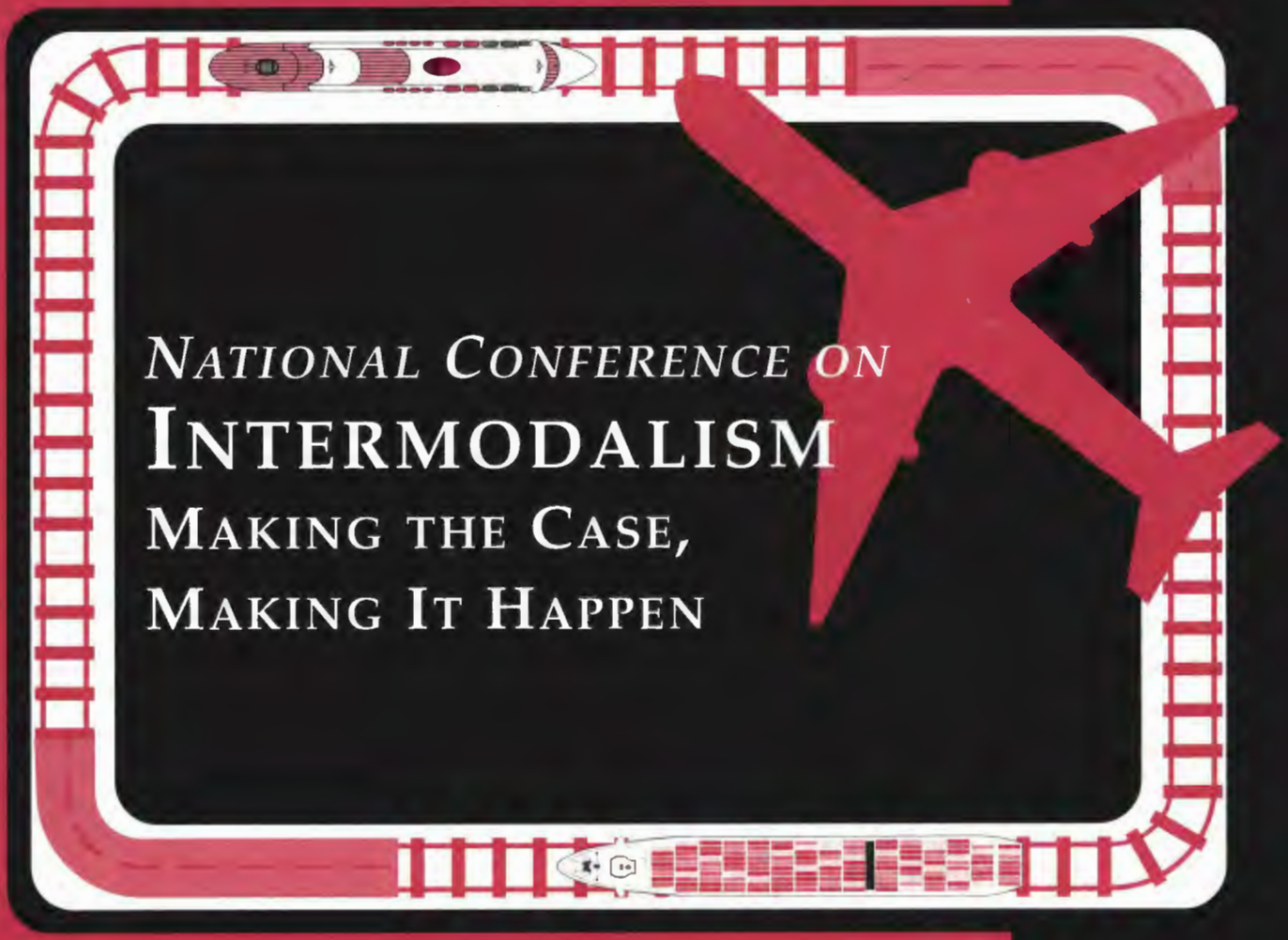
CONFERENCE PROCEEDINGS 11



National Conference on INTERMODALISM

Making the Case, Making It Happen

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CONFERENCE PROCEEDINGS 11

National Conference on Intermodalism: Making the Case, Making It Happen

New Orleans, Louisiana
December 7–9, 1994

Sponsored by

Federal Aviation Administration
Federal Highway Administration
Federal Railroad Administration
Federal Transit Administration
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PREFACE

The National Conference on Intermodalism: Making the Case, Making It Happen was jointly funded by six agencies of the U.S. Department of Transportation: the Federal Aviation Administration (FAA), the Federal Highway Administration (FHWA), the Federal Railroad Administration (FRA), the Federal Transit Administration (FTA), the Maritime Administration (MARAD), and the Office of Intermodalism. At the request of these sponsors, the Transportation Research Board convened a steering committee to plan this conference, which focused the attention of a wide group of national transportation leaders.

These proceedings convey only part of the story. Two conferences ran concurrently on December 7–9, 1994: "Intermodalism: Making the Case, Making It Happen" and "The Intermodal Freight Terminal of the Future." The second focused on technical and institutional issues related to freight terminal planning and design. Papers from the second conference will appear in a forthcoming Transportation Research Circular.

The pairing of these two events gave voice to the partnership dialogue that will be the key to realizing an intermodal future for the U.S. transportation system. Supporting these joint conferences were two TRB standing committees on freight, each modal administration of the U.S. Department of Transportation, and an impressive cross section of state departments of transportation, local metropolitan planning organizations, and various transportation leaders within the private sector.

The two concurrent conferences, complemented by poster sessions, exhibits, and handout materials, were intended to serve as an interactive idea fair. Throughout the two-and-a-half-day event, participants commented that an intermodal future would be characterized by a "paradigm shift," "continuous innovation," "linkages," and "market-driven decisions." This landmark event advanced discussions that will help the transportation community realize its collective intermodal future.

These proceedings are organized as follows:

- Executive Summary;
- Plenary Session 1, containing the keynote address and reports from the members of the National Commission on Intermodal Transportation;

- Nine additional plenary sessions, some containing an issue overview, with case studies supporting the theme of the session;
- An appendix with poster session case studies and corporate profiles; and
- A listing of conference participants.

The case studies developed by the participants are snapshots of progress toward realizing intermodal systems, snapshots ranging from policy funding innovations to technical solutions. The proceedings of this conference should provide the reader with a workbook of ideas and a directory of diverse national initiatives upon which to draw. This record can only begin to convey the rich and dynamic exchanges that occurred with more than 500 attendees. The conference sponsors and steering committee hope that this compilation of summary materials serves the interests of other transportation planners as they develop their intermodal programs.

Information has been condensed to assist readers, and other information sources and contacts have been indicated. All participants and speakers appear either in the appendix (poster session and corporate listing) or in the participants list. Cross references between the appendix and the plenary sessions provide additional details. All speeches are not quoted here; rather, session summaries and case study templates are presented.

More speakers, moderators, respondents, and poster session presenters participated than can be individually recognized in this document. The conference organizers wish to note other contributors to this conference:

- Welcoming remarks from Albert J. Herberger, MARAD, and M. John Vickerman, Vickerman · Zachary · Miller;
- The American Association of Port Authorities, the Intermodal Association of North America, and the American Trucking Associations, joint hosts of the poster session reception;
- Sarah Campbell, who moderated the panel "Intermodalism: A Dynamic Process—New Technologies, Partnerships, and Procedures";
- Sarah Siwek, who moderated the panel "New Directions: New Partnerships," and David Albright, who served as respondent for that panel;
- David King, who moderated the panel "Transit: Planning Services and Terminals for Customers," and Gregory Benz, who served as respondent for that panel;
- Matthew Coogan, who moderated and contributed to the organization of the panel "Aviation: Access Solutions";
- Lee Johnson, Distribution Director for Limited Distribution Services, who participated in the presentation on the Ohio Inland Port; and
- Contributors to the wrap-up panel, including Gordon Linton, FTA; Sally-Hill Cooper, FRA; Joan Yim, MARAD; George Schoener, FHWA; Barry Valentine, FAA; M. John Vickerman, Vickerman · Zachary · Miller; Henry Dittmar, Surface Transportation Policy Project; Allen Hendrix, California Department of Transportation; Erik Stromberg, American Association of Port Authorities; and Robert Kochanowski, Southwestern Pennsylvania Regional Planning Commission.

C. Michael Walton
Chair, Conference Steering Committee

Contents

Executive Summary

Michael D. Meyer, *Georgia Institute of Technology*

In December 1994, in New Orleans, the Transportation Research Board sponsored a national conference on Intermodalism: Making the Case, Making It Happen. The conference was the second one on intermodalism. The first, ISTEA and Intermodal Planning: Concept, Practice, and Vision, was held in Irvine, California, in 1992. Coming soon after passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the first conference focused on an understanding of intermodalism in the context of transportation policy and planning. The participants at the Irvine conference discussed the definition of intermodalism, identified the characteristics of effective partnerships, and explored the meaning of intermodal transportation planning.

The New Orleans conference had a different focus. It emphasized examples of effective intermodal project and plan implementation so that transportation professionals could better understand the characteristics of successful integration of intermodalism into transportation planning and decision making. The 600 participants at the New Orleans conference heard speakers from many jurisdictions, each having a variety of interests and experiencing intermodalism from numerous viewpoints, discussing what it takes to get intermodal projects implemented. The overall tone of the presentations, and of the conference itself, was very upbeat. Participants realized that the conference was not so much a single event as it was part of an evolutionary process to more fully appreciate intermodal concerns in the bigger picture of transportation investment strategies. Despite limited research and targeted investment dollars, the conference showcased the hard work, ingenuity, and entrepreneurial spirit that made intermodal projects happen.

This executive summary highlights the key observations and messages that emerged from this conference. Given the long-term, evolutionary perspective toward intermodalism adopted by the conference, the following paragraphs should be considered a point of departure for further consideration of intermodalism in the context of transportation planning and decision making. Concepts needing further exploration were identified. Intermodalism was viewed fundamentally as a dynamic process, one that responds to opportunities for improving the transportation system in a changing world. Our understanding of intermodalism must continue to respond to this changing world as well.

In summary, the conference was another step in the process of developing a true intermodal transportation system. The key concepts discussed there provide guidance on how intermodalism can be successfully incorporated into planning and investment decisions. The next stop, and indeed the challenge left to the profession by this conference, is to continue exploring innovative approaches to making intermodalism happen. This entails innovative approaches to finance, development of partnerships, better understanding of the benefits to society associated with intermodalism, and a better appreciation of the role of technological advances in fostering greater productivity and improving system performance.

Overarching Concepts

Although the conference program focused on the lessons learned from intermodal project implementation, several global themes emerged from the presentations. They provide an important benchmark for our understanding of intermodalism, viewed as a state-of-the-art practice in 1994.

Not Business as Usual

Most presentations described successful intermodal projects as the result of negotiations, financing, schemes, and project development strategies representing a very different process from the one existing before enactment of ISTEA. At its most basic level, this theme suggests that intermodal transportation is a critical element of the transportation system and deserves attention in the planning and programming process. Interest in intermodal transportation can be catalyzed by changes in technology, market forces, environmental considerations, and economic factors. Many of these factors have traditionally not been part of the planning process. From the perspective of intermodal transportation planning, success implies the participation of a large number of actors in an open process, each willing to compromise, learn from one another, seek creative solutions, and hold the process and each of its participants accountable to good economic sense and strong public policy.

Partnerships

The Irvine conference identified the concept of partnerships as critical to successful intermodal transportation. This concept emerged again at the New Orleans conference. Intermodalism is founded on partnerships and the flexibility of the partners to respond to opportunities to make a project happen. As noted by many presenters at this conference, successful partnerships allow each partner to contribute its best strengths.

Total-Trip Perspective

Some refer to this as the transportation chain, others as transportation flows, and still others as supply chain management. In essence the concept was that freight and passenger transportation must be viewed from the perspective of all elements of a trip that affect the actual and perceived performance of the transportation system. Intermodalism in this context not only means the connecting points where bottlenecks can occur, but also the interaction of modes where one affects the performance of another (railroad grade crossings, for example).

Market-Driven Planning

In descriptions of both freight and passenger projects, knowledge of the market was considered vital to successful intermodal projects. This has significant implications for analytical tools, data, and the process of planning and project development. For example, this focus might entail a perspective of transportation flows that occur in a global market. Such global forces could be critical to understanding what is happening in a state's or metropolitan area's transportation system. Many presenters suggested that successful intermodal planning occurs only when the analysis is broadened to include the wide variety of factors that influence such transportation.

Customer Orientation

A customer-oriented intermodal planning process is similar in concept to market-driven planning but much more specific to the needs of individual customers. Transportation, fundamentally, is a derived demand, and the characteristics and desires of system users are a critical input into the planning process. Intermodal freight movement, for example, could be viewed as a direct response to customer demand for safe, reliable, and efficient movement over long distances. And changes in the characteristics of intermodal freight movement have often been undertaken in response to customer needs and desires. Similar concepts could be applied to passenger travel.

Rethinking Roles and Responsibilities

Many presenters indicated that intermodalism means rethinking the roles and responsibilities that have traditionally structured transportation planning, decision making, and project finance. Many of the problems we face in intermodal transportation are institutional in nature and inherent in our traditional way of thinking. In some of the case studies, presenters made the point that private-sector initiation of ideas or participation early in the process helped the ideas become realities. In others, the important role of the metropolitan planning organizations (MPOs) as conveners and advocates of seamless transportation was emphasized. The new actors involved in intermodal transportation planning and the capabilities and resources they bring to the process suggest a new set of responsibilities for traditional participants in the planning and decision-making process, and new roles for the new participants.

Funding

In each case study of project implementation, the major focus was on how project funding was arranged. Whether discussing a transportation terminal in Holland, Michigan, or the Alameda freight corridor project in Southern California, success was partially defined as the ability to make the "deal." This often required flexibility in the use of funds and formal partnerships that defined financial and management responsibilities. Innovative funding strategies included revolving funds, private contributions, and use of congestion mitigation and air quality (CMAQ) funds.

Importance of Linkage

Many of the case studies discussed at this conference were successful because project proponents were able to link the intermodal project to economic development, quality of life, eco-

nomic competitiveness, environmental considerations, and so forth. In particular, in situations where public funds are necessary to support a project and political constituencies are needed to garner such support, the benefits of a project need to be explained in terms understandable to nontransportation officials. Many conference participants suggested that we need to do a better job of understanding these linkages.

Consideration of Intermodalism at All Levels: Policy, Planning, Design, and Operations

When taken together as an integrated conference program, the presentations showed that intermodalism can occur and be very influential at all levels of transportation provision. At the policy level, this could include integrated fare structures or regulatory reforms that provide more efficient transshipment of freight at national borders. At the planning level, this means examining options for the movement of people and goods. At the design level, this means providing capacity and opportunities for efficient access. And at the operations level, this means coordinating schedules and operations for efficiency in movement.

Technology Innovation

Advances in technology, especially for intermodal freight movement, are important driving forces behind new forms of services and travel patterns. Information technology and technological innovation in infrastructure provision can be catalysts for market-driven changes in transportation demand. For example, electronic labeling of containers allows more efficient operation at port facilities, resulting in greater turnover in container utilization and greater container movement on the transportation system serving that port. Technology thus becomes an important input into the transportation planning process and could possibly be a cost-effective strategy for solving the identified problems.

Intermodalism as Opportunity

Almost all of the presentations portrayed intermodal projects or plans as means of taking advantage of market forces, geographic features, technological innovation, or network configurations. Thus, intermodalism should be viewed as an opportunity to enhance productivity and efficiency.

Making the Case

Perhaps the best argument for intermodalism was the large number of successful partnerships described at the conference. Partnerships rely on agreement from many perspectives that a project is worthwhile (e.g., public benefits versus return on investment). The fact that the conference portrayed so many good examples of intermodal projects indicates the important role that intermodalism has in both the public and private arenas.

Intermodalism was viewed by many conference participants as an opportunity to improve the efficiency of the transportation system and, ultimately, to benefit society in a variety of ways. Several case studies described these benefits. In most cases, the descriptions were general, with few specific data on actual impact.

Economic Impacts

Several case studies described the economic benefits of effective intermodal transportation. Perhaps the most impressive was the data from a New York/New Jersey airport regional

access study, which estimated that the economic impact of the three airports in the region was $25 billion annually, or 3 to 4 percent of the regional GNP. Poor access to the region's airports had been consistently given as the second most important reason why firms moved away from the region. The Alameda freight corridor project in Southern California is expected to provide substantial economic growth in the port areas. At a more site-specific level, the Union Station case study in Washington, D.C., indicated what impact a well-designed intermodal station could have on enhancing ridership and attracting retailers.

To the users of the system, the benefits of effective intermodal transportation were described as reduced time, increased reliability, and reduced costs. Although not quantified, these benefits were expected to be received as increased customer satisfaction and passed along to system users as productivity gains and reduced costs to the ultimate consumers.

Environmental Effects

The environmental effect cited most often is the reduction in air quality that is associated with intermodal projects. For example, the Alameda freight corridor is expected to see a significant increase in truck flows by 2020, an increase of 20,000 per day over the period. The New York/New Jersey transit access to airports is estimated to reduce carbon monoxide emissions by 2,300 tons per year by removing 18,000 vehicles per day from the road system.

Safety

Reduction in accidents is a primary benefit of projects that improve access to terminals. This safety benefit was associated with vehicular conflict, but also vehicle-pedestrian interaction.

Increased Opportunities and Quality of Life

Intermodal projects designed to produce the preceding benefits would enhance the quality of life of a community. One speaker pointed to the Americans with Disabilities Act requirements for barrier-free transportation access as an excellent way in which intermodal linkages can enhance the mobility of an important segment of society.

Making It Happen

Consistent with intermodal planning from a total-trip perspective, successful project implementation requires understanding, dialogue, agreed-upon expectations, and education of the interdependent participants in the process. Of some interest in the conference was the difference in scale of application of intermodal concepts. The presentations pointed to strategies for and approaches to project implementation that proved successful for particular situations. Presentations related to three areas: systemwide/areawide approaches, corridor or subarea applications, and site-specific strategies.

Systemwide/Areawide Approaches

An excellent example of an intermodal transportation system was found in a presentation from MARTA, the public transportation system in Atlanta. As noted by the MARTA representative, this system is intermodal by policy and by design. Examples included subway stations designed with easy access by bus, automobile, pedestrians, and bicycles. Policy aspects included providing funds to local governments for sidewalks connecting to the transit system. The fare structure provides for convenient transfers. The key message from this presentation was that effective intermodal systems need to have associated intermodal policies and designs.

The concept of market-driven planning was deemed critical at the systems level. Many examples were presented at the state and MPO level where the customers and users of the transportation system were part of the process. The airport access example from the New York/New Jersey region emphasized the importance of attitudinal and origin-destination surveys. Examples from Wisconsin, Florida, Ohio, New York State, Albany, Columbus, and Seattle emphasized the need to understand the market forces and demands influencing freight movement.

Intermodal planning at the systems level needs to take into account the importance of a much broader scale of application, especially in understanding freight movement. Factors that influence intermodal transportation often do not end at the state border. Examples were provided of a much broader analysis perspective brought into the planning process, something very different from traditional planning.

Systemwide intermodal considerations often require a convener that can transcend some of the more myopic perspectives of individual agencies or organizations. MPOs have become important catalysts for addressing the intermodal transportation issues in their regions. Lessons learned from the examples given indicated the importance of listening to the customers and being pragmatic. Albany, New York, for example, showed that by listening to the customers, the focus of system performance measurement shifted from volume-to-capacity type measures toward a concern for reliability of system performance.

The importance of good data, especially at the systems level, was emphasized by many presenters. An excellent example of what good data can do for developing a strategic plan for intermodal freight movement was provided from eastern Washington. Understanding transportation flows, both passenger and freight, is based on the existence of good data.

Corridor and Hub Applications

Corridor and hub applications, as presented at this conference, tended to focus on access to terminals (e.g., the Los Angeles ports, the Port of New Orleans, and airports). Participants identified several factors for successful project implementation, which are described in the following paragraphs.

Most of the examples in this conference at the corridor level began with information about why projects were needed. For example, in Los Angeles one reason was a substantial increase in the number of dedicated truck and rail trips from the two ports in the region to a common intermodal rail yard (related to shifting world markets and transportation technology). In Boston, New York/New Jersey, and St. Louis substantial increases in airport-oriented trips required the development of feeder systems. Market factors necessitated new partnerships, which often strongly influenced the level of participation of the groups involved.

Partnership arrangements at this level become important in bringing a project to completion. Almost all of the examples showed the importance of some mechanism for this partnership to operate (a board, steering committee, task force, etc.). As was noted in the Tchoupitoulas corridor at the Port of New Orleans, it is important to have private-sector participation early in the process. The broad concepts of economies of scale and common system benefits need to be established before technical issues can be dealt with.

Once an institutional mechanism is in place for intermodal planning at this level, the key issues need to be addressed. For example, the New York Full Freight Access study focused on passenger/freight rail conflicts and on issues concerning access to a new intermodal terminal. If clearly identified key issues are not agreed upon early in the process, a great deal of time and money may be wasted as these issues reappear later.

Many of the corridor studies included representatives from various business and modal perspectives. Given this type of participation, there needs to be a group with a broader, unified perspective on the multimodal nature of corridor needs and that does not address the issues from a single perspective. The analogy used by one presenter was that you cannot build a house by asking the plumber, electrician, carpenters, and so forth to meet at a given time and design a house. A blueprint for success is essential.

Site-Specific Strategies

This level of application provided the most detail on successful implementation and public/private partnership. The issues ranged from creative sources of funding (for example, CMAQ funds for an intermodal yard in Auburn, Maine) to the existence of unique institutional structures to take a project to completion (for example, the management organization for Union Station in Washington, D.C.).

Important Observations in the Presentations

The involved parties need to clearly define and agree on the objectives at the outset. This is especially important when broad-based teams are the basis for design and oversight of a project. It is also necessary to examine a facility in the broader context of the general service that is being provided. Train stations, for example, are just one part of a traveler's trip. Intermodal freight yards are just one element of freight movement. Design and operations must clearly be related to the function this terminal has in the broader context.

Successful "selling" of an intermodal project requires clear delineation of its likely benefits. For example, most of the port access projects presented at the conference were related to likely economic development benefits and jobs. This linkage was especially important when numerous government agencies became involved in project implementation and local elected and appointed officials began asking why public funds for these projects were justified.

Many success stories were based on the concept of letting people do what they do best. Especially at the site level, public-sector agencies have distinct roles (land taking, funding, planning, etc.) that become important in the overall scheme of project implementation. Private organizations also have roles in land economics, funding, market analyses, service provision, and so forth. Success means playing to the strengths of each participant.

Finally, although the focus of site-specific projects tends to be fairly narrow, even here a systems perspective is often important. For example, the Auburn, Maine, intermodal terminal will be strongly affected by the operation of a tunnel between Ontario and Michigan that allows doublestacked railcars. The boundaries of success and failure go well beyond property limits.

SESSION 1

Keynote Address

Michael P. Huerta, *Office of Intermodalism, U.S. Department of Transportation*

I am pleased to address this distinguished gathering of two important conferences on intermodal transportation. The Transportation Research Board (TRB) has noted, quite correctly, in the preparatory materials to this conference, that it is essential to promote a dialogue between the leadership of the public and private sectors in the spirit of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). At the same time, we need to identify initiatives here in the United States and abroad that best exemplify intermodalism. Both of these conferences will advance that agenda and will fill an important need in advancing intermodalism here in America. Two years ago, TRB and the U.S. Department of Transportation (DOT) convened a similarly diverse but much smaller group in Irvine, California, to discuss ISTEA and intermodal planning. The Irvine conference focused on how to achieve more economically and environmentally efficient transportation through the combined use of various modes. In the next 2 days we will discuss the progress we have made and highlight specific examples of innovation in intermodal transportation. Today I would like to provide impressions on the continuing evolution of intermodalism.

In preparing for this conference I felt that it would be useful to go back and look at what we were saying in Irvine 2 years ago about intermodal planning. At that time ISTEA was just about 1 year old and, as Lillian Liburdi from the Port Authority of New York and New Jersey noted in her keynote address, "Some of us were wondering, do I really love this new creation, is this baby really mine?" Bob Martinez, my predecessor as Associate Deputy Secretary in the Office of Intermodalism, noted that although intermodalism was the guiding principle of ISTEA, the term "intermodalism" was not defined precisely in the legislation, and this was not a bad thing since it gave us the flexibility to apply the principles of intermodalism in a variety of ways. Rob suggested three: connections, choices, and cooperation. We agreed that an intermodal transportation system should be viewed from the perspective of the total trip. Therefore, not only are points of connection important, but also the links that connect to these points, or the elements of the system.

Given our focus on the total trip, we concluded that there were several things that we as transportation professionals needed to do. The first was to emphasize the performance of the transportation system. Rather than concentrating on construction of specific systems and dis-

tinct modal systems, it is essential to think of transportation as a single integrated system and to emphasize the performance of the system as a whole. We discussed barriers to achieving a performance-based intermodal transportation system. These included institutional structures, lack of data, inadequate analytic tools, no clear planning process, and perhaps most important, a lack of understanding of the roles and relationships of the elements and the many participants in the transportation system. We suggested that research be undertaken to develop these tools to assist transportation planners. We believed that there would be much that could be learned from the states, from metropolitan planning organizations (MPOs), and from others involved in the implementation of ISTEA. We also felt that there was much to learn from the private sector, where intermodalism had its beginning. To capture this knowledge, we suggested that special emphasis be placed on education and dissemination of information about the lessons learned. We discussed the need for federal initiatives to complement the highway system. One recommendation was for DOT to identify a limited number of high-priority national freight corridors.

If there was a single word that summed up the focus of the Irvine conference, it was "partnership." A great deal of time was devoted to gaining an understanding of what constitutes a successful partnership. We heard that a successful partnership involves a long-term commitment, a sense of cooperation, and shared risks and benefits among the participants. We concluded that we needed to find new ways of partnering between federal, state, and local governments; between the public and private sectors; and between the providers of transportation services and the users of the system. As Larry Dahms of the Metropolitan Transportation Commission of the San Francisco Bay Area said at the conclusion of the Irvine conference, "If partnerships are not elevated to a new level of effectiveness, then ISTEA will be unfulfilled."

I was fortunate to be at the Irvine conference as a participant representing one element of the transportation system. I confess that I was intrigued by the promise that ISTEA appeared to hold, but at the same time I had a healthy degree of skepticism over whether it could ever live up to the expectations that we all have. Here we are, in New Orleans, 2 years later. Some of us are wearing different hats, but we have come to assess the questions, "Have we made the case for intermodalism? Have we made it happen?" The answer is clearly, "Yes." Although it may not be at the stage that we would like to see, we have made impressive progress toward achieving a national intermodal transportation system. Is the system perfect? Far from it. But we are certainly better off than before ISTEA was enacted. We have reached this point through the cooperative efforts of all of us in transportation, at all levels of government and the private sector. We will be hearing many examples of the progress we have made throughout the country in the conference sessions.

I would like to highlight some of the achievements of DOT in advancing the intermodal agenda. Let's turn first to intermodal planning. One of the most significant accomplishments of ISTEA was that it explicitly linked planning and funding for transportation, and it made intermodalism a priority in transportation plans. The focus on planning is further strengthened by the emphasis that ISTEA places on developing plans through an open and participative process. This means that more players should be at the table when decisions are made about transportation priorities.

Since ISTEA, we have taken very seriously the emphasis on better transportation plans that incorporate intermodal principles. In developing our planning guidelines and regulations, the Department of Transportation, through the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), stressed flexibility. Rather than prescribe strict guidelines on what plans should look like, we focused more on what the process should involve. We left it to the states and MPOs to determine how best to plan for their areas. These plans are scheduled to be submitted to DOT early next year.

In keeping with our flexible approach, we have not set forth fixed standards or absolute requirements for the plans. However, we expect that state and metropolitan plans will be mutually supportive. The result of this planning approach has been that state and local officials are trying a wide variety of approaches to planning, and we can all learn from their experience. For example, Ohio has emphasized preserving rail corridors. Six New England states

have tried to integrate their planning activities to understand broad or regional issues. From Alaska, we have learned that in some places highways are not the backbone of the transportation system, but landing strips for small aircraft might be. And Florida, with 25 MPOs, is particularly notable for its coordination and concurrent development of metropolitan and statewide plans.

We have all been struggling with how to make the planning process open and how to bring in new players. Some organizations have set up private-sector freight advisory councils. Others have targeted transportation user groups for participation. Some things have worked better than others, but we have all learned from our experiences.

Despite the call for flexibility, we also expressed the need for integrating some planning issues at the national level if we are to achieve a national intermodal transportation system. One example of this was, of course, the National Highway System (NHS), called for in ISTEA, on which DOT and the states completed work ahead of schedule last December. We are all hopeful that Congress will do its part ahead of schedule by enacting the proposed NHS before the ISTEA-mandated deadline of September 1995.

During the next 12 months FHWA will further advance the NHS through a two-phased effort to identify the intermodal connections to the NHS. Like the NHS itself, this will be a collaborative process involving state and local officials, industry groups, and other interested parties. Clearly the NHS is an important statement of the nation's future priorities for transportation. However, when we think of America's transportation needs for economic growth and quality of life in an increasingly integrated global environment, highways alone do not tell the whole story. That is why Secretary Peña called upon the transportation community to join together to develop a National Transportation System (NTS), which encompasses all modes.

The NTS will serve as a planning framework to focus our attention on the future needs of the entire transportation system. We have spent the last year discussing the NTS concept and framework with providers, planners, and users of the transportation system. As we have heard from these groups, our own thinking has evolved and changed on what the NTS should be, how it should be developed, and what it should include.

Originally, we thought that the NTS would look a lot like the NHS, that is, a set of specific facilities designated as nationally significant that would serve as a guide for funding decisions. However, when we test-marketed that concept, we heard that the NTS must be more than just a map of facilities. You and your colleagues in the transportation community said that the NTS would be more valuable if it dealt with performance, bottlenecks, and corridors. You also stressed that the NTS should relate to the planning frameworks set in motion by ISTEA. We listened to what you were saying, and we concluded that you were right. Consequently, we have revised our proposed approach to the NTS. We are paying particular attention to your suggestion that the NTS focus on performance measures. We are keeping the NTS dialogue open and soliciting ideas on what these performance measures might look like. The NTS will only work for us if it works for you. That's what partnerships are all about.

We have also seen some progress in better integrating aviation into the rest of the transportation system. In this year's reauthorization of the Airport Improvement Program, DOT worked hard to make airport ground access projects eligible for specific airport funding. We were not able to get that far. But the resulting bill did include language emphasizing the benefits of intermodalism and urging integration of aviation plans with broader transportation plans. To help move things along, the Federal Aviation Administration (FAA) is cosponsoring the development of an airport access planning guide. The guide will address the role of airports as intermodal terminals and will include techniques for evaluating alternative modes and selecting the best combination of modes for ground access. In a similar vein, FAA, along with the FHWA and FTA, is initiating a 1-year study in conjunction with the Metropolitan Washington Airports Authority to investigate how high technology can be applied to relieve congestion and delay in airport access systems.

What about funding? We've made some progress in that area as well. Over the last 2 years DOT has received increases in its appropriations, consistent with President Clinton's emphasis on investing in the infrastructure that America needs. However, funding levels still fall short of authorized levels. More important, DOT has aggressively promoted innovative ap-

proaches to transportation financing. Earlier this year FHWA released a report on how we might change some of the rules on how federal dollars are used. We received more than 60 responses, and none of them asked for more money. Instead, they asked for flexibility on local match requirements, expanded authority for revolving loan funds, and authority to generate nontraditional sources of revenue for fast-tracking. There were public and private partnership proposals and many other great ideas. Nearly half of the innovative financing proposals received by FHWA to date involve intermodal projects. I believe that this reflects the interest in getting intermodal projects going, and it also reflects the creativity that intermodal projects generate. Since our original solicitation for project ideas, FTA and the Federal Railroad Administration (FRA) have also requested proposals, and FAA is planning to do something in this area as well.

We have already approved some of these project proposals, and we expect to approve more. This activity has taught us that there is no single program or framework that will foster more innovative use of federal funds. Instead, we expect that it will be a menu of different techniques that can be mixed and matched to meet the needs of the specific projects in question. I should also stress that DOT does not see our innovative financing program as replacing or diminishing the resources dedicated to our traditional grant programs. We all know that our needs for transportation dollars far outstrip existing resources. Instead, this activity will help us stretch our existing resources much further.

How transportation programs are structured is one thing, and I have talked about some of the things that we at DOT are doing to restructure our programs and make them more user friendly. However, we also need to look at how those programs and services are delivered. We might have the best program in the world, but if you have to deal with a cumbersome delivery system, the program will fall short of its original purpose. We have worked hard to improve the rules, regulations, and administrative procedures that govern our programs.

Federal highways and federal transit share the administrative responsibilities for ISTEA, and they have been successful in consolidating regulations and guidance in many program areas. They haven't stopped with regulations. Following the issuance of the final rule on statewide and metropolitan planning, they conducted joint training on regulatory compliance and expectations in virtually every state. Our outreach and training efforts have not been limited to the public sector, however. The Maritime Administration has invested a significant amount of time and energy in reaching out to shipping lines, port authorities, product shippers, and others to ensure that they understand that they now have a seat at the table where transportation decisions are made. And FRA has convened workshops all around the country to explain ISTEA and how it applies to the railroad industry. The Maritime Administration has also placed a new emphasis on port and intermodal issues and has elevated their status within the organization. In the technology area, DOT has given greater focus to coordinating its research efforts. One example is our new joint program office for Intelligent Transportation Systems (ITS)—the name alone says a lot. This is what we used to call Intelligent Vehicle Highway Systems. But we and our partners in industry have learned that the potential applications of ITS go far beyond the highways.

In my office, the Office of Intermodalism, we have organized according to the regions of the country. Why? Because the action is not in Washington. Intermodalism needs to be more than a policy discussion among transportation planners. Users of the transportation system have to see that it improves transportation for them. Our team members have taken on the responsibility to identify promising intermodal projects and to make sure that we at DOT are doing everything we can—be it advocacy, assistance, or removing barriers—to make these projects happen.

We have seen changes in the regulatory front. This year's reauthorization of the Airport Improvement Program included a trucking provision. How is that for intermodalism? It was a deregulatory initiative that affects intrastate operations of motor carriers. The new law provides that a freight motor carrier, for other than household goods, will no longer have to obtain state certification for intrastate operations if it already holds an ICC license or permit. This is a huge benefit for intermodal freight carriers. As one example, it took UPS 20 years to get authority from one state to provide intrastate service to complement existing interstate

operations. Under the new law, a carrier would be able to operate in that state if it already has the federal authority to do so.

When we were at Irvine, one thing we spent a lot of time talking about was data. Virtually across the board, transportation users have expressed concern about the lack of information that they need to make informed decisions. Last year, DOT's new Bureau of Transportation Statistics issued its first annual report of transportation statistics. It represents a start and has proven to be an invaluable compilation of information on what we need to know. The second and much enhanced edition will be available early next year.

I have taken the time to touch on some of the things that we at DOT are doing in cooperation with our partners in government and the private sector for one important reason. When you add it all together, you can see that it is quite a bit. And that is a very small part of the whole story. There is a lot happening in the industry, in the maritime sector, in the rail sector, the trucking sector—a lot is happening all around the country. We have come a long way. However, our work is far from done.

As we look forward, I believe we need to focus on three areas: funding for intermodal projects, analytic tools, and roles and relationships. Turning first to funding, I want to reiterate that we have made progress in the levels of funding, and we've been successful in trying new approaches. Where we need to do more is in structuring funding programs around the unique needs of intermodal projects. Intermodal projects are, by definition, more complex than a typical highway or transit project, because they often involve multiple sources of funding and public- and private-sector participation. They might face questions of eligibility, and because of this they may not enjoy strong support from transportation agencies. We can have all of the policy language that we like, but if we do not address the difficulties in funding intermodal projects, we will not see the projects that we would like to.

This point is especially important for freight intermodal projects. In addition to being complex, they often involve rail elements. And under existing law it is very difficult to fund dedicated rail freight projects with federal dollars. As a solution I suggest that we need to simplify the funding maze for intermodal projects and loosen the eligibility rules for rail freight projects where there is a clear public benefit to be gained. I am not the only one saying that. You will be hearing later that the Intermodal Commission struggled with this very issue.

We started to focus on data needs and frameworks for analyzing transportation choices, but we still face a frustrating lack of tools to assist us in making good intermodal transportation decisions. Addressing this problem is an extremely important objective of the NTS. Through the NTS we need to figure out how to incorporate market information, system performance, and other factors into our decision frameworks. What we have now is clearly insufficient. The work being done by the states on the ISTEA-mandated management systems will also be a major contribution. And at DOT, the Bureau of Transportation Statistics is working with the Volpe Transportation Systems Center to develop a model for making cross-modal comparisons. We need to provide support to these and other activities to help us understand what is happening in the world and learn how the transportation system needs to respond.

In the area of roles and relationships, we have progressed from where we were at the conclusion of the Irvine conference—we have placed an increased emphasis on partnership. It has become apparent that partnership means rethinking the roles that we have traditionally assigned to ourselves. At DOT, we have long been accustomed to making the decisions, controlling the purse strings, and holding a regulatory hammer. But the world has changed under ISTEA. What we have heard from our partners is that they think we also need to play a different kind of role, one that includes convening, facilitation, and mutual support. This is a big change for us, and one that we are struggling to move toward.

We all need to consider our roles as partners—none of us has the luxury of operating in our own little world. Intermodalism is about the integration of transportation, and that requires understanding how what we do affects the entire system. We all need to pay greater attention to understanding how we should work together, rather than allow ourselves to fall into the trap of doing things the way we have always done them.

So we are here today and we are asking ourselves, "Have we made the case for intermodalism? Have we made it happen?" Or, "Has intermodalism happened without or in spite

of our efforts?" I think it is clear that we have made the case, and I think that we have all played a role in making it happen. From its beginning in the private-sector freight industry, intermodalism has emerged because of our collective willingness to think about transportation differently.

A member of my staff has recently suggested that intermodalism is nothing more than common sense. Over the years we have built institutions and planning frameworks that today get in the way of the most efficient and effective transportation system. Intermodalism may be common sense, but it requires uncommon vision and dedicated persistence. Although it might look like we still have a long way to go, we must not lose sight of how far we have come.

We have always characterized ISTEA and intermodalism with terms like watershed, revolutionary, and landmark. Over the next few days we will have the opportunity to celebrate the successes that we have had so far. We will leave this gathering renewed and energized to tackle the obstacles that still confront us on the road, the rail line, the waterway, the air corridor, the information superhighway—or any combination of these—toward intermodal transportation.

Reports from the National Commission on Intermodal Transportation by Commission Members

Anne P. Canby, *Delaware Department of Transportation*
Thomas J. Donohue, *American Trucking Associations, Inc.*

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) established a National Commission on Intermodal Transportation to study the status of intermodal standardization, intermodal impacts on public works infrastructure, legal impediments to efficient intermodal transportation, financial issues, new technologies, problems in documenting intermodal transfers of freight, research and development needs, and the relationship of intermodal transportation to productivity. The report was presented to Congress. Anne P. Canby, Delaware Secretary of Transportation, and Thomas J. Donohue, President and CEO of American Trucking Associations, Inc., were members of the commission. Their presentations to the conference follow.

Anne P. Canby

It is a pleasure to be here and to have an opportunity to talk to such a varied group about the work of the commission. When Rob Krebs sent us a memento from the work, he had an inscription on it saying, "It was a hell of a ride." Well, he was right, and Tom Donohue of the American Trucking Associations, who will speak next, will echo some of those thoughts. I can tell you, we had some very interesting discussions in coming up with the recommendations in this report, which I think all of you received in the materials that were handed out. So take a look at it. There were some interesting ideas.

As we began to think about the recommendations that we would set forth, the commission members listened to a number of voices throughout the country. And I think Secretary Peña helped to frame some of the issues of intermodalism when he said early in our deliberations that *we must integrate all modes of transportation into a seamless system for moving*

goods and people from coast to coast and within metropolitan areas. For me, as one member of the commission, that served as a guiding light as we went through our discussions. In the beginning there was also some thought that intermodalism was defined exclusively by the private-sector freight industry, and not a lot of thought had been given to the passenger side. The secretary broadened the commission by adding Jacki Bacharach from Los Angeles, Jacqueline Gillan from Washington, Damaso Seda from New York (Transportation Workers Union member), and myself, to add some new and public-sector-oriented perspectives to the commission. It probably made for more lively deliberations.

As we moved around the country we heard a lot about the problems that you all deal with on a day-to-day basis—poor access to terminals, urban congestion. We spent a fair amount of time talking about the public-private relationship, which Michael Huerta referred to. What seemed to be missing was the involvement of those of us in the public sector with the private providers and shippers. Probably some of the private providers and shippers are just as happy that that's the case. But the reality is that we in the public sector tend to be the managers of a key link in this network, the highway portion. Bringing those different modes together was something that struck us as necessary. I think that there are a lot of lessons that we can learn from the enormous progress, productivity, and efficiency that have been gained on the private side over the last 10 years or so between the trucking, rail, and ocean carrier participants.

On the passenger side of things it is clear that our thinking is still much too separate and too unequal. Kirk Brown, my colleague, Secretary of the Department of Transportation in Illinois, said that our greatest problem in intermodalism is not our infrastructure, but our thinking and institutions, which are still very much mode-specific. What gets lost in all of this is that the customer is very far away from our focus, and we still think too much about the mode and not, as Mike referred to, the total trip. Very few trips are a single mode. Another participant pointed this out even more clearly when he said it was very easy for him to ship a box from Boston to Columbus, Indiana, but when he tried to get his grandmother from those two places, forget it. It's a pain. You can't do it very easily. When you stop to think about the nature of those trips, one phone call one fare for the box, imagine being able to do that if you are trying to ship yourself or move as a person. So the passenger portion of intermodalism has many links that still need to be filled.

In looking at things like ticketing, integrated fares, and schedules, Amtrak is now beginning to show some bus links to areas that are not on their route schedule, but this is relatively new. Revenue sharing doesn't happen on the passenger side particularly well right now. Relatively few airports are linked to their urban centers by good, convenient transit. Two good examples are Atlanta and Chicago. Again, too many of our cities have abandoned their passenger terminals. On the other hand, we have some examples of great successes in Los Angeles's Union Station, Union Station in Washington, D.C., and South Station in Boston, all successes of bringing passenger intermodalism together.

Again, we heard of some successful joint use agreements between freight carriers and commuter operators in Los Angeles, St. Louis, and Chicago. This kind of partnership is what Mike Huerta was talking about, and we clearly need more of that. We heard everywhere, as you can imagine, about the lack of resources. And even if every single transportation program were fully funded at its authorized level, there still would not be enough to meet the identified needs. Clearly the ISTEA flexibility has given us some opportunities to deal with the challenges that intermodalism raises, but funding decisions in my state, as well as many others, still tend predominantly to be made the old way—in modal silos. And this approach tends to leave intermodal projects out in the cold with no sponsor and no funding, because they are more complicated in most cases, involving more than one entity.

In looking at the area of decision making and organizational responsibility, I think we continue to be very fragmented. We all recognize this. What are we going to do about it? Our airports, ports, rail, transit, and highway systems are for the most part planned, funded, owned, and operated by separate agencies. They have separate funding, separate constituencies, and separate bureaucracies. This tends to pit each mode against its partners, in many cases, for a piece of the network and a piece of the funding pie, leaving no advocate for that seamless integrated system.

Metropolitan planning organizations (MPOs) were another subject of considerable discussion. We are seeing a lot of change in this area of the planning process, but still there is a lot of room for improvement. Many MPOs, although not all, have tended to focus on the passenger side of the transportation business and have not gotten broadly into the freight side. I think that is beginning to change in a number of areas around the country, and we believe that needs to continue.

As we began listening to all these ideas, we became aware of several benefits from intermodalism that led us to the recommendations we developed. One is that from the user's perspective the quality, cost, timeliness, and safety of the trip are what count. This applies equally to the movement of goods and people. Through intermodalism we can lower transportation costs by using each mode for the portion of the trip to which it is best suited. By lowering the costs we can increase our global competitiveness, which is a key challenge for us in this country. The freight industry has demonstrated that this can be done by shifting portions of the trips to portions of the network with excess capacity. We can reduce the burden of an overstressed total network by using all the pieces more efficiently. As we use it more efficiently, we will gain greater returns on our investments, both public and private.

In a slightly different vein, we think there are opportunities through intermodalism to improve mobility for several sectors of our society: the elderly, disabled, rural, and isolated, as well as the economically disadvantaged, for whom intermodalism can be a ticket to opportunity. Finally, intermodalism can play a role in helping us to reduce energy consumption and minimize environmental damage, thereby improving our overall quality of life.

We focused recommendations on three basic areas. The first is making efficient intermodal transportation the goal of federal policy. I think, in listening to Mike Huerta this morning, that we are very much on the way to doing that, but the hard part is yet to come. Second is increasing investment in intermodal transportation and strategically focusing any increased investment in that area. Third is restructuring government institutions to support intermodal transportation.

Let me highlight some of the recommendations. We supported a national transportation system with the National Highway System as a backbone. Again, not as a map, because we felt that would lead to disastrous intermodal or intramodal bickering. With an emphasis very much on performance benchmarks, we felt that that is the way to judge where our investments should be focused. We want to see the development of intermodal passenger transportation, including expanding eligibility for ISTEA to include Amtrak, which is a critical participant in the movement of people and even in the potential of easing goods movement in some of our regions. Looking at things I mentioned before, this includes ticketing, signage, revenue sharing, scheduling, and making that seamless connection so that we can free up some of the highway capacity for the goods movement that cannot in most cases get to its final destination except by truck. Yes, there are rail sidings, but most material and product moves to its final destination by truck. Most of that is in urban areas. So how do we allocate limited capacity among the different users?

In keeping with the signs of the times, we did not call for new taxes but instead suggested ways to make better use of existing resources through initiatives such as greater flexibility of federal highway, federal transit, and rail dollars. We also found innovative financing in expanding the sources of match, including more private-sector resources, where there are projects in which it makes sense to be intermodal.

Looking for giving incentives for intermodal projects rather than having to play by the same rules—and we've heard that the U.S. Department of Transportation is very much interested in moving in that direction—we did, not always being consistent I suppose, call for full funding not only of ISTEA but of the other transportation programs as well. Remember, this report was written before the first Tuesday in November.

In the third area, organizational structure, I think this administration in Washington has moved more strongly than many in the past toward connecting the modes, and we think that that should continue to move forward. We also stuck, back deep in the report, the thought that the congressional committee structure might be consolidated and streamlined. I assure you that at the time we wrote it we did not think that this was going to be much of a possi-

bility. I think that we have been surprised on that front, at least on one side of the Capitol dome. In the regulatory area we also want some incentives to facilitate intermodal projects and approaches to achieve the efficiencies and productivity that we believe are there.

The MPO process seems to us to be one of the linchpins in bringing in a broader array of players and looking at the intermodal issues from a broader perspective. But we don't want to bring the private sector in as partners and then eat away at the productivity that has been accomplished over the last 5 or 10 years.

That gives you a thumbnail sketch of some of the areas. The important thing is this: we have had ISTEA, this report, and this second TRB conference. We have the U.S. Department of Transportation actively thinking it. We have to, as transportation agencies and providers, start thinking outside the mode, about the total trip, and how we come together as one entity—the transportation business—rather than just as ports, airports, rail, highway, transit, whatever the mode is that brought us here in the first place. How do we erase that and just have transportation, the customer, and the total trip be our focus? A number of workshops over the next couple of days will allow you to think outside of your mode and to start thinking connectively about how we can make our total transportation system work more effectively. I think it is good for us and our country. And I hope that you'll look at our recommendations.

Thomas J. Donohue

Good morning, ladies and gentlemen. I am very happy to be here with those who have spoken before me, and there is some benefit in speaking last. All the others have made their points, and now I can tell you what they meant.

What I plan to do is to make some comments on the report and recent political and market realities that should either contradict or support what we have encouraged. Then I would like to make a few comments on what a number of the previous speakers have said.

Let me start with the report. Just think about this. It took us a year to get it finally, formally put into place. But the report was finished on time, ahead of budget, and it was all put down together with all of the lists and everyone that appeared before us, all of the diagrams and everything that you find in its 59 pages. That has never been done in the history of commissions. Usually it has been done by how you weigh it. I think it is a testament to Rob Krebs, our chair, who, by the way, having spent a year trying to keep us in order, has honed his own skills and is now trying to merge with two of the largest railroads in America. Krebs did a great job. As Anne indicated, the four members were added to our commission when the administration changed. I found the perspective they brought very helpful. Particularly I think Anne's perspective, being a secretary of transportation, was very helpful.

Now, some of my own observations in this regard. First of all, the freight people very quickly came to some agreements on the directions that we wanted to pursue, and most of those were market based. It was an education for us to listen to and visit with the people on the passenger side of the business. And I daresay, it was an education for them to engage in a discussion with us.

I would like to give you the bottom line first. As far as I'm concerned in American Trucking Associations, I don't care if they take this report now and put it in the round pile. The relationships that were developed among the people on the commission and the people that we brought to the commission to take part in the debate on how we should proceed have already brought to the various industries and public services a good deal of benefit. They are proving useful in the resolution of public policy questions that are before us.

Now let me jump, for a second, to the question of some of the recommendations, because there are four that I would like to talk about. The first is, of course, the support for the National Highway System, and within that and future highway bills, to apply federal high-

way money to building intermodal connectors. By the way, an intermodal connector is a road that connects to a rail, air, or water terminal. It does us very little good to build the finest roads in the world, up and down the system, if you are 1 mile from a connector and can hardly get there. You go to Chicago and try to get from the major highways to the rail and air terminals and you, number one, need a guide dog. And you might as well be following the Romans in carriages, because some of those roads are just ridiculous. We are encouraging work to be done and are prepared to spend federal highway money for those purposes. It is very clear to everyone, regardless of mode and whose money you are out looking for, that we need to put the National Highway System (which we almost passed just at the end of the previous Congress) in place right away and get that money out into the system.

The National Highway System, which will cover 159,000 of the more than 2,000,000 miles of roads, is going to carry 75 percent of the freight and a huge amount of the tourism and personal mobility. We need to get that system in place now. Let me just digress a minute to tell you something about the market forces affecting that decision and all of the decisions that were taken in this report. Assume for a minute that between now and the end of the century, and by the way that's 60 months, that we maintain a modest economic growth of 2.8 percent. (Last quarter was 3.9 percent. Alan Greenspan is trying to choke it down to about 2.8 percent, and God bless him; we'll see where it goes.) Even if you maintained 2.8 percent, doubled the amount of freight that the railroads are carrying (which they'll have a hard enough time carrying), and took the domestic air cargo business, making it a bigger business than the railroads—even if you do all of that, and without counting NAFTA, GATT, and a whole lot of freight that is not included, like package freight and local delivery—on the roads you would still have to carry 30 percent more freight, drive 31 percent more miles, and put 15 percent more heavy trucks on the road. Now a lot of people say, "But we don't want to do that, society doesn't want to do that." And that's fine. Then just figure what freight you are not going to move, and which jobs you are not going to have, and which standards of living you are not going to enjoy, and which industries are going to find themselves going somewhere else. So we deal with the market reality that we have after everything we can think of intermodally with freight: we are going to have a major increase in what happens on the roads. So we need to pass the National Highway System. We need your help; you need to encourage the Congress to do so.

Second, we need coordination between transportation, environmental, and related health and regulatory policies. One only has to look to California to the Federal Implementation Plan (FIP) to find the dumbest piece of regulation that anyone has ever issued. It was well intended and has very important objectives, but it was put out under the demand of a federal court. As a result, we are chasing the cow that's out of the barn. Just look at this FIP in California, which, very briefly, requires you to reduce air flights in and out of the state by 35 percent. This regulation also says that a truck going into the state can only stop in one place in the air quality zone and one other place in the state, and a ship with a warm boiler cannot come into the Port of Los Angeles or Long Beach, which means, by the way, it will never come (so you can get your money back on the Alameda Corridor). You know I could go on for an hour, but I want to bring to the forefront how ridiculous this rule is. This regulation also says that if you have cows in California you must move them all into covered facilities, not in the fields but into the covered facilities so that you can collect the gases and not let them get out into the atmosphere. Now who is in charge of this deal? Well intentioned, very sound objectives, but not very sound in its application. So our very important recommendation is that the White House have a counsel that looks at these types of regulations before they're released and asks fundamental questions (e.g., What is it going to do for the movement of goods and people? What is it going to do for the stability of economies, society, and communities? What is it going to do, create or eliminate jobs?). We hope that this president and future administrations will be smart enough to say, "Let's look at that stuff before people start to laugh at us." By the way, while we are all laughing, in February that becomes a fact that will phase in over many years unless somebody does something about it.

Now we had another very important series of discussions about the international borders, delays that are going to take place in Mexico and Canada, and other customs issues. You

know we're going up to 6 million border crossings between Mexico and the United States by 2000. At the rate we process freight across those borders because of drug interdiction, those trucks and trains will be backed up to Caracas, Venezuela, as we try to move through the current customs system. What we're suggesting is a whole series of things that would allow the application of new technology to drug interdiction and other matters, at the same time protecting our society and moving the freight. In the trucking industry we've put together a group called the North American Transportation Alliance with the trucking associations and all three NAFTA countries. We are inviting and participating with railroads and others from the private sector to work on this.

Our fourth suggestion dealt with procurement. I think Vice President Gore and others have been focusing on this with a clear eye. We need sweeping changes, the report says, in the rules that govern federal and state procurement processes for transportation. We really think you ought to start from scratch. We spend a whole bunch of the money just in the process of buying it, because we start out in government with the theory that everybody is going to cheat you. I mean if everybody lies, cheats, and steals, then we need to have more regulations than you can imagine. As a result, and by the way we do need protections for the government's money, what happens is we often don't get the best buy for our dollar; we don't get the best quality for our expenditures. We are suggesting that there are tremendous potential savings in money and effort if we were to work together on this.

Anne Canby, Michael Huerta, and others have mentioned the MPOs. We're doing a whole thing as a result of some of these discussions with the rail, air, and shipping communities about dealing with the MPOs. MPOs are pretty smart people, you know. They have a pretty good understanding of what goes on in their community. But as Anne indicated, we have to get them to focus on the movement of freight, because freight is a simple indicator of what kind of economic strength they are going to have in their communities.

Let me make a couple of comments about what all this does as a result of recent elections and the political changes that are going on. I have great sympathy for politicians, mostly because of us, the citizens. Now we are very difficult. Just think what we want. If you were the Congress of the United States, I'll tell you what the people want. They want more federal largesse. They'll tell you till the cows come home that they want spending cut. They want more efficiency, but they want more federal money for their transportation system, university, health system, local community; whatever it is, they want more money. They do not want deficits. They read about that—it's bad. And they do not want any increased taxes. And if you don't deliver more money while reducing taxes and getting rid of deficits, they're probably going to want to get rid of you. Now, we are in that type of turmoil. And politicians and citizens have to work their way through it.

But these elections have significant impacts on how people are going to behave in Washington and the states and on what you and I are going to do in the transportation business. Let me just mention a few. First, we are going to pass a National Highway System, and hopefully do it in the next 6 months. Second, there is going to be some form of the holy trinity legislation, cost justification, societal and health benefit, and private property, passed as they relate to every regulation. We are all going to deal with this, and that's going to affect all of us in the way we conduct our business.

Third, as Anne Canby indicated, the responsibility for different modes is going to move to different committees. The railroads are going to what was House Public Works and will now be Transportation and Infrastructure under Congressman Shuster. These changes and maritime changes are going to affect a lot of what we do. Perhaps the most fundamental change will be the reduction of 30 percent in committee staffs. The flip between Republicans and Democrats will mean that the people we are used to dealing with, the 2,500 Democratic staffers, are not going to be with us. Lots of them are going to be with someone else. They will be looking to you for a job. That's going to make a fundamental set of new relationships necessary. The big problem the Republicans have is they don't know how to run the House. It is just like the Democrats who came to the presidency after they hadn't been there a long time; they didn't have the people in waiting and training to take over the big jobs. The same

thing is going to happen with the Republicans in the House. So this is going to push us toward a whole set of educational requirements. We must go and get out to the people who make decisions that affect our lives, and we must explain to them what the issues really mean.

A couple of things are pretty obviously going to happen. You could write this down, the Interstate Commerce Commission is history. It's dead; it's buried; it's gone. The question is where are we going to send the orphaned children? Which things are going to go to DOT? Which things are going to go somewhere else because they are legally required?

Another thing, and our commission discussed this, is the ability to move passengers. By the way, that was one of the most educational parts for me. I have far better appreciation for those problems because they are not market driven. They are societal driven. I believe that Amtrak is going to be significantly cut back as a part of the structural and expenditure changes suggested by the new administration.

Let me wrap up so that we can get to the questions with a few comments about what Mike and others said. I believe that intermodal, as Mike said, does depend on information, cooperation, and partnership. But it works best, and it only works in the matter of movement of freight, when the market demands it. As I listen to every speaker up here, there was one thing nobody talked about, and that was the market. I heard about planning, planning, planning. Now I understand about planning, and I very much admire the professional planners, but that's government. What will drive the transportation system in this country, first for the movement of freight and, eventually, for the movement of people, is going to be market demand. If you don't have market demand, you don't, in the long run, have a program.

A lot of what we are talking about, if we get very honest with ourselves, all during the commission and the discussions here, is, Who has the money, and how do you get a piece of it? Understandably so. If you're running a public transportation operation, if you're the secretary of transportation, as Anne is, the allocation of money is the issue that everybody calls you up about. We are concerned in our business, for example, that the highway money for the most part stay in highways, although we want to build connectors that go to transit, and so forth. I was a little taken aback by Mike's comment about how it is that we cannot structurally take this highway money and go build private rail facilities. Our commission was very clear, led by Rob Krebs. We want to work on rail crossings and stuff like that, but market-driven private railroads will build their own facilities.

I think while you are walking around these halls for the next several days you ought to talk about people and freight and markets. That's the best way to think about where the money is and how to get it. I think that the funding of the kinds of projects we need to do is going to have to come from lots of places, and in some ways from additional taxes that trucks are going to have to pay. Trucks are 4 percent of the vehicles, 13 percent of the traffic, and 50 percent of the taxes. And you can argue whether we should pay 3 percent, or 5 percent, or 10 percent more. I would be glad to get in the argument with you. But we're in this deal arguing about money that we pay every day. So, it is going to be really interesting. Focus on people, markets, and freight and you get pretty quickly to the points of who has it and how you're going to get it.

Let me end with one paragraph. The way to get things done in Washington and in the states is to begin to erase the intramural squabbles over public policy issues of common interest to get rail, water, air, and truck together, and in many instances over inclusion of MPOs and transit people. Then find out what our common interests are in clean air, safety, roads, and intermodal facilities. Then go to Washington and to the states together and get them. I believe that 60 to 70 percent of the things that our individual organizations seek we could seek in concert and get them. We can then fight about the other 30 percent. But to let the 30 percent keep us from working together is to let someone else control our destiny. I'm convinced, our industry is convinced, that we should work in concert with the other modes. It is in concert that we survive. We can fight over the other 30 percent on the weekend. I invite you to look for ways to do that. I thank you for inviting me here, and I really appreciate the opportunity we had to be on this commission. We have made some very fine new friends.

LUNCHEON PRESENTATIONS

The Challenge of Managing an Intermodal System

Marion McNeil Porter, *CSX Intermodal*

It is a delight to be here today, and I certainly would be remiss if I did not thank Mike Walton, John Vickerman, and the Transportation Research Board for inviting me. It would appear that by sheer numbers, this is going to be a successful get-together for you folks. We were kidding up here at the table a while ago, we didn't think this many people in the United States could spell intermodal, much less were interested in listening about it. I am reminded of being in Japan a few years ago when I lived there and was talking about our intermodal system in the United States, when one of my Japanese counterparts asked me if we were in the plumbing business. Intermodal has come a long way. It is also very good to see so many women in the audience in the transportation field. Not only do you brighten up the room with your good looks and your attractive clothes, but as my wife often reminds me, you have a lot to do with raising the intelligence level in the room. I could get away with anything now, right?

What I would like to talk about with you today is how this intermodal business we are in has become the fastest-growing transportation arena in the United States today, how my company is playing a part in that, some of the thoughts we have about the past and the present, and what we are able to see in the future. Peter Drucker, the consultant and management theorist, tells us that there are two things that companies should think about: marketing and innovation. Companies that can't be innovative probably won't be around in 2000. I think we are beginning to see a lot of that. I can remember coming back from Asia in 1987 and meeting with the rail group at CSX, some Sea Land people, and some of the people in the trucking business. The first thing I said to them is that we wanted to court the market-driven company. Their eyes glazed over, and some of their operators asked, "What do you mean?" What I mean is that in the future when you move the train it is going to be because the customer wants you to move it, and he's put enough freight on it to make it go to that particular place. And it's not going because you think it's a good time of day to run that train over there. I mean how simple can we get?

I would like to tell you that it is working 100 percent, but it is working about 80 to 90 percent. There is a long way to go. Again I am reminded of a story when RCA invented color television and they couldn't find anyone to use it. They started selling sets for less than it cost

to make them, and they got them in the homes. Of course NBC owns RCA. Then they started broadcasting color television programs. People started to ask people to write letters to the principal stations and ask why color television wasn't being broadcast. NBC put a peacock up there. You recall that, I am sure. Some of you were around. Next thing you know they've got color television everywhere. It was innovative, they were tough in the way they approached it, and it worked for them.

The intermodal industry, beginning in the late 1970s or early 1980s, had to be innovative. It had to first survive, because what it had first intended to be from a rail standpoint was something that would compete with a truck. What happened was it competed with itself when it took the freight out of the boxcars. It didn't take anything off the highway for years. Of course that revolution is taking place today. The truckers are now looking to intermodalism as an alternative.

But we had to change the industry, and we had to change how we managed our business and what our relationships were with both our customers and our suppliers. There were no intermodal companies in the country in 1980 that had a distinct intermodal plan. Very few of them had any idea what the direction should be. Most of them were inside of the railroads, and they were heavily subsidized. They didn't really know what the cost of doing business was.

Our first task in starting our intermodal company in 1987 was to ascertain the real cost of doing business. You might think that's a simple task, you might think that's a good thing. But when you find out what you are really making and your competitors still don't know what they are making and you go out to attempt to price the business, then you are in real trouble—because you know when you are losing money. But they don't have the slightest idea.

The first year we were in this business we lost $25 million to $26 million. The next year we made $1 million, the next year we made $7 million, the next year we made $15 million to $16 million, and the next year we made $35 million. Last year we made $53 million. This year we'll make more than $60 million. It is a good business. It has been a great turnaround. It has been a good business because we have reacted to the customer. We haven't decided to design this intermodal business to fit our needs, but we have attempted to design it to fit the customer's needs. What we must continue to do in intermodalism is look for that customer's need and that customer's future. If we can address that, intermodalism can continue to be profitable.

To begin with we rationalized our service. We eliminated waste. There is still a tremendous amount of waste in the intermodal business today. We still share in a lot of that waste. But there was no incentive before the Staggers Act of 1980 for railroads to be efficient or to approach the customer from that standpoint. With the advent of the Staggers Act railroads were placed in a position to be competitive, and there was a reason for them to look at how to regain some of their lost business.

I guess the interesting thing about it is that here we are in 1994, and the American railroad business is experiencing the first growth year in almost 50 years. It is daunting to think about having growth after no growth for 50 years. How do you deal with this? You've been downsizing and maintaining the status quo. You've been ripping up track. You've been selling off things, and all of a sudden somebody wakes up and says that transportation in America is going to continue to move on rails and is probably going to grow. So now we are all playing catch up. We are all hiring people. We are buying more locomotives. There is talk about putting doubletrack in the West again. I think that the future is extremely bright for the intermodal industry.

There are many extremely talented people who are coming into our business. Not that we did not have good people in the business before, but most of the people in the intermodal business in the 1970s and 1980s were very focused and very parochial in their approach. Today it is very encouraging to see the breadth of the people who are coming into this business, their ability not only to think through a problem but to think about all the extremes that make the equation.

A tremendous amount of new equipment has been put into the intermodal business, the doublestack networks that you hear about. One of the things that we are struggling with in this country today is that back in the 1980s when the steamship lines first began to use the

doublestack systems in the West, they were primarily designed around the arrival of ships. Today, you have a competing faction called domestic intermodalism, or domestic containerization, domestic piggyback. You have a new entrant in the truckload carrier, who now moves cargo from East to West. So now that business that was almost entirely designed to fit the arrival of ships in the West has other economic factors involved in it. The true test of whether intermodalism will survive will be the ability of those three or four different types of businesses to live together on those trains in the West, and the ability of the western railroads to handle the growth that they will have over the next 10 to 20 years.

Most of you know what's happening in the West today. There is, I would say for lack of a better word, a certain amount of confusion concerning the direction of three of the railroads in the West. We happen to be a purchaser of transportation in the West. We spend about $300,000,000 per year as an intermodal company buying services from the Southern Pacific, the Burlington Northern, and the Santa Fe. We are interested in what happens to those railroads and that they survive in some form, no matter what takes place. But the strength of those railroads remains constant. Without it, part of our company is in jeopardy, part of this entire room's ability to compete in the worldwide market has problems. There's something to think about and not to be taken lightly. We are encouraged that the right thing will happen and that we will come out of this stronger rather than weaker.

There have been tremendous financial gains as a whole in the intermodal industry. Most railroads today are making money at intermodalism. Most of them are beginning to lay master plans where intermodal facilities need to be in the future. They are even beginning to talk to local and state authorities about cooperating. I know that you heard a little about that this morning, but it is important that that be a two-way street. It's important that states and cities understand what intermodalism means to them and what can be created from an economic values standpoint for individual states and cities through proper communication and partnering with the right kind of intermodal companies. It's not just moving people, it's moving goods and services. Our government is going to have to address the fact that there are two kinds of things they have to look at going forward from a transportation standpoint, and that is how you fund the necessary support for both the people and the goods and services.

I do not think that railroads will continue to subsidize in every form that they have in the past. I think there is going to need to be cooperation in building bridges, clearing tunnels, and doing other things that will enhance the viability of the intermodal part of this business. Business looks extremely bright going forward. The growth is probably going to be in the 5 to 6 percent range going over the next 10 years, and that is pretty healthy in almost anybody's business.

Some of the issues that we have to address as an industry are the complexities. We still operate like railroads did 30 or 40 years ago. Things run up to a certain point, stop; somebody else takes over, then moves a little further, and it stops again. We are eliminating some of those disjointed complexities, but we are not moving fast enough. Our service levels, while adequate, are not the kind of service levels that will drive people to change to intermodalism. There have been some gradual changes, and they are very positive because intermodal is starting from a small base. But as this base grows larger, getting more people involved in intermodalism will require us as an industry to be very competitive—to think like a trucker and act like a trucker. A lot of people don't like to hear this, but that is what we are competing against.

We have another opportunity. We have become an alternative form of transportation for many of the Fortune 500 companies, who, in using certain truck lines in this country, have grown not only to like them but to become partners with them. Those companies see the inability of those truck lines, particularly some of the larger truckload carriers, to grow in a manner that will allow them to support the Fortune 500 companies' growth. I am talking about the inability to have over-the-road drivers, a higher cost of tractors, the ability to retain people, the high cost of insurance, fuel, the taxes on highways, all of the economic factors that will prevent some of these truckers from continuing the tremendous growth they've had recently. The alternative is to move some of that business to the intermodal systems.

So we are no longer a competitor as much as we are now an alternative form of transportation. We spend a lot of time with both the truckload carrier and the Fortune 500 com-

panies, and both of them are looking to us as a relief valve. We're not elastic; we're not going to continue to stretch forever without some tremendous capital investments.

The secret of intermodalism up until about this year, maybe next year, has been that most of these intermodal facilities around the country had some elasticity in them. Going forward we have to learn how to use them better. We talk about things like having free days for equipment. There are no free days. There is nothing free in this entire world. So, we are going to have to be much more realistic about how we approach this business. We are going to have to do more with less, and to do more with less we certainly have to make some tremendous investments in people and infrastructure.

It is a challenge for both government and the private sector. If you look at the ability to move into the inner city from an intermodal standpoint, we haven't scratched the surface. Most railroads today in this country have big complexes inside the major cities. Trucks have difficulty in getting into these particular areas. But railroads can run in the middle of the night, and they don't disturb anybody—except they wake a few people up.

Members of our National Commission on Intermodal Transportation recently testified in Washington to the House Subcommittee on Transportation. Their key message was that we had to meet the nation's freight and transportation needs for the future, and the United States must change the way it views, funds, and manages transportation. There is no question about it. We need to have more dialogue, and the recent change in the makeup of the intermodal industry as well as the recent changes in Congress will lead us into some of these discussions. Ultimately it will lead to a better understanding of each other's needs, and it will ensure that the competing interests of both intermodal freight and passenger transportation are properly balanced and funded.

The success or failure of our transportation system will ultimately be determined by how successful we are at collectively meeting this challenge. There is no doubt that the message is extremely clear. Not only does private industry have to be innovative, but the government has to be innovative in the way it approaches this thing. We all must have the determination, persistence, and will to make what has become a very positive transportation mode in this country successful.

European Union Perspective

John Hugh Rees, *Railways, Combined-Transport and Waterways Division, Commission of the European Union*

I will try to tell you something useful about what we are doing in Europe. We are running a bit late, which, knowing something about European railroads, is nothing that I am unused to. I will remind you of what the English king, King Henry VIII, is supposed to have said to his wives: "Don't worry: I won't keep you very long." I will try to explain something about our situation in Europe. In some ways, as usual, we are a bit behind you in the United States, but there may be a few areas where we have something to say to you about our background, what our problems are, and what we are doing. I will show you some pictures in case you get bored.

George already said that I am responsible for an area called combined-transport; it means intermodal, really. But we have used the term "combined" to represent the idea that it is a combination of rail, road, and waterway—road always being involved, of course, for part of the trip. Combined-transport means about the same thing as intermodal.

Intermodal is something of a flavor of the month, particularly with politicians. I do not know whether it is that way here in the United States, but it is with us. It is a panacea for the ills of transport, and I am afraid there are plenty of ills, not only environmental ones. Rather curiously, and again I guess it is the same here in the States, a lot of the ills of the transport system are due to the success of transport. All you ladies and gentlemen here are far too good at your jobs, and people want to buy far more transport services from us than we can actually supply. The problem is the same in Europe. The real costs of transport in Europe in the last 20 years have gone down substantially. They have gone down because of deregulation, and you know about this. This was done because the transport industry needed to be a lot more efficient. People are restructuring their plants, thinking about what they want to do and where they want to live, and in doing so they use transport more and more—and they keep on wanting to do it.

We are faced with a situation where the ills of the transport system are brought on by the transport practitioners, like you, ladies and gentlemen. Obviously we have to think of a solution if we are going to keep ourselves in business, and keep me in business as well, which as far as I am concerned is equally important.

What is the European Community? At present it is 12 countries, and in January it will become 15. I work for a body called the Commission of the European Union. We are the executive body, and we try to develop policy for the EU. As of next year we will have 15 member states. You have a few more states here in the United States, and I imagine that federal policy doesn't always agree with state policy. You can be sure that the same is true with us. But sometimes we do actually agree on things.

As I said, the problem we have had is that transport is too successful. What this diagram is supposed to show is that the rate of growth of the economy has continued to excel, while the rate of demand for transport, the top curve, has gone up even faster. I think that this is the picture in the States too. Basically, we are in the same situation—the economy has grown, and the demand for transport has grown quicker.

Will this continue? Our long-term forecasters, and I think Mr. Vickerman is one of those for you in the States, keep on telling us that this is the situation. But the only thing that is true with long-term forecasts is that, of course, they never come true, so do not believe anyone who tells you anything else. Even assuming that you do not believe the econometricians (and I used to be an economist so I know something about econometrics), we are facing a situation where the demand for transport is likely to increase if we can satisfy it. The problem is whether we can sustain that demand, in terms of environmental costs, land availability, and other considerations.

You know that the EU is something like the Northeast Corridor in the States. We are not lucky enough to have the space that you have. But the situation that you get in New Jersey is a bit similar to the situation we get throughout the EU. We are faced with a situation of gridlock, traffic congestion, and so on. We have a situation where at the same time that traffic is going up (I guess it is probably the same in the States), investment is going down in France. So why is investment going down while traffic is going up? Because all state-funded activities are requiring more and more investment, for schools, health for the elderly, and so forth. It has been easy to try to knock the transport budget down to meet other sectoral demands. We find the demand for transport going up, and investment in the transport sector is going down. In addition, we have environmental difficulties.

What sort of solutions might we envisage in these rather trying times? There are a number of options. The first is to make transport more expensive. You can imagine that that is not going to be very popular, although we might have to do it. The second is to make better use of systems. The third is to encourage environmentally friendly modes. The fourth is to put more money into transport, particularly into investment. The fifth, of course, is to clean up road transport.

As I said, the first option is not very popular, particularly with politicians. No politician likes to raise taxes; they always like to bring them down. That is something that we will leave for the end. As for making better use of systems, yes; this is something that we and everybody can do. We have a road system that is congested, but we have railways, inland waterways, and, particularly, shipping lanes, where there is space. This is an area where we have a parallel with you in the United States. If we could use this space, this would help to meet the increased demand for transport. Another point is that these systems of transport are environmentally friendly, or are supposed to be environmentally friendly, and they generally are. So, eureka! I think we have the solution—if we can make better use of the systems that have capacity available, we will also be helping the environment.

Then we come to the question of intermodalism. This is really where intermodalism starts in the EU. Here in the States I think intermodalism was developed on the basis that it would increase the efficiency of the transport system as a whole, in terms of its rate of return. In the EU the reasoning was different. It was really to face up to this problem of the demand for transport, of how to satisfy the demand for transport in an environmentally friendly way. If we can do this and make the transport industry more efficient at the same time, so much the better.

A question I should address, particularly here in the States where everyone is supposedly more liberal than in the EU, is, Why should the EU want to do anything anyway? Will the market be able to provide the right answers? I think the answer is no, to be honest. And I am not saying that because I have a friend in Moscow, or used to have a friend in Moscow. It is

only realistic when you assess our situation, where the costs of transport are not correctly represented by the market. The costs are not correctly represented with certain modes of transport, particularly road transport, which does not pay its full costs—its direct costs to the infrastructure and its full costs to the environment. We also have a problem of investment in this system as a whole, because most of our private-sector investors are short term. Anything that goes over 3 years the investors do not want to know of. We have a great problem in trying to get people to invest in transport facilities because the payoff here is too long and the risks associated with it are too great. I do not think that the private sector is going to provide the answers that it should without some help from the public sector.

So what are we going to do? One of our problems with intermodalism is shown here [slide], and it is that most of our goods move over short distances. That is not surprising because the EU is a lot shorter than the States, of course. I think, though I stand to be corrected, that the average distance over which intermodal transport in the States is commercially viable is 700 to 800 miles, or even longer. The situation with us is that we hardly have any transport that does that. If our intermodalism has to be based on only competing for traffic that is going more than 700 to 800 miles, well, we do not have any such traffic. Intermodalism in this case will not work. I hope this has made the point. Anyway, we hope this is not the case. What we have to do is find ways ways where the private sector can react to this situation and develop combined-transport, intermodal transport that is viable and attractive to the user. This is a big point. We do not have many transport users in the EU. We do not have many shippers with philanthropic attitudes. We have to provide a multimodal system that people will want to use—and it will have to have the same quality and the same cost as the road alternative, which people basically wish to use.

This poses a problem for us. The railroads in the EU have many admirable features, but most of these are technical and not commercial. Many of the railways never knew how to deal with their customers in the first place, and those that actually did forgot. This poses something of a problem today, when quality of service is all-important. We have to enhance the effectiveness of our railway system. What are we trying to do?

The first thing we are trying to do is develop integrated planning. This is what we call a *trans-European network for combined-transport.* All of those routes you see there [slide] are routes that we are aiming to develop for combined-transport by the beginning of the next century. They are all routes where there are fairly large volumes of traffic moving sufficient loads to move at least one train a day. They cover routes where traffic is over 400 to 500 kilometers, where we think that it should be viable to move by rail or waterway.

We are trying to develop an integrated approach to networks. One of the big problems with our railway systems in the EU is the fact that they are run individually, by each nation. The European states' thinking is that if it is international, it is someone else's problem. Our railways are too nationalistic and not really interested in the international business, which is the fastest-growing sector of the EU freight market.

There we are. That is the waterway system [slide]. Our equivalent of the Mississippi is called the Rhine. And our doublestack of the Rhine is river barges with 400 containers on them. Unfortunately, we have only one other river, the Rhône down in the south, which is in no way comparable with the Rhine. But at least we have some waterway capacity, which can play an effective role in the development of intermodalism in the EU.

If we are going to talk about quality and cost, one of the areas we must focus on is, obviously, the terminal. There has been a lot of activity and very interesting discussion on terminals during this conference. We are doing a lot on terminals. One of the areas that we are developing is automated terminals. This rather futuristic diagram is supposedly capable of persuading you that it is possible to run an automated terminal. I am not necessarily saying that this will work, but the idea is that we have trains that are shuttling into a central hub. In this hub we have equipment that will be capable of unloading a train, loading it, and sending it on its way again in 15 to 18 minutes. Instead of having direct trains from point to point, we send all of the boxes to this hub. The trains arrive, and the boxes are sorted out. The trains go back to where they came from after shuttling through the hub. This system is based, obviously, on the aviation system. Whether it works or not, well, we will wait and see.

As you know, transport technology tends to be a bit different from the nuclear sector, which I know something about. The firm that has actually worked on this project has been a nuclear firm because of all of the cranes and so forth that are necessary. If it works, it would mean that, for instance, in a country like France you could offer a 24-hour turnaround, terminal to terminal. In other words, it would work on two cycles of 12 hours. In the first 12 hours you move the box to the central hub. In the next 12 hours you send the box off to its destination. In 24 hours, a box coming into the system would also depart from the system. If it works, it will be a good idea. Whether it will work depends on the reliability of the technology.

However, if we want to make a serious attempt to develop intermodal, we have to reduce the frontier, or distance. This means we have to get into other markets for intermodal. This is an idea of an Austrian firm (actually Austria will be a member of the EU next year). This firm has developed, for six trains, carrying pallets that will call at regular terminal points. The pallets would be moved on and off very quickly. A similar idea is being developed in France. You know the French TGV system, called TGV freight. It is to have very fast 300-kph (180-mph) trains, circulating between key points with automated equipment to load and unload them at these key points, and the trains would keep moving. Obviously they are very expensive, but if you get a very high utilization out of them, they may be profitable.

Well, those are some of the ideas. I don't think that we are short on innovation in the EU. The problem will be to translate these ideas into the appropriate technology. That is another photograph [slide] of the technology for transferring pallets very rapidly.

How do we get capacity flawless? One of the things we are developing in our trans-European network is a high-speed train system. This is a photograph of the high-speed train system. We are positively tilting the budget for investment in the EU in favor of rail. This network links the main population centers of the EU. The idea is to have this open, up and running, early in the next decade. This is important in terms of passenger movement. With us, when we talk about intermodal, the focus is often on the freight side. But in reality, when we talk about environmental damage and so forth, it is the passenger car that is very often the main culprit. If we want to, if you will allow me to say it, avoid falling into the hole that you fell into here in the States and maintain a public passenger transport system, we have to offer, throughout the EU, good, high-quality public passenger transport systems. The backbone of this is the high-speed rail network, which is well under way and hopefully will be completely open when we will see the lines set out there, early in the next decade.

As a corollary, this will also free up capacity for freight trains, because a lot of the passenger trains will move off the conventional system onto the high-speed system and give us the extra capacity we need on the freight system. I think this network concept is important. In a way I suppose it is a bit like the Interstate highway system here. I will admit that when we develop our ideas we often think about what you are doing in the States, and very often we find the ideas very satisfactory. I must tell you that.

We have some nice trains. Someone said this morning that shippers will not pay for nice trains. Okay, they won't. The nicest one I think is the Italian high-speed train. But there is a problem with the rails, and that is their image. Not that we all should become locomotive buffs, but I think that railways have to tone up their image and get equipment where people are interested in them. This is really something to travel on. This Italian high-speed train [slide] will compete with anything Boeing or McDonnell Douglas will do in terms of style. It is interesting where the high-speed train network is in place now. Something has radically changed—the attitude of the public toward the railways. With these sorts of trains, people think that they are on a new modern mode of transport and do not think that air transport is the only transport worth having. Without saying that locomotives are all-important, the concept of design must fit into intermodal, particularly as far as the railways are concerned.

We have done something in the past as well [slide]. This is a 1923 photograph that I thought you might be interested in. You might think that we are far behind you, but we are not that far behind you. I brought this slide because it is of one of our first intermodals. You see this yellow little thing here. This is a container, believe it or not. It is about 4 tons. And this modern gantry device behind was a thing that was used to lift it on and off the train. So we started quite a long time ago. The unfortunate thing is that we kept on with those for quite a long time, and we did not develop new ideas. Well, we are catching up now.

This is an Austrian train running through the Alps, where we are carrying the whole vehicle. I put that slide on, not because I think it is the best means of intermodal transport, but because I thought the picture was rather nice. Here is something that you might like [slide]. We heard this morning about the Iron Highway from Mr. Engles. Well, this is an Iron Highway. This is the Channel Tunnel, from England to France. I deliberately picked this truck because I thought you might recognize an American-made Mack truck, which is coming off a train in this slide. This system, which is now up and running, is working well. In a way, this might be the precursor of the concept of moving the whole vehicle, instead of moving boxes or trailers. You see the lorries coming off the train. This is not a very simple terminal. This is quite a sophisticated terminal, and all of the equipment of the terminal is sophisticated and expensive as well. But it works. I am not certain it is going to be viable. But what we are looking at now is a whole range of concepts that involve moving a whole vehicle. This concept could be viable in very high-traffic areas where we could concentrate flows of getting service, about every 15 to 20 minutes in the day. If truckers have to wait 1 or 2 hours to get on a train to do 200 kilometers, they will go by road. So we have to get high traffic. We have to get efficient terminals. If this can be achieved, we may get somewhere.

We are also thinking, of course, about your ideas of road railers. We have 11 designs of road railers up and running in the EU at the moment. I think the road railer is suitable for certain niche markets. It might be suitable for moving into underdeveloped markets in Eastern Europe. What we have on offer is a whole range of ideas, which we will see whether the public and the shipper will accept in the future. That is the big point—whether the shipper will accept them. This [slide], I think, is going to be the prime mode of intermodal for us, whether it is by water or rail. This is a swap body. This is a new terminal in Paris, where basically it is handling swap bodies.

As I say, we have a lot of options. We have the hub system called Commeter. We have a research program that we are starting in the near future with which we are going to give 50 percent joint funding to firms interested in new technologies, particularly in intermodal. So, we've got high tech. We've got medium tech, which is, I suppose, running the lorry onto the train, as we saw running through the Channel Tunnel. We've got low tech. I hope there's nobody from road railer here, but I call road railer low tech, in a way. So we have a whole range of ideas at the drawing board stage, though we have to push them forward now, combined, if intermodal is going to be successful.

I am overrunning a bit on my time. I am not like Henry VIII, I'm afraid. So let me conclude. What can I say as a conclusion? I think intermodal has a window of opportunity to the extent that everyone now is aware of the problems of the environment and the problems of gridlock. I do not think that this window of opportunity is going to be open for very long. Automobile manufacturers here in the States and in the EU are aware of the problems, and they are going to be developing better vehicles. I have seen test tracks of vehicles in the EU with Volkswagen cars running around at 80 mph without distance between them, all radio controlled. You can imagine what that does to the capacity of the road system. I have seen new test bed vehicles, heavy road freight vehicles that are very friendly to the environment in terms of noise and emission. These things are going to be coming on stream in the next 5 years. If intermodalism is going to take off, it has 5 years to do it. If it does not do it, well, we will wait and see what happens.

When I talk about intermodalism, of course I am not talking about doublestack; that is going to work anyway. I am talking about intermodalism as a concept, as a mode. Intermodalism, if it is going to work, has to be thought of as a mode in its own right, something that you are going to ship with. You are not going to ship with rail, you are not going to ship with water, you are not going to ship by road—you are going to ship intermodal. We don't think like that now. It requires a quantum jump in our thinking, and I believe we have a few years to do it. If we do not do it—intermodalism will not work.

Therefore, the problem comes back to management, the problem comes back to the industry. Is the industry going to be capable of accepting this challenge? From the public sector, we are prepared to help. We are prepared to help with aid. We are prepared to intervene in the market. We are prepared to give subsidies to develop combined-transport, to develop intermodal transport. To quote a famous railman, the Director General of the French rail-

ways said a number of years ago that he was sure that *technically* railways had a great future, well into the next century—if the railmen don't close them down first. I think, though this wasn't entirely serious, that it is a legitimate comment. The problem is management thinking.

Will the various managers in the different modes be prepared to work together? In the EU we have not seen that yet. There are some changes. We would like to get them into a situation where they think that working together is going to make everyone better off, rather than someone worse off. If we can do that, I think we can succeed.

As I say, I believe that there are many areas here in the United States where the problems that you have are similar to ours. In certain areas you have advanced quicker than we have. In other areas, we may have something to tell you. This implies that we should be thinking together about some form of cooperation, some form of structure where we can put our ideas together and develop the best parts of our thinking, and in that way advance intermodalism as a whole. I leave that thought with you. We in the EU are interested in doing that, and if anyone here in the hall is interested as well, I would be glad to hear from you.

SESSION 2
INTERMODAL HUB FACILITIES AND CORRIDORS

Session Summary

To have the most effect on projects and successful partnerships, intermodal planning should be applied at the corridor or hub level. At this level, intermodal transportation flows occur or passengers and freight await transfer. In addition, this is the level at which such travel and the associated facilities have the most impact.

Of all the conference sessions, this session provided the most specific recommendations and observations concerning lessons learned partly because of the speakers' experience with intermodal transportation in corridors or hubs. The main theme throughout all of the presentations was the partnership between public and private-sector groups and the important role partnerships play in guiding the implementation of recommended improvements. The Tchoupitoulas Corridor project in New Orleans is an example in which important roles were played by both groups. The government role was primarily one of working through the maze of regulations and the process surrounding the project. Public agencies also provided funds, undertook the design, and used eminent domain powers to deal with right-of-way issues. The private-sector groups provided the funds and the political influence to keep the project on track. The Alameda Freight Corridor project and the Union Station project also showed the unique contributions made by different participants in the process.

A corollary to this theme of effective partnering is the need to have some institutional structure in place that can act as a forum to deal with problems that arise. The Tchoupitoulas Corridor project was guided by a steering committee that met monthly. This steering committee facilitated resolution of issues early in the process, which allowed greater attention to be paid later in the process to substantive issues. The Alameda Corridor project had an advisory board consisting of representatives from communities, state agencies, the metropolitan planning organization (MPO), and trucking, rail, and steamship companies. Similar to the Tchoupitoulas steering committee, this board provided a forum for relatively quick resolution of issues. The Union Station project actually had a formally incorporated organization designed to act as a project expediter and to provide a means of minimizing territorial battles.

A second major theme from these sessions was the importance of understanding the ultimate goal early in the planning process. The United Parcel Service (UPS) consolidation hub

was a good example. Two mature businesses, UPS and the Santa Fe Railroad, were seeking new ways to be creative in providing service to their customers. The challenge of this partnership was to find a location for an intermodal yard that would best serve new market demands. The location decision was heavily influenced by the stated end goal of the project—seamless flow of goods to best meet customer demands. The Union Station project also benefited from targeted and clearly stated objectives. Especially with regard to passenger terminals, this strong guidance up front is necessary to keep the project focused on providing enhanced mobility to system users. Such projects could become overly dependent on economic development goals with little realization that these goals usually depend greatly on having a successful transportation hub.

Each intermodal project is unique. Most are in direct response to growing demands or changing market conditions. Given how important the success of these projects is to the local economy, the projects need to be carefully coordinated with all relevant groups, clear objectives should be stated early, and some form of institutional structure should be in place to guide project development.

Issue Overview

Lillian Borrone, *Director, Port Commerce Department, Port Authority of New York and New Jersey*

I am pleased to serve as the moderator of this session, Intermodal Hub Facilities and Corridors, because it gives me the opportunity to present four experts on four projects that individually and collectively indicate how intermodal systems can add to efficiency, cost-effectiveness, and environmental enhancement in moving people and goods.

Two of the projects—Amtrak's Union Station and the UPS Chicago Area Consolidation Hub (CACH)—demonstrate how the hub-and-spoke concept, often applied in the aviation industry, can be recrafted to improve, and indeed provide, superior intermodal transportation service to passengers and freight customers. The other two projects—the Tchoupitoulas Corridor and the Alameda Corridor—especially attract my attention, not only because they aim to create critical links between waterborne transportation modes and landside systems, but also because they are moving well beyond the concept phase toward realization.

I stress the progress of these projects because too often there is a large gap between intermodalism as a concept and intermodalism in practice. Conceptually, intermodalism is more often a planner's vision of how our transportation systems should work. It holds the promise of a more efficient distribution system by effectively making a seamless combination of the service and capacity advantages of each mode. As transportation planners, we can easily describe ideal intermodal systems, draw diagrams of what they should look like, and fill pages in our textbooks with discussions on how they should work. But on a practical level, true intermodalism in this country—that is, the ability to offer convenient, rapid, efficient, and safe transfer of people and goods from one mode to another—has a long way to go. Again and again we are confronted with the dichotomy between concept and practice. Most of us know why: process delays, "NIMBYism," funding constraints, jurisdictional and political conflicts, and environmental limitations that dampen the enthusiasm of even the most ardent intermodalist.

As the following brief review will show, the burden of overcoming these obstacles to effective intermodalism should receive greater support from our national transportation policy. Historically, that policy has directed government regulation and resources in ways that maximized national mobility in a pragmatic, problem-solving manner. The policy's authors recognized that transportation played an important role in meeting the economic and commercial needs of our country.

The first major national transportation legislation, which created the Interstate Commerce Commission (ICC), was passed in 1887. This legislation, also known as the Granger Act, used federal economic regulation to help farmers get their produce to the growing urban markets and overcome unfair railroad price and service practices. The nation's first interregional highway systems also were developed to deliver produce to urban markets.

By 1940 individual modal systems had grown apace to meet the needs of manufacturers and urban retailers as well as farmers. The 1940 amendments to the ICC legislation stated that the "national transportation policy of the Congress [is] to provide for fair and impartial regulation of *all* modes of transportation . . . and to recognize and preserve the *inherent advantages* of each. . . ." Because the ICC regulations protected single-mode development, the trucking industry was nurtured from infancy to major mode status along with rail and waterborne service.

For the next 30 years, national transportation policy supported separate but impartial modal development, "all to the end of developing, coordinating, and preserving a national transportation system by water, highway, and rail, as well as other means, adequate to meet the needs of the commerce of the United States, of the Postal Service, and of the national defense."

By the late 1970s, congressional policy makers decided that deregulation of the modes was necessary to give the private sector the freedom to refine and improve the multimodal transportation system and to encourage the development of an intermodal freight system. The intent was the same as it was in 1887 and in 1940: to do what was best for the economic well-being and commerce of this country. Regulation that had once been a helping hand in the development of our surface transportation system became a hindrance. The railroad industry's response to deregulation has resulted in a strengthened contribution to the movement of general freight—a business that for the railroads had been on a steady decline; no system has benefited more from the loosening of regulations than rail-based intermodalism.

Now we have the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), which recognizes the fact that our transportation system must respond to a global economy served mainly by a combination of intermodal services. ISTEA states that "it is the policy of the United States to develop a National Intermodal Transportation System . . . , one that shall consist of all forms of transportation in a unified *interconnected* manner" and support "the nation's preeminent position in international commerce."

This language indicates that the aim of the ISTEA authors is to protect and promote the commerce, and therefore the economic well-being, of the United States by increasing the effectiveness of intermodal systems. However, experience shows that we still have a way to go to make their vision a reality. We know that intermodalism thrives under a policy of regulatory freedom, but we are still struggling with how best to integrate government responsibility for developing basic highway and transit system infrastructure with private-sector investment in rail and other transportation modes. It is now appropriate for us to ask why—after 3 years of implementation experience—we are having a difficult time with this task. In light of its goals for intermodal transportation, is ISTEA working?

I think the answer is only a partial yes, and that's because the vision in ISTEA is much broader than it was in previous legislation. ISTEA establishes a more comprehensive and sometimes complex program that gives greater emphasis not only to intermodalism but also to clean air and energy efficiency goals. In fact, ISTEA proposes and invites more transportation change than can be realized under existing organizational structures. For example, both state and metropolitan planning organizations welcome the flexibility of ISTEA's funding programs, but the lack of full funding for ISTEA slows our ability to move beyond pure system maintenance to more innovative intermodal approaches.

ISTEA has been only modestly helpful in advancing the projects we're going to hear about this morning, in part because ISTEA has no rail policy, and partnerships between the private sector and government for intermodal projects are only beginning to be defined. Moreover, ISTEA does not provide much of a national policy framework for determining the advantages of mega-metropolitan projects such as the Alameda Corridor and how to give them adequate federal funding without giving short shrift to national priorities identified in other regions.

To realize the broader vision of ISTEA, we must be willing to forsake our earlier, narrower vision of modal-based transportation development and concentrate more on improving total freight and passenger flows. In the short run, it is more comfortable to keep using the same microcosmic map and to look at the world with modal blinders on, but in the long run, we simply don't have that luxury. The international marketplace is different today than it was 100 years ago, 50 years ago, or even 25 years ago, and we must provide transportation services that meet the demands of our ever-changing world. This is why Thomas Donohue of the American Trucking Associations (ATA), formerly a strong advocate of single-mode transportation, now speaks openly of the need for a new intermodal agenda with the railroad industry, realizing that both modes will become stronger through improved connectivity.

Thus, ISTEA authors recognized that times are changing and, although the path ahead is not as clear as we would like it to be, our commitment to a new direction in intermodal transportation must not falter.

The authors of ISTEA also recognized that we needed more information and clearer benchmarks to measure our progress. That is why the legislation emphasizes the development of transportation management plans with performance objectives and goals as central components. Nevertheless, our economic and competitive survival may depend in part on a more aggressive approach to transportation problem solving, and no level of detail in systems management planning will make us entirely comfortable with the actions we must take.

Our discussion this morning will focus on freight and passenger intermodal projects that demonstrate the kind of strategic thinking and cooperation required to establish new intermodal paradigms. Each of them bridges the gap between the conceptual and practical aspects of intermodalism.

Case Studies

Tchoupitoulas Corridor Project

The first presentation will be on the Tchoupitoulas Corridor project, which is at the Port of New Orleans. What I find most interesting about this project is that it had its origins years before ISTEA was enacted but it captures the spirit of ISTEA. Even more interesting is the fact that George D. Hopkins, Jr., proposed this project in 1982 in his doctoral dissertation for an architecture and engineering degree at Tulane University. Hopkins is probably one of the few Ph.D.'s in this country who can actually boast of seeing his dissertation advance from concept to reality. Hopkins is currently President of Master Planning Consortium, Inc., and Chief Planning Consultant for the Tchoupitoulas Corridor. He is a member of the American Institute of Architects and the Louisiana Architects Association. His publications include various articles for academic and trade periodicals and Urban Ecology Through the Adaptive Use of Existing Buildings, *a comprehensive analysis of opportunities for upgrading existing structures. A perfect example is the Tchoupitoulas Corridor.*

Lead Agency: City of New Orleans, in cooperation with the Board of Commissioners of the Port of New Orleans and with the assistance of the New Orleans Public Belt Railroad and the Louisiana Department of Transportation and Development

Project Contact: Jim Reese, Assistant to the President, Port Authority of New Orleans, P.O. Box 60046, 2 Canal Street, Suite 2600, New Orleans, LA 70160 (telephone: 504-528-3264); and George D. Hopkins, Jr., Master Planning Consortium, Inc. (telephone: 504-838-7222)

Description

The project consists of a rebuilt and improved city street, including a new four-lane boulevard for a section of this street; a new port access roadway; the repair, replacement, or both, of existing sewer and drainage systems; modifications to existing flood walls; and the reloca-

tion and consolidation of railroad trackage. The purpose of this project is to provide a roadway that will improve access into the port while removing heavy-vehicle traffic from existing city streets, as well as to reconstruct the existing Tchoupitoulas Street. The consolidation of heavy-truck routes leading to the port's recently expanded Mississippi River terminals entails the removal of three truck routes passing through residential neighborhoods. An average of more than 1,500 trucks a day will travel the Tchoupitoulas Corridor to reach the port's intermodal facilities and an intermodal rail yard after the four truck routes have been combined into one.

The project will separate truck traffic from local traffic by providing two roadways, one exclusively for port traffic and the other dedicated to local traffic. The project will improve the level of service of Tchoupitoulas Street and supply the capacity needed for the consolidation of truck routes leading to the riverfront intermodal facilities.

Status

The project is in the early stages of construction; flood walls are being modified and railroad trackage is being relocated as a prerequisite to the construction of the roadways.

Budget

The total estimated budget for project completion is $63 million for roadway, rail, flood wall, and utility work and right-of-way acquisition.

Funding Sources

Funding consists of $35 million appropriated by the Louisiana legislature in 1989 under the Transportation Improvement Model for Economic Development (TIME) Program and approximately $10 million of urban Surface Transportation Program (STP) federal funds programmed by the Regional Planning Commission (principally the New Orleans MPO). The total project cost is anticipated to exceed the funds appropriated. The city and port, with the assistance of the Regional Planning Commission and Louisiana Department of Transportation and Development, are attempting to identify alternative funding sources to address the anticipated financial shortfall.

Schedule

The estimated date of completion for the project is June 1996.

Major Needs and Problem Definition

Construction of expanded riverfront terminals is increasing the cargo capacity of port facilities along the Mississippi River. The elimination of heavy-truck routes through residential neighborhoods in the uptown area will force current and additional traffic onto the two-lane Tchoupitoulas Street. The Tchoupitoulas Corridor project is needed to improve the level of service of the current roadway and add the needed capacity along the corridor to accommodate heavy trucks diverted from the eliminated truck routes. Without the project, the current Tchoupitoulas Street would be beyond capacity, delaying commerce and severely affecting local businesses and residents.

Major Issues and Concerns

Improved access along the Tchoupitoulas Corridor to the port's facilities is essential to maintain quality of service once the uptown truck routes have been eliminated. The Port Authority is investing more than $100 million in capital improvements at its Mississippi River terminals, and truck traffic will not be able to reach these terminals in an efficient manner without the capacity provided by the project. Elimination of the three heavy-truck routes will divert the truck traffic from the uptown routes into the corridor. The economic efficiency of the Port of New Orleans would be drastically reduced without the increased capacity of the corridor project.

The impact of truck routes through residential areas is a concern that will be addressed by the creation of the Tchoupitoulas Corridor. The vibrations created by heavy trucks affect the quality of life on major residential streets. Moving the truck traffic to a dedicated port access roadway will reduce the impact of intermodal facilities on nearby neighborhoods. The exclusive port access roadway will also solve some of the safety problems that arise from the interaction between passenger automobile traffic and high volumes of truck traffic.

Continuation of rail service to the riverfront within the Tchoupitoulas Corridor is a mandatory component of the project. The roadway, rail lines, and flood wall must all fit safely within a prescribed area. Technical and operational considerations of the roadway and rail lines were evaluated in determining their alignments.

Determinants of Success or Failure

The major portion of this project was made possible with state TIME program funding. Alternative funding for completion of the project will also be needed. Limited funding sources are available for the exclusive port access roadway, which will be dedicated to removing heavy trucks from city streets. The project must be completed before current truck routes are removed, or severe congestion will result.

Critical Analytical Evaluation Measures

Critical evaluation measures include analyzing existing conditions and reviewing previous studies.

Environmental Issues

The environmental impact of heavy-truck traffic along residential streets that are currently used as truck routes will be reduced.

Community and Public Outreach

The community's request for removal of the uptown truck routes and the transportation industry's desire for improved access to the expanding port facilities provided the impetus for funding this project.

Economic Impact Analysis

Economic impact analyses have been performed for the operations of the Port of New Orleans and the construction of the Tchoupitoulas Corridor.

Public-Private Partnership

A partnership was created between the City of New Orleans and the Port of New Orleans. The New Orleans Public Belt Railroad, the Regional Planning Commission, and the Louisiana Department of Transportation and Development also cooperated.

Security and Safety

Separating truck traffic and private automobile traffic will provide a safer operating environment for both. Dedicating a roadway to transporting cargo passing through the Port of New Orleans will allow for greater security of the transported goods.

Technology

The extremely high volume of truck traffic that will be traversing the port access roadway requires a high standard of engineering design. The rail line grade crossings used by heavy trucks also warrant special design considerations. The incorporation, relocation, and engineering of the flood wall with gate openings for port access requires advanced technological design.

Lessons Learned

Alternative methods of financing were employed for this project, as well as ISTEA funding. A phased construction process will be used. Much can be learned about the impact of consolidating heavy-truck routes and the coordination of capital projects sponsored by more than one government agency.

Reason for Inclusion

This project is included because of its importance for intermodal goods movement. There is cooperation between local and regional government entities, including the Port of New Orleans, the City of New Orleans, the Louisiana Department of Transportation and Development, the New Orleans Public Belt Railroad, and the Regional Planning Commission. Other aspects of the project that make it important for this audience are its complex history; its specialized funding sources; its use of limited funding sources for specialized roadways; and the operational agreements among the port, the city, the Levee Board, the Public Belt Railroad (local switching railroad), and the Illinois Central Railroad. Also of interest is the system design that separates rail, truck, and automobile traffic within one corridor and the effect of that design on the local economy and the environment.

Innovative Aspects

Innovative aspects of this project are traffic separation, multiagency cooperation, and multiple funding source utilization.

Alameda Corridor Project

Our next presenter is Gill V. Hicks, General Manager of the Alameda Corridor Transportation Authority (ACTA). Acting in this capacity since 1990, Hicks is responsible for providing

overall management of ACTA, helping the Governing Board of ACTA generate political support and raise funds for the Alameda Corridor project, and managing all consulting engineering and planning contracts for the project's design. Before becoming General Manager of ACTA, Hicks was Assistant Planning Director and Manager of Transportation Planning for the Port of Long Beach. Hicks, who has a master's degree in civil engineering from the Massachusetts Institute of Technology (Transportation Systems Division), began his career in transportation with the Office of the Secretary, U.S. Department of Transportation, in 1971. He is a member of the Institute of Transportation Engineers and an associate member of the American Society of Civil Engineers; he is past president of ASCE's Urban Planning and Development Group, Los Angeles Section.

Lead Agency: Alameda Corridor Transportation Authority (ACTA)

Project Contact: Gill V. Hicks, General Manager, Alameda Corridor Transportation Authority, 6550 Miles Avenue, Room 113, Huntington Park, CA 90255 (telephone: 213-583-3080; fax: 213-583-3083)

Description

The Alameda Corridor Project will dramatically improve railroad and highway service to the ports of Los Angeles and Long Beach—the largest port complex in the United States. The project is designed to facilitate port access while mitigating potentially adverse impacts of port growth, such as traffic congestion, delays at rail and highway grade crossings, train noise in residential areas, and air pollution.

The corridor is approximately 20 mi long and runs between downtown Los Angeles and the ports. The project has a highway and a railroad component. The railroad component involves consolidating the port-related traffic of three railroads—the Atchison, Topeka and Santa Fe Railway; the Union Pacific Railroad Company; and the Southern Pacific Transportation Company—onto a fully grade-separated right-of-way. Currently the three railroads use four separate tracks that cross nearly 200 busy streets between downtown Los Angeles and the ports. This project would eliminate highway-railroad traffic conflicts.

North of State Route 91 the railroad corridor will be lowered (into a trench about 33 ft deep and 47 ft wide). East-west streets will bridge this trench. South of Route 91 the tracks will be at grade, and east-west streets will be raised above the tracks and Alameda Street. The project will be designed to accommodate future electrification of the rail line.

The highway component involves widening Alameda Street south of Route 91 from four to six lanes. New pavement, signals, and left-turn pockets will be installed along the segment of Alameda Street between Route 91 and Interstate 10.

Status

Conceptual design (3 to 5 percent of the total design) has been completed. On January 14, 1993, ACTA's Governing Board certified the Environmental Impact Report (EIR), satisfying the requirements of the California Environmental Quality Act (CEQA). Railroad agreements were signed in December 1994.

Preliminary engineering began in January 1995. An Environmental Impact Statement (EIS) satisfying the requirements of the National Environmental Policy Act (NEPA) will be completed in July 1995. The Federal Highway Administration and the Federal Railroad Administration are joint federal lead agencies for preparing the EIS.

Budget

The estimated cost of the project is $1.835 billion, which includes all engineering and construction, right-of-way, inflation, and contingency costs, and a project reserve.

Funding Sources

Over $1 billion, or 55 percent of the funds, will come from local sources, including $400 million from the ports, $8 million from the Los Angeles County Metropolitan Transportation Authority, and $600 million in revenue bonds. State Proposition 116 funds will provide $80 million, or 4.4 percent of total project costs.

It is proposed that $747 million, or 40 percent of total costs, come from federal sources. Of that amount, $45 million has already been committed from ISTEA, and $2 million has been granted by the Economic Development Administration. ACTA has requested $700 million in additional federal assistance.

Schedule

As stated earlier, detailed engineering should commence in mid-1995. The goal is to begin construction in early 1996 and to have the corridor operational by 2001.

Major Needs and Problem Definition

The ports of Los Angeles and Long Beach, also known as the San Pedro Bay ports, handled nearly 100 million metric tons of cargo in 1991. Rapid growth in Pacific Rim trade will increase tonnage through the ports to nearly 200 million tons by 2020.

The challenge facing ports and nearby communities is how to manage ever-increasing truck and train traffic to and from the ports. By 2020 the ports will generate nearly 50,000 truck trips and 100 train trips per day. Major improvements to the highway and railroad system serving the ports will be required to accommodate this demand and to mitigate the impacts of the traffic on communities north of the ports.

Major Issues and Concerns

The major issue facing the ports and nearby communities is managing port growth in times of increasing urbanization, heightened environmental awareness, and limited financial resources. Problems of traffic congestion, noise, and air pollution must be addressed, but equally important is providing opportunities for economic growth. The Alameda Corridor project is a "win-win" solution for the economy and the environment.

Determinants of Success or Failure

Success will depend primarily on obtaining necessary financing, particularly $700 million in federal funds.

Critical Analytical Evaluation Measures

Critical measures used in the environmental impact analyses include (*a*) reduction in highway traffic delays; (*b*) improved safety; (*c*) improvements in train speed and other aspects of rail operations; (*d*) reductions in air and noise pollution; (*e*) economic growth, particularly in terms of the number of jobs to be created; (*f*) construction impacts; and (*g*) project costs.

Environmental Issues

Delays at grade crossings will be reduced 90 percent. Every day more than 15,000 hr of highway traffic delay will be eliminated, and noise from trains will be reduced 90 percent. Railroad emissions (mostly NO_x) will be reduced 28 percent. Locomotive hours of operation will be reduced 30 percent, and train stoppages (when a train blocks the operation of another train) will be reduced 75 percent.

Community and Public Outreach

Several public hearings and school-based community meetings have been held. The community outreach program involves many briefings and presentations and extensive use of brochures, newsletters, videos, and other media.

Economic Impact Analysis

The Alameda Corridor will facilitate economic development through port growth, construction employment, and improved business and development opportunities along the corridor. The corridor traverses areas affected by the civil unrest of April 1992—areas that are in great need of economic rehabilitation.

By 2020, the growth of the ports and the Alameda Corridor will generate an additional $31.9 billion in federal taxes per year, including $5.2 billion per year in additional customs receipts. Growth of the harbors will generate an additional 700,000 jobs regionwide and 2.2 million jobs nationwide by 2020. Construction of the project itself will employ 10,000 workers in the central Los Angeles area between 1995 and 2000. Economic development along the corridor will be enhanced because of improved traffic conditions, including reduced delays for customers, employees, and residents of the area.

Public-Private Partnership

The Alameda Corridor project involves all levels of government—local, regional, state, and federal—as well as the ports and the transportation industry. The private sector will contribute a significant amount of the funding in the form of revenue bonds. Debt service for these bonds will be paid through fees (based on cargo volume and rail traffic) collected from the railroad and steamship companies.

Security and Safety

Safety will be greatly improved by adding sophisticated train control systems and by eliminating traffic conflicts at nearly 200 grade crossings.

Technology

State-of-the-art train control and communications systems will be utilized. New traffic signals will also be installed for the highway component of the project.

Lessons Learned

The principal lesson is how to design and promote a major public works project in a complex political environment.

Reasons for Inclusion

The Alameda Corridor project should be of great interest to transportation professionals because it is one of the largest intermodal projects in the country.

Innovative Aspects

The Alameda Corridor project represents an innovative approach to solving the complex environmental problems that face the Los Angeles area. The project involves consolidating the operations of three Class I railroads into one 20-mi corridor, which will significantly reduce traffic delay, noise, and air pollution.

UNION STATION

The Union Station project in Washington, D.C., is notable for several reasons: it is a successful historic restoration, a major adaptive reuse for commercial purposes, an exceptionally convenient multimodal facility, and one of the best examples of a public-private partnership. Doug Varn was project director for the National Railroad Passenger Corporation (Amtrak) Union Station; he will talk about the multimodal aspect of and the role of the public-private partnership in the Union Station project. Currently, Varn is Senior Director of Asset Management for Amtrak. He received his B.A. in American history from Spring Hill College, participated in additional course work in economics at the University of Illinois at Chicago, and completed the Amtrak Executive Program at the Darden Graduate School of Management, University of Virginia. Varn joined Amtrak in 1973 and has held a variety of positions in sales, train operations, corporate planning, station services, and real estate. He has led Amtrak's intermodal facility program and has directed its involvement in the construction, renovation, and redevelopment of many of the major rail stations throughout the country. He is a member of the Transportation Research Board's Committee on Intermodal Transfer Facilities and has served on the steering committees for both the Irvine conference on ISTEA and intermodal planning issues and today's conference.

Lead Agencies: Federal Railroad Administration and Amtrak

Project Contact: David Ball, Executive Director, Union Station Redevelopment Corporation, 444 North Capitol Street, NW, Suite 740, Washington, D.C. 20001 (telephone: 202-906-4130)

Description

The Union Station project involved adaptive reuse of a 600,000-ft^2 historic rail station into an intermodal transportation center, major retail and entertainment center, and corporate offices for Amtrak. This transportation center serves Amtrak; the state of Maryland commuter rail service (MARC); Virginia Railway Express, the state of Virginia commuter rail service; MetroRail and MetroBus service; and various tour operations. The project contains 200,000 ft^2 of retail space occupied by approximately 100 retail outlets, 7 restaurants, a food court, and a 9-screen multiplex cinema. The project also has a 1,500-car parking garage.

Status

Preliminary planning for the project was begun in 1981, and the facility opened for public use in October 1988.

Budget and Funding Sources

Reflecting the public-private nature of the project, funding came from a number of sources:

Source	*Amount ($)*
Federal government (U.S. Department of Transportation and Federal Railroad Administration) (building and land) and Amtrak (building infrastructure and historic restoration)	70 million
District of Columbia (parking garage)	40 million
USV (developer) (retail improvements)	30 million
Retail tenants (retail improvements)	20 million
Total	160 million

Major Needs and Problem Definition

Following a generally unsuccessful conversion of historic Washington Union Station into the National Visitors' Center for the 1976 national bicentennial activities, the building was closed because of severe deterioration. Because of the $2 billion federal investment in the Northeast Corridor, significant growth in northeast rail travel, increasing national interest in preserving architecturally significant historic structures, and the desire to minimize the negative publicity from the National Visitors' Center experience, the federal government, the District of Columbia government, and Amtrak resolved to learn from the past and to seek a nontraditional approach to redeveloping publicly owned facilities.

Determinants of Success or Failure

The redeveloped Union Station is recognized as one of the finest transportation facilities in the world, serving about 70,000 passengers daily. As a result of the significantly improved facilities, Amtrak's ridership increased about 10 to 15 percent. The commercial activity is equally successful, with annual gross revenues of about $\$475/ft^2$.

Public-Private Partnership

In an effort to avoid the problems associated with the National Visitors' Center, private-sector real estate professionals (an Urban Land Institute panel sponsored by Amtrak) were asked to evaluate the station's potential as a transportation center and financially viable commercial development. A separate redevelopment corporation was formed to manage the project and to provide a buffer between the project and the sometimes-conflicting interests of the sponsoring parties. Union Station Redevelopment Corporation (USRC) was then able to manage the project as a private-sector initiative. Recognizing that market-based rents could not support the necessary infrastructure rehabilitation and normal operating expenses, Amtrak committed $70 million for the infrastructure upgrade and historic preservation work, and the District of Columbia committed $40 million to complete the parking garage. With this level of investment, the project became commercially sound. Under this arrangement both the public and private sectors were able to work together and make the best use of the strengths of each.

Lessons Learned

The following lessons were learned during this project:

1. Each project is unique and must take advantage of its own strengths. It is seldom possible to recreate someone else's success if the same combination of factors does not exist. Project developers should be realistic about a project's potential.
2. Objectives should be defined very clearly and concretely at the beginning of the project and the focus should then be maintained. Changing the major objectives after a project is started usually results in failure. Roles and responsibilities of all of the parties involved should be specifically defined.
3. Strong commitment to the principles of Items 1 and 2 will help to avoid unnecessary conflicts that can interfere with the project's success.
4. When several parties have ownership of parts of the project, a buffer organization should be used to manage the project. This buffer organization permits the involved parties to bring in their own particular expertise, it allows a singular focus, and it helps minimize territorial issues.

United Parcel Service Chicago Area Consolidation Hub, Santa Fe Intermodal Facility, and Related Infrastructure

Another good example of public-private partnership is the United Parcel Service (UPS) Chicago Area Consolidation Hub (CACH). The history of its development is a fascinating chronicle of cooperation and coordination among a host of diverse public and private organizations. Sheryl Washington, Manager of Public Affairs for United Parcel Service in Washington, D.C., will talk about this project. She joined UPS in 1993 after serving as Senior Professional Staff Member on the Surface Transportation Subcommittee of the U.S. Senate Commerce, Science, and Transportation Committee. Ms. Washington received her master's in public administration from the University of Pittsburgh and her B.A. from Spelman College.

Lead Agency: UPS with participation from the Atchison, Topeka and Santa Fe Railway, the state of Illinois, and local government units

Project Contact: Mike Johl, Employee Relations Manager, United Parcel Service, 6700 W. 73rd Street, Bedford Park, IL 60638 (telephone: 708-496-7210)

Description

The Chicago Area Consolidation Hub (CACH) will be the world's largest package distribution facility. It will be used as a national consolidation point for domestic ground package volume for UPS. When operating at full capacity, by 1997 or 1998, more than 5,000 employees at CACH will process almost 3 million packages per day. The adjacent Santa Fe intermodal facility will be used as the rail connection for trailer movements entering and leaving the UPS hub. The project is a model of how modern high-tech infrastructure improvements are made possible with solid planning and strong commitment by all parties involved.

Status

All phases are currently on schedule. The CACH building is complete and undergoing conveyor and technology installation. Operations are scheduled to begin in March 1995 and will be phased in until capacity is reached around 1998. The Santa Fe intermodal facility was scheduled to begin operation in August 1994. The full-service public interchange from I-294 opened on June 20, 1994. The grade separation over Willow Springs Road has been completed.

Budget

Funds have been allocated as follows:

Item	*Amount ($)*
UPS facility	150 million
Santa Fe facility	75 million
I-294 interchange	14 million
Grade separation	10 million

Funding Sources

Funding was provided by UPS, the Atchison, Topeka and Santa Fe Railway, the Illinois Department of Commerce and Community Affairs (DCCA), the Illinois State Toll Highway Authority (ISTHA), and the Illinois Department of Transportation (IDOT).

Schedule

All phases are currently on schedule (see section on Status).

Major Needs and Problem Definition

UPS and Santa Fe operations in the Chicago area are at or near capacity. By forming a partnership for development, the two private entities benefit by being able to increase capacity and create the most modern operations of their kind. The area communities benefit by the new infrastructure and new development being promoted by the UPS project. The state benefits through increased tax revenues.

Major Issues and Concerns

The UPS site was once the home of a General Motors stamping plant. The plant was undergoing a phased shutdown, which eliminated 3,300 jobs. This project revitalizes the commercial area, provides a long-term solution to the shortage of package-sorting and intermodal capacity in the Chicago area, and perpetuates Chicago as the rail hub of the nation.

Determinants of Success or Failure

Success or failure will be determined by the ability of UPS to maintain the successful phasing in of operations over the next 3 to 5 years.

Critical Analytical Evaluation Measures

The project will be evaluated by measuring projected package volume, intermodal use, and cost justification; a nationwide UPS feeder (tractor-trailer) travel path model will also be developed.

Environmental Issues

All impacts have been studied by independent outside firms and were found to comply with or exceed the requirements of all federal, state, and local laws. The sorting of packages produces neither effluents nor by-products. The CACH building will have its own recycling center to maximize resources. The eight wash tunnels are equipped to recover 70 percent of the water used in washing the feeder equipment.

Community and Public Outreach

The two villages most heavily involved with the project are Hodgkins and Willow Springs, Illinois. Because of its magnitude, the project will have dramatic regional impacts for job creation and further economic development in the region. Because the impact was regional, many local communities were involved even before ground was broken in 1991. A UPS community coordinator with an office near the site was responsible for ongoing outreach efforts.

Economic Impact Analysis

In addition to the initial construction investment, state and local taxing bodies will greatly benefit by the increase in tax revenues. Direct and indirect payroll is estimated to reach nearly $72 million per year when UPS reaches full operating capacity.

Public-Private Partnership

Several major areas of shared development are involved in this project: (*a*) UPS, ISTHA, IDOT, and DCCA were partners in the development of the I-294 interchange; (*b*) UPS, ISTHA, IDOT, Santa Fe Railway, and the village of Hodgkins were partners in the development of 75th Street, a 1.5-mi-long three-lane roadway connecting the tollway interchange to public thoroughfares at either end of its path; and (*c*) Santa Fe Railway and IDOT were partners in the construction of the grade crossing over Willow Springs Road. Once again, because of the scope of the development, federal, state, and local authorities were involved from the early phases.

Security and Safety

Both the UPS and the Santa Fe sites are restricted-access areas. Both are monitored by 24-hr security personnel and utilize electronic monitoring systems.

Technology

The technology being installed at the UPS hub is a cutting-edge system so advanced that details cannot yet be made public. The computerized sorting equipment is of proprietary UPS design. The system is currently being tested in two on-line UPS facilities in the United States.

Lessons Learned

Two instructive areas in this project were (*a*) the level of coordination for a project of these proportions and (*b*) the development of good working relationships with government agencies.

Reasons for Inclusion

These combined projects reach a magnitude not approached by any other intermodal project. When CACH is fully operational, over 5,000 units will move in and out of the hub every day. About half of those will come and go by the tollway access, with the remainder using the intermodal facility. Nearly 500 acres of property is devoted to some part of the combined projects. The history of the development is a fascinating chronicle of cooperation and coordination among a host of diverse public and private organizations.

Innovative Aspects

Innovative aspects include (*a*) use of leading-edge technology to control all aspects of the projects and (*b*) the scope and effect of this development, unmatched by any other intermodal transportation project.

Wrap-Up Remarks

Lillian Borrone, *Director, Port Commerce Department, Port Authority of New York and New Jersey*

As these presentations have amply demonstrated, it is possible to turn vision into reality. It is hoped that hearing about these projects has given us the inspiration, motivation, and know-how to meet the challenges of intermodal project development. For those of us in the freight business, the challenges include the introduction of technologies that would foster greater automation in transfer systems, faster truck drayage and delivery, and increased development of rail services to meet both environmental and efficiency needs.

The opportunity to realize the vision set forth under ISTEA is very much with us. We must work together to fully capture that opportunity. We can do nothing about the past, and future opportunities are beyond our immediate grasp. In fact, now is the time to put on our collective thinking cap to form new relationships and map out new processes when important new concepts like Secretary Peña's proposal for a new National Transportation System (NTS) are taking shape.

There are several things we can do to bring ourselves closer to intermodal nirvana. We can actively create and support efforts to establish new federal policies for NTS maintenance and development, and we can reduce administrative and legislative gridlock and bickering on modal transportation issues. We should consider revamping transportation legislation and policy development at the federal and state levels. It may be time for the executive branch to take the initial organizational steps within the U.S. Department of Transportation to create a surface transportation administration that will forge well-crafted intermodal infrastructure links among our highway, railroad, and waterborne systems. The time is ripe for Congress to reorganize its committees to better reflect intermodal and multimodal considerations—in fact, we know that these issues are receiving serious review by the new House and Senate leadership. We can make the business community and general public more knowledgeable about agency and MPO efforts to improve intermodal projects and programs. We can promote more public-private partnerships in planning and building intermodal projects. (A good example is the private-sector alliance that Tom Donohue is trying to build with other intermodal partners.) And finally, we can use our intermodal expertise to create new transportation solutions designed to achieve clean air and energy conservation goals that make quality-of-life enhancements—as well as transportation improvement—the cornerstones of the new post-ISTEA intermodalism.

SESSION 3
STATE SAMPLER

Session Summary

ISTEA has created many challenges for state transportation agencies; perhaps one of the most important is the requirement to develop a statewide intermodal transportation plan. The states are thus major actors in fostering intermodalism in the design and operation of the nation's transportation system. This session focuses on examples from several states that have had substantial experience with intermodal planning.

All the state transportation agency officials emphasized the importance of including system users or customers in the planning process that guides investment in the intermodal transportation system. The Louisiana and Wisconsin representatives, in particular, focused on a process best characterized as "listening to the customer." Given the service orientation of many transportation systems, user input into the planning process was deemed critical for eventual success in enhancing intermodal system performance. In both Louisiana and Wisconsin, extensive outreach efforts (e.g., interviews and surveys) were used to seek ideas on necessary changes in the transportation system.

The most prevalent theme that surfaced in this session was the linkage between intermodal transportation and economic development goals. Wisconsin incorporated intermodal project assistance (e.g., harbor improvements) into the proposed transportation budget explicitly because of the impact on economic development and on the economic competitiveness of the state. The New York representative focused on a full freight access study for Lower Manhattan that included the construction of a $400 million intermodal freight park in the South Bronx. The Eastern Washington study examined the flow of agricultural commodities and their importance to the economy of the state. The Doublestack Clearance Project in Pennsylvania provided major economic corridors in the state with the capability of relying on doublestack container rail movement. Again, the primary motivation for this project was to enhance the economic competitiveness of Pennsylvania and the Port of Philadelphia.

Another recurring theme in this session was the importance of incorporating intermodal issues in a systematic way into statewide planning and decision making. Intermodal transportation has not been a focus of statewide transportation planning, and most states do not have the funding flexibility to support intermodal projects. The message from these presentations was that intermodal transportation must be an integral part of the planning and

decision-making process before it will be given serious consideration by decision makers. The Florida case study illustrated how an intermodal element of a transportation plan could be developed and become part of a state's transportation strategy. The Maryland case study showed how restructuring of the decision-making process was necessary to ensure strong consideration for intermodal issues. Credibility for intermodal transportation starts with consideration in the planning process.

Issue Overview

Jude W.P. Patin, *Louisiana Department of Transportation and Development*

It is a pleasure for me to preside over this session and to be part of such a distinguished group of presenters. As the title suggests, the purpose of this part of the conference is to sample what the individual states are doing to embrace the concept of intermodalism. Before we begin, I would like to give you an overview of what the Louisiana Department of Transportation and Development (DOTD) is doing toward the development of an intermodal transportation infrastructure system for our state.

As you know, ISTEA has challenged each state to focus its energies on a national intermodal transportation system. Through the concept of intermodalism, connectivity among ports, rail systems, airports, and highways is believed to be the key to the future growth of the nation.

In order to do our part, we in Louisiana have modified our thinking and adjusted our priorities to implement an intermodal approach to the way we do our jobs. In planning for the future, we are ensuring that airports, highways, railroads, ports, harbors, and mass transit facilities work together to provide an efficient and effective homogeneous transportation network.

The focus of the Louisiana system is to move people and goods in a safe and energy-efficient manner, to provide the foundation for improved economic development and growth, and to strengthen the ability of Louisiana and the nation to compete and succeed in the global economy.

In keeping with its national intermodal policy, Congress mandated that states prepare statewide intermodal transportation plans by late 1995. Congress also directed the U.S. Department of Transportation to make $3 million in grants available to six states to develop prototype intermodal transportation master plans. Louisiana was awarded one of these coveted grants.

The two primary goals of this federal project were to develop a prototype methodology for statewide intermodal transportation planning and to develop a recommended long-range intermodal transportation master plan for Louisiana. I would like to explain in more detail our approach toward developing the intermodal transportation planning model.

The project was undertaken by a team of experts in a variety of different areas from within the state. The organization of this wide-ranging team was headed by DOTD under my overall direction. A project manager was appointed and primary staff responsibility was assigned to the Research and Planning Directorate. A project staff was then organized that included members of the Department of Economic Development (DED), a significant contributor in forecasting levels of population and industry and in the development of alternative plans, policies, and strategies.

Other staff included representatives of Louisiana State University, such as faculty members and research staffs of the Department of Civil and Environmental Engineering, who specialize in transportation planning, remote sensing, image processing, and geographic information systems applications. Also included were members of the National Ports and Waterways Institute who specialize in freight transportation, particularly by water and rail.

In addition, the staff included expertise from the University of Southwestern Louisiana, Louisiana Tech University, Southern University, and Tulane University. To guide the efforts of the staff, a Project Management Advisory Committee (PMAC) was formed that consisted of the senior administrators for each of the participating agencies and institutions and the project manager. The purpose of the PMAC is to review overall project progress, staffing, budget expenditures, and management issues.

Under the project manager, a Technical Advisory Committee (TAC) was formed, which consisted of the senior technical staff members from each of the agencies and universities. As specific tasks were assigned, a task leader was selected from the TAC, and a staff was drawn from the appropriate areas of expertise within the entire project staff.

The next step in the process was to establish mechanisms to involve other public agencies and the private sector. This was accomplished through the organization and formal appointment of an Intermodal Advisory Council consisting of the modal advisory councils and the metropolitan planning organizations (MPOs).

Modal advisory councils were established for passenger mobility and for highway, rail, water, air, and pipelines. These councils consisted of both users and providers of transportation services in their respective modes. Selected representatives from each modal council were then appointed to the Intermodal Advisory Council. An advisory council of regional planning officials from the MPOs was created to ensure proper coordination between state and local planning efforts. With an organization and structure in place, the planning began in earnest.

The first step in the planning process was capturing the input from the public's involvement, which was accomplished in three ways. First, the modal advisory councils proved to be invaluable in identifying issues and opportunities for consideration. Issues and opportunities were also identified through an intermodal transportation planning conference. In addition, a quarterly newsletter was published and distributed to approximately 3,000 stakeholders. Last, personal interviews were conducted with nearly 100 senior transportation executives.

The next step in the planning process was to establish goals and objectives for Louisiana's intermodal transportation system. These goals and objectives were defined using the collective wisdom of the entire team. The next major thrust in the planning process was focused on three areas. First, a comprehensive needs analysis was conducted in which long-range transportation demand forecasts were made to determine deficiencies of the intermodal system. Separate conceptual frameworks and models were developed for passenger and freight planning. Second, an extensive data collection effort was undertaken to develop an inventory of intermodal transportation facilities and existing freight and passenger movements and characteristics to measure system performance. Third, long-range transportation demand forecasts were developed, with 1990 as the base year and 2020 as the forecast year.

Because so many of the passenger and particularly the freight movements in Louisiana do not originate or terminate within the state, forecasts were required at three geographic levels: Louisiana, the rest of the United States, and the rest of the world. Because of differences in passenger and freight demand, transportation analysis zones were defined differently for forecasting each passenger and freight variable.

In the next step, the issues and opportunities identified through the stakeholder outreach effort, along with deficiencies identified through the needs analysis, formed a pool of poten-

tial improvements to consider when generating alternative transportation plans. A classical brainstorming approach was selected as the method for generating alternative plans in which revenue forecasts and goals and objectives served as the principal constraints. A methodology for evaluating alternative plans was also developed. This methodology called for substantial involvement from the Intermodal Advisory Council in ranking the alternatives and formulating the recommended statewide plan. The recommended master plan will now be presented to the legislature for its review and approval. Finally, the plan will be adjusted to reflect any changes and finalized. I am pleased to report that we have completed the first goal of the modal plan and have submitted the plan to DOT for review, and we are well along in developing our detailed implementation master plan for Louisiana.

In conclusion, we are excited about the future and about the direction of our efforts toward realizing a fully integrated intermodal transportation infrastructure system for Louisiana. We know it is the key to opening the door for economic growth for our state and for the nation.

Case Studies

TRANSLINKS 21

Roger Schrantz is the Administrator of the Planning and Budget Division of the Wisconsin Department of Transportation (WisDOT) and the project manager for the development of TRANSLINKS 21, Wisconsin's first, and one of the nation's first, state intermodal transportation plans.

Lead Agency: Division of Planning and Budget, Wisconsin Department of Transportation

Project Contact: Randall Wade, Chief of Statewide System Planning, WisDOT (telephone: 608-266-2972)

Description

The Wisconsin DOT is currently involved in the TRANSLINKS 21 multimodal planning process. TRANSLINKS 21 involves three concurrent planning activities: strategic, MPO, and intercity. The TRANSLINKS 21 Intercity Multimodal Plan explicitly addresses all intercity passenger and freight modes: automobile, truck, bus, passenger rail, freight rail, air passenger, air cargo, passenger ferry, and waterborne freight and commercial ports.

The passenger element of the plan is supported by a comprehensive travel data base and the use of a statewide, intercity, multimodal forecasting model. The freight element of the plan is supported by statewide county-to-county commodity flow data and forecasts.

Intercity plan outputs include recommended modal shares in 2020; recommended 2020 statewide systems; required improvements in infrastructure, level of service, and intermodal connectivity; and recommended public and private-sector roles in plan implementation.

Status

The intercity planning effort has been under way for approximately 9 months. Work is being conducted by WisDOT staff with consultants KPMG Peat Marwick/HNTB on the passenger

element and Wilbur Smith/Reebie Associates on the freight element. WisDOT is also concurrently conducting an update of the State Airport System Plan, which will include a major air cargo element. This work is being done by TAMS Consultants.

Budget

The budget for the one-year planning effort includes $827,000 for WisDOT staff, $476,000 for passenger and freight consultants, and $375,000 for an airport system plan.

Funding Sources

Funding sources include the State Transportation Fund, FHWA Highway Planning and Research funds, FAA state airport system planning funds, and FRA state freight rail planning funds.

Schedule

Public review of plan alternatives is scheduled for June 1994 and the recommended draft plan is to be issued September 1994. Final plan selection is slated for November 1994.

Major Needs and Problem Definition

WisDOT has previously prepared statewide modal system plans for highways and airports, but this is the department's first multimodal planning effort. It is structured to meet ISTEA statewide planning requirements.

Major Issues and Concerns

Major issues and concerns include determining the proper role for the public sector in implementing freight elements of the plan, given the current private-sector dominance in freight transportation; identifying benefits for the public sector when evaluating alternative intercity public transportation modes; and assessing the benefits of providing additional modal choices to both travelers and shippers while enhancing the overall efficiency of a multimodal transportation system.

Determinants of Success or Failure

Project success will be determined by public acceptance as reflected in public hearings; adoption of the plan by the governor and subsequent reflection of plan elements or priorities in the state budget(s); legislative acceptance of plan recommendations; departmental use of plan forecasts, recommendations, and priorities as a basis for ongoing project programming, planning, and budgeting; and MPO acceptance of intercity forecasts and system recommendations as a point of departure for local transportation planning.

Critical Analytical Evaluation Measures

Five areas of evaluation are discussed in the following paragraphs.

Passenger Travel Demand Forecasts

Using statewide origin-destination (O/D) and travel preference survey data, an intercity travel demand forecasting model will be used to develop multimodal forecasts. Travel assignments will be made to a network and zone system based on the state principal arterial system with zones added for neighboring counties and major metropolitan areas such as Chicago and the Twin Cities. The model will be used to evaluate alternative multimodal level-of-service scenarios (e.g., travel time, frequency, and fare).

Freight Commodity Flow Forecasts

County-to-county commodity flow forecasts for each freight mode will be assigned to a principal arterial highway network, the state rail network, and state airports and water ports. An expert panel of modal operators and shippers will be used to evaluate scenario-driven forecasts that reflect alternative levels of modal diversion.

Level-of-Service and Performance Measures

Alternative levels of service for each passenger and freight mode will be used to assess the transportation benefits of multimodal scenarios.

Costs

Unit costs will be used to quantify total capital and equipment costs associated with alternative multimodal scenarios. Operating costs will be estimated for passenger modes where appropriate.

Public- and Private-Sector Roles

Appropriate public- and private-sector roles and responsibilities with regard to plan implementation will be identified on the basis of a strategic analysis of public-sector benefits and costs. This analysis will be critical for freight modes where private-sector investment would be the predominant means of implementing the recommended plan.

Environmental Issues

A system-level environmental evaluation will be an integral part of the TRANSLINKS 21 planning process. Environmental considerations will be used to assist in identifying and structuring alternative scenarios.

Community and Public Outreach

An extensive overall public outreach effort has been undertaken as a part of TRANSLINKS 21 planning. Two rounds of regional forums will be conducted at eight locations to identify planning issues and to evaluate alternatives. Six statewide "thematic" forums have been held on freight, economic development, tourism, and rural, environmental, and transit issues. A TRANSLINKS newsletter is published biweekly. TRANSLINKS issue papers are distributed statewide to a select list of 122 opinion leaders for review and comment via a structured questionnaire.

In addition, Intercity Multimodal Plan developers have utilized monthly staff and consultant team meetings with representatives from the various passenger and freight modes. A freight expert panel representing each mode as well as shipper interests is being used to ad-

vise the department on alternative multimodal scenarios and forecasts. Subcommittees representing each of the freight modes and shipper groups have also been formed to broaden the expert panel's review.

Economic Impact Analysis

As discussed above, unit costs will be developed for each multimodal scenario and evaluated in the context of a strategic cost-benefit analysis. Economic development benefits will be analyzed qualitatively.

Security and Safety

Safety is one of the five transportation goals to be used in evaluating plan alternatives.

Technology

Future passenger and freight transportation technologies will be important determinants for multimodal scenarios. Technologies to be evaluated include high-speed rail, advanced air traffic control, intelligent transportation systems (ITSs), advanced highway pavements, and intermodal freight rail and truck technologies (e.g., containers, lift equipment, rolling stock, and automated tracking and dispatch).

Lessons Learned

This project provided some valuable guidance on:

1. The importance of private-sector input and expertise in freight planning;
2. The critical need for freight commodity flow data, at least at the county level;
3. The need to integrate intercity travel forecasting with MPO forecasting and modeling;
4. The benefits of fully integrating staff and consultant work into a team process;
5. The importance of anticipating data management system issues when undertaking a multimodal planning effort;
6. The potential benefits of geographic information system (GIS) applications in multimodal planning and the usefulness of establishing a national rail GIS application accessible to all the states at a nominal charge; and
7. The importance of establishing modal constituencies early in the planning process to ensure plan implementation.

Reasons for Inclusion

The TRANSLINKS 21 project is included in these proceedings because of its multimodal approach and equal consideration of all modes, its distinct passenger and freight plan elements, its use of scenarios to involve the public and facilitate input by policy makers, its use of an innovative intercity passenger demand forecasting model, and its innovative use of county-to-county commodity flow data for freight planning. The TRANSLINKS 21 project also used the expert panels to develop and refine freight forecasts, system plans, tangible plan outputs, and modal share forecasts and to sketch plans of statewide systems for each mode, estimate system costs, and identify public- and private-sector roles.

Full-Freight Access Program

Bruce A. Blackie is the Deputy Assistant Commissioner for Rail and Freight Policy with the New York State Department of Transportation. He is responsible for development and integration of the department's policies relating to rail, motor carrier, intermodal, and upstate port activities. Before holding this position, Blackie served as an independent transportation and logistics consultant and as the Director of Logistics with the Xerox Corporation.

Lead Agency: Commercial Transport Division, New York State Department of Transportation

Project Contact: Bruce Blackie, 1220 Washington Avenue, State Campus Building, Suite 4, Albany, NY 12232-0431

Description

The Full Freight Access Program is one of New York State's largest investments in rail transportation. The program will total over $300 million by the end of 1998 and has been the catalyst for the private development of a $400 million intermodal park in the South Bronx area of New York City. This intermodal park is just one of three intermodal terminals the department hopes to construct in the New York City metropolitan area. These activities taken together are known as the Full Freight Access Program. Two of the program's aspects will be discussed: a new rail trestle known as the Oak Point Link and the redevelopment of an abandoned rail facility known as the Harlem River Yard which is slated for redevelopment. Both of these projects are in the South Bronx.

First, by way of introduction, I will explain some things about transportation in New York State. A sound transportation system has long been recognized as vitally important to industry and the economy. New York State's economy is heavily dependent on its transportation links with the rest of the country. Among the most important of these links is the railroad system connecting the state's industries with its major trading partners.

The New York City metropolitan area is one of the largest and most important freight markets in the country. It serves as a major interchange for both domestic and international movements by all modes. The region is also a principal consumer of goods, which originate throughout the nation. Until now, it has been impossible to offer direct intermodal service to eastern Connecticut and southeastern New York, including New York City and Long Island. The Hudson River serves as a physical barrier that separates New Jersey on the west from New York on the east. As a consequence, all of the current intermodal service to the region is provided by drayage from intermodal yards located in New Jersey. Direct access to the eastern side of the Hudson has long been a goal of the New York State Department of Transportation (NYSDOT).

During the past two decades there have been revolutionary changes in the transportation industry that are rendering the freight system in New York City and on Long Island obsolete. It is apparent that congestion has been building for years with more people, cars, trucks, freight trains, passenger trains, and transit vehicles traveling more miles on what is essentially a fixed-capacity transportation network. Growing congestion on the bridges over and tunnels under the Hudson River has degraded service from the western side of the river, where the principal intermodal facilities have been developed, to the eastern side, where most of the area's population and much of its economic activity are concentrated.

It was not just a single action that caused the freight movement problems in the New York metropolitan area, particularly east of the Hudson. It was a series of events including but not limited to the building of the Interstate highway system, the loss of competitive rail service with the creation of the Consolidated Rail Corporation (Conrail), the fixed capacity of the existing highway network, and what may be the most significant factor—the shift to containerization. Coupled with these transportation industry factors were the dramatic shifts in

the economies of the region reflected in the loss of many manufacturing jobs and the growth of the service industry. Where once the New York metropolitan area was a significant exporter of goods, it is now almost entirely a consumer of goods. This resulted in a direction shift in the transport of goods and required the development of a local delivery system composed primarily of vans and panel trucks, which further drained the capacity of the area's streets and highways.

The transportation system that we have today has parts that were put into place at the beginning of this century to serve a different economy, a smaller population, and a different attitude toward transportation. The airplane has replaced the ocean liner and passenger trains, the truck on the Interstate highway has replaced the freight trains, the suburbs have replaced city dwelling, containerization has replaced break bulk, and the number of vehicle registrations continues to grow each year. With the restraints of land use, money, time, and the economy, the present transportation system, which served the area very well in the past, is now suffering from congestion, deterioration, and improper use. It is on the verge of coming to a grinding halt.

There are many interrelated factors behind the freight service deficiencies experienced in the New York City area. The railroad building craze of the early 1890s was intense in the area, where rapidly growing industrial, commercial, and maritime markets made the city a hub of railroad activity for the state and the Northeast. Forerunners of the New York central system formed the principal land route into New York City from the north and west. Access from the east was via the New York, New Haven, and Hartford Railroad. The Long Island Railroad, first built as a main line to Boston, developed an extensive freight network running from the New York Harbor to outlying communities on Long Island. Although this created an extensive rail transportation network, modern railcars could not use most of this system.

Other railroads such as the Erie (and its subsidiaries); the Pennsylvania; the Delaware, Lackawanna & Western; the Lehigh Valley; the Central of New Jersey; the New York, Ontario and Western; and the Baltimore & Ohio were less fortunate in that they could not reach New York City's best markets by an all-land route. Blocked by the Hudson River, they established cross-harbor car-float operations from their terminals on the west bank of the river in New Jersey to the New York City waterfront. At the same time, New York Harbor terminal railroads were developing extensive car-float operations to link their New York waterfront rail facilities with other terminals in the harbor and with the major trunk lines serving the city. New York Harbor soon become a floating railroad yard on a right-of-way that was free from clearance restrictions, with hundreds of tugs and car-floats crisscrossing the harbor.

By the 1960s the financial condition of the Northeast railroad giants had been significantly weakened by several factors including overcapitalization, rapidly escalating operating costs stemming from labor wage increases and deteriorating plants, and the increased intensity of motor carrier competition. The commercial transportation system serving the metropolitan New York–New Jersey area changed from its historical water-rail mode to almost total dependence on the use of trucks. Now there are approximately 50,000 trucks entering the New York metropolitan region east of the Hudson every day. In addition, the commercial transportation flow has changed from one going westbound, shipping goods from the manufacturing facilities within the region to the rest of the United States, to one that now flows from west to east, delivering goods to the first (New York City) and ninth (Long Island) largest markets in the country. Both of these changes have had major impacts on the transportation system and have created problems that must be addressed and solved if the economy of the metropolitan area is to survive and grow.

Information that has been gathered on New York City's commercial goods transportation system in recent years indicates that:

- The freight transportation system developed with little coordination between the public and private sectors; as presently configured, the system barely satisfies public or private goods and movement needs.
- Congestion has forced the use of northern and southern freight corridors that circumvent Manhattan. These corridors are used by the trucking industry to transport goods to Long Island.

• A system of small warehouses on the eastern side of the Hudson River serves as a second-level break-bulk operation, allowing the goods to enter the area in large trucks and then to be broken down and delivered in smaller trucks or vans, which are better able to negotiate the congested streets and roads.

An option that would greatly improve the existing commercial goods movement system in the New York City area would be to increase the amount of goods moved by rail directly into the city. However, the present rail system with its low overhead bridge clearance cannot physically accommodate the larger, more modern, rail freight equipment. In addition, there are serious conflicts with New York City commuter rail operations that preclude the establishment of a 24-hr freight schedule, and there is no modern intermodal rail terminal in New York City or anywhere in the metropolitan area east of the Hudson River. The lack of an intermodal terminal is particularly significant, because the fastest-growing element in modern rail freight service is the use of truck trailers or containers on railroad cars.

Beginning in the 1970s, an effort was undertaken to study this rail freight situation and determine what could be done. Several principles or objectives evolved; these included transportation and economic policy objectives that recognized the disadvantage to shippers and the consuming public of their dependence on motor carriers, the importance of rail service, and the serious problem that a 15-ft 3-in. vertical clearance presented to rail access. To address the problem, several operations were considered and analyzed by the Port Authority of New York and New Jersey, NYSDOT, and New York City. These options included rail tunnels, alternative routes, special barges, low-profile rail equipment, and abandonment of rail service.

After several studies, a series of rail clearances and other line improvements, termed the Full Freight Access Program, was adopted by the state, the Port Authority, and the city as the most effective and least costly way to improve the rail freight infrastructure in the New York metropolitan area. The program consisted of the following elements:

• Hudson division clearances: Eliminate clearance restrictions between Albany and the South Bronx to establish a new vertical clearance envelope, in which the limit is 19 ft 6 in. north of Tarrytown and 17 ft 6 in. south of that point into the Bronx at a point called High Bridge Yard next to Yankee Stadium.
• Long Island Railroad: Elimination of restrictions out to Nassau and Suffolk counties to facilitate development of services at locations as close to the ultimate customer as possible to minimize drayage on an already overcrowded highway network.
• Bay Ridge branch: Acquisition of the branch from Conrail and clearance improvements to permit intermodal traffic flows to the Brooklyn waterfront.
• Oak Point Link: A new rail line along the shore of the Harlem River to the Harlem River Yard and on to the Oak Point Yard.
• Development of intermodal terminals: Acquisition of the Harlem River Yard and its development as an intermodal terminal to complement the rail clearance improvements made as part of the Full Freight Access Program. Future terminals are contemplated on the Brooklyn waterfront and on Long Island.

The Full Freight Access Program had as its major objective the continuance of direct rail service to the largest city in the country. The program is nearing completion. About $235 million has been expended to date to acquire the Harlem River Yard and to improve tracks and clearance in Brooklyn and on Long Island and along the east side of the Hudson River from Albany to the Bronx.

The basic objectives of this program were:

• To eliminate conflicts between rail commuter and freight operations in the Bronx that affected existing freight and commuter services and impeded the development of new rail freight services;

- To complete the final segment of vertical clearance improvements so that existing rail freight users could benefit from larger, more modern and cost-effective conventional rail car equipment and to allow for the long-term development of new conventional and intermodal rail service; and
- To provide a regional intermodal facility to better accommodate the New York City metropolitan area's existing intermodal business.

The last major segment of the Full Freight Access Program is a project known as the Oak Point Link, a 1.8-mi route along the east shore of the Harlem River from the south end of Highbridge Yard to the west end of the Harlem River Yard. The link will connect Conrail's Hudson Line Water Lever Gateway directly to the South Bronx and Long Island and eventually will provide access without overhead or lateral restrictions for standard intermodal equipment. Without the Oak Point Link, the majority of the current boxcar fleet cannot serve New York City. This rail link will also make it possible to develop intermodal service to the east side of the Hudson River.

The Oak Point Link is now under construction. The foundations (approximately 160 piers) for the 1.8-mi-long railroad trestle are nearing completion, and the beams (with an average length of about 60 ft) that span the piers will begin to be placed within the next few weeks. Construction is due to be completed about this time next year.

With the completion of the Oak Point Link, rail freight service to New York City and Long Island will be vastly improved by making it possible to have intermodal trailer and container service directly into the city and by allowing higher and wider conventional equipment to travel into New York City. In addition, rail freight service approaching the 24-hr-per-day goal will be possible with the segregation of passenger and freight service south of Highbridge. This should result in reduced costs and travel time and more efficient rail freight services overall. Direct intermodal service to New York City should have a positive effect on the entire New York–New Jersey metropolitan region. Through aggressive marketing, improvement in service, and reduction in costs, intermodal traffic to and from the New York City–Long Island region has been forecast to triple within a few years.

The link will also provide the connection necessary to enhance development of a proposed regional intermodal facility at the Harlem River Yard. The proposed 96-acre Harlem River Yard Transportation and Distribution Center located in the South Bronx will be a totally secure state-of-the-art multimodal park providing warehousing, distribution, and rail transportation services to businesses serving the New York City metropolitan region. In 1989, NYSDOT solicited proposals from the private sector to finance, construct, and manage the operation of intermodal transportation facilities at the Harlem River Yard. Private development and operation of the facility were deemed to be critical to its success. The development of projects solely by the public sector is not without some potential delays. The markets that this intermodal facility was to serve are in a constant state of change. As a result, the development of the Harlem River Yard was awarded to the private sector. The Harlem River Yard Transportation and Distribution Center has become a joint venture of the Galesi Group, a major New York State developer and manager of industrial parks, and the Hunts Point Terminal Produce Cooperative, New York City's largest distributor of both refrigerated and nonrefrigerated foods. The yard will be developed over the next 5 years.

From the perspective of the residents of the South Bronx, the project represents a major infusion of capital, active business, and a wide variety of job opportunities. From the larger perspective of consumers and businesses in the New York region, the intermodal facility at the yard promises major savings in transportation costs and consequent reductions in the final prices of numerous critical products, which in turn will make many New York businesses more competitive and better able to expand their market performance. The project also has the benefit of reducing regional air pollutant emissions because of major decreases in truck vehicle miles of travel over the Hudson River.

The centerpiece of development at the Harlem River Yard is the intermodal rail terminal. It will occupy the largest acreage on the site (approximately 28 acres in the northern portion

of the site). The terminal is designed to function as either a container-on-flatcar (COFC) or trailer-on-flatcar (TOFC) facility. Goods arriving via rail will be transferred to trucks for distribution in the New York City area; goods arriving via truck will be transferred to rail cars for transport to regional end users. The facility is anticipated to be ready for full operation at the completion of the Oak Point Link project.

The volume of rail traffic generated by the proposed activity at the Harlem River Yard will enhance the competitiveness of freight service to New York City and Long Island because the fixed costs of maintaining freight service and trackage in the Albany–New York City corridor will be spread over a substantially larger number of revenue carloads than at present.

Similarly, the increased rail traffic volume between Albany and the Bronx will enhance the economic viability of freight service to Long Island. The Galesi Group and its associates in this venture intend to develop the Harlem River Yard to complement existing Long Island Railroad and New York Cross Harbor Railroad freight service.

Other proposed facilities include the following:

- Bulk transfer–team track rail facilities. A bulk transfer and team track will be provided at the western end of the site. The facility could serve as a loading and unloading area for rail-transferred commodities such as plastic pellets, aggregates, or other bulk products. It could also be used as a team track area for loading and unloading various commodities, depending on market demand. A through track for the Oak Point Link will also be provided that will pass through the yard just south of the intermodal terminal in the central portion of the yard along its southern boundary.
- Refrigerated/dry warehouse. The warehouse will serve as a distribution center for rail-to-truck movement of various commodities.
- Newsprint, recycling, and production facility. The facility is capable of producing up to 470 tons per day of high-quality pulp from mixed office waste generated in the New York City area. The facility is being developed jointly with the local community and several international paper companies.

The development of the Harlem River Yard and the completion of the Oak Point Link will finally open New York's metropolitan area to modern rail freight service.

East-West Multimodal Corridor Study

Robert Herbert is Manager of the Ports and Intermodal Section in the Florida Department of Transportation, and he oversees freight rail planning and intermodal management systems. Herbert has been with the Florida Department of Transportation (FDOT) for the last 5 years, and his career spans some 20 years as a multimodal transportation professional. Herbert explained how Florida is growing intermodally. Several projects were presented.

Lead Agency: Florida Department of Transportation

Project Contact: Myrna Valdez de Henry, Parsons Brinckerhoff, Inc., 5775 Blue Lagoon Drive, Suite 360, Miami, FL 33126 (telephone: 305-261-4785)

Description

The East-West Multimodal Corridor Study is being conducted by following the joint Major Investment Analysis guidelines of the Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) and the Project Development and Environmental (PD&E) guidelines of FDOT, all of which fully comply with the requirements of the National Environmental Protection Act (NEPA). The culmination of the study will be a final environmental impact statement and location design approval for the project.

This is one of the first multimodal projects to be studied under ISTEA and under a joint memorandum of understanding entered into by FHWA, FTA, the Federal Railroad Administration, the Maritime Administration, the U.S. Coast Guard, and FDOT. The study area is a 22-mi corridor extending through one of the fastest-growing areas in Dade County. Because of the severity of the transportation problems experienced throughout the corridor, a number of multimodal highway and transit improvement options are being examined, including highway operations, interchange and roadway access, transit [light-rail transit (LRT), high-occupancy vehicle lanes, and heavy-rail people movers], intelligent transportation systems, bikeways, and combinations of these options.

The study is examining ways to facilitate movement along SR 836; connect the various transportation modes arriving at or near the airport with destinations along the corridor; improve access to activity areas along the corridor; improve local circulation in Miami Beach; provide linkages to existing transit (MetroRail and MetroMover); provide direct service connections between the airport and the seaport cruise ships; and provide a distributor system between terminals within the seaport. A number of transportation modes will arrive at the future Miami Intermodal Center (MIC), to be located just east of the airport, including an airport circulator, commuter rail, Amtrak, buses, private vehicles, Metrorail, and possibly high-speed rail. MIC is envisioned as an intermodal transfer center that would serve as the connecting point for regional trips within the Greater Miami Area and an extension of Miami International Airport. The modes arriving at MIC would be provided easy access to the East-West Multimodal Corridor, to both an improved highway facility and a new transit system.

Status

The consultant team has currently completed 9 months of the 2-year PD&E study.

Budget

The capital cost of both the East-West Multimodal Corridor and MIC is estimated to be approximately $2 billion, of which $1.4 billion is transit related and $600 million is highway related.

Funding Sources

Design and construction funds will be sought from the following sources: FDOT, local revenues, joint development revenues, FTA, FHWA, the Maritime Administration, and possibly the Federal Aviation Administration and Federal Railroad Administration. The current study is being funded by FHWA and FDOT.

Schedule

The study started in June 1993. The final environmental impact statement will be completed in February 1995, and the PD&E documentation and location design approval is set for June 1995. Design is to be final by July 1997 and construction of the first phase should be finished in early 1998.

Major Needs and Problem Definition

Dade County is a rapidly growing area in southeast Florida. Extensive growth is occurring in the western portion of the county, and the only major east-west transportation facility is State

Route 836. This highway is vital to the mobility of the area because it links the rapidly growing county with all of the major north-south routes, including the Florida Turnpike on the west, SR 826, I-95, US-1 and, along with I-395, it provides access to Miami Beach across the MacArthur Causeway.

No other major east-west artery in south Dade County carries the volumes currently experienced on SR 836. Serious congestion is found throughout the day because the highway is the only east-west freeway facility in the area that provides access to numerous employment and activity centers, including Florida International University, Miami International Airport, several major shopping malls, commercial centers and hotels, Miami Merchandise Mart, the Orange Bowl, the Miami central business district, the cruise ship *Seaport*, Miami Beach, and the Miami Beach Convention Center.

Major Issues and Concerns

One major issue is the lack of consensus within the community because of the diverse nature of the corridor and issues relating to the different geographic areas of the corridor. Other concerns are finding technologies that can be adapted to meet the consumer needs of the corridor, assessing the local circulation needs of Miami Beach and the distributor needs of the airport and seaport, and coordinating and developing programs that can work as part of existing and planned land uses in the corridor and that will also work for future joint development at station areas.

Determinants of Success or Failure

Success or failure depends on system patronage projections; community support of the project; cost-effectiveness of the system; congestion mitigation; air quality improvement; local, state, and federal agency support; and funding availability.

Critical Analytical Evaluation Measures

Evaluation measures include (*a*) analysis of ridership demand to ensure a proper evaluation of costs and benefits; (*b*) development of an innovative evaluation methodology and criteria that allow a fair assessment among various transit, highway, and multimodal alternatives; and (*c*) financial planning and analysis that maximizes all possible and creative sources of funding, including a proactive joint development program.

Environmental Issues

Since the corridor is located in an urban area, there will be minimal impacts on the natural environment. However, the improvements will potentially affect several historical and recreational resources, which will require a 4f statement (NEPA requirement) and additional agency coordination. The challenge will be to successfully integrate transit improvement within the Miami Beach Art Deco historic district. Other issues that will require special attention are minimizing the impact of construction of existing waterways, especially the tunnel options in Biscayne Bay, and maintaining traffic flow during construction.

Community and Public Outreach

The public involvement program is the most comprehensive ever experienced in the area for any project and is unique in that it combines the East-West Multimodal Corridor Study with

the MIC study to maximize the effectiveness of resources and present a unified approach to the public. The program averages 20 public meetings per month. The most significant elements of the program include:

1. An aggressive local meeting program that includes meeting one-on-one with every elected official in the study area; meeting with homeowner associations, community and special interest groups, and homeowners in the affected area; meeting with institutions in the project area; and providing special presentations to interested public agencies and their advisory groups;
2. An introductory project area video and a quarterly newsletter in English and Spanish;
3. A fully staffed public involvement program office;
4. Color displays and handouts;
5. Three-dimensional imaging to pictorially depict improvements in potentially sensitive areas;
6. Public workshops by geographic area in an attempt to arrive at a consensus on the project and on alternatives;
7. Development and maintenance of a fully computerized data base that includes comments received from individuals and a record of materials mailed out and meetings attended; and
8. Creation of a lively project logo and calendar poster that is distributed widely and used in all graphic productions.

Economic Impact Analysis

In accordance with FTA guidelines, the consultant will develop a rigorous basis for financial comparison of the screened alternatives (i.e., quantification of regional impacts, county impacts, local impacts, jobs, and business development).

Public-Private Partnership

Stations where joint development opportunities could exist have been identified in a special task; public-private partnership opportunities for developing these stations will be creatively examined during the planning phase. A subcommittee has been formed by the study's policy steering committee to provide guidance for examining design and development issues for station areas.

Security and Safety

The issues of safety and security will be given special attention in this study because of recent incidents involving tourists in the Miami area. Media exposure of these incidents has affected the area negatively, which can seriously affect tourism, one of the region's major industries.

Technology

The technologies being examined include heavy rail, LRT, people movers, and a hybrid vehicle that can operate on third rail or overhead catenary.

Lessons Learned

The East-West Multimodal Corridor Study is instructive in the following areas: successful application of the new federal Major Investment Analysis process, implementation of a suc-

cessful fast-paced coordination program in spite of the multitude of projects already under way along the corridor, and provision for the multiple transportation and land-use needs of the diverse communities traversed by the corridor.

Reasons for Inclusion

This project represents the essence of the ISTEA legislation because it will interconnect various modes of transportation, thus improving mobility. It provides an improved east-west highway and transit facility and, more important, it links all other modes accessing the corridor, making the regional transportation system more effective.

Innovative Aspects

Innovative approaches in this project are found in its multiagency transportation initiative, in its being an airport-seaport connector, in the project's information program office, and in the multimodal nature of each alternative being considered.

Miami Intermodal Center Study

Lead Agency: Florida Department of Transportation

Project Contact: Allen Parker, ICF Kaiser Engineers, Inc., 3750 N.W. 87 Avenue, Suite 530, Miami, FL 33178 (telephone: 305-716-5144)

Description

The Miami Intermodal Center (MIC) Study is being conducted following the joint Major Investment Analysis guidelines of the Federal Transit Administration (FTA) and Federal Highway Administration (FHWA) and the Project Development and Environmental (PD&E) guidelines of the Florida Department of Transportation (FDOT), all of which fully comply with the requirements of the National Environmental Protection Act (NEPA). The study will culminate with a final environmental impact statement and location design approval for the project. A joint memorandum of understanding has been entered into by FHWA, FTA, the Federal Railroad Administration, the Maritime Administration, U.S. Coast Guard, and FDOT, with FHWA as the lead agency.

MIC is envisioned as an intermodal transfer center that would serve as the central connecting point for regional trips within the greater Miami area. MIC also would become an extension of Miami International Airport (MIA) and the facility would include selected landside terminal functions.

The transportation functions that may be accommodated in MIC include intermodal transfers between East-West Multimodal Corridor rail technology, Metrorail (Stage 1 connection), Tri-Rail (commuter rail), Amtrak, future Florida high-speed rail, people mover connector to MIA, seaport-airport transportation services, Metro Bus, regional highways, local streets, and private shuttles.

Status

The consultant team is currently 20 months into the study and work on the project is proceeding in close coordination with a parallel FDOT study, the East-West Multimodal Corridor Study.

Budget

The capital cost of MIC, the related expressway connector linking SR 836 to SR 112, and the people mover connector to the airport is estimated to be approximately $1.2 billion.

Funding Sources

MIC will be financed by federal, state, and local funding sources and the private sector through joint development opportunities.

Schedule

PD&E studies began in June 1993 and are scheduled for completion in mid-1996. The final design and right-of-way acquisition are timed for mid-1996 to mid-1998, construction of MIC and the transit link to the airport is to begin in 1998, and construction of the airport-seaport connector is to begin in 2002.

Major Needs and Problem Definition

Dade County is a rapidly growing area of southeast Florida. Extensive growth is occurring in the western area of Dade County and in the vicinity of MIA. Dade County is served by numerous transportation modes, including Metrorail, Tri-County Commuter Rail (Tri-Rail), Metro Bus, and a variety of vehicles that use the regional highway system. Also, long-range planning is under way to extend the future statewide high-speed rail system to Dade County. All these transportation modes provide mobility options for citizens and visitors to Dade County and southeast Florida as they travel to major employment centers, recreation points, and other destinations.

There is, however, a lack of connectivity in the current system of transportation modes. The access points (i.e., the stations) for Dade County's high-capacity facilities and services do not allow efficient connections or intermodal transfers. Inconvenient connections reduce the effectiveness of the overall transportation system, which affects Dade County's social and economic vitality. Another area of concern with respect to transportation opportunities in Dade County is that key transportation modes do not directly serve MIA and its associated facilities. Thus, the MIA complex is a major area of employment and a travel destination in South Florida, but the principal means of access to the complex is by automobile. This results in congested streets throughout the area, especially the regional access highways and terminal roadways that provide access to MIA.

In addition, MIA is landlocked. Although expansion of its airside facilities is possible, expansion of its landside facilities and improving access to the terminal are critical issues that need to be resolved. Accommodating landside functions in MIC, such as car rental facilities, airline ticketing, and baggage handling, and providing an automated people mover connection between MIC and MIA are seen as solutions to this problem.

Major Issues and Concerns

The following are major issues and concerns: building broad-based community support, coordinating with the local master plan, encouraging private-sector participation through joint development, providing an interface with the community, and mitigating the impacts on adjacent communities.

Determinants of Success or Failure

Determinants of the success or failure of the MIC project are traffic congestion and mitigation; air quality improvement; community support; effectiveness in creating a catalyst for area revitalization; integration with adjacent community and land uses; ability to accommodate selected airport landside functions; local, state, and federal agency support and coordination; and availability of funding.

Critical Analytical Evaluation Measures

The following aspects of the project will be analyzed: cost-effectiveness, connectivity between transportation modes, effectiveness in improving access to MIA and accommodating landside functions, and environmental impacts.

Environmental Issues

The challenge will be to successfully integrate a complex transportation interchange and related airport functions into a site constrained by existing waterways, residential and recreational uses, existing roadway infrastructure, and glide path restrictions of MIA. In addition, the study area appears to be contaminated as a result of long-term activities such as aircraft-related functions, automobile repairs, and boat building.

Community and Public Outreach

Community and public outreach is a major component of the project. A comprehensive public involvement program has been established by FDOT for both MIC and the related East-West Multimodal Corridor study for SR 836 in order to maximize the effectiveness of resources and to present a unified approach to the public. More than 20 meetings and project presentations per month have been held since the project began. The primary goal for the program is establishing and maintaining a dialogue with local decision makers, residents, and business owners throughout the entire design and development process.

Economic Impact Analysis

The project will have a regionwide effect on the local economy. It is expected to be a catalyst for redevelopment of the surrounding areas and of the MIC site itself. The project will have a short-term positive effect on job creation during construction of the facilities, which will take place over several years. The long-term effect on employment will be even more beneficial as a new social and economic infrastructure develops to support the needs of the airport, MIC, and related developments.

Public-Private Partnership

MIC, as a result of its accessibility and proximity to MIA, will present opportunities to involve the private sector in the development and funding of the center. As part of the PD&E study, the project team is aggressively investigating opportunities for joint development and searching for innovative institutional instruments to facilitate private-sector participation in project financing. In addition, the study will integrate land use planning with transportation planning and prepare a conceptual land use plan for the area surrounding MIC, approximately 420 acres.

Security and Safety

A major local concern has been the recent spate of incidents involving tourists. The project, through improvements to the roadway network and improved interfaces between public transportation modes, is seen as a method of improving safety and security.

Technology

Of special interest is the provision of a seamless airport-to-seaport connection for cruise ship passengers. The study will investigate the feasibility of utilizing the guideways of the people mover connector to MIA and the East-West Multimodal Corridor rail to provide a direct connection.

Lessons Learned

The project is at the beginning of the planning and design process. For the project to succeed, there must be (*a*) continued close cooperation among all levels of government agencies on this fast-track project, (*b*) integration of FHWA and FTA requirements, and (*c*) integration of the facility within the community while satisfying complex programmatic requirements.

Reasons for Inclusion

This project is included in this conference because it exemplifies the essence of the ISTEA legislation, a memorandum of understanding among all DOT agencies is in place, MIC is a major intermodal facility involving multijurisdictional approvals, and funding for the project includes multiple federal sources as well as private-sector participation.

Innovative Aspects

Some of the innovative aspects of the project include an aggressive and extensive local meeting program; a fully staffed public involvement program office; project videos and quarterly newsletters in English and Spanish; color displays and handout materials that include a lively project logo; a fully computerized data base that includes comments received from individuals and a record of materials mailed out and meetings attended; a multiagency transportation initiative; the integration of the airport-seaport connector with the East-West Multimodal Corridor technology; and incorporation of airport landside functions in an intermodal facility.

Interstate 4 Multimodal Master Plan

Lead Agency: District 5 of the Florida Department of Transportation in cooperation with the Federal Highway Administration and the Federal Transit Administration

Project Contact: Jamie Cochran and Alice Gilmartin, District 5, Florida Department of Transportation (telephone: 407-623-1085); Victor Poteat and Mark Boggs of Post, Buckley, Schuh, and Jernigan, Inc. (telephone: 407-647-7275)

Description

Florida Department of Transportation (FDOT) is developing a multimodal master plan for the I-4 corridor between the Polk and Osceola county lines and the I-4/I-95 interchange near Day-

tona Beach in Volusia County, Florida. The master plan is being prepared in accordance with FDOT's Interstate policy, which states that no more than six general-use lanes plus four exclusive high-occupancy-vehicle (HOV) through lanes will be constructed within urban areas. The project will define the type of transit interface, the location of multimodal access and facilities, and the systemwide parameters for managing the implementation of the master plan.

Status

FDOT and a consultant, Post, Buckley, Schuh, and Jernigan, Inc. (PBS&J), are working through the second of three tiers of developing, refining, and evaluating alternatives. The current alternatives include combinations of general-use lanes; exclusive through-HOV lanes; express bus, light rail transit, or both; and high-speed rail along the 75-mi corridor.

Budget

The budget is to be determined during the 22-month study. Staging and financing plans will be developed for implementation of the master plan.

Funding Sources

The anticipated funding of the master plan will require a combination of local (e.g., sales tax and gasoline tax), state, and federal highway and transit funding sources. It is also anticipated that public-private partnerships will fund intermodal facilities.

Schedule

The master plan will be complete in early 1995.

Major Needs and Problem Definition

In its innovative Interstate policy, FDOT has recognized that its Interstate highway corridors can effectively accommodate future travel demands only if coupled with multimodal investments that serve to stimulate increased use of transit and increased automobile occupancy rates. By limiting the number of travel lanes allowed on the Interstates, FDOT believes that it can use these highways as examples to gain support for Florida's goals for bettering the quality of life (e.g., improving air quality, making cities more livable, preserving energy resources, and improving urban mobility).

Major Issues and Concerns

FDOT's Interstate policy sets limits on the number of lanes that will be constructed on these highways in the state. In rural areas, no more than 6 lanes will be built, whereas in urban areas, the limit is 10 lanes, 4 of which must be exclusive lanes restricted to through trips or high-occupancy vehicles. Further, it specifies that those roadways will become multimodal corridors, with the possibility of providing fixed-guideway transit in the median. In addition, a major coordinated planning effort is under way to incorporate intercity high-speed rail service into the Interstate corridor. The I-4 multimodal master plan goes beyond this to define optimum locations for HOV access, transit interface, and station locations.

Within that context, the following are seen as major issues and concerns. Continued mobility within the I-4 corridor is imperative to the region's economic future. A planning strategy that focuses on growth within 12 major activity centers has been identified within local growth management plans. Six of the largest activity centers, including the central business district and the tourist and resort area, are served directly by the I-4 corridor and are expected to continue strong growth trends.

Travel characteristics within the corridor vary significantly from one section to another, with each section posing unique challenges. The northern portion of the corridor represents a traditional commuter corridor with inbound and outbound movements between large residential areas and major employment centers. However, this portion exhibits low vehicle occupancy characteristics.

The southern portion of the corridor includes the world's largest concentration of hotel and motel units and several major tourist attractions, namely, Disney World, EPCOT, MGM Studios, Universal Studios, Sea World, and several smaller attractions. Others are on the drawing board. This segment of the corridor exhibits very high vehicle occupancy rates, largely controlled by the tourist industry's family orientation.

The central portion of the corridor includes the central business district of Orlando and other attractions. Work trips dominate.

Implementation of the FDOT policy includes provision for the long-distance, single-occupant vehicle trip, which is defined as a trip passing completely through the region. This type of trip serves as a complicating factor with respect to enforcement of the exclusive through-HOV lanes. The volume of vehicles attributed to this element is low, estimated at approximately 5,000 to 6,000 vehicles per day, but provision for this element is essential to successful implementation of the Interstate policy.

Finally, the incentive for the public to change trip-making modes from single-occupancy vehicles to HOV and transit is a major concern related to success of the plan.

Determinants of Success or Failure

The ultimate success or failure of this plan rests upon (*a*) the ability to achieve public support for shifts toward HOV and transit, (*b*) the development of a staging and financing plan appropriate to anticipated and estimated funding scenarios, (*c*) the cooperative efforts of all governmental units of the region toward seeking a managed mobility approach, and (*d*) successful coordination with the regional transit authority's recommendations for high-capacity transit improvements.

Critical Analytical Evaluation Measures

Selection of the optimum set of transportation solutions for the I-4 corridor is based upon a broad set of evaluation measures that reflect the goals set for the Interstate corridor and includes the following:

1. Cost-effectiveness of the transportation investment in terms of the incremental cost of providing efficient, usable transportation person-trip capacity (as opposed to vehicle capacity), whether highway or transit;
2. Satisfaction of travel demand as predicted by a travel demand forecasting model that accurately portrays existing and future conditions under the multimodal alternatives (i.e., transit ridership, HOV usage, etc.);
3. Adaptability of the final plan to realistic improvement financing and staging within an acceptable time frame and blueprint; and
4. Public and agency consensus on the preferred alternative.

Environmental Issues

FDOT views the implementation of this project as a major tool in the state's efforts to preserve air quality within the central Florida region and sees its Interstate policy and the project as being consistent with the Clean Air Act Amendment requirements. By focusing investment strategy on high-capacity transportation improvements that discourage continued use of the single-occupant vehicle, the department is promoting more effective transportation solutions, which should lead to cleaner air.

Most environmental impacts will result from the increased right-of-way required to bring major interchanges up to standard; provision of additional lanes, rail system rights-of-way, or both; and provision of direct connections between the exclusive through-HOV lanes and adjacent land uses. Sensitivity to impact on the community is a key to obtaining local support. Environmental impacts are limited to some wetland impacts along the corridor.

Community and Public Outreach

The FDOT has conducted this study in close coordination with the two local metropolitan planning organizations (MPOs) and local public agencies. FDOT has made extensive use of public involvement materials and presentations in an effort to solicit both public and agency input and to reach a consensus on potential solutions. Numerous presentations have been made to local agencies and interest groups along the corridor. Continuing public involvement activities will include further presentations, newsletters, and formal public involvement meetings.

Economic Impact Analysis

Alternatives will be reviewed by looking at cost-benefit and life-cycle cost analyses. These will address both the benefits and total costs of highway and transit-related facilities. Such analyses should provide the department and the public with a strong measure of the cost-effectiveness of various investment strategies, including the incremental cost of adding capacity, whether for transit or highway, within an existing transportation corridor.

Public-Private Partnership

A principal focus of the master plan study is identification of financing strategies that will enable FDOT to optimize public investment within the corridor. A key element will be identification of opportunities for public-private partnership activities. For example, FDOT anticipates entering into legal arrangements for the provision of multimodal facilities supporting the corridor, such as transit stations, HOV park-and-ride lots, and high-speed rail operations.

Security and Safety

A key element of the final master plan will be a set of operational strategies that will allow FDOT to respond quickly to incidents within the corridor and ensure efficient operation of the roadway. The typical roadway section, as defined in the Interstate policy, provides unique opportunities for managing incidents by providing what amounts to dual multilane roadways in each direction of travel.

In addition, through selective enforcement and rigorous management of access, it is anticipated that implementation of the policy will allow preservation of a high level of travel service for persons using the HOV lanes.

Also being considered in the master plan is the issue of enforcement. Previous HOV applications within the region have proven very difficult to enforce, so the study team is now working closely with law enforcement agencies to ensure that enforcement concerns are recognized and accounted for.

Technology

The use of intelligent transportation systems (ITS) is of particular interest with respect to future management and enforcement of the master plan. The master plan will address ITS applications such as ramp metering for access control, variable message signs for motorist notification, automatic vehicle identification (AVI) for possible congestion pricing strategies, video monitoring and AVI for enforcement strategies, and real-time traffic data for congestion management systems in the exclusive through-HOV lanes.

Lessons Learned

The I-4 multimodal master plan was FDOT's initial effort to implement its innovative Interstate policy. In the course of implementing the plan, several lessons were learned. The most instructive efforts were applying FDOT's Interstate master plan policy and scope of services, coordinating FDOT master plans and regional transit plans, applying current HOV travel forecasting methods, and using the master plan to streamline the project development process. The next step will be a multimodal Major Transportation Investment Analysis, which combines FTA's old alternatives analysis/environmental impact statement process with a typical NEPA and FDOT Project Development and Environmental (PD&E) process.

Reasons for Inclusion

This project presents a truly intermodal approach to addressing mobility needs and solutions within a traditional Interstate highway corridor. The multimodal approach will require coordination between federal, state, and regional agencies. Consensus on the various issues and mobility needs must be reached by the four counties, the cities, and the state and federal agencies involved. This is the first multimodal master plan created by FDOT that fully incorporates private development into both planned and existing facilities (such as park-and-ride lots, high-capacity transit, transit stations, and direct connections to HOV lanes). The plan will promote coordination with that portion of the Florida high-speed rail that lies within the corridor and will ensure the coordination of all efforts to provide multimodal facilities.

Innovative Aspects

Innovative aspects include the following:

1. Intermodal coordination among federal, state, and regional agencies;
2. Multiagency initiative to bridge the gap between the regional transit systems plan and the master plan through the Major Transportation Investment Analysis, traditional highway preliminary engineering, and environmental studies;
3. Creation of a Project Advisory Group (PAG) composed of numerous local group representatives; and
4. Combination of long-distance single-occupant vehicles with HOV and transit vehicles within a single separate roadway to both serve long-distance travel needs and promote efficient urban travel patterns.

Eastern Washington Intermodal Transportation Study

Jerry Lenzi is Administrator of the Eastern Region for the Washington State Department of Transportation and is responsible for program and project implementation and administration in a six-county area. Before holding this position, Lenzi was Manager of the Transportation Planning Office. Of special note, Lenzi was the first recipient of the President's Intermodal Award, which was conferred by the American Association of State Highway and Transportation Officials.

Lead Agency: Washington State Department of Transportation and Washington State University

Project Contact: Jerry Lenzi, District Administrator, Washington State DOT, 2714 North Mayfair Street, Spokane, WA 99207-2090 (telephone: 509-456-3030); Ken Casavant, Department of Agricultural Economics, Washington State University, Pullman, WA 99164-6210 (telephone: 509-335-1608)

Description

The Eastern Washington Intermodal Transportation Study (EWITS) is a 6-year comprehensive intermodal transportation study. The overall study design includes several major elements and case studies. Development and subsequent use of this study information will help shape the intermodal network necessary for the efficient movement of freight and passengers in eastern Washington. The study examines the movement and flow of commodities in a system that includes a local, state, and federal roadway network; agricultural haul roads; rail lines; inland waterways; and a host of loading, transfer, and storage facilities that are primarily utilized by the agricultural industry in eastern Washington. Economic models developed during the study will enable quick-response evaluation of the economic consequences of system changes such as rail line abandonment, potential seasonal river draw-downs, expansion of the all-weather roadway network, and so on.

The study's economic linkage element assesses business location impacts in relation to transportation system improvements. Case studies will also be developed on hazardous materials routing and intercity passenger travel issues with options to improve transit services. Benefits and costs of infrastructure improvements and critical funding and management challenges will be identified. Results of the study will be used in existing regional and statewide transportation planning efforts and in forecasting future freight and passenger transportation service needs for eastern Washington. Gaps in eastern Washington's current transportation infrastructure will also be identified as well as transportation system improvement options critical to economic competitiveness and mobility within eastern Washington.

Status

A state-level steering committee was formed to provide overall direction for designing and implementing the project. An advisory committee with representation from a broad range of transportation interest groups has also been formed to provide guidance for the study. Private consulting firms are engaged as appropriate to provide the Washington State University project team with research and management assistance. The status of four major elements of the study follows.

1. The Freight Truck Origin and Destination Study was completed in 1994.
2. The Farm-to-Market Transportation System Study will result in a comprehensive data base containing the agricultural haul road, highway, rail, and inland waterway network as well as the storage and intermodal distribution system serving eastern Washington agriculture.

3. The Economic Linkages Study, completed in 1994, consists of inquiries and analyses of numerous businesses and industries in Washington.
4. A geographic information system (GIS) application is being developed for this study. Base maps have been incorporated into the GIS to allow linking information to maps for visual display and analysis. The commodity flow model is currently under development and is expected to be completed in 1996.

Budget

The budget for the study is $1.3 million over 6 years.

Funding Sources

EWITS is funded jointly by the federal government and the Washington State Department of Transportation as part of the Intermodal Surface Transportation Efficiency Act of 1991.

Schedule

The schedule for the remaining tasks is as follows.

1. The identification of the impact of policies on intermodal cost and competition and the identification of the cost of damage to the roadways resulting from freight shifts from rail to truck are expected to be completed in 1995 and 1996.
2. Case studies of hazardous materials routes and intercity passenger travel issues, the development of options to improve transit services, and identification of benefits and costs of infrastructure improvements are also scheduled for 1995 and 1996.
3. The identification of critical funding and management challenges will commence in 1994 and is ongoing.

Major Needs and Problem Definition

Rail abandonments, accelerated roadway wear resulting from increased truck traffic, and potential seasonal river draw-downs of the Snake River are combining to create a climate of economic uncertainty for eastern Washington's agricultural industry. These events have a significant potential for increasing transportation costs to producers, shippers, and consumers. This situation could dampen the competitiveness of the state's vital agricultural industry and forestall the ability of eastern Washington counties to improve urban and rural passenger mobility. The need exists to develop information necessary to identify gaps in eastern Washington's current transportation infrastructure and to pinpoint transportation improvement options critical to the state's economic competitiveness and mobility.

Major Issues and Concerns

Of concern in this study are (*a*) the cost of damage to the roadways as freight is shifted from rail to truck because of rail abandonments or from barge to truck because of river draw-downs; (*b*) the cost of transporting commodities by more expensive, energy-intensive modes because less expensive, less energy-intensive modes are unavailable; and (*c*) the impacts of cost-effective transportation of commodities on global competitiveness.

Determinants of Success or Failure

Success will depend on the ability to provide continuing projections for transportation facilities and to obtain public support and funding for necessary infrastructure improvements.

Critical Analytical Evaluation Measures

Two types of evaluation will be made: economic modeling to enable quick-response evaluation of the economic consequences of system changes such as rail-line abandonments, potential seasonal river draw-downs, and expansion of the all-weather roadway network and cost-benefit analysis of infrastructure improvements.

Environmental Issues

No formal environmental study is being conducted. However, on the basis of information and analysis from the study, future intermodal transportation system improvement may result in energy savings and associated air quality improvements as less energy-intensive modes or more efficient modal transfers become available.

Community and Public Outreach

Public outreach and involvement have been and continue to be important components of this project. The EWITS Advisory Committee consists of 21 members representing the public and private sectors. Cooperation from the Washington State Patrol Commercial Vehicle Enforcement Office and Customs Offices from both the United States and Canada has been and will continue to be an essential ingredient in the success of collecting freight origin and destination information. For example, in collecting information on freight movements, users of the transportation system were interviewed. Statewide, 97 percent of the truck drivers who were stopped at weigh stations agreed to be interviewed. Community service club members who actually conducted the interviews were key to the success of the data collection.

For the Economic Linkages Study, a telephone survey was conducted of more than 600 businesses and industries in the state of Washington. Information and analysis from EWITS will continue to be disseminated and incorporated into the statewide and regional transportation planning process.

Economic Impact Analysis

As part of the Economic Linkages Study, detailed case studies were conducted of seven eastern Washington communities with either state route main streets or state route bypasses. The case studies provided insights on maximizing positive economic impacts and minimizing the possible detrimental impacts on small towns that have state route main streets and state route bypasses.

Public-Private Partnership

To accomplish the major elements of EWITS, new partnerships have been formed: truckers who stopped at weigh stations agreed to be interviewed for the Freight Origin and Destination Study; community service club members agreed to be trained and to conduct the interviews of the truck drivers; grain elevator and cold storage facility operators were personally contacted, providing more accurate information; and public- and private-sector representatives have agreed to be part of the Advisory Committee.

Security and Safety

The Washington State Department of Transportation is committed to providing safe roads for freight and passenger movements. The results of this study will facilitate regional and statewide transportation planning efforts to provide a safe transportation system for its users. Community service club members were trained to ensure that interviews with truck drivers were conducted in a safe, efficient, and comprehensive manner.

Technology

A geographic information system (GIS) is currently being developed at Washington State University. This technology will provide a geographic profile of key highway, rail, and waterway routes used by eastern Washington's agricultural industry. The combination of GIS technology and economic modeling will demonstrate (on visual maps) changes in transportation flows that would likely occur as a result of policies such as river draw-downs or improvements to seasonal restricted (all-weather) roadways. The GIS technology can also be used to analyze statewide freight movements.

Lessons Learned

Two important lessons are provided by this study. (*a*) Extensive data collection is necessary to develop the level of analytical detail required to plan a coordinated, connected, and comprehensive intermodal transportation system. (*b*) Inter-jurisdictional cooperation among federal agencies, states, ports, counties, cities, planning organizations, the Canadian government, and representative public and private associations from the initial stages throughout the development of the study is necessary for success.

Reasons for Inclusion

EWITS emphasizes the following:

1. Creation of opportunities for cooperation among various jurisdictions and interests;
2. Development of quantitative and qualitative measures and evaluation tools for quick-response, cross-modal comparisons to target limited resources toward the infrastructure improvements that are most important to Washington's economy and global competitive position;
3. Development of a GIS application to enable mapping of key commodity routes and to make it easier to address other issues of importance to statewide and regional transportation planning; and
4. Development of economic models that will enable quick-response evaluation of the economic consequences of system changes. Improved information will be available to help developers target enhancements for key road, highway, rail, and water port facilities most essential to eastern Washington's agriculture.

Innovative Aspects

Supplemental funding provided to EWITS by the Washington State Department of Transportation enabled the statewide collection of freight origin and destination information. Improved management systems will result from having more accurate information on specific routes utilized by freight carriers and the types of commodities hauled over those routes. A data base of highway, rail, water, and air freight flows was developed from existing sources to ob-

tain a comprehensive picture of commercial shipping in the eastern Washington region. Special attention will be given to key intermodal connections that support commerce in Washington.

Doublestack Clearance Project

John Brown is acting Director of the Bureau of Rail Freight, Ports, and Waterways for the Pennsylvania Department of Transportation (PennDOT). After a successful 30-year career in transportation with the U.S. Army, he joined PennDOT in July 1993. Brown will explain Pennsylvania's Doublestack Clearance Project.

Lead Agency: Pennsylvania Department of Transportation, Conrail

Project Contact: John E. Brown, Director, Bureau of Rail Freight, Ports, and Waterways, Pennsylvania Department of Transportation, Transportation and Safety Building, Room 506, Harrisburg, PA 17120 (telephone: 717-783-8567; fax: 717-772-5782)

Description

The purpose of the project is to clear 163 obstacles (undercuttings, signal bridges, highway and township bridges, and tunnels) on Conrail's east-west route from Ohio to the Port of Philadelphia and Canadian Pacific's north-south route from the New York border to Philadelphia, as well as to make horizontal improvements to accommodate high and wide cargo being transported from Wilkes-Barre to the Port of Philadelphia.

Status

Construction on the project began in May 1993. All work will be completed no later than December 1995. The regulatory requirements of the Pennsylvania Museum and Historical Commission (PMHC) and the Pennsylvania Public Utilities Commission (PUC) have remained ahead of schedule.

Budget

Source	*Amount ($)*
Commonwealth of Pennsylvania	38.10 million
Canadian Pacific Railroad	3.30 million
Conrail	39.25 million
Total	80.70 million

The commonwealth's participation is capped, and all cost overruns are the responsibility of the respective railroads.

Schedule

Legislation was passed for both vertical and horizontal clearances in December 1992, contract negotiations were conducted from January through April 1993, construction began in May 1993, and the project is to be completed in December 1995.

Major Needs and Problem Definition

Containerized doublestack traffic is the fastest-growing segment of intermodal transportation. Clearance obstacles in Pennsylvania prevented the state and ports from maximizing

growth in these areas. A clearances of at least 20 ft 8 in. is required on each of the 163 obstructions throughout the state.

Major Issues and Concerns

Achieving access to a competitive transportation system in a timely and efficient manner is essential for preserving transportation advantages for all shippers and for economic development. Since it is easier to capture new traffic than to draw companies away from other shipping patterns, it was necessary to complete the project as soon as possible.

Determinants of Success or Failure

It was clear from the outset that the regulatory authorities—the PUC, PennDOT, and the PMHC—were key to the on-time completion of the project.

Critical Analytical Evaluation Measures

Evaluation measures included a feasibility study (funded by seven sources), task forces (PMHC and PUC), marketing commitments, and partnership commitments.

Environmental Issues

Potential positive environmental advantages from this project will result from the conversion of long-haul shipments by single-trailer trucks to doublestack movements.

Community and Public Outreach

A significant number of public speaking engagements and updates have been undertaken to make the public (members of shipping, transportation, and general interest groups) aware of the project's advantages and to receive their input. In addition, the railroads have agreed to serve on a marketing task force, and a high-profile publication will be made available in early May. The audience for the publication includes shippers, economic development agencies, and the port marketing community.

Economic Impact Analysis

PennDOT's consultant, TransMode, projects that by 1995 Pennsylvania's companies will save up to $53 million in transportation and logistics costs. In addition, they project that by 1995, 3,244 direct jobs and 7,670 spinoff jobs will be created, and that by 2000, 6,615 direct and 15,738 spinoff jobs will be created. The Port of Philadelphia is also expected to have an increase in containerized traffic of as much as 50 percent by 1995.

Public-Private Partnership

The Doublestack Clearance Project has been a true partnership between PennDOT and the railroads; together, they have worked on legislation, negotiations, construction, regulatory task forces, and marketing.

Technology

Innovative techniques in undercutting and tunnel modification were used by both the railroads and the specialized contractors involved in the project.

Lessons Learned

In the course of this project, lessons were learned about the value of public-private partnerships, the importance of transportation advantages to industry, and the importance of rail improvements in enhancing the seamlessness of the overall transportation network.

Reasons for Inclusion

This doublestack improvement project is included because it is the largest public-private project of its kind.

Innovative Aspects

This project used innovative approaches to the regulatory task forces, funding partnerships, and marketing partnerships.

Planning and Funding Intermodalism in Maryland

Janice Hedemann is Deputy Director of Finance for the Maryland Department of Transportation (MDOT). She has been with the department for 7 years and is responsible for managing the department's 6-year financial plan.

Lead Agency: Maryland State Highway Administration (SHA)—all of Maryland's modes working together: highway, transit, rail, port, and airport

Project Contact: Hal Kassoff, Administrator (telephone: 410-333-1111); Neil Pedersen, Director, Planning and Preliminary Engineering (telephone: 410-333-1110); Clyde E. Pyers, Director, Office of Highway Policy Assessment (telephone: 410-333-0327), Maryland State Highway Administration, 707 N. Calvert Street, Baltimore, MD 21202

Description

Intermodalism is a familiar concept to Maryland's transportation planners. Although it is not always called intermodalism, the concept has been a part of Maryland's transportation planning for more than 20 years. Intermodal interfaces that are as seamless as possible have been created, or as Congressman Roe of New Jersey (former Chairman of the House Public Works Committee) puts it, transportation planners have been "making it possible to get there from here."

A large part of making intermodalism work well in Maryland is the fact that Maryland's different modes work well together. This is not coincidental. Within the Maryland Department of Transportation (MDOT) framework there is a broad range of transportation facilities, services, and responsibilities that consist of (*a*) ownership, management, and operation of state highways and public transportation (commuter rail, heavy rail, light rail, and buses);

(*b*) landlord airports; (*c*) operating airports, including a major international airport; (*d*) seaports (several operating terminals); (*e*) toll facilities (five bridges and two tunnels); and (*f*) motor vehicle activities (registration and driver's licenses). There are also some short-line rail responsibilities. Maryland has a broad outlook on transportation; it considers which mode(s) of transportation can best do the job and how other modes can assist.

Status

The following is a summary of Maryland's intermodal facilities:

1. US-50 and I-95/495 feed directly into a multimodal rail station at New Carrollton, which serves Amtrak, Maryland Rail Commuter Service (MARC), and Metrorail and has bus service and a park-and-ride lot.
2. I-370 feeds directly into the Shady Grove Metrorail terminal station, which has a major park-and-ride facility.
3. I-95/495 feeds directly into the Greenbelt MARC and Metrorail terminal station, which has park-and-ride service.
4. I-795 has heavy rail in the median and a major terminal station with park-and-ride service at the Owings Mills interchange.
5. I-195 offers direct service to Baltimore/Washington International Airport (BWI), both passenger and freight operations, and also serves the BWI Amtrak station.
6. I-95 and I-695 both provide direct access to the various seaport terminals in Baltimore Harbor.
7. New interchanges being built on Maryland Route 100 will serve super stations on the MARC line.
8. A traffic signal preemption project on MD 2 allows express service buses between Glen Burnie and Annapolis to extend green times and jump queues, thus reducing their mean travel time. A similar system is planned on MD 5.

Each of these projects involves a highway connection. There are other examples like the BWI Railroad Station serving BWI Airport and the intermodal rail facility serving the Canton-Seagirt Port Terminal, where the connection to highways is less direct. These are very important, but the bulk of intermodal connections involve highways. Further, most if not all of these highways involve segments of the National Highway System.

Budget

The Consolidated Transportation Program (CTP) is a key factor in implementing intermodal projects. The budget portion of the program varies depending on the project and modal splits. Overall, CTP costs total $5.4 billion for FY 1995 to 2000. The CTP is flexible and is adjusted to reflect revenue fluctuations so that available funds may be concentrated on the most important projects.

Funding Sources

The Transportation Trust Fund set up in 1971 handles taxes and fees, federal grants, proceeds from the sale of Consolidated Transportation Bonds and Notes, and transfers from the Maryland Transportation Authority. These various revenues go into a single trust fund that covers the capital and operating requirements of the various modes. All expenditures of MDOT are covered by the Transportation Trust Fund except those of the toll facilities, which have their own trust fund (because of bonding requirements).

Schedule

Financial resources for CTP development are projected over a 6-year period; CTP is being developed within the framework of the Maryland Transportation Plan, the long-range state plan for transportation. Intermodalism is an ongoing process within the CTP.

Major Needs and Problem Definition

Some of the problems with intermodal transportation were presented by Senator Daniel Moynihan and Congressman Roe during the debate before passage of ISTEA. According to Moynihan, "We must have innovation and new ways of conducting our surface transportation activities and not be totally driven by highway construction only activities." Roe said, "We must have better intermodal connections. In northern New Jersey we have the greatest highway in the world. But, you look to the left and there is Newark International Airport—the greatest airport in the world. On the right we have the greatest seaport in the world in Port Elizabeth. Unfortunately, you can't get to either one of them from the highway."

Section 1006 of the Declaration of Policy in the Intermodal Surface Transportation Efficiency Act states: "The purpose of the National Highway System is to provide an interconnected system of principal arterial routes that will serve major population centers, international border crossings, ports, airports, public transportation facilities, other intermodal transportation facilities, and other major travel destinations; meet national defense requirements; and serve interstate and interregional travel."

Major Issues and Concerns

The most significant problem with intermodalism in Maryland is the level of expectation about what it can and cannot do. As stated earlier, Maryland has been organizationally and financially multimodal since 1971. The intermodal emphasis and flexibility promoted in ISTEA do not represent a new way of doing business for Maryland, but they do support Maryland's historical approach to the delivery of transportation services and facilities. It is necessary to have a clear understanding of what intermodalism is and is not.

Determinants of Success or Failure

Maryland's intermodal transportation plans will be successful if the following conditions are met. (*a*) Modes cooperate with each other and serve one another; each mode serves its own niche market and is assisted in doing so by other modes thus making the overall system perform at a higher level. (*b*) Funds are devoted to each mode in accordance with its role in the system. (*c*) Intermodal connections are established so that each element can perform its appropriate role. Determinants of failure include not having an adequate and well-preserved highway system to support the intermodal network and not balancing the benefits of economic productivity and growth with air quality and land use plans.

Critical Analytical Evaluation Measures

Evaluation measures include analyzing both ridership demand and finances and developing criteria to screen alternatives.

Environmental Issues

Section 2 of ISTEA states the following environmental goal, which Maryland fully strives to achieve: "The National Intermodal Transportation System shall consist of all forms of trans-

portation in a unified, interconnected manner, including the transportation systems of the future to reduce energy consumption and air pollution while promoting economic development and supporting the National preeminent position in international commerce."

Community and Public Outreach

Outreach efforts at this stage of the project are to promote community awareness and to foster public-private partnerships for reaching the stated mission.

Economic Impact Analysis

Maryland will support the economic goals of ISTEA by developing an intermodal transportation system that (*a*) is economically efficient and environmentally sound, provides the foundation for the nation to compete in the global economy, and moves people and goods in an energy-efficient manner; and (*b*) consists of roads that are essential for interstate and regional commerce and travel, national defense, intermodal transfer facilities, and international commerce and border crossings.

Public-Private Partnership

Public-private partnership working groups for each mode have been formed to create a link between the two types of enterprise and to define how private industry can benefit from and provide for the mission of improving transportation service.

Security and Safety

With more efficient roadways, the number of primary and secondary accidents will decrease. The level of accidents in Maryland is now historically low.

Technology

The use of technology is very broad and includes implementation of an information exchange system, evaluation of traveler information and surveillance technology, and evaluation of other innovative activities to improve mobility efficiency.

Lessons Learned

Each mode has its role to play, and the overall responsibility of the transportation agency is to ensure that there are no impediments or biases to prevent each mode from reaching its potential.

Innovative Aspects

Innovative aspects of Maryland's transportation plan are the Consolidated Transportation Trust Fund and the fact that each mode of transportation has operating as well as capital investment responsibility.

SESSION 4
MPOs REENGINEERING FOR INTERMODALISM

Session Summary

Intermodalism poses the biggest challenge to the transportation planning and programming process at the metropolitan level. Many of the intermodal passenger and freight terminals are located in urban areas, and thus the metropolitan planning organization (MPO) will play a critical role in enhancing efficient intermodal system performance. However, as noted by several presenters, there is a lack of connection between the traditional MPO planning process and the interests (and thus the willing participation) of the freight sector. Larry Dahms of the Bay Area's Metropolitan Transportation Commission noted two of the most important problems—an increasing interest in freight issues but no funding for freight projects and the traditionally long time frame of MPO planning compared with the relatively short time perspective of private-sector organizations.

One strategy that is important to freight interests is to be as pragmatic as possible when structuring a planning process. The Albany, New York, MPO developed a straightforward approach that allows freight interests to have some input into the planning process. The goods movement task force ranks data collection activities by priority and has helped the MPO define key performance measures. Whereas the focus of the old planning process was providing peak-hour capacity, a new vision has emerged that places greater emphasis on safety, infrastructure deficiencies, congestion, and intermodal transfers. The Central Puget Sound Freight Mobility Roundtable also found that "reliability" became the most important performance indicator when the users of the system were part of the process of identifying key performance measures. The lesson from both of these cases was that the freight community will participate in the MPO process when it is clear that their participation will have some impact.

A final theme that emerged from this session was the importance of, and the associated difficulty with, conducting a good study of freight needs. The Central Puget Sound study provided a good example of what is necessary for such a study. The study had a regional perspective, the participation of the freight industry, targeted data collection in key markets, and an implementation perspective that focused on strategies and projects that could be implemented. During this effort, the participants learned a great deal. One participant noted, "The study was more comprehending than comprehensive."

Issue Overview

Lawrence D. Dahms, *Executive Director, Metropolitan Transportation Commission*

Although MPOs are all different, each one has had to address such issues as modeling, system expansion, finance, environmental analysis, air quality conformity, and several new issues brought about by ISTEA, including intermodalism, in planning its local transportation systems.

The Metropolitan Transportation Commission (MTC) progressed from a project to a systems approach, which produced the Metropolitan Transportation System (MTS). The emphasis changed from expansion to operations and management functions and finally, somewhat reluctantly, to management of certain operating functions and demonstration projects (e.g., the Pavement Management System, Surface Authority for Freeways and Expressways, Freeway Service Patrol, TRANSLINKS, and TravInfo). Thus, the MTC approach to system planning, which now focuses on operations, maintenance, and improvement of the MTS, has been the product of our particular brand of institutional growth and clearly demonstrates an intermodal orientation. It is the "I" of ISTEA, however, that raises the question of whether and how MPOs are to reengineer for intermodalism.

At ISTEA's midpoint, how are we doing? Seen from a distance, MTC appears to be making good progress in addressing freight and intermodal issues. A closer look, however, shows that we continue to be challenged. For example, at a meeting sponsored by the Transportation Users Group (TUG), originally formed to help solve a Port of Oakland channel problem, the TUG chair, a retired American President Lines executive, characterized my summary of activities as incremental improvement when fundamental changes seem to be called for.

The four case studies to be described here today and similar efforts stimulated by ISTEA might be seen as representing only incremental progress but, nonetheless they are important in building the foundation for new partnerships. However, two major unresolved problems threaten to mask even this progress and may result in more fundamental changes. First, there are now more players, including freight and private-sector interests, who were not previously involved in MPO processes, but the transportation budget is essentially flat. Second, the planning and programming process takes too long to be relevant to our new private-sector partners. Our typical 5- to 10-year project lead time does not reconcile with the 1- to 5-year time frame common in private-sector planning. (Unfortunately, these two conditions are having a negative effect on progress—transportation deficits are handled by stretching out the delivery schedule, which in turn blocks funding of new projects.)

While working for Tom Larson, Don Camph argued that congressional demonstration projects have been used to circumvent these budget constraints and the long and complex planning processes. With a new Congress looking in every corner for reform, will these projects gain more credence as strategies for circumventing the planning process, or will old ideas (e.g., turning responsibility for transportation from federal government back to the state government) be resurrected to represent fundamental rather than incremental change and improvement?

If we are to assume that the initiatives of ISTEA represent the appropriate foundation for change, is reengineering MPOs as important as reengineering the larger transportation decision process? Reengineering the structure and orientation of MPOs may be necessary, but it may not be the only condition for successful planning.

The Intermodal Commission's recommendations for reorganization in the U.S. Department of Transportation and Congress first come to mind. Michael Huerta recollects that the subject of effective partnerships emerged from the first intermodal conference in Irvine 2 years ago as perhaps the most fundamental key to intermodal improvement. The old surface transportation partnerships were found in the FHWA–state DOT fraternities and the FTA–city transit connections. In ISTEA, Congress attempted to marry the state and municipal planning organizations to force a move from unimodal to multimodal partnerships. The gaps in our intermodal transportation system are partly the product of our historic unimodal partnerships. The solution for this problem depends on the emerging multimodal partnerships and their ability to amass multisource funding packages.

I believe that the conventional wisdom, which says that the local orientation of MPOs may stand in the way of intermodal investments, is misdirected for two reasons. First, up to now the only multimodal view of transportation in metropolitan areas has been vested in MPOs. Only with the advent of ISTEA are the MPOs being given the leverage of flexible funding and more influence in their discussions with the states that have historically been characterized by a unimodal focus. Second, city-states performing as global competitors in world markets will force MPOs to realize that they must make decisions that encourage a healthy regional economy, even though that may not have been their original perspective.

The challenge is to continue to mine the new ideas for transportation planning that are emanating from wider participation in the planning process stimulated by ISTEA and to use these ideas to better manage and operate integrated systems. We should reform our intermodal planning and financing strategies to more closely match the private sector perception of a reasonable time frame. Given our current under-funded transportation programs and resulting extended delivery schedule, it will be no small feat to devise a process that ensures more timely delivery.

Case Studies

Integrating freight concerns into Metropolitan Planning Process at Medium-Sized MPO

Lead Agency: Capital District Transportation Committee (metropolitan planning organization for the four counties around Albany, New York)

Project Contact: John P. Poorman, Staff Director, and Kristina Younger, Senior Planner, Capital District Transportation Committee, 5 Computer Drive, West Albany, NY 12205 (telephone: 518-458-2161)

Description

The Capital District Transportation Committee (CDTC), which is the metropolitan planning organization (MPO) for the Albany, New York, area, has adopted a very pragmatic approach to incorporating goods movement issues into the metropolitan planning process. This approach was necessitated by size (a staff of 12 in a metropolitan area of 775,000) and by a full agenda of ISTEA-related activities. Goods movement is one area in which it is very easy to go overboard on data collection; without focus, the data can be of questionable value. For planners, the most important characteristics of freight movement are its rapid and constantly changing nature and the fact that the private sector has a dominant position in this arena.

CDTC's approach has been to assemble a representative group from the freight community and to start a dialogue. CDTC provides enough background material on ISTEA and the metropolitan planning process to get discussions going and to maintain focus. The task force ranks the issues and areas by priority to help focus the data collection process. This has been a productive approach, and CDTC has not encountered problems with "proprietary" information that other groups have. There are some areas in the Capital District in which current

and projected limitations on goods movement are caused by the transportation infrastructure. This is where CDTC exerts its greatest influence. Addressing deficiencies at railroad grade crossings, structural clearances, and bridge load limits is a major, although not an exclusive, focus. Goods movement is an integrated and integral part of the overall planning process, not an isolated area of concern.

Budget

The overall CDTC budget is just under $1 million per year. The long-range plan update represents about 40 percent of the overall budget, with goods movement specifically allotted a $10,000 budget for FY 1994-1995, which was exceeded. The 1995-1996 Unified Planning Work Program (UPWP) is allotted a $17,000 budget, reflecting the continued importance of the task.

Funding Sources

Funding for CDTC is 90 percent federal planning funds, with in-kind matching and local contributions.

Schedule

The long-range plan update began in May 1993. The current estimated completion date is spring 1996.

Major Needs and Problem Definition

CDTC, as the MPO, has a solid foundation in comprehensive transportation planning, modeling, and corridor-level investment analysis. Before the passage of ISTEA, however, the focus of CDTC's efforts was on peak-hour vehicle movements. ISTEA emphasizes the need to integrate the movement of goods into the overall transportation plan. CDTC needed to create a mechanism for doing that.

Staff and "traditional" MPO participants began the process of planning while being largely ignorant of goods movement concerns. A Goods Movement Task Force consisting of representatives of intermodal facilities, the private sector, and the affected public sector was set up to define issues of concern and to rank them by priority. This task force is one of nine created to address various issues related to long-range planning. All nine task forces have a common mission, structure, and expected outcome. The first major milestone in the larger planning process, which is called New Visions, was reached in December 1993. A conference was held in which white papers from the nine task forces were presented to an audience of transportation professionals, local planners, and interested citizens. Each paper outlined current conditions, projected the trend of the conditions to 2015, and identified the major issues requiring further study and candidate actions that would address those issues. The Goods Movement Task Force identified five major issues for further study, as outlined below.

Major Issues and Concerns

The Goods Movement Task Force has identified the following five major intermodal issues in the Capital District. This list of issues was developed by keeping in mind the project eligibilities of ISTEA and the role and sphere of influence of an MPO. During the second phase of New Visions, the list of issues has been the subject of a survey and a roundtable discussion of

the Capital District freight community. The survey confirmed these basic major issues and provided insight into their relative priority. The task force has developed a series of infrastructure investment principles, performance measures, and performance objectives for goods movement in the Capital District. Together with strategies for implementation, this information will be packaged into a comprehensive document during the summer of 1995. A major public forum in October 1995 will launch the third and final phase of New Visions—a broad public dialogue on the major policy choices facing the region, backed up by a significant amount of technical analysis and information.

Safety

The mixture of vehicles of different sizes and speeds, particularly in areas of growing congestion, will require attention as the long-range transportation plan develops. Examples of areas in which there is potential for conflict because of the traffic mix include high-speed passenger rail service on shared freight rail lines and truck routes. In this region Amtrak leases track from Conrail. Scheduling and other conflicts will need to be resolved. The process of truck route designation is confusing and complicated and is of great concern to local communities. It is the largest single source of complaint and conflict between the freight community and other transportation system users.

Transportation System Deficiencies

The transportation system deficiencies affecting freight in the Capital District have been inventoried, and five major areas of deficiency have been identified:

1. **Railroad Grade Crossings.** To implement high-speed passenger rail service and improve rail freight delivery, the number of at-grade crossings of rails and roads needs to be dramatically reduced. Community opposition based on access concerns and the costs of such programs are the major barriers to eliminating crossings in accordance with the Federal Railroad Administration's 25 percent crossing reduction goal.
2. **Clearances and Bridge Load Limits.** *Roads:* Truck access is most commonly limited by clearance and load limits. These deficiencies have been mapped and categorized. An assessment of the existing alternative routes, needed capital improvements, or both, is now being performed. *Rail:* Railroad height restrictions limit the ability of the railroad to use doublestack train technology on the main freight rail lines to the east of the Capital Region. Width restrictions limit the transport of specialized cargo—the newest generation of turbines produced by the General Electric Company in Schenectady. *Water:* Waterside access to the Port of Albany is hindered downstream, at Bear Mountain, where a 28-ft rock ledge restricts ship size. Ships with wheat and corn (important commodities for Cargill) currently cannot be fully loaded. This restricted access could have a long-term impact on the port's ability to sustain business. *Air:* Clearance for airport operations is becoming an issue as the airport area becomes more developed. The noise impacts of airport operation require specific mitigation strategies.
3. **Commercial Services.** Along all Interstate routes in the Capital District except the Thruway, very few services (such as rest stops) for commercial traffic are provided. The Thruway's example of a successful public-private partnership to implement a program should serve as a model.
4. **Local Delivery, Site Design, and Commercial Parking.** Truck access, like transit access, is often given inadequate attention in site design for new facilities. This issue will be incorporated into the site design guidelines being developed by the New Visions Task Force.

   In urban areas the designation and use of commercial parking, particularly for truck loading and local deliveries, will require increased attention as arterial corridor management concepts gain acceptance.
5. **Education.** Integrating goods movement concerns into the transportation planning process as well as into the driving habits of the motoring public will require a concerted ed-

ucation effort. Basic knowledge about freight movement is required, and by giving freight representatives a voice in the process, the first steps have been taken.

Impact of Congestion and Clean Air Strategies on Freight Movement

As responses to the ISTEA Congestion Management System and Clean Air Act requirements are formulated, the impact on goods movement must be analyzed. For example, congestion management principles that focus on demand management strategies for commuters do not address time-sensitive freight movements. On the other hand, cooperative approaches with the freight community can lead to the shifting of noncrucial deliveries to off-peak times, to changing modes used (for some shipments), and to converting fleets to cleaner vehicles; mandated congestion management and clean air requirements can be viewed as either opportunities or challenges.

Intermodal Connections

The critical point in most freight movements is at terminals where transfers occur, either from truck to truck or between rail cars, airplanes, ships, and trucks. The availability of transfer mechanisms is more of an issue in the Capital District than is the efficiency of existing transfer points. A strategic planning approach to increasing the overall connectivity of the system is emerging from ongoing discussions with the freight community. The development of performance measures has helped tremendously to make this strategy emerge as the most effective. The opportunities for partnerships to accomplish the goal will be explored in subsequent steps.

Technological Advances in Goods Movement

The private sector, led by firms like the United Parcel Service and Federal Express, is making widespread use of advanced technology to improve customer service, increase efficiency, and raise profits. Technology like global positioning, advanced communications, and hand-held computer invoicing is changing the face of goods movement. The potential impact that these improvements will have on travel demand could be significant. For example, enhanced ability to monitor shipments can lead to improvements in scheduling capability, which allows motor carriers to avoid peak periods of congestion. In practical terms, it is the private sector of the transportation industry, with its ability to make decisions quickly and respond to innovations, that will test and refine major new technologies. The public sector will then benefit from their experience.

Determinants of Success or Failure

The following are determinants of success or failure: (*a*) the degree of integration of goods movement concerns into MPO plans; (*b*) the degree of integration of goods movement concerns into the capital program in terms of which specific projects are initiated to address freight priorities and how the movement of freight is incorporated into other scheduled infrastructure projects; and (*c*) ongoing participation by the freight community in the process.

Critical Analytical Evaluation Measures

The CDTC long-range planning process (New Visions) has established a number of performance measures designed to provide insight into the benefits provided by future transportation improvements. These performance measures are of two types, core and supplemental. Core performance measures are used to calculate accessibility, access, congestion, flexibility, safety, energy use, economic cost, air quality impacts, land use implications, environmental effects, and

economic impact. They are called core measures because they cut across all issue areas being investigated in the long-range planning process. Supplemental measures are issue-specific.

Core performance measures that pertain to goods movement include accessibility (travel time to intermodal facilities), access (major freight movements with modal alternatives), recurring congestion (impact on freight), nonrecurring congestion (incident-related) (impact on freight), economic cost (daily value of commercial time in travel), and economic impact (economic activity supporting and constraining features of the transportation system). The accessibility, congestion, and economic cost measures are calculated from CDTC STEP Model runs. Access and economic impact measures are narrative discussions of current and projected conditions.

The following supplemental freight performance measures have been calculated.

For roads: highway infrastructure constraints, highway bridges with vertical clearance restrictions, highway bridges with load limits, intersections with inadequate turning radii for 53-ft trailers, locations with narrow lanes, locations with high rates of truck accidents, and commercial facilities (e.g., rest stops) to serve trucks and truckers.

For rail: railroad infrastructure constraints, at-grade crossings, and railroad bridges on freight main lines with vertical clearance restrictions.

For water: Port of Albany and canal operations, tonnage processed through the Port of Albany, vessel calls at the Port of Albany, revenue generated in the local economy by the Port of Albany, tonnage using the canal, and commercial vessels using the canal.

For air: airport operations, tons of cargo at the Albany County Airport, and business activity generated by the Albany County Airport.

The New York State Department of Transportation (NYSDOT), Region One, provided the primary data sources for the highway infrastructure constraints: a bridge inventory, accident history printouts, and the *Highway Condition Manual*. CDTC staff used these data in an analysis of the freight priority system (which consists of the national highway system and other state highways that carry more than 5 percent truck traffic). Turning radii data were gathered from local members of the Championship Council of the New York State Motor Carriers Association.

A major effort was undertaken to create a grade crossing inventory for the Capital District. By using Federal Railroad Administration and NYSDOT inventories as a basis, CDTC staff members were able to gather supplemental information from the railroads and confirm it with spot site visits. Height limitations were obtained from the NYSDOT bridge inventory and confirmed by the railroad operators.

Port, canal, and airport operations data were obtained directly from the facility operators. Revenue generated by port activities was calculated by CDTC from raw data by using the Maritime Administration methodology. Airport economic impact was obtained from the NYSDOT report entitled *The Economic Impact of Aviation in New York State*, updated with data from the Capital District Regional Planning Commission.

A status report on the calculation of core performance measures that pertain directly to goods movement as well as a draft report on the preliminary calculations of the freight supplemental measures (with holes in the data highlighted) are currently available. An integrated report that includes all aspects of the program is expected to be available by fall 1995.

Environmental Issues

Environmental issues are not a major concern at the program level, but they may arise at the project-specific level.

Community and Public Outreach

Public outreach is the cornerstone of the overall New Visions long-range planning effort. Task forces focus on specific issues but use a variety of mechanisms to gather additional input,

including surveys, workshops, major conferences, and presentations to industry or interest groups. CDTC depends on this input for a "reality check" on freight issues. The first roundtable discussion, to be held in March 1995, will provide valuable insights that will influence the strategies to be developed and analyzed during the summer.

Public-Private Partnership

The planning process at CDTC is structured around, even driven by, public participation. A variety of public participation mechanisms are used that recognize the varying levels of interest of the stakeholders and the amount of time people have to devote to transportation planning. This program, based on mutual respect and an acknowledgment of the different roles that people play, is in many ways a public-private partnership. It is expected, and evidence has already been seen in the area of incident management, that these partnerships will persist and grow as implementation nears.

Technology

Technological advances are primarily of interest as components of congestion management for incident detection, automatic vehicle identification at toll booths, and other intelligent transportation system applications. Aggressive pursuit of advanced technology has been identified as a type of action that will be examined during strategy evaluations.

Lessons Learned

The freight community has expressed a surprising and rewarding level of willingness to participate in the process and invest its time in working with the other players. This is partially because the process accepts and provides input mechanisms for various levels of interest, time, and stake in the outcome. There is a lot to learn from the exchange of ideas with different sectors. Much can be achieved by providing a structure and focus for roundtable discussions and giving the participants the lead in determining the content. This has greatly facilitated information sharing and avoided many issues of proprietary information.

Reason for Inclusion

Many MPOs, especially small and medium-sized ones, are struggling to find the appropriate level of response to the ISTEA mandate for integrating freight concerns. This project is an example of an integrated approach that is working because it is based on participation by the affected parties.

Innovative Aspects

Innovative aspects of this effort include program content driven by participation of the affected parties, good reception by the freight community, a pragmatic approach by the MPO, and integration of the New Visions plan into a larger planning process.

Regional Intermodal Transportation Center Project

Lead Agency: Syracuse Metropolitan Transportation Council (SMTC), Central New York Metropolitan Development Association (MDA), and Central New York Regional Transportation Authority (CNYRTA)

Project Contact: Charles Poltenson, Sr., Intermodal Transportation Analyst (telephone: 315-422-5716), and Charles Everett, Jr., Chair, Planning Committee (telephone: 315-454-3263), SMTC, 100 Clinton Square, 126 N. Salina St., #100, Syracuse, NY 13202

Description

The Regional Intermodal Transportation Center Project is currently in the preliminary or schematic design phase. The project was initiated in 1971 by the Long-Range Transportation Plan for the Syracuse metropolitan area. A feasibility study was carried out the following year for the project to be constructed in the next season. The facility will accommodate intercity bus and rail, local transit, airport and rail shuttles, bicycles, pedestrians, and taxis. The goal of the project is to create a single transportation hub connecting the various modes serving the Central New York region and further enhance the role of Central New York as the transportation hub for New York State.

Status

The most recent feasibility study was completed by SMTC in 1991. *The Stadium Market Center Master Plan*, the specific project plan document that will guide the program, was completed in 1993. Bids for design and construction of the facility were let in late 1994. A final architectural plan will be developed by early 1995, and construction is anticipated to start during this construction season, with a late 1996 completion date.

Funding Sources

Source	*Amount ($)*
Federal Transit Administration, Surface Transportation Program (STP/ISTEA)	5 million
New York State Thruway Authority	5 million
New York State Department of Transportation	2.5 million
Central New York Regional Transportation Authority	½ million

Schedule

Construction is scheduled to begin in 1995, and the project is expected to be completed in 1996.

Major Needs and Problem Definition

The current modal transportation terminal facilities are in various and remote locations throughout the area, making interconnectivity virtually impossible. The current Amtrak station is located east of the city in a suburban freight yard. The bus station is on the fringe of the central business district (CBD), a generally unsafe area. The airport is located 11 mi north of the city. The local transit system is CBD-centered and does not facilitate, via transit, reverse commuting, suburb-to-suburb travel, or connectivity between intercity modes. Transit service to the airport does not currently exist, and service to bus and rail terminals is uncoordinated. There is a rail shuttle service that serves the university section of the city along with the CBD and a major shopping center (Carousel Mall), which is near the location of the proposed transportation center. The bicycle trail system is not continuous and is in the

preliminary stages of development. The Regional Intermodal Transportation Center would provide connectivity by linking all of these modes with a single convenient transfer point.

Major Issues and Concerns

Improving access to a centrally located terminal facility will increase the economic vitality of the region. The entire region may also benefit from potential linkage with New York State's high-speed rail initiative, which will provide 125-mph rail service across the state. New opportunities for seamless connection between modes would be created as well as improvements in service and an increase in the frequency of service to surrounding communities, all linked through the Syracuse hub.

Determinants of Success or Failure

Success or failure depends on increased use of public transit, improved and coordinated scheduling between modes, increased utilization of nonautomobile intercity travel, and increased utilization of connecting modes.

Critical Analytical Evaluation Measures

Evaluation measures include: analyzing alternatives, ridership demands, and environmental impact; assessing the market; and determining site location feasibility.

Environmental Issues

Potential sites may be environmentally sensitive.

Community and Public Outreach

The following are aspects of community and public outreach: SMTC Transportation Center Technical Advisory Committee, MDA Stadium Market Center Technical Advisory Committee, SMTC Transportation Improvement Program (annual), public review and comment, and CNYRTA Capital Program Public Hearing.

Economic Impact Analysis

After evaluating the original 20 sites and detailed screening and analysis of 6 sites, the current Park Street location was selected as the most acceptable in terms of technical and financial feasibility.

Public-Private Partnership

The Regional Intermodal Transportation Center is one component of a joint public-private investment model and is also part of the overall Stadium Market Center (SMC) site development. The SMC includes a new $30 million, 12,000-seat stadium for the Syracuse Chiefs (a Toronto Blue Jays farm team), and a renovated regional farmer's market facility, in addition to the Regional Intermodal Transportation Center. The SMC will be adjacent to the Inner Harbor Area (Hiawatha Harbor), which adjoins Carousel Mall (the largest shopping mall in

the region), a proposed Carousel Landing shopping complex, and the new Hiawatha Harbor waterfront development. The SMC is part of a larger overall development plan for revitalizing the northern section of the city.

Safety and Security

The Regional Intermodal Transportation Center will be a well-patrolled area with enhanced security measures.

Technology

The rail portion of the facility will accommodate two station tracks on piers above the terminal. The terminal will be the only facility on Amtrak's Empire Corridor with a high-level platform to satisfy the design requirements for persons with disabilities and to reduce station dwell times. Flexibility will also be built in to accommodate the proposed New York State high-speed rail initiative and service will be expanded to areas not currently served.

Lessons Learned

Instructive aspects of the project include using the flexibility provisions of ISTEA funding, showing intermodal connectivity in action, becoming involved in the project development process, using innovative financing methods, creating the vision for seamless connectivity, and working toward that goal.

Reasons for Inclusion

This project is included in these case studies because it is intermodal, it uses flexible ISTEA funds, and it is multijurisdictional. This project also provides the basis for a regional transportation system, provides opportunities for connectivity that were previously nonexistent, and provides the opportunity to develop a vision and follow through on it.

Innovative Aspects

Innovative aspects of the project include the multiagency MPO initiative, proactive MPO involvement from start to finish, and advancement of the concept of seamless connectivity as envisioned and encouraged by ISTEA.

Central Puget Sound Freight Mobility Program

Lead Agency: Puget Sound Regional Council assisted by the private-sector Regional Freight Mobility Roundtable

Project Contact: Peter D. Beaulieu, Puget Sound Regional Council, 216 First Avenue South, Seattle, WA 98133 (telephone: 206-464-7537; fax: 206-587-4825); Dan O'Neal, President, Greenbrier Development Corporation, 200 West Thomas, Suite 500, Seattle, WA 98119 (telephone: 206-282-0099; fax: 206-282-3824)

Description

The program will develop a freight and goods database, identify issues and options for action, and select a freight and goods mobility action plan for inclusion in the Metropolitan Transportation Plan (MTP) update. The MTP is a multimodal plan that will be conducted in cooperation with the State Department of Transportation and in consultation with local transit agencies; it is consistent with the new requirements of the Intermodal Surface Transportation Efficiency Act (ISTEA). The program will lead to subarea, corridor, and project-level actions.

Status

In December 1993 a consulting team was selected and was led by Transmode Consultants, Inc.; the team included Harvey Consultants, Porter and Associates, and OMG, Inc. Initial data development and a preliminary status report were completed in February 1994. The draft action package was completed in September 1994 and was folded into the overall MTP development and review process. Regional council policy action on the final MTP is scheduled for April 1995.

Budget

The budget is $200,000 initially, with implementation continuing in subsequent years.

Funding Sources

The project is funded with ISTEA discretionary funds (through the Washington State Department of Transportation) and matched by regional council membership dues.

Schedule

Project commencement is set for January 1994. Action on all modal elements of the MTP (including freight mobility) will be completed by December 1994 (draft) and by April 1995 (final). Subarea and corridor-level work is intended for 1995.

Major Needs and Problem Definition

Foreign trade with Pacific Rim countries and Europe is a major economic force in the Central Puget Sound region. The ports of Seattle and Tacoma constitute the second-largest load center in North America for marine traffic. More than 27 percent of West Coast containerized intermodal (ship and rail) activity passes through the ports. Truck freight in and through the region is also growing.

The population of the region (four counties, 6,300 mi^2) is expected to increase from 2.6 million to nearly 4.0 million by 2020. Ground congestion in the urban area poses serious problems in terms of time, cost, and reliability to the freight and goods industry (e.g., the spreading of the peak commuter period into nonpeak travel periods favored by truckers). The MTP includes, for the first time, a freight and goods mobility element that enables the region to define, research, debate, and act on freight issues at the local, regional, and state levels.

Major Issues and Concerns

The action plan addresses four concerns: infrastructure, institutional aspects, financing, and operations. For example, the region is concerned with (*a*) ground access to the Port of Tacoma, especially to Seattle (to handle new service by American Presidents Lines), and to the Seattle-Tacoma International Airport; (*b*) consideration of freight delivery needs in local plans; (*c*) design standards and regulations; (*d*) incorporation of freight projects and programs in the regional Transportation Improvement Program (the funding element of the MTP); and (*e*) the possibility of freight access to high-occupancy-vehicle lanes during periods of relatively slack traffic.

Determinants of Success or Failure

Sustained roundtable activity, community understanding and support, funding, policy changes, and a useful data base and model are determinants of success or failure. Monitored results are required under ISTEA (the required Performance Monitoring System).

Critical Analytical Evaluation Measures

The following aspects of the plan will be evaluated: freight generation, commodity flows and future trends (from a relational data base and truck activity model), and financial support. Performance measures for use in the Performance Monitoring System, the Congestion Management System, and the Intermodal Management System are all required by ISTEA.

Environmental Issues

There will be no environmental impacts during the planning phase. Environmental impacts will be considered as part of the broader MTP supplemental environmental impact statement, which will augment a nonproject environmental impact statement prepared for the Regional Growth Management and Transportation Strategy, adopted in 1990, by the regional council (VISION 2020).

Community and Public Outreach

Outreach will be accomplished in three ways. The first phase involves the creation of the Regional Freight and Goods Mobility Roundtable, which will be assembled under the auspices of private-sector economic groups. (The convener is the Economic Development Council of Seattle–King County.) Continuing consultation with the roundtable will be part of broader public review, plan development, and implementation processes. A regional conference was held in September 1994 and was cosponsored by the roundtable, the regional council, the Washington State Department of Transportation, and the FHWA and the Maritime Administration of the U.S. Department of Transportation.

Economic Impact Analysis

This project is part of the MTP required by federal transportation legislation (ISTEA). There are fifteen factors to be considered by the Metropolitan Planning Organizations (i.e., the regional council) as they develop their MTPs, including attention to economic concerns. The regional council is also working with a broad range of community interest groups on a regional economic development strategy. (The Phase One situation analysis was released by the

regional council in October 1993.) Phase Two of the strategy targeted four promising growth sectors for the region: aerospace, high technology, international trade, and manufacturing.

Public-Private Partnership

Stakeholders in the roundtable include marine shipping lines; two Class I railroads; trucking firms; shippers, including the Boeing Company, Safeway, and others; the ports; major airport operators; third-party interests; and some public agencies (Dan O'Neal of Greenbrier serves as chair). Financing strategies will likely include the packaging of public and private resources.

Technology

One example of technology is related to a freight mobility recommendation that calls for comprehensive subarea studies of complex parts of the region. One such subarea is located in southern Seattle, with its interactions between ferry loading-zone approaches, containerized cargo train assemblies, ingress and egress (at the Port of Seattle), the possibility of a high-speed commuter rail, and a mix of other types of surface transportation. Signaling, communications, and tracking technology combined with infrastructure improvements will be part of the solution in this and other similar cases.

Lessons Learned

Instructive aspects of this program include (*a*) commodities flow data and models for trucking (trip generation and origin and destination by zone), (*b*) a freight and goods element in the urban transportation model, (*c*) regionally specific freight and goods issues and solutions, (*d*) broadly applicable intermodal and multimodal issues and approaches, and (*e*) a roundtable method of public-private cooperation.

Innovative Aspects

This program is innovative because it is intermodal, involves state and regional cooperation, is integrated into the MTP, is multijurisdictional and international, contains transferable data development methods, involves early and continuing input from the private sector (the Regional Freight Mobility Roundtable), and it makes combined and imaginative use of national and local data sources (with a designed survey). Its focus is on an action plan that involves integration of the MTP with local land use plans under the combined guidance of ISTEA and a new state Growth Management Act.

Available Products: *Proceedings of the Regional Freight Mobility Conference* (September 1994); *Recommended Action Packages* (September 6, 1994); *Analyzing Freight Movements in the Puget Sound Region* (December 1994); and *Modeling Freight Movements in the Puget Sound Region* (January 1995).

Intermodal Coordination Study

Lead Agency: Northern New Jersey Transportation Planning Authority

Project Contact: Joel Weiner, Executive Director, 153 Halsey Street, P.O. Box 47022, Newark, NJ 07101 (telephone: 201-645-8700)

Description

The Intermodal Coordination Study was undertaken in May 1993 by the New Jersey Alliance for Action, under contract with the New Jersey Department of Transportation (NJDOT). The study, which was completed in December 1993, was performed for the Northern New Jersey Transportation Planning Authority, Inc. (NJTPA), the official metropolitan planning organization (MPO) for a 13-county area of northern New Jersey. NJTPA was formerly known as the North Jersey Transportation Coordinating Council.

The study was carried out pursuant to ISTEA in which the states and MPOs throughout the nation were mandated to undertake intermodal freight transportation studies. It is believed that this intermodal study is one of the first in the United States to be completed under the ISTEA legislation.

The objectives of the study, which were specified in the Scope of Services prepared by NJDOT and NJTPA, were to (*a*) identify the infrastructure, systems, and institutional deficiencies adversely affecting intermodal freight operations in northern New Jersey; (*b*) analyze and evaluate those deficiencies; and (*c*) prepare a program of recommended actions designed to remedy such deficiencies.

An Advisory Committee with 13 members from public and private interests was established early in the study to advise and assist the study team. With the assistance of the Advisory Committee, the study team defined freight intermodalism as "the movement of goods via two or more modes of transportation in a container or trailer capable of interchange among the modes without the need to unload the goods between modes." This definition served as a guide for the study team. A critically important part of the study was to conduct interviews with public and private interests representing a cross section of the intermodal industry to determine the deficiencies perceived by those intimately involved in intermodal freight transportation. Some 50 interviews of public agencies; transportation associations; air, marine, truck, and rail carriers; and major shippers were conducted by the foundation's study team along with extensive field inspections and observations.

From these interviews and field observations, some 47 deficiencies related to infrastructure, systems, and institutional aspects of intermodal freight operations were identified. The study team reduced the 47 deficiencies to 38 by eliminating 9 deficiencies that were deemed either not pertinent or beyond the scope of the study. During the evaluation process, the deficiencies were further consolidated to 20, which were intensively studied. Fourteen specific recommendations were made to mitigate those situations having negative impacts on efficient intermodal operations in the 13-county area. The recommendations were based on information gathered in the interviews and on the study team's observations. Specific and detailed planning analyses were not within the scope of the study.

Summary of Major Deficiencies and Recommendations

Access to Intermodal Facilities

1. **Inadequate highway and road access to marine and rail facilities:** Intermodal interests should vigorously support efforts to have certain roads designated part of the National Highway System (or some other federal program) so that federal funding assistance could be provided for improvements.

2. **Delay and congestion at New Jersey Turnpike toll booths, toll rates, need for electronic toll management and a new turnpike interchange:** The Turnpike Authority should (*a*) consider equalizing toll rates at Interchanges 13, 13A, and 14; (*b*) promote use of coupons by motor carriers; (*c*) move as rapidly as possible in coordination with others to implement the electronic toll program; and (*d*) expedite the development of a new interchange at Secaucus.

3. **Serious congestion and delays on Routes 1 and 9:** Highway management, including modern computerized signal systems and intelligent transportation system applications, should be vigorously supported by intermodal interests. Other improvements under consid-

eration by NJDOT, including elimination of four-lane bottlenecks, should be aggressively supported.

4. **Inadequate depth in federal channels:** Because of the critical role it plays in planning channels, the Corps of Engineers should be encouraged by NJTPA to participate in the MPO-state intermodal planning process and should also be encouraged to participate in the NJTPA Technical Advisory Committee.

5. **Rail capacity, routing of doublestack trains (DST), and competitive rail access:** The freight railroad and NJ Transit should develop a master rail plan for the northern New Jersey region that includes clearance requirements for DST, adequate competitive rail access to the terminal district, and development of a public-private funding plan based on fair evaluation of benefits.

Terminal and Facility Systems or Institutional Issues

1. **Marine facility operations and equipment in need of significant improvement:** Operational and maintenance aspects of chassis supply, quality, and control should be investigated, including possible establishment of a chassis pool and improved communications in the handling of containers and chassis.

2. **Serious constraints on containership traffic posed by inadequate depths at ship berths:** NJTPA should take the lead in planning long-term solutions and working with the Corps of Engineers, the Environmental Protection Agency, the Port Authority, and others to develop a risk assessment procedure for dredging and dredged material. Port Authority planning efforts to relocate, expand, and improve access to ExpressRail Transfer should be vigorously supported by New Jersey and intermodal interests.

3. **Need for additional public and private investment at marine terminals:** The state of New Jersey should strongly support federal financial assistance for port-oriented projects and should evaluate New Jersey Economic Development Authority financial assistance for private port development interests at marine terminals.

Policies and Procedural or Institutional Issues

1. **Need for improving coordinated freight planning efforts and improving the understanding of the MPO's role in ISTEA-based intermodal freight projects:** NJTPA, NJ Transit, and NJDOT should make recommendations for improving ISTEA so that it would provide creative public-private funding mechanisms and greater recognition of the role of freight in the state's economy. The NJ State Transportation Plan should recognize regional land use plans to ensure that properly zoned land is available to meet future intermodal terminal needs.

2. **Federal, state, and local environmental and site development regulations are often conflicting, thus impeding intermodal operations:** State policy should recognize that development of intermodal freight facilities is vital to the economy of the region; policy makers must balance economic and environmental concerns.

3. **Operational and safety problems posed by overweight foreign-loaded containers:** NJTPA and state of New Jersey transportation departments should closely monitor the federal Intermodal Safe Container Transportation Act of 1992 to ensure that the safety of intermodal transport operations on NJ highways is maintained.

Other Issues Affecting Intermodal Operations

1. **Limited data on New Jersey industrial relocations:** The state of New Jersey should consider obtaining and disseminating data from Department of Labor response teams on reasons for plant closings and relocations in New Jersey; transportation factors should be included.

2. **Lack of understanding of economic importance of intermodal freight industry:** All elements of the public-private intermodal industry should coordinate their efforts to communicate the vital economic importance of this industry to the public.

Other Findings and Information

The study report contains several additional findings and observations of a somewhat lower priority than those summarized above.

A special study was undertaken by the study team on the reasons for relocation of industry either into or out of the northern New Jersey region. The objective was to determine the extent to which such relocation decisions were based on transportation or, more particularly, intermodal transportation factors. The conclusions of that special study, based on data available to the study team, were generally negative.

The appendixes of the study report contain information and background materials that helped the foundation and the study team conduct their analysis. Included are the initial Scope of Services, a copy of the questionnaire used in the interviews of industry representatives, an historical perspective of intermodalism as an evolving and growing industry, and charts of typical containerships and types and dimensions of containers commonly used in intermodal operations.

Finally, the appendixes include correspondence regarding the review of the draft of this report and minutes of and attendance at a workshop on this subject conducted March 18, 1995, at Rutgers University.

SESSION 5
NEW TECHNOLOGIES, PARTNERSHIPS, AND PROCEDURES

Session Summary

A major theme throughout the conference was the importance of partnerships. Partnerships are particularly important when new technologies are introduced. This session focused on the role of technology and the importance of partnerships in developing a strategy for effective project implementation.

An important theme in these presentations was the ripple effect of technological change throughout the supply chain and in the planning process that precedes it. The Iron Highway concept, for example, showed how technology change can affect the assumptions about how we travel and ship goods. The I-95 Corridor Coalition illustrated the role that technology innovation has in the rethinking of multistate transportation investment strategies. Innovation in passenger and goods movement clearly represents a major opportunity for enhanced system efficiencies and improved logistics in a global market.

The presentation on Port Hueneme illustrated the need for flexibility in the planning process, before investments are made. In this case the investments were targeted to enhanced market opportunities that would spur local growth. In the Washington State example, the proposal for congestion pricing in the Seattle metropolitan area was being implemented incrementally, starting with high-occupancy vehicle (HOV) lanes and only proceeding to the next step when conditions were conducive. Flexibility becomes vital to an overall strategy for implementing change in the transportation system.

A theme emphasized in the New Jersey Goods Movement presentation was the importance of a good data base that can identify opportunities for improving system performance. There is a technological component to data collection in that many innovations for freight movement can be linked to enhanced data collection. Electronic labeling and improved sensor technologies can be tied to improved data on traffic flows and origin-destination information.

The session indicated the opportunities that exist for technological innovation in the transportation industry and the importance of understanding the impact on the entire logistics chain.

Case Studies

I-95 Corridor Coalition

Lead Agency: None—a partnership among 14 state and local DOTs (Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York City, New York, Pennsylvania, Rhode Island, Vermont, Virginia); 10 transportation authorities (Delaware River & Bay Authority, Delaware River Port Authority, Delaware Turnpike Administration, Maine Turnpike Authority, Maryland Transportation Authority, New Jersey Highway Authority, New York State Thruway, Pennsylvania Turnpike Commission, Port Authority of New York/ New Jersey, Triborough Bridge and Tunnel Authority); other related organizations (Amtrak, TRANSCOM, ATA Foundation, American Bus Association, National Private Truck Council, FHWA, FRA, USDOT Office of Intermodalism, AAA Foundation for Safety, IVHS America)

Project Contact: Hal Kassoff, Chairman of Executive Board, 410-333-1111; Matthew Edelman, Chairman of Steering Committee, 201-963-4033; Morey Rothenberg, Program Coordinator, I-95 NEC, 703-370-2411

Description

The listed agencies formed a partnership whose mission is to work cooperatively to improve mobility, safety, environmental quality, and the efficiency of interregional and intermodal travel of people and goods in the Northeast through real-time communication and operational management of the area's transportation system. The coalition will seek to establish an economically beneficial multimodal framework for early implementation of appropriate IVHS technology.

Status

Formed 2 years ago, the coalition has grown significantly in commitment and achievements. A 5-year business plan was developed consisting of 21 projects that no single agency could fund on its own or that are interregional in nature and best accomplished by pooling resources. Ten first-year projects have $10.5 million in federally earmarked funding obligated, and 9 second-year projects are proposed.

Budget

In 1992 $500,000 was provided by FHWA discretionary funds for start-up and consultant contract to help develop the business plan. In 1993 $10.5 million was earmarked by Congress for first-year projects. For 1994 we proposed a $12.5 million program, were earmarked $1 million by Congress, and have requested additional discretionary funding from FHWA.

Schedule

Five-year business plan, updated annually.

Major Needs and Problem Definition

The Northeast Corridor is arguably the most complex and burdened transportation network in the United States. More than 25 organizations in the Northeast Corridor are responsible for Interstate highways and major toll roads. To coordinate transportation service across jurisdictional lines, the major transportation agencies in the Northeast have banded together to form the I-95 Corridor Coalition.

Major Issues and Concerns

The mission is to work cooperatively to improve mobility, safety, environmental quality, and the efficiency of interregional and intermodal travel of people and goods in the Northeast through real-time communication and operational management of the area's transportation system. In doing so, the coalition will seek to establish an economically beneficial multimodal framework for early implementation of appropriate IVHS technology.

Determinants of Success or Failure

Member support and funding availability.

Environmental Issues

Reduction in delay and improved operations on a corridorwide basis will have positive environmental impacts.

Community and Public Outreach

Only outreach at this stage is to private industry to try and foster public/private partnerships in achieving our stated mission.

Economic Impact Analysis

Although quantitative data are not available, it is hypothesized that by improving corridorwide transportation operation we can expand what is already the nation's major industrial base in the Northeast.

Technology

Very broad, including the implementation of a corridorwide information exchange system, evaluation of traveler information and surveillance technology, and evaluation of CVO IVHS activities.

Lessons Learned

Many advantages to partnering among public agencies (technology transfer, coordinated operation, common traveler information messages, etc). Many more lessons to be learned, and partnership must be maintained.

Innovative Aspects

A partnership among more than 25 public agencies able to work together and make progress toward a common goal, with nothing more than improving service to our customers as the primary motivator.

Public-Private Initiatives in Transportation Opportunities for Intermodal Facility Development

Lead Agency: Washington State Department of Transportation

Project Contact: Jerry Ellis, Director, or Rhonda Brooks, Economic Development, 206-705-7020

Description

In 1993 the Washington State legislature unanimously approved an innovative program: Public-Private Initiatives in Transportation. This new law tests the feasibility of privately financed transportation capital improvements. The law directs the Washington State Department of Transportation (WSDOT) to solicit proposals from the private sector to plan, design, finance, build, and operate any transportation-capital related improvement in the state, including intermodal facilities. A key feature of the program is that the projects are identified by the private sector and then proposed to WSDOT. The state transportation secretary is given the authority to select up to six projects and negotiate individual agreements for each one. Businesses may impose user fees and tolls to recover some or all of the costs of their investments. Public funding, authorities, and resources are allowed to be used in conjunction with the selected projects.

Status

In January 1994 almost 400 individuals and organizations requested RFPs. The Washington State Transportation Commission approved six proposals to advance into agreement negoti-

ations. The six proposals represent more than $2 billion in transportation improvements. It is estimated that $25 million would be needed in state funds to implement these projects. Private equity, investments, and revenue generated from user tolls, fares, and fees could provide much of the financing. In 1994 a $25 million bond authorization was approved by the state legislature, and a revolving fund was established to provide loans and state contributions to the selected projects. Proposals that request federal funding require congressional or federal program approval. Any local funds used in conjunction with the proposals require approval of the local jurisdiction.

The six proposed projects approved by the Transportation Commission are as follows:

- Park-and-ride capacity enhancement: Single-level parking decks at 23 King County park-and-ride lots for a total capacity of more than 16,000 spaces countywide. Total project cost is $68 million. Customers would pay an estimated $2 per day parking fee.
- State Route 18 improvements: Limited-access four-lane toll highway in King County. Automatic vehicle identification would allow drivers to be electronically billed for tolls without stopping. Total project cost is $256 million for Phase I and $220.4 million for Phase II.
- State Route 522 corridor improvements: A series of improvements to the transportation corridor between Woodinville and Monroe in Snohomish and King counties. A toll highway, a pilot pricing program, park-and-ride lots, and modernization are included. Total estimated cost for Phase I is $155 million.
- Puget Sound congestion pricing conversion of underused HOV lanes to fare lanes: Buses and carpools will continue to ride free. Gradual conversion of freeway lanes to fare lanes. Total estimated cost is $32.5 million for Phase I and $90 million for Phase II.
- Tacoma Narrows: A series of alternatives to reduce congestion on the Tacoma Narrows Bridge and State Route 16 and to complete HOV lanes on State Route 16. Double-decking of the bridge is estimated to cost $564 million, and demand management alternatives are estimated to cost $216 million.
- State Route 520/Evergreen Point Floating Bridge improvements: Improvements in Phase I include seismic upgrading, noise mitigation, and connection of existing freeway ramps with I-5 express lanes. Improvements in Phase II include HOV lanes in each direction, toll collection facilities (including automatic vehicle identification tolling), and the addition of lids and parks. Total estimated cost is $67.5 million for Phase I and $372 million for Phase II.

Budget

$800,000 in administration for 1993-1995. The combined total of proposed projects may exceed $1 billion.

Funding Sources

State transportation funds are provided for implementing the program. Funding sources for the specific projects will be primarily private; there is potential for some public funding participation.

Major Needs and Problem Definition

As transportation needs grow across the nation, public funding is shrinking, leaving a huge shortfall in providing for the mobility needs of the 21st century. In the last decade an industry has been created by businesses, financial institutions, and developers who are seeking to invest in transportation capital improvements. Government leaders who are faced with shrinking revenues and growing needs must examine project opportunities that might be provided with the help of this new industry.

Major Issues and Concerns

Several major issues must be examined when considering private financing of transportation capital facilities. They involve legal, financial, institutional, and regulatory matters unique to each state or jurisdiction. Whether this method of financing provides an avenue for intermodal facility development will depend on the climate that can be created for successful investment. Can the government create such a climate to attract private-sector investment? Will the government be able to leverage its limited funds to attract private investment?

Another major issue is the shift from traditional transportation funding, under which everybody pays for project financing that involves a user fee or toll. Will the public accept this departure from traditional funding of transportation facilities?

Transportation projects are typically defined by public agencies on the basis of public need. Projects involving private investment are market driven. Will new technology or development be created given this different focus? Will changes in travel behavior occur? Will there be efficiencies not previously detected?

Determinants of Success or Failure

The purpose of this program is to test the feasibility of privately financed transportation capital facilities in Washington State. WSDOT has developed a program evaluation design to analyze the outcomes of implementation. A number of topics were identified that involved both short- and long-term measures, including the following:

1. Have the projects been accepted by the communities?
2. Has the program been well received by the private development and financing community?
3. What are the economic impacts of the program?
4. Have the program and its projects supported the state's transportation, growth, and environmental policies?
5. What impacts has the program had on state and local governments?

Critical Analytical Evaluation Measures

Some of the evaluation measures that pertain to short- and long-term impacts are the project's characteristics, including the type of mode, markets served, technology, and effect on the local and regional transportation system; community reaction to and acceptance of the projects; amount of new private capital investment in transportation for the state; quantifiable economic opportunities for the state's businesses and people; achievement of state goals through projects such as improved air quality, energy efficiency, and reduced travel demand; and impact on state and local governments, such as financing and operations.

Community and Public Outreach

Community and public acceptance of a public-private transportation initiative is crucial from both the private developers' and the state's perspectives. In fact, in evaluating proposals under this program, 30 out of 100 points are assigned to community acceptance and public involvement activities. Project proponents are required to demonstrate evidence of support or opposition to the project. Given that private funding is involved, there is unlikely to be any interest in developing projects where strong public opposition would likely drag out the permitting and construction phases. WSDOT also recognizes that there will be heightened concern from the public that some transportation facilities are perceived as "free," whereas projects under this program may involve a user-pay funding scheme.

Economic Impact Analysis

The economic impact of the program and the specific projects will be a key element in program evaluation. Will public funding be leveraged to attract private dollars? Will the projects have a favorable economic impact on the affected communities by creating jobs and new business opportunities? Will the program create opportunities for private investment in transportation improvements, thus spurring new opportunities for other jurisdictions?

Public-Private Partnership

Having reduced many of the legal, regulatory, and administrative barriers to public-private partnerships, Washington State has forged ahead with an innovative program that provides a framework within which both parties benefit. A unique ingredient in developing this program has been the direct involvement of the private sector in creating the program and the procedures for evaluating and selecting the projects. The large number of firms, worldwide, requesting the RFP is another indication of the private-sector interest in transportation capital development.

Technology

It is anticipated that the private sector will bring new technology to proposed projects. Such technology may include AVI, WIM, computerized technology, and other transportation management systems.

Lessons Learned

The next test in this emerging industry of public-private initiatives in transportation will occur in Washington State. Therefore, it is important to examine the state's experience so that other jurisdictions can benefit.

Some of the lessons that may be learned are as follows:

1. Did the legislative framework provide a climate conducive to private-sector investment and provide WSDOT with the flexibility for the agreements to be executed?
2. Did the state gain transportation development that might not otherwise have been provided in the same time frame?
3. Do economies or efficiencies result from the private sector playing the role of developer rather than the state?
4. Can intermodal facilities be financed in a public-private partnership arrangement given that the users entail a mixed market of transportation providers and users?

Reasons for Inclusion

The Washington State experience in implementing the Public-Private Initiatives Program will have profound impact on the future of the industry and on the ability of other states to attract private investment. There is no question that the private sector is ready for opportunities to invest in transportation capital development. The real question is whether the public sector is ready. By the time this conference is held, Washington State's program will have been through the first round of proposal solicitation and project selection. Agreement negotiations will likely be under way during the time of the conference. The lessons learned from this process will be informative to other transportation professionals from other states, who may

also be seeking innovative ways to obtain financing, given shrinking public resources. If an intermodal facility is selected in this process, it could pioneer the way of future development in our nation. If there are no intermodal facilities proposed or selected, perhaps there will be some interesting reasons why they are not.

Innovative Aspects

Washington is the only state to have authorized a public-private program that includes facilities other than toll roads. Intermodal facilities are important elements in moving people and products, and they are included in the definition of eligible projects. State law is also the first to authorize public funding to be used in conjunction with privately financed transportation projects.

The parameters and flexibility inherent in the program include (*a*) an alternative procurement process outside of the traditional public works competitive bid requirements, (*b*) the ability of the private partner to set tolls and rates without interference from government as long as the maximum rate of return is not reached, (*c*) the ability of the state to use its assets and authorities to leverage private investment, and (*d*) the broad authority of the state to enter into unique franchise agreements for project development.

New Jersey Goods Movement Data Base

Lead Agency: New Jersey Department of Transportation, Bureau of Freight Services

Project Contact: New Jersey DOT: Ted Mathews, 609-530-8026; John Powers, 609-530-6594. DRI/McGraw-Hill: Steven Leven, 617-860-6783; Michael Sclar, 617-860-6128.

Description

The New Jersey Goods Movement Data Base is a comprehensive planning and analysis tool to support the identification and evaluation of freight flows and freight demand affecting New Jersey. The data base provides detailed county-level estimates of all freight flows covering both domestic and international corridors, including the identification of major intermodal seaports and airports. The data base has been delivered in a powerful PC-based information management software system and includes facilities for reporting, graphing, and mapping.

Status

Data base delivered to NJDOT in January 1994.

Budget

$150,000.

Funding Sources

Agency funding.

Schedule

Project commenced in late July 1993. Project analysis took approximately 6 months.

Major Needs and Problem Definition

Aware that New Jersey is one of the largest freight markets in the United States and that freight is one of the leading industries, NJDOT planners and policy makers had no current estimate of freight flows affecting New Jersey. The Goods Movement Data Base would be used to support existing corridor capacity evaluations and the planning requirements of ISTEA.

Major Issues and Concerns

There were many significant technical and information hurdles to overcome, including the lack of current interregional truck flow information, systematic mappings between different commodity classifications (SIC, STCC, SITC), and the identification of a software and data structure capable of managing millions of cells of information.

Determinants of Success or Failure

This will be measured by the usefulness of the data base system to support ongoing and special planning requirements over the coming months and years.

Critical Analytical Evaluation Measures

Economic modeling and primary research techniques were used in data base development.

Environmental Issues

This information can be readily merged with data on emissions and environmental impacts to identify potential problems or conflict areas.

Economic Impact Analysis

Because this freight flow information is linked to economic variables and indicators, it can be easily incorporated as part of a policy model to support the analysis of economic impacts.

Technology

The data base can be used to identify critical corridors and potential bottlenecks as part of the ISTEA intermodal management system. This identification can aid in deployment decisions for technology such as IVHS or automated toll identification systems.

Lessons Learned

There is a need to establish data collection and data management efforts to maintain and update this information on a more frequent basis.

Reasons for Inclusion

States and MPOs will benefit from a greater understanding of the capabilities to develop estimates of current and projected freight movements. The New Jersey case study can demonstrate how this information can be used to support statewide and metropolitan intermodal plans and management systems.

Innovative Aspects

The PC-based information management system provides policy makers and planners with immediate access to information to support improved analysis and decision making. As a result, limited agency resources can be focused on analysis rather than data collection or information retrieval.

Maintaining a Viable Niche Port

Lead Agency: Port of Hueneme, Hueneme, California

Description

The focus of the case study was on the intermodal aspects of a niche port, application of technology to improve productivity and throughput, and future trends of the niche port in world trade and freight movements. The intent is to make transportation planners, MPO decision makers, and policy makers aware of the pressures on a small port in today's intermodal systems. Using the Port of Hueneme as a case study demonstrated the intermodal role of the niche port in regional economic development activities.

Reasons for Inclusion

In the January 1993 *Landside Access to U.S. Ports,* it was suggested that as the load center ports reach a certain level of saturation over the next 20 to 30 years, other lesser-used ports, such as San Diego, may emerge as important parts of the national intermodal system. It is believed that the lesser-used ports need to be encouraged to modernize. By encouraging this type of development, we are ensuring their availability for future decades.

In the 1990s and into the next century, the handling of waterborne commerce will not be confined to historical urban waterfront and large port load centers. Regional transportation planning efforts have to look beyond the immediate needs of the shipping industry at the load centers and into the long-term requirements over the next two to three decades.

Whereas millions of dollars will be spent by public port authorities to gain the status of a major load center, others will need to invest in the movement of specialty cargoes (e.g., automobiles, pelletized cargo) that are not containerized and that require intermodal transportation corridors. The case study will focus on the partnership between Sunkist Growers, Inc., Cool Carriers, and the Port of Hueneme for the development of a state-of-the-art refrigerated terminal to handle citrus exports and the partnership with BMW Motors of America in developing a vehicle preparation center close to the port.

The emergence of niche ports in the national transportation system will assist in fostering new technological advances in marine terminal productivity and intermodal transportation. The case study focused on how the Port of Hueneme uses planning technologies and will discuss future concepts.

Finally, the case study will provide the conference participants an opportunity to see how the strategies being used in resolving access problems at major load centers are applicable to regions that serve the emerging niche ports.

The Iron Highway: Effects on Intermodal Terminal Design and Operations

Lead Agency: CSX Intermodal

Presenters: The presentation and background paper were developed by David R. McKenzie, Parsons Brinkerhoff, and Thomas H. Engle, Integrated Rail Motive Systems (formerly with New York Air Brake) and reflect their opinions and not those of CSX Intermodal. The Iron Highway™ is under research and development by CSX Intermodal. Information on this advanced technology is available from the Business Development Office, CSX Intermodal, Centerpointe, 200 Intermodal Circle, Hunt Valley, Maryland 21030.

Description

The Iron Highway (I-H) is a promising new rail intermodal system being developed by the New York Air Brake unit of New York Brake Corporation and CSX Intermodal. Besides serving the long-haul trailer intermodal market, I-H will create new opportunities for railroads in the short-haul (300 to 700 mi) freight market, now almost exclusively the domain of the highway mode. Penetration of this market depends on the railroad's ability to reduce or eliminate drayage, which is a direct result of terminal location and design. This presentation addresses the intermodal terminal design, operational, and location requirements needed for I-H to achieve this market penetration and how I-H terminal operations can be integrated with the railroad's other intermodal services.

I-H combines an innovative rail vehicle technology with a thoroughly updated old technique—circus loading. The basic unit of the I-H is a 1,120-ft-long, self-propelled, bidirectional "element" with a split-ramp loader at its center and control cabs at either end. The element has a continuous flat deck made up of short, articulated platforms with no bridge plates or discontinuities that would hinder roll-on/roll-off loading. The control cabs house the propulsion engines and are equipped with transit-type couplers. The couplers automatically connect air and electrical systems and permit remote-controlled coupling of up to five elements into trains that are operable in MU from a single station.

An element can be thought of as two half-elements, each facing in opposite directions and connected back-to-back by the split ramp. Each short platform has a single pair of wheels supporting an articulation at one end and rests on the articulation of the platform ahead. The power from the two propulsion engines in each cab is transmitted to the first five axles on each end of the element. Operation of the element is controlled through a trainlined computer system that commands propulsion, brakes, and couplers, while logging maintenance data.

The loader is, in reality, two ramps, each articulated to a half-element. When the ramps are pushed together using the motive power of one of the half-elements, they interleave, with one atop the other. They are held together by special couplings that automatically connect all air and electrical circuits. When separated, each ramp's apron is supported a fraction of an inch above the rails by small wheels, allowing trailers to be driven easily onto the deck while providing guidance along the rails to permit the splitting and recoupling operation. The trainlined control system is arranged to permit these operations to be controlled by an operator located on the ground at the split ramp.

Standard highway trailers ranging in length from 28 to 57 ft can be quickly loaded onto the deck by a single operator using a hostler tractor. No ground personnel are required, and the hostler operator never has to leave the tractor. A movable pull-up hitch on each platform can be adjusted to accommodate different trailer lengths. An element can carry twenty 53-ft trailers or a greater number of shorter ones.

I-H and the Short-Haul Freight Market

In 1990 motor carriers hauled 2.6 billion tons of freight in the U.S. intercity market. To move this volume, the trucking industry used 2,200,000 trailers, of which only 145,000 were liftable railroad z-vans. The average length of haul was only 250 mi for the intercity truckload carrier and only 556 mi for the intercity less-than-truckload carrier. This represents an immense market in which rail-intermodal services cannot effectively compete—timewise or costwise—using current intermodal technologies. I-H provides an opportunity for railroads to compete successfully in this market by taking advantage of its inherent low labor cost, flexibility, and rapid performance, all of which are particularly beneficial in the terminal operations area. These features are evident in the assembly of trains, inspection of mechanical systems, fast, single-person loading and unloading, and the absolute minimum fixed plant.

The latter feature means that unlike "conventional" rail-intermodal terminals, I-H terminals do not have to be located at a small number of major hubs (usually in congested intercity areas) where a great number of trailers are concentrated from a large dray radius. Instead, I-H terminals can easily be established wherever they will most conveniently serve the customer. With a minimal investment, terminals can be built anywhere along a rail line with room for a siding and convenient highway access. From a financial investment perspective, all that is needed is enough business volume to support 20 or so trailers at a time, and not necessarily every day. Such business would usually originate at a truck line's terminal or a major manufacturer, where a concentration of trailers destined for a given geographic area exists today.

With its flexibility in siting terminals, I-H can

- Minimize the truck haul, which means not only lower drayage costs but also better overall service and less congestion and air pollution;
- Eliminate the need to provide storage space for trailers, thus reducing security costs and fixed plant requirements;
- Allow full performance intermodal service to be offered for seasonal loadings, such as agricultural and highly cyclical commodities;
- Provide the military with a rapid deployment system for much of its mobile equipment, permitting movement directly to destinations without regard to local highway traffic delays; and
- Provide fast emergency relief to areas where normal highway traffic has been disrupted because of a natural disaster.

I-H Intermodal Terminal Design Requirements

Terminal design requirements for the I-H are minimal. No mechanized lift equipment is needed unless operators desire to haul containers without chassis. All that is necessary is a rail siding at least 1,375 ft long, with a surfaced area near its center that is approximately 250 ft long by 25 ft wide and is level to top of rail to allow enough room to maneuver the trailers on and off the deck. In fact, the only preparations necessary to test the I-H operation at the AAR Test Track in Pueblo, Colorado, was to spread 150 yd^3 of gravel to the top of rail along 250 ft of existing track.

Because I-H services can be quick turnaround operations characterized by prearranged and scheduled pickup or drop-off of trailers, there is no inherent requirement for extended trailer storage at the terminals. Consequently, space, security, and staffing needs at terminals can be kept to a minimum, preferably zero. Furthermore, since the cost of establishing an I-H terminal will be very small, the break-even traffic volume needed to support it is almost insignificant, and the direct train-related costs become almost the only costs of the operation.

The I-H technology not only provides railroads with a way to compete successfully in the huge short-haul market, but can even provide added flexibility and cost savings to their longer trailer intermodal business. The key to achieving these benefits, however, is a recognition that because the short-haul market is both time- and cost-sensitive, it will require a commitment to manage the business to take advantage of the I-H technology's greatly reduced capital cost and labor requirements and to provide the timely service that the market requires.

SESSION 6
NEW DIRECTIONS, NEW PARTNERSHIPS

Session Summary

This session focused on examples of successful intermodal projects and the factors that led to their success. In each case the project used innovative approaches to financing and project development. In addition, consideration of these projects leads to a broader perspective on the benefits associated with intermodal projects.

The Auburn, Maine, intermodal terminal project will reduce the 24 million truck vehicle miles traveled because of the diversion of freight to rail. Similar diversion benefits were found in the Santa Teresa Freight Facility and discussed in the presentation on the expanded role for the maritime system. Enhanced intermodal traffic flows were expected to provide economic benefits to the surrounding community, improving the economic competitiveness of the state.

The presentations indicate that a systems perspective is needed to take full advantage of project improvements. The Auburn project was designed to provide a competitive alternative for freight movement from the eastern seaboard to Chicago. Although the terminal improvements made in Maine were critical to achieving this objective, the key problem was getting doublestack container clearance through a rail tunnel near Detroit. Thus the analysis needs to include the total-trip perspective.

In summary, these presentations focused on factors for successful project implementation. Success depends on creative thinking, a broad perspective on system benefits and linkages, and the building of the broad-based coalitions necessary for effective project implementation.

Case Studies

Fort Devens Intermodal Freight Facility and Intermodal Transfer Center

Lead Agency: Springfield Terminal Railway, Massachusetts Land Bank, and Massachusetts Executive Office of Transportation and Construction

Project Contact: John Robinson, Massachusetts Executive Office of Transportation, Boston, Massachusetts, 617-973-7221

Description

Development of a new intermodal facility, inland port, and warehouse distribution/transload facility on an active but almost closed Army installation. The project interfaces with other long-term economic plans for the Army post and surrounding region.

Fort Devens is a 4,500-acre Department of Defense installation in Ayer, Massachusetts. The closing of the post means the loss of 9,000 jobs in the region and severely affects the surrounding towns. This inland port and distribution center begins the creation of primary and secondary employment opportunities. Unique to its development is the issue of leasing U.S. Army property to operate a private-sector intermodal facility on an active military post. The project is dedicated to creating a full-service domestic and international intermodal facility and making a full-fledged effort to work with surrounding towns, the army, state transportation, and appointed installation closure officials to mitigate the impacts of closure.

Some of the features of the project are as follows:

- Changes to physical plant: Some modifications will be made to the warehouse, for example, insulated divisions between refrigerated transfer dock and the main warehouse.
- Planned growth: Expansion of services for intermodal bulk transfer of food products and other ways to complement industrial development at the Army post are being examined.

- Partnering with Fort Devens Reuse Marketing: Some 100 companies, among them a paper conversion plant that operates oversize equipment, have expressed interest in coming to Fort Devens. Their transportation needs are being programmed into the intermodal center's improvements planning.
- New contracts: The facility now shares the Ford automobile contract with Conrail. This involves an automobile transload facility from rail to truck.
- Room to grow: The intermodal center generates a modest amount of truck traffic, about 75 vehicles per day. The environmental threshold associated with truck traffic generation is set at 450 trips per day, easily accommodating growth.

Status

The state and railroad signed a lease with the Army in April 1993, initiating an investment of some $2,000,000 in private capital. Base reuse planning is advancing with the creation of a Devens Enterprise Commission. Work is under way to open key rail corridors to doublestack traffic to the west and between Devens and the Port of Boston.

Budget

Intermodal facility is funded solely with private investment.

Funding Sources

Private railroad funds.

Schedule

Intermodal facility is operational. Base closure is ongoing through 1994, with final closure scheduled for late 1995.

Major Needs and Problem Definition

Because it met a need to encourage and enhance competition in both domestic and international intermodal freight traffic/services, the project received state support. An associated problem was locating the intermodal facility on an active Army post. In addition, the intermodal facility required approvals of various federal, state, and local agencies, as well as environmental permitting.

Major Issues and Concerns

Facilities that previously had no intermodal competition have opposed development of these services and, in particular, have fought the development of an associated state doublestack clearance program into the Port of Boston. Also, Army leases cannot exceed 1 year, hindering the attraction of industrial development before closure of the installation.

Determinants of Success or Failure

Short-term success will be determined by the growth of intermodal traffic through the new facility. Long-term success will be determined by the acquisition of new international trade

opportunities for the industries of Massachusetts, additional commerce through the port, and the attraction of new industries to replace what is being lost regionally by the withdrawal of the Army.

Critical Analytical Evaluation Measures

Specific analytical tools will include the measurement of traffic through the Port of Boston and the Devens facility. Also measured will be the long-term impact that investments have on primary and secondary job growth.

Environmental Issues

The project required federal and state environmental reviews that focused on the protection of sensitive environmental areas, such as a major aquifer located nearby. Additional coordination with environmental cleanup planning associated with the installation closure was required. Estimates were made on the possible air quality benefits associated with a transfer of long-haul truck freight to rail.

Community and Public Outreach

This part of the project was immense, and the developers worked closely with joint boards of selectmen, the Fort Devens Redevelopment Board, State Land Bank, and many local, regional, and state planning agencies. This involvement led to a public-private partnership in development of the intermodal facility. The railroad and state agencies also participated in public workshops, which included local citizens, planning agencies, and consultants who focused on building a consensus for the creation of a Fort Devens land use plan.

Economic Impact Analysis

Studies to date clearly indicate a sustained growth in intermodal traffic. Accommodating continued growth requires public and private analysis of infrastructure investments, such as doublestack clearance. This analysis is ongoing and will increase in intensity when the base closure is completed and land is made available for development.

Public-Private Partnership

This theme has flowed through the entire program and reinforces the goal of the state administration to promote private investment.

Security and Safety

This facility is fully secured and patrolled by railroad and military police.

Technology

Today the intermodal facility uses state-of-the-art singlestack spine cars. As clearances are made available, modern doublestack cars will serve the facility. The Springfield terminal system is fully integrated into the national railway network and provides competitive service in the Boston to Chicago corridor.

Lessons Learned

(*a*) A model process for creating partnerships between private-sector investors and local, state, and federal agencies collectively responding to the many concerns (and opportunities) raised by military installation closures. (*b*) How this type of public-private partnership nurtures a positive climate for long-term industrial development. (*c*) Finally, it will provide data on long-term job growth for a region developing a similar facility under similar circumstances.

Reasons for Inclusion

The lease between the railroad and the Army was the first to be signed between a private company and the Army for the operation of a facility on an active military installation. We believe this remains the only such lease to date to be signed. This precedent-setting project depicts opportunities in the intermodal transportation of freight that are found within the infrastructure of a local economy facing the loss of a major military installation.

Auburn Intermodal Freight Terminal, Maine

Lead Agency: Maine Department of Transportation

Project Contacts: Paul Minor, Director of Planning, Maine DOT, 207-287-3131; Frank Harder, Intermodal Management, Inc., 215-557-2140

Description

The project includes design and construction of an intermodal freight terminal to be served by St. Lawrence and Atlantic Railroad. The associated freight rail intermodal service will provide Maine shippers with low-cost access to world markets through high-quality access to the North American intermodal rail freight network.

Status

Project is in the final design stage.

Budget

$2.5 million.

Funding Sources

80 percent of the funding is from ISTEA sources under the CMAQ provisions; 20 percent is from the city of Auburn.

Schedule

Construction will commence this spring. Operations will begin in summer 1994.

Major Needs and Problem Definition

Southeastern Maine is an air quality nonattainment area. Air quality can be improved by reducing vehicle miles traveled by substituting rail intermodal line-haul services. Currently no rail intermodal service exists in the state.

Major Issues and Concerns

The key to establishing high-quality rail intermodal service is the development of an effective private-public partnership between the state, city, short-line rail carrier, and Class I rail carrier (CN North America). This partnership has been active and will provide not only the terminal facility but also the commercial commitment required to develop this new service.

With respect to the site development, care was taken to ensure that environmental impacts (primarily wetlands impacts) were minimized. This was accomplished through proper site selection and sensitive design strategies.

Determinant of Success or Failure

The operation must be financially viable in the long term. The project should also stimulate growth in the distribution industry in the region as Auburn becomes a regional distribution hub.

Critical Analytical Evaluation Measures

Air quality in the region. Volume of traffic through the facility. Number of additional business ventures stimulated by the development of the intermodal terminal facility.

Environmental Issues

The air quality impacts of the project are the positive aspect of the project. The water quality impacts are negative but have been minimized.

Community and Public Outreach

The public-private partnership to establish this service formed a project team to accomplish the development. In addition, Auburn's planning/permitting process involved public meetings.

Economic Impact Analysis

The project has not yet been completed.

Public-Private Partnership

The public-sector agencies, FHWA, MDOT, and the City of Auburn, are providing the capital funding for the fixed facility. The SLR will lease the facility from the city. The SLR is also providing the terminal equipment and other working capital to fund the start of the terminal operation and intermodal service. Similarly, CN North America is providing additional working capital as well as the freight cars and intermodal containers for the service. SLR and CN are jointly marketing the service.

Technology

This facility is being developed with off-the-shelf equipment and design concepts.

Lessons Learned

The project provides a model for the development of intermodal freight service and the associated terminal by a public-private partnership.

Reasons for Inclusion

This is the first such project in the nation to take advantage of ISTEA funding. It is also an effective example of a successful private-public partnership.

Innovative Aspects

The innovative portion of this project relates funding process and positive environmental impacts.

Maritime System of the Americas

Lead Agency: U.S. Department of Transportation, Maritime Administration, and Louisiana State University's National Ports and Waterways Institute

Project Contacts: Anatoly Hochstein, Director, Louisiana State University's National Ports and Waterways Institute, 1300 N. 17th Street, Suite 320, Rosslyn, Virginia 22209, 703-276–7101 (fax 703-276–7102); Doris Bautch, Maritime Administration, 202-366-4357

Description

The Maritime System of the Americas includes the east coast of Mexico, the north coast of South America, the Gulf of Mexico, the Mississippi River, the Great Lakes, and the St. Lawrence Waterway.

The research program explores opportunities presented to the maritime mode by rapidly increasing trade and transportation demand in the NAFTA region. The program addresses economic and technological trends to define market share for water transportation. The options involved are all water mode with the introduction of river/ocean vessels and intermodal operation, including rail/barge ferries, trailers on barge, and transshipment to short sea and conventional vessels.

Status

The program has been developed in phases. The first phase, dealing with economic, operational, and technological aspects of river/ocean vessels with an emphasis on southern routes, was completed in November 1993. The second phase, dealing with intermodal operation (rail/truck/water), also with an emphasis on southern routes, was completed in October 1994. Reports are available at the NTIS. The next phase is in progress, including an analysis of northern routes and regional meetings with the industry.

Budget

Total cost of all phases is $250,000 federal funds and $100,000 as cost-sharing by the industry.

Funding Sources

U.S. Maritime Administration complemented by cost-sharing from several U.S. ports and shipping lines.

Schedule

Program began in 1992 and is expected to be completed in November 1995.

Major Needs and Problem Definition

So far the water mode between the United States, Canada, and Mexico has mostly been involved in bulk cargo transport. Restructuring of the trade opens windows of opportunity for water transportation to increase its market share and attract more general cargo. Unlike land border crossings, the maritime ports currently possess sufficient capacity to immediately accommodate increases in demand. The Maritime System of the Americas also provides opportunities to use innovative intermodal technologies such as river/ocean vessels, ferries, and short sea barges/vessels to service specific cargo types and hinterland areas.

Major Issues and Concerns

Market structure, comparative analysis of different modes of transportation, new maritime technologies, intermodal transshipments, service of areas with small volume of traffic.

Determinants of Success or Failure

Following recommendations of the first phase of the program, actual services were attempted and more are being considered. The U.S. shipyards have adapted results of the analyses to develop vessel designs suitable for new market requirements.

Critical Analytical Evaluation Measures

A computer model for traffic allocation by modes of transportation has been developed and exercised.

Environmental Issues

No apparent impact.

Community and Public Outreach

The program is supported by an industry advisory group. International conferences were held in March 1993 in New Orleans and in July 1994 in Veracruz, Mexico. Five regional meet-

ings are being planned during April and May 1995 to develop a plan of action by regional public and private interests involved in trade with Mexico.

Public-Private Partnership

The program has identified several undertakings that may be brought about by joint financing of the private and public sectors in the United States, Mexico, and Canada.

Technology

Assessment of new technology is a major component of the program. Several innovative vessel designs for all-water or intermodal operation (for river/ocean vessels, rail ferry, trailer ferry) are assessed and are being considered by the shipyards.

Lessons Learned

Impact of new market development and institutional changes on transportation technology and intermodal operation.

Reasons for Inclusion

Public-private cooperation. New market. Innovative transportation technologies. Intermodal operation.

Innovative Aspects

New vessel designs and operational methods and services that have not yet been developed in the United States.

Santa Teresa Intermodal Facility

Lead Agency: New Mexico State Highway and Transportation Department with Sandia National Laboratories. This project has been developed in cooperation with the Federal Highway Administration and a public-private steering committee.

Project Contacts: James Kelsey, Transportation Program Director, Sandia National Laboratories; Ron Forte, Deputy Secretary, New Mexico State Highway and Transportation Department

Description

This project represents a best practice intermodal case study. On the basis of independent analysis of the potential for a border crossing and an intermodal facility, public and private funds have been attracted. Funds have been secured to build an advanced border crossing at Santa Teresa, New Mexico. As part of this initiative, a related intermodal facility is proposed to be built. The name of the proposed intermodal development is the Paseo Del Norte Intermodal Facility.

The successful and ongoing analysis is conducted by Sandia National Laboratories. The analysis was guided by a steering committee, led by the New Mexico State Highway and

Transportation Department. The steering committee included diverse private and public groups with potential interest in the border crossing and intermodal facility.

The study demonstrated demand and opportunity for investment and advanced technology in innovative intermodal movement of people and goods. The study has resulted in border crossing development and planning for an intermodal facility.

Status

Initial study is complete, and follow-up marketing study is under way. After securing property rights, funding was committed for border crossing development and is being sought to build the intermodal facility.

Budget

The first phase study by Sandia National Laboratories was $300,000. The second phase study, under way, is $1.2 million.

Development

The border crossing has attracted $650,000 for land and $9 million for construction. The cost of the intermodal facility is now under study, and discussions are being held on public-private funding.

Funding Sources

The study and the border crossing are funded by the State of New Mexico and the Federal Highway Administration. The border crossing involves a variety of organizations including the General Services Administration. Public and private railroad investment is committed to the intermodal facility.

Schedule

The first study phase was completed in June 1993. The second study phase will be completed in December 1994. The property rights have been secured, and ground-breaking on the border crossing is anticipated in fall 1994.

Major Needs and Problem Definition

There is a need for a new Mexico/New Mexico border crossing and intermodal facility that will incorporate innovative technology to enhance the efficient and safe intermodal transfer of commodities.

Major Issues and Concerns

The marketing survey of specific shippers and their use of the intermodal facility will be conducted this year and is scheduled to be completed in December 1994. This study, administered by Sandia National Laboratories, will play a significant role in determining whether there will be an advanced intermodal facility in addition to the funded new border crossing.

Current indications are positive, but the analysis will be rigorous before a decision is made to proceed.

Determinants of Success or Failure

The determinant of success or failure for the border crossing was analysis of demand and capacity of existing border crossings. The determinant of success or failure for the Paseo Del Norte will be sufficient shipper interest in using the intermodal facility.

Critical Analytical Evaluation Measures

Commodity flow simulation and analysis have been conducted by Sandia National Laboratories. An extensive list of candidate technologies has been prepared for the proposed intermodal facility. The simulation will be used to indicate the costs and benefits of introducing candidate technologies to facilitate intermodal transfer.

Environmental Issues

Environmental analyses of the border, intermodal facility, and area development are being cooperatively conducted.

Community and Public Outreach

Public hearings are being held to review the study findings and proposed development.

Economic Impact Analysis

Economic impact is a major component of the study. This includes the role of the facility in commodity movement, the potential for person movement, and the costs and benefits of introducing advanced technologies into facility design and operation.

Public-Private Partnerships

A steering committee provides guidance to Sandia National Laboratories in the analysis of the Paseo Del Norte border crossing and intermodal facility. The steering committee has representation from the rail and trucking industries and local, regional, state, and federal governments.

Security and Safety

Security and safety concerns are addressed in candidate technologies for cross-border intermodal transfer.

Technology

An extensive list of candidate technologies has been prepared. These technologies have the potential to improve the efficiency of intermodal transfer. They will be simulated individually

and interactively to indicate the technology contribution to intermodal facility operation. The simulation will be used to identify benefits and costs of alternative technological solutions in the proposed Paseo Del Norte Intermodal Facility.

Lessons Learned

Independent analysis can be used to attract public and private support to build a border crossing. Analytical procedures can be used to assess the impact of an advanced intermodal facility.

Reasons for Inclusion

The Paseo Del Norte project is a major new border crossing moving forward in response to trade opportunities provided by NAFTA. The project is an example of a U.S. Department of Energy national laboratory working closely with the U.S. Department of Transportation and a state transportation agency. The steering committee is an example of public-private partnership in guiding the assessment and development of border and intermodal facilities.

SESSION 7
PLANNING SERVICES AND TERMINALS FOR TRANSIT CUSTOMERS—AN INDUSTRY CROSS SECTION

Session Summary

The effectiveness of transit services is influenced by intermodal connections and transfers. This effect has not only been incorporated into the physical design of terminals but has also been included in the demand models that predict market share for transit services. Intermodalism and transit are intricately intertwined. The presentations in this session focused on the lessons learned from several intermodal transit projects and systems in the country. A central theme that ran throughout all these presentations was that a transit system, to be successful, had to consider intermodal connections in the physical design of the facilities, the guiding policies that influence investment decisions, and the operations strategies that influence system efficiency. An excellent example of this intermodal systems approach was described by a representative of MARTA, the transit agency in Atlanta. The intermodal connections in this transit system include automobile-rail, automobile-bus, pedestrian-bus, pedestrian-rail, air-rail, air-bus, and bicycle-rail. All these connections were guided by a policy and design of minimal barriers to effective connections.

Another theme was the importance of teamwork or partnerships in making the project happen. The Amtrak station projects in Emeryville, California, and Holland, Michigan, occurred because the numerous actors that needed to be involved were partners in developing a successful project. As noted by one presenter, the "energy" of the commercial space at the terminal combined with the customers or users of the terminal make a natural opportunity for effective collaboration between private- and public-sector groups. In several of the presentations, speakers emphasized the important role that developers played in catalyzing project implementation. The presentation on the Indianapolis transit system emphasized the need to bring the riders or customers into the strategic planning process for mobility management.

A final theme was the potentially significant economic development benefits that could be associated with terminals. The benefits range from commercial and retail sales that occur at a major station like Union Station in Washington, D.C., to the Holland, Michigan, Amtrak station, which is the focal point for new development aimed at revitalizing downtown.

Transit is fundamentally a set of services provided to targeted customer markets. The effectiveness of service provision is dependent on the skill in handling intermodal connections.

Case Studies

Transit System Development and Operations in Atlanta

Lead Agency: MARTA

Project Contact: Gerry Pachucki, Director of Planning, 404-848-5320

Description

The MARTA transit system has been designed from its initial concept to be based on strong intermodal connections and system considerations. Examples include bus-subway interfaces, park-and-ride lots, pedestrian access, joint development opportunities, connection to suburban transit services, ADA response, access to the airport, and cooperation with employers.

Status

Ongoing.

Funding Sources

Federal and local.

Schedule

Ongoing.

Major Needs and Problem Definition

Transportation mobility in Atlanta requires extensive transit services to be reliable. Given the size of the service market, this often means transfers to higher-capacity and high-speed services. These intermodal linkages, which have traditionally been bottlenecks in most systems, have become one of the successful defining characteristics of the MARTA system.

Major Issues and Concerns

Access to major activity centers and transportation hubs requires a comprehensive perspective on service provision. This means that key issues include modal interfaces, rethinking of service operations, terminal design, marketing, and linkage to growing suburbs.

Determinants of Success or Failure

Public and political support.

Critical Analytical Evaluation Measures

Ridership. Percent transfers. Usage of park-and-ride lots.

Environmental Issues

Effective intermodal transportation will provide incentives for SOV users to use transit. This could have air quality benefits. In addition, intermodal terminal designs need to be environmentally sensitive and acceptable to neighborhood groups.

Community and Public Outreach

Throughout its system development, MARTA has provided opportunities for public involvement.

Economic Impact Analysis

MARTA's economic impact on the Atlanta metropolitan area has been dramatic.

Public-Private Partnership

The business community has been a strong supporter of MARTA and works closely with MARTA officials to develop effective services and terminal designs.

Security and Safety

Safety is built into the MARTA system design.

Lessons Learned

Systemwide intermodal transportation works only when you pay attention to the linkage points through operations and design. Intermodal transportation facilities can also play an important role in the region's economy.

Reasons for Inclusion

The MARTA system represents a large transit system that has survived because of its strong intermodal characteristics. It illustrates these intermodal characteristics not only from the perspective of design but also from an overall philosophy toward service provision.

Innovative Aspects

Large-scale intermodal systems design. Intermodal access to airport. Intermodal service concepts. Linkage to urban development. Linkage to air quality. User market orientation.

Larkspur Ferry Terminal, Marin County, California

Lead Agency: Golden Gate Bridge, Highway and Transportation District, San Francisco, California

Project Contact: Gene P. Rexrode, Secretary of the District, Golden Gate Bridge, Highway and Transportation District, P.O. Box 9000, Presidio Station, San Francisco, California 94129-0601, 415-921-5858 (fax 415-923-2282)

Description

The district is a special district of the state of California, which operates and maintains the Golden Gate Bridge and provides bus and ferry public transit services between and within Marin, Sonoma, and San Francisco counties. The home port for the ferry transit services is the Larkspur Ferry Terminal, located on a 25-acre site in the city of Larkspur, in central Marin County. Approximately 1 million passengers per year pass through the intermodal terminal facilities for the 11.25 nautical mile ferry service between Larkspur and San Francisco.

Whereas most access to the terminal is accommodated by the parking area (capacity 1,150) and by the various forms of ridesharing, the district feeder bus system serves the surrounding residential communities. A recent passenger survey indicated the following travel modes to the terminal: 49 percent park vehicles at the terminal, 21 percent carpool or are dropped off, 21 percent use bus service, 7 percent walk, and 2 percent bicycle.

Status

Larkspur Ferry Terminal has been operational since December 1976, 15 years prior to ISTEA. A fleet of three ferries provides service to the San Francisco Ferry Terminal 362 days per year, with most frequent service during weekday commute periods.

Budget

The fiscal year 1993-1994 budget for the ferry transit division, including the operation and maintenance of four vessels and three terminals, provides for revenues of $5.3 million, expenses of $11.0 million, and patronage of 1.5 million.

Funding Sources

Golden Gate Bridge vehicular tolls provide the major operating subsidy, along with the fare box revenues generated by the district bus and ferry transit systems. Minor federal and state subventions provide other operating funding. Primary capital funding for development of the systems during the 1970s was provided by the Urban Mass Transportation Administration, along with local funding from Golden Gate Bridge vehicular tolls.

Major Needs and Problem Definition

As established in the 1969 report to the California State Legislature, to develop alternative modes of public mass transit to relieve the increasing vehicular traffic congestion on the Golden Gate Bridge and in the Golden Gate Corridor between San Francisco, Marin, and Sonoma counties.

Major Issues and Concerns

(*a*) Dredging and maintenance dredging of the 2-mi ferry channel from the bay to the terminal and disposal of dredge spoils. (*b*) Reduction of ferry wave wash on adjacent shorelines.

Public-Private Partnership

Adjacent district property leased to private bus operator providing scheduled daily service between Larkspur and the San Francisco International Airport.

Innovative Aspects

Use of bridge vehicular tolls to provide local capital funding and an operating subsidy for public mass transit systems serving the same corridor.

Conclusion

The Larkspur Ferry Terminal, following nearly 18 years as an intermodal transit facility, continues to serve the community as intended and provides opportunity for the expansion of such transit services.

Emeryville, California, Amtrak Station

Lead Agency: Emeryville Redevelopment Agency

Project Contact: Kofi Bonner, Director of Economic Development and Housing, 510-596-4350; Jeffrey Heller, Heller & Leake Architects, 415-247-1100

Description

After years languishing as a sleepy industrial hamlet tucked between Berkeley and Oakland, Emeryville has recently experienced a boom of new development. Located next to the highly congested I-80 corridor linking the Bay Area to the Central Valley, Emeryville's proximity to

local freeways and bridges has attracted major employers and hordes of regional commuters. The solution was a new Amtrak train station.

Emeryville has recently opened a new 10,000-ft Amtrak station at the crossroads of major bridges and freeways serving the San Francisco Bay Area. A free shuttle bus system links the train station to major local job sites and to the nearby Bay Area Rapid Transit system.

Status

The station was completed on time and on budget and was opened for passenger traffic in August 1993. The station is expected to serve 720,000 passengers per year by 2004.

Budget

$1.6 million for station construction; $5.9 million for land acquisition and infrastructure improvements.

Funding Sources

Wareham Development Corporation sold the land for the station and an adjacent parking lot to the Redevelopment Agency and paid $1.6 million to construct the station. In exchange the agency awarded Wareham air rights over the parking lot and granted exclusive negotiation rights on adjacent redevelopment parcels.

The agency issued $6.2 million in tax exempt bonds to pay for construction of the train platform, laying of spur tracks, construction of new access streets, and creation of the parking lot. The agency leases the station from Wareham Development. Amtrak subleases the station and parking lot from the agency for $300,000 up front and $60,000 per year for 25 years, after which Amtrak will own the station.

Schedule

The entire process took only 9 months–from January 1993 to opening day on August 13, 1993. The funding package took 3 months from concept to approval. The station opened for business just 6 months later.

Determinants of Success or Failure

Construction within budgetary constraints. Operational station in time to meet Amtrak's planning needs. Community support. Passenger demand. Increased use of feeder transportation due to strategic location near the Bay Bridge. Increased development activity in and around the station. Increased development capacity due to mass transit alternatives.

Environmental Issues

Selection of the station site was subject to the California Environmental Quality Act. The station was sited on a property without significant sensitive environmental characteristics, and no negative impacts were identified in a Negative Declaration prepared for the project.

Private-Public Partnership

The planning, siting, and design of the new Amtrak station involve the close cooperation and financial resources of the City of Emeryville, Amtrak, Wareham Development, and Heller & Leake Architects.

Security and Safety

The building's architecture was designed to promote public safety through the extensive use of glass and interior and exterior lighting. Security services are provided by the Emeryville Police Department, paid for in part by the additional property tax revenues generated by the development of the property.

Lessons Learned

Seek creative, cooperative public-private financing solutions. Incorporate all stakeholders early in decision-making process to promote public support. Smaller towns and edge cities can successfully serve as regional transit hubs. Quality architecture can promote public support for the project and encourage public usage of the station. Quality architecture does not require an expensive construction budget.

Louis and Helen Padnos Transportation Center, Holland, Michigan

Lead Agency: City of Holland, Michigan

Project Contact: Soren Wolff, City Manager, City of Holland, 270 River Avenue, Holland, Michigan 49423, 616-394-1310 (fax 616-394-4543)

Description

Featuring a painstaking restoration of the historic 1926 Pere Marquette Railway depot and situated in a parklike setting at the entrance to the community, the Louis and Helen Padnos Transportation Center now serves as the attractive and popular new "welcome center" to the community for Amtrak, intercity bus, charter bus, local transit, taxi, and highway travelers. The depot also houses the Holland Convention and Visitors' Bureau and is the headquarters for Tulip Time, Inc. The Holland Tulip Festival is the third most popular annual public attraction in the United States, following the Rose Bowl and Mardi Gras.

Status

Designed and constructed between 1989 and 1991, the renovation was completed and the facility officially opened in September 1991. Transportation, travel, and visitor/tourism activities have been conducted within the facility continuously since its opening.

Budget

Design and construction costs of $1.7 million.

Funding Sources

$1.1 million from the State of Michigan, Comprehensive Transportation Fund, and $0.6 million from local and private contributions.

Schedule

Design and construction completed in 1991. Facility fully operational since opening.

Major Needs and Problem Definition

The project transformed a decayed eyesore into a centralized and fully coordinated welcome center that presents a dramatic and active new community image to local residents, travelers, and visitors.

Major Issues and Concerns

The decayed depot presented a very negative first impression of the community for arriving Amtrak and highway visitors. The community lacked a central focal point to welcome travelers and to promote local attractions, and no intermodal coordination existed between bus, transit, taxi, and Amtrak services.

Determinants of Success or Failure

Dramatically enhanced community image and central tourism focal point for arriving visitors, including Amtrak, automobile, intercity and group charter bus, plus new connectivity opportunities between modes.

Critical Analytical Evaluation Measures

Trends in transportation use patterns are positive, with Amtrak ridership alone growing by 25 percent since the opening of the new station.

Environmental Issues

No negative environmental impacts occurred as a result of restoration efforts. The historic character of the station was retained and restored, which contributed to the enhancement of the surrounding parklike setting.

Community and Public Outreach

The project's success was achieved through direct and active citizen participation throughout the effort. Direct input was received from local historians, environmentalists, the Association of Railroad Passengers, and other civic groups or interested individuals.

Economic Impact Analysis

No formal evaluation has yet been completed to quantify the various economic benefits that are now being enjoyed by the community because of the project's success.

Public-Private Partnership

The construction and operation of the center have been made possible through a package of state and local public funding, private contributions from local interests, and facility use contributions from the public and private tenants of the facility.

Security and Safety

The Transportation Center is a city-owned facility, afforded the same security as all other municipal areas within the community. Since its opening in 1991, the rehabilitated facility has demonstrated success in providing an attractive, safe, and secure environment for travelers and visitors to the community.

Indianapolis Transit Effectiveness Program

Lead Agency: City of Indianapolis

Project Contact: Peter A. Bisbecos, Chief Counsel for Public Transit, Department of Capital Asset Management, City County Building, Suite 2360, 200 East Washington St., Indianapolis, Indiana 46204-3357, 317-327-3798

Description

The removal of barriers to competitively provided transit, encouraging creative transportation alternatives, includes the following:

1. Intensive public involvement in the recreation of our transit system: Representatives of the disabled community drafted the RFP for the first ADA paratransit competitive contract in 1992. Representatives also participated in the second contracting process in 1994. We also have a group of bus riders who are evaluating our strategic plan to rebuild transit and will shortly be making recommendations.
2. Deregulation of our local ground transportation ordinances: This included eliminating an artificial cap on the number of cabs licensed, changing the fixed fare to a maximum ceiling, allowing negotiation of fares and contract prices, and authorizing wheelchair cabs.
3. Moving as much publicly funded service as possible into the competitive arena: ADA paratransit has been contracted out. In the first year, 1993, service was doubled without increasing the budget. From 1993 through 1997, we anticipate saving between $5 million and $7 million because of competition. Considering that the total projected expenditure from 1993 through 1997 is $9,997,000, the savings is significant.
4. Creative application of our ridesharing program: We continue to promote ridesharing in the traditional way. However, we are also considering ways in which we can shorten the trips of those who will continue driving alone.
5. A community-based effort to coordinate social service transportation, which is currently fragmented by agency.

Status

This process is partially complete. ADA paratransit has been competitively contracted with substantial assistance of the disabled community. Local ground transportation deregulation is complete. We are coordinating social service transportation and sponsoring a citizen's group that is advising us on the implementation of our strategic plan for transit.

Budget

Most public money dedicated to transit goes to the bus company (roughly $21 million per year). Section 16 funds usually provide a number of vehicles yearly; the amount fluctuates. There is also considerable money in private not-for-profit transit, generally for individual social service agencies.

Funding Source

We consider the bus company to be our only transit budget in that the other sources listed are completely in the hands of others. The bus company is funded as follows: (*a*) federal operating and capital assistance; (*b*) a yearly grant from the state's Public Mass Transit Fund, which receives 76 percent of sales tax revenue; (*c*) a county property tax levied by the bus company; and (*d*) the fare box.

Schedule

Because of the political change in Congress the reform schedule will probably change. If regulations are relaxed, it could accelerate. If funds are cut substantially, it could be reduced.

Major Needs and Problem Definition

Transit in this city has suffered from a combination of inattention, protectionism, and a general lack of need. The city decentralized, but transit did not. Today we have the same radial system that existed 50 years ago. Consequently, the 2 percent of the population needing public transit have difficulty getting to work and doing other things they would like. Without changing the system, we cannot change transit to meet the needs of the customers.

Major Issues and Concerns

(*a*) Unmet need, with shrinking budgets. Furthermore, we can't raise taxes because that will cause erosion of our tax base. (*b*) No significant need for or general interest in transit due to an extraordinarily effective road system. (*c*) Many transit providers are insulated from competition due to state and federal law, which results in inefficient use of a shrinking subsidy.

Determinants of Success or Failure

(*a*) Providing the services required by the customer. (*b*) Elimination of legal barriers to the competitive process. (*c*) Increased efficiency in the use of subsidy.

Critical Analytical Evaluation Measures

There are two. First is customer satisfaction, which is subjective. We believe that we can determine that through extensive customer involvement in reform. Second is an evaluation of the efficiency with which the subsidy is being used. The paratransit statistics given indicate how this measure is being used.

Environmental Issues

This is not a factor. Indianapolis is rated as a marginal attainment area, and we have minimal congestion.

Community and Public Outreach

As has been suggested, community involvement is critical in this process. It will continue to be a primary strategy for achieving success.

Economic Impact Analysis

This must be considered on two levels. First, the bus company, even when reformed, will have minimal impact on our economy because only about 2 percent of our population ride the bus. Second, the deregulation of private ground transportation in Indianapolis has had a notable impact. Since cabs were deregulated in July 1994 we have seen 29 new cab companies with 47 new cabs on the street. We have also seen fares drop roughly 7 percent. In opening a market for small business we have had an immediate and positive impact.

Public-Private Partnership Involvement

(*a*) Cooperation with some providers in our deregulation efforts. (*b*) We are pursuing an unfunded downtown shuttle. One local provider is interested if promotional assistance from the city or related organizations is provided.

Lessons Learned

Reliance on the market through removal of artificial barriers to competition will result in superior service at lower cost if reasonable quality control is in place.

Reasons for Inclusion

Indianapolis is an automobile-friendly city, a marginal attainment area, with no way to increase transit revenue, and with little interest in transit except among transit-dependent people. Consequently, we must pursue market-based solutions that are attractive to our customers.

Innovative Aspects

Government-customer partnership in restructuring transit.

Innovative Approaches to Transit in Indianapolis

Lead Agency: City of Indianapolis

Project Contact: Peter A. Bisbecos, Chief Counsel for Public Transit, Department of Capital Asset Management, City County Building, Suite 2360, 200 East Washington St., Indianapolis, Indiana 46204-3357, 317-327-3798

Description

Providing transit is a real challenge in this city. We have no appreciable congestion problems, adequate inexpensive parking, and an average trip to work of roughly 18.6 min. We are a mar-

ginal attainment area for air quality purposes. Furthermore, like most major urban centers, we have seen a consistent reduction in bus ridership since the mid-1980s, while property tax rates, which support transit, have increased markedly. This is critical in that there are no land or water barriers between Indianapolis and our contiguous counties. One can drive from any of these counties to downtown Indianapolis within 40 min during rush hour. Frankly, we are in competition with these counties for residents and jobs. Mayor Goldsmith aggressively opposes property tax increases because he is concerned that increases would cause the erosion of our tax base. People in the real estate markets have recognized this and in one case purchased advertising on a bulletin board touting lower taxes in another county. It is clear that we cannot raise taxes. At the same time we have an aging bus fleet and a mature driver force. Whereas the bus company, which is a separate municipal corporation, is well managed, we believe that its cost may be reaching a critical level. While facing these financial constraints we have made a commitment to improve public transit. Consequently, we are working to maximize the use of every dollar, while working to attract private-sector transit providers.

Innovative Aspects

Public transit in Indianapolis has been questionable to inadequate for decades. Our mission is to improve the transit option in this city and to assist in compliance with the ADA.

Some of the efforts we have undertaken or anticipate undertaking in furtherance of this goal are as follows:

1. Our first effort was made in furtherance of ADA paratransit compliance. When Mayor Goldsmith took office in January 1992, the administration discovered that the paratransit system was delivering roughly 100 rides per day and that there were no significant efforts under way to formulate an ADA compliance plan. This department in cooperation with the bus company (Metro) formed a committee composed largely of people with disabilities. The committee held a series of public meetings and produced an RFP for the paratransit service. Metro published the committee's RFP, and nine proposals were received. The committee conducted interviews separately from Metro and made a nonbinding recommendation to the Metro board. The driver's union submitted a proposal. It had to reduce its hourly wage by 50 percent to be competitive and finished in the top four finalists. The contract was awarded to a local ambulance company. The result was that the number of rides per day increased from 100 to 224—without a cost increase. Whereas our joint efforts with members of the disabled community were difficult and initially filled with mistrust and conflict, it has become an excellent partnership, which has led to cooperation with riders in the disabled community in other projects.
2. As I explained previously, we are refocusing our ridesharing program. Whereas we will continue to offer traditional ridesharing services, response in an automobile-friendly city like Indianapolis will never be outstanding unless we add an element to the program that meets the needs of drivers. Our revised program will include a trip pattern survey, followed by an attempt to reduce the length of trips to and from work. For instance, if we discover that 50 people in a particular office building use the same dry cleaner, this information will create the opportunity to get the dry cleaner to pick up and deliver, shortening the trip home. However, I feel that the area with the greatest potential is day-care. Since we are just beginning work on this concept, we can give no more information at this time.
3. Recently an ordinance was introduced to our city-county council that would deregulate the cab industry. We have had involvement in that ordinance to the extent that we have advocated the authorization of wheelchair cabs and a rewrite of the jitney ordinance. The wheelchair cabs will create a medium-priced transit option for people who use wheelchairs. The jitney proposal requires that operators publish an origin and destination point and their schedule for departure and arrival, and they must also define a corridor. Their operation between the origin and destination is not dictated. They can run a fixed route or paratransit. Our intent is to allow as much creativity as possible.

4. We also have two community-based projects under way. One is an effort to coordinate transportation offered by local social service agencies. This group's membership includes interested social service providers, a rider, Metro, and the City. The other is an effort to determine where underemployment and unemployment exist and to connect the two areas with public transit. The group's membership includes employers, the chamber of commerce, an employment network, an urban planning staff from Indiana University, Purdue University at Indianapolis, a rider, Metro, and several people from the City, including economic development experts and staff from the MPO.

5. We have recently had an owner of a local limousine company and an owner of a local cab company express interest in providing separate unsubsidized downtown shuttle services. The only things asked of us are to help market this service and provide shuttle stops. We are attempting to determine how to meet their needs and address the concerns of the city on behalf of riders without regulating this service. We believe that the solution will maintain quality and encourage other operations with minimal government intervention.

6. In 1993 the city commissioned a strategic plan for the revision of public transit in Indianapolis, which was presented to Mayor Goldsmith in late January 1994. We are now in the process of creating a Riders' Advisory Council that will work closely with decision makers in remolding our current system. In years past transit decisions have been made without the input of riders. The result is an outdated system that does not serve the ridership as well as it might. This council is the first such broad effort in this city to actually make transit riders part of the decision-making process. Whereas this will create more work, our experience with the paratransit committee has convinced us that this will allow the production of a superior product that has community-based support.

All of these efforts have the potential to improve transit effectiveness and options without tax increases.

SESSION 8
AIRPORT ACCESS SOLUTIONS

Session Summary

Airports are a natural location for strong intermodal connections. By their nature, airports require passengers and freight to access facilities in a mode other than the airplane, thus creating great opportunities (and problems) for intermodal efficiencies. This session presented examples of good airport access in cities all over the world.

One of the themes in the presentation on access to airports in European cities, which was carried throughout the session, concerned the role of connections not just at a terminal but in the context of regional and national intermodal transportation systems. The European examples, in particular, showed how terminal design could enhance passenger and freight movement nationally. The New York/New Jersey regional airport access study illustrated this concept at a metropolitan scale. In both cases, the land- and airsides of the airports were being viewed as one part of an integrated plan.

Another aspect of this national/regional connections issue was how the design of the intermodal system needed to be guided by a much broader perspective than simply facility access to a terminal. The St. Louis presentation, for example, emphasized the importance of adopting a user perspective in providing numerous access services, including Greyhound bus, Amtrak, helicopter, light rail, taxi, public bus, limousine, and private automobile. In London, designers struggled with ways of providing access from a regional rail line to a new terminal in an area of difficult terrain and design constraints. The solution was to bring the terminal to the regional access point by constructing the terminal at the existing rail station. This required looking at airport access in a very different way.

Another theme developed in this session was the importance of market research in understanding the various customer markets that are relevant to airport terminal operations. The Boston and New York/New Jersey examples illustrated market-driven planning. In both cases, planners analyzed the users of the airport and their needs with regard to access. As one presenter noted, his organization used market surveys to "get into the heads of the customers to see what is necessary to change behavior."

The concept of partnerships was emphasized in the presentations primarily as a means of funding access improvements. In this context, several suggestions were made concerning the use of passenger facility charges, National Highway System funds, and Congestion Mitigation and Air Quality funds to support improvements to airport access.

Finally, this session provided the best evidence of economic and societal benefits associated with enhanced access to an intermodal facility such as an airport. The New York/New Jersey regional airport access study indicated that the benefits of improved access are increased regional competitiveness, reduced congestion and delays on the regional highway network, improved air quality, a strengthening of the regional transportation system, and enhanced opportunities for employment of underrepresented groups at the airports. The New York/New Jersey regional airports handle 72 million passengers annually and have 63,000 employees. It was estimated that the airports have a $25 billion impact on the regional economy, or 3 to 4 percent of the regional GNP. Poor access to the region's airports has been given as the second most important reason for firms leaving the region. The Port Authority of New York and New Jersey has undertaken a major study of improving airport access to preserve the critical economic linkages to the region.

Airports are a major generator of economic activity in most urban areas. Effective intermodal access to these sites is a critical element in maintaining this relationship.

Case Studies

METROLINK LIGHT RAIL TRANSIT STATION AT LAMBERT–ST. LOUIS INTERNATIONAL AIRPORT

Lead Agency: FTA, in cooperation with FAA, Lambert-St. Louis International Airport Authority, and the Bi-State Development Agency, the MetroLink operator.

Project Contact: Janice M. Titus, Aviation Planner, Airport Planning and Development, Lambert–St. Louis International Airport, 4610 North Lindbergh Boulevard, Bridgeton, Missouri 63044, 314-731-5707; John H. McCarthy, Sverdrup Civil Project Manager, 801 North 11th Street, St. Louis, Missouri 63101, 314-770-4415

Description

A light rail transit station tying directly into the Main Terminal at Lambert–St. Louis International Airport, connecting downtown St. Louis with the region's major air carrier airport, a 15-mi link. A second MetroLink station at the airport is being built as part of an approximately $65 million East Terminal expansion.

Status

The Main Terminal MetroLink station has been completed and is in use.

Budget

The Main Terminal station cost about $4 million and the East Terminal station will cost somewhat less. Construction of the MetroLink alignment in the airport area cost about $25 million. The full funding agreement project cost for MetroLink is $351 million.

Funding Sources

FTA dollars matched by a City of St. Louis local share, supplemented with FAA funds to accommodate particular airport needs. Legislation is currently pending in the Missouri Legislature that will enable a local sales tax vote to provide needed operating revenue.

Schedule

The East Terminal MetroLink station is scheduled to open in 1996.

Major Needs and Problem Definition

The need for the project is to get employees, traveling residents of St. Louis, tourists, and conventioneers to and from Lambert Airport. Bus interface and multiple park-and-ride lots feed employees and residents via MetroLink to and from the airport. MetroLink connects with multiple hotels, convention center facilities, entertainment venues, and tourist attractions, making St. Louis a more attractive and competitive convention and tourist destination.

Major Issues and Concerns

The major issue was finding an alignment and terminal station locations that would not preclude future options for enhancing airport landside access or limit airside activities. Major utilities also complicate right-of-way issues. A possible future MetroLink extension from the airport to the west presents additional airport-related concerns. Another issue is providing good signage and pedestrian access within the multiple-level airport terminal building leading to the MetroLink station.

Determinants of Success or Failure

Heavy patronage of the Main Terminal MetroLink station is the most effective measure of success.

Critical Analytical Evaluation Measures

Meeting all FAA airside clearance requirements for existing and possible future runway configurations is the most critical project criterion. A large electrical transmission line and a directional Interstate interchange required a creative MetroLink alignment to reach the airport.

Environmental Issues

A remote radio transmitter, multiple utilities, and a large cemetery were the primary issues affecting construction. MetroLink is intended to reduce automobile congestion at the airport, reducing air pollution. Also, aesthetics were a significant issue with MetroLink's extensive elevated structure, which was designed with a project-signature pier and distinctive emergency walk handrails influenced by Arts-in-Transit artists working in collaboration with design engineers and architects.

Community and Public Outreach

The development of MetroLink involved a full range of informational meetings, advisory committee meetings, public hearings, and so forth. Also, Citizens for Modern Transit, a local transit advocacy group, supported the project and worked to achieve project awareness.

Economic Impact Analysis

The airport MetroLink connection is programmed to make St. Louis a more attractive and competitive corporate headquarters site, convention city, and tourist destination.

Public-Private Partnership

Future possible pedestrian overpasses linking one or both of the airport stations to the south side of I-70 may involve partnership with the existing and expanded or new hotel and offices located south of I-70.

Security and Safety

Closed-circuit TV is used in the airport MetroLink station. Airport security personnel patrol the station.

Technology

State of the art. MetroLink has been designed using proven technology.

Lessons Learned

Early and continuing coordination of differing institutional requirements is necessary.

Reasons for Inclusion

This light rail transit airport station provides one of the best airport-to-downtown connections in the country.

Innovative Aspects

The light rail transit connection tying into the airport adjacent to its signature four-dome main terminal structure provides an exceptional modal interface.

Other Comments

The great success of MetroLink, contradicting its vocal opponents, argues for the success of the air–light rail interface, setting a standard for the rest of the country's major air carrier airports.

St. Louis Gateway Transportation Center, an Intermodal Passenger Facility

Lead Agency: FTA, in cooperation with FRA, FHWA, and FAA, granted planning and design funds to the East-West Gateway Coordinating Council (the St. Louis region's MPO), which contracted with the City of St. Louis Board of Public Service (BPS); BPS contracted with Sverdrup Civil, Inc., and 13 subconsultants.

Project Contact: John H. McCarthy, Sverdrup Civil Project Manager, 801 North 11th, St. Louis, Missouri 63101, 314-770-4415; Joseph K. Kuss, P.E., Deputy City Engineer, Board of Public Service, City of St. Louis, 305 City Hall, St. Louis, Missouri 63103, 314-622-3535

Description

The St. Louis multimodal project is a $25 million intermodal passenger transportation complex to be located on the southwest edge of downtown St. Louis. Proposed key components include Amtrak with future high-speed rail service to Chicago and other destinations, Greyhound bus, MetroLink (St. Louis' new light rail transit system), intracity express and local bus transfer, a heliport with future vertiport expansion capability, a satellite airline terminal with curbside baggage check-in, automobile parking, taxi service, car rental, bicycle interface, pedestrian linkage, and possible charter/tour bus connections and future commuter rail service.

Status

Phase I, planning, is under way.

Budget

$2.4 million for consultant services (planning study and design drawings/specifications). $25 million estimated construction cost.

Funding Sources

An FTA grant is funding the consultant services. Construction will be funded through multiple public (federal, state, and local) and private sources, including ISTEA, FTA, FAA, and FHWA sources, and so forth.

Schedule

The Phase I planning study provides for 210 days and the Phase II design program provides for 300 days plus review time. Construction will be phased with ground-breaking for the first phase of construction anticipated in federal fiscal year 1996.

Major Needs and Problem Definition

Both Amtrak and Greyhound are in "temporary" facilities, which they would like to replace. Amtrak left Union Station in 1978, and that venue has been converted to a festival market-

place with no room for Amtrak. Greyhound's downtown terminal was demolished in 1993 for a domed stadium convention center expansion. The Bi-State Development Agency would like to expand its MetroLink service and provide commuter rail service. Also, the City of St. Louis has determined a need to build a downtown heliport at the project site.

Major Issues and Concerns

The large number of project players and facility users complicates project consensus and implementation. Financial feasibility is clearly a major issue that has not yet been fully resolved.

Determinants of Success or Failure

The objective of the project is to facilitate modal choice and operational efficiency for both end users and the suppliers of these transportation services. Success is getting a project built that satisfies this objective.

Critical Analytical Evaluation Measures

Projecting facility usage and financial return are the project's key evaluation considerations.

Environmental Issues

Hazardous waste cleanup is a project cost. No opposition to the project exists. Located in a commercial/industrial area devoid of sensitive receptors, NIMBYs, and so forth.

Community and Public Outreach

A variety of measures will be used, including participation with Citizens for Modern Transit, the local transit advocacy group; a broadly based technical advisory committee; and so forth.

Economic Impact Analysis

This facility is a key piece in the city's continuing program to attract tourists and conventioneers. The project reaffirms downtown St. Louis as the heart of the region.

Public-Private Partnership

Multiple concessionaire opportunities are being explored for tenant spaces. One option is a concessionaire operator for the facility (e.g., Greyhound has expressed interest).

Security and Safety

Safety and security, as well as the perception of these factors, are very important in the proposed complex. Lighting, closed-circuit TV monitoring, and other security measures are a key design issue.

Technology

State of the art plus vertiport expansion and high-speed rail expansion potential.

Lessons Learned

Patience and persistence can pay off. The complexity of the institutional issues that define this project requires focused attention.

Reasons for Inclusion

This project offers an outstanding national role model for combining all inter- and intracity passenger modes in a new well-located facility, satisfying a broad range of users and project players.

Innovative Aspects

The airside component is unusual in a project of this type. A satellite airline facility with curbside baggage check-in for Lambert Airport plus a heliport on the edge of downtown combined with Amtrak and Greyhound is an exceptional package.

Other Comments

The complexity of this project is both its greatest asset and its greatest challenge. St. Louis is fighting to meet that challenge.

Air Passenger and Employee Vehicle Trip Reduction Strategies, Logan International Airport, Boston

Lead Agency: Massachusetts Port Authority (Massport)

Project Contact: Evelyn Addante and Diane Ricard, Project Managers, Ground Access, Unit 2150, 10 Park Plaza, Boston, Massachusetts 02116, 617-561-1646

Description

To contain traffic congestion and air quality impacts while accommodating future air passenger growth, Massport has undertaken a proactive and innovative market-based approach in its intermodal access program at Logan Airport. In three travel corridors that are serving the Boston region, Massport has initiated remote express bus service. Service options are being studied for the remaining areas that are underserved. Massport also runs a water shuttle and on-airport shuttle buses that connect to the regional rapid transit system. Massport disseminates information on ground access alternatives through a toll-free number for air passengers and through its ground access advertising program.

Massport also offers some incentives for airport employees to use HOV modes to commute to Logan Airport. An airportwide survey was conducted in 1990, and Massport is using the results to develop a comprehensive employee commute program.

Status

Some elements operational with ongoing improvements; other elements being studied.

Budget

Fiscal year 1994 operating budget (exclusive of Massport staff time):

Item	*Amount ($)*
Airport shuttle bus to terminals and rapid transit	460,000
Handicap van, on-airport shuttle	110,000
Water shuttle bus	430,000
South Shore remote bus	960,000
Western remote bus	1,280,000
Northwest remote bus	1,030,000
Advertising program	740,000
Toll-free information line	50,000
Total	5,060,000

Funding Sources

Some elements are funded exclusively by Massport, and others are funded jointly by Massport and the airlines.

Schedule

Ongoing programs, continuously enhanced.

Major Needs and Problem Definition

Manage traffic and curb congestion at Logan, reduce regional traffic impacts, control air quality impacts, accommodate air passenger growth with a containment of traffic impacts, and limit traffic impacts on neighboring local streets.

Major Issues and Concerns

Logan Airport is the fifth-busiest U.S. airport for passenger access via the regional transportation system. The airport, which is located about 2 mi from downtown Boston, is a major contributor to and recipient of traffic congestion in the Boston area. Most Logan traffic shares the roadways with vehicles destined for Boston. Exacerbating the problem is the limited access to the airport via two cross-harbor tunnels.

Because of the need to accommodate future air passenger growth within the existing airport boundaries and regional roadways, restrictions imposed by the Logan Airport parking freeze, and a responsibility to participate in reducing regional environmental impacts, it has become increasingly important to find ways to reduce the vehicle trip generation rates of the various Logan Airport user groups.

Determinants of Success or Failure

Passenger utilization of program elements, available funding.

Critical Analytical Evaluation Measures

Passenger and employee utilization, passenger surveys.

Environmental Issues

Each successful program element yields positive environmental impacts.

Community and Public Outreach

To date, the public has been receptive to all program elements. Completed comment cards on the remote bus services have resulted in improvements. Where applicable, environmental filings have been made. With regard to the Logan employee program, the goal is to get all employees involved in the planning stages.

Economic Impact Analysis

A mature bus service (4 to 5 years) covers its operating costs.

Public-Private Partnership

All bus services are contracted by Massport to private bus operators. The Airport Water Shuttle is operated by private interests. The airport's ground transportation from the dock is operated by Massport. In addition, one of the elements of the Logan employee program will be to form a transportation management association among all Logan Airport employers.

Security and Safety

Security and safety are taken into consideration when offering HOV alternatives. For example, Massport feels that without secured parking at the remote lots, air passengers would be reluctant to park their automobiles for the duration of their travel.

Lessons Learned

(*a*) Characteristics of a successful remote bus service. (*b*) A thorough understanding of air passenger market segments and mode choice through survey analysis and passenger comment cards. (*c*) An understanding of employee commute characteristics through survey analysis.

Reasons for Inclusion

Intermodal. Regional impacts. Comprehensive program.

Innovative Aspects

(*a*) Using market research to determine customer preferences, potential markets, and market penetration for new services. (*b*) Massport, rather than a private company, is initiating and funding remote bus services.

Other Comments

In the future, more airports will be focusing on ground access issues for some or all of the following reasons: to connect the airport to the regional transportation system, to manage traffic congestion, to minimize environmental impacts, to be a better neighbor, and to provide better services to air passengers (because the MPO is studying airport ground access in the context of ISTEA).

Airport Access Program

Lead Agency: Port Authority of New York and New Jersey

Project Contact: Geoffrey A. Fosbrook, P.E., Program Manager, Airport Access Program, Port Authority of New York and New Jersey, One World Trade Center, Suite 1973, New York, New York 10048

Description

The Airport Access Program involves the planning, environmental studies, design, and implementation of automated guideway transit connecting the three regional airports (LaGuardia, JFK International, and Newark International) with railroad, subway, and bus routes in the greater New York/New Jersey metropolitan area. The Newark International Airport connection will be a 1-mi extension of the existing on-airport monorail to connect with New Jersey Transit trains at a new rail station on the Northeast Corridor main line, providing direct access to points in central New Jersey and both Newark's and New York's Pennsylvania Stations. The new rail station will also be a transfer point from New Jersey Transit's proposed Newark-Elizabeth Rail Link connecting the downtown areas of those two key cities in the region.

In New York, the program involves a 20-mi-long automated guideway transit system that will start in midtown Manhattan, cross the East River over the Queensboro Bridge, and make three stops in the Borough of Queens: Long Island City, Willets Point/Shea Stadium, and the Jamaica transportation hub. These stops were selected for their connections with the Long Island Rail Road, bus routes, and subway lines. The system will have three stops at LaGuardia and several terminal stations around the JFK central terminal area. A branch will connect the central terminal area with the Howard Beach subway stop, parking lots, and rental car outlets.

Status

Concept designs and environmental impact statements (EISs) are being completed. The Federal Aviation Administration (FAA) is sponsoring EISs. This sponsorship is a requirement related to the proposed funding source, the passenger facility charge (PFC). A second phase of ridership studies and economic impact analyses is under way. Coordination with the railroads, transit agencies, and other appropriate regional transportation and economic agencies has been under way for months. The program has a steering committee comprising representatives of federal, state, and city agencies; the railroads; transit agencies; and the boroughs' presidents' offices.

Budget

The initial estimate of the New Jersey component is $200 million to $300 million. For the New York system, the estimate is $2.5 billion.

Funding Sources

The Airport Access Program is being funded from a $3 PFC on airline tickets for departing flights. The PFC, a federally authorized program, has been collected at all three airports since October 1, 1992. FAA administers the PFC program and has authorized the Port Authority to spend up to $21 million in PFCs for airport-access planning and environmental studies. Requests to FAA for approval to continue collecting PFCs and use them for construction will be made in early 1995. Operating and maintenance costs for the New York system are to be fully recovered from the fare box. The system is to provide premium service with a corresponding premium fare.

Schedule

Time Frame	*Item*
December 1992	Engineering and construction feasibility studies completed
January 1993	Planning and concept design initiated
June 1994	Concepts to be completed and draft EISs issued
December 1994	Final EISs to be issued
Spring 1995	PFC applications to FAA for final design and construction
Fall 1995	FAA approval for construction and contractor selection process to begin
1998	Newark Airport system extension operational
2003	Full New York AGT system in operation (if phased, segments could be operational 2 to 3 years earlier)

Major Needs and Problem Definition

Ground access to the region's airports is becoming more difficult as traffic on the area's highways continues to worsen. On the principal highway serving JFK the current volume is 60,000 vehicles per day. The New York State Department of Transportation estimates that the volume will increase to 90,000 vehicles in the next 10 years. Also, airport access has been identified as a major consideration for businesses relocating from the region. Aviation accounts for 3 to 4 percent of the gross regional product and must obviously be sustained to maintain the economic vitality of the region.

Major Issues and Concerns

FAA approval of PFC applications to continue to collect PFCs and to expend that revenue for the construction of the program.

Determinants of Success or Failure

Ability to construct the systems. Ultimate ridership levels on the systems. Procurement process. External support of the program.

Critical Evaluation Measures

Ridership analysis. Economic analysis.

Environmental Issues

FAA is currently managing EISs for both the New Jersey and New York components. Principal considerations to be addressed include noise, air, and aesthetic impacts. Implementation of the Airport Access Program is projected to remove more than 30,000 vehicles each day from area highways, reduce vehicle miles traveled daily by 500,000, and eliminate 4,400 tons of carbon monoxide and more than 300 tons of particulate matter from the atmosphere annually.

Community and Public Outreach

An extensive outreach program has been instituted, which includes contacts with community, civic, and business groups and leaders; various levels of staff and executives at federal, state, and local agencies; and the aviation industry. Brochures, newsletters, exhibits, and slide shows have been developed to effectively support this effort.

Economic Impact Analysis

An economic impact analysis is under way. The analysis will identify and evaluate direct transportation benefits to users, indirect benefits for other trip makers and residents, improvements in air service, economic development benefits, and economic impacts of construction and operation.

Public-Private Partnership

Opportunities are still being identified, investigated, and evaluated. It is premature to discuss the opportunities, but various station sites are involved.

Security and Safety

Various strategies are being identified, investigated, and evaluated in the current planning phase of the program to maximize passenger security and safety.

Technology

The Newark Airport system will be an extension of the same technology currently under construction for the on-airport system. It is a monorail system with a computer-controlled drive system.

The New York project will also be an elevated automated guideway transit system. The marketplace is planned to determine the optimal and most economical system to be implemented. A performance specification will be prepared that might be satisfied by any of a variety of technologies: steel wheel on steel rail, rubber tire, monorail, or maglev.

Lessons Learned

(*a*) FAA administration of the EIS for airport access. (*b*) Effectiveness of integrated owner/consultant staff.

Reasons for Inclusion

Magnitude and multiplicity of intermodal opportunities. Use of PFC to fund airport-access projects.

Innovative Aspects

Open forum with all stakeholders. Multiagency steering committee. Funding mechanism. Premium service for airport access. Procurement concepts. Shared fare medium.

Other Comments

Over the past 30 years, there have been almost two dozen proposals for improved airport access in the New York City region. They all failed because of the lack of viable funding sources, dedicated rights-of-way, and a consensus of affected regional entities. The PFC now provides a viable funding source, the use of automated guideway transit enables use of public right-of-way, and improved airport access is acknowledged as a pressing need for the region.

Air-Truck Goods Movement Facilitation, JFK International Airport

Lead Agency: Port Authority of New York and New Jersey

Project Contact: Daniel B. Muscatello, Manager, Air Cargo Programs

Description

A series of initiatives to make JFK International Airport more user friendly for the trucking industry: signing, information stops, maps, rest center, industry survey on other issues.

Status

Signing, maps, and survey in progress; other aspects in development.

Budget

$2 million.

Funding Sources

Port Authority Aviation Department revenue.

Schedule

All initiatives to be complete by December 1994.

Major Needs and Problem Definition

To aid out-of-state truckers, reduce queuing time, reduce commercial vehicle emissions, expedite goods movement, reduce congestion and inappropriate parking.

Major Issues and Concerns

A user-friendly environment increases business, which equates to jobs within the region. High costs of business in the region can to some extent be offset by services.

Determinants of Success or Failure

Reaction of the trucking industry, enhanced traffic flows, shorter queues.

Critical Analytical Evaluation Measures

Survey of trucking customers and postprogram.

Environmental Issues

If effective, these initiatives will reduce commercial vehicle emissions.

Community and Public Outreach

Public approach stresses better regional traffic flows, reduced duplicative trips, and cleaner air.

Economic Impact Analysis

Job retention and job growth are critical—$1 billion worth of cargo equates to 1,000 jobs.

Public-Private Partnership

Trucking survey will help shape specifics of future initiatives and evaluate the effectiveness of the current ones.

Security and Safety

A trucker's rest center (truck stop) will provide a safer and more secure environment for truckers.

Technology

No major technology issues.

Lessons Learned

To be determined.

Reasons for Inclusion

Need to stress that air/land is intermodal.

Off-Airport Terminal for Bus Services Supporting Intermodal Concept for Airport Access

Lead Agency: Marin Airporter

Project Contact: Grace A. Hughes, President and CEO, 415-461-4770

Description

To provide historical data and projected plans on a model for off-airport airline services (check-in, baggage check, and ticket sales) and for services surrounding the delivery of passengers via bus to San Francisco International Airport.

Status

The Marin Airporter now operates a 21-hr/day service with ½ hr schedules, 365 days per year, which carries 370,000 passengers from Marin County to San Francisco International Airport, a 28-mi trip (one way). It has had, in the recent past, a full-service commercial transport operation with United Airlines and American Airlines providing check-in and services. The airlines have discontinued check-in baggage services, and now only American operates a commercial transport operation at the location.

Funding Sources

Were the model to be coventured with municipalities or local government agencies, ISTEA could be a factor.

Major Needs and Problem Definition

Traffic congestion on highways leading to the San Francisco International Airport is becoming a major source of frustration to travelers, commuters, and product delivery services. Growing pollution problems and federal mandates relating to the Clean Air Act demand effective responses from all sectors of the transportation industry.

Major Issues and Concerns

The issue of mass transit solutions versus the accommodation or encouragement of private automobile use is a core concern. Operative funding and innovative joint ventures between private and governmental entities are only two of the issues that must be addressed.

Determinants of Success or Failure

Governmental encouragement and flexibility and the ability of private enterprise to perceive an opportunity for economic success.

Critical Analytical Evaluation Measures

Airline participation to determine economic realities for cooperation, analysis of private-sector ability to meet the demand, ability to assess public acceptance and participation.

Environmental Issues

If successful, will have major impact on air quality and savings of resources.

Community and Public Outreach

Would depend on whether project was undertaken as an individual model study or a broad-based consultant-oriented project.

Economic Impact Analysis

Obvious benefits to bring in private participants to leverage public resources.

Public-Private Partnership

That's what it's all about!

Security and Safety

Security issues would be explored and analyzed.

Technology

Very little needed, possibly computer model projections.

Lessons Learned

All sectors must contribute to planning and invest in the assumptions of success.

Reasons for Inclusion

Speaks directly to issues raised by intermodal conference.

Innovative Aspects

Public-private cooperation, with a direct link to accomplish intermodal goals.

SESSION 9
INTERMODAL LOGISTICS MANAGEMENT

Case Studies

California's Perspective on Intermodal Logistics Management—Intermodal Transportation Management System

Lead Agency: California Department of Transportation (Caltrans)

Project Contact: Ed Boyle, Intermodal Transportation Management System (ITMS) Project Manager, 1130 K Street, 4th Floor, P.O. Box 942874, Sacramento, California 94274-0001, 916-324-7563 (fax 916-324-7427)

Description

See description in Poster Session.

Status

Caltrans conducts intermodal logistics planning nationally and statewide through various committees involving the public and private sectors. As a multimodal transportation department, Caltrans has undertaken many intermodal projects over the years involving all modes of transportation. The 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) mandated an expansion of these activities, and the department's programs reflect this mandate.

We are preparing the ITMS for the first time using the consultant services of a consortium led by Booz-Allen and Hamilton, Inc., in consultation through a committee structure involving public and private transportation interests and agencies of the federal, state, regional, and local governments. We are currently in the 23rd month of a 30-month contract.

Budget

Logistics planning costs: We don't track directly the costs associated with logistics planning, but these activities involve most decisions when considering the movement of people and goods. ITMS tool development costs only. ITMS contract costs: $1.9 million over 30 months. Caltrans ITMS PYs: three per year.

Funding Sources

ITMS tool development costs only: federal, 54 percent (State Planning and Research Account); state, 46 percent (State Planning and Research Account).

Schedule

Logistics planning is ongoing. We began the ITMS consultant contract in January 1993 and hope to complete the contract by June 1995.

Major Needs and Problem Definition

The term logistics brings to mind the military or private freight forwarders engaged in people and goods consolidation and distribution. Caltrans is also involved in these activities to support its large work force, the state's 31 million citizens, and its vast area. Another aspect of logistics planning for the department involves delivering, improving, and maintaining the state highway infrastructure, rail passenger services, and general aviation to support the safe and cost-effective transport of goods and services. This requires working with our federal, state, regional, and private-sector partners, planning for infrastructure needs, programming scarce public resources to address safety and capacity deficiencies in the transportation system, and planning responses in case of a national emergency or natural disaster. Logistics planning is gaining importance in the public sector and is a vital component of decision making at Caltrans.

ISTEA, among many other provisions, requires states to develop a series of management systems in cooperation with regional and local agencies as part of the transportation planning process. State and regional agencies must use the management systems when considering federal highway and transit investments in the nation's transportation infrastructure for improving efficiency and safety.

The ITMS fulfills this federal requirement by

1. Involving regional and local agencies and the private sector in the development and implementation processes of the ITMS;
2. Including all the state's transportation systems, modes, and major intermodal corridors and facilities;
3. Serving the movement of people and goods;
4. Providing a performance-based analysis methodology for evaluating intermodal system improvements;
5. Including information on demography and land use;
6. Performing system monitoring;
7. Developing new methods and analytical tools for transportation planners to use when evaluating intermodal transportation investments; and
8. Establishing programs for training and future system enhancements.

Major Issues and Concerns

California is the seventh-largest economy in the world, totaling $759 billion. In 1992 its population was more than 31 million and growing. In this year, California captured one-fifth of the nation's $980 billion in trade, and its exports alone supported more than 1.6 million jobs. We are a major consumer and producer of goods and services and provide a gateway to the Pacific Rim countries, Mexico, the continental United States, and other world markets. California realizes it must keep its transportation infrastructure competitive or lose market share to competitors. Loss of market share would result in the loss of jobs and revenues needed to support a healthy transportation infrastructure and statewide economy.

This points to the need for effective logistics planning and for developing and managing the intermodal transportation system. The ITMS desktop planning tool will support these activities by

1. Determining alternative intermodal investments that consider a range of performance measures for the environment and economy,
2. Increasing private-sector involvement in the public planning arena for lasting partnerships so that California and the nation's businesses can remain competitive in a global economy,
3. Actively involving regional and local agencies and the private sector in developing and using the management systems,
4. Providing new tools and readily available information for public and private systems planners to use when making investment recommendations to policy and decision makers,
5. Supporting local and regional autonomy in the decision-making process, and
6. Justifying public investments in private-sector improvements that are in the public interest.

Determinants of Success or Failure

(*a*) Successful logistics planning is quantifiable when considering the costs and time involved in delivering goods and services. (*b*) Regarding the ITMS, the willingness of the public and private sectors to use and support the tool initially will provide a measure of its acceptance. Ultimately, the success of the ITMS will depend on its recommended decisions resulting in a more effective intermodal transportation system.

Critical Analytical Evaluation Measures

Logistics planning involves many activities and requires such things as planning ahead, responding to emergencies, and reducing congestion on transportation facilities. These activities are measured in terms of program development and implementation, response time, and time delay reduction, respectively. Just-in-time deliveries, overnight mail, new technologies, and the information highway are a few examples of emerging tools that must be applied effectively. Caltrans must plan and invest its resources wisely. Otherwise, it will not keep pace with developments in these and other areas, resulting in a lower level of service and productivity.

The ITMS includes performance measures for both people and freight addressing mobility, financial costs, environmental factors, economic impacts, safety, and quality of life impacts.

Environmental Issues

Logistics planning can affect the environment, especially when it comes to moving hazardous waste materials. Caltrans carefully plans, designates routings, cleans up spills, protects public safety, and monitors movements.

The ITMS will estimate the emission factors and energy demands caused by a given improvement and compare these results with those of alternative proposals in the same corridor.

Community and Public Outreach

Outreach to the public and private sector is an ongoing part of logistics planning and developing the ITMS. We accomplish this through the state legislature, the California Transportation Commission, shared responsibilities with other public and private entities, media,

statewide outreach meetings, newsletters, and a number of working committees representing all transportation interests. Our contractors also engage in outreach through the media, surveys and working relations when responding, taking actions, developing processes, and collecting and disseminating information on behalf of the department.

Economic Impact Analysis

Economic impacts of logistics planning will reflect the transportation investment and integrated system contributions and role in the local, regional, and state economies and economic competitiveness. We use the ITMS economic performance measures for conducting economic impact analysis of proposed system improvements and can access the data base for conducting ad hoc and "what-if" analysis.

Public-Private Partnership

Caltrans could not carry out its logistics planning responsibilities without the involvement and support of the public and private sectors, including organizations such as the Federal Highway Administration, State Office of Emergency Services, California Highway Patrol, Public Utilities Commission, and the California and United States automobile, port, trucking, and railroad associations. In developing the ITMS, we held statewide meetings in the early phase involving federal and state agencies, regional governments, and ports to gain input and support for the ITMS. We involved these entities later by serving on the selection committee enlisting the services of the Booz-Allen team. The ITMS advisory committee and subcommittees, composed of a broad range of public and private transportation interests, provide the primary vehicle for developing ongoing partnerships. We make presentations and conduct workshops involving regional and local planning agencies and participate at national-level workshops. Additional partnering involves our data base and GIS vendors providing us with extensive support for the development and implementation of the ITMS.

Security and Safety

Security and safety are major components of logistics planning. The movements of hazardous and flammable materials are of critical concern. In this information age, security of computer systems is critical, and the breaching of computer systems can be costly and detrimental. Truck traffic flows between California and Mexico are also of concern.

In the ITMS, we include performance measures for safety but do not propose to address security issues in depth because of its macro scale. An aspect of security that the ITMS will address is maintaining data integrity by controlling access to data files and spatial layers. This will help protect against unauthorized changes to the ITMS data base since the public and private sectors will have access.

Technology

Caltrans is applying and developing the latest in new technology. In the area of logistics planning we monitor and control traffic from computerized traffic management centers and truck weigh-in-motion facilities. Intelligent transportation systems are under development, including vehicle guidance and tracking systems. Also, Caltrans is applying the latest computer systems and is now developing its data base for effective data management and distribution over computer networks.

The ITMS is being developed using the latest in personal and mainframe computers, client-server technology, data transmission over public and private networks, relational data base

management system, and geographical information systems (GISs). The GIS provides the driver for the ITMS application and is accessible using a single graphical user interface from an IBM computer or IBM clone or Macintosh personal computer.

Lessons Learned

Caltrans has substantial experience and will discuss its role in logistics planning and will relate lessons learned from the Northridge earthquake, intermodal projects, dealings with Mexico and border crossing issues, public-private partnerships, and public-sector investments.

At the completion of the ITMS project we will have learned

1. The development and deployment processes;
2. Technical solutions to the ITMS decision support systems;
3. Ways of gaining ITMS acceptability by the user community;
4. Systems hardware, software, and network platforms;
5. Data needs and collection for people and goods;
6. Performance measures and cross-modal analysis;
7. Forecasts for freight and person travel;
8. How well the current state transportation improvement program serves the needs of an intermodal transportation system;
9. Application of new technologies;
10. Interdependencies between the ITMS, the planning process, and the other management systems;
11. How the public and private sectors can apply the ITMS;
12. An estimate of the level of effort needed to use, update, and sustain the ITMS;
13. Training needs;
14. Future system enhancements; and
15. Where we go from here.

Reasons for Inclusion

California is the seventh-largest world economy and is a major gateway to the United States and other world markets. We believe the Caltrans experiences are a valuable addition to the conference and of interest to the participants.

The ITMS may be the most advanced example of an intermodal management system in the nation. It is being coordinated with the California Transportation Plan, management systems, planning process, intelligent vehicle highway systems technologies, and the public and private sectors.

Innovative Aspects

Over the past several years, California has been struck by fire, floods, and earthquakes. In the areas of transportation spills, traffic accidents, transportation emergencies, and natural disasters, Caltrans is on the front line and must safeguard public safety and restore transportation services as quickly as possible. The handling of such problems provides the backdrop to our presentation of experiences on logistics planning at the conference. The ITMS

1. Provides an intermodal improvement screening tool that can be applied early in the planning process;
2. Develops an open and multipurpose intermodal planning architecture for planning, evaluating, and recommending intermodal system improvements and for system monitoring;
3. Assembles people and goods information for all modes of travel and includes major intermodal corridors and facilities in the state;

4. Allows local and regional agencies to tailor the ITMS for their own transportation systems;
5. Uses existing data to maximum extent;
6. Integrates with other Caltrans information management systems;
7. Will allow access over different hardware, software, and network platforms;
8. Is a performance-based decision support system capable of cross-modal, what-if, and ad hoc analyses;
9. Will allow intergovernmental and private-sector access for evaluation of proposals using the same data sources;
10. Includes calculations using Standard International (metric) and U.S. traditional units of measurement;
11. Analyzes and displays information within a GIS context; and
12. Provides for productivity gains in transportation planning and project development by providing computer connectivity, data, and new tools and analytical methods that supplement manual methods currently being used.

Ohio Inland Port and "Access Ohio" Program

Lead Agency: Greater Columbus Inland Port Commission, Ohio Department of Transportation

Project Contact: Greater Columbus Inland Port Commission, c/o Columbus Chamber of Commerce, 37 N. High St., Columbus, Ohio 43214, 614-225-6940 (fax 614-469-8250); John R. Platt, Chief of Staff, Ohio Department of Transportation, 614-644-8241

Description

The Ohio Inland Port is an exemplary public-private partnership where the Ohio Department of Transportation, the Columbus area Chamber of Commerce, and the shipper-carrier community jointly planned an inland distribution hub. It is a model distribution center with state-of-the-art information systems to facilitate trade and logistics. Inland port directories are available from the contacts noted above.

The inland port is only one facet of Ohio's approach to intermodal management and planning. The Ohio Department of Transportation developed the "Access Ohio" approach to intermodal planning in the belief that state and local governments can reduce congestion through infrastructure improvements and better management of the highway/rail system.

To obtain the funding needed to do the job, decision makers need to have information on how well the existing system is performing, and they need to know the likely benefits to freight movements if a project is accomplished.

The Ohio Department of Transportation is pursuing intermodal management approaches to improve Ohio's share of the global market.

"Access Ohio" precepts are as follows:

1. Listen to the customers—ask the users what is important to them in freight/passenger movement.
2. Organize—involve private industry and public groups.
3. Adopt goals and objectives.
4. Establish standards of performance.
5. Decide what can be managed.
6. Collect only data that help make decisions.
7. Report what was found, the gaps and needs.
8. Develop a strategic plan—output of actions and process.

Further information is available from the Ohio Department of Transportation.

Closing Remarks

Michael P. Huerta, *Office of Intermodalism, U.S. Department of Transportation*

Everyone is asking me about my impressions of this conference. My initial impression is that I am exhausted in terms of what we have heard, all the wonderful things that you have talked about, both in the public sessions and in private conversations. I would like to leave you with the theme that I touched on in my opening comments, and that was where we were and where we are.

Many of you have heard a small story that I would like to begin with about my mother. For those of you who have heard it, I promise you that this will be the last time. The story is that when I first came to take over as associate deputy secretary, my mother heard that I was going to be doing intermodal transportation. She asked me what intermodalism was. I told her that it was about connections, choices, and seamless movement, and her eyes began to glaze over. As I finished my little rap on what I was going to be doing in this position she basically said, "Well, as long as you are happy." I am going to come back to this in a few minutes.

If we look at where we were and how this industry has evolved, intermodalism, as we think of it, began in the 1980s, with the Staggers Rail Act, the Motor Carrier Act, and the shipping act. The combined effect of all these things was that we gained the ability to do things like through bills of lading, door-to-door seamless service, all of the things that we have been spending 3 days talking about and celebrating; this is where intermodalism has come. Well, customers responded, and they responded with great force. Why was that? It was because the economics, efficiencies, and products that were being offered in the form of intermodal transportation were compelling. My main point is that what started this was deregulation, and what deregulation means is removing barriers.

We learned more about customer response with the deregulation of the airline industry and, in 1991, with our surface transportation program in ISTEA. All of us are still struggling to come to grips with and figure out what our customers want and how we provide it to them. We will be doing our job when we give customers choices that are not artificially constrained. Mike Meyer has talked about how many of us have stressed market-driven planning and all of the things that we have heard about being responsive there, and that's what this is all about. Intermodalism gives us a tool to provide some of these choices. But the choices have to be related and relevant to what our customers want—that's how we make the case.

One thing that hammers this point home was part of a private conversation with Grace Hughes. We all heard earlier her story of the Marin Airporter. Grace said to me that she was feeling rather overwhelmed sitting here, hearing about these projects that were costing hundreds of millions or billions of dollars, hearing that that is what intermodalism is all about. What Grace said was that, fundamentally, intermodalism is just making it easy and providing something to our customers. Her point was that, in these multimillion and multibillion dollar projects, we do not want to lose sight of the fact that we are providing transportation service for the benefit of our customers. It doesn't have to cost a lot of money. It could simply be an application of good management or common sense.

We tend to despair over how much there is to be done and how much it is going to cost. I am reminded of the person who visits a gourmet restaurant and has a 10-course meal with all of the elaborate trimmings, sauces, and flourishes, and then complains that there was no salt on the table. Well, an awful lot has been accomplished, and we need to celebrate it. As George pointed out, Rodney Slater would say, "Find the good, and praise it." At the same time there is so much opportunity out there—we need to seize it and run with it.

What we are talking about is the theme we were discussing in this last session, the theme of continuous improvement. In industry it is called total quality management. In government we call it reinventing ourselves. But the principles of both of these are really very simple: put your customers first, cut red tape, remove barriers, and empower all of us to get the job done. Transportation affects each of us, all day long, every single day. Transportation is vital to America. Intermodalism gives us one means to provide our customers with responsive transportation. But let's not think that it is the only tool; it is only one of many tools that we have. We need to think about how we can be most responsive to our customers.

My mother does not care what intermodalism is as a concept, but she has a very clear idea of what she wants from transportation. Parenthetically, I will say I was relieved when I heard it was intermodal. She is just like all of our customers in the transportation system. So let us join together to listen to them and provide them with transportation that works—transportation that is seamless, transportation that provides choices, transportation that is coordinated and connected.

Now, Mike Meyer talked about us preaching to the choir. So I will conclude by addressing this congregation with one simple message: "Go forth and multiply, but do not just preach. Let's get the job done."

APPENDIX: POSTER SESSION AND CORPORATE PROFILES

This section contains a listing of participants in the poster session and case studies or corporate profiles provided by participants. It is not intended to be a comprehensive list of intermodal projects or organizations involved in such projects. No endorsement of any project or firm by the Transportation Research Board or the National Research Council is intended or implied.

(*continued on next page*)

1. ALAMEDA CORRIDOR/PORT OF LOS ANGELES

Gill Hicks, General Manager, Alameda Corridor Transportation Authority, 6550 Miles Avenue, Suite 113, Huntington Park, CA 90255 (telephone: 213-583-3080)
See Session 2: *Intermodal Hub Facilities and Corridors*; Case Study: Alameda Corridor Project

2. ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

Jerome George, Chief, Engineering Operations and Public Facilities, 4111 Aviation Avenue, Anchorage, AK 99502 (telephone: 907-266-1456)
Intermodal Planning for Emerging Transportation Systems
Lead Agency: Alaska Department of Transportation and Public Facilities
Contact: Jerome George, Chief, Engineering Operations and Public Facilities, P.O. Box 196900, Anchorage, AL 99519-6900
Description: This project will determine how market forces influence decisions in an emerging transportation system and will propose a strategy for identifying intermodal opportunities, encouraging local proponents, and selecting opportunities for future development.
Status: The project is ready for implementation.
Funding Sources: The project is being financed by an intermodal grant from the U.S. Department of Transportation, with supplemental state general funds.
Schedule: The intermodal plan has been completed, and the project is entering the training phase for department staff and local proponents.
Major Needs and Problem Definition: There is a need to apply intermodal planning precepts developed for a mature transportation system to an emerging transportation system.
Major Issues and Concerns: Institutional barriers to sound intermodal planning are more constraining than physical barriers.
Determinants of Success or Failure: Acceptance of the process by grassroots sponsor and champions, department staff, the legislature, and funding entities will indicate a successful outcome.
Critical Analytical Evaluation Measures: The Alaska intermodal plan will be evaluated on the basis of incorporating the state transportation department's constitutional charge, state policies, and ISTEA precepts into a flexible, user-friendly methodology, requiring minimal data collection.
Environmental Issues: Modal alternatives will be evaluated as part of the National Environmental Policy Act of 1969 (NEPA) process.
Community and Public Outreach: Community sponsors and proponents are essential elements of the process, from identification of opportunities through implementation of recommendations.
Economic Impact Analysis: The Alaska intermodal plan's economic impact will be evaluated based on economic contributions at the local, regional, and state levels.
Public-Private Partnership: Innovative financing enhances a project's opportunity for development and implementation.
Technology: Alaska's intermodal plan will identify a wide array of potential technological, institutional, and physical solutions.
Lessons Learned: Emerging transportation systems require a planning process that differs significantly from those applicable to more mature transportation systems.
Reasons for Inclusion: Alaska is eager to share with other states its easy-to-implement, low-cost public involvement process for the identification and development of intermodal opportunities.
Innovative Aspects: The project will make the public a partner with the department and private industry in the development of transportation systems.

3. ALLIANCE FOR TRANSPORTATION RESEARCH

David Albright, President, 1001 University Boulevard SE, Suite 103, Albuquerque, NM 87106 (telephone: 505-246-6410)
See Item 57 in this Appendix: *New Mexico State Highway and Transportation Department*
The Alliance for Transportation Research (ATR) assembles scientific, technological, engi-

neering, and research skills of laboratories, universities, public agencies, private organizations, and individuals determined to meet the transportation challenge by fostering (*a*) creativity in theoretical design, (*b*) integrity in data analysis, (*c*) precision in engineering, (*d*) concern for individual travelers, and (*e*) commitment to the nation's economic well-being. ATR is a flexible research partnership between the Los Alamos National Laboratory, New Mexico State University, Sandia National Laboratory, University of New Mexico, and New Mexico State Highway and Transportation Department, which participated in this conference as partners in the New Mexico intermodal projects.

4. AMERICAN ASSOCIATION OF PORT AUTHORITIES

Eileen Denne, Public Relations, 1010 Duke Street, Alexandria, VA 22314 (telephone: 703-706-4714; fax: 703-684-6321)

The American Association of Port Authorities (AAPA), founded in 1912, represents 120 public seaport agencies throughout the Western Hemisphere, including all major public port authorities in the United States and major port agencies in Canada, Latin America, and the Caribbean. AAPA is dedicated to serving public ports, enhancing port management professionalism, and advocating issues critical to public seaports.

AAPA promotes the interests of the port community and provides leadership on trade, transportation, environmental, and other issues related to port development and operations. AAPA seeks to further public understanding of the essential role fulfilled by ports in the global transportation system. The association serves as a resource to help members realize their professional responsibilities.

AAPA's mission incorporates five goals: to support environmentally responsible port development and operations, conduct research and analysis, encourage professionalism, expand public awareness, and represent and promote the common interests of ports. Administered by a professional staff and headed by an appointed president, AAPA is organized into four departments: Membership Services, U.S. Government Relations, Public Relations, and Research and Information Services.

5. AMERICAN PUBLIC TRANSIT ASSOCIATION

Laurie Radow, Senior Policy Analyst, 1201 New York Avenue, NW, Suite 400, Washington, DC 20005-3917 (telephone: 202-898-4105; fax: 202-898-4049)

Recent intermodal publications may be obtained by contacting Rose Gandee, Manager, APTA Information Center (202-898-4089).

The American Public Transit Association (APTA) is the international organization representing the transit industry. APTA members serve the public interest by providing safe, efficient, and economical transit services and by improving these services to meet national energy, environmental, and financial concerns. Ninety-five percent of individuals who use public transit in the United States are transported by APTA members.

APTA's more than 1,000 members include motor bus and rapid transit systems and the organizations responsible for planning, designing, constructing, financing, and operating these systems. In addition, APTA members include business organizations that supply products and services to the transit industry, academic institutions, and public interest groups.

APTA committees, which plan and conduct APTA activities, address matters of common interest to members. All committees are open for participation by all classes of members. The Intermodal Operations Planning Committee serves as a focal point for the development of plans, policies, and procedures to enhance scheduling and service planning activities in urban areas with multimodal transit systems.

APTA publications include the brochure *Making the Connection: Intermodal Passenger Transportation Facilities,* which provides an overview of opportunities for and issues concerning intermodal surface passenger transportation facilities, including funding sources and economic development benefits. The brochure emphasizes the importance of good intermodal connections and intermodal possibilities ranging from major terminals, to transfer centers, to bikes on buses. Issues that might be encountered in planning and developing such facilities are addressed.

How will Americans move about in the 21st century? Should we limit ourselves to the automobile, or is now the time to consider a range of transportation options that will strengthen our economic opportunities and offer mobility? These questions are addressed in *America's New Surface Transportation Network*. A network map and accompanying paper, Mapping America's New Surface Transportation Network, describe the nation's array of high-capacity, shared-ride surface transportation services. The map attests to the worthiness of linking and expanding these systems and services as part of an integrated nationwide network.

6. AMERICAN TRUCKING ASSOCIATIONS, INC.

Michael Jackson, Vice President, American Trucking Associations, Inc., 2200 Mill Road, Alexandria, VA 22314 (telephone: 703-838-1854)

The American Trucking Associations is the national association working to educate and promote the domestic trucking industry's interests. ATA has developed several informational products to inform MPOs and the general public about freight planning issues.

7. AMTECH SYSTEMS CORPORATION

Kenneth Kelley and Lisa Middleton, Marketing Managers, Intermodal Terminals, 17304 Preston Road, Building E-100, Dallas, TX 75252 (telephone: 214-733-6056)

Contact: Gerald D. Allen, Director, Transportation Marketing, and Kenneth Kelley, Manager, Intermodal Marketing, Amtech Corporation, 17304 Preston Road, Building E-100, Dallas, TX 75252 (telephone: 214-733-6600; fax: 214-733-6699)

Amtech Systems Corporation designs, manufactures, markets, and supports a line of hardware and software products and provides services utilizing radio frequency technology. Amtech uses radio frequency identification (RFID) technology for remote identification of and communication with vehicles, intermodal containers, and other transportation equipment through the use of radio signals. Other RFID products include low-frequency electronic security systems for hands-free personnel access control and radio frequency data collection systems for transportation and logistics applications. Amtech products are currently marketed to government, hospitals, and intelligent transportation systems and to the intermodal, rail, air freight, vehicle fleet management, access control, and security industries.

8. ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

Cliff McKinney, Planning and Research Division, P.O. Box 2261, Little Rock, AR 72203 (telephone: 501-569-2476)

Identification of Methods to Expand Intermodal Services at Rural River Ports and Investigation of Intermodal Infrastructure Development Options to Promote Economic Growth

Lead Agency: Arkansas State Highway and Transportation Department, Planning and Research Division, in conjunction with the state of Mississippi

Description: The objective of this study is to identify methods to increase the use of rural river ports and slackwater harbors. Emphasis will be placed on determining ways to attract value-added processing activities and intermodal shipments of agricultural and forestry products from rural areas to these facilities. The study will investigate intermodal infrastructure development options to promote economic growth in rural areas. Another objective is to teach state transportation planners how to conduct similar studies in the future. The area to be studied includes selected public river ports and slackwater harbors on the Mississippi River and in the surrounding region in eastern Arkansas and western Mississippi.

Status: An agreement for consultant services has been awarded, initial data collection activities have started, and the steering committee for the study has been established.

Funding Sources: The study is being funded through the Federal-Aid Applied Research Technology Program, with additional resources and in-kind services provided by the states of Arkansas and Mississippi.

Schedule: The study is scheduled to be completed in January 1996.

Major Needs and Problem Definition: The Arkansas–Mississippi Delta region exemplifies much of the nation's rural areas with its sparse population, isolated areas, and limited economic resources and an infrastructure that is inadequate for supporting economic develop-

ment. Studies have determined that a viable transportation system is essential to achieving long-term economic growth in the region. A recurring economic development issue in the region is better use of rural ports and harbors on the Mississippi River. These facilities have been identified as potential manufacturing sites for value-added processing of the region's abundant agricultural and forestry products and as prime locations for import and export shipments.

Major Issues and Concerns: The study will focus on identifying (*a*) major industries that can be attracted to rural river port and harbor areas, with emphasis on value-added processing activities that can use local products; (*b*) methods for attracting intermodal shipments to rural river ports and harbors, especially agricultural and forestry products from rural areas; (*c*) techniques for expanding cargo handling at rural river ports and harbors, with attention given to emerging intermodal technology; (*d*) economic development opportunities for rural areas resulting from increased intermodal activities at rural river ports and regional intermodal infrastructure improvements; and (*e*) indirect economic benefits, such as transportation cost savings and expanded market areas for local goods and products, and the influence of NAFTA on rural ports.

Determinants of Success or Failure: Particularly regarding intermodal services, increased use of regional river ports and slackwater harbors by local manufacturers, farms, forestries, and major shippers will indicate the success of the planning effort. Other indications of success will be an increase in import and export shipments at river facilities and development of port-related industries.

Environmental Issues: The study will not affect the environment; however, the environment could be affected by construction of needed improvements to the regional transportation infrastructure brought on by increased usage of river terminals.

Community and Public Outreach: A steering committee, consisting of one representative from each of the study's five river ports and harbors, a representative from academia, and delegates from state agencies that have an interest in waterborne transportation will provide guidance to the consultant.

Private-Public Partnership: Strategies involving public and private partnerships will be developed for implementation of the study's findings.

Technology: An investigation of methods, including emerging technologies, to expand cargo handling at river terminals will be made.

Reasons for Inclusion: Rural states such as Arkansas face many unique intermodal issues. For example, What are the best ways to extend intermodal services to small and scattered shippers in rural areas? What is the role of state planners? Can intermodal services enhance import and export shipments? What are the benefits of expanding statewide intermodal activities? The study will address these issues and provide insight into the short- and long-term advantages of intermodal activities for rural states.

9. U.S. ARMY CORPS OF ENGINEERS NAVIGATION DATA CENTER

Arlene L. Dietz and David Penick, 7701 Telegraph Road, Casey Building, Fort Belvoir, VA 22060 (telephone: Dietz: 703-428-7071; Penick: 504-862-1404)

U.S. Army Corps of Engineers Navigation Statistics Program

Contacts: Arlene L. Dietz, Director, Navigation Data Center (telephone: 703-428-7071); David Lichy, Chief, Systems Division, and Manager, Lock Performance Monitoring System (telephone: 703-355-3052); John Vetter, Chief, Ports and Waterways Division (telephone: 703-355-2495); David Penick, Director, Waterbome Commerce Statistics Center (telephone: 504-862-1404); Virginia Pankow, Manager, Dredging Statistics Program (telephone: 703-355-3047)

Description: The U.S. Army Corps of Engineers navigation mission is supported by a $1.5 billion budget. Funding comes from two trust funds: local cost sharing and the general fund. Harbor operations and maintenance is paid 100 percent by users, whereas up to 60 percent of new port construction and 50 percent of lock construction is paid by users. All navigation data collection and processing in support of this mission requires less than one-half of 1 percent of the navigation budget.

The Corps of Engineers' responsibility for data collection and statistics support for navigation was codified more than 125 years ago. Today the Corps' navigation statistics program manages data on the uses, physical characteristics, and operations and performance of the U.S. navigation system. These data support not only the Corps navigation mission but also navigation data needs of other federal agencies, state and local governments, port authorities, port and waterway industries, and myriad private organizations. This primary data source is the foundation for analysis and decision making for planners, operators, lawyers, engineers, enforcers, and legislators.

The Corps' navigation statistics program involves the collection, management, processing, and distribution of data and statistics for the U.S. navigation system. Included are data and statistics on the following:

- Use—commodity tonnages, passengers, vessel movements, and lockages;
- Characteristics—port and terminal facilities, locks, vessels, and waterways; and
- Operations and performance—lock performance and dredging activities.

These data are available in hard copy (more than 65 documents are published routinely) and electronic form to federal users only. They can be obtained by limited direct query through the bulletin board Waterline, CD-ROM, and the Internet.

The Corps' statistics program is operated and managed by the Navigation Data Center (NDC), whose purpose is to collect, process, and distribute water transportation data and statistics. NDC manages three related areas:

- Planning, development, evaluation, and implementation of navigation data collection and processing systems;
- Ensurance that national and regional navigation data bases are integrated and efficiently operated and maintained; and
- Assessment of navigation data dissemination technology and procedures and distribution of products.

NDC offices and programs include the (*a*) Waterborne Commerce Statistics Center, which operates from New Orleans, La.; (*b*) Ports and Waterways Division; (*c*) Systems Division; (*d*) Dredging Statistics Program; and (*e*) Lock Performance Monitoring System Program. NDC's main office is located at Fort Belvoir, Va.

10. BARTON-ASCHMAN ASSOCIATES, INC.

John Hamburg, Vice President, 7770 Jefferson Street NE, Suite 350, Albuquerque, NM 87109

See Item 57 in this Appendix: *New Mexico State Highway and Transportation Department*

11. BATTLE CREEK TRANSIT

James Walker, Transit Manager, 75 Beacon Street, Battle Creek, MI 49017 (telephone: 616-966-3588; fax: 616-966-3652)

Battle Creek Transportation Center

Lead Agency: City of Battle Creek, MI

Description: In 1981 a railroad consolidation project was undertaken to eliminate a long-term problem with train and automobile congestion in the downtown area of the city. At that time, Conrail/Amtrak trains operated on tracks one block north of and along the entire downtown area. Adding to the problem was that Grand Trunk operated one block south and along the entire length of the downtown area. When train traffic was heavy, automobile traffic was either locked in or out of the central business district.

The consolidation project moved all railroad traffic to the existing Grand Trunk tracks on the south side of downtown. Track and grade crossing improvements were made, and a new overpass on the immediate west side of downtown was completed. This action caused a need

for a new Amtrak station to be constructed along the south side tracks because all north side tracks were removed.

The Greyhound/Indian Trails station was located two blocks east of the old Amtrak station. The city bought the old bus terminal to help consolidate these two intercity services. At that time, Battle Creek Transit had an open grant to construct a local bus transfer station in the downtown area for its passengers. It was decided to combine all federal, state, and local dollars to construct one facility to operate all three transportation systems.

Status: The facility was designed and constructed during 1981 and 1982. Amtrak, the first tenant at the facility, relocated in the summer of 1982. Greyhound and Battle Creek Transit moved to the facility in 1983.

Budget: The project had a budget of $2,127,000.

Funding Sources: The federal government provided $1,701,600, and the state provided $425,400. The local government donated land and purchased the old Greyhound terminal to allow the bus company to relocate.

Major Needs and Problem Definition: The project opened the way for massive reconstruction of the downtown area. Since this project was completed, the city obtained a new hotel and arena, Kellogg Company's world headquarters, Kellogg Foundation's headquarters, and, in the old Amtrak station, a new high-quality restaurant. No longer are there traffic backups from the trains and people can move in and out of the central business district more easily.

The traveling public can go to one location where they have access to rail, bus, and other ground transportation. The station is located within walking distance of all the new facilities mentioned previously.

Major Issues and Concerns: Before this center opened, the three primary transportation providers operated separately. Amtrak was operating out of a trailer next to an old, dilapidated train station. Greyhound was in a building two blocks east of the train station. Battle Creek Transit buses were located on the open street at the four main corners of the downtown area. There was no coordination of services, and interservice commuting was minimal, to say the least.

Determinants of Success or Failure: The city believes that this project has been a success. The project resulted in a standout building in the downtown area that serves the needs of the traveling public well. It affords each system's users the opportunity to easily connect with other modes of transportation, an opportunity not available previously.

Critical Analytical Evaluation Measures: Battle Creek Transit has seen a 5 percent increase in ridership during the past few years; it is difficult to determine ridership figures from the other carriers. Service features such as connecting bus and train service were not possible under the old arrangements.

Environmental: No negative environmental impacts resulted from this project.

Community and Public Outreach: The project was guided by longstanding public concern for the traffic problems in the downtown area. The project was received well by citizens.

Economic Impact Analysis: No formal evaluation has been completed.

Public-Private Partnership: The construction of the center was completed with federal, state, and local dollars. The operation of the center is paid for by the city and two private carriers located at the facility.

Security and Safety: The facility is owned by the city and patrolled by its police department. Fire and burglar protection is provided by a private security company.

12. CALIFORNIA DEPARTMENT OF TRANSPORTATION (Caltrans)

Edward Boyle and Valerie Jenkins, Division of Transportation Planning, 1100 N Street, Sacramento, CA 95814 (telephone: 916-445-8140)

See Session 9: *Intermodal Logistics Management*; Case Study: California's Perspective on Intermodal Logistics Management—The Intermodal Transportation Management System

13. CAPITAL DISTRICT TRANSPORTATION COMMITTEE

Kristina Younger, Senior Transportation Planner, 5 Computer Drive, West Albany, NY 12205 (telephone: 518-458-2161)

See Session 4: *MPOs Reengineering for Intermodalism*; Case Study: Integrating Freight Concerns into Metropolitan Planning Process at Medium-Sized MPO

14. CH2M HILL—DeLONG MOUNTAIN TRANSPORTATION SYSTEM

Michael Mariano, Senior Vice President, 8501 West Higgins Road, Suite 300, Chicago, IL 60631-2801 (telephone: 312-693-3800; fax: 303-770-2616)

Project Contact: Tom Huntsinger, Executive Vice President, Transportation Director (telephone: 303-771-0900); Rick Leubbers, Intermodal Director (telephone: 503-752-4271); Michael R. Mariano, Senior Vice President, Director of Technology, Transportation; Brad Erickson, Ports Director; and Bob Meadows, Senior Transportation Economist (telephone: 206-453-5000)

Description: CH2M Hill is an international consulting engineering firm providing services in three business areas: environmental, water, and transportation.

CH2M Hill was founded in 1946 in Corvallis, Oregon, and has grown into over 70 offices across the United States, Canada, and other countries. The firm provides the complete range of services, technologies, and specialty skills necessary to execute all phases of intermodal projects. This includes strategic and feasibility planning; conceptual planning; functional, preliminary, and final design; construction administration; and resident engineering program management. CH2M Hill's project experience represents the range of the intermodal elements: airports, ports, public transit properties, highways, and bridges.

15. CITY OF CHICAGO, ILLINOIS

City of Chicago–Southwest Industrial Corridor Development

Lead Agency: Greater Southwest Development Corporation

Project Contact: Jim Capraro and Vickie Shea, 2601 West 63rd Street, Chicago, IL 60629 (telephone: 312-436-1000; fax: 312-471-8206)

Description: The integral relationship that exists between the Chicago economy and the region's rail lines and intermodal facilities is epitomized on the city's Southwest Side. This area of Chicago is crisscrossed by freight rail lines that drove its early development and continue to provide direct service for major industrial companies such as Nabisco, Tootsie Roll, and Occidental Chemical. The same area is the site of major intermodal freight depots for Santa Fe, Norfolk & Southern, and the Belt Line (which plays a major role in intraregion transfers), among others. The Southwest Side also enjoys good public transportation through bus and passenger train lines.

The Southwest Side is enjoying an economic renaissance largely because of the leadership of the Greater Southwest Development Corporation, a community development group that has coordinated successful efforts to stabilize housing prices, invigorate commercial streets, and retain and attract industry. Transportation has consistently been a focus of Greater Southwest's community development strategy. The organization successfully opposed the development of an expressway that would have destroyed a number of residential neighborhoods. It then focused community energy on advocating development of the Orange Line, a major new passenger rail line that connects the Southwest Side to Chicago's Loop and to Midway Airport.

With equal intensity, Greater Southwest has worked for the retention and optimal use of transportation resources in its industrial development policy because these are the expressed needs of the area's industrial companies. As part of its overall planning effort, Greater Southwest conducted a needs assessment survey of 41 industrial companies in its area. These companies ranked a good arterial street system and availability of public transportation as the most attractive features for industrial location in their area. At the same time, needs for infrastructure improvements, particularly to streets and viaducts, were among the most significant concerns of the responding companies. In several cases, respondents to the Greater Southwest survey were the intermodal depot operators, who voiced the same concerns about needed infrastructure improvements that were noted in the FHWA study. Greater Southwest is supporting efforts to secure these improvements as part of an integrated development strategy which recognizes that importance of maintaining state-of-the-art intermodal facilities and industrial companies served by freight rail for its local economy.

Chicago's Southwest Side is one of a limited number of areas in America today in which a range of industrial customers do business directly with freight rail lines, sending or receiving full freight cars as producers or users. Industries in this area also provide products for other

nearby manufacturers as an important aspect of their business, and some companies' waste provides feedstock for neighboring manufacturers. In this milieu, rail lines sometimes provide the only necessary transport link from producer to consumer, bypassing the highway system entirely and optimizing environmental as well as economic efficiencies. As urban industrial areas such as Chicago's Southwest Side are invigorated, this highly efficient transport pattern may become more common.

Status: Project development is ongoing. The city agreed to do feasibility studies for the project through its Model Industrial Corridors Program. Greater Southwest is also helping the city conduct general industrial planning for the area, which will facilitate some infrastructure improvements. Funding was secured through Community Development Block Grants (CDBG) and other federal sources. A similar program, the Local Industrial Retention Initiative (LIRI), was also largely funded through CDBG. The project has institutional and financial backing from the city, the Chicago Department of Transportation, and the neighboring community. The next steps involve executing the work plan.

Budget: Regarding current research, $1.25 million has been allocated for the implementation of several projects that were part of the five-year strategic plan.

Funding Sources: Funding has been provided by the City of Chicago, Chicago Department of Transportation, federal funds (CDBG, etc.), freight rail companies and other private investment, and a combination of local and federal funding under the Intermodal Surface Transportation Efficiency Act of 1991.

Schedule: Greater Southwest plans to start feasibility studies in 1995 and finish them within 8 to 12 months. Project construction is to be completed by 1999.

Major Needs and Problem Definition: A 1992 General Accounting Office study estimated that "nearly half of all intermodal freight shipments either originate, terminate, or connect in Chicago." The same study notes: "The success of intermodal trains between Chicago and the West Coast has presented a challenge in that it has increased truck traffic on highways leading to and from Chicago's intermodal terminals, adding to the city's congestion and pollution. . . . Intermodal activity generated at least 3 million truck trips in 1991 (over 8,000 per day) on Chicago area highways. This included over 2 million loads originating or terminating in the Chicago area or surrounding states, over 700,000 drays between rail terminals, and an unknown but substantial number of trips to and from depots where empty trailers and containers awaiting loads are stored. . . . Intermodal trips account for at least 5 percent of heavy truck traffic in the Chicago area."

Major Issues and Concerns: Intermodal freight movement is essential to the Chicago regional economy, and its freight rail system is a vital link in the nation's transportation system. To improve the efficiency and decrease the environmental impact of the system, however, several steps need to be taken: (*a*) more transfers of containers between intermodal yards need to take place by rail rather than by truck, (*b*) highway infrastructure leading to and from Chicago intermodal yards needs to be improved, and (*c*) whenever feasible, cargoes originating or terminating in the Chicago region need to move by rail. More opportunities for such transfers need to be created by basic economic development planning.

Determinants of Success or Failure: Success or failure depends on retention of the job base and construction of an east-west access road so that trucks do not disturb residential streets.

Critical Analytical Evaluation Measures: Currently, there is no way to get from one end of the industrial corridor to the other without going through residential areas. Therefore, an east-west access road is needed.

Environmental Issues: Truck traffic creates air and noise pollution and vibration safety problems. The community is trying to solve the noise problem by erecting sound barriers (either berms or walls). Freight rail poses an oil pollution problem in certain areas.

Community and Public Outreach: Greater Southwest is working with residential groups to keep them informed of the process and to gain support for it. The neighboring community consists largely of working-class, predominantly African-American residents with higher concentrations of Latino residents toward the west and white or eastern European residents to the far west. Professional workers are scattered throughout the area, although they are concentrated more toward the west.

Economic Impact Analysis: Retaining the local job base is important for the community and the region. Greater Southwest and other groups have resolved to work with the city and county to accomplish this.
Public-Private Partnership: There are major partnerships between businesses in the area, the city, and community groups. Before the city intervened, Nabisco, for example, was considering leaving the area, which would have moved 2,000 jobs to the suburbs. To induce Nabisco to stay, a tax increment financing (TIF) district was created in which the city reduces or eliminates taxes on a planned development for a certain period of time until it is operational. Taxes are later assessed at a higher tax rate, and the company resumes normal tax payments. Kraft is another major employer that considered leaving, but efforts by the city, local businesses, and the Model Industrial Corridor Program convinced them to stay.

Throughout the project period, Greater Southwest has worked on some road issues with the support of the Chicago Department of Transportation. In fact, the east-west access road will be included in the Chicago DOT master plan, which must be finished by the end of 1995.
Security and Safety: Some major businesses have their own security forces, and some smaller businesses have pooled resources to do the same. Also, a new Community Policing Program has been developed with the police department. Community groups are planning to develop a Special Service Area taxing district. In an SSA, property owners vote to charge themselves an additional real estate tax that would cover items such as infrastructure improvements, marketing promotion, street cleaning, graffiti control, or a district security force.
Lessons Learned: In developing the project, Greater Southwest conducted a survey of industrial users on the assumption that many companies were planning to relocate to suburbs. However, they discovered that 60 to 75 percent were planning to stay and that roughly 50 percent of businesses were planning to expand. This survey was done after Nabisco and Kraft had already committed themselves to staying. Another lesson was the need for an east-west access road.
Reasons for Inclusion: The development of the Chicago–Southwest Industrial Corridor is applicable to this conference because of its intermodal aspects, the close cooperation between public and private partners, and the community involvement.
Innovative Aspects: Innovative aspects include plans for using an SSA taxing district. Greater Southwest also has plans to develop intracorridor business opportunities, in which corridor businesses would participate in the bulk purchasing of items such as sugar and paper clips. Businesses might reduce costs (especially transportation costs) by, for example, bringing a sugar distributor to the area. An intracorridor business fair is scheduled for May.

16. CITY OF HOLLAND, MICHIGAN

Soren Wolff, City Manager, 270 River Avenue, Holland, MI 49423 (telephone: 616-391-1310)
See Session 7: *Planning Services and Terminals for Transit Customers—An Industry Cross Section*; Case Study: Louis and Helen Padnos Transportation Center, 171 Lincoln Avenue, Holland, Michigan

17. CITY OF INDIANAPOLIS, INDIANA

Peter A. Bisbecos, Chief Counsel for Public Transit, Department of Capital Asset Management, City County Building, Suite 2360, 200 East Washington Street, Indianapolis, IN 46204-3357 (telephone: 317-327-3798)
See Session 7: *Planning Services and Terminals for Transit Customers—An Industry Cross Section*; Case Study: Indianapolis Transit Effectiveness Program

18. CITY OF MERIDIAN, MISSISSIPPI

Don Farrar, Director, Community Development Department, 601 24th Avenue, P.O. Box 1430, Meridian, MS 39302-1430 (telephone: 601-485-1910)
Union Station Multimodal Transportation Center
Lead Agency: City of Meridian, Mississippi
Project Contact: Honorable John Robert Smith, Mayor; Don Farrar, Director of Community Development, City of Meridian. G. Williamson Archer, Archer and Archer, P.A., Architects.

Description: Renovation of the historic Railway Express (REA) and Union Depot buildings to house the Meridian Railroad Museum and a multimodal transportation center. The Amtrak passenger terminal will be included in the center. The project site is approximately 7.3 acres.
Status: The project was selected by the State Transportation Commission for inclusion in the fiscal year 1994 Statewide Transportation Improvement Program (STIP) and federal funds were allocated for construction.
Budget: Funding consisted of a grant from the Federal Highway Administration (FHWA) for approximately $3.35 million (through the Mississippi Department of Transportation) and from the City of Meridian for $1.5 million; total project funding is $4.85 million.
Funding Sources: Funds through the Federal Surface Transportation Program–Transportation Enhancement (STP-TE) were provided by the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) and the city of Meridian. The current railroad depot and surrounding property were donated by the Norfolk Southern Corporation. A portion of the city's matching share will come from The Partnership (the local economic development agency).
Schedule: Final plans and specifications have been completed. Construction is planned to begin in May 1995 and be completed by July 1996.
Major Needs and Problem Definition: Service by various modes of transportation (public transit, bus, rail, air, and taxi) is fragmented. There is a need to unite these modes to provide effective and efficient operations and access to community services. Preservation of the area's railroad heritage by saving the historic structures from further deterioration is another need.
Major Issues and Concerns: The major concern in this project is to integrate transportation providers into a functional facility while addressing historic preservation initiatives and incorporating outdoor festival and marketplace activities.
Determinants of Success or Failure: Success of the project will depend on proper management and an adequate source of funding support.
Critical Analytical Evaluation Measures: It has been determined that this project not only will address transportation-related services, but will also serve as the catalyst for future downtown development and revitalization.
Environmental Issues: All environmental assessments have been conducted and approved by FHWA. During construction, normal activities will affect the site.
Community and Public Outreach: The project was planned and developed through grass roots participation. Numerous meetings among citizens, businesses, and government entities were held in 1990–1992 to address the programmatic and conceptual design issues. Participants included all sectors of the community.
Economic Impact Analysis: A multimodal transportation center feasibility study was funded by the Federal Transit Administration in 1991. A positive report was completed in 1992. Results will be determined by final tenant occupation.
Public-Private Partnership: The city is coordinating the project design with Amtrak, Greyhound, and Trailways bus systems, Meridian Transit Authority, Norfolk Southern Railroad, and the economic agency for the area, The Partnership.
Security and Safety: The security and safety of users of the project have been incorporated into the design and operation of the facility.
Technology: Modern technology will be used together with the historic preservation regulations of the Department of the Interior to enhance transportation facilities and operations. The project will be handicapped-accessible.
Lessons Learned: Lessons learned from this project include the varied interpretations of ISTEA legislation and the need to coordinate the project at every stage with all levels of the appropriate state and federal government agencies.
Reason for Inclusion: The collective vision of local government officials and the business and transportation community has produced a national model for intermodal operations in other small cities.
Innovative Aspects: The multimodal transportation center will incorporate the needs of the Meridian Naval Air Station and provide services to address those needs.
Other Comments: The project will serve as an official gateway and visitors' center for Meridian. It is planned that the facility will be opened and in operation to serve the 1996 summer Olympic Games in Atlanta, Georgia.

19. CITY OF NEW ORLEANS, LOUISIANA

New Orleans Union Passenger Terminal (NOUPT)

Lead Agency: Regional Transit Authority (RTA) in cooperation with the City of New Orleans and the Board of Commissioners of the New Orleans Union Passenger Terminal Authority.

Project Contact: Wayne A. Dupre, Executive Director, Regional Transit Authority

Description: The purpose of this project is to develop the existing facility into a truly multimodal transportation facility. The redesigned facility will accommodate the following existing and future transportation and large-scale capital projects. Existing projects: intercity bus operations (Greyhound), intercity rail operations (Amtrak), downtown heliport, taxi parking and surface lot parking in the immediate area. Future projects: planned $84 million multipurpose arena, expansion and renovation of the existing terminal building, realignment and redesign of tracks and streets within the property to accommodate intermodal transportation services, light rail-central business district circulator service via the future Canal Street Line, provision of an operations and maintenance facility for the Canal Street Line on the real property of the Union Passenger Terminal site, Interstate highway and high-occupancy-vehicle access, park-and-ride commuter facilities (peripheral parking for 1,000 to 1,500 vehicles in an elevated facility), future commuter rail access to and from such facilities as the airport to downtown and East New Orleans to downtown, heliport and vertiport facilities, expansion of real estate redevelopment to include, if feasible, proposed hotel, office, retail, parking, other commercial uses and light industrial uses on the rear acreage of the property.

The objective of this project is to create an environment where the Union Passenger Terminal, the traditional gateway to downtown New Orleans, can be operated to maximize the greatest and best use.

The following federal, state, and local agencies will be involved: Federal Transit Administration (FTA), Federal Railway Administration (FRA), Federal Aviation Administration (FAA), Federal Highway Administration (FHWA), Environmental Protection Agency (EPA), Louisiana Department of Transportation and Development (LADOTD), City of New Orleans, Regional Transit Authority, Regional Planning Commission, and New Orleans Union Passenger Terminal Authority.

Status: Currently, this project is in Phase One: Planning and Engineering. A Request for Proposals (RFP) was made public in November 1993. The Scope of Services includes consulting preliminary architectural design and engineering services, as well as project development and environmental study. The contract was awarded in January 1994.

Budget: The total estimated costs for developing the multimodal facility will be $52.2 million. These costs do not reflect the reimbursement of FAA dollars for moving the existing heliport, which will total $4.1 million. In addition, related development projects, including the proposed multipurpose arena and the development of a large-scale parking facility, will cost approximately $155.3 million.

Funding Sources: It is anticipated that funding for the NOUPT project will come from the following sources. Federal Transit Administration, $41.8 million; City of New Orleans (local match), $ 9.4 million.

Schedule: Estimated date for completion of this project is fiscal year 1997.

Major Needs and Problem Definition: Currently, the Union Passenger Terminal is widely considered underutilized as a center for intermodal transportation. The primary objective of this project is to integrate other large-scale passenger transportation projects into a cogent overall system, with the NOUPT as the gateway to the New Orleans CBD. In addition, NOUPT is close to present and future large-scale trip generators such as the Superdome and the aforementioned multipurpose arena.

Major Issues and Concerns: Several issues and concerns are of foremost importance, among which are compliance with the Americans with Disabilities Act and the revised Clean Air Act. Further, it will be necessary to address issues involving mobility improvement, environmental benefit, cost-effectiveness, and operating efficiency.

Determinants of Success or Failure: It is strongly believed that the success of this project depends on the cooperation of the various stakeholders in the project. Ten government agencies at the local, state, and federal levels have direct input into the planning process for this project. Therefore, effective intergovernmental communications and cooperation will be imperative for the project to succeed.

Critical Analytical Evaluation Measures: The following analyses or evaluations of the project need to be made: analysis of existing conditions, review of previously related studies, existing land use analysis, integration of multiple modes of transportation into a cogent system, identification of long-term transportation needs and requirements, projected needs analysis, joint use development, peripheral parking concepts, and intergovernmental relations.
Environmental Issues: Numerous environmental issues pose special opportunities for and detriments to this project.
Community and Public Outreach: A Public Involvement Process will be developed for NOUPT according to the scope of the aforementioned architectural and engineering services contract, which was awarded in January 1994.
Economic Impact Analysis: It is estimated that NOUPT and associated projects will have a direct economic impact of $528 million dollars and create 1,100 temporary construction jobs and at least 250 permanent service-sector and transportation jobs. Additional economic impacts in the hundreds of millions of dollars would result from the enhancement of efficient downtown travel, the thousands of passenger hours saved, reduction of fuel consumed, and elimination of parking costs via the use of transit.
Public-Private Partnership: It is anticipated that there will be substantial private-sector involvement in this project, particularly at later stages of development. Part of the strategy for redevelopment of the UPT is to include, where feasible, a hotel, offices, retail businesses, parking, or other commercial uses and light industrial uses on the property.
Security and Safety: The enhancement of safe and efficient passenger service through the integration of multiple modes of transportation will be of utmost concern for the NOUPT project.
Technology: The extremely high volume of truck traffic that will be traversing the port access roadway requires a higher standard of engineering design. The grade crossings of rail lines by heavy-truck traffic also warrants special design considerations. The incorporation, relocation, and engineering of the flood wall with gate openings for port access requires advanced technological design.
Lessons Learned: Because of the current status of the project, the learning curve is still ill-defined. However, expected lessons to be learned include the following: alternative methods of financing transportation projects, the ISTEA funding process, use and categorization of matching funds, coordination of capital projects sponsored by more than one government agency, and public-private partnerships and financial participation.
Reasons for Inclusion: The NOUPT project is applicable in this discussion because it is related to intermodal goods movement, it involves cooperation among local and regional government entities, including the Port of New Orleans, the City of New Orleans, the Louisiana Department of Transportation and Development, the New Orleans Public Belt Railroad, and the Regional Planning Commission. Also important are its complex development history and specialized funding sources; limited funding sources for specialized roadways; operational agreements among port, city, Levee Board, Public Belt Railroad (local switching railroad), and Illinois Central Railroad; and the system design separating rail, truck, and automobile traffic within one corridor.
Innovative Aspects: The project is innovative in its separation of traffic, multiagency cooperation, and multiple funding sources.

Opportunities: This project will amalgamate several modes of transportation at one location, thereby creating an economy of resources, such as time, fuel, and space. Creating a more efficient system will help mitigate the detrimental environmental effects of the project such as congestion and pollution. The renovation of the UPT can enhance ambient air quality and generally improve the quality of life in the New Orleans area.

Detriments: It is widely believed that there are several areas of contamination within the confines of the NOUPT site, which has been a rail yard for many years during which environmental laws either did not exist or were poorly enforced. With the advent of Superfund legislation in the 1980s, cleanup of contaminated areas is now necessary and generally very costly.

20. CITY OF SANTA CLARITA, CALIFORNIA

Ron Kilcoyne, Transportation Manager, 25663 Avenue Stanford, Santa Clarita, CA 91355 (telephone: 805-294-2505)

Santa Clarita Metrolink Transit Center

Lead Agency: City of Santa Clarita jointly with the Southern California Regional Rail Transit Authority (SCRRA) and the MTA

Description: This project is a part of the regional Metrolink commuter rail program administered by SCRRA. Inaugurating service on October 26, 1992, the Santa Clarita Metrolink Transit Center is the first commuter hub of its kind in the area, providing commuter train and bus service to midtown Los Angeles, Glendale, Burbank, and San Fernando. In addition, Santa Clarita Transit, the city's transit agency, realigned all local fixed-route bus lines to pulse at the Metrolink station and coordinates scheduling of local bus service to ensure convenient, reliable connections with Metrolink trains.

Status: During the first 14 months of Santa Clarita Metrolink service, the daily average ridership was around 1,000. On the basis of an SCRRA ridership survey, Santa Clarita Transit claimed the greatest percentage of work-to-home intermodal passengers (8 percent used both train and bus) of all Metrolink stations throughout the three-county system.

On January 17, 1994, the Northridge earthquake severely damaged State Highway 14 and Interstate 5, the exclusive high-capacity connector between north Los Angeles County and all areas to the south. Metrolink service has increased from 7 inbound and 7 outbound trips to 11 inbound and 12 outbound trips. Santa Clarita Transit has increased and rescheduled all local fixed-route bus service to maximize intermodal use. Current daily average Metrolink ridership is around 6,000, with bus-and-train trips averaging about 500 per day.

Also, Santa Clarita Transit has implemented three new commuter bus routes, which serve areas of the San Fernando Valley that do not have access to the Metrolink system. These routes also begin and end at the Metrolink station. Daily ridership has topped 500.

Budget and Funding Sources: All local fixed-route bus service is funded by the Los Angeles County sales tax. Metrolink service is funded by a variety of local, state, and federal funding, and emergency expansions are currently funded by the Federal Emergency Management Agency (FEMA). All three new commuter bus routes are currently funded by FEMA and are expected to be sustainable through state funding sources.

Schedule: Initial service commenced on October 26, 1992. Emergency services have been phased since January 17, 1994.

Major Needs and Problem Definition: Southern California is experiencing the genesis of a regional commuter rail system. Local fixed-route bus service has grown continuously throughout the region over the last 20 years. Transit properties are faced with a challenging opportunity new to the area; that is, intermodal transportation must be truly competitive with the automobile. The Northridge earthquake, which devastated the Santa Clarita Valley at least as much or more than any other area, has abruptly presented an opportunity to offer a truly intermodal alternative. Santa Clarita Transit, SCRRA, and the MTA must continue to collaborate on scheduling decisions in order to maintain a high-quality service.

Major Issues and Concerns: The state of California has taken unprecedented steps to accelerate the rebuilding of State Highway 14 and Interstate 5. Consequently, these roadways are projected to reopen in less than 8 months after the disaster. Also, State Highway 14 will continue to be an identified congested corridor monitored by the MTA's Congestion Management Plan. Finally, Southern California continues to rate as a top contender for worst air quality on a national scale.

Determinants of Success or Failure: At this time the Santa Clarita Metrolink Transit Center clearly qualifies as a success. Continued community support and funding availability will govern the future.

Critical Analytical Evaluation Measures: An analysis of ridership statistics and resources is needed.

Environmental Issues: As previously stated, congestion and air quality are major issues in this region.

Community and Public Outreach: Santa Clarita Transit and SCRRA have coordinated and will continue to coordinate a major marketing effort. This marketing effort is aimed at the

commuting public, which has been enormously affected by recent events, but marketing efforts will also continue to face the problem of congestion and air quality.
Lessons Learned: A united shared effort between agencies is critical to the success of any intermodal project.
Reasons for Inclusion: Reasons for including this project in the conference include its intermodal and multijurisdictional aspects as well as because of the effect on the first commuter rail system of its kind in the area of the greatest natural disaster in the nation's history.
Innovative Aspects: Multiagency decisions and actions create an effective intermodal transportation system, which is doubled in scope in a matter of days.

21. COSMOS, N.V.

Bertrand Waucquez, Marketing and Sales Manager, Stijfselrui 34, 2000 Antwerp, BELGIUM (telephone: 32-3-220-6295)
Description: Seaport terminal planners and designers for the Port of Antwerp.

22. CSX INTERMODAL: THE IRON HIGHWAY

Dave Wise, Vice President Business Development, Centerpointe, 200 International Circle, Hunt Valley, MD 21030 (telephone: 410-584-0180)
See Session 5: *New Technologies, Partnerships, and Procedures*; Case Study: The Iron Highway and Its Effects on Intermodal Terminal Design and Operations

23. DRI/McGRAW-HILL: NEW JERSEY GOODS MOVEMENT DATA BASE

Michael Sclar, 24 Hartwell Avenue, Lexington, MA 02173 (telephone: 617-860-6128)
See Session 5: *New Technologies, Partnerships, and Procedures*; Case Study: New Jersey Goods Movement Data Base

24. DIGITAL EQUIPMENT CORPORATION

Description: World's leading manufacturer of networked computer systems and system integration with expertise in intermodal cargo monitoring systems. DEC systems are in use at Maher Terminals, Inc. (Port Elizabeth, New York), Journal Square Plaza, Jersey City, NJ 07306 (telephone: 201-963-2100; fax: 201-963-7760)
Please contact local Digital sales representative for more information.

25. EDMONDS, WASHINGTON, MULTIMODAL TERMINAL

Paul Mar, Director, Edmonds Community Services, 250 5th Avenue North, Edmonds, WA 98020 (telephone: 206-771-0220)
Edmonds Multimodal Terminal
Lead Agencies: City of Edmonds, Washington State Department of Transportation (WSDOT), and Community Transit.
Project Contact: Paul Mar, Edmonds Community Services Director (telephone: 206-771-0220); Jerry Weed, CH2M Hill, Project Manager (telephone: 206-453-5000)
Description: Siting and development are under way for an intermodal terminal to serve Washington State Ferries, Amtrak, commuter rail, local and express buses of Community Transit, and, potentially, privately operated passenger-only ferries.
Status: The initial ferry terminal feasibility study was completed in 1992, and the preferred site for terminal operations was identified in 1994. The preliminary engineering and environmental impact analysis is under way.
Budget: The preliminary engineering and environmental impact analysis will cost $2.5 million. The construction budget has yet to be determined.
Funding Sources: The following are the funding sources: ISTEA (STP, CMAQ), Washington State Rail Funds, WSDOT Marine Division, City of Edmonds, Community Transit, FTA Section 3 Funds, and WSDOT multimodal funds.
Schedule: The schedule is as follows: 1994–1997, preliminary engineering and environmental impact analysis; 1994–1997, interim repairs to existing facilities; 2000–2003, Phase I construction; 2003–2013, staged construction.

Major Needs and Problem Definition: There is a need to create an intermodal facility to serve the ferry, Amtrak, bus, commuter rail and bicycle-pedestrian interface.
Major Issues and Concerns: The location of the existing WSDOT ferry terminal conflicts with the vision of the city of Edmonds. The city government would like the terminal to be relocated. WSDOT projects that the Edmonds-Kingston travel demand will continue to increase from the present 11,000 trips per day at a rate of over 10 percent per year. The existing ferry terminal is in need of improvement as well as expansion to meet the increased travel demand. Its location is such that the vehicle holding lanes are separated from the docking facilities by Burlington Northern Railroad, which carries over 40 freight trains per day. Implementation of commuter rail service between Seattle and Everett through Edmonds is currently under consideration. The initial cost-benefit analysis supports commuter rail service. Community Transit currently serves the area, but service is not coordinated with ferry schedules.
Determinants of Success or Failure: Success will constitute an agreement between all parties on a long-range goal for providing transportation services in Edmonds that meets the needs of commuters, regional travel demands, and local concerns.
Critical Analytical Evaluation Measures: Measurements should include percent of on-time departures by ferries, wait time for departure by a mode, length of walk between modes, and mode shift caused by improved service and options available.
Environmental Issues: Complicated environmental issues are caused by potential disruption of a marine estuary, intertidal areas, a petroleum storage site with ground contamination, and extensive wetlands, both fresh and salt water.
Community and Public Outreach: An extensive public involvement process is involved in this project to encourage participation in determining an optimum solution. The effort is guided by an oversight committee composed of elected and appointed policy makers from all levels of government. A technical advisory committee guides the technical details of the study progress. A citizen advisory committee reviews study efforts from the perspective of overall community interests. Newsletters, information kiosks, public meetings, attendance at local clubs, and a variety of similar activities will be used to inform the community.
Economic Impact Analysis: The existing Edmonds downtown core business operations are concerned about the impact on their operations from relocation of the existing ferry terminal. A variety of private and public arrangements will be evaluated related to the operation of a multimodal terminal. The study goal is to develop a multimodal facility that will attract visitors for more than just a commuter trip connection. The waterfront environment affords an opportunity to establish an attractive development that will generate visits for recreation, business, travel, shopping, and a multitude of other reasons.
Public-Private Partnership: A number of opportunities will be explored from private passenger-only ferry operation, retail opportunities within the terminal building, business park development, cooperation with the Port of Edmonds for industrial developments, and a long list of other ideas.
Security and Safety: The project is intended to provide enhanced security and safety through development of a center with a mix of activities that ensure multiple opportunities during the operation of the terminal. With an existing travel base of over 11,000 trips per day and the projected growth in trips, it seems reasonable to expect interest in public-private partnership opportunities.
Technology: The project provides a unique interface between waterborne transportation and the normal automobile, bus, pedestrian-bicycle, and rail modes. Potentially long walking distances and unique interfacing needs will require innovative solutions.
Lessons Learned: The project is instructive because of the coordination of ferry, rail, bus, pedestrian-bicycle, and automobile traffic; the development of an intermodal facility despite the lack of some of the projected services; the resolution of major conflicts between regional travel demands and the local community concerns related to impacts.
Reasons for Inclusion: The project demonstrates the development of a multimodal terminal coordinated with an existing major ferry operation that serves regional travel demands and a growing commuter travel demand.
Innovative Aspects: The project demonstrates innovation in the multijurisdictional problem solving of a regional transportation issue, its ferry connection to Amtrak and commuter rail,

resolution of conflicting interests through development of an intermodal terminal, the public involvement program and government cooperation, Funding opportunities, and project management.
Other Comments: Although it is early in the development of the Edmonds Multimodal Terminal, the project provides unique issues and a variety of issues that provide insights for others in how to define a project and seek funding for implementation.

26. FASTSHIP ATLANTIC
Terrance Johnson, 1033 N. Fairfax Street, Suite 300, Alexandria, VA 22314 (telephone: 703-739-9645)
Description: FASTSHIP Atlantic is a new transoceanic shipping design that will travel at speeds up to 40 knots. A ship traveling at this speed will attract cargoes for just-in-time delivery. FASTSHIP Atlantic has the potential to revolutionize terminal design and inland delivery systems.

27. FEDERAL AVIATION ADMINISTRATION
Larry Kiernan, Airport Planner—Intermodal Contact, 800 Independence Avenue, NW, APP-400, Washington, D.C. 20591 (telephone: 202-267-8784; Fax: 202-267-5383)

28. FEDERAL HIGHWAY ADMINISTRATION—Training in Intermodal Access Planning and Design
Dane Ismart, Intermodal Engineer, 400 7th St., SW, HEP-50, Washington, D.C. 20590 (telephone: 202-366-4071; Fax: 202-366-3713)
National Highway Institute (NHI) Training Course: *Landside Access for Intermodal Facilities*
Lead Agency: Federal Highway Administration (FHWA)
Contact: Lee Chimini, Transportation Engineer, FHWA (telephone: 202-366-4068); Al Miller, Training Officer, NHI (telephone: 703-285-2787)
Description: The project is to develop a three-day training course on the planning and design of landside access improvements needed to support intermodal passenger and freight facilities. The course will present recent case studies of "best practice" planning and design for each of these types of facilities; it will also establish a planning methodology that represents best practice. The course will be given to state departments of transportation (DOTs) and metropolitan planning organizations (MPOs) and will address airports, passenger bus and railship terminals, intermodal rail facilities, and freight distribution centers. Vickerman-Zachary-Miller (VZM) is the lead consultant; Matthew Coogan and Michael Meyer are subconsultants.
Status: VZM has completed research and reports on technical and administrative issues associated with intermodal facility access, and a draft course outline has been submitted to FHWA for approval.
Budget and Funding Sources: The budget for the course is $420,202 from the U.S. Department of Transportation.
Schedule: Over the next several months, the course outline will be finalized, presentation materials prepared, and pilot presentations given. Following approval of the pilot courses (anticipated in early summer), up to 30 courses will be given.
Major Needs and Problem Definition: There is a perceived lack of understanding on the part of state DOTs and MPOs regarding the function, importance, and access requirements of intermodal facilities, particularly intermodal freight. The course is intended to provide this basic information and demonstrate how intermodal facility access planning and design issues can be addressed at the state, regional, and local levels.
Major Issues and Concerns: In the broad sense, intermodalism is a means to maximize efficient use of existing and future capital transportation investments. Creation of near-"seamless" transfer capability between modes will make more mode choices available for freight and passenger movement throughout the transportation system. This choice allows freight and passenger users to select the mode or combination of modes that minimizes

individual and social costs (delay, environmental impact, construction and operating costs, direct and indirect fees, etc). Intermodalism is also a means by which the U.S. transportation system is linked to the global transportation network; efficient air and water connections provide seamless connections across national boundaries, reducing passenger and freight transportation costs and contributing to the integration of world markets.

One key to providing this seamlessness is to have transfer points (intermodal facilities) that function effectively, and another key is to have fast, cost-effective access to and from these facilities by each of the component modes. Failure to provide adequate access to intermodal facilities results in either of the following or both: (*a*) unacceptable levels of congestion and impacts on surrounding communities, particularly by major airports and seaports that generate very large numbers of trips, or (*b*) impaired functioning of the intermodal facility resulting from limited ingress and egress or imposed operating restrictions.

As a result, improved access to intermodal facilities is a matter of both local and national interest. Transportation funding agencies are typically faced with an array of choices, some favoring specific modes and others supporting intermodalism. The largest share of funding has gone to highways, which has benefited both passenger and freight movement, but growth accommodated and fostered by highway development has been pushing the system to its limits. There has been increasing attention to passenger mass transit but little interest in access improvements to support intermodal freight. The funding of passenger and freight intermodal access improvements must be a higher priority.

In making this case, the course will address (*a*) legislative, regulatory, and administrative issues and mandates, including funding eligibility; (*b*) guidance on developing and evaluating strategic alternatives; (*c*) data requirements and collection techniques; (*d*) performance measures for assessing, monitoring, and evaluating access to intermodal facilities and overall system efficiency; (*e*) modeling applications for transportation planning and analyses of impacts on land use, economy, and the environment; (*f*) factors to be considered in designing access for intermodal terminals; and (*g*) detailed design guidelines for the various operational elements of intermodal facilities.

Determinants of Success or Failure: Success will be determined by the response of the target audience.

Critical Analytical Evaluation Measures: Intermodal system performance and planning evaluation measures will be presented. At this point, a number of different measures are being explored.

Environmental Issues: Environmental impacts associated with access improvements will be discussed during the course.

Community and Public Outreach: Pilot presentations will be made to public transportation officials to fine-tune the course content and presentation.

Economic Impact Analysis: Economic impacts associated with access improvements will be discussed.

Public-Private Partnership: Many, if not most, of the improvements required for efficient landside access to intermodal facilities will require partnerships between public regulatory and funding agencies, quasi-public entities that operate intermodal facilities, and private owners and operators of transportation companies. Partnership opportunities will be a major focus of the course.

Security and Safety: Security and safety will be factors in evaluating system improvements.

Technology: Emerging and future technologies that facilitate intermodal transfers will be a major theme of the course.

Lessons Learned: To date, a huge amount of information has been found on specific transportation planning topics and issues, but there is little integration of this information into a comprehensive intermodal planning framework. Planners in the field appear to want a straightforward, "how to" guide to intermodal planning. It is hoped that as a result of the course, participants will be able to (*a*) grasp the planning concepts, methodology, and requirements for providing access for intermodal facilities; (*b*) comprehend what is needed to successfully design access for intermodal facilities (airports, seaports, passenger rail/bus/ship terminals, intermodal rail facilities, and freight distribution centers); and (*c*) define measures,

tools, and techniques for developing, assessing, and evaluating the performance of alternative access strategies.
Reasons for Inclusion: The course will offer a comprehensive methodology for intermodal planning with illustrative "best practice" case studies of airport, seaport, passenger rail/bus/ship terminal, intermodal rail facility, and freight distribution center access.
Innovative Aspects: The course views the intermodal transportation system as a functionally integrated, interdependent whole—not simply the sum of its parts—and places equal emphasis on freight (which has been neglected) and passenger movement. Such a comprehensive balanced treatment is lacking in the transportation planning literature.

29. FEDERAL HIGHWAY ADMINISTRATION—Bicycling and Walking Studies
National Bicycling and Pedestrian Clearinghouse
Lead Agency: FHWA, U.S. Department of Transportation
Contact: Barbara McMillen, National Bicycling and Pedestrian Clearinghouse, FHWA, U.S. Department of Transportation (telephone: 202-366-4068; Fax: 202-366-7660)
Description: The National Bicycling and Walking Study is an effort by the U.S. Department of Transportation to develop a national policy on bicycling and walking as modes of transportation. Goals are to double the amount of trips and to reduce accidents by 10 percent and to provide an action plan for federal, state, and local governments to use in meeting these objectives. The report may be obtained through the National Bicycling and Pedestrian Clearinghouse (telephone: 800-760-6272).

30. FEDERAL RAILROAD ADMINISTRATION
John Cikota, Chief, Passenger Services, 400 7th St., SW, Suite 5411, RDV-21, Washington, D.C. 20590 (telephone: 202-366-9332; fax: 202-366-0646)
Contact for intermodal freight issues: William Gellston (telephone: 202-366-0356)

31. FEDERAL TRANSIT ADMINISTRATION
Contact for intermodal transit issues: Robert Owens, 400 7th St., SW, Suite 9300, Washington, D.C. 20590 (telephone: 202-366-1689; fax: 202-366-7116)
The following study is available: *Intermodal Passenger Terminal Facilities Project Summaries: A Compendium of Proposed, Active, and Completed Intermodal Passenger Terminal Facilities.*

32. FLORIDA DEPARTMENT OF TRANSPORTATION
Servando Parapar, Director for Planning and Programs, 1000 N.W. 11th Avenue, Room 6207-G, Miami, FL 33172 (telephone: 305-470-5458)
See Session 3: *State Sampler*; Case Study: East-West Multimodal Corridor Study, Miami Intermodal Center Study, Interstate 4 Multimodal Master Plan

33. FLORIDA INTERNATIONAL UNIVERSITY AND SOUTH FLORIDA UNIVERSITY
LCTR at Florida International University
Contact (for intermodal publications and courses): L. David Shen, Chairman and Director, Lehman Center for Transportation Research, VH-160, Florida International University, Miami, FL 33199 (telephone: 305-348-3810; fax: 305-348-4057)
Description: The Lehman Center for Transportation Research (LCTR) at Florida International University was established in 1993 in honor of Congressman Bill Lehman and his tireless efforts to make South Florida a better place to live. The center's vision is to become a strong state-of-the-art transportation research and training facility. LCTR is committed to serve and benefit society by conducting research to improve mobility and quality of life, develop partnerships in the transportation industry, and educate a multidisciplinary workforce to plan, manage, and implement transportation systems.

Currently, LCTR and the Center for Urban Transportation Research (CUTR) at the University of South Florida are conducting a joint research project entitled "Factors Influencing Successful Implementation of Intermodal Guideway Public Transit Systems," funded by the

Federal Transit Administration. Also funded is a research project entitled "Evaluation of the National Demographic and Technological Trends and Their Impact on Future Transportation Efficiency."

Faculty, staff, and students at LCTR are involved in research related to transportation systems design and operation, public policy, air pollution, and application of geographic information systems and other advanced technologies, such as artificial neural networks and scientific visualization, to transportation. Future plans include networking with the public and private industry to collaborate on transportation-related research. In addition, applied research will be conducted on, but not limited to, intelligent transportation systems.

34. FREDERIC R. HARRIS, INC.

222 W. 6th Street, San Pedro, CA 90731 (telephone: 310-833-1002; fax: 310-833-1236)
Contacts: Jerome Premo, Michael Leue, and Michael McCarthy (telephone: 703-641-5600); Ed Schmeltz (telephone: 212-973-2900)
Description: Frederic R. Harris, Inc. (FRH), is one of the largest civil engineering consulting firms in the country with more than 63 years of experience. Harris has prepared intermodal transportation studies and has handled engineering and design, construction management, and the start-up and operation of land, air, and waterborne transport systems.

FRH maintains 25 offices throughout the world and has worked on numerous intermodal transportation projects, including

- MetroLink Project—Southern California Regional Rail Authority (SCRRA);
- Joint Intermodal Terminal—Port of Oakland, California;
- Terminal Island Intermodal Container Transfer Facility—Port of Los Angeles, California;
- Pier 400 Port Expansion Project—Port of Los Angeles, California;
- TruckSim Traffic Simulation Modeling—Port of Long Beach, California;
- Landside Harbor Access Simulation Modeling—Honolulu and Barbers Point, Hawaii;
- Kaohsiung International Port Overall Development Project—Taipei, Taiwan;
- Port Everglades Expansion Program—Port Everglades Authority, Florida;
- Rail Barge Intermodal Facility—New Orleans, Louisiana;
- Terminal Planning and Gate Simulation—Boston, Massachusetts;
- Massachusetts Bay Transportation Authority Southwest Corridor—Massachusetts;
- Oak Point Rail Link—Bronx, New York;
- New Haven Interlocking—New Haven, Connecticut;
- SP-ICTF Expansion Study—Port of Los Angeles, California;
- Numerous airport projects—New York City, Miami, Atlantic City, San Diego; and
- Numerous intelligent transportation systems and computer-controlled traffic signal and traffic control systems.

35. GEORGIA DEPARTMENT OF TRANSPORTATION

Luke Cousins, Administrator and Project Director, 276 Memorial Drive, S.W., Atlanta, GA 30303 (telephone: 404-651-9200); Alan Meyers, Vickerman-Zachary-Miller, 2100 Reston Parkway, Suite 202, Reston, VA 22091-1218 (telephone: 703-758-8800)
See also Session 7: *Planning Services and Terminals for Transit Customers—An Industry Cross Section*; Case Study: Transit System Development and Operations in Atlanta (MARTA)
Savannah–Chatham County Intermodal Freight Study
Lead Agency: Georgia Department of Transportation
Project Contact: Luke Cousins, Administrator and Project Director; Richard J. Drake, Project Manager; Alan Meyers, VZM Consultant Project Manager.
Description: The Savannah–Chatham County area of Georgia is a major coastal transportation hub in the southeastern United States composed of rail, highway, seaport, airport, and pipeline transportation systems. The study will first determine and analyze the current movements of goods and materials between the various freight transportation systems. Next, in concert with the modal owners and operators, the study will identify and quantify potential areas for improved economic and operational efficiencies.

Status: As of March 31, 1995, a consortium of transportation planning consultants led by Vickerman-Zachary-Miller was under contract and nearing completion of Phase I tasks. A technical advisory committee and a policy advisory committee have been formed to solicit input from public-sector and private-industry representatives.
Budget: The budget for consultant services is $600,000 for a period of 18 months. No reimbursement has been budgeted for the involvement and efforts by any agency, company, organization, or individual.
Funding Sources: Funding comes from the following sources: FHWA Highway Planning and Research funds, 80 percent; state motor fuel taxes, 20 percent.
Schedule: Completion of phases is planned as follows: Phase I, inventory and data collection, June 1995; Phase II, postulation of scenarios and analysis of alternatives, January 1996; Phase III, development of recommended alternatives and final report, May 1996.
Major Needs and Problem Definition: The major purposes of the study are to identify and quantify the current public and private users and providers of all modal freight transportation systems, forecast their future demands, and determine capacity constraints or conflicts therein.
Major Issues and Concerns: Major concerns are to postulate alternatives that could eliminate or minimize future investment requirements and reduce redundancy in certain capital, operating, and maintenance costs to all users and providers of freight transportation.
Determinants of Success or Failure: Because this study will deal with both the public and private sectors, efforts will be a success if there is active constructive participation throughout the study by the owners, providers, and users of freight transportation, up to and including endorsement of recommended alternatives.
Critical Analytical Evaluation Measures: Measures will be the development of an equitable economic criterion for objective, meaningful evaluation and comparison of alternatives between each mode of the transportation system.
Environmental Issues: The study will address overall congestion mitigation within the communities as well as air, noise, and water quality and socioeconomic factors as they relate to the various modes and alternatives.
Community and Public Outreach: Although technical and policy advisory committees are composed predominantly of representatives from various modes, local, state, and federal government representatives will also be included throughout the study. Two public information meetings will be conducted to explain the issues and findings, and comments from the public will be solicited.
Economic Impact Analysis: The majority of the providers and operators being in the private sector, economic analysis and cost comparisons between monies will be vital to establish the credibility of alternatives. Although the public sector is composed primarily of owners and not operators of systems, a fundamental profit-cost analysis will be used for capital investments.
Public-Private Partnership: This study is totally predicated upon cooperative involvement by the private and public sectors. The ultimate implementation of any recommendations will also hinge upon a cooperative and joint financial partnership between the public and private sectors.
Security and Safety: Improved personal safety will be manifested by operational, economic, and social benefits. Security of goods and materials from loss, damage, and pilfering will be addressed as an operational and economic factor.
Technology: A custom-designed, fully intermodal discrete event simulation model of Chatham County will be created to allow operational and economic evaluation of various alternatives. The potential of new and improved technology for the various modes will be presented for inclusion of future operations and economic impacts.
Lessons Learned: It will be determined whether there are the will and the way for the public and private sectors to jointly and cooperatively invest in projects involving the intermodal movements of goods and materials.
Reasons for Inclusion: Intermodalism is an "in" topic. Many studies address passenger intermodalism but few address freight intermodalism, which is possibly where the term origi-

nated. Physical operations, control, accountability, safety, and security in the movement of goods and materials between modes form an intricate, complex process requiring tremendous knowledge and experience.

Innovative Aspects: The Savannah–Chatham County area is a microcosm of most of the various systems for the movement of goods and materials within a relatively small modal geographic corridor. The major systems are rail–trailer-on-flatcar and rail–container-on-flatcar, highway-trucking, seaport-harbor, airport-cargo, and pipeline-fluids.

Other Comments: A major justification for the location of these various transportation systems in Savannah is its continued competitive advantage over the other large freight-handling centers along the southeast Atlantic Seaboard. Therefore, to maintain and enhance the efficient seamless and economical movement of goods and materials between modes is in the best interests of the state of Georgia.

36. HELLER AND LEAKE ARCHITECTS

Jeffrey Heller (telephone: 415-247-1100)

See Session 7: *Planning Services and Terminals for Transit Customers—An Industry Cross Section*; Case Study: Emeryville, California, Amtrak Station.

37. ICF KAISER ENGINEERS, INC.

Allen Parker, 3750 N.W. 87 Ave., Suite 530, Miami, FL 33178 (telephone: 305-716-5144)

See Session 3: *State Sampler*; Case Study: Miami Intermodal Center Study

38. INTERMODAL ASSOCIATION OF NORTH AMERICA

John McQuaid, President, 6410 Kenilworth Avenue, Suite S-108, Riverdale, MD 20737 (telephone: 301-864-4160)

Description: Intermodal service is an integral part of America's transportation network. Today's intermodal service providers increasingly offer innovative, efficient, and value-added services that allow shippers to effectively compete both domestically and worldwide. Leaders in intermodal services recognize that for this industry to build on the success of the past decade, it needs to forge a strong identity among customers, policy makers, and regulators, whose future decisions will be critical to the industry's long-term growth.

The Intermodal Association of North America (IANA) is the industry alliance formed to achieve this goal. IANA is North America's leading industry trade association representing the combined interests of intermodal freight transportation companies, including intermodal truckers and highway carriers, railroads, water carriers, stacktrain operators, intermodal marketing companies, and industry suppliers.

The mission of IANA is to promote the benefits of intermodal freight transportation and encourage its growth through innovation and dialogue. The goals of IANA include promoting the benefits of intermodal service to the shipping community, providing its members a forum to discuss common issues and innovations, fostering its members' professional development, participating in governmental proceedings affecting the industry, and informing and educating lawmakers and other government representatives about the industry.

39. INTELLIGENT TRANSPORTATION SOCIETY OF AMERICA (ITS AMERICA)

Intermodal Contact: Richard Easley, 400 Virginia Avenue, S.W., Suite 800, Washington, D.C. 20024-2730 (telephone: 202-484-4847)

40. JACK LONDON SQUARE AMTRAK STATION

Susan Stewart, Division of Rail, Stations Branch, California Department of Transportation, P.O. Box 942874, Sacramento, CA 94274-0001 (telephone: 916-227-9410).

Lead Agency: The Port of Oakland

Contact: Steve Hanson, Commercial Real Estate (telephone: 510-227-1218)

Responsible Agency: California Department of Transportation

Contact: Susan Stewart, Intercity Rail Program (telephone: 916-227-9410)

Description: This project was presented as an intermodal, intercity, transcontinental hub rail station for northern California. It is located at 2nd and Alice Streets across from Jack Lon-

don Village in Oakland, California. The new terminal provides the general public with two boarding platforms, a pedestrian bridge, a parking facility, ticketing service, baggage service, and express mail service.

Transit modes such as taxis, bicycles, local buses, shuttle transits to Bay Area Rapid Transit (BART) stops, and waterway connections to San Francisco via ferry service add the intermodal component to the station, not excluding pedestrians. The facility also provides Amtrak officials and crews with office space and locker rooms.

The associated track work involves realignment of two main line tracks through the station area; construction of an approximately 1,500-ft station track with associated signal and grade crossing protection work; and three crossover tracks. Because of extensive freight activity in the area, the Southern Pacific Railroad recommended two main line tracks, one for freight and one for passenger rail service. State-supported trains, as well as out-of-state trains, can access the station at the same time.

Status: The station is targeted to open April 28, 1995.

Budget: The station element totals $9.066 million. The track element totals $5.5 million.

Funding Sources: Funding comes from transit capital improvement funds, Proposition 108 and 116 rail bond funds, federal emergency relief for track work, and Program 130 railroad grade crossing funds.

Schedule: Occupancy of the station is planned for April 1995 and completion of the station (associated street work along Embarcadero Boulevard) by December 1995.

Major Needs and Problem Definition: The 1989 Loma Prieta, California, earthquake caused irreparable damage to the Oakland Amtrak station as well as the collapse of a section of the nearby I-880 elevated freeway. The original site was condemned and Amtrak was forced to relocate Oakland station operations temporarily in adjacent Southern Pacific facilities located at 16th and Wood streets. The new Cypress I-880 project required track relocations that forced the remaining existing Oakland station facilities to be abandoned by late summer 1994.

Major Issues and Concerns: The success of the new terminal is contingent on access to the station by all available trains, including the *California Zephyr*, *Coast Starlight*, *San Joaquin*, and *Capitol Corridor*.

Determinants of Success or Failure: The new Oakland station is considered the primary hub intercity rail station for the East Bay and northern California.

Critical Analytical Evaluation Measures: Ridership demand to and from Oakland excluding San Francisco passenger transfers will be analyzed, and traffic congestion and fuel and energy savings in the Bay Area will be determined.

Environmental Issues: The Port of Oakland has filed an approved Negative Declaration dated April 1992. All potential impacts have been mitigated.

Economic Impact Analysis: The rail station was built in the Jack London Village area to offer destinations and passenger amenities, such as hotels, restaurants, shopping, essential transfers with connections to the Oakland Airport and to San Francisco via ferry service, and bus shuttles to Lake Merritt and business areas in Oakland, as well as Jack London Square.

Community and Public Outreach: A brochure is available upon request from the Port of Oakland.

Public-Private Partnership: Joint development activities include rail freight business, tourism, intercity rail service, and local business for shopping, hotels, and restaurants. Local transit will initially provide seven routes to and from the new rail facility.

Security and Safety: The Port of Oakland has agreed to provide security guards at the station during all rail service operations.

Technology: The station has an innovative communications display system to assist passengers with real-time travel information and details about surrounding conveniences.

The new station meets all state and federal laws regarding accessibility for disabled persons at transit facilities. For example, each boarding platform will have a visual display board to assist passengers with information pertaining to train departures, arrivals, and delays. Also, ADA-approved clay transit tile has been used for the tactile edge. Parking and paths of travel are appropriately designed. The new bridge also provides an elevator at each tower.

The station meets stringent seismology codes for the location. The window treatment includes neoprene shims to add flexibility to the glass if an earthquake threatens the structure. The glass is the strongest material available and offers beauty with low maintenance. It also offers protection during fires because the product does not produce toxic fumes and will break into small, rounded pieces in intense heat.

The architecture is reminiscent of historic rail facilities with its barrel design and the influence of industrial steel as used in European rail stations.

Lessons Learned: Instructive aspects of this project are the project development process and working with multiple funding sources and multiple partners (Port of Oakland, Amtrak, Southern Pacific Railroad, and California Department of Transportation).

Reasons for Inclusion: This project is important in a discussion of intermodalism because it involves intermodal, intercity rail; is multijurisdictional; involves a partnership; and is the largest and most complex intercity rail station in northern California.

Innovative Aspects: Innovation is shown by the new communications technology, architectural design, accessibility compliance, intermodalism, multijurisdictional aspects, and multiple funding sources.

Other Comments: A video is being prepared to provide a history of the station construction.

41. LARKSPUR FERRY TERMINAL, CALIFORNIA

Gene Rexrode, Secretary of the District, Golden Gate Bridge Highway and Transportation District, P.O. Box 9000, Presidio Station, San Francisco, CA 94129 (telephone: 415-921-5858)

See Session 7: *Planning Services and Terminals for Transit Customers—An Industry Cross Section*; Case Study: Larkspur Ferry Terminal, Larkspur, Marin County, California

42. LOS ANGELES COUNTY TRANSPORTATION AUTHORITY, UNION STATION GATEWAY, INC. (DESIGN-BUILDER)

Gateway Intermodal Transit Center at Union Station (National Register of Historic Places), Los Angeles, California

Lead Agency: Los Angeles County Transportation Authority; Union Station Gateway, Inc. (design-builder)

Project Contact: Dennis Newjahr, Los Angeles Metropolitan Transportation Authority (MTA), 818 7th Street, 11th Floor, Los Angeles, CA 90012 (telephone: 213-244-6463; fax: 213-244-6031)

Description: The Gateway Intermodal Transit Center will serve as a regional transportation hub connecting Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. It will serve all major transit modes, including regional and local bus lines, commuter rail lines, heavy and light rail systems, carpools and vanpools, taxi and shuttle service, and the regional highway and high-occupancy-vehicle (HOV) system. As designed, Gateway will accommodate more than 100 buses an hour and serve more than 115,000 multimodal transit users daily. Gateway's design has three interconnected elements: (*a*) a bus plaza linking public transit and parking to create a highly visible public space; (*b*) a portal pavilion, located adjacent to the bus plaza, to serve 30,000 waiting and disembarking passengers transferring between various transit modes each day; and (*c*) a park-and-ride element to provide 2,500 spaces adjacent to six heavily traveled freeways, encouraging automobile commuters to complete their commute using an alternative mode of transit. This facility is expected to serve an estimated 8,000 carpooling commuters per day.

On a larger scale, the transit center is planned as a centerpiece of a joint-development mixed-use project known as the Union Station Gateway Center. Upon completion, the Gateway Center will consist of the transit center and at least two office towers totaling more than 1 million gross ft^2, together with related rail and user amenities. The first office tower will be the new headquarters of the MTA.

The headquarters building, while designed and funded independently of the transit center, will be integral with the transit center's components, a transportation hub and parking facility serving as the focal point of the Gateway Center. The transit center will serve as the "front door" to the proposed project, linking the various buildings, public transit, and parking ele-

ments and serving as the connection between buses and rail systems. The transit center will contain a variety of retail spaces to meet the needs of those commuting through the facility, including outlets for convenience goods, food, and other services such as bus and rail transit passes.

Status: The transit center and the MTA headquarters are under construction.

Budget: The total construction budget for the transit center is approximately $149.5 million, to be financed over five years. At present, committed funds total $134.5 million.

Funding Sources: A strategy has been adopted to create a highly diverse funding base, which includes the following:

Source	*Amount ($)*
Federal Transit Administration	45,495 million
Federal Highway Administration	31,636 million
State of California	4,517 million
City of Los Angeles	3,700 million
MTA	54,195 million

Schedule: Construction was initiated in February 1993. The transit center is scheduled to be completed in September 1995.

Major Needs and Problem Definition: The need for the intermodal facility was initially identified as a mitigation measure in the 1983 Metro Rail Environmental Impact Statement. The report identified a need for a bus terminal with bus bays and layover spaces, a transit plaza to serve passengers, public parking for up to 2,500 cars, ingress and egress to the site, freeway ramp improvements, and roadway alignments. With the increase in rail and bus usage in Southern California, it is anticipated that the transit center will serve an anticipated 15,000 daily bus and automobile trips and 115,000 daily rail passengers.

Major issues are institutional (the creation of a public-private entity known as Union Station Gateway, Inc., to act as "design-builder"; the relationship between MTA, Catellus Development Corporation, and the Union Station Gateway, Inc.); funding-related (timing approval and release by federal and state agencies of funding for construction of the project); operational [integration of Amtrak, Metrolink (commuter rail), Metro Rail Red Line (heavy rail), Metro Rail Blue Line (light rail), and HOV busway services]; and related to community planning (incorporation of a community planning effort for the Los Angeles-sponsored Alameda District Master Plan).

Determinants of Success or Failure: Necessary for success are timely construction and operation, accommodation and incorporation of buildings planned for the transit center site, and critical analytical evaluation.

Critical Analytical Evaluation Measures: No measures have been formally adopted.

Environmental Issues: The project has received environmental clearance consistent with provisions of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

Community and Public Outreach: Public hearings and community outreach were conducted during the planning and predevelopment stages of the transit center.

Economic Impact Analysis: The transit center will have substantial and diverse economic and fiscal impacts. The regional economy, employment development opportunities, and fiscal obligations and revenues of governments in the region will all benefit; the transit center will generate between 2,000 and 3,000 jobs annually during construction and 100 to 200 permanent jobs; a total annual tax revenue to the City of Los Angeles of $1.4 million (the project represents an increase in current revenues of 143 percent); approximately $1.2 million in mitigation fees to support school and community services; and over $50 million for DBE and WBE programs.

In addition, funding for affordable housing units in the surrounding community will be considered part of the Gateway Center and future development in the area.

Public-Private Partnership: A public-private partnership was created to plan, design, and construct the transit center and MTA headquarters. Known as Union Station Gateway, Inc.

(USG), the partnership was formed between the MTA and a publicly held real estate company, Catellus Development Corporation. USG has the lead role in functions related to day-to-day program management and control, design and construction management, and safety and security. USG is also responsible for preparing, executing, and administering contracts with consultants and contractors. A board of directors of three public-sector and three private-sector members governs USG activities.

Although no private funding has been utilized initially for Gateway, the cost of certain infrastructure improvements that benefit future development will be captured through a cost-allocation provision in a development agreement between the MTA and Catellus. The costs allocated to Catellus total approximately $10,500 million.

Security and Safety: State-of-the-art safety and security systems have been incorporated into the transit center.

Technology: A number of communications and telecommunications technologies will be implemented as a critical part of the transit center.

Lessons Learned: A series of planning, design, predevelopment, and construction lessons will be generated from the transit center project. Some of the lessons will be institutional, dealing with the implementation of the public-private partnership; a set of lessons will focus on procurement of funding and financing of the project; and other lessons will center on utilizing the project as an economic and social catalyst for the surrounding community.

Reason for Inclusion: The Gateway Intermodal Transit Center will be the largest project of its kind on the West Coast. Secretary of Transportation Peña has called Gateway a "national model" of intermodalism. While the U.S. Department of Transportation and Congress begin to evolve a National Transportation System (NTS), the Gateway project is a strong example of intermodal investments of national significance.

Other reasons to include this project are institutional (public-private partnership), funding-related (innovative use of federal, state, and local resources), planning-related (incorporation of mixed-use development), development-related [project to serve as catalyst for community planning of surrounding neighborhoods (Hispanic, Asian)], design-related (creative elements of project incorporated with historic Union Station and creation of significant pedestrian environments), and operational (integration of major rail and bus systems).

43. LOUISIANA STATE DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

Carl Rascoe (intermodal contact), P.O. Box 94245, Baton Rouge, LA 70804-9245 (telephone: 504-358-9136)

See Session 3: *State Sampler*; Issue Overview

44. LOUISIANA STATE NATIONAL PORTS AND WATERWAYS INSTITUTE

Charles Appfel, Assistant Director, Helen Carter House, Baton Rouge, LA 70803 (telephone: 504-388-2750)

See Session 6: *New Directions, New Partnerships*; Case Study: Maritime System of the Americas

45. MAINE DEPARTMENT OF TRANSPORTATION

Paul J. Minor, Bureau of Planning, Transportation Building, State House, Station 16, Augusta, Maine 04333-0016 (telephone: 207-287-3131)

See Session 6: *New Directions, New Partnerships*; Case Study: Auburn Intermodal Freight Terminal, Maine

46. MARIN COUNTY AIRPORTER

Grace Hughes, President, 300 Larkspur Landing Circle, Larkspur, CA 94939 (telephone: 415-461-4203)

See Session 8: *Airport Access Solutions*; Case Study: Off-Airport Terminal for Bus Services Supporting Intermodal Concept for Airport Access

47. MARITIME ADMINISTRATION
Richard Walker (intermodal contact), Office of Intermodal Development, 400 7th St., SW, Suite 7201, Washington, D.C. 20590 (telephone: 202-366-5474)

48. MARTA
Gerry Pachucki and Harriet Robin-Smith, Director of Planning, 2424 Piedmont Road, N.E., Atlanta, GA 30324 (telephone: 404-848-4244)
See also Session 7: *Planning Services and Terminals for Transit Customers—An Industry Cross Section*; Case Study: Transit System Development and Operations in Atlanta
Intermodal transit at MARTA is systemwide in both design and policy.

- Automobile-bus
  –Local street access by design
  –Interstate highway access by design
  –Park-and-ride lots by design
- Bicycle-rail
  –Bicycle parking at all rail stations by design
  –Demonstration policy allowing bicycles on all MARTA trains at all times
- Pedestrian-bus
  –New policy to help finance sidewalks adjacent to major bus routes
- Pedestrian-rail
  –Sidewalks within MARTA property by design
  –New policy to help finance sidewalks leading to MARTA property
- Airlines-rail
  –MARTA rail station located within Hartsfield International Airport by design
- Bus-rail
  –Barrier-free by design
  –Free transfer by policy
- Airlines-bus
  –MARTA bus service to Hartsfield International Airport by policy

49. MARYLAND DEPARTMENT OF TRANSPORTATION
Hal Kassoff, Administrator, Maryland State Highway Administration (telephone: 410-333-1111); Neil Pedersen, Director, Planning and Preliminary Engineering (telephone: 410-333-1110); Clyde E. Pyers, Director, Office of Highway Policy Assessment (telephone: 410-333-0327)
See Session 3: *State Sampler*; Case Study: Planning and Funding Intermodalism in Maryland

50. MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
John Robinson, Massachusetts Executive Office of Transportation, 10 Park Plaza, Boston, MA 02116-3969 (telephone: 617-973-7221)
See Session 6: *New Directions, New Partnerships*; see Session 8: *Airport Access Solutions*; see Item 55 in this Appendix: *New England Transportation Initiative*

51. MASSACHUSETTS PORT AUTHORITY (MASSPORT)
Evelyn Addante and Diane Ricard, Project Managers, Ground Access, Unit 2150, 10 Park Plaza, Boston, MA 02116 (telephone: 617-561-1646)
See Session 8: *Airport Access Solutions;* Case Study: Air Passenger and Employe Vehicle Trip Reduction Strategies, Logan Int. Airport, Boston

52. METROPOLITAN TRANSPORTATION COMMISSION, CALIFORNIA
Keith Mattson, Associate Planner, 101 8th Street, Oakland, CA 94607-4700 (telephone: 510-464-7832)
See Session 4: *MPOs Reengineering for Intermodalism*; Issue Overview
Metropolitan Transportation Commission Freight Advisory Council
Lead Agency: Metropolitan Transportation Commission (MTC)
Project Contact: Keith Mattson, Associate Planner, MTC, 101 8th Street, Oakland, CA 94607-4700 (telephone: 510-464-7832; fax: 510-464-7848)

Description: MTC's Freight Advisory Council represents a broad spectrum of public- and private-sector freight interests for promoting economic development in the Bay Area. Representatives from private freight transportation companies, shippers and receivers, public-sector seaports and airports, and public-sector agencies with freight concerns meet regularly to discuss intermodal freight issues in the region. The Council's mission statement is as follows: To build consensus among public and private sector freight interests for improving the safety and efficiency of freight movement.
Status: The Council has been ongoing since November 1992.
Budget: There is no set budget. MTC staff time is required to develop agendas and research specific issues.
Funding Sources: Staff time is included in MTC's overall work program.
Schedule: The activity is ongoing, with regular meetings every other month and special sessions scheduled as needed.
Problem Definition: Freight interests as an entire sector had never before been involved in MTC's decision-making processes. In particular, private freight companies had not been included in regional transportation planning and investment decisions. The Freight Advisory Council fills a critical gap in MTC's role for freight planning in the region.
Major Issues and Concerns: The five objectives of the Freight Advisory Council are (*a*) to advise the MTC and other public agencies about specific freight concerns, issues, and priorities; (*b*) to educate each other and the broad spectrum of interests that the Council represents about issues that affect freight mobility; (*c*) to advocate specific changes in policies and practices that would improve freight mobility; (*d*) to participate in MTC's transportation planning and investment decision processes; and (*e*) to identify, support, and implement promising and effective strategies to improve freight mobility.
Determinants of Success or Failure: Success or failure is related to the level of participation of individual members. Ultimate tests are (*a*) the ability to influence MTC planning and investment decisions to improve freight mobility and (*b*) achieving tangible results through specific projects and operational strategies to improve freight movement.
Critical Analytical Evaluation Measures: Travel time and cost savings as a result of specific improvements should be measured.
Public-Private Partnership: The Council is a excellent case study of how multiple private- and public-sector entities can form a working partnership. Certain elements have been key to this accomplishment, including establishment of a common purpose ("shared values"), mutual education and cross-training, definition of specific problems on which to focus, and active participation among members.
Technology: The Council has been involved in intelligent transportation system issues, such as advising MTC on its advanced traveler information system (ATIS) project, TravInfo, and tackling the tough implementation issues behind weigh-in-motion mainline bypass technology. The Council has also advised MTC about freight issues and concerns for the Congestion Pricing Demonstration Project on the Oakland Bay Bridge.
Lessons Learned: An effective freight sector–MPO partnership can be accomplished if it is given time to develop. The early development of the partnership should focus on mutual education about freight concerns in the region, what a metropolitan planning organization (MPO) does, and so on. MPOs need to make it clear how they can improve freight mobility and advise the private sector on how and where decision making can be influenced. A good short-range focus will ensure that the private sector does not disengage.
Reasons for Inclusion: The Council has served as a model for other MPOs in the country that seek to establish a dialogue with intermodal freight interests. Although many other MPOs will have established their own freight advisory councils by the time of this conference, the 2 years of lessons learned should make MTC's Freight Advisory Council interesting and informative. The Freight Advisory Council also demonstrates the elements of successful partnership development presented by Jack Helton at the TRB Conference on Intermodal Planning in Irvine, California, in December 1992.

53. NATIONAL HIGHWAY INSTITUTE

Al Miller (telephone: 703-285-2787)
See Item 28 in this Appendix: Federal Highway Administration: NHI Training Course, *Landside Access for Intermodal Facilities*

54. NATIONAL TRANSIT INSTITUTE (NTI), RUTGERS UNIVERSITY

Donald Miklas, P.O. Box 270, 120 Albany St. Plaza, Suite 705, New Brunswick, NJ 08903-0270 (telephone: 908-932-1700; fax: 908-932-1707)
Description: The National Transit Institute was established under ISTEA at Rutgers, the State University of New Jersey, and is funded by a grant under the Federal Transit Administration. In response to industry need, NTI has developed a comprehensive management development program exclusively for transit managers.

55. NEW ENGLAND TRANSPORTATION INITIATIVE

John Robinson, Massachusetts Executive Office of Transportation, 10 Park Plaza, Boston, MA 02116-3969 (telephone: 617-973-7221)
New England Transportation Initiative Final Report (synopsis)
Lead Agency: New England Transportation Initiative (NETI) policy committee composed of state DOT representatives, two state economic development officials, and two environmental agency representatives.
Project Contact: Charles Repeta, Jr., Project Manager, NETI (telephone: 617-973-7025)
Description: NETI is a cooperative venture among the six New England states to develop a business plan for strategic transportation planning in the region. The plan is not intended to create a detailed transportation network or program that will continue to grow out of the traditional state and local planning processes. It is, however, intended to achieve agreement on policies and priorities at the strategic level on issues of regional significance. The agreement on a plan of cooperation represents an unprecedented achievement in regional cooperation in the transportation field among six states with disparate political cultures and priorities and that have tended to act unilaterally in the past.

The study has focused on using transportation policy to enhance mobility and access for persons and goods, economic vitality, and environmental quality. On a regional level, it should be possible to resolve and manage conflict among these goals, which, for most Americans, define quality of life. The new era of global economic competitiveness makes it imperative that the New England states use transportation policy to promote economic vitality or risk falling behind national economic growth rates.

The following are the major recommendations of the NETI project:

1. Create the New England Regional Intermodal Freight Alliance to assist the states in the development and implementation of a strategic, intermodal, and regional approach to the movement of goods in New England.
2. Address increasing levels of congestion in passenger transportation by undertaking regionally coordinated multimodal capacity expansion and demand management projects in congested priority regional travel corridors defined by Interstate highway I-95 in five of the six states, I-93 in Massachusetts and New Hampshire, and I-91 and I-84 in Connecticut.
3. Undertake a regional tourism transportation initiative to facilitate the movement of tourists into and throughout the region.
4. Undertake four initiatives on a regional basis in the application of new technologies to the solution of transportation problems: intelligent transportation systems (ITS), telecommunications, low-emitting vehicles (LEVs), and alternatively fueled vehicles.
5. Continue efforts to preserve the existing transportation infrastructure in good working order. The most critical link in this system, despite the new initiatives described, is the roadway network, which will continue to accommodate the majority of passenger and freight trips and will experience increased volume under any of the proposed scenarios.

Status: The NETI policy committee has selected a consultant team of seven under the leadership of Cambridge Systematics, Inc. (CSI). The team has completed the first phase of data collection and will, under the direction of the policy committee, develop the required scenarios

by early summer 1994. The policy committee with the assistance of the consultant team will prepare the plan of cooperation by early 1995.
Budget: The study has an $800,000 budget, 80 percent of which is funded by ISTEA.
Funding Sources: The total budget of $800,000 is divided as follows: ISTEA grant, $727,500; Massachusetts Department of Transportation MHD, 72,500.
Schedule: The grant is for an 18-month study that began in September 1993 and is to be completed by March 1995.
Major Needs and Problem Definition: The six New England states possess regionally unconnected transportation policies. Transportation planning in New England currently is carried out by six separate state DOTs. NETI suggests that a cooperative effort in regional planning will result in an efficient and environmentally sound regional transportation system.
Determinants of Success or Failure: Success depends on the development of a list of cooperative efforts that can be accomplished by the six New England states to result in a seamless intermodal transportation system for the region.
Critical Analytical Evaluation Measures: The current planning policies of the New England states should be analyzed. Further, on the development of the transportation scenarios, they should be evaluated on the basis of selected criteria focused on efficiency, economy, and environmental fitness.
Environmental Issues: Congestion mitigation and compliance with the Clean Air Act are to be intrinsic to the plan of cooperation.
Community and Public Outreach: A major part of this study is public input through the development of advisory committees in each state, such as a regional business roundtable, regional technical advisory committee, and an intergovernmental advisory committee. The advisory committees directly support the policy committee in development of the plan.
Public-Private Partnership: The public outreach programs will provide a direct pipeline to the NETI advisory committee.
Technology: The NETI plan of cooperation may provide a practical model for other regional or national initiatives that develop an integrated intermodal transportation system.
Lessons Learned: Instructive aspects of this project are the benefits of regionalism versus individual state planning, how to develop interstate transportation plans, and what the important issues are when adjoining states plan cooperatively.
Reasons for Inclusion: The importance of the project for this conference lies in its multistate effort toward establishing a regional intermodal transportation system, the first such effort.
Innovative Aspects: The project is innovative in its development of a plan of cooperation instead of a transportation plan; the multistate, multimodal aspect; and integration of state DOTs, state environmental agencies, and economic agencies in a transportation study.

56. NEW JERSEY DEPARTMENT OF TRANSPORTATION

Ted Mathews and John Powers, Bureau of Freight Services, New Jersey DOT (telephone: Mathews, 609-530-8026; Powers, 609-530-6594)
See Session 5: *New Technologies, Partnerships, and Procedures*; Case Study: New Jersey Goods Movement Data Base

57. NEW MEXICO STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

Ron Forte, Deputy Secretary, New Mexico State Highway and Transportation Department, or David Albright, President, Alliance for Transportation Research (telephone: 505-246-6410)
See also Session 6: *New Directions, New Partnerships*; Case Study: Santa Teresa Intermodal Facility
URICA Program Plan
Description: A system architecture will be designed for an advanced transportation corridor. Public transit will be the lead mode for implementing this intermodal system. The architecture will be open-ended, enabling other modes and applications to be added. Together, the architecture, advanced transit program, and capability to expand are called the Urban/Rural Intelligent Corridor Application (URICA) Project.

Advanced transit is emphasized within the initial transportation system architecture. An ongoing transit program will be designed, developed, and implemented for the Albuquerque Transit and Parking Department. The transit program will include flexible routing, vehicle location, and real-time automated reservations and scheduling for the city's paratransit service. All paratransit vans will be equipped to take part in the program.

All modes in the transportation corridor will be included in the URICA architecture. A prototype Incident Management Center will be developed to show the feasibility of the architecture. To verify the design, proof-of-principle testing within the urban and rural corridor will be performed. This testing will include highway hazardous materials incident detection, location, and response, and verification of the data-transfer capabilities between the prototype Incident Management Center and the Albuquerque Transit and Parking Department.

URICA will enable new transit technologies to be integrated into the open system architecture. The result will be an advanced urban paratransit operation with the capability to expand to other modes. The project will demonstrate intelligent transportation technology as well as an integrated approach to urban and rural transportation. Most important, it supports improved service to the public, resulting in a more liveable community.

A two-member team will be hired as evaluators of URICA. The members of this evaluation team will assist URICA staff in developing performance criteria for the project. The evaluation team will perform an independent evaluation of the success of the URICA project in achieving the performance criteria.

New Mexico State Intermodal Planning

Lead Agency: Barton-Aschman Associates, Inc., in cooperation with the Alliance for Transportation Research

Project Contact: John Hamburg, Vice President, Barton-Aschman Associates, Inc., 7770 Jefferson St., NE, Suite 350, Albuquerque NM 87109.

Description: The New Mexico State Intermodal Planning Project was one of six areas to receive funding from the U.S. Department of Transportation to undertake a model intermodal planning effort. The state of New Mexico retained the firm of Barton-Aschman Associates, Inc., to undertake this work. The multitask effort included identification of intermodal facilities, specification of performance measures and data and sources, data collection and management, a specific evaluation process, development of planning analysis tools, testing of intermodal scenarios, provision of training, and preparation of draft state intermodal transportation plan.

Status: The work is to be completed by June 30, 1994.

Budget: The project has a grant from the U.S. Department of Transportation for $500,000.

Schedule: Work commenced in March 1993 and is to be completed in June 1994.

Major Needs and Problem Definition: The provisions of ISTEA call for a planning process that deals with the movement of persons, goods, and information by providers and users of all modes of transportation, both public and private, by intrastate, statewide, and interstate geographic levels. This project was to develop a set of supply data requirements including network identification for all modes, travel demand data requirements for goods and people, evaluation performance measures, and procedures for utilizing these data in a planning and scenario evaluation to be integrated with the New Mexico State Highway and Transportation Department intermodal planning process.

Major Issues and Concerns: Mobility for people is prerequisite to economic, educational, and cultural development. Mobility for goods is key to the economy of cities, regions, and the state. Another major concern is the issue of public participation during the planning process rather than at the end of the process. This participation further requires input on the day-to-day issues, improvements that might be made, as well as the evaluation criteria by which to choose among alternatives.

Determinants of Success or Failure: There are two aspects of success: the first is the technical accomplishment of the specific contractual work tasks of intermodal facility identification, which includes the specification of necessary demand data requirements and how they might

be met; the identification of, specification of units for, and measurement of performance of intermodal links and hubs; the development of models to estimate person movement and goods movement demand present and future or with changed supply; a method of diagnosing deficiencies in link and hub performance related to performance measures; a method for generating intermodal improvement scenarios; and a method for evaluating alternatives.

The second aspect of success is the acceptance by the state of part or all of these procedures in the development of an ongoing intermodal planning process.

Environmental Issues: Meeting the goals of air and noise pollution reduction, reduced energy consumption, reinforcement of the land use plan, and preservation of historic sites is critical to the environment.

Community and Public Outreach: An intermodal conference was held.

Economic Impact Analysis: The evaluation process considers the economic impact of alternative intermodal scenarios, and this is critical to choosing from among scenarios.

Public-Private Partnership: The concern with the public-private partnership is reflected in the composition of the policy and technical committees of the studies, which included federal, state, and local planners and administrators as well as private organizations, such as the American Trucking Associations, railroads, and user groups. This concern carried over into the conference, which reached out to the private sector and individuals for participation.

Security and Safety: Both of these are important performance measures for both persons and goods.

Technology: No technology breakthroughs were accomplished in this effort. However, the need for a geographic information system (GIS) and its utility to the process are very clear.

Lessons Learned: Three aspects of this project are instructive: the potential of GIS in intermodal planning, the need for "real" public participation, and the paucity of available inter- and intrastate data on goods movement.

Reason for Inclusion: This project is included here to demonstrate the power of GIS in intermodal planning display (networks, intermodal hubs, travel demand, demographic data relevant to intermodal needs), data management, diagnostic utility (providing performance measures on facilities at all geographic levels), examining mobility and accessibility issues at a statewide level, and graphic evaluation of proposed intermodal scenarios.

58. NEW YORK STATE DEPARTMENT OF TRANSPORTATION

Bruce Blackie, 1220 Washington Ave., State Campus Bldg. Suite 4, Albany, NY 12232-0431

See Session 3: *State Sampler*; Case Study: Full-Freight Access Program

59. NORTH CAROLINA GLOBAL TRANSPARK

Mark Cramer, North Carolina Global Transpark Authority, 1130 E. 3rd St., Suite 210, Charlotte, NC 28204 (telephone: 704-347-2538)

North Carolina Global TransPark

Lead Agency: North Carolina Global TransPark Authority

Project Contact: William T. Powell, Jr., Executive Vice President, N.C. Global TransPark Authority, P.O. Box 27406, Raleigh, NC 27611-7406 (telephone: 919-733-1365; fax: 919-733-1359)

Description: Global TransPark (GTP) will provide a unique multimodal transportation environment to create an international competitive advantage for manufacturing, distribution, agribusiness, and transportation-related companies. A comprehensive planning effort has fully integrated air, rail, road, and nearby sea transportation modes to serve the logistics requirements of industrial and other tenants that will locate at, or utilize, the project.

GTP has been planned to encompass 15,300 acres located in eastern North Carolina 90 mi east of Research Triangle Park and 50 mi from the Atlantic Coast. In its ultimate stage the project will have two long-range parallel runways, a state-of-the-art central cargo processing area, an intermodal rail terminal, an internal cargo transport system throughout GTP, a high-speed road network, and upgraded connections to regional road and rail systems. The two deepwater ports of Morehead City and Wilmington are located one hour away by rail and highway. The transportation modes and the industrial tenants will be further integrated and

supported by enhanced electronic data interchange, telecommunications, customs, and educational and training facilities and systems. Projections call for direct employment at GTP of over 40,000.

The state of North Carolina believes that the GTP embodies the type of innovative infrastructure investment that will be a foundation for industrial growth in the United States into the 21st century. The GTP is the leading new economic development project of the state and enjoys the same level of bipartisan political support that led to the creation of the Research Triangle Park. The Board of Directors of the GTP Authority is chaired by James B. Hunt, Jr., the Governor of North Carolina, and is composed of leaders from government, academia, and the private sector. The first chair of the Authority was then-Governor James G. Martin.

Status: The North Carolina General Assembly created the GTP Authority in 1991. A feasibility study was completed, site selected, nonprofit supporting foundation formed, and master planning effort initiated in 1992. A 13-county GTP Development Commission was formed in 1993, and private fund-raising efforts were initiated. The master plan for the GTP has been completed.

Budget: The budget calls for $4.5 million for master planning and the environmental assessment effort and $159 million for the first phase of development.

Funding Sources: Funding for the project has come from private and public sources at the federal, state, regional, and local levels. It is expected that a variety of funding sources will continue to support the development of the GTP.

An application will be made to the federal government for the eligible portion of runway construction costs, $1 million to conduct a technical research project, $622,00 for the master plan now nearing completion, and $300,000 for an air cargo system plan.

The state government will provide matching funds for runway construction and $250,000 for the technical feasibility study; $11 million has been provided to date for GTP Authority operations and marketing, and $25 million has been authorized for land acquisition. The internal rail system has been programmed for $10 million, and $7.5 million has been appropriated for the regional GTP Development Commission. The GTP Development Commission will provide an additional $20 million for related development.

Lenoir County and the city of Kingston have agreed to donate the existing Kingston Regional JetPort, valued at $140 million, to the GTP Authority as the nucleus of the project and will contribute $40 million to provide additional water and sewer service.

Private-sector funding includes the nonprofit GTP Foundation, which has a fundraising goal of $30 million to support the GTP. Over the life of the project, the private sector will invest hundreds of millions of dollars in tenant-owned facilities and will run and operate certain common-use systems and facilities.

Schedule: The Environmental Impact Statement may be processed as early as the end of 1995, with construction of major improvements scheduled to begin late in calendar year 1996.

Major Needs and Problem Definition: Manufacturing industries in the United States are facing intense competition from overseas companies. The ability to compete in a global economy has been defined by cost, quality, service, and, most recently, speed and efficiency of transportation. Enhancing speed and efficiency in every part of the business process, from product design to material and component supply and customer delivery, is essential to business success.

It has been recognized in North Carolina that barriers imposed by transportation, communications, and institutional bottlenecks have limited the competitiveness of U.S. companies. Only a new and innovative approach to intermodal transportation systems can break down these barriers and provide the necessary competitive advantage. The GTP seeks to accomplish this by creating seamless logistics, fully integrating transportation modes, communications, and industrial facilities. Firms will be able to choose the most effective and efficient transportation mode or combination of modes and services to meet their logistics needs, whether local, domestic, or international.

Major Issues and Concerns: The strength of the manufacturing sector is vital to North Carolina, the Eastern Seaboard, and the entire United States. For U.S. manufacturing companies to maintain and expand their market share, prosper, and create jobs, they must substantially

upgrade their entire logistics chains. The existing transportation infrastructure is not adequate to meet the needs of these firms in the future. To compete into the next century, a carefully planned and truly integrated multimodal transportation infrastructure and innovative business environment will be necessary. Only through new facilities, institutional structures, and services, as exemplified by the GTP, can the requisite efficiencies and capabilities be fully realized. This achievement requires a new partnership between all levels of government and the private sector and a new approach to planning and funding.

Determinants of Success or Failure: The GTP is a long-term project. Success will be dependent on the ability to sustain public and government support over several years until a sufficient "critical mass" of site improvements and private-sector involvement is achieved. A basic philosophy of the project is that the success of the GTP will be measured by the success of its tenants.

Critical Analytical Evaluation Measures: The following should be measured or analyzed: the air cargo capture rate, the identification and evaluation process for defining potential manufacturing tenants, the marketing success rate, initial development costs and funding sources, and the commercial-financial business plan.

Environmental Issues: Environmental assessment of the project is an important part of the master plan, which has recently been completed. Preparation of an Environmental Impact Statement is now under way and may be completed as early as the end of 1995.

The environmental planning objectives for this project have been very extensive, including protection and improvement of on-site wetlands and forests, enhancement of water quality, improvement of wildlife habitat, provision of opportunities for outdoor recreation, and protection of historical and archeological resources.

A number of innovative features have been developed as part of this effort. A comprehensive conservation plan was developed that incorporates over 2,100 acres of wetland and forest into an open space and conservation system. Among other unique items, this plan includes creation and restoration of wildlife corridors, which will link bottomland and interstream forest management areas. Off-site wetland mitigation "banks" are also being considered as mitigation alternatives.

Community and Public Outreach: A comprehensive program of public information and involvement was established at the very early stages of the master plan process and will continue throughout the project. A comprehensive one-day conference has been held to inform citizens and teachers from a 19-county area about the project. A number of other on-site public meetings have been held, with more being planned, to provide information and seek public comment on the project. A GTP newsletter as well as regional newspaper articles have provided extensive coverage of activities related to the project. A videotape about the GTP has been prepared, and key individuals from the project have given informative speeches to organizations and groups throughout North Carolina. The GTP Authority has placed special emphasis upon meeting with school groups to explain the economic opportunities that will result from development of the GTP.

Economic Impact Analysis: One of the key benefits of this project will be the tremendous economic impact it will have on eastern North Carolina. In its final stage, the project is forecast to provide direct employment for more than 40,000, with total direct and indirect employment of over twice that amount.

In addition, the upgrading and expansion of regional roads, rail lines, and utilities to serve the project will lead to further off-site economic growth that will benefit the entire region. This off-site growth will also be stimulated by the GTP Development Commission, which will help plan and fund regional activities and economic development projects related to the GTP. Improvements in the ability of firms located in North Carolina and beyond to move products and goods quickly and efficiently will provide long-term opportunities far beyond the GTP itself.

Public-Private Partnership: One of the unique strengths of the GTP is the degree to which the project has from its inception been a partnership between the private and public sectors. One of the basic precepts of the project has been that the federal, state, and local governments will provide the planning, infrastructure, and institutional framework. The private sector will then build upon that framework with private investment and development.

The Authority was given a broad range of powers, including land use zoning, eminent domain, and the ability to build roads, bridges, and rail lines. Although an agency of state government, the Authority was granted exemptions from a number of contracting and personnel restrictions, allowing it to operate much like a private firm.

A nonprofit private foundation, the GTP Foundation, Inc., was also formed for the sole purpose of supporting the development of the project. It has set a fund-raising goal of $30 million from the private sector, and its Board of Directors is composed of business leaders from throughout the state. It will provide a wide range of services and financial resources for the project.

The Authority is now exploring options for private-sector participation in funding, construction, and management of various common-use and support facilities within the project. Most, if not all, of the investment in plants and facilities within the GTP will be provided by private-sector tenants.

Security and Safety: Security and safety are important parts of the planning for the project. The design of the airport not only must meet all currently applicable requirements of the Federal Aviation Administration, but also must be flexible enough to accommodate future regulatory changes. A unique challenge exists in providing both runway access to industries and increased security measures for freight movements by those industries.

Technology: Advanced cargo-handling technologies are central to the concept of the GTP. Substantial research has been conducted into the best technologies for movement of components, goods, and products to and from, as well as within, the project area. Special emphasis has been given to air cargo technologies, as well as to technologies designed to link multimodal capabilities throughout the project's industrial areas.

Equally key are the technologies and advanced information systems necessary to track and support the movement of cargo. The GTP is being planned around optical fiber cable networks, satellite communications, and electronic data interchange (EDI) systems. A detailed EDI information study is being conducted that will define the principal components of the systems. This effort is directed toward merging the flows of information and goods to eliminate costly delays and barriers.

The seamless integration of multimodal transportation supported by the latest information technologies is a primary objective of the GTP.

Lessons Learned: This project has been instructive in the design of multimodal facilities and systems, its multidisciplinary project development approach, the multijurisdictional and agency cooperation, the regional and international logistics requirements, and the global factors driving structural changes in the U.S. economy.

Reasons for Inclusion: Reasons for inclusion are as follows: the central concept of multimodal and intermodal transportation; the project's regional impact and benefit; the direct support of U.S. manufacturing competitiveness; the potential as a test bed for implementation of new intermodal technologies; its model aspect for other projects; and the excellent examples of public-private partnership, as well as federal, state, regional, and local cooperation.

Innovative Aspects: The project embodies full integration of air, road, rail, and sea transportation modes; recognition that time-based competition is now key to global business success; recognition that air cargo is the fastest-growing mode of international trade and the identification of facilities to leverage that capability; clear focus on utilizing innovative infrastructure and information systems to support manufacturing competitiveness and job creation; unprecedented integration of manufacturing facilities with direct airfield access allowing aircraft to come to the "factory door"; development of new public-private partnerships and intergovernmental structures; creation of a new state agency with the ability to act much like a private entity; environmental planning that incorporates innovative strategies to not only protect the environment, but to improve it; and project potentially supports new logistics requirements of the U.S. military.

60. NORTHERN NEW JERSEY TRANSPORTATION PLANNING AUTHORITY

Joel Weiner, Executive Director, 153 Halsey St., P.O. Box 47022, Newark, NJ 07101 (telephone: 201-645-8700)

See Session 4: *MPOs Reengineering for Intermodalism*; Case Study: Intermodal Coordination Study

61. OFFICE OF INTERMODALISM, U.S. DEPARTMENT OF TRANSPORTATION

Michael L. Huerta, Associate Deputy Secretary and Director of Intermodalism, U.S. Department of Transportation, 400 7th St., SW, Suite 10126, Washington, D.C. 20590 (telephone: 202-336-5781)

See also Session 1, *Keynote Address,* and *Closing Remarks*

Description: The Office of Intermodalism, established under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), maintains and disseminates intermodal transportation information and coordinates federal research on intermodal transportation.

62. OHIO DEPARTMENT OF TRANSPORTATION

John Platt, Chief of Staff, 25 South Front Street, P.O. Box 899, Columbus, OH 43216-0899 (telephone: 614-644-8241)

See also Session 9: *Intermodal Logistics Management*; Case Study: Ohio Inland Port and "Access Ohio" Program

Stark County, Ohio, Intermodal Facility

Lead Agency: Ohio Department of Transportation with the Stark Development Board

Project Contact: John Platt, Ohio Department of Transportation, 25 South Front Street, Columbus, OH 43215 (telephone: 614-644-8241)

Description: The Stark intermodal project consists of the construction of a new intermodal facility to allow truck trailers, road railers, and freight containers to be loaded or unloaded onto railroad flat cars or rail bogeys. The intermodal facility is, in effect, an interchange—a transportation facility that enables easy transfer of freight from highway to rail and from rail to highway, or vice versa. Food products from the South and West are a primary source of inbound freight, as well as machinery and manufactured goods for the southern states. The Pacific Rim countries and Mexico are the primary destinations for outbound freight. More than 1,000 jobs are positively affected by the intermodal facility.

Status: The use of congestion mitigation and air quality (CMAQ) funds for this project has been authorized by EPA, FHWA, and FTA because of the reduction in hydrocarbon emissions in three nonattainment areas of the state gained by truck traffic flow reductions through these areas. An agreement between the Ohio Department of Transportation (DOT) and Stark Development Board has been finalized that provides for the construction of the facility, and preliminary engineering is under way.

Budget and Funding Sources: Public investment for the project includes preliminary and final engineering at a cost of $500,000, with construction estimated at $7,400,000. Purchase of three rolling gantry cranes will cost $3,300,000, for an overall total of $11,200,000. Private investment includes $24,000,000 from Fleming Foods for a warehouse and distribution center and another $1,000,000 from the regional railroad company.

Schedule: Environmental clearance of the project is anticipated for early summer 1995, with construction to commence by late summer. Project completion is anticipated by the end of 1995.

Major Needs and Problem Definition: Access to intermodal facilities in northeast Ohio is severely limited, thus requiring long-distance drayage of containers to Chicago, Columbus, or Cincinnati. Facilities at these three cities are overcrowded. Recently Conrail decided to discontinue its intermodal service to East Coast cities because of the lack of capacity to serve the marketplace. The Stark intermodal facility will gather containers and trailers destined for both coasts and distribute them to all three Class I railroads for subsequent movement to their destinations.

Major Issues and Concerns: Improving access to northeastern Ohio is essential to the long-term viability of the durable goods manufacturing base and to U.S. exports. Ohio ranks first in the nation in the export of durable goods to both the European Union and the Pacific Rim countries. This export of value-added products assists the U.S. balance of trade.

The Ohio DOT is using CMAQ funds to enable the construction of the intermodal facility. In addition, because of the revenue-generating characteristics of the intermodal facility, the CMAQ funds are to be lent to the project rather than granted. As the private operator pays a lift fee to the Stark Development Board (SDB), the CMAQ loan is repaid to Ohio DOT. These payments are redeposited to a Transportation Revolving Loan Fund to be made available to other projects eligible under ISTEA.

Determinants of Success or Failure: The overall success of the Stark intermodal facility will be measured by the number of lifts being performed on an annual basis at the site. A lift is defined as the movement of trailers and containers onto and off a railroad flat car. As the number of lifts increases, the highway system will be used less for long-distance drayage, the more energy-efficient mode of transportation will result in less hydrocarbon emissions, and there will be a greater return on the public investment because of the return of lift fees to the revolving loan fund.

Critical Analytical Evaluation Measures: Analysis should be made of the number of lifts, hydrocarbon emissions reduced, fees collected, and funds distributed to the revolving loan fund from the lift fees.

Environmental Issues: The project is likely to be a "categorical exclusion" from the environmental process because no additional right-of-way is required; there are environmental benefits related to energy consumption reduction; and energy consumption reduction in turn reduces the emissions of volatile organic compounds (VOC) and nitric oxides (NO_x) that contribute to carbon monoxide, sulfuric and nitric acid formation, and ozone. The reduction of more than 10,000 annual truck trailer trips in Ohio, which are on average 500 mi per trip and which total 5,000,000 reduced miles of emissions, will also reduce diesel fuel consumption by 625,000 gallons. Reduction of truck traffic on three major Ohio roads will also lessen congestion and consumption of energy by allowing traffic speed increases. Reducing vehicle miles traveled and congestion are two crucial methods to help attain clean air goals in three of Ohio's nonattainment areas affected by the existing truck drayage.

Community and Public Outreach: Community leaders have had extensive input into the siting and design elements of the facility. Nearby neighborhoods, although not immediately affected, have had input into design elements. Input has included choices to preserve recreational opportunities located south of the site and to mound and screen the north end of the site. Land to the east and west of the site is industrial and commercial, already compatible with this use.

Economic Impact Analysis: The economic benefits included the retention or creation of 1,021 jobs at an average annual wage of $35,000 for a total payroll of $35,735,000 in an economically depressed area of northeast Ohio. Real estate, personal property, and local income taxes will add over $1,000,000 to local governments for public service expenditures, and state income tax collections will provide $1,965,425 annually.

Security and Safety: Safety on the highways is an important issue to Ohio; the intermodal facility will have a positive effect on safety by reducing vehicle miles traveled and by reducing interstate truck traffic on at least three major highways.

Technology: The facility will be operated through computer simulation. As containers and trailers arrive and depart, they will be electronically monitored by a global positioning system (GPS) to inform customers of their movements. GPS data broadcast through a telephone modem will enable customers to locate goods. As drivers enter the facility, they will insert a card with a magnetic strip at the gate to identify themselves and their container or trailer. The computer will provide the driver with a map showing the location on the site by slot number for either pickup or delivery of the container or trailer. Billing will occur simultaneously with all other information related to the transaction.

Lessons Learned: The project demonstrates two objectives: (*a*) the ability to use ISTEA funding creatively for projects that improve air quality by reducing vehicle miles traveled and (*b*) the ability to make loans rather than grants of ISTEA financing to enable states and localities to better utilize federal funding for revenue-producing activities, thus creating a new source of funding using the payback of loans.

Reasons for Inclusion: The project is intermodal, it is a public-private partnership, it demonstrates the investment leverage of private funds ($26 million private versus $11.2 million pub-

lic), and it is a new distribution model using a neutral rail site that multiple railroads can use, with the benefit being more competitive rates to the users.
Innovative Aspects: The project is innovative in financing and in the public-private partnership of its financing, ownership, and operation. CMAQ funds are being used for the project and are being provided as a loan to the facility rather than as a grant. There has been difficulty in qualifying intermodal projects for ISTEA funds in general and for CMAQ funds in particular. The Stark intermodal facility project has achieved a major breakthrough in the use of CMAQ funds that will allow other states and localities, including metropolitan planning organizations, to become involved in projects that enable intermodal terminals.

63. PARSONS, BRINCKERHOFF, QUADE, AND DOUGLAS, INC.

The Parsons Corporation, World Headquarters, 100 West Walnut St., Pasadena, CA 1124 (telephone: 818-440-2000; fax: 818-440-2630)
Contact for intermodal passenger transportation services: Gregory Benz, Vice President, Principal Professional Associate, 301 N. Charles St., Suite 200, Baltimore, MD 21201 (telephone: 305-385-4141; fax: 410-727-4608)
See Session 3: *State Sampler*; Case Study: East-West Multimodal Corridor Study (Florida Department of Transportation)
Description: Parsons, Brinckerhoff is a major engineering, planning, and design firm. Client-focused services have been used on numerous landmark projects, including the following: Metrorail transit systems in Los Angeles, California, and Washington, D.C., and in Taipei and Kaohsiung, Taiwan; the rail improvement program for the Northeast Corridor between Washington, D.C., and Boston, Massachusetts; major airport projects in Washington, D.C.; Chicago, Illinois; Dallas and Ft. worth, Texas; Baltimore, Maryland; and Jedda, Saudi Arabia.

64. PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

John Brown, Transportation and Safety Bldg., Harrisburg, PA 17120 (telephone: 717-783-8567)
See Session 3: *State Sampler*; Case Study: Doublestack Clearance Project
Private Freight Industry Involvement in Metropolitan Planning Organization Planning
Lead Agency: Pennsylvania Department of Transportation (PennDOT), Delaware Valley Regional Planning Commission (metropolitan planning organization)
Project Contact: John E. Brown, Director, Bureau of Rail Freight, Ports, and Waterways, Pennsylvania Department of Transportation, Room 506, Transportation and Safety Building, Harrisburg, PA 17120 (telephone: 717-783-8567; fax: 717-772-5782)
Description: This process is designed to provide a voice for private freight interests in public planning. The Delaware Valley Goods Movement Task Force (DVGMTF) was established in December 1993 with the mission of identifying impediments to the movement of goods by all modes in the Delaware Valley. The membership of approximately 75 represents rail, trucking, port, air, government, commerce, and shipper interests.
Status: The DVGMTF has identified a priority list of recommended improvement projects for the movement of freight. The list will be presented for inclusion in the region's Transportation Improvement Plan (TIP).
Budget: No new funding resources are required.
Schedule: The project began in December 1993. There is a commitment to ongoing work until the task force succeeds.
Major Needs and Problem Definition: Private freight interests have not had a significant impact on the planning process in the regions where they operate. The input of stakeholders in the U.S. transportation network is imperative in defining how it can function more efficiently. The MPO and PennDOT needed to identify and implement a process to generate the buy-in of private freight interests. The DVGMTF is now at a critical junction to advance identified priority projects into the region's TIP.
Major Issues and Concerns: It is necessary to secure private freight involvement in the MPO planning process on a continuing basis without their losing interest. The success of the DVGMTF is an opportunity to fundamentally alter the method of participation of freight interests in the planning process. However, because of the time lag in developing and programming projects, the interest of private industry participation becomes vulnerable.

Determinants of Success or Failure: Success depends on industry participation.
Critical Analytical Evaluation Measures: Evaluations should be made of the level of industry involvement, programming of quality projects, and the efficiency and "user-friendliness" of the transportation system.
Environmental Issues: There should be potential positive impacts on Clean Air Act requirements for urban areas and congestion mitigation.
Community and Public Outreach: Community and private industry involvement is mandatory throughout the course of DVGMTF activities.
Economic Impact Analysis: In the spirit of ISTEA and intermodalism, it is anticipated that this process will generate economically necessary and efficient improvements fostered by the transportation system users.
Public-Private Partnership: Presentations of a timely nature are made at each of the quarterly meetings, for example, by regional economists, newly located industries, and major improvement projects, and about relevant ISTEA requirements.
Lessons Learned: Instructive aspects of this project are the value of participation by private freight interests, the importance of freight to the planning process, and the willingness of private industry to be involved.
Reasons for Inclusion: The importance of this project to intermodalism lies in the nonfinancial method of incorporating freight interests in the MPO planning process and the method of developing intermodal partnerships.
Innovative Aspects: Innovation is shown in the MPO-PennDOT initiative to generate involvement on a mode-diverse task force, the task force approach to inviting freight interests into the MPO and PennDOT process, and development of DVGMTF subcommittees chaired by a private industry representative to guide task force activities.

65. PORT AUTHORITY OF NEW YORK AND NEW JERSEY

Robert James and Don Lotz, Intermodal Development Division, Port Department, One World Trade Center, Suite 34-E, New York, NY 10048-0682 (telephone: 212-435-6032)
See also Session 8: *Airport Access Solutions*; Case Study: Airport Access Program

Brooklyn Intermodal Goods Movement Barge

Lead Agency: The Port Authority of New York and New Jersey
Project Contact: Robert Beard, Intermodal Division, Port Department, Port Authority of New York and New Jersey, One World Trade Center, Room 34-E, New York, NY 10048 (telephone: 212-435-6652)
Description: The Gowanus Expressway in Brooklyn will be under reconstruction over the next 12 years. To minimize the impact of this work on truck traffic to a major marine container terminal, a barge service was begun, enabling containers destined for New Jersey points to bypass the construction. This concept will be expanded to include a broader range of freight being transported across New York Harbor.
Status: Phase I is a small-scale, self-contained system designed to serve one marine terminal using leased commercial container barges.
Budget: The budget for 1994 is $3.4 million, $8.3 million in 1995.
Funding Sources: Funding comes from the Port Authority of New York and New Jersey and congestion management and air quality (CMAQ) funds.
Schedule: The project began in January 1994 and will end December 31, 1995.
Major Needs and Problem Definition: In early stages of the traffic management systems analysis process, it was noted that the reconstruction would reduce traffic flows by 40 percent. Several alternatives such as longer terminal hours, traffic information services, and so on, were identified to mitigate impacts at the Red Hook Marine Terminal, but the concept of moving the containers by barge won the greatest customer acceptance. Several studies currently under way will identify the total freight market between geographical Long Island (including Brooklyn and Queens) and points west of the Hudson. The feasibility of transportation by trailer or container on barge will be identified.
Major Issues and Concerns: The long-run financial support for an intermodal goods movement barge is the paramount concern. Another concern is to minimize costs to the ocean car-

riers so that they will not be inclined to relocate their operations to another terminal. Finally, the amount of freight that can be diverted from the highway and the cost of that diversion is a key measurement yet to be quantified.

Determinants of Success or Failure: Success can be measured by the number of truck miles of travel reduced and the concurrent reduction in nitric oxides and pollutants. The cost per container and trailer transported will also affect the outcome.

Critical Analytic Evaluation Measures: Market demand for international and domestic freight should be measured, and models for measuring pollutants produced by various modes of transportation can be used.

Environmental Issues: There should be a significant improvement in air quality through reduction of the number of truck miles traveled.

Community and Public Outreach: Maritime interests are kept abreast of this project through the Red Hook Promotion Committee. The shipping public and motor carriers have been involved in the commercial Transportation Subcommittee of the Gowanus Technical Task Force.

Economic Impact Analysis: The carriers at the Red Hook Container Terminal move 60 percent of their cargo west of the Hudson River. The hypothesis that they are dependent on the barge service if they are to remain in Brooklyn will be independently tested by an outside consultant. The Port Authority has developed an economic impact model to generate the contribution to the economy of the Red Hook Terminal under various scenarios.

Public-Private Partnership: The public sector would provide capital for the project; the private sector would share in the cost through user fees.

Security and Safety: Security and safety will not be measured, but highway safety should be enhanced by the reduction of truck mileage on the Gowanus Corridor.

Technology: Existing container-lifting technology and new roll on/roll off barges will be used.

Lessons Learned: This project has been instructive in providing new techniques for mitigating highway construction impacts, demonstrating alternatives for moving freight in congested urban corridors, detailing economic impacts caused by changes in freight technology, and examining costs of operating a short-haul containerized cargo barge.

Reasons for Inclusion: This unique intermodal operation is bi-state and multijurisdictional. Also important for intermodalism are the aspects related to freight transport and the public-private partnership.

Innovative Aspects: Innovation is shown in the involvement of the private freight sector, new uses of waterways in coastal cities, and the intermodal movement of freight using waterways.

Express Rail Permanent On-Dock Intermodal Transfer Facility

Lead Agency: The Port Authority of New York and New Jersey

Project Contact: Donald H. Lotz, Manager, Intermodal Cargo Division

Description: The project is a new on-dock rail terminal located at the Elizabeth–Port Newark (New Jersey) Marine Terminal for ship-to-rail transfer of marine containers.

Status: The project has been approved by the Port Authority Board and is in the final design phase. Completion is scheduled for early 1995.

Budget Design and construction costs are budgeted for $8 million. Additional costs for equipment are to be determined.

Funding Sources: The capital is to be provided by Port Authority with recovery through user charges.

Schedule: Design was finished early in 1994. Bids for construction were let in mid to late 1994. Construction is slated for late 1994 through early 1995.

Major Needs and Problem Definition: The major long-term need is to provide an efficient facility capable of handling increasing volumes of ship-rail intermodal transfers. The immediate need is to replace an existing facility that is over capacity and inefficient.

Major Issues and Concerns: Major concerns are how to evaluate the commercial risks associated with the goods movement market, which is very fluid, balanced against need to recover capital investment.

Determinants of Success or Failure: Success or failure depends on the ability of the terminal to attract cargo to the port and on the ability to repay the capital investment.

Critical Analytical Evaluation Measures: Measures should include container throughput and capital recovery.
Environmental Issues: The project would reduce truck trips to reach rail terminal. The construction on the existing marine terminal is not expected to be problematic. The facility will encourage energy-efficient, environmentally friendly rail transport.
Community and Public Outreach: The Express Rail Advisory Group consists of potential users.
Economic Impact Analysis: Economic effects include 818 new jobs, $30 million in incremental wages, and $111 million in regional economic activity.
Public-Private Partnership: The Port Authority of New York and New Jersey and the Conrail terminal operator constitute the public-private partnership.
Security and Safety: As an industrial facility, the terminal must comply with government, Port Authority, and railroad standards.
Technology: On-dock transfer is the latest intermodal technology. Electronic data transfer under study. The design incorporates state-of-the-art features.
Lessons Learned: Lessons learned from the project are as follows: financial and commercial risk assessment, development of sensitivity model to reflect the competitive position of the proposed terminal among competing North Atlantic port terminals, and the project development and management process.
Reasons for Inclusion This project represents the latest ship-to-rail technology on the U.S. North Atlantic coast.
Innovative Aspects: The project is innovative in its public-private relationships designed to protect respective financial goals while protecting the commercial viability of the terminal.
Other Comments: An earlier pilot project demonstrated the viability of a larger permanent facility.

Regional Freight Network Intermodal Management System
Lead Agency: Port Authority of New York and New Jersey
Project Contact: John M. Brady, Manager, Goods Movement, One World Trade Center, Room 64-E, New York, NY 10048 (telephone: 212-435-5500; fax: 212-435-5298)
Description: A consultant is to develop and assist in implementing a plan that identifies and coordinates a bi-state regional (New York–New Jersey metropolitan region) intermodal freight network to improve regional freight movements. The plan would serve as a model for other regions that might have the same multistate intermodal challenges, especially at state crossings. Emphasis is on regional connectivity, especially linkages such as the Cross Bronx Expressway, I-495, and others.
Status: Application for ISTEA funds was made in early 1994.
Budget: Funds total $150,000.
Funding Sources: Funds will come from ISTEA through the Federal Highway Administration.
Schedule: The proposal draft was completed in the fourth quarter of 1993. During the first quarter of 1994, the proposal was submitted to FHWA. The project started in the second quarter of 1994, when the consultant was hired.
Major Needs and Problem Definition: Most ISTEA programs and projects stop at state borders, including those in the New York–New Jersey region. As a result, intermodal planning requires coordination of initiatives of both states, including data collection, system monitoring, and planning.
Major Issues and Concerns: Obtaining the cooperation and participation of state and local transportation agencies, including metropolitan planning organizations, on gathering data and agreeing on an intermodal freight management plan that would benefit the region as a whole are issues of importance.
Determinants of Success or Failure: Success depends on agreement on workable plans that lead to selection of projects supported by regional MPOs and other ISTEA-supported projects; the ability to gain the support and participation of the private sector is also critical. Inability to gain timely MPO support and cooperation based on suggested ISTEA program guidelines may result in the project's failure.

Critical Analytical Evaluation Measures: Two analyses are needed: (*a*) development of a data-gathering and analysis system applicable to the region's intermodal freight movement needs and (*b*) direct application to specific regional intermodal connectivity programs and projects.
Environmental Issues: Existing land use in and around intermodal freight corridors and other linkages should be protected. The project should conform with the provisions of the Clean Air Act.
Community and Public Outreach: A key factor in the success of the project is gaining the support and active participation of the private sector in various areas: gathering data and evaluating it for conclusions and identifying, securing funding for, and implementing programs and projects.
Economic Impact Analysis: To be developed by the consultant in concert with the Port Authority and other participating agencies.
Public-Private Partnership: The consultant will be asked to develop a plan that would identify the way in which the public and private sectors could best cooperate in the development of the management system.
Security and Safety: Safety and securities issues are to be identified in the development process.
Technology: Use of technology is mostly in relation to analytical software programs.
Lessons Learned: The project development process is implementation, monitoring, application, and follow-up.
Reasons for Inclusion: The project is a unique example of a regional bi- and multistate intermodal freight management system. The role of the consultant in the information gathering, analysis, and program implementation process is of interest.
Innovative Aspects: This is a regional approach that focuses on public-private cooperation on a regional and bi-state intermodal freight management program and projects.

Access to Region's Core
Lead Agency: Port Authority of New York and New Jersey jointly with the MTA and New Jersey Transit (NJ Transit)
Project Contact: Hermann Botzow, One World Trade Center, Room 64E, New York, NY 10048 (telephone: 212-435-4499; fax: 212-435-4539)
Description: This project will explore the feasibility of constructing a new east-west rail passenger link from northern New Jersey through midtown Manhattan to Queens. This service could also carry rail freight from New Jersey to connections serving Brooklyn, Queens, and Long Island. The project will define a long-term infrastructure development strategy for integrating several of the region's noncontiguous transportation network elements into a cohesive, environmentally sound system.
Status: The Port Authority, MTA, and NJ Transit are completing a consultant scope of work for a jointly sponsored assessment of options for connecting western Queens, Manhattan, and the Meadowlands with a new rail transit service that also has freight capability.
Budget: The budget is to be determined.
Funding Sources: Because of the large investment, as many sources as possible will be utilized, including federal grants and possible new regional capital funding sources.
Schedule: The project will take two years beginning in early 1994. The systems planning study and alternatives analysis should be completed in 1996.
Major Needs and Problem Definition: Current transportation facilities into midtown Manhattan are nearing capacity. There is no direct commuter rail to the east side of midtown. If the initial systems planning study and alternatives analysis is not undertaken, the three agencies will not have a joint plan for accommodating future demand in the Midtown Corridor. The result will include increased congestion on the existing corridor. In the absence of a single plan, each agency would proceed with separate, overlapping initiatives with a higher total cost and poorer interconnectivity.
Major Issues and Concerns: Improved access to the region's core is essential to improving its economic efficiency, which is fundamental to its long-term competitive position and its ability to retain existing businesses and attract new ones. A new rail crossing would provide environmentally sound, long-term capacity route to Manhattan and divert future motorists to

public transit, thereby providing relief for anticipated increases in congestion on existing transportation facilities. The region is also in need of a direct modern rail freight link to improve goods movement, efficiency, and competitiveness.
Determinants of Success or Failure: Community support and funding availability will affect success.
Critical Analytical Evaluation Measures: Analysis of ridership demand, development of criteria to screen alternatives, and financial analysis are necessary.
Environmental Issues: No impacts will occur during the systems planning study and alternatives analysis. Eventual construction of a locally preferred alternative may create construction impacts. The final system will be in a tunnel over most of route.
Community and Public Outreach: Community and public outreach is considered among the primary challenges in implementing a project of this magnitude. It is critical that community constituencies have input into the initial stages of development of the various elements of the project.
Economic Impact Analysis: In accordance with FTA guidelines, the consultant will develop a rigorous basis for financial comparison of the screened alternatives.
Public-Private Partnership: The consultant will be asked to identify areas that offer joint development opportunities.
Technology: Tunneling construction and signaling technologies are of special interest.
Lessons Learned: The project development process, development of a trans-Hudson travel demand model, risk assessment, and the federal process are instructive aspects of the project.
Reasons for Inclusion: The project is intermodal, bi-state, and multijurisdictional, and lays the basis for a regional rail system similar to European examples.
Innovative Aspects: Innovation is shown by the multiagency transit initiative (project oversight committee), the use of tunneling in a densely populated central business district, and the development of a hybrid of up to four individual operating systems (power distribution, staffing).

66. PORT OF HOUSTON

Thomas Kornegay, Executive Director, 1519 Capitol Avenue, P.O. Box 2562, Houston, TX 77252-2562 (telephone: 713-670-2456 or 1-800-688-DOCK; fax: 713-670-2564)
Description: The Port of Houston Authority owns 43 general cargo wharves, which are available for public hire, and two liquid cargo wharves. The Port Authority also owns Houston Public Elevator No. 1, Houston Public Elevator No. 2 (Woodhouse Terminal), the bulk materials handling plant, Fentress Bracewell, Barbours Cut Container Terminal, and Jacintoport Terminal. The Port Authority operates the Malcom Baldridge Foreign Trade Zone. The Authority's facilities handle approximately 15 percent of the cargo moving through the port.

67. PORT OF HUENEME, CALIFORNIA

William Buenger, Executive Director, Oxnard Harbor District, P.O. Box 608, 105 E. Port Hueneme Road, Port Hueneme, CA 93044-0608 (telephone: 805-488-3677)
See Session 5: *New Technologies, Partnerships, and Procedures*; Case Study: Maintaining a Viable Niche Port
Description: The emergence of "niche ports" in the national transportation system will assist in fostering new technological advances in marine terminal productivity and intermodal transportation. The case study focuses on how the Port of Hueneme uses planning technologies and will discuss future concepts.

68. PORT OF NEW ORLEANS

James Reese, Assistant to the President, The Port Authority of New Orleans, P.O. Box 60046, 2 Canal Street, Suite 2600, New Orleans, LA 70160 (telephone: 504-528-3264)
See Session 2: *Intermodal Hub Facilities and Corridors*; Case Study: Tchoupitoulas Corridor Project

69. PUGET SOUND REGIONAL COUNCIL

Peter Beaulieu, 216 First Avenue, South, Seattle, WA 98133 (telephone: 206-464-7537)

See Session 4: *MPOs Reengineering for Intermodalism*; Case Study: Central Puget Sound Freight Mobility Program

70. SANDIA NATIONAL LABORATORIES
James Kelsey, Transportation Program Director
See Session 6: *New Directions, New Partnerships*; Case Study: Santa Teresa Intermodal Facility

71. SOUTHWESTERN PENNSYLVANIA TRANSPORTATION PLANNING COMMISSION
For information on intermodal programs, contact Robert Kochanowski, Executive Director, SW Regional Planning Commission, The Waterfront, 200 First Ave., Pittsburgh, PA 15222-1573 (telephone: 412-391-5591; fax: 421-391-9160)

72. ST. LOUIS GATEWAY–ST. LOUIS AIRPORT AUTHORITY
Jan Titus, Aviation Planner, Airport Planning and Development Office, 4610 N. Lindbergh Boulevard, Suite 200, Bridgeton, MO 63044-2203 (telephone: 314-731-5707); John McCarthy, Sverdrup Civil Project Manager, 801 North 11th Street, St. Louis, MO 63101 (telephone: 314-770-4415)
See Session 8: *Airport Access Solutions*; Case Study: MetroLink Light Rail Transit Station at Lambert–St. Louis International Airport

73. SURFACE TRANSPORTATION POLICY PROJECT
Henry Dittmar, Executive Director, 1400 16th Street, N.W., Suite 300, Washington, D.C. 20036 (telephone: 202-939-3474; fax: 202-939-3475; e-mail: stpp@igc.apc.org)
Contact: Don Chen or Hank Dittmar
Description: The purpose of the Surface Transportation Policy Project (STPP) is to ensure that transportation policy and investments help conserve energy, protect environmental and aesthetic quality, strengthen the economy, promote social equity, and make communities more livable. The needs of people, rather than vehicles, are emphasized in ensuring access to jobs, services, and recreational opportunities. To these ends, STPP is structured along five functions: federal strategies, policy development, research, grassroots organizing, and communications. The STPP publishes a monthly newsletter, *Progress*; a quarterly journal, *Access;* a weekly federal policy newsletter, *Transfer*; a monograph series; and reports and books on transportation policy.

74. SVERDRUP CORPORATION
John McCarthy, Sverdrup Civil Project Manager, 801 North 11th Street, St. Louis, MO 63101 (telephone: 314-770-4415)
See Session 8: *Airport Access Solutions*; Case Study: MetroLink Light Rail Transit Station at Lambert–St. Louis International Airport

75. SYRACUSE METROPOLITAN TRANSPORTATION COUNCIL
Charles Poltenson, Sr., Intermodal Transportation Analyst, 100 Clinton Square, 126 N. Salina St., Suite 100, Syracuse, NY 13202 (telephone: 315-422-5716)
See Session 4: *MPOs Reengineering for Intermodalism*; Case Study: Regional Intermodal Transportation Center Project

76. UNITED PARCEL SERVICE
Sheryl Washington, Public Affairs Manager, 316 Pennsylvania Avenue, S.E., Suite 300, Washington, D.C. 20003 (telephone: 202-675-4244)
See Session 2: *Intermodal Hub Facilities and Corridors*; Case Study: Chicago Area Consolidation Hub

77. UNIVERSITY OF MEMPHIS
Martin Lipinski, Herff College of Engineering, Memphis, TN 38152 (telephone: 901-678-3279)

Development of Inland Waterway Information System
Lead Agency: University of Memphis, Inland Waterways Studies Institute
Project Contact: Martin E. Lipinski, Chairman, Department of Civil Engineering, Memphis State University, Memphis, TN 38152 (telephone: 901-678-3279)
Description: The project explored the availability of data and literature describing the inland waterway transportation system in the United States. The study team surveyed the waterway industry, shippers, researchers, and government agencies to ascertain the need for waterway data, existing sources, and perceived limitations of available data. The data needs included, among others, commodity, cost, equipment, and physical infrastructure elements. Use of the data to address intermodal issues was considered in the study. A personal computer data base containing a compendium of the identified data sources was developed. This data base describes each of the identified data resources, identifies the collecting organization and point of contact, describes the content and uses of the data, and identifies limitations, strengths, and weaknesses.
Status: Data base finished and project report issued in February 1994.
Funding Source: Maritime Administration, U.S. Department of Transportation.
Major Needs and Problem Definition: The inland waterways industry has recognized the need for data to evaluate waterway performance, safety, cost, and other factors, and especially to examine opportunities for connections between waterway transportation and other modes. Because of the size and structure of the industry, however, it has been difficult for researchers to identify data sources and to evaluate the quality and usefulness of the data. This difficulty has hindered research into waterway issues.
Major Issues and Concerns: Current data sources are widely scattered and of uncertain quality. In addition, a significant portion of government-collected data contains proprietary elements. Screening of these elements may significantly reduce the usefulness of the data. The project team identified key areas of deficiency in waterway data. The financial, economic, and safety categories are difficult to address with current data sources. The compendium developed by the project addresses the content and utility of each data source and should prove a useful aid to waterway research. Maintaining the compendium after the project completion, however, is an unresolved issue.
Public-Private Partnership: The overall project was made possible by in-kind support from a variety of private- and public-sector organizations in addition to the seed money contributed by the principal sponsor. Support of the compendium will require a continued public-sector–industry partnership.
Reasons for Inclusion: The importance of this project lies in its being a resource for evaluating intermodal opportunities involving the waterway mode and for facilitating cross-modal comparisons.

Helena–West Helena Port, Phillips County, Arkansas: Birth of Inland Intermodal River Port
Lead Agency: Inland Waterways Studies Institute, University of Memphis
Project Contact: Martin E. Lipinski, Chairman, Department of Civil Engineering, Memphis State University, Memphis, TN 38152 (telephone: 901-678-3279)
Description: The port of Helena–West Helena, located in the heart of the inland delta of the Mississippi at 752 river miles upstream from the Gulf of Mexico, is the intermodal, multimodal, and intramodal end product of a best practices experience envelope beginning in 1968. Its specific documentation is a port development study, Helena Harbor, April 1993, prepared for the Phillips County Port Authority, Helena–West Helena, Arkansas, by Memphis State University and Cline-Frazier, Inc., consulting engineers, Helena.

The port's slack-water harbor, constructed by the U.S. Army Corps of Engineers, is ±13,000 ft long with a channel bottom width of 350 ft plus an extra 100 ft of width along 1,000 ft of bank line for fleeting operations. The Authority's land adjacent to the harbor totals ±1,350 acres with ±28,000 linear ft of harbor frontage. The intermodal features of the plan for the Authority's land have been designed also to serve adjacent industrial lands owned by others. Those lands contain about 1,600 acres.
Status: The study is complete, the port is open for occupancy, and the Authority is executing Phase I construction and a comprehensive marketing plan.

Budget: The study cost was $82,000. The Phase I construction budget derived from the study is $6,290,000.
Funding Source: Phillips County Port Authority, Helena–West Helena, Arkansas. The flexibility prompted by local funding was augmented by a partnership with a local professional engineer (Cline–Frazier, Inc). This feature is very important; it ensures local knowledge, local access over time, and the ability to make revisions and expansions.
Schedule: The Authority's Phase I construction plan has been initiated. Although the port is not complete, occupancy is now possible.
Major Needs and Problem Definition: The port development study gives both initial and future space needs as follows: *multimodal*—provide for barge, truck, rail, and pipeline modes; *intermodal*—provide for closest possible relationships between and among the modes; *intramodal*—provide user-friendly relationships for materials handling, storage, retrieval, etc., as connectors between on–site modes; *commercial*—provide for banks, restaurants, printers, service stations, etc.; *governmental*—provide for fire and police, customs offices, port management office, etc.; *miscellaneous*—provide for streets, parking, rail, marshalling yard, utilities, etc.

For each separate mode of transportation, the needs given are access to the port area; parking areas (marshall/fleet) for transportation units, full and empty (trucks, rail, cars, barges and their prime movers); service areas for units of the different modes; loading and unloading areas for units of different modes; and storage areas for loads in keeping with transportation arrival or departure rates.

Problems are defined as follows: highway access will meet initial needs but is inadequate for the future (alternatives are examined and recommendations made); railway access is needed (alternatives are examined and recommendations made); the problems of linkages between the economic dynamics of the facility, its brick and mortar plans, and continuing administration are defined and recommendations made; understanding of the functions of the Authority and its port director is often a problem (recommendations are made); continuous planning for future growth, expansions, and revisions is a problem (recommendations are made).
Major Issues and Concerns: Major issues were covered by establishment of goals early in the study. Feedback methods were used to verify continued awareness of those goals.

The continuing need for revisions and expansions is emphasized in several parts of the development study, and the Cline–Frazier consulting engineer component of the study team was included for that purpose.
Determinants of Success or Failure: Success or failure is covered in the segment of the study that defines the determination of community economic impact on an annual basis and how to use it.
Critical Analytical Evaluation Measures: One of the five sections of the study is devoted to both qualitative and quantitative understanding and utilization of the port's economic dynamics. The results are checked against the goals.
Environmental Issues: Approximately 400 acres (in addition to other acreage noted earlier) of the Authority's land is set aside and managed as wetlands, wildlife and aquatic life habitats, timberlands, etc. A cultural resources survey and a wetlands survey were prepared separately, referenced in the study, and illustrated. The general features for environmental and cultural coordination between redevelopment of the existing commercial river frontage of downtown Helena and the newly opened port (about 10 mi downstream) are defined in the study.
Public-Private Partnership: The study, in a segment called "Space Numerics," is designed to make 76.9 percent of the land now owned by the Authority available for sale or lease to private owners as a coordinated community of partners. The remainder (23.1 percent) will be retained for streets, utilities, on-site environmental and cultural uses, etc.
Technology: The study covers many technical subjects such as floating wharfs, clearances in the harbor for navigation, expansion of the present inadequate roadway-highway system, extension of the rail to the port area, in–stream servicing of tows, and many others.

Lessons Learned: Many lessons learned from the past are applied here. They can be noted in almost every segment above.
Reason for Inclusion: This project is clearly an example of application of best practices. Further, it represents the kind of small local project (in contrast to the typical million-dollar project reported at this conference) on a public scale comparable with a small business. Its smallness plus its rural American characteristics are conference attractions.
Innovative Aspects: Innovative aspects of this port study are as follows: it actually connects quantitative economic dynamics to numerical functional plans and follows with administration guidelines for the future use by those who will execute the plan; it presents a plan with built–in instructions regarding the inevitable need for revisions, updating, and expansions; it has planned professional participation at the local level to give it both local flavor and continuous professional input; it outlines a process that resulted in the addition of ±164 acres of harbor front land with ±6,650 lineal ft of harbor frontage suitable for traditional terminals; it was prepared by a named (three-person) university team plus a local professional engineer and was reviewed by the local funding Port Authority but no others.

Resolving Land Use and Port Access Conflicts at Inland Waterway Ports
Lead Agency: Inland Waterways Studies Institute, University of Memphis
Project Contact: Martin E. Lipinski, Chairman, Department of Civil Engineering, Memphis State University, Memphis, TN 38152 (telephone: 901-678-3279)
Description: The objectives of this project are to analyze the conflicts between land use and port access that are created by the redevelopment of waterfront areas and to develop guidelines that can be used by local decision makers to conduct the transportation and redevelopment planning process so that the needs of the inland waterway industry will be recognized.
Status: The project is in progress and will be completed in the summer of 1994.
Budget: The funds for the project total $100,000.
Funding Sources: Funding sources include the Maritime Administration, U.S. Department of Transportation (50 percent), and matching funds from Memphis State University and the Memphis Uniport Association.
Schedule: The project will be completed in July 1995. The analysis of an industry and government survey of land use and port access has been completed. Case study analysis is nearing completion. Approximately 10 cities have been contacted. Guidelines will be developed and reviewed in the next month.
Major Needs and Problem Definition: In urban areas with waterfront frontage, increased pressure is being placed on the waterway navigation industry to relocate waterway–related functions. In the last two decades, urban redevelopment of waterfront areas has accelerated. The competition between the waterway navigation industry and redevelopment interests for scarce waterfront land has resulted in conflicts. Congestion along the access routes to existing ports and terminals has affected the ability to move goods efficiently to and from the waterfront. The recently published study *Landside Access to U.S. Ports* (Transportation Research Board Special Report 238) reported that access restrictions result in increased delays and contribute to higher transportation costs. This study also pointed out that redevelopment efforts are often at odds with navigation interests as roadway and rail traffic to and from the port and related noise and air-quality impacts are perceived as limiting the viability of the redevelopment efforts and in conflict with local neighborhood requirements.
Major Issues and Concerns: The principal concern is that development pressures will force deterioration and possible elimination of waterway transportation facilities in a region. The importance of waterway transportation and the economic contributions made by the waterway community to the area and the region are seldom considered. Individuals involved in the land use and transportation planning process—urban planners, local officials, transportation planners, traffic engineers, and developers—are typically uninformed regarding the importance of waterway transportation and the economic contributions made by the waterway community to the local area and region.
Determinants of Success or Failure: Success or failure hinges on the ability to develop guidelines that can be used by government and industry to resolve conflicts related to land use and access issues.

Critical Analytical Evaluation Measures: Analysis of industry and government surveys, development of case study narratives, and preparation of guidelines are all necessary.
Environmental Issues: There are no direct impacts. However, land development and the construction of transportation access facilities may be affected by environmental concerns such as wetlands and dredging regulations.
Community and Public Outreach: Community impact is an important consideration in land development and the construction of transportation facilities. Community involvement will be a key factor to be reviewed in the development of planning guidelines.
Economic Impact Analysis: The analysis of economic impacts is central to the land development process. Determining the economic impact of development alternatives on the waterway transportation industry will be an important part of the analysis.
Public-Private Partnership: The focus of this project is to explore avenues for increasing the interaction between the public-sector and private-sector industries operating on the inland waterway network.
Safety and Security: Safety is a key issue, especially the conflicts between barge and towboat traffic and pleasure craft. Most landside planners do not perceive the safety issue as critical.
Lessons Learned: The project is in progress. However, on the basis of the data analyzed so far, the lessons to be learned focus on methods for improving government and private-sector cooperation.
Reason for Inclusion: This is an intermodal project that involves several modes of transportation and government-private partnerships.
Innovative Aspects: Urban governmental agencies will be asked to consider the intermodal transportation aspects of land development projects. Also, the economic impacts of waterway transportation will be highlighted for decision makers.

78. UNIVERSITY OF TENNESSEE
Arun Chatterjee, Department of Civil Engineering, 110-C Perkins, Knoxville, TN 37996-2010 (telephone: 615-974-7714)
Impact of Growth of Intermodal Transportation on Highway Accidents
Lead Agency: Transportation Center, University of Tennessee, Knoxville
Project Contact: Arun Chatterjee, Department of Civil Engineering, University of Tennessee, Knoxville, TN 37996-2010 (telephone: 615-974-7714; fax: 615-974-2669)
Description: The project will forecast the number of trailer-on-flatcar and container-on-flatcar (TOFC/COFC) movements in the major travel corridors. These volumes will be used to estimate the decrease in truck traffic on Interstate highways and increase in drayage movements on local and collector roads. The impact of these changes on highway accidents will be assessed.
Status: The project is in progress.
Budget: Funds for the project total $ 45,000.
Funding Sources: The project is being funded by the Southeastern Transportation Center, which is funded by the U.S. Department of Transportation.
Schedule: The expected completion date is December 1994.
Major Needs and Problem Definition: The increase in TOFC/COFC movements may have a positive effect on long-distance travel routes but a negative impact on roads leading to terminals.
Major Issues and Concerns: Highway safety is a major concern.
Critical Analytical Evaluation Measures: Changes in truck traffic and accident rates for large trucks on different classes of roads should be determined.
Security and Safety: The project is to determine effect on highway accidents of increase in intermodal traffic.
Lessons Learned: Access roads to intermodal terminals may need improvements in many cases.
Reasons for Inclusion: State departments of transportation and local metropolitan planning organizations should be aware of highway safety problems.

79. VICKERMAN-ZACHARY-MILLER (VZM)

Division of Transystems Corporation, M. John Vickerman, President and CEO, 101 Broadway, Oakland, CA 94607 (telephone: 510-835-2716) or 2100 Reston Parkway, Suite 202, Reston, VA 22091-1218 (telephone: 703-758-8800

Description: VZM is an intermodal seaport and rail facility designer and planner. The organization is a national transportation consultancy with over 300 employees and 17 offices throughout the country.

See also Item 35, Georgia Department of Transportation, in this Appendix

80. WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

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See also Session 3: *State Sampler*

Colman Dock Pedestrian Mobility Vision

Lead Agency: Washington State Department of Transportation

Project Contact: Gordon Kirkemo, Public Transportation and Rail Division, Washington State Department of Transportation, Olympia, WA 98504 (telephone: 360-705-7914)

Description: This project develops a conceptual vision, or "envelope," for enhancing pedestrian mobility through Colman Dock, which is part of a comprehensive intermodal system. Situated at the base of Seattle's financial and business district, Colman Dock is the terminus for three ferry routes serving Bainbridge Island, Bremerton, and Vashon Island. Colman Dock experiences the highest volume of ferry passenger and automobile traffic of the 21 terminals on the Washington State ferry system. Nearly 6 million passengers and 3 million cars pass through this facility every year. This project provides a unique opportunity to create interest and invite the public to think differently about mobility issues. The vision supports forms of mobility that do not rely on the single occupant vehicle (SOV). The visioning process explores ways to encourage current SOV commuters to make a mode shift.

Status: An informal study team of individuals from various agencies and organizations has been formed and has identified over 80 potential mobility enhancements. The study team has also worked with a market research firm to identify riders for focus groups to determine which enhancements have value to riders. The study is now complete and is part of a larger level of effort to develop a comprehensive intermodal system.

Budget: The budget was $15,000.

Funding Sources: Funding included state sources plus in-kind assistance from various agencies and organizations in the Seattle area.

Schedule: This six-month project concluded in June 1994. Further planning, design, and construction efforts will follow based on the results of the conceptual vision.

Major Needs and Problem Definition: Congestion at Colman Dock is caused by high volumes of pedestrian and automobile traffic boarding or deboarding the Washington State ferries. Total ridership on the ferries serving Colman Dock is expected to increase by over 1 million passengers during the next 10 years. In the vicinity of Colman Dock, congestion will worsen, with vehicle backups and waiting lines along arterials exacerbating an already hazardous condition for pedestrians. The goal of improving nonmotorized access to Colman Dock is to retain current non-SOV riders while encouraging more riders to access the ferries as pedestrians.

Major Issues and Concerns: The Washington State Department of Transportation is committed to improving access to its principal ferry terminal. Pedestrian mobility through the terminal is essential to encourage current and future ferry riders to walk onto the ferry instead of driving on. Key to the success of the study is building a network of partnerships with transit agencies serving the region, including Bainbridge Island and Seattle. Such partnerships are critical to the development of a successful conceptual vision and the implementation of projects to achieve it.

Determinants of Success or Failure: To make Colman Dock a pedestrian-friendly facility, a wide range of mobility initiatives needs to be explored. As part of the visioning study, no idea was considered too outlandish or too inconsequential. Simple and inexpensive options such as signage and information displays to high-technology options such as people-mover sys-

tems could be considered. The project includes assessing the complexity of implementation for each option through identifying critical success factors and potential barriers.
Critical Analytical Evaluation Measures: The project created as many options as possible and developed an order-of-magnitude cost estimate for each option.
Environmental Issues: Energy savings and improved air quality from alternative to SOV travel may be significant. Improved pedestrian mobility and access to Colman Dock may reduce the need for expanding ferry terminal access for vehicles along an already developed shoreline.
Community and Public Outreach: Public involvement has been and will continue to be a necessary part of this project. Public outreach began at the initial stages of the study. The visioning process includes using a market research approach with focus groups to ascertain rider preferences. Through the focus groups, measures can be taken of rider preferences of various mobility improvement options. The targeted groups are the SOV commuter, current walk-on riders, and potential new non-SOV riders.
Economic Impact Analysis: A formal economic analysis will not be part of this project.
Public-Private Partnership: The study will address the need for partnerships to design, implement, and, if applicable, operate each option. Potential retail development at the site will be among the considerations as a new revenue source to help fund additional access improvements.
Security and Safety Safety and security are important issues to be addressed in the process. The pedestrian mobility vision will emphasize safe and secure pedestrian movement.
Technology: The visioning process is an opportunity to develop a conceptual envelope for enhancing pedestrian mobility through the terminal. The process is open to technology options such as people-mover systems or smaller technology options such as the automated vehicle information (AVI) system for quick processing of high-occupancy vehicles (HOVs) at toll booths or an electronic fare collection system for walk-on riders.
Lessons Learned: Although the study is in its initial stages, involvement of various agencies and organizations is already proving the importance of outreach and interjurisdictional cooperation.
Reasons for Inclusion: The Colman Dock Pedestrian Mobility Vision Project will pursue the following: (*a*) engage the public in the planning process from the initial stages by asking the public to create the vision; (*b*) explore operating arrangements among various interests, transportation providers, and organizations; (*c*) foster collaborative arrangements among the various players in the intermodal transportation system; (*d*) follow a rigorous approach to identifying partnerships necessary to design, implement, and, if applicable, operate the various options of the project; and (*e*) directly foster the development of intermodalism by exploring all options including high-technology people-mover systems.
Innovative Aspects: The study's approach is innovative in that it examines options that will make Colman Dock a pedestrian-friendly facility and a significant intermodal hub in the pedestrian system in Seattle; explores a wide range of mobility initiatives (no idea was considered too outlandish or inconsequential); and assesses the complexity of implementation for each option by identifying critical success factors and potential barriers.

Statewide Intermodal Passenger Terminal Renovation
Lead Agency: cities, counties, and ports in conjunction with the Washington State Department of Transportation
Project Contact: Ken Uznanski, Public Transportation and Rail Division, Washington State Department of Transportation, Olympia, WA 98504-7387 (telephone: 206-705-7901)
Description: Fourteen communities in the state of Washington have been selected as viable candidates for intermodal passenger terminals. Currently, these communities are in various stages of planning, design, and construction involving the renovation of old train depots and a ferry terminal into efficient intermodal terminals. Some communities are renovating terminals to handle rail passenger service combined with bus, ferry, automobile, bicycle, and taxi service. For communities along the north-south corridor—from Seattle, Washington, to Portland, Oregon—the renovation of old train depots into efficient intermodal terminals is con-

sidered essential for successful rail passenger service. Other smaller communities are preparing to renovate old train depots into intermodal terminals to more efficiently connect rail travel with the roadway system.

Status: The 14 intermodal terminals are in various stages of planning, design, or construction.

Budget: Over a 2-year period ending June 1995, the Washington State Department of Transportation will commit $7 million of state money to this project. Of that, $654,000 will have been spent for planning, $789,000 for design, $470,000 for land, and $4.5 million for construction. Local communities are to contribute. Over the next 2-year period ending June 1997, the Washington State Department of Transportation will request $10 million of state money for this project.

Funding Sources: Federal, state, and local sources are involved.

Schedule: The intermodal terminal renovation project is a long-term planning and capital improvement project extending over an estimated 10-year period. By 1996, approximately 50 percent of the projects will be completed.

Major Needs and Problem Definition: The intermodal passenger terminals are located in large and small cities throughout Washington. An unused or unusable facility only adds to the financial burden of a community whether the community is large or small. In the larger cities, old train stations will need to be renovated to handle an increasing number of rail passengers. In addition, congestion problems resulting from inadequate parking and high volumes of traffic circulating through the downtown areas will need to be addressed. In the smaller cities, where congestion may not necessarily be a problem, the focus is upon the need for facility renovation and economic revitalization. An intermodal terminal can become a focal point for improving the efficiency of transfers between modes. At an intermodal terminal, access is provided to the various transportation modes necessary to complete a trip. An intermodal terminal serving train, automobile, intercity, local bus, shuttle, and taxi service is critical in moving people, delivering supplies and materials, and shipping products and services.

Major Issues and Concerns: The Washington State Department of Transportation is committed to (*a*) improving the efficiency of passenger transfers between modes; (*b*) providing incentives for renovation of existing terminals to accommodate rail passenger, intercity, and local bus, automobile, bicycle, and taxi service; (*c*) building a network of partnerships to support efficient intermodal transfers; (*d*) facilitating existing local, regional, and statewide transportation planning efforts; (*e*) pinpointing transportation system improvement options critical to economic competitiveness and mobility; and (*f*) encouraging effective redevelopment and economic revitalization efforts.

Determinants of Success or Failure: Public support and funding for intermodal passenger terminals are critical.

Critical Analytical Evaluation Measures: Ridership figures should be determined seasonally and over time. The redevelopment impact should be monitored by tracking revenues generated at the facility.

Environmental Issues: Energy savings and improved air quality from SOV to alternative forms of mobility travel may be significant.

Community and Public Outreach: Community outreach was undertaken from the initial stages of the project. Community ownership in the project is a critical factor to successful design, development, funding, and operation.

Economic Impact Analysis: The facilities are under public ownership. However, local jurisdictions are exploring public-private initiative opportunities to attract retail and service businesses to the intermodal terminals. Business activities will provide services and generate income so that the intermodal terminals can be self-supporting. To attract business activities, tourism will be emphasized. Buildings of architectural and historic significance will be enhanced to feature heritage resources.

Public-Private Partnership: Local participation is an essential element of the total project.

Security and Safety: Security and safety issues are of importance and are being addressed in the planning process. All users of the intermodal passenger terminals must feel safe and secure when using these facilities. Improved lighting, fencing, measures to channel riders safely

through the terminal, clearances on platforms, and appropriate ingress and egress to tracks are among the safety enhancements being designed and constructed.
Technology: Efficient intermodal passenger terminals are a critical component in providing successful rail passenger service and to demonstrate that efficient transfers between modes are important to the success of the system. In the near term, Washington will be implementing tilt-train technology, which can significantly reduce travel times. In addition, trains can travel at higher speeds as track improvements occur and as speed restrictions are safely lifted.
Lessons Learned: Cooperation and commitment from local jurisdictions are considered necessary from the initial stages of the project and throughout project development. For successful completion and operation of the intermodal terminals, representatives of public and private agencies and associations are encouraged to participate. Washington State Department of Transportation staff are working together with the various representatives in carrying out this project in an ongoing, continuous fashion. This outreach effort is intended to educate the public and affected communities and to gain acceptance and commitment to high-speed rail passenger service.
Reason for Inclusion: Washington's Statewide Intermodal Passenger Terminal Renovation Project emphasizes the following: facilitating efficient transfers between modes, conducting extensive public involvement, gaining long-term local community commitment, applying limited resources toward intermodal infrastructure improvements most important to Washington's economy, and accommodating high-speed tilt-train technology.
Innovative Aspects: Cities, counties, and ports are the principal jurisdictions responsible for planning, design, development, construction, operation, and maintenance of their respective multimodal terminals. The Washington State Department of Transportation serves as a conduit for funding and provides some technical oversight. Accommodation of high-speed tilt-train technology is another innovative aspect.

81. WISCONSIN STATE DEPARTMENT OF TRANSPORTATION

Roger Schrantz and Randall Wade, 4802 Sheboygan Avenue, P.O. Box 7910, Madison, WI 53707-7910 (telephone: 608-266-2972)
See Session 3: *State Sampler*; Case Study: TRANSLINKS 21.

82. WOODS HOLE, MARTHA'S VINEYARD, AND NANTUCKET STEAMSHIP AUTHORITY

Reconstruction of Existing Ferry Terminal
Lead Agency: Woods Hole, Martha's Vineyard, and Nantucket Steamship Authority
Project Contact: John D. Tuck, Project Manager, and Armand Tiberio, General Manager, P.O. Box 284, Woods Hole, MA 02543 (telephone: 508-548-5011)
Description: Reconstruction of the existing ferry terminal, including installation of a second ferry slip; construction of a new terminal building, a public pier, and maintenance shop; and improved road access to the Hyannis–Nantucket ferry route, Hyannis Harbor, Town of Barnstable, Barnstable County, Massachusetts, will ensure uninterrupted year-round transportation of goods and passengers between the Island of Nantucket and the mainland. The revised site plan will connect existing bus and taxi services with the ferry terminal. Proposed shuttle bus service will connect off-site parking lots and the existing railroad station with the ferry terminal. Site design incorporates the town's plan for a pedestrian "Walkway to the Sea" as well as a public pier, small boat landing area, and park.
Status: In the first quarter of 1994 final design will be completed, the final environmental impact statement will be issued, and permit applications will be pending.
Budget: Construction is estimated at $4.6 million.
Funding Sources: Funds come from Steamship Authority bonds and ISTEA Section 1064.
Schedule: The estimated construction time is 12 months, starting October 1994, with October 1995 completion. Construction will be staged and timed to minimize interference with Steamship Authority operations and to preclude cancelling or rerouting of any vessel trips.
Major Needs and Problem Definition: The need for a second slip is the driving force. The only connection for freight to the island is through the Steamship Authority terminal. Operating

with a single slip is simply too risky. If the slip were disabled for any reason, all operations would be transferred to the Woods Hole Terminal, adding expense and time to the Nantucket trip. The Woods Hole Terminal is too small to be able to handle staging and parking of all the Nantucket-bound traffic as well as the traffic to Martha's Vineyard.

Major Issues and Concerns: Community issues revolved around reduction of traffic in the area and reduction of parking on the waterfront with increased landscaping.

Steamship Authority issues revolved around the need for a back-up slip and an improved year-round terminal building. The present terminal is a small summer cottage converted to a ticket office. Since 1972, traffic growth has been mostly in the fall and spring seasons. If the existing slip were disabled for any reason, the connection between the island and mainland would be shut down.

Determinants of Success or Failure: A successful project will allow the movement of people and vehicles in and out of the terminal more quickly. On peak weekends, two vessels can be used to move traffic in and out of the terminal, thereby reducing the impact on town streets. Patrons will be able to wait in protected areas instead of uncovered outside areas as they now do.

Critical Analytical Evaluation Measures: The Steamship Authority continuously monitors and surveys patrons to determine satisfaction. Traffic surveys conducted by the town provide feedback.

Community and Public Outreach: Mitigation measures included a reduction by 25 percent of parking on site, construction of a 150-ft small boat pier, and construction of an 8-ft-wide walkway around the perimeter of the water side of the site. This Walkway to the Sea is a goal of the Hyannis Vision Group, which hopes to have a continuous walkway around the entire harbor. This project is the first to include the Walkway to the Sea in the plans and is a major step toward that goal. The Steamship Authority also agreed to provide funds to improve traffic on selected intersections and traffic studies to help with traffic concerns to the town. Additionally, the Steamship Authority agreed to provide a public meeting room on the second floor of the terminal.

Economic Impact Analysis: This project ensures continuous operation of the terminal. If the existing slip is ever disabled for any reason, operations would be conducted from the new slip proposed in this project. Nantucket businesses rely heavily on mainland businesses for many supplies. All freight to the island must go through the Steamship Authority terminal. It is vitally important to the economic success of the island that this freight connection be maintained.

Public-Private Partnership: Before beginning the design and engineering, the Steamship Authority negotiated a legally binding agreement with the town that also served as the basis for the Environmental Impact Report, which also facilitated the public process. The Steamship Authority is a quasi-public, self-supporting organization that operates more like a private business than a public agency and as such can negotiate agreements in a quick, efficient manner.

Security and Safety: One of the primary goals of this project was to separate, as much as possible, existing conflicts between pedestrian and vehicular traffic on the site. Additionally, this project is providing bus access to the terminal, allowing passengers to ride to the terminal rather than walk from the nearby bus terminal. Pedestrians were required to cross one of the busiest intersections in the town (i.e., Hain and South streets); passengers traveling by rail will make a safer connection to the terminal.

Technology: No new technology is used on this project.

Lesson Learned: Community involvement in the very early stages of planning is paramount. Community involvement throughout the process only serves to improve the flow of the process and calm fears.

Reasons for Inclusion: This project may be considered an ideal model of intermodal transportation development because it connects existing bus, rail, pedestrian, and vehicular traffic with the ferry system and it serves as a catalyst for community redevelopment of the waterfront and downtown Hyannis.

Innovative Aspects: There is a 12-ft grade difference between the terminal building and mean low water. Rather than ramps, an elevated pier and bridge are to be constructed from the terminal building to the pier, allowing for a single grade directly to the vessel. Patrons will not have to negotiate any grade changes between the terminal and the vessel. Accessibility is greatly enhanced with this design.

Other Comments: The Steamship Authority is in the midst of a major facilities improvement program. Toward that goal the Hyannis and Vineyard Haven terminals are being redesigned. After the Hyannis and Vineyard Haven projects are completed, the Authority intends to rebuild the Woods Hole Terminal, which is the Authority's headquarters and the busiest port in the system.

The village of Woods Hole has long looked at the Authority as a major source of congestion. Reconstruction of the Woods Hole Terminal should allow improvements for intermodal connections and give the community opportunity for input to improve traffic circulation, staging, patron amenities, employee parking, lighting, etc. Community involvement is the lesson learned during the Hyannis and Vineyard Haven projects.

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