

Statewide Transportation Planning: Making Connections

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ISBN 978-0-309-43690-8 | DOI 10.17226/23275

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TRANSPORTATION RESEARCH
CIRCULAR

Number E-C099

June 2006

**Statewide
Transportation
Planning**
Making Connections

**May 18–20, 2003
Duck Key, Florida**

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Statewide Transportation Planning

Making Connections

May 18–20, 2003
Duck Key, Florida

Transportation Research Board
Statewide Multimodal Transportation Planning Committee
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Transportation Programming, Planning, and Systems Evaluation Committee

June 2006

Transportation Research Board
500 Fifth Street, NW
Washington, DC 20001
www.TRB.org

TRANSPORTATION RESEARCH CIRCULAR E-C099

ISSN 0097-8515

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Preface

The Statewide Transportation Planning: Making Connections conference was designed as an opportunity for transportation planners at state departments of transportation, metropolitan planning organizations, local governments, and transit agencies to meet together and discuss making connections in the transportation planning process. The sessions were organized around making connections in four different areas:

- Connections in the political process,
- Connections to customers,
- Connections between transportation systems and with other types of plans, and
- Connections between planning and programming.

This conference was the seventh in the series of statewide transportation planning conferences. The first was held in Williamsburg, Virginia, in 1962. The sixth conference was held in Girdwood, Alaska. The Girdwood conference focused on the state-of-the-practice in statewide planning. The conference organizers for this conference focused on the future. The presentations, breakout sessions, and the informal discussions held during the conference were oriented to how to improve the planning process and future activities that the community could encourage.

The contributions of the conference planning committee and the conference participants were critical to the success of this event. The committee, chaired by Neil Pedersen, developed the conference program. The full committee is listed on the title page. There were many more program participants than can be individually recognized in this preface; their contributions appear in this circular. The Federal Highway Administration provided funding and support, and the Florida Department of Transportation hosted the conference. Other conference cosponsors were American Association of State Highway and Transportation Officials and the Association of Metropolitan Planning Organizations.

This circular, prepared by Katherine Turnbull and Gordon Shunk of the Texas Transportation Institute, includes the presentations, resource papers, and summaries of views expressed by conference speakers, panelists, and participants.

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OPENING PLENARY SESSION

Welcome

Neil J. Pedersen
Maryland State Highway Administration
Moderator

WELCOME TO FLORIDA

Ysela Llort, *Florida Department of Transportation*

Good afternoon. It is a pleasure to welcome you to this conference on behalf of Florida Governor Jeb Bush and Secretary of Transportation José Abreu. The Florida Department of Transportation (DOT) is very pleased to help host this important conference. The conference committee has developed an excellent program and we will have a busy 3 days.

I hope that you will also be able to enjoy some of the local sites and scenery. There are many things to see and do in the area. The Florida Keys are wonderful and Miami is truly an international capital.

There are many important transportation activities underway in the state. You will hear more about Florida DOT's strategic intermodal program and other efforts from speakers at the sessions. We have much to share with you about recent planning activities. We also have much to learn from your experience.

Again, it is a pleasure to welcome you to Florida. Please let me or any of the Florida DOT staff at the conference know if you have any questions or if there is anything we can help you with. I hope you enjoy the conference and your stay here in Florida.

CONFERENCE WELCOME

Neil J. Pedersen, *Maryland State Highway Administration*

It is a pleasure to welcome you to the opening session of this conference. I had the opportunity to serve as chair of the Conference Planning Committee. This conference is the 7th Statewide Transportation Planning Conference sponsored by the Transportation Research Board (TRB).

The first conference was held in Williamsburg, Virginia, in 1962. I would like to recognize Dr. Michael Meyer, who was responsible for organizing many of the conferences. I have participated in the past few conferences and helped plan the last conference which was held in Girdwood, Alaska.

The conference in Girdwood addressed a number of significant issues and topics, focusing primarily on the state-of-the practice in transportation planning. The planning committee felt it was important to focus this conference on the future. Rather than worrying about how we improve on past processes I challenge you to think creatively during the conference about how to improve the decision-making process for the future.

I would like to welcome our colleagues from metropolitan planning organizations (MPOs) throughout the country. TRB's new Metropolitan Policy, Planning, and Processes

Committee assisted with organizing the conference and will be holding its mid-year meeting this week.

I would like to recognize all of the members of the conference planning committee. This group did a great job of planning a very interesting and informative conference. I would like to thank Florida DOT, especially Ysela Llort and Dave Lee, for their support and hard work in organizing this conference. I would also like to recognize the other conference sponsors, including the FHWA, the AASHTO, and the Association of Metropolitan Planning Organizations (AMPO).

As always, TRB staff did an outstanding job with the conference logistics and provided other assistance to the planning committee. TRB staff Kim Fisher, Freda Morgan, Bruce Millar, and Brie Schwartz all contributed to the success of this conference.

The overall theme of the conference is making connections in the transportation planning process. The general sessions are focused on the four sub-themes of making connections with the political process and with decision makers, making connections with customers, making connections with systems and other plans, and making connections between planning and program delivery. We also are fortunate to have futurist Glen Hiemstra speaking tomorrow morning. I think Glen will challenge us to look at the future in a new way.

The breakout sessions provide the opportunity for more focused discussion. The moderators will pose questions based on the topics presented at the different general sessions to help focus discussion.

I hope you will find the conference interesting, stimulating, and informative. I challenge each of you to fully engage in the breakout group discussions and to share your ideas with others. Thank you.

PLENARY SESSION

Making the Connection with the Political Process and Decision Makers

W. David Lee

Florida Department of Transportation

Moderator

CONNECTING AT THE LOCAL LEVEL

Richard J. Kaplan, *City of Lauderhill, Florida*

It is a pleasure to have the opportunity to speak to you this afternoon. I would like to share some of my thoughts and ideas related to transportation planning, which I see as an ongoing process. I have been Mayor of the City of Lauderhill since 1998 and I currently serve as chair of the MPO for our area.

As you are all aware, MPO staffs are trained planners with a wealth of experience and expertise. MPO boards are comprised of local elected and appointed officials who do not typically have extensive backgrounds in transportation planning. This situation may cause a disconnect between staff and MPO policy boards. One of the challenges for MPO staff is to develop strong working relationships with policy board and advisory committee members. It is also important to build working relationships with policy makers at all levels—local, state, and federal. Transportation planning is a complex process. Helping policy makers understand the process, especially the funding aspects, is important.

Policy makers are concerned with the same types of issues transportation planners deal with, including lack of funding, intergovernmental conflicts, and political concerns. In Florida, we have been working on these issues for many years. Working together we developed an orientation and reference manual for MPO board and committee members. This document, which is updated periodically, is provided to all newly appointed MPO board members. The manual provides an overview of the planning, project delivery, and funding processes. It also includes a glossary of common terms and acronyms. The manual may be used as a model for other states or a national initiative.

The manual has been every effective in helping new MPO board members learn about transportation planning and the project selection process. We are now working on a second step of developing and holding education seminars. These seminars will provide the opportunity to help educate local officials on transportation planning. These seminars might also serve as a model for a national effort.

I think it is well recognized that while MPOs have an important role to play they do not run the transportation system. The various elements of the transportation system are operated by local, state, and federal agencies and governments, and the private sector carriers. I think transportation policy and decision making is performed best as a collaborative process involving all affected groups. Our primary purpose is to serve our constituents.

The various local, state, and federal transportation agencies can learn from each other. It is important that these groups work closely together, which does not always happen. There are some good examples here in Florida of enhanced coordination and cooperation among

transportation agencies at all levels. There are currently 25 MPOs in Florida. I believe there is potential for four new MPOs based on the latest census. There has also been discussion about regionalizing MPOs.

The MPO Advisory Committee (MPOAC) was created through the cooperative efforts of Florida DOT and the MPOs, along with state-authorizing legislation. MPOAC is comprised of two groups. The governing board includes one elected official from each of the 25 MPO boards. The staff group is made up of a staff member, usually the executive director from each MPO.

The MPOAC provides a number of benefits. First, it allows Florida DOT to meet with all MPO staff and policy members four times a year, reducing the need for individual meetings with all 25 MPOs. Attending four meetings a year, rather than a potential 100 meetings a year is more effective. Second, the MPOAC helps create uniformity in policy and procedures among the MPOs. Third, the meetings facilitate the sharing of ideas and best practices and make it easy to provide updated information on state and federal programs. The meetings also provide opportunities for vendors, consultants, and other groups to address representatives from all of the MPOs.

Florida DOT is to be commended for helping facilitate the creation of the MPOAC and supporting its ongoing operation. Although Florida DOT and the MPOs do not always agree, the MPOAC provides an excellent forum for the discussion of issues. Given their different roles and responsibilities, it is natural that Florida DOT and the MPOs will have different points of view and different priorities. Florida DOT is concerned with the entire state, while the MPOs are focused on their region. I think that Florida MPOAC provides a good model for other states to consider. Any state with more than two or three MPOs would benefit from using a similar type of organization.

The Strategic Intermodal System Steering Committee (SISSC) provides another example of coordination among agencies and modes in Florida. The committee was established by the state legislature to identify the state's strategic intermodal system. The committee included of some 33 members representing all modes, government levels, businesses and trade organizations, and interest groups.

The committee met on a regular basis over a 1-year period. I had the opportunity to participate as the representative from the MPOAC. It was a fascinating experience. The plan developed by the committee identified bottlenecks and missing links in the intermodal system. The plan, which was approved by slightly over 80% of the members, was submitted to the legislature. Actions are being taken to address many of the plan's elements.

Another example of coordination is the memorandum of understanding (MOU) signed by all 25 MPOs to establish a process for considering environmental concerns earlier in the transportation planning and decision-making process. This approach is being examined as a possible national model.

I think these examples highlight the benefits of bringing groups together and improving communication and cooperation among the organizations involved in transportation. Proper investments in the transportation infrastructure provide benefits and revenues to the public and private sectors. Transportation is an economic engine.

According to recent information from the National Center for Intermodal Transportation, transportation accounts for about 20% of the U.S. economy, and helps support the remainder of the economy. Industry, agriculture, and tourism could not function without the transportation system. Transportation is a circulatory system of the nation, bringing goods and services to all of

its citizens. I heard recently that every \$1 property invested in transportation creates \$5 in economic benefits.

If organizations are not working together to develop and operate effective transportation systems, they are loosing the potential for significant economic gains within their communities. Rather than cutting back on transportation finances, we should be increasing funding to ensure the health and viability of our economy.

I have been approached by MPO board members from other parts of the county who are concerned about the lack of cooperation between MPOs and the state transportation department. In Florida, both Florida DOT and MPOs have worked hard to develop open communication and to build trust. While we do not always agree, we are firmly committed to working together.

Thank you for the opportunity to speak with you today.

CONNECTING WITH DECISION MAKERS

Vernon Petersen, *Fergus County, Montana*

It is a pleasure to have the opportunity to speak at this important conference. I am from Montana, which is a large rural state. Fergus County, where I live, covers some 4,300 mi² and has about 2,000 mi of county roads, and 157 bridges. Montana has the highest percentage of rural annual vehicle miles of travel (RAVMT) of all states in the country. In comparison, Texas has 33% RAVMT, while Florida has 26% RAVMT.

The theme of this conference, Connecting with the Decision Makers, is very appropriate. As a county commissioner, I would like to share some of my thoughts about connecting with decision makers. The single most important thing I want to emphasize is, contrary to what you may think, decision makers are human. Being human, decision makers usually respond well to two things: courtesy and respect.

Think about when you were young. Your mother was a decision maker and how did she respond to you? Where did whining and complaining get you compared to being courteous and respectful? You may not always have received what you wanted, but you probably received much more consideration and more positive responses when you were polite.

My comments will focus on dealing with decision makers at the local, state, and federal level. If the local politicians in your area have an open-door policy, stop by and introduce yourself. Let them know who you are and what you do, and thank them for serving in a tough job. Remember who they are and, if you see them in public, be sure to greet them and identify yourself again. Most politicians may not recall who you are at first and will appreciate not having to guess, but after the second or third encounter they will remember you.

Read the local newspapers and when a local politician does something you agree with, write them a note thanking and encouraging them. Trust me, they do not get many thank you letters and they will likely remember your name when you decide its time to connect with them on your topic of concern. Use courtesy and respect when presenting your perspective to policy makers.

At the state level is it important to establish political credibility. You build credibility by knowing your subject inside and out. You will develop credibility if you can answer decision makers' questions. If you do not have the information they are asking for, do not guess or make up answers. Tell them you will get the answers and then follow through. They will respect you for being honest and for following up in providing the information.

If you have to testify before a legislative committee, it is important to know the names of the committee members and where they are from. Choose examples that relate to their constituents or districts. Include those examples in your testimony. For instance: “Senator Jane, in your district this approach will result in a cost savings of...” or “the project will benefit your constituents along the highway.”

While developing examples involves extra work on your part, it produces extremely positive results. Also, it is good to have analyzed the situations in committee members’ areas in case they ask you questions. Having the information saves them time and effort. Be aware that they will probably check your figures the first time or so and might tell others, so your assessments must be correct. If so, you will advance your cause considerably and establish your credibility, setting you up for future successes.

At the federal level, go out of your way to personally contact your senators and congressmen. Attend their listening sessions and provide brief, concise, and accurate input on topics of concern to you. They will soon begin calling on you by name when they see your hand raised. Consider how the President calls on the reporters he trusts by name at his press conferences.

While it is good to know your elected officials, much of the real work is done by their staff. Find out which staff deal with your subject and get to know them. Treat them with respect and courtesy, and give them plenty of accurate information to support your cause. Most elected officials depend on their staff—in many ways those young kids you see in senators offices are running this country. They write the legislation and they explain to the senator what it contains, how it affects his or her constituency, and how they should vote.

Use the same approach when dealing with decision makers within agencies. Remember that while these political appointees are very important, they are usually temporary. It is critical to establish links to the staff supporting the decision makers, who frequently carryover from one administration to the next. They can help establish your credibility.

If you represent an organization, be sure to elect or appoint reputable people as chair or president of your group. Do not put people in a position simply because they have been there a long time. Put whoever will dedicate themselves to doing the job right. One weak leader can negate the longevity and credibility of an organization. If this situation happens, you must start over.

In Montana, we used these approaches successfully to change our secondary road program. We had problems with getting projects funded under our state-legislated secondary road program which divided federal funding among 56 counties. Counties accumulated funds over the years by a formula until they had enough for a needed project. At times, the state had \$10 to \$15 million or more in funds obligated, but still could not build projects because individual counties did not have enough funds for their specific project.

We began formulating a draft bill right after a legislative session, which meets for 90 days every 2 years. Between the Montana Association of Counties Transportation Committee, which I chair, and the Montana DOT, we spent almost 2 years writing the draft legislation. The approach was approved by all 56 counties and personnel at Montana DOT. We found a sponsor and the legislation was passed without a single amendment. That is unheard of for such a major, complex bill but we had done our homework. We overcame all opposition encountered by fine-tuning the draft bill, introducing it to most legislators at the county level before the session, and by knowing the bill so well that we were able to answer questions quickly and honestly.

In closing, let me remind you that decision makers are human beings. Treat them with the same courtesy and respect that you would appreciate in their place. Thank you.

CONNECTING WITH POLITICIANS

Kirk T. Steudle, *Michigan Department of Transportation*

It is a pleasure to have the opportunity to speak at this conference. My comments focus on connecting the planning process with the political process and decision makers. I will highlight some of the differences between planners and politicians, as well as common areas of interest. I will illustrate how both groups can benefit from establishing closer working relationships.

There are a number of factors that contribute to the gap between planners and politicians. The two groups tend to want different things, speak different languages, serve different customers, have different perspectives, and follow different rules. While there are differences between planners and politicians, there are also areas of common interest.

In general, planners want policies, procedures, and products. On the other hand, politicians focus on results. While there are obviously differences in the focus of planners and politicians, there is some common ground. Politicians and planners both want results that are best for the community. Both groups also want viable, sustainable solutions to transportation issues.

The award-winning Precious Cargo program implemented by the Texas DOT provides one example of both groups working together to find this common ground. Texas DOT staff work with local school districts to provide early assistance in the planning for new schools. The program was created in response to traffic accidents at schools located along Texas highways. Texas DOT works with local governments and school districts on traffic planning before schools are constructed. Texas DOT provides comprehensive and thorough site plan reviews, identifies potential traffic control devices, and examines future planning for roadway improvements. Texas DOT also shares existing traffic safety education materials with the schools. The program has resulted in lowering traffic fatalities on highways around new schools.

Planners and politicians use much different language. Planners talk about technical issues and tend to use a lot of jargon, including terms like vehicle miles of travel (VMT), average daily traffic (ADT), and level of service (LOS). Planners also deal with agencies and groups including MPOs and transportation management associations (TMAs). Politicians focus on public support, local involvement, economic benefits, and tax generators.

The key to improving communication between planners and politicians is finding common ground. Both groups are concerned about road conditions and traffic congestion. Planners use terms like LOS, while politicians talk about traffic jams. While each group has its own jargon to describe the problem both want to find the best solution to these issues.

Although LOS and traffic jams represent different levels of technical detail, both groups are talking about the same thing, congestion. The longer-term solution may be to add a new freeway lane, which costs a lot of money and the ribbon-cutting ceremony is years away, but it provides a significant improvement. A more expedient, cost-effective solution might be to synchronize traffic signals on the surrounding roads, or to advance the proposed repaving of a parallel route and put up some changeable message signs (CMSs) to encourage drivers to use the less-congested roadway. Politicians want results such as a less-congested roadway. Planners can help politicians decide how to address the problem.

Michigan's Choke Point program provides an example of planners and politicians working together. The program was the brainchild of a previous Michigan DOT director, who had a political background. The program identified congested areas or choke points that could be addressed in less than 1 year, most for under \$10 million. It was a successful program that achieved significant benefits for a modest investment.

The director identified the need to address pockets of congestion based on his own recreation travel. He saw the opportunity to get significant benefits for a relatively small investment. The planning department sought input from Michigan DOT regions and transportation service centers (TSCs), who are in regular contact with communities and local officials. The suggestions were examined, and the best options were selected based on available funding. Projects were quickly implemented by regions whose input was sought and accepted. Communities were delighted to have quick solutions to long-standing problems.

Planners and politicians service slightly different groups. Transportation planners serve the public, other agencies, and politicians. In comparison, politicians serve their constituents and other politicians.

There is common ground among the groups served by planners and politicians. Constituents are the public. Both groups sometimes need to satisfy other politicians to accomplish goals. Other agencies also serve these customers. Both groups want a functional, multimodal transportation system. Both groups want timely data and solutions.

Michigan DOT's Southwest Region Non-Motorized Investment Plan provides an example of planners and politicians working together to meet the needs of the public and constituents. The process started as a result of local requests for more non-motorized transportation, which generated interest from both politicians and planners. Michigan DOT's decentralization approach brought highway engineers closer to public and it was impossible to overlook the public requests. The state long-range plan goal for development of non-motorized transportation facilities as an element of a more balanced Michigan transportation system provided impetus for a new approach to non-motorized investment, which had previously been rather haphazard. Public workshops were held to develop the plan, with some 1,000 participants from local government, the public, advocacy organizations, educational groups, and safety organizations.

The plan also responds to the governor's directives to broaden Michigan DOT's focus to include more consideration of other modes, particularly non-motorized. Both the Intermodal Surface Transportation Efficiency Act (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21) required consideration of non-motorized facilities and connections. Michigan DOT's asset management program lent itself to the next step of including other facilities in planning road improvements. The result is a plan that highway engineers can consult when planning improvements; it highlights opportunities for non-motorized facilities and provides a checklist and cost estimating tools to include those facilities as part of a programmed project.

Planners and politicians focus on different time horizons and have different perspectives on the transportation system. Planners focus on the long term, the 20- to 25-year time frame. They also consider statewide or national issues. Transportation is at the center of their concerns. Politicians focus on the short term and address local or district issues. Politicians view transportation as one of the many issues they deal with.

There are ways to find common ground among these differences, however. First, over time the short term becomes the long term. Second, local and district issues typically mirror state

and federal issues. Transportation is an important concern at the local, state, and national level. Finally, both groups want to spend public money effectively and efficiently.

Michigan's long-range transportation plan provides an example of common ground for planners and politicians. It is a 25-year multimodal plan. It was created with input from a large and diverse group of representatives from agencies or organizations throughout the state. Michigan DOT's 5-year program goals fit in the 25-year scenario in the long-range plan.

Every state has a long-range plan, as required by TEA-21. The plan includes transportation goals for all modes and strategies to achieve those goals. The plan provides a framework for investment for all modes from 2000 to 2025. The Michigan plan was drafted with the assistance of over 35 public interest groups ranging from various tribal governments to the Commission for the Blind, Area Agencies on Aging, local governments, road builder groups, and the League of Michigan Bicyclists. The plan focuses investments in key highway corridors, but includes intermodal connections and facilities as well.

The draft plan was reviewed with the public at nearly 40 meetings across the state. These meetings provided opportunities for public comment. The public input reinforced the goals that had been identified, such as managing land use and growth, and also prompted an additional safety goal several months before September 2001.

Planners and politicians operate in different ways. Planners consult federal and state laws, state and national transportation policies, and regulations. Politicians consult opinion polls, party policies, and other politicians. There are similarities in the way the two groups operate, however. Both planners and politicians have to abide by the law and both groups are accountable to the public.

The Michigan Disadvantaged Business Enterprise (DBE) program provides an example of a similar approach between the two groups. A DBE program is mandated by 49 CFR Part 26 as a condition of receiving federal financial assistance. Michigan DOT's DBE program benefits all Michigan citizens by promoting the formation of small businesses, new jobs, and stimulating innovation.

No quotas are imposed by the U.S. Department of Transportation DBE program. The focus of the program is to enable minority-owned businesses to compete in the areas of construction, engineering, and service contracts on federal aid roads. In 2002, 91 DBE firms won FHWA, FAA, or state-local funded contracts for various aspects of transportation construction, maintenance, and engineering in the state. The DBE effort improves programs by giving Michigan DOT the benefit of different perspectives and approaches to our transportation issues. It is also in accordance with the governor's mandate to broaden economic participation to all citizens in Michigan as well as fostering job growth and creating economic expansion.

Planners can connect with elected officials in a number of ways. It is important to identify the result you both want to achieve. It is also important to use terms that express common ground between both groups. Seek out public input and use it in developing and proposing solutions. Recognize transportation as one component in a bigger picture. Finally, it is important to be patient. Building strong working relationships takes time. Thank you.

Over the Horizon *Events, Trends, and Developments Shaping the Future*

GLEN HIEMSTRA
Futurist.com

Thank you very much for inviting me to be here. I have spent an amazing month traveling in Australia and other areas. Yesterday I was in Boston for our middle child's graduation from Boston University. My wife and I have three children between us—the oldest is 23, the new graduate is 21, and our 19-year-old is attending the University of Washington.

I am going to share a story about Seattle, Washington, which fits well with the types of issues you are concerned with. It is the story of the great Seattle fire, which occurred in June 1889. The fire started when a glue pot in a downtown cabinet shop caught fire. Over a 3-day period, the city virtually burned to the ground.

A few days later, a group of about 600 people got together in one of the few remaining buildings to debate the future of the city. Should they rebuild? Their answer was yes. Should they rebuild in the same place? While the city was in an ideal location on Puget Sound, it was also built on a tittle mud flap, so it was a terribly mucky, awful place for streets and roads. In fact, because of the tides, sewers could not be built.

The group decided to rebuild the city in the same place, but to raise it one story. They reconstructed the buildings and then worked their way down the surrounding hills, filling in the streets to one-story high. Everything was raised one story and the underground city was eventually abandoned. You can see remnants of the underground city by taking the underground Seattle tour from historic Pioneer Square.

It is a very interesting true story. By the way, nobody was killed in the fire. What I am about to tell you now, I have made up concerning the decision-making process. In the debate over rebuilding, somebody in the room said it was an unbelievable tragedy. Somebody else suggested the fire provided a golden opportunity to start over again. What city has a chance to build itself from ground level, to start from scratch, knowing what we know now? Somebody else asked what do we know now that the early settlers did not? Somebody in the room might have seen an automobile somewhere in the country in 1889, and said, for example, we know about this new thing called the automobile and we will need to accommodate it as we re-build.

I am sure there was a transportation planner in the room who might have suggested the automobile was too far in the future and did not need to be considered. They focused on the need to re-build the horse infrastructure based on the 30,000 people living in Seattle at the time and the forecast 300,000 people in 30 years. That growth did happen. To meet this population increase an infrastructure for 150,000 horses hauling people to and from work, and 150,000 more horses hauling hay, would have been needed. The new horse infrastructure would have been so vast they would have had to levy a local option manure tax just to pay for it.

There were two men who owned much of the land in the city. These two individuals did not get along. One decided to orient his streets in an east–west direction, while the other decided to orient his streets along the angle of the bay. As a result, the streets in Seattle are confusing. It has been a big headache ever since, but we have gradually worked to fix the problem.

That is enough about Seattle and 1889. Here we are in 2003 and we are in the same situation, figuratively speaking. What should we be thinking about for the next 30 years? When I

am invited to work with organizations or states, they typically want me to think about starting over from scratch and what they should be considering. I will share with you this morning many of the things going on in the world right now that have the potential to influence transportation.

I would like to start with this question: “What is your image of the future?” It is a big question; a fun question; a question I ask everyone. It is also a question I am often invited to assist organizations or states think about. In the end, all planning boils down to how you answer this question. When you think of the future—whether it is 6 months, 6 years, or 60 years—what kind of words, phrases, and pictures come to mind to drive the decisions you make today?

What we think of in terms of transportation tends to be a popular image of the future, which focuses on traffic congestion. I was in Tulsa for the Mayors Economic Summit, and Tulsa wants more congestion. They have lots of empty streets and empty buildings, so they would love to have a congestion problem. Most areas have too much traffic congestion and most of you are looking at ways to reduce or eliminate congestion.

Our image of the future is very powerful. Of course, there are alternative images of the future transportation system, which may or may not be realistic. An inventor in Spokane, Washington, came up with an alternative you may not have heard of called Tango, which is a battery-operated electric vehicle. The City of Spokane is considering buying some of these vehicles, and the car has been approved for use in Washington and California. Seeing this vehicle, you immediately know what this person’s image is in terms of dealing with congestion and getting more people into the existing infrastructure.

What is your image of the future? What kinds of things should drive your decisions? Our image of the future is somewhat based on our knowledge that the past created the present world. We believe our job is to make decisions today that will create the world of tomorrow our kids will be living in and we will be living in as we grow older. Extending this line of logic reveals that the future, as it is created by the present, simultaneously creates the present in the sense that our images of the future tell us what we should be doing right now. If you want to change what you are doing in the present, change your image of the future. What you expect to occur in the future determines how you prepare for it today. If you have a negative image, you will do what you can to prevent it; if you have a positive image, you will do what you can to ensure its creation. Your decision making in the present is driven by how strongly you buy into and believe in your image of the future. Therefore, the future is a very powerful force for shaping the present.

Many groups have been thinking about future images of transportation. In 2000, I was invited to participate in a 3-day symposium hosted by the National Aeronautical and Space Administration (NASA) and the FAA for technical research personnel. There were three events around the country and one was in Seattle. The symposium brought together scientists, engineers, researchers, sociologists, and others focusing on what transportation will look like in 50 years. A study, *Vision 2050*, resulted from the symposium. With the change in administration, I am not sure how much the document was used.

People have always tried to foresee what the future will look like. The Smithsonian Institute has just opened an exhibit called *Yesterday’s Tomorrows* which looks what became of past visions of transportation. For example, Robert Fulton’s “Airphibian” would fly, drive, and go through the water. The Levercar from Ford Motor looked like a bubble and would ride on a cushion of air. There is also Paul Moller’s Skycar from 1999, which is still being fine tuned.

I am often asked about techniques to help people think about the future. I am currently involved with a project for the Idaho Transportation Department to create a vision for the future transportation system in the state. My role has been to assist with the public participation

process, especially getting people to think creatively about the future. A short video was produced and shown at the public meetings to help people imagine different future transportation elements.

I have found it helpful to try to get people to look backward as well as forward. Look at how much things have changed in the past 30 years. Ask people to visualize what they think will change in the next 30 years.

A good example is to look at the changes that occurred between 1890 and 1920. The automobile was invented in this time period and Henry Ford had built the first assembly line factory. The Wright Brothers flew an airplane. X-rays were discovered. The cause of malaria was discovered. The radio was invented. Though it was invented slightly before 1890, the telephone became a common communications device during this period. We were in the final stages of the industrial revolution, when homes were first being built away from the factories, separating people from where they worked. This led to commuting, the building of the first suburbs as we think of them now, the paving of the roads in North America, the electrification of the country, and so on and so on.

Futurists like myself will almost always tell you that change is accelerating. The pace of scientific development, scientific discovery, and technological development continues to accelerate. There are some good measurements that illustrate these trends. At the same time, we can question if our lives are really changing as much today as they did for people living from 1890 to 1920.

The period represents the last major technology revolution. Three driving technologies—the telephone, electricity, and the automobiles—changed the social economy of the country. These technologies changed how things were made, bought, and sold; how, when, and where we worked; how and where we lived in relationship to our work; how and when we traveled; and how and when we communicated. All of those things fit together to create our social economic system, and they all changed quite radically during that time period.

Looking back, the pace of change today may not match what occurred between the 1890s to the 1920s. I think we are going through a similar kind of techno-social economic evolution driven by three or four key technological developments: the biotechnological revolution, the nanotechnological revolution, the digital revolution, and the coming energy revolution.

The question now is, will these new technologies—biotechnology, nanotechnology, information technologies of all kinds, and new energy technologies—once again reinvent how things are made; how, when, and where we work; how we live; and how and when we travel. The answer is most likely yes. When we sit around our kitchen tables in the 2030s, we will say that life changed a lot in this first 30 years of the 21st century.

There is evidence to show we are in a technological and social economic change. The latest top 10 list of emerging technologies maintained by the Massachusetts Institute of Technology (MIT) includes the following items:

- Wireless sensor networks,
- Injectible tissue engineering,
- Nano-solar cells,
- Mega-tronics,
- Automobile engineering,
- Grid computing,
- Nano-imprint lithography,

- Software assure,
- Glycomics, and
- Quantum cryptography.

These emerging technologies indicate that we may be in the early stages of a technological revolution similar to that which my grandparents went through. These revolutions are either in information technology, biotechnology or nanotechnology. If you include solar cells, you also begin to hint at the future energy revolution.

The future also holds major changes for transportation at our international borders. Clearly, when it comes to borders, and the facilities and infrastructure that exist there, the future is not what it used to be. While I am not a security expert, it is obvious we must be able to defend against both countries and super-empowered, angry individuals. One of the more unique things about our time in history is that the power of technology can be used to amplify an individual's anger, giving them much more power than ever before. Our new reality today is that we must be able to defend against small groups of angry individuals, probably more so than large nations.

Transportation facilities are obviously vulnerable to attack and sabotage. Unfortunately, transportation has also been used as a way to attack our society. On the very long-term horizon, the greatest danger is going to be invisible, nanotechnology that can be weaponized. The Department of Defense is researching the possibility of making things so small that they cannot really be seen. How are we going to watch for invisible weapons?

A number of technologies are being considered to enhance security at our borders, including retinal and iris scanners, fingerprint readers, and machines that can pick up chemical and biological scents. If things like the SARS epidemic continue to pop up over the next 30 years, we may also see our airports imitating what they are doing in China, which includes measuring the temperature of everyone who comes through the gate. As people walk through the security gate to get on the airplane their body temperature is scanned. If someone's body temperature is over 100, they will be taken aside for further testing.

I believe it is essential to have futures which are positive, attractive, and, in a certain sense, magnetic. I have a five-point vision to build an eco-economy. On the one hand, it sounds like an ecological or environmental vision. But, on the other hand, it represents the greatest financial business opportunity of the next 25 to 50 years. In my opinion, the eco-economy will be the driving force of the economy in the next 25 to 50 years.

The first element of the vision is to convert to the next energy era. We will see a shift from an oil-based economy to a hydrogen-based economy over the next 25 to 50 years. The wealthiest country in the world 50 years from now could very well be Iceland, which plans to be a fully hydrogen economy and to be an exporter of hydrogen by 2020. Iceland has massive amounts of hydroelectric and thermal energy. Using that energy can begin to break down water into hydrogen, which could make Iceland the OPEC of the hydrogen world. That is really their dream. In addition to being pollution free, Iceland could become, on a per capita basis, the wealthiest country in the world if a shift to the next energy era is made.

The second element of the vision is to convert to the next automobile era. If you want to improve the environment fast, changing the automobile to something that does not create as much pollution will have the largest influence. While it is probably unrealistic to get rid of automobiles, it may be possible to make major changes relatively quickly. Actually, we can do that now, but I do not think we are changing fast enough.

The third element of the vision is to accelerate the shift to no-waste, little energy, little or no cost, cradle-to-cradle manufacturing. This shift would greatly reduce energy consumption and the waste associated with current manufacturing processes.

The fourth element of the vision is to provide broadband communication to everyone. We can truly begin to substitute high bandwidth communication for travel if it is available to everyone. High-speed, high-bandwidth communication is needed for real, effective communication over the web. We are going to see a gradual revival of the web revolution as more people have access to high-speed, high-bandwidth communication.

The final element of the vision is to develop an integrated, intelligent Global Positioning Satellite (GPS) system.

In April 2003, *Wired* magazine came out with a five-point plan to build a hydrogen economy. The plan is really pretty simple. The first step is to develop a plan to solve the hydrogen fuel tank problem. There is a lot of research currently going on to determine how to store the hydrogen. The second step is to encourage the mass production of fuel cell vehicles, which will probably be inevitable, even without a lot of encouragement. The third step is to create federal financial incentives to encourage the necessary mass production. The fourth step is to convert the nation's fueling infrastructure to hydrogen. At best, this conversion is probably a 25-year project. The oil industry in the Gulf States currently produces a lot of hydrogen, and uses it in other processes. They already know how to make hydrogen, pipe it around, store it, and use it.

The final step is to mount a public education campaign to sell the whole idea of a hydrogen economy, including all the ecological benefits, the global and geopolitical benefits, and the financial benefits of being a leader in the hydrogen economy rather than a follower. Rather than waiting for Iceland, China, Japan, or some other country to lead us into the hydrogen economy, the United States should assume the leadership role.

There are a number of demographic trends that will influence the transportation system. Factors relating to changes in the age distribution, changes in retirement, and changes in birth rates will also influence the transportation system.

The population is getting older at such a rate that according to the Census Bureau we will have 27 Floridas by 2025. In Florida, 20% of the population is over 65 years of age. In cities like Miami and Ft. Lauderdale, one out of every five people is over 65. By comparison, in Idaho, only 11% of the population is over 65 and in Washington State, 13% of the population is over 65. The Census Bureau forecasts that 20% to 25% of the population in the state of Washington will be over 65 by 2025. In 2011, when the baby boomers start to turn 65, the true tidal wave of an over-65 population that has been forecast for a long time will begin and will last for a couple of decades.

This increase in the percentage of the population over 65 will occur in most of states, except for those that have significant Latino immigration. The Latino population is younger and is still having somewhat larger families; however, they will eventually catch up with the aging of the population. But at this point, demographically, their profiles are younger.

Think about how this change will influence our transportation system. In your mind's eye walk down your neighborhood street. Instead of one out of every 10 people you see being over 65, one out of every four to five people you see will be over 65. This change will be most dramatic in Italy, where 33% to 50% of their population will be over 65.

One of the most important changes associated with an older population relates to retirement. Invented in the 20th century, retirement was a result of the industrial revolution. It was means of getting older factory workers out of the way to make room for the huge waves of

young, European immigrants early in the century. People would work and earn income up to age 65 and, beyond that age, they would cease income-generating work and live the rest of their lives in a lifestyle dominated by leisure and paid for by accumulated savings and benefits.

We set up a whole retirement system and Social Security based on this ideal. At the time we invented it, very few people lived to be 65. Now, a lot of people live to be 65; in fact, two-thirds of the people who ever lived to be 65 in the whole history of the world are alive today. Currently, there are approximately 360 million people worldwide over 65 years old. In 1900, there were only 10 million people over 65 in the entire world. In fact, most people now live to be well over 65.

When retirement was invented, the assumption was people would have about 5 years of leisure paid for, which made a lot of sense. Five years in the Florida Keys playing golf and going fishing would be a nice reward for a lifetime of work. Now people live an additional 20 years past retirement and, 30 years from now, 10 more years could be added to that. The question is: What will people do with those 30 years? A chart from Time magazine last summer showed that retirement came to an end in 1990, much earlier than my prediction that we would see the end of retirement in the 21st century. The chart, which only reflects the male population, shows the workforce percentages in the 70-, 65-, and 62-age brackets had dropped each year, beginning in the mid-20th century until 1990, when they began to go back up as those age groups were again staying longer in the workforce. It seems strange that a rise should begin in the 1990s—a time of booming economics—when we would have expected to see more and more people retiring.

This trend was partly due to the good economic times and the increased availability of jobs. It was also partly because people were beginning to realize that when they reach 65, they still had another 20 to 30 years to live. They began to re-think that entire phase of their life and ask themselves questions like: Do I really want to drive around in a Winnebago for 30 years? Will my savings really last for 30 years?

An older population will greatly impact the transportation system. In fact, we have already begun to prepare for it. Plans to compensate for issues related to eyesight such as sign size and safety, as well as many other age-related concerns are beginning.

We are also seeing changes in the birth rate. According to information from the United Nations, if the average number of children per woman is 2.1, the population remains constant. If the average number of children per woman is more than 2.1, the population increases. If the average number of children per woman is less than 2.1, the population will eventually decline, allowing for a time lag as people live longer. The one exception to the general decline in birth rates is Africa.

There are several reasons for this overall declining trend in world birth rates. Improved communications technology is leading to better information about family planning. Also, it has been shown that there is a close correlation between economic development and declining birth rates. Following that same trend are the impacts of the economic emancipation of women around the world. As you have economic development and as women become more economically emancipated, they have fewer kids. As health care improves, people begin to have more faith in the survival of their family. So, as communications improve, the worldwide economy improves, health care improves, and there are fewer births worldwide.

Reduced birth rates have lowered the United Nations' forecast for world population growth in this century. World population levels have increased from 6 billion at the turn of the century to approximately 6.3 billion. The United Nations considers its medium forecast to be the

most accurate, showing the population reaching 9 billion in 2070. I think the United Nation's low-end forecast, which projects 7.8 billion people in 2040 will turn out to be the most accurate.

Countries with low immigration levels will begin to see population decline first. This trend is has already become evident in countries like Germany, Russia, and Japan. We might even see a world conference in the future addressing the impending population decline. Possible approaches range from doing nothing to encouraging people to have more children. Imagine the political debate in America when birth rates begin to decline, not to mention if and when the population in our country begins to decline. The birth rate is 2.08, right at population replacement. So if we grow, it is primarily due to immigration. The birth rate in Canada is 1.5, which indicates a population decline in the near future.

Mexico has experienced an astonishing drop in birth rate from 7 to 2.9 in the past 20 years. Assuming improved economic development in Mexico, immigration pressure over a 25- to 30-year period should be relieved, with less immigration in the future. In addition, when you apply security issues to immigration, suddenly the whole population growth picture begins to change. Maybe our population growth will fail to meet most of our forecasts and could even come to an end within our own lifetimes.

How does the world change if population stops increasing? Tulsa, Oklahoma, is a good example of what might happen. When the oil industry collapsed, the population of Tulsa declined. Questions we should ask about the potential influence of population decline include: Where are people going to live? What is the future of community development? I think we will see a change in development patterns. Many people think development will occur around multiple town centers and multiple miniature urban centers within the larger urban areas, where retail, work, parks, office, and schools are all connected by sidewalks. The great tragedy in transportation between 1950 and 1995 was that we built so many streets without sidewalks. Many cities and towns are now building sidewalks. In Kirkland, Washington, I live two blocks from a high school that was built in 1949. A sidewalk was added just 2 years ago, and it is busy every day.

There is increasing interest in building walkable areas, urban in-fill, suburban in-fill, and converting old offices and warehouses to retail and residential spaces. Many areas are examining the need for senior housing and multimodal transportation systems to move people around town as well as in and out of town. There has been a great deal of study and hard work on how to move people around within cities, as well as getting them in and out of downtown areas. This thinking is different from the mindset of downtown areas just being work places. These areas are becoming 24-h activity centers, or 24-h town centers, where there is less movement in and out, and much more movement within the area.

Besides retirement, another thing that is coming to an end is the 20th century home. Beginning in the late 19th century, the nature of homes has changed. Since the beginning of civilization, the home was the center of life: where people were born, where they died, where they were cared for when sick, where most living took place, where most work took place on the back 40 acres or in the shop downstairs, and where most education occurred. But in the 20th century we invented the factory and the suburbs and we began to spend a great deal of time moving back and forth in transportation vehicles to work, school, and other activities outside the home. From the big mansion to the small apartment, our homes became simply a place to eat, to sleep, and to store our personal possessions.

For the average North American, European, and Australian, our lifestyle has become one of getting up in the morning around 6:00 or 6:30 a.m., traveling in a vehicle 22 to 23 min to

work, working for about 8 h, traveling back home, eating dinner, and going to sleep. Future historians may look at us and wonder why we would do all this. Why would we organize everything in such a way, wasting energy and physical space? Why would we build such infrastructure so people could just talk on telephones, have meetings around tables, and pass paper back and forth?

Many new houses and retrofitted homes have offices. Houses will gradually become three-dimensional communications studios. In the future we may travel to get together, but not so much to do basic work. I think the majority of people will still travel to meeting places where they can get together with other people, face-to-face, in order to accomplish much of their work—especially creative work. So we will not get rid of the commute, but the timing, the density, and the intensity of it may change. We see this trend already as our homes are increasingly becoming places where we do some work, some learning, and other activities. It has certainly already happened to my home, and may have already happened to yours.

A favorite tool of people in the business of thinking about the future of cities these days is the visual preference survey. Visual preference surveys usually include a transportation component. People are shown alternative pictures of development and transportation systems in the surveys. For instance, people may be asked to choose a parking facility that looks best for their city based on various examples. These visual preference surveys reveal that people almost always want what we do not have.

Another current transportation-related city development trend is the reclaiming of waterfront areas. Many cities turned their back on waterfront areas a century ago. These cities are now reclaiming waterfronts in a variety of ways. In Seattle there is a double-decked viaduct running along the waterfront in the downtown area. The viaduct is in need of replacement. How the goals of reclaiming the waterfront and rebuilding the road can be coordinated is being debated. Other cities with waterfronts are probably facing similar kinds of questions. We may have treated waterfronts as sewers a century ago, and now we want to treat them as a community development asset.

Technology is largely about social, economic, and demographic trends. The three big technologies that have changed the world in the past are telephones, electricity, and automobiles. Now, a new technological revolution is continuing and beginning to bear fruit in the areas of biotechnology, nanotechnology, and information technology.

Biotechnology is a very powerful trend and its significance to transportation should not be ignored or underestimated. One example is the portable gene sequencing machines which can help monitor border traffic by measuring what people are doing as they cross the border.

Nanotechnology is an interesting field and possibly the most significant of the three technological revolutions. Nanotechnology answers questions regarding how we will build things tomorrow. We build things today the way our ancestors have for thousands of years, by chipping away at or by melting trillions of molecules and stirring it all up. What if, instead of building like that, we could take an individual molecule or an individual atom, grab it with a chemical or mechanical tool and place it very precisely?

Nanotechnology, a field that really only came into being in 1990, manufactures things as though building with Lego blocks. At first the general idea was that we would possibly achieve results by 2020. However, last fall I attended a conference of nanotechnology researchers where they agreed that, because so much progress has been made in the past 2 years, many advances will be in place by 2010. We are increasingly able to observe and accomplish more and more things on a molecular scale. Molecular manufacturing could be the biggest of the three

technological revolutions because it will change what we make and how we make it as dramatically as Henry Ford did when he built the Model T on the assembly line.

New nanotechnology companies are appearing, both off the stock market and on the stock market. These companies are working to introduce real products into the marketplace. A National Science Foundation conference last fall forecast that nanotechnology will impact almost every aspect of our lives, and could be a \$200 billion business by 2006 and a trillion dollar business by 2015.

Researchers at MIT suggest that nanomanufactured solar cells or solar cells manufactured at a nanoscale will appear as soon as 3 years from now. Nano, by the way, means a billionth of a meter; micro is a millionth of a meter. Nano is essentially something that is 5 to 6 atoms wide, or a nanometer. If successful, these nano solar cells will give us the ability to buy solar cells that will be produced and marketed in one of two ways: in a paint can and you paint them on, or printed in an inkjet-style printer. If this technology succeeds, it could be the start of a change in the energy area.

In the long-term transportation future, out of nanotechnology may come the reality of the space elevator. The National Aeronautics and Space Administration (NASA) has let a contract to examine the concept of a space elevator. This elevator might be a cable built into space, a ribbon actually, made out of nanotechnologically produced material called carbon 60 or nanotubes. Using electricity or a “post-laser,” an elevator would run up and down the ribbon. This technology would greatly reduce the cost of putting something into space.

Futurists suggest that everything possible today was, at one time, impossible. Accepting this concept means that everything that seems impossible today may, at some time in the future, be possible. Certainly everything we do in transportation today, except walk, once seemed impossible. I find that it is very hard for professionals to let go of today’s realities and to have faith in something that is considered today to be impossible. This inability to envision different future scenarios seems especially true for transportation professionals.

Quantum entanglement is another example of a present impossibility which may become a future reality. The “Trillion Atom Triumph,” is an achievement in which, for the first time, businesses forged quantum entanglement between two large blobs of gas. This accomplishment brings the possibility closer for super-fast quantum computers and teleportation. Theoretically, it may be possible to teletransport materials in the future. This ability would certainly influence freight and goods movement. What is quantum entanglement and how is it done? At one end of the transmission, the molecular or atomic image of something would be read and sent, thousands of miles away, to a location where there would be the same raw materials. Using the molecular or atomic image as a map, those raw materials would reassemble themselves into the same thing.

In addition to biotechnology and nanotechnology, perhaps the most important of all the driving technologies today, is digital technology. The digital technology revolution began with the first transistor. Over the next 20 years, digital technology will take us into a world where personal computers are replaced by millions of tiny, intelligent systems embedded in clothes, jewelry, furniture, and walls. These systems will recognize voice commands and will be inexpensive. Companies which do not put chips or intelligence into all their products, including transportation infrastructure and vehicle products, will be at a very great disadvantage.

We will continue to see advancements in digital technology. The performance and power of chips doubles every 10 months, data storage every 12 months, and optical fiber capacity doubles less than every 10 months.

We will see new ways of using these technologies, such as reality glasses. Through these glasses a person will see the real world, but a tiny camera mounted on the glasses will point a little retinal scanner onto the eye, painting an image of computerized data. The wearer will see the real world and the computerized world simultaneously. This tool, called a virtual retinal display, would be a useful for mechanics, office workers, construction workers, pilots, and others. Virtual retinal displays exist today.

The world of information delivery will have a great impact on transportation and on all of us in all the types of work we perform. About 10 years ago we believed telecommunications would substitute for a lot of travel. The telephone was actually the first communication technology to begin replacing travel. Imagine the world today working with only transportation and no telephone. But the future of telecommunications is three-dimensional. Imagine being in your office, your home office, or your vehicle with your augmented reality glasses on—something that looks like wrap-around sunglasses with a little camera and display device. You can see the real world and the virtual world at the same time. Who knows, perhaps 30 years from now there may well be contact lenses or even implants for virtual retinal display, instead of bulky glasses.

To have that level of technology in every day use 30 years from now will require having what might be labeled as municipal broadband networks; very high-speed broadband communications coming into every office, every home, and every automobile. Once these networks are established, today's relatively crude communication systems will be things of the past as we find ourselves in true, three-dimensional communication systems.

The nature of work is also changing in interesting ways that will influence the future of transportation. The nature of 20th century work was very job-based, very fixed time and place-based, and supervised jobs tended to be relatively static and secure—one-size jobs, full-time work, jobs where you got paid on scale. Employment was either technical or personal, and change tended to be relatively slow compared to what is happening today. But all that began to change in the late 20th century.

In the 21st century, work is characterized as more stint-based than job-based. Stint-based is characterized as shorter-term and more project-based, with jobs and companies coming and going on faster cycles. Work happens in a way that is asynchronous and on the move all the time. People are more self-managed. Work is characterized by innovation and uncertainty. There are many options for work and you get paid for performance. Work is both technical and personal at the same time. All that has become true in today's working world, where change is faster and more chaotic.

When examining the transportation system in the future we must consider the need to both facilitate economic activity and to protect the environment. We will know more about global warming and the greenhouse effect over the next decade. Twenty years from now, there will be a much broader consensus on whether these are real phenomenon, and what we can do about them. It could be that we will need to do more about it than we are now, which will immediately impact transportation to the extent that we are still an oil-based industry.

Another upcoming development that will impact transportation and energy is converting garbage into oil. According to the MIT technology review site, a company with test laboratories in Missouri, Arkansas, and Kansas is putting chicken and turkey parts, refuse, and other types of garbage under super high heat and super high pressure to develop usable oil and gas. A test plant and a first full-size factory are under construction.

This group is comprised of transportation professionals. I have been talking in broad terms about the future. Here are some of the questions you might consider regarding where transportation is headed in the future. What if automobiles became pollution-free and air pollution ceased to be an issue with automobiles? What if the materials used to produce vehicles became recyclable? What if transportation integration occurred so that automobiles really did integrate with transit, walking, and 24/7 downtowns and urban villages?

What decisions would you be making about transportation if these scenarios were true? Would we figure out whether or not people really want sprawl? Would we or would we not tolerate it? If what I have said about energy, technology, automobiles, and other issues comes true, we are headed for such a world in the next 20 years. If these forecasts become reality, most of the transportation and land use debate will center around sprawl, with a little still focusing on congestion. There will be less cause for concern about the environment and less focus on reducing the number of cars on the roads and increasing transit use. Cars will eventually be non-polluting and, except for the impact on the land, there will be no environmental reason to get people out of cars.

We are at the dawn of the second automobile era, as exemplified by General Motors' Highwire car. This astonishing hydrogen-fueled prototype cost a half-million dollars to build, and is the future of automobile transportation. The cool thing about this car is that there is nothing on the inside but four seats and a steering wheel that slides back and forth, left to right, from driver to passenger side. There is no accelerator or anything by your feet. The brakes and the accelerator are all on the handles. The whole area in front is just completely open. Everything is in a skateboard-like chassis. The Highwire is an amazing car and if we can build a hydrogen structure to support it, these types of vehicles will change everything.

Studies indicated that the average person is willing to devote 1 h a day to transporting themselves to various activities. As transportation becomes easier and faster people tend to move further out from the central cities.

We may also see other technologies, such as monorail, personal rapid transit systems, elevated transportation systems, and magnetic levitation systems. There are three key characteristics that a system must have to become a reality—technological feasibility; economic viability; and social and political acceptance. It is that third characteristic that stops many potential technologies and projects

I hope you have a productive conference. Thank you.

PLENARY SESSION

Making Connections with Our Customers

Charles Howard

*Washington State Department of Transportation
Moderator***TRAVEL AND THE ELDERLY**Audrey Straight, *AARP*

It is a pleasure to participate in this session and to provide a perspective from the Public Policy Institute of the AARP. We use AARP now rather than the American Association of Retired Persons because more than half of our members are not retired. AARP has approximately 35 million members in some 32 million households. The mission of AARP is to enrich the experience of aging for people 50 years of age and older.

AARP's Public Policy Institute conducts research and sponsors public policy research. I am part of the long-term care-independent living team at the Institute. We focus on policy research related to independent living. Transportation, especially how transportation policy relates to older people maintaining their independence, is an important area of our research.

I would first like to highlight some demographic information about our aging society. I hope you will consider this information as you develop and implement transportation plans and programs. I encourage you to think about how transportation plans influence the mobility, safety, and quality of life of older individuals.

About 2 weeks ago, AARP released a report called *Beyond 50.03*. It is the third report in a series called *Beyond 50*. The report focuses on long-term independence and disability. It includes a great deal of information from a variety of sources. It also includes the results of a survey focusing on the impacts of disability on maintaining independence. For many individuals the process of aging brings with it functional impairment that makes older peoples more or less able to negotiate the physical environment they live in. This report is free and is available online or in hardcover from http://research.aarp.org/il/beyond_50_il.html, or you can send me an e-mail at astraight@aarp.org and I will arrange to have a copy sent to you.

Many of my comments address older individuals living in rural areas, which is often an overlooked group. Today, approximately 20% of all elderly individuals, defined as individuals 65 years of age or older, live in rural areas. Further, 13% of the rural population is 65 and older. The rural elderly population is evenly divided between men and women.

People 65 and over in rural areas comprise 25% of all Americans living in poverty. Further, 13% of the rural population with incomes at or below the poverty level is elderly. New data indicates that nearly one-quarter, or 22%, of rural senior consumer expenditures go to transportation. This figure represents more than their expenditures on out-of-pocket health costs.

I want to discuss the influence of functional impairment on the elderly population, especially regarding transportation and whether or not they can use a system that has been built to serve most Americans. As you are well aware, our transportation system focuses on driving. The functional impairments associated with the aging process can make driving difficult, if not impossible. I prefer to use the term functional impairment, rather than disability, because the

term disability is associated with the Americans with Disabilities Act (ADA). Under the ADA, a person must pass an eligibility test, and disabilities that make it difficult for seniors to use public transit are not necessarily the same disabilities that qualify them to get ADA transportation.

For instance, a vision problem may make it as difficult for a senior to use public transportation as a physical problem. In most cases, individuals with vision problems will not qualify under ADA unless they are basically blind. Therefore, I prefer to use the term functional impairment rather than disability. However, since disability is an accepted and commonly used term, it is used in the report I noted previously.

A quarter of the rural population 65 years of age and over have a functional impairment preventing them from going out alone. The term “community mobility disability” is used to refer to this situation. Further, 11% of rural elderly households have no vehicle and 27% of chronically disabled elderly persons live in households without cars.

These figures raise questions about the mobility of elderly individuals in rural areas. In rural areas, one-quarter of individuals 70 years of age and older do not drive. However, 90% of all trips by seniors are made by driving, creating an imbalance. Of the 10% of trips made by rural seniors who do not drive, 16% are for medical and dental purposes.

It is important to remember that people make both quality of life trips and quantity of life trips. Medical trips and grocery shopping are quantity of life trips—those that meet very basic needs. Social trips are quality of life trips and make up the greatest percentage of trips for the rural elderly group. These figures reveal something about preference and the types of programs that are needed in rural areas.

One out of four trips in rural areas for medical and dental care is 22 mi or longer. The National Household Transportation Survey (NHTS) recently included for the first time a large sample of persons 70 years of age or older to find out more about this group. This group includes both drivers and non-drivers. It is difficult to learn much about non-drivers without doing a telephone or similar survey. The results indicate that the average length of a trip for medical and dental care was approximately 8 mi, however, about one quarter are 20 mi or further. These figures clearly indicate a barrier for transportation planners to overcome.

Well over three-quarters of rural seniors have no access to public transportation. Having few choices but driving creates significant implications for safety. People will drive if a trip is necessary to meet their basic needs and the only way to accomplish it is to drive, whether they should or not.

It is important to realize that people 85 and older are the fastest growing cohort in America and have been for some time. Except for the 16- to 24-age group, people 85 and older are 10 times more likely to die when involved in a crash than all other age groups. They are not 10 times more likely to get into a crash; but, if they are involved in one, they are 10 times more likely to die as a result. This issue of safety is important because it has to do with vulnerability. It involves issues with vehicle design and occupant restraints, as well as highway design, which involves transportation planning. For instance, there is an *Older Driver Highway Design Manual* sponsored by FHWA. It contains some 16 recommendations associated with making highways safer for older drivers. This issue is going to require consideration in transportation planning and design.

Federal transportation law requires transportation planners to involve the public early and often. Connecting with older persons is what we do at AARP. We are very good at it. While we are not set up to facilitate connections between transportation planning and older persons, we can offer some suggestion based on our experience.

There are ways to connect transportation to older people at the local level. The first thing is to ask the same questions we did in our national survey. Learn the demographic characteristics of the area to know what to change and what plans to make. Estimate what the growth of the older population looks like, taking into consideration the rate of functional disability. Know where people live. Is there a senior community or neighborhood? Are there naturally occurring retirement communities, known as NORCs? There are a lot of senior communities built around the country, but they are not necessarily connected by any mode of transportation other than roadways. That is not a good quality-of-life situation.

Go to seniors and they will tell you their concerns. Often, in public participation processes where seniors are involved, they show astute awareness of their problems. They will usually communicate their needs effectively and offer useful ideas for solutions.

There needs to be more public outreach toward older people. To build the planning capacity of public participants, you must go where they are because these people cannot get to you. It is a catch-22. If you are not mobile, you are not going to be able to get out to a public meeting to voice your needs.

Incorporate help from the many organizations working with seniors. For instance, Area Agencies on Aging, or the state unit on aging, know where seniors live and what their needs are. These organizations do need assessments every year and would appreciate any effort to reach out to them and the people they serve, acknowledging their transportation problems.

Cooperative extension offices are another resource. There are United States Department of Agriculture (USDA) extension offices in rural areas. Other helpful groups are non-profit organizations such as the Red Cross, faith-based groups, and developers of senior housing. Talk with those people and find out what their plans are for providing alternative transportation resources.

Just like the policy makers Vernon Petersen discussed in the session on Sunday, if you treat older people with respect, they will be there when you need them. When you need support for added tax revenues to pay for transportation improvements that will benefit seniors, they will turn out and vote in support of those efforts. Thank you.

FREIGHT PERSPECTIVE

James Hertwig, *Landstar Logistics*

It is a pleasure to speak at this session. Landstar Logistics is a \$1.5-billion transportation firm performing multimodal service for our customers. We have a fleet of 8,000 vehicles, traditionally known as owner-operators. We refer to them as business capacity owners, however. With 900 offices throughout the United States, we interact with over 8,500 other transportation providers. Many of those are small, independent contractors. Therefore, not only are we in the transportation business, but we are in the small business, the safety business, and the technology business.

I appreciate the opportunity to attend this conference on statewide planning and to participate in this session. I have been asked to discuss the issues and needs of freight operators and to share some thoughts on ways to better address and incorporate private industry perspectives into the transportation planning and decision-making processes.

First, I will highlight some of my own experiences with transportation planning. Somewhat unique in the world of freight executives, I have been involved in a variety of

activities that have made me more aware of freight policy issues. I served on TRB's committee examining freight capacity for the next century. The committee was asked to provide guidance to Congress, federal agencies, and states on freight policy issues facing the United States during the coming decades.

I also served on the Executive Committee of the Florida Freight Stakeholders Task Force, and chaired the highways subcommittee. The Task Force was organized in 1998 by the governor to address two key objectives. The first objective was to identify, prioritize, and recommend freight transportation projects for fast-track funding. The second objective was to develop recommendations for the 2020 Florida State Intermodal Systems Plan.

I am frequently asked to make presentations to different groups on regional freight movement and incorporating freight mobility needs and issues in the transportation process. I enjoy the opportunity to help others better understand the freight transportation business. I am an active member of the Intermodal Association of North America. I have also served as a trustee on the Foundation of Intermodal Research and Education.

The majority of freight executives have not had the opportunity to participate in these diverse groups. I think this experience provides me with a better perspective of the transportation planning and decision-making process. One of the problems for the freight industry is that most executives do not know who to contact about issues or how to become involved in the planning process. As you know, numerous agencies are involved in transportation. Most freight executives would probably start with their local elected officials or their chamber of commerce.

Few people within our industry know about MPOs or realize what a resource they are. I have also heard of cases where individuals for the freight industry have tried to participate in MPOs and have not had good experiences.

I think we need to focus on how can we improve interaction and break down some of the barriers that exist. If public agencies really want freight industry input, they should be more aggressive in seeking us out to understand what our real needs are. Florida is fortunate that the governor assembled the Freight Stakeholders Task Force, but that situation is not the norm in most states. MPOs and other transportation agency staff do not always have a good understanding of multimodal freight issues. It also appears that there are few freight specialists within public agencies. On the other side, as I noted previously, the freight industry does not have a good understanding of MPOs, state transportation agencies, and the transportation planning process.

Understanding freight intermodalism requires diverse experiences and expertise. This expertise includes in-depth knowledge about trucks, railroads, airports, and seaports, as well as their importance as hubs connecting to other segments of the transportation system.

The lack of funding for all modes is also a critical issue. With limited funds, traditional projects and public transit typically get more attention. Providing additional funding to address intermodal needs is important.

I think one of the most important issues public agencies need to understand, and need to be able to articulate to the public, is the contribution freight transportation makes to the local and the state economy. While the importance of freight transportation to the national economy has never been in doubt, the true magnitude of the nation's dependence on reliable, cost-effective systems for distribution of goods is not well understood by most people. Until the recently detailed military coverage of Operation Iraqi Freedom, most people had never considered the importance of logistics to our country's military operations. The fact remains that freight transportation shapes cities, underpins the economy, and determines U.S. trade patterns. Better

freight reduces the cost of doing business and improves the nation's standard of living. Highly coordinated freight operations moving through efficient intermodal connectors deliver the materials upon which the United States and its trading partners rely.

The intermodal freight transportation system in many areas is now being operated at maximum capacity. Should any component of the system break down, more than one-fourth of the nation's economy will be crippled. Such breakdowns have partially occurred and will most likely occur in the future. The United States has significant reserve capacity in the freight system. However, it is simply not located in the right places to relieve most critical bottleneck points. We need a national program for transportation planning and development focusing on addressing the bottleneck points at key intermodal gateways and corridors.

In addition to facing capacity challenges, our industry is also viewed as the front line in the war against terrorism. Since September 11, 2001 (9/11), the major focus has been on preventing incidents intended to disrupt the nation's economy and commerce or to harm our citizens. The potential for economic disruption is a hidden threat to the nation's security.

The freight industry has always had to protect ourselves from intrusion, theft, and sabotage. Now we are also expected to be the security gatekeepers for the entire supply chain without allowing interruption of service and additional costs to our shippers. As an industry, no single intermodal transportation component can stand alone in this challenge. Security needs to be addressed in the collective context of the total intermodal transportation system. Otherwise, risks just move to the weakest link in the chain. Security should be tackled on equal footing with efficiency and speed.

Land in urban areas for new port, truck, air, and rail facilities is both costly and scarce. Land use planning generally ignores freight and therefore ignores its economic impact. New financing options for intermodal freight infrastructure enhancements could be developed to offset existing and future impediments to an effective intermodal freight system. Possible options include expanded eligibility for existing TEA-21 programs, a national freight transportation bank, and a new series of transportation bonds.

Environmental factors must also be considered in making public sector transportation investments relative to land use issues. In some cases, it is possible to directly assign costs to some facets of environmental damage, while in many others it is impossible to determine financial impacts. Due to the importance to society, these environmental effects are usually quantified to the extent practicable, though they are not commonly converted to economic measures.

Other important land use issues relate to social and community impacts which can be both positive and negative. As a result, public sector decision making embraces widespread social impact analysis and community involvement. Neighborhood impacts of freight transportation projects typically reflect a preference for projects increasing freight movement through predominantly industrial areas and disfavor increasing freight movement through residential neighborhoods.

I think we currently lack an effectively coordinated approach to an intermodal system. The intermodal system appears to be merely an aggregation of multiple private and public modes that are stove-piped within their own individual areas of activity. That is, each mode has a vertically integrated information system, vertically integrated planning, development and management programs, and vertically integrated funding mechanisms with minimal cross-talk between modes.

Most of you have probably not conducted modal shift analyses. If a high-level dialogue between the private and public sectors were to occur, it could further development of a national intermodal transportation planning process supporting the creation of a strategic, intermodal freight network. Such a group could begin to break down those stovepipes and serve as the primary point of accountability to help coordinate the development of a national transportation network.

One recommendation would be the development of a national freight policy to institutionalize and coordinate a separate freight program within the DOT to plan and promote a national intermodal system relying on timely freight data and effective technology. Creating a freight advisory committee to produce specific targeted results in areas where infrastructure shortfalls have been identified and could be a first step in this effort.

Overall, the basic understanding of freight needs has improved since ISTEA, with successes in the major intermodal corridors in New York, Chicago, Illinois, and Los Angeles and Long Beach, California. However, the real test is whether or not any of you have actually reached out to freight representatives in your own areas and if so, what you have learned from them about transportation in your own local or regional territory.

Better understanding can be gained from attending trade association conferences of organizations like the Intermodal Association of North America, Council of Logistics Management, National Industry Transportation League, and the Transportation Intermediators Association, along with individual state transportation associations.

Frequent outreach to local freight constituents through local transportation and traffic clubs would also be beneficial. Many local colleges and universities offer academic programs that can further broaden a person's knowledge of intermodal transportation and the overall importance that logistics plays in the business environment.

I would also suggest that you take the time to attend these meetings and network with private sector executives. I do not normally see many MPO or state DOT personnel at trade association functions. Landstar invites the DOT personnel to attend and speak monthly at our safety meetings to gain a better appreciation of mutual safety issues. However, this is more often the exception than the rule within the industry.

I hope my comments provide you with some ideas to consider in your area. To reiterate my points: first, national and regional freight issues have to be studied. Second, the economic impacts of freight need to be quantified. Third, freight volumes have to be accurately counted and given economic value. Fourth, a federal freight advisory committee could be created and new financing options should be evaluated.

I believe trade is critical to our nation's economy. Trade flourishes if there is an efficient transportation system relying on the combination of modes, an intermodal system delivering cargo on-time, at a competitive cost. Our country is the world's greatest trading nation and therefore relies on the current and future efficiency of our intermodal system. As trade is only expected to increase, the level of congestion on our already over-burdened transportation infrastructure can only worsen. I believe this conference, and your participation, is a right step in assuring that our intermodal freight transportation system does not fail in keeping this nation's economy strong.

SPECIAL GENERATOR'S PERSPECTIVE

Tom Lewis, *Disney Corporation*

It is a pleasure to have the opportunity to participate in this session. I will start with a little background about myself to help put my comments into perspective. I have done a number of things in my 25-year career. I started out as an architect, a planner, and real estate developer. When a friend was elected governor of Florida, I spent 8 years in state government, including 4 years as Assistant Secretary of Florida DOT.

I also served for 2 years as the Secretary of the Florida Department of Community Affairs, which is the state land use planning agency. While I was secretary, Florida's growth management legislation was passed. This legislation is probably the strongest, and some might say the most onerous, growth management legislation in the country, notwithstanding legislation in Vermont, Oregon, and the California coastal zone statutes.

The Florida legislation contains a number of key provisions. First, it influences local government planning and provides a role for reviewing and approving all or most local government plans. Second, it includes the concept of concurrency. This concept requires about six or seven different categories of infrastructure, including affordable housing, water and sewer, parks and recreation, and transportation to be developed concurrently with growth. In the past, Florida allowed growth to occur, and then tried to figure out how to fit in the needed infrastructure.

I have been with Disney's real estate group for 17 years. For 12 years I was responsible for the development of Disney's new town on the south end of our property in Orlando called Celebration. I had the opportunity to help with the planning, the design, and the development of the basic social community and the physical infrastructure. It was a great opportunity.

I left Celebration 2 years ago to join Walt Disney World, which is a very large organization. Since the late 1980s we have grown from around 18,000 employees to almost 60,000 today. In the 1980s, we had two theme parks. Now we have four in Tokyo, California, Florida, and Paris. There is a fifth park under construction in Hong Kong which will open in about 2 years. We also are planning a sixth theme park in Shanghai. It will probably come on-line 8 years after Hong Kong.

You can visit a Disney theme park anytime in a 24-h day. On an average day, Walt Disney World is a city of about a quarter of a million people. On a peak day, that figure increases considerably.

Disney World is a major customer of the transportation system. The transportation infrastructure itself is vital to getting people and services to our parks. The trucking industry is very important to us in terms of moving needed supplies to our facilities. Even the park itself is a huge transportation system. When we opened in the early 1970s, we had three buses and the monorail, with six cars. Guests did not even ride the buses at that time. Today, the monorail fleet has grown to 12 vehicles and the bus system includes 270 vehicles. Many guests spend a lot of time on buses, which is a constant challenge for us.

Since the late 1980s, Disney has collaborated on significant programs and projects with Florida DOT and formed public-private partnerships with the local counties in central Florida. These partnerships have been primarily with Orange and Ociolo Counties, Florida DOT, and Florida Turnpike. During that time, the value of the donated right-of-way (ROW) by the private sector was probably close to \$1 billion. About \$300 million in ROW was donated for the southeast corner area of the beltway and some \$700 million was donated on the western side of

the beltway. In another 4 or 5 years, we will be close to completing the beltway around the central Florida area.

There are some key elements that can be learned from our experience working with state and local entities. Some questions that come up are: What is your knowledge of and interaction with transportation planners? Are there critical issues that should be addressed? How well do you handle land use issues? Do you address all modes? Are you creative and open to new ideas? What is your basis for making decisions? Are there any recommendations?

We have very good working relationships with Florida DOT and other transportation agencies. The Disney Company is a significant customer of the transportation system, but we also tend to be a very sophisticated, informed customer. Without egotism or conceit, we pride ourselves in knowing our business needs. We do conduct a great deal of research because we care about our customers. We exist to serve our customers; therefore, we know our business and what it needs. So, when we start to deal with the external world, beyond the boundaries of a Walt Disney World, we are informed. That not only makes us a good customer, it also makes us a good partner. We know what agencies to deal with and we understand their processes.

For example, Disney has a good knowledge of and appreciation for Florida DOT. One of my key assistants worked for Florida DOT for 10 years before joining Disney. Strong partnerships are built on understanding your partners. Disney has a good understanding of Florida DOT and other the transportation agencies we deal with.

I think Florida DOT has a good understanding of Disney, although it took time for them to understand our perspective. The private sector thinks in terms of net present value and the internal rate of return on an investment. These terms are not frequently used in the public sector. Over the years, both sides have come to understand the other better and we have established a good working relationship.

Disney uses a central point of contact for dealing with public agencies, especially related to infrastructure programs. I think it helps having one or two people dealing with public agencies. This approach has helped minimize confusion for public agency personnel. It has also helped ensure that we are aware of the ongoing issues transportation agencies are dealing with.

In general, our experience working with transportation agencies has been very positive. Most issues have been resolved at the staff level, although there have been times when senior management has been brought in.

One of the biggest hurdles we had to overcome in the beginning was a great lack of trust and knowledge of one another. Public agencies are sometimes suspicious of private industry and often view them as enemies rather than partners. Similarly, private industry has a tendency not to respect government, doubting their capability to get things done in a timely fashion. Both sides must overcome their biases. Tearing down barriers requires communication and working together to resolve issues, questions, and doubts.

Next to mobility, and keeping our highways uncongested, our biggest challenge in Florida is probably the issue of concurrency. To ensure adequate capacity, we have helped fund infrastructure improvements throughout the years. In return, we have received advance credits for use throughout the development of Walt Disney World, to ensure that we have adequate capacity from a concurrency or a permitting standpoint.

When Walt Disney World opened we had two theme parks and 5,000 hotel rooms. We now have four theme parks and almost 30,000 hotel rooms. The build-out of Walt Disney World is probably one more theme park and a total of 49,000 hotel rooms. We are a huge development

causing a major impact on the infrastructure and transportation system, so concurrency and ensuring that we have the needed capacity has been vital for us.

We have established a strong working relationship with the Florida DOT district over the years. Probably one of the reasons for this conference is that transportation planning often lags behind land use planning. I think Central Florida has been more proactive in looking at transportation needs before they develop, probably because the private sector is very involved in how transportation systems will grow. Going back to when I was in government, there was always endless debates related to should land use lead transportation or should transportation lead land use. I tend to believe the latter—that we ought to put transportation systems where they are needed and land use should follow. But more often than not, it happens in the reverse order.

Florida DOT has evolved into a multimodal agency, which does a good job of multimodal planning. The department has come a long way since I was there in 1981 when it was primarily a highway department. It is a transition requiring careful thought and focus every day, as I suspect it does for most other state DOTs.

I would encourage you to look at creative financial solutions. Florida DOT, Florida's Turnpike, and the private sector have used a number of different funding approaches. The private sector operates out of economic self-interest. We are also very concerned about brand image and we consider ourselves to be good community citizens.

I would also encourage you to focus on creating realistic plans that can be funded and implemented. I started thinking about suggestions for you to think about last night. I came up with the idea of a mantra using the word CARE. The word care is both a noun and a verb. As a noun, it is the care that you take in meeting your obligation to the public. As a verb, it is caring about making something happen or caring about achieving a win-win situation. CARE is also an acronym that can stand for the following:

- C: Communication. Communication and connecting is very important.
- A: Anticipation. Anticipating each others' critical issues and perspectives is important.
- R: Risk taking. None of these public-private projects would have been accomplished without risk-taking. Government is not inclined to take risks, but without it, nothing great ever happens.
- E: Enthusiasm. Dealing with the private sector can be frustrating, but you must face it with enthusiasm. The "E" in CARE also means enjoy. Have some fun while you are doing it. We at Disney enjoy what we do, and that has motivated us to keep on doing it.

Thank you for this opportunity to talk with you. I hope the remainder of your conference is very productive.

PLENARY SESSION

Making Connections with Systems and Other Plans

Tony Kane

*American Association of State Highway and Transportation Officials
Moderator***OVERVIEW: MAKING CONNECTIONS**Tony Kane, *American Association of State Highway and Transportation Officials*

It is my pleasure to provide an overview on the general topic of making connections. Listed below are six typical transportation goals and the state and local agencies and groups with strong interest in these goals. These agencies and groups are partners in achieving the transportation goals.

- Safety: Police, fire, emergency medical services (EMS), and multiple state safety agencies.
- Security: Department of Homeland Security (DHS), multiple state and federal agencies, and public safety agencies.
- Economic Growth: Chambers of commerce, planning boards, and key industries.
- Mobility: Users, employers, shippers, police, fire, and EMS.
- Environmental Quality: Resource agencies, advocacy groups, and communities.
- Overall: Local transport agencies and private carriers.

Key partners in the security area are the DHS, multiple state and federal agencies, and public safety agencies. Security has a two-dimensional hat, focusing on both the securing of our systems as well as the emergency response in the event of any incident like 9/11, on or off the system.

In the area of economic growth, key partners include chambers of commerce, planning boards, and key businesses and industries. Partners interested in mobility include users, employers, shippers, and public safety agencies. Partners interested in environmental quality include resource agencies, advocacy groups, and communities. We heard yesterday that we need to do a better job of reaching out to the freight and other related stakeholder groups.

Another aspect to examine is the types of transportation plans at the state level. Although not all states have a comprehensive safety plan, completing these plans is on the horizon if it is not there now. AASHTO recommends state safety plans as part of reauthorization. The Governor's Highway Safety Administration, which is the association of all the governor's highway safety representatives, and the administration's reauthorization bill, includes a safety provision. A comprehensive safety plan is needed that integrates and ties together the actions related to engineering, economics, enforcement.

Most states have the following plans. Congestion management plans are required in areas with populations over 200,000. The administration's bill also requires an incident response reporting mechanism statewide within 2 years. This requirement would create a statewide effort toward having better integration of data and knowledge on key incidents within your state. Many

states have growth management plans, economic development plans, environmental conservation plans, and asset management plans.

SAFETY-CONSCIOUS PLANNING

Susan Herbel, *GATA, Inc.*

Good morning. It is very exciting to be participating in this conference. My job this morning is to talk about safety. I will start by defining what the safety problem is today and why we should care about it.

You are probably familiar with the statistic that almost 43,000 people were killed on our nation's highways in 2002. Because roadway fatalities happen at different times, rather than in one major event, we tend to lose sight of the significant number of people that are killed on our roadways. At a conference a few months ago, one of the MPO directors pointed out that more people are killed on Texas highways in a single year than died in 9/11 attacks.

In addition to the fatalities, there are about 3 million injuries every year from roadway crashes. This figure has declined recently, in all probability because of safety belts, but not nearly as much as it should. There are about 4.5 million reported crashes every year, but all states have a reporting threshold. The total number is probably closer to 10 million, because so many accidents are not reported if they fall below the threshold. The NHTSA estimates the cost to the nation is about \$230 billion from these crashes.

The human consequences of traffic crashes are devastating. Crashes affect everyone—your friends, your family, and your neighbors. On the other side of this issue, of course, is the economic effect of accidents. Crashes cause high economic damage.

The characteristics and trends associated with crashes are very interesting. This conference is about making connections, but we still have many groups working in silos, with everyone operating in their own area of specialty. I have a little analysis that points this out in an interesting way.

According to NHTSA, about 50% of all fatal crashes are due to distracted driving. This figure is estimated at 45% to 90%, but NHTSA reflects 50% with a rising trend. A number of factors appear to be influencing this increase. First as automobiles become easier to drive and roads become better and more easily traversed, we pay less attention to driving.

Second, there are more in-vehicle electronics today. You can virtually live in your car now, doing almost everything but showering. We have refrigerators, microwaves, faxes and computers, not to mention cell phones. We expect this trend to get worse before it gets better, but we are not very good at figuring out what to do about it.

Unfortunately, approximately 42% of all fatalities are due to an impaired driver. This figure was down below 40% at one point, but is now inching its way back up toward the 56% it was previously.

Roadway departures account for 38% of fatalities. In fact, FHWA tells us that very close to half of all fatalities happen when people leave the road. Speeding has consistently attributed to about 30% of fatalities. It is obvious that, if you are driving slowly, you would probably avoid a crash. Therefore, most accidents involve some element of speed.

It is reported that about 80% of people in the United States use safety belts. I hope that is true, though no state that I work with reflects that use rate. If safety belts are 50% effective, we could reduce fatal crashes by about 13% overnight if everybody buckled up. However, we also

know that the people who tend to die in crashes unbelted are the same people that tend to drink and drive, drive aggressively, and speed. These driving characteristics seem to cluster.

Approximately 21% of all fatal crashes occur at intersections and some 13% of crash fatalities are pedestrians. While this statistic is declining, before we congratulate ourselves on the good news, we should look at exposure. Fewer people are actually walking for a whole variety of reasons. In general, people are getting less exercise and growing heavier. More importantly for us, however, is that studies reveal most people do not have a safe and secure place to walk.

While 12% of fatalities involve trucks, the vast majority of truck fatalities are a result of multivehicle accidents. An analysis we conducted a few years ago revealed that, in about 72% of these crashes, the passenger vehicle driver is found at fault. For example, in fatal truck crashes, 1% is due to impaired driving, 1% is the truck drivers' fault, and 28% occur as a result of an impaired passenger or vehicle driver.

Fatalities associated with motorcycle use are climbing dramatically. It seems to be mostly middle-aged males—lawyers and accountants who carry briefcases and sit at their desks all week long, then on Friday night and the weekend hit the road on their motorcycles.

The most interesting thing about all these statistics is that if you add them all up, you get 230%. That result tells us that crashes are multivariant experiences, and no one discipline can be held accountable and expected to solve them all. It is going to take all of us because almost every crash involves several factors.

I have a very simple analysis to present here. This analysis has two assumptions. First, it assumes the Census Bureau's population projections are accurate. Second, it assumes that the fatality rate in 2000 is not going to change significantly over the next few years. This analysis shows that, if nothing changes, by the year 2050 we will be experiencing 63,513 fatalities a year on our roadways. That is a 53% increase. It is not going to affect all groups equally due to the way the population is changing. Because we are an aging population, a lot more of those fatalities will be older people and those who are in the 25 to 34 age group.

A key question is how will we deal with this potential increase in traffic crashes? Another key question is who has responsibility to address the problem? I would like to suggest that all levels of government and all groups associated with transportation have a role to play in addressing this problem.

Certainly, federal agencies have a role to play, especially in funding. But states also have a big responsibility. And crashes actually happen at the local level. Individual responsibility also has to figure into the mix. According to recent research, the big gains made in safety over the past 10 to 20 years are the result of state-level initiatives. Every state has a highway safety agency with safety as their responsibility. However, they do have some serious limitations. One limit is that these agencies are funded through NHTSA, which means their focus is on behavioral elements and roadway user elements. They do not usually research the same types of data as most of you here do. Another problem is that state safety groups are small in comparison to the other agencies in the state, with small staffs and limited funding. While these agencies can do a lot of good things, they cannot be held totally accountable to solve the traffic safety problem.

We know that good laws improve safety, so we have to get the legislators involved. We need to find ways to influence and inform our decision makers. The state police also play an important role—their focus is more often on fighting crime. It is difficult to convince them that they will make more head-way by improving road safety. The state police do tend to be the best informed and best trained, have the best equipment, and often have the greatest influence over their colleagues at the local level if we can get them involved in safety.

Individuals have a responsibility too, but we have to keep them informed about driving safety, including what the laws are, and the consequences of not following the laws. Manufacturers do not have any real control over safety, except in our information campaigns. There are a lot of safety technologies available, but car manufacturers are not going to incorporate them in cars, increasing their cost, until there is a real consumer demand. Navigational aids, heads-up display, night vision, and cell phones all cost extra money and not many people are willing to pay an extra \$1,000 for a vehicle right now, even for a safer vehicle.

Motor carrier safety agencies play a key role. The tendency of these agencies has been to focus on vehicle inspection, yet we know that the vast majority of crashes involving trucks are due to driver error. We need to work more closely with our motor carrier colleagues to improve driver behavior.

Departments of motor vehicles (DMVs) should be the guarantors of the safety system, just as they are the guarantors of the licensing system. If we could raise the bar in terms of the skills, abilities, and knowledge you need to drive a vehicle, one would think we would improve safety. But in this country, once most people have a drivers' license, it may as well be valid forever. For instance, I learned that in Virginia you only have to go into the DMV once every 10 years for license renewal. Once you have a license it is 10 years before anybody lays an eye on you to see if you are still safe to drive.

At a conference a short time ago, I heard someone say we should do away with all the DMVs and use an automatic teller machine (ATM) transaction to get your license. We really need to get the DMVs more involved in the safety game.

Finally, state DOTs need to be key players. These agencies have funding and staff resources, and are the guarantors of safe roadways. We need to look at how we can get state DOTs more involved.

A key part of the answer to the safety dilemma is something called safety conscious planning. You may call it safety integration, integrated safety management, safety management systems, or some other related term. Whatever term you use, the key is an explicit consideration of safety all the way across the board, beginning with the planning process. It involves multimodal, system-wide analysis, not just focusing on hot spots. It is excellence in safety planning at every step of the way.

Transportation planning has to address a number of issues today, including traffic congestion, air quality, and other environmental concerns. Safety issues have not typically been included in the traditional transportation planning process. I think one of the reasons safety has not been included is what I like to call "safety sniffles." Planners often use excuses related to lack of good planning tools, lack of expertise, lack of training, and lack of financial resources. Concerns are also voiced over the lack of policy support and the need for better coordination among planning at all levels.

The new vision of safety conscious planning focuses on the explicit consideration of safety in the planning process. The term explicit indicates a true commitment to including safety in the planning process. The vision includes having planners trained in safety issues, having the necessary planning tools and predictive models, and having support from policy makers. That is the new vision.

Outreach and collaboration is an important part of the vision. All the safety partners need to work together. One model for collaboration is the safety conscious planning working group initiated by the FHWA. This ad hoc group meets periodically to help identify actions that can support, promote, and fund safety-conscious planning efforts.

This effort was initiated by the FHWA planning group, but the safety group is also involved. We need to bring in land use planners and developers to get everyone involved. The working group has helped facilitate a number of activities, including organizing sessions at conferences, and hosting a series of forums. Publications addressing case studies of good practices and other topics have been completed. A training course is under development, sponsored by FTA, which will be delivered through the National Transit Institute (NTI). The course should be pilot tested in the fall of 2003 and will be delivered over the next 3 years. Several publications, including the June edition of *Public Roads* have articles on safety conscious planning and several research projects are underway.

The purpose of the safety conscious planning forums is to facilitate communication among various groups. These forums are targeted at the state level with the development of objectives, priorities, and an action plan as the desired outcomes. Additional forums will be held in 2004. Any state that has an interest in sponsoring a forum is welcome to contact us.

Some good practices have resulted from the forums. For example, in Michigan all the MPOs are developing safety profiles and conducting forums in their areas. The same thing is happening at the state DOTs district levels in both Ohio and California.

In Michigan, the Annual Highway Safety Meeting has been conducted for a number of years. Recently, MPO representatives began attending and participating for the first time. The Michigan DOT operations and planning groups are also participating, in addition to the safety office.

A forum in Oregon resulted in the Rogue Valley MPO becoming involved. The MPO lacked the location-specific data needed for planning efforts. The Oregon DOT helped them develop a geographic information system (GIS) to manage their data, and now they are working on a number of safety-related projects.

At a forum in Iowa, data displays were given to all the MPOs and rural planning agencies, highlighting the location of safety problem areas. The need for more training was identified at the forum and efforts are underway to provide additional support.

A website is also under development, as is a list service. The list service will allow individuals to sign up for notification when new information becomes available. I encourage you to visit the website frequently because there are constant updates and postings. Over the next few years there will be a lot of additional information as research projects are completed.

We are also developing a communications portfolio to help keep decision makers and the public informed about the importance of safety and what is needed to make our world safer. If you have any thoughts about the tools needed for this, please talk to us about that.

A number of research projects are currently underway, including NCHRP projects. One project is identifying and developing tools for integrating safety in the planning process. AASHTO is also a good source of information for safety planning.

PEACE ARCH PORT OF ENTRY REDEVELOPMENT PROJECT

Jim King, *General Service Administration, Border Center of Excellence*

I appreciate the opportunity to participate in this session. My presentation will focus on the Peace Arch Point of entry in Blaine, Washington. I will begin by explaining the General Service Administration's (GSA's) role at border crossing stations. GSA works with the federal inspection agencies, including Customs, Immigration, and Food and Drug Administration

(FDA). We provide these agencies with the facilities they need for safe operation of the borders. Since 9/11 that has held much more meaning. We are also working with the new agency, the DHS, in these activities.

Particularly along the northern United States, we have utilized a fairly open border for trade and travel. However, since 9/11, concern and efforts have increased to make sure we know who is coming into and who is leaving the country—putting a whole new twist on the importance of the border and its funding. The government and legislators have enacted a number of laws and regulations to ensure safe, or at the least more informed, travel across the border. That has had some major repercussions on GSA and our borders, causing us to take a new look at how we deal with projects there.

We deal with congestion at the border all the time. Historically, inspection services have set priorities based on relatively short time frames. We tend to plan for the growth anticipated over the next year or two. This is a big difference from transportation planning which focuses on a much longer time horizon. Given the events of 9/11 we have been forced to look ahead to our long-term needs. We have developed a long-range plan for border facilities. These facilities will have a major impact on the transportation sector.

There are 165 border crossings in the United States. A number of these are owned by the U.S. Customs and Immigration Service. Some 125 facilities on our northern border with Canada are owned by GSA. The infrastructure at many of these facilities is old and outdated. The average facility was constructed in 1952, and the average major renovation was performed in 1956. These facilities amount to a collection of very old buildings, mostly located in rural areas that look like old gas stations. Since 9/11 these very small facilities are operating 24 h a day with 10 to 12 people crowded in the buildings, trying to do a job requiring a lot of technology and a lot more space.

Obviously, the port-of-entry (POE) infrastructure projects need corresponding improvements in the highway and roadway system. In February 2003, GSA and FHWA sponsored a conference in Dallas, Texas, to start communication with state DOTs on the issue associated with transportation links to POEs. Ongoing communication, cooperation, and collaboration is vital to ensuring the appropriate links with the highway infrastructure are there as we improve our facilities along the border.

I want to discuss one of the challenges we face to illustrate the different planning processes. It is an example of the issues GSA is, and will be, facing with different state DOTs. The Peace Arch project in Blaine, Washington, is in the northern termination of Interstate 5 (I-5) at the U.S.–Canadian border. Unfortunately, there is very limited space where we can expand the current POE at this location. The site is surrounded by Puget Sound, a state park, residential areas, and Interstate ramps.

Some of the complications concern Peace Arch State Park, an international park owned and operated by the state and provincial governments of Washington and British Columbia. The Peace Arch, located on the U.S.–Canadian border in Blaine was built by Sam Hill in 1921 to commemorate 100 years of peaceful relations between Canada and the United States. Visitors to the POEs, in both the United States and Canada can wander openly through the park. The park also limits possible expansion of the POEs.

The fact that the POEs are located at the terminus of an Interstate highway also added to the Peace Arch Project challenges. Highway traffic coming into the United States backs up at the border station. This facility, built in the 1950s and 1960s, is out-dated. Traffic is processed using seven inspection lanes. Inspections occur primarily on the left-hand side of four lanes, however.

The POE building is a small, two-story structure. There is very little space for operations, and due to the constricted road lanes and poor layouts, traffic is especially congested coming into the United States. There is one rapid pace lane for inspections for currently enrolled vehicles. Traffic in this lane also tends to back up, however. The secondary inspection area, which is used when an inspector has questions or needs to do further inspections, is undersized. Parking for staff and visitors is also very limited.

In summary there are four major deficiencies with the current facility. First, the POE building is undersized for the current mission of Federal Inspection Services. Second, the constricted road lanes and poor layouts cause traffic congestion. Third, the secondary inspection area is undersized. Finally, the staff and visitor parking area is undersized.

Approximately 12 acres of land is needed for the improved POE. The current building is 39,000 ft² and 102,000 ft² is needed. There are seven primary lanes of inspection and eight are needed. According to computer simulations, the capacity of the lanes is not really the problem—it is the configuration of the building and how that affects the safe inspections of automobiles. The differences in the current site and the proposed configuration are outlined below in [Table 1](#).

The facility currently has very limited space, thus very little capability to inspect the vehicles. Luckily, there is not a lot of snow during the winter and the facility does not have to be enclosed. There are currently 24 secondary inspection spaces and 60 are needed. There are currently no outbound spaces. Two outbound spaces are being proposed. Currently, there are no outbound inspections of vehicles traveling into Canada. Customs would like to have two inspection lanes to perform checks of vehicles traveling out of the country.

The facility is also out-dated from a security standpoint. There are primary booths on both sides of the buildings. The fact that there is not a good view from the administration building to the primary booths is a real concern for management and others. For security reasons, we need to have a clear line of vision so personnel can observe what is happening in the primary lanes. [Figure 1](#) shows an aerial view of the area. You can see how little space is available and how tight the current conditions are.

TABLE 1 Peace Arch Port of Entry Needs

	Current	Proposed
Site	2.5 acres	12 acres
Gross square footage	39,000 ft ²	102,400 ft ²
Inbound primary lanes	7 lanes	8 lanes
Inbound secondary inspection	24 spaces	60 spaces
Outbound secondary inspection	0 spaces	2 spaces
Parking (visitor, staff, government)	30 spaces	146 spaces



FIGURE 1 Aerial view of GSA facility.

A number of concepts for expanding the facility and increasing the size of the building are being considered. However, all concepts are limited because there are railroad tracks to the west, and any relocation or change to the railroad is a major cost.

The first replacement concept would expand the facility to the west. This concept involves re-routing the railroad to allow expansion to the west. It would also require taking some of some residential property for parking. The building would be moved to allow for the additional eight lanes all on one spot, so all the lanes could be seen from the building and provide for a safer environment. The second replacement concept would expand the facility to the east. This concept would impact the park, but would not require relocation of the railroad.

Both replacement concepts impact I-5. Expanding the current facility in any direction would move the ramps closer to the D Street exchange on the south. It is also anticipated that outbound inspections will impact I-5 to the north, but the exact impacts are not known at this time.

It is GSA's mission to provide space and services to other federal agencies. Federal laws have vested GSA with jurisdiction, custody, and control over federally owned properties necessary to accomplish this mission. GSA is authorized to acquire buildings and sites by purchase, donation, condemnation, and exchange. Only the administrator of GSA may construct public buildings, including the repair and alteration of such building. Congress authorizes and funds specific major capital projects in GSA annual appropriations. These appropriations can be applied only to the projects for which the appropriations were made except as otherwise provided by law.

GSA's authority revolves around facilities and public buildings, not highways and their infrastructure. Therefore, GSA can do almost anything related to buildings, but GSA is very limited in authority over highway construction. We can, and occasionally are, authorized by some congressional actions to do things like build roads. That is not, however, our expertise and not how we prefer to spend our limited funds.

On the other hand, FHWA provides funds from the Highway Trust Fund to state DOTs to encourage and promote the safe and efficient management, operation, and development of the surface transportation systems that serve the mobility and freight needs for projects on the Federal-Aid System. Per 23 U.S.C 135, Statewide Planning, the plans and programs for each

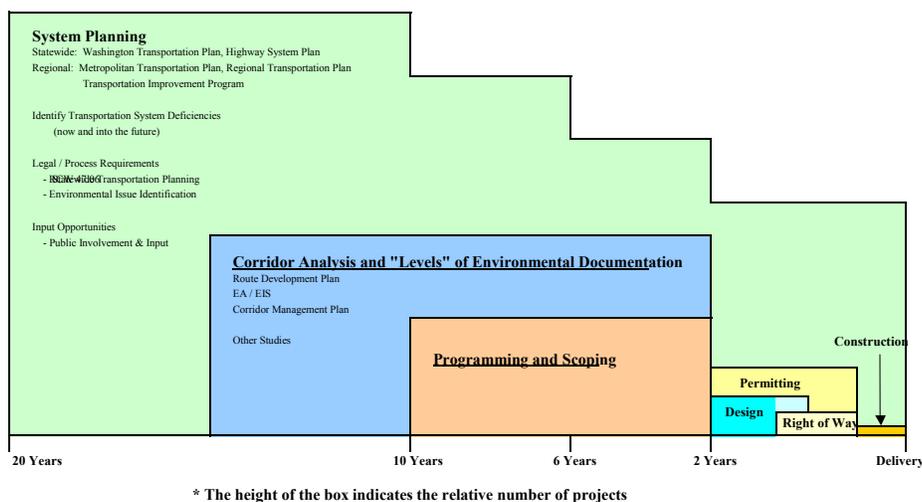


FIGURE 2 Washington DOT state planning process from transportation need to project delivery.

state shall provide for the development and integrated management and operation of transportation systems and facilities. Plans are developed by the states in coordination with MPOs, local governments in non-metropolitan areas, Indian Tribal governments, and interested parties. States develop 20-year, long-range plans that are fiscally constrained. FHWA has the opportunity to concur with these plans, but GSA is not involved with the review process.

Figure 2 shows the Washington DOT state planning process. It looks out 20 years for system planning, with corridor analyses starting at about 15 years, and programming and scoping at 10 years.

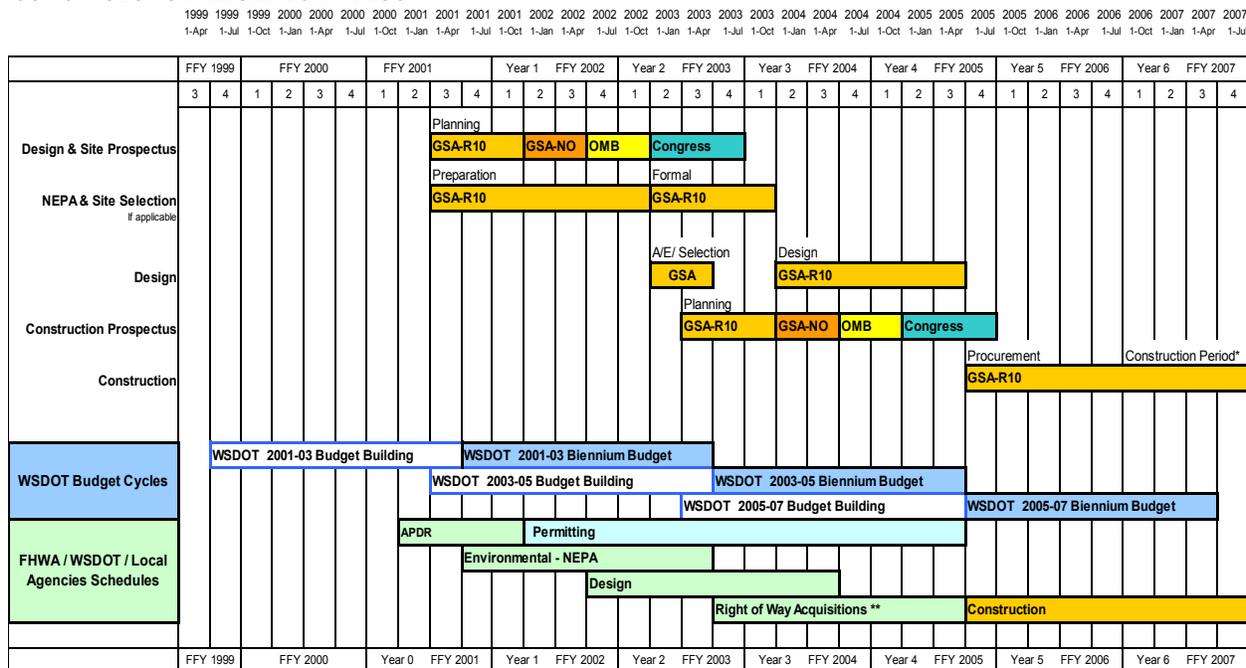
In the case of the Peach Arch POE, GSA's jurisdictional authority prohibits funding highway improvements, even if the highway need is caused by the project. Currently, Washington DOT has no plans for improving I-5 in the area of the Peach Arch POE. FHWA cannot require Washington DOT to spend federal funds in the area. Coordination between FHWA, GSA, and Washington DOT needs to begin at the scoping or feasibility study time frames used by FHWA and GSA, which do not exactly correspond.

GSA's funding process is different from FHWA's and Washington DOT. As noted previously, GSA has a much shorter planning and funding process right now. I would like to have a 20-year planning cycle and be able to work closely with the states so their plans work with ours, but that does not always happen.

Even though GSA has worked with the Washington DOT and FHWA staff, the current project is a new learning experience. I do not know that we ever had all the right people in the same room at the same time. Also, although we are communicating, our planning processes and funding mechanisms do not always line up when they should.

Both GSA and FHWA have to go through environmental processes. Because we know our facilities are there, GSA sometimes identifies projects much earlier than the National Environmental Policy Act of 1969 (NEPA) process actually begins. The FHWA and the GSA

GSA & WSDOT SCHEDULE COMPARISON



* Construction period is dependent on project scope and will vary.
 ** Right of Way acquisition period dependent on project scope and will vary.

FIGURE 3 GSA and Washington DOT schedule comparison.

processes really need to be combined so there is only one NEPA document moving forward. The NEPA document will examine potential impacts from both the POE redevelopment and the resulting highway modifications. However, there are questions on funding and authorities tied to this action.

Figure 3 highlights the GSA and Washington DOT schedules. The difficulty is getting them to line up. What is a priority for GSA may not be a priority for Washington DOT. GSA is asking for funding for design of this project from the FY 2004 program. We would be looking for construction money in FY 2006 with a completion in FY 2007.

This project raises a number of issues for consideration. First, since the POE and I-5 operate as a package, maybe they should be funded as a package. This approach would require a change in the way Congress currently appropriates funds. It might require special FHWA funding tied to GSA’s budget process for POE projects.

We will be looking for guidance from our headquarters, both FHWA and GSA, and maybe even congressional action, to ensure coordinated effort such as projects like the Peace Arch POE move forward. This year, the reorganization resulting in DHS has placed USDOT and GSA under the same appropriations and budget committees, which may present opportunities to link some of our projects together. Our plan is to jointly brief the examiners and others as our projects move forward. For GSA to begin making things happen with our projects, we need transportation links, policy changes, a better understanding of Congress and the Office of Management and Budget staff, and we need to look for some special FHWA funding to be tied to GSA’s budget.

In conclusion, I want to go back to my earlier comment. It is critical that highway funds are earmarked—obligated for the highway portion of POE projects. We do not want to open up larger stations without the necessary highway infrastructure in place.

ECONOMIC DEVELOPMENT AND TRANSPORTATION PLANNING: THREE PERSPECTIVES

Janet Watermeier, *Florida Gulf Coast Consulting Group*

It is a pleasure to have the opportunity to talk about transportation planning and economic development at this session. Because effective economic development considers community livability, environmental sensitivity, and economic vitality, we tend to think effective transportation is really at the heart of it all. If you do not have adequate transportation planning, you do not have effective economic development. I will discuss economic development from the state perspective, the regional perspective, and the local perspective.

I currently serve on the nine-member Florida Transportation Commission. The commission reviews and recommends major transportation policy to the Governor and the legislature. The commission also nominates the transportation secretary and has oversight responsibility for Florida DOT.

This commission, under the current chairman, looks at itself as a partner with the Florida DOT, not simply an oversight committee. Our goal is to help the Florida DOT move into the next century with creative ideas.

When the Florida DOT was having trouble keeping key staff members, the commission conducted an executive compensation study. This study indicted that compensation within Florida DOT was not keeping pace with the marketplace. The commission also plays an important role supporting the statewide intermodal transportation system and providing links to other agencies and groups.

I also serve on Florida's long-term economic strategic plan group. This 5-year plan crosses disciplines. It includes annual updates, is regionally focused on eight markets, and is really designed for leadership action. Anything in the state strategic plan should be supported in the governor's budget, and headed for priority legislation and legislative funding. It is very interesting trying to get all the different disciplines to think collectively because there are economic elements in all the major departments at the state level. Key groups involved in the plan are "Enterprise Florida," which is our public-private partnership for economic development; "Visit Florida," which is our tourism private-public partnership; and the secretaries of the different departments—state, agriculture, community affairs, transportation, and education.

The focus is on our eight regional economies. Annual workshops are conducted to set priorities. Transportation is always a top focus in the rural areas. It is also one of the top three-to-five focus areas in each of our urban areas.

The plan focuses on economic diversification, marketing and research, workforce development, telecommunications, technology development, and transportation. In the rural areas, water and sewer is a critical issue and, in all areas, quality of life and protecting the environment are very important. Obviously, transportation is at the heart of those concerns.

I come from southwest Florida, where we have a regional economy made up of three counties: Charlotte, Lee, and Collier. While we do function as a regional economy, it is very

difficult to convince the political leaders of each county that their economy does not stop at their own county line. Collier County is best known because of Naples. Lee is best known because of Santabelle and Captiva Islands. Charlotte County is one of our emerging areas. Today there are about 1 million people in the three counties combined. We have grown very fast because there were only 100,000 people in 1960. Continued population growth is forecasted for all three counties.

We also face other challenges. Some 3 million tourists visit the area each year. We also have some 350,000 winter residents who live here for 6 months and spend 6 months in other parts of the country. Many of these people eventually become permanent residents.

Tourism accounts for about 50% of our economy. Some 90% of our goods come in by truck—we have no ports and virtually no rail. Roads make up the largest portion of our economic infrastructure and provide links to other modes.

Another very important form of transportation to us is telecommunications. One of our hopes for economic development is that transportation planners will start including telecommunications infrastructure in transportation infrastructure. As all of our economies grow, the ability to move and integrate data, particularly in our ROWs is extremely important.

We have the 15th fastest-growing airport in the country and a \$400 million expansion is in progress. Other than Orlando International Airport, we are the only international airport in the state that has land available for expansion. We also have the country's newest public university. It is only 5 years old and has a large technology and research park.

Now let us take a look at our transportation issues. Our two primary corridors, US-41 and I-75, are facing gridlock and building moratoriums. There are few programmed improvements on these facilities. The chamber of commerce is very politically active at the state level. About 3½ years ago they conducted a study focusing on moving goods to market, trying to change the way the state views transportation and intermodal connections. That study resulted in our strategic intermodal system. While it was a great idea and a great plan, the study stopped at I-75 in Tampa and did not include southwest Florida. While it covered all the other Interstates, the strategic intermodal system left the communities in our region feeling isolated.

From the local perspective, there was a sense of unfairness. Like many in Florida, we are a high-income donor area for state taxes, and we did not feel we were getting our fair share in return. We collect the maximum local option taxes, when many other urban areas do not. While transportation improvements always cost a lot of money, our problems can be fixed relatively inexpensively, because our ROWs are not as expensive yet.

Economic and tourism growth is dependent upon adequate transportation but we needed to get the state's attention. So we pulled together and held community transportation convocation with six counties. That is unheard of in our marketplace, where we normally do not talk across the county lines. In addition to the regional planning council, all the MPOs, economic development, trucking, and tourism groups participated. The result of the convocation was an organization called Southwest Florida Transportation Initiative (SWFTI). This initiative focused on regional transportation priorities, building strength at the state level, conducting local transportation studies, and partnering with the Florida DOT. The focus on regional priorities helped reach agreement on one priority list of projects. Next we have to reach out and build coalitions with Palm Beach County on the other side of the state. That is unheard of as well.

We also started coordinating grant applications among communities. The processed focused on submitting grant applications for shelf-ready products that followed established priorities. Possibly the greatest benefit from this effort was that we were not competing locally

for the same dollars. When we went to the legislature for funding, we did not have to choose between City A, City B, or County C. We all had the same priorities.

Previously, we did not even know the district secretary in our area. As part of our effort, we set out to find out who this person was and to build a relationship with him. We developed a strong working relationship with our local Florida DOT office. Transportation Secretary Barry came to our area to get acquainted with us and he helped us understand how to work through the Florida DOT system.

We started to educate our legislative delegation, who had previously been unaware that transportation was a local priority. We got them to sponsor transportation legislation that was creative and new—some of which passed and some that did not. But we finally had everyone's attention. We even went so far as to have a local membership drive for the Florida Chamber. So, the next time a Florida Chamber cornerstone came out, we were on the map and not left out.

We started partnering with Florida DOT in different ways. Our developers started donating ROW and partnering on other efforts. We performed studies that provided us with important information. We hired the same consultant that had done the state's cornerstone study. We had no information on freight and its effect in our marketplace. Now, more than 3 years later, we have 75 real business partners with over 35,000 people. We expanded our efforts from three counties to five counties. We got key regional infrastructure advanced that was not on the plan. We got links funded for the Southwest Florida International Airport and our new university. The reasons this effort has, and continues to be, successful are: it is single-issue focused; it is privately funded; it has engaged the public; and it has a dedicated program coordinator.

We are currently focusing on the federal level. We are partnering with Florida DOT to prevent possible conflicts. We are also working the state grant programs, exploring the potential of a regional expressway authority, and examining transit funding. We continue to support the strategic intermodal system in our local marketplace.

Everything we are doing integrates transportation with economic development priorities. Florida's fiber network opportunities are critically important to us, and we hope to integrate them into our future transportation planning. Our goal is to match our transportation with our Florida Gulf Coast University, our airport, and our technology park. This effort would go beyond the simple transportation element, to include all the required infrastructure planning and funding.

We face numerous challenges, not the least of which will be a statewide funding shortfall. Our district has a \$5.5 billion shortfall on the Interstate highway system alone. We have a local shortfall of about \$1 billion. This is a small marketplace and the traffic on our existing roads is expected to double by 2010. Florida recently passed some constitutional amendments that have increased development costs and the state is experiencing budget constraints. Added security is also requiring increased funding.

Lee County is the 11th largest county in Florida and one of the fastest growing counties in the state. Fortunately, because most development is fairly recent, our infrastructure is still quite new. However, one of our primary needs is preserving capacity. We need new roads that balance growth with the environment, enhance telecommunications infrastructure, and maintain capacity at our airport. We do not have a transit system that works—everyone drives automobiles and our buses are mostly empty. We need to develop an effective rail system for our future commercial growth.

One of our most frustrating challenges has been pulling together the local groups. Because they are isolated and working in silos, they do not all speak the same language. Within our local transportation focus there are a lot of participants. There is also the non-transportation

focus. Although funding for roads and engineering was in place, it took 3 years to get the last two roads because of the environmental impacts. We want to protect the Everglades and panthers and all the beautiful wildlife and environment we have. While ours is a sort of microcosm where everybody pays attention, we still have to grow. We need to grow with nature and make it simpler.

As an economic development director, I have local links to transportation every single day. New and expanding businesses must have Interstate access. As we develop our roads, we need to maintain capacity, and we need to find alternatives to state roads for local access. We truly believe that linking economic development to transportation is the first step in developing a local economy. Roads, ports, airports, rail, and transit all need to be interconnected. Without an efficient, effective, integrated transportation system, economies cannot grow and regions cannot effectively compete with other parts of the state and country.

Partnering in transportation planning is important. In economic development, it begins at the local level but expands into regional, state, and global connectivity. Planning for transportation and economic development at the local level at the same time can only benefit the local economy.

PLENARY SESSION

Making the Connection Between Planning and Program Delivery

Ken Leonard

*Wisconsin Department of Transportation
Moderator*

MAKING THE CONNECTION BETWEEN PLANNING AND IMPLEMENTATION

Abigail McKenzie, *Minnesota Department of Transportation*

It is a pleasure to participate in this session. I am an economist by training and most of my experience in the field of economics. When I come to conferences like this one, I learn a great deal about planning. As an economist and a planner, I have worked over the past 10 years with planning, programming, and project development processes. Today I will discuss the approaches the Minnesota DOT uses with these processes and share some ideas on the future use of performance-based planning.

I will begin with a quick overview of Minnesota DOT’s planning and programming process which, being extremely decentralized, is somewhat unique. Figure 4 highlights the process. The first step in our process is the strategic plan—a statement of our mission, our vision, and our strategic directions.

The next step in our planning process is the statewide transportation plan. This plan is a policy document that establishes a policy framework for implementing the strategic plan. The statewide transportation plan also includes a set of performance measures and targets to track our progress toward achieving those policies.

At this point, the decentralized process comes into play, with the district 20-year, long-range plan. During this stage, each district identifies the investments needed to meet the policy

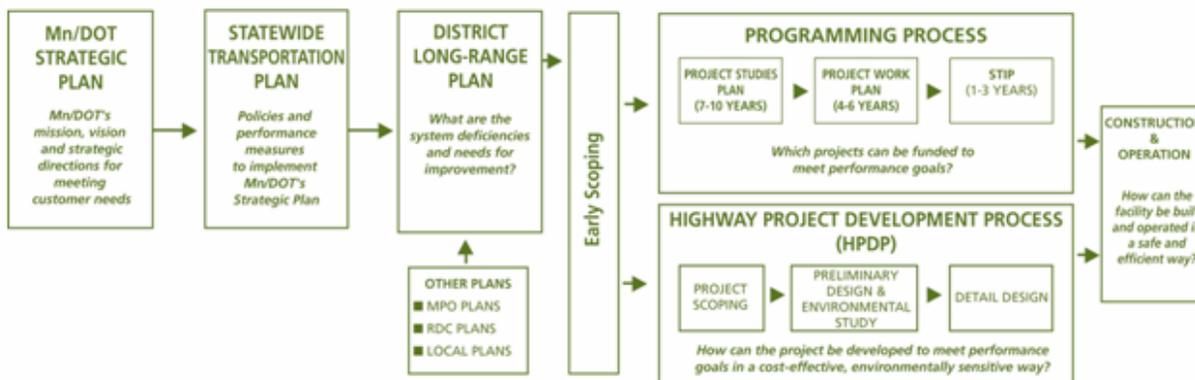


FIGURE 4 Minnesota DOT’s planning-programming project development process.

goals and performance targets of the statewide plan. It also identifies each district's priorities within Minnesota DOT's fiscally constrained budget.

The programming process in Minnesota is also decentralized, with the districts doing their own programming of projects. Programming for especially big projects will begin as early as 10 years out, ultimately ending in our 3-year State Transportation Improvement Program (STIP).

Minnesota DOT's area transportation partnerships are another unique feature of our process. In each of our eight districts, committees, called area transportation partnerships, are comprised of representatives from the counties, the cities, the MPOs, and other groups. The area transportation partnerships program the federal project funds.

In Minnesota, the programming and project development processes are parallel and are fairly disconnected. The project development process goes from the investments identified in the district plans to project scoping, preliminary design, environmental review, ROW acquisition, detail design, and ultimately to the construction and operation of the facility.

Like many states, Minnesota DOT is not conducting tradeoff analyses that would allow us to make optimal investment decisions between modes and within modes. What we really have are modal silos. Like most states, our modal programs are funded entirely separately. We are even more limited in our ability to do trade-off analysis because our highway funds, gas tax, and license tab fees are constitutionally dedicated to highway purposes. Since we are not able to flex those funds across modes, planning and programming for the different modes occurs almost entirely separately.

Within modes, the plans at this point generally identify categories of needs. We have not yet implemented performance-based planning at the district level. Districts identify the amount of needs in expansion, safety, asset preservation, and other project categories. As the program is developed, those needs and the investments identified in those plans are only qualitatively evaluated as they move into the program.

Finally, our area transportation partnership process has even further devolved into a sub-allocation situation. Many districts target certain percentages of federal funds to cities, counties, and MPOs, regardless of needs and priorities. This approach further diffuses our ability to do trade-off analyses and to meet our plan objectives.

Minnesota DOT is working toward performance-based planning and programming. At that next step of the planning levels—the district planning level and into the programming level—our goal is really to answer two basic questions. Which policies of the statewide plan have the greatest performance gap (see [Figure 5](#))? Which investments achieve the greatest performance improvement per dollar of investment?

Minnesota DOT's statewide plan identifies and set targets for essentially 30 performance measures relating to system performance. In some areas, we are very close to our targets. For example, in past years we have essentially met our statewide target for pavement smoothness. In other areas we are very far from our goals, particularly in regard to urban mobility. Thus, some areas have much bigger problems in terms of our performance goals than others.

[Figure 6](#) is from work by Cambridge Systematics, Inc., for NCHRP on multimodal trade-off analysis. It is appropriate at both the planning level and the programming level. The basic idea is that, the benefit per dollar of investment differs by performance problem. Obviously, Project A does a better job of achieving the performance goal than Project B. The ultimate goal is to conduct this kind of analysis at the project level during the project development process and

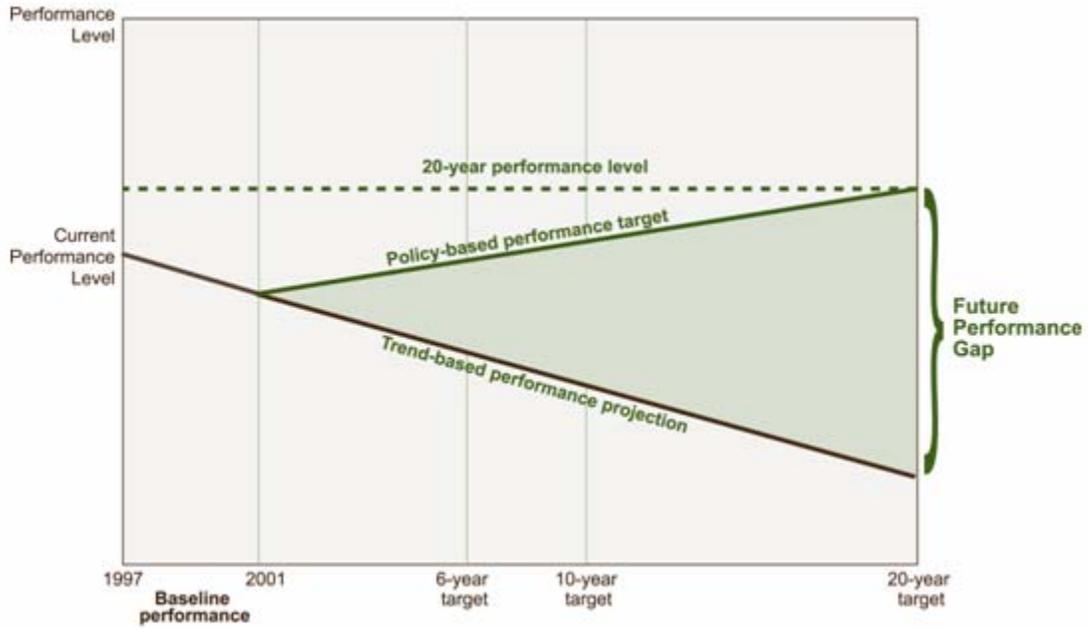


FIGURE 5 Projected gap between performance targets and trends.

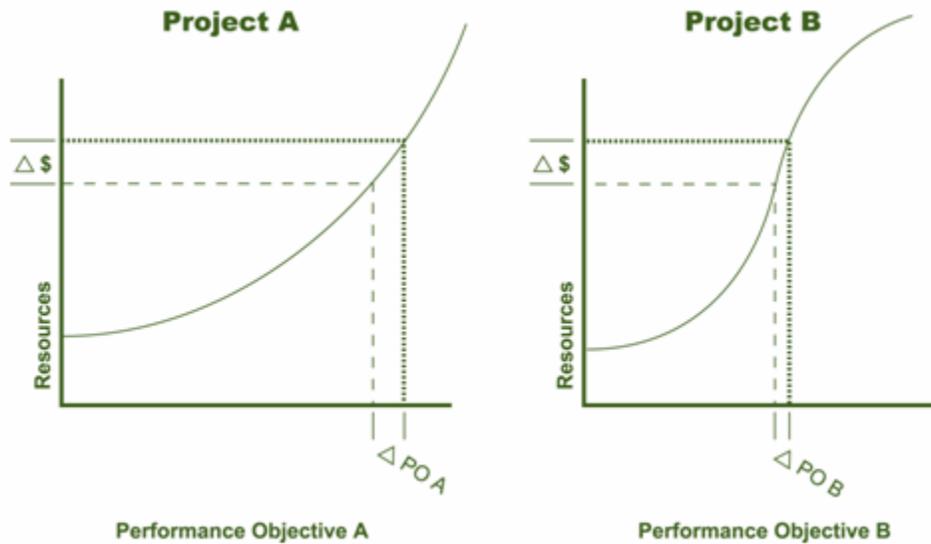


FIGURE 6 Trade-offs in the transportation planning-programming process.

during planning to conduct analysis of return on investment at the program level.

We are trying to accomplish two things. The first goal is to direct our investments toward areas with the larger performance gaps. The second goal is to invest in the most cost-effective investments to close those gaps. Unfortunately, we are far from having these capabilities.

In the area of projecting our performance, setting our performance targets, and identifying performance gaps, we are doing fairly well. We have accomplished those goals for all 30 of our performance measures, and districts have also accomplished those goals. We are still a long way from really understanding how far a dollar of investment goes toward meeting our performance goals. Working with our metropolitan division, we need to develop an understanding of what \$100 million buys in terms of mobility improvements. Even with all our modeling capability, we are not yet able to discern a clear answer.

In order to evaluate the performance and effectiveness of our highway program, there are two questions we ask. The first question is if the department is achieving our transportation goals and the second question is how well we are managing the program in terms of schedule and budget.

The first question asks if we are achieving our transportation goals. Minnesota DOT has 10 long-range plans and supporting performance measures for which we have established short-term as well as long-term targets. These measures are in our statewide plan and we report back to the division engineers on the measures on a regular basis—either quarterly or annually, depending on the performance measure.

Figure 7 presents our pavement smoothness measure (PSR), which tracks ride quality. We are doing a pretty good job of meeting those targets in all eight of our districts with a couple of exceptions. As districts go onto the next programming cycle, their PSR lets them know if they are on track.

Figure 8 illustrates the remaining service life measure that examines the structure of PSRs and road smoothness. This measure assesses the maintenance and condition of the structure. Having established a remaining service life of 12 to 13 years, we are in pretty good condition here.

District engineers get this data throughout the year, which may cause problems. A critical first step is to give them all the performance data as it relates to achieving the state plan goals on a schedule that is directly timed to the development of their STIPs. Within a month or two of beginning their STIP development process, they will have the most up-to-date information on where they stand in terms of meeting the state transportation goals. That is a simple step that we can accomplish within the next year or so.

The next set of questions asks how well we are managing the program. Is the STIP on time and on budget? We have four to five performance measures here. The first is a monthly budget status report. We report out to each district based on the costs of the projects they have let to date and the projects they have planned in their STIP to let in the next year, informing them if we are on-budget or under budget.

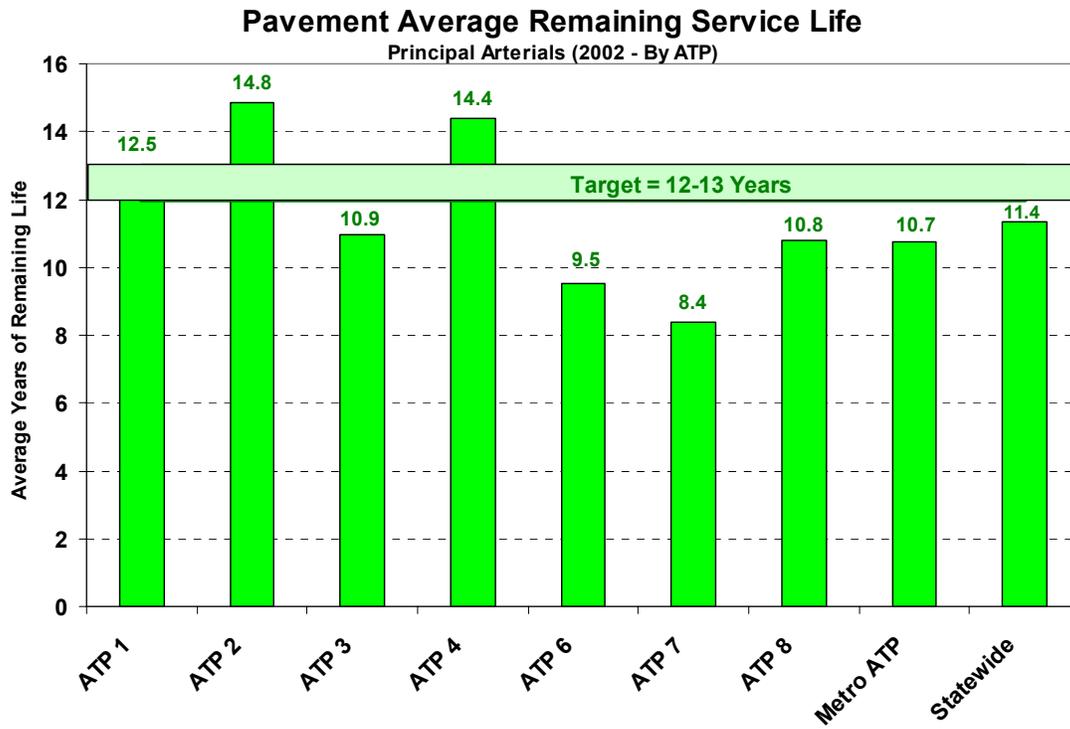


FIGURE 7 Pavement–customer ride quality.

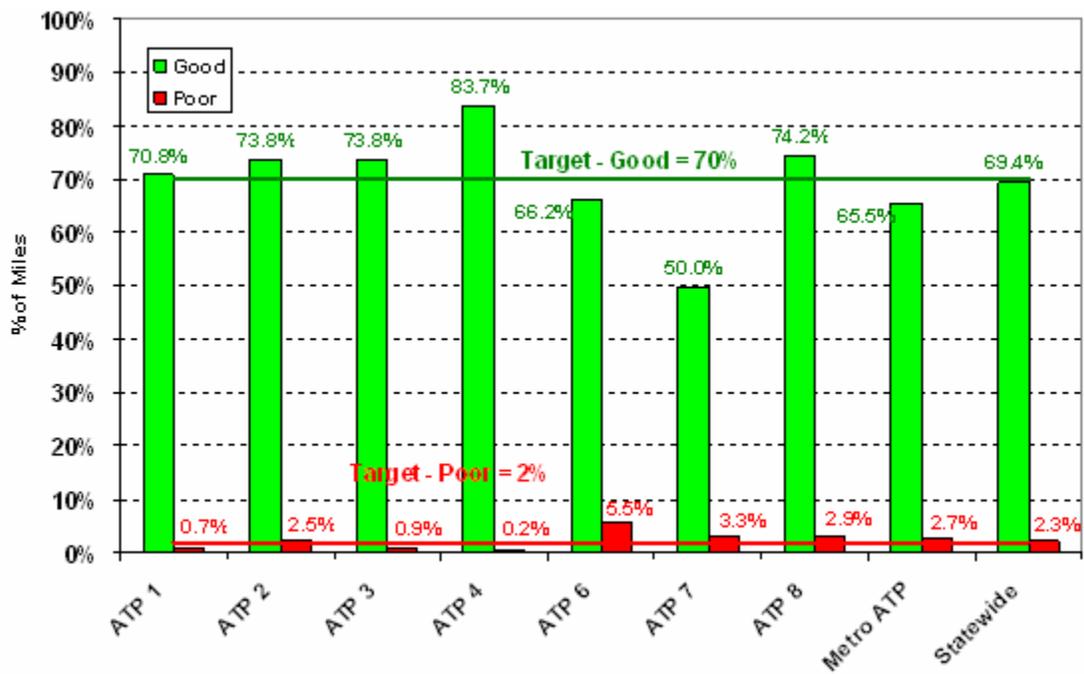


FIGURE 8 Pavement average remaining service life.



FIGURE 9 Percentage of STIP projects let in planned year, statewide.

The timeliness of STIP projects, shown in [Figure 9](#), is the percent of projects that we let in their plan year. In the first year of the STIP, our goal is to let 90% of the projects because both the customers and our industry are expecting them to be delivered. We are at about 80% currently, so we have some work to do in that area.

Another measure is the deviation of project cost estimates from the STIP to letting. This measure examines the difference between the estimate cost of a project in the program and the cost of the project when it is let. The measure, which shows the deviation between the two figures, is given to the district engineers on an annual basis.

A final measure is an estimate of the deviation from the let project cost to final project cost which includes cost overruns, supplemental agreements, and other related factors. These measures provide decision makers with a lot of information on the status of the cost of the program. These measures were implemented in the past few years in response to serious problems with projects being over budget. Two years ago the department had to push the biggest letting of the year into the next fiscal year because too many lettings had caused us to come in over budget. As a result of this problem, we have really begun to focus on cost management.

The department put together a task force to pinpoint the reasons we were having problems estimating our costs accurately, both in the STIP and in our engineers' cost estimates. The task force identified a couple of problems. One problem was general inflation, as shown in [Figure 10](#). In the graphic, the line on the bottom is the Minnesota cost index, the line above that is the FHWA construction cost index, and the line going through that is the general Gross Domestic Product (GDP) price deflator. From about the mid-1990s on, Minnesota and the nation both experienced much higher inflation in construction costs than we were experiencing in general inflation as a whole. The department was not programming those inflationary costs in our STIP, however. We would estimate a cost in the first year of the STIP, and put it in the third year of the STIP. Three years later when it came to the first year of the STIP, inflation had driven those costs up.

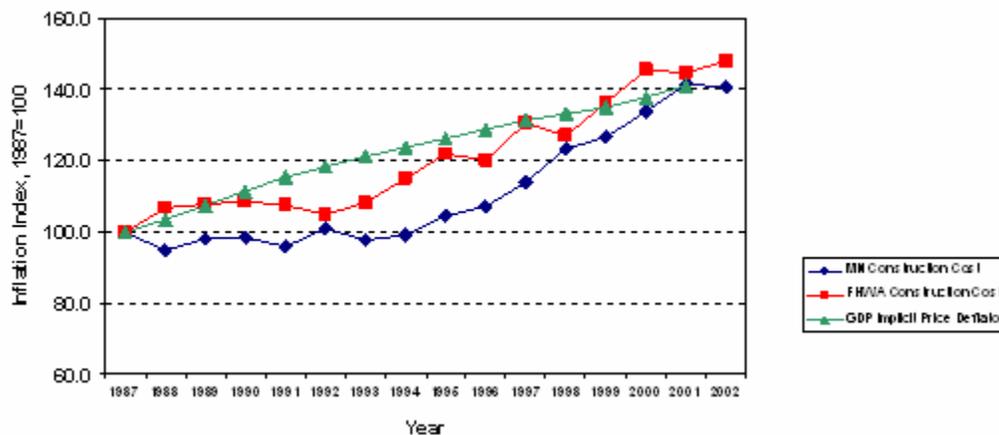


FIGURE 10 Minnesota construction cost index, FHWA highway construction cost index, and general inflation index.

The first thing we did to address this problem was to develop a process for inflating our projects to year of construction dollars. Based on the year the project was expected to be constructed, the construction estimate for a project in current dollars would be inflated to that year of construction dollars. We used the Data Resources, Inc., (DRI) forecast for state and local construction expenditures, which forecasts inflation quarterly.

The second problem the task force identified, and probably the biggest driver of cost increases, is scope creep. Minnesota has a local approval requirement. Minnesota DOT cannot build a project without the locality approving the project, with the exception of Interstate projects. So there are local pressures to add features to projects at this stage.

A somewhat related problem is a move toward the use of premium materials. The initial estimate may have been based on the standard cost for concrete or asphalt. In the end, the engineer may have decided to use a premium material, which adds a great deal to the cost. There are also unexpected conditions, such as poor sub-soils, that increase costs.

All these factors together have resulted in big cost increases, especially on our major construction projects. In a recent analysis comparing the STIP estimate and the let estimate, we found the 24 biggest projects in the STIP experienced cost increases of over 100%. It is no wonder we were over budget.

In the area of scope creep, we have introduced a new estimating technique to try and add more rigor into the cost estimating procedure. This new estimating technique is called length, width, and depth estimating. This technique does two basic things. First, it more formally quantifies the volumes of materials that will be needed in a project. Second, it also has factors for both the complexity and the risk associated with a project. If a project is in an urban area where there are a lot of local pressures, the risk factor increases. If the project is in an environmentally sensitive area, the complexity factor increases.

We just started using this technique a little over a year ago. We will track our performance measures to see if we are doing a better job of bringing our projects in not only on time, but also on budget.

I was also asked to talk about mega projects and Minnesota DOT's success in implementing mega projects. For us, as for all states, this is a major struggle. With our recent use

of performance-based planning, the planning process does not seem to have a problem identifying mega projects. After establishing an inter-regional corridor system in 1999, we immediately performed seven major corridor studies focusing on the investments needed to reach the mobility performance targets on those corridors. The plans adequately identified the corridor level investments, or the mega projects, needed to get that whole corridor functioning properly.

Inadequate financing can be one major problem with implementing mega projects. Inadequate financing is not the same thing as inadequate funding. While we will never have enough money, we can learn how to make use of innovative finance tools. Minnesota has been a pay-as-you-go state for 50 years. It is very difficult to complete projects exceeding \$1 billion on a pay-as-you-go basis. Decentralized programming has much strength, including local buy-in and communication with our local partners, as well as local ownership of both the project and the budget. Decentralized programming does create a problem, however, when available resources are essentially split into eight different districts. It is much harder to put together the resources needed to undertake a very large project under a decentralized approach.

Local opposition is also frequently a problem with implementing mega projects. Essentially, as a project gets bigger and more complex, the potential for controversy multiplies as well.

Minnesota DOT has used a three-pronged approach to address mega projects in the last year. The first step is establishing a very strong strategic direction. Unless the priorities are very clear, focusing that many resources on a project is difficult, even over a number of years. Therefore, from the very highest level of the organization, we have established a few key strategic goals, which has been a great help.

Secondly, while we will never move entirely toward centralized programming since there is a lot of support for our decentralized programming approach, the department will probably begin to centrally program the mega projects that have statewide significance. This centralized approach appears to make sense as no single district has the necessary resources to implement a mega project.

Finally, Minnesota has moved very aggressively in the past 3 years to adopt innovative financing techniques. With the legislature's approval, we will undertake billions of dollars' worth of bonding projects this year to fund them over their entire life as opposed to a pay-as-you-go basis.

In Minnesota, we believe performance-based planning and programming hold promise to improve trade-off analyses. It provides the necessary quantitative tools, enabling staff and decision makers to make more fully informed trade-off decisions during the project selection process and to clearly understand the performance goals they are achieving. However, there is still room for improvement in the unit cost area. We need to develop much better information regarding benefits per dollar of investment in a wide range of areas.

Finally, we need to establish more formal links between our performance measures and our programming. This includes timing—getting the performance information out in a timely manner relevant to the programming process—as well as developing project cost and output information in the project development process, and making it available to decision makers during the programming process.

TRANSPORTATION PLANNING IN FLORIDA

Ysela Llort, *Florida Department of Transportation*

It is a pleasure to have the opportunity to talk you about transportation planning in Florida. What this session refers to as program delivery, I will be calling implementation throughout my presentation. Due to the amount of documentation on our processes, I will not go into a lot of supportive detail today—I will simply point you to where that detail can be found.

We have been trying to link the planning and programming processes together for a long time. It has been an evolutionary process for us, born of necessity. Florida is a large and a very complex state. While Florida DOT's budget is very large, a lack of funds in the late 1980s forced the department to become more deliberate in our planning and programming process.

Florida's tremendous population growth has created some unique issues. Approximately 16 million people live in Florida and we have about 800 new people moving into the state each and every day. Our major urbanized areas grew by 32% between 1990 and 2000. The population age group of 65 years and over is growing at a faster rate than other population segments. This group makes up a large proportion of our population, which creates some specialized issues. Estimates indicate that by 2025, over 25% of Florida's population will be over the age of 65.

Tourism continues to grow, despite the downturn in 2001 and 2002. Today we have 75 million tourists per year. This figure is projected to grow to 110 million per year by 2020. Tourists obviously use the transportation system.

Travel demand continues to grow in the state. All elements of the transportation system are experiencing increases in travel demand. With continued population and economic growth there will be a rising demand for all forms of passenger and freight transportation. VMT has grown by over 24% on all public roads since 1990 and is projected to increase by 55% between 2001 and 2025. Person hours of delay are increasing by almost 6% per year on our core highway system. The numbers in travel growth and the projections in all the modes are tremendous.

At Florida DOT, while we see certain areas as our principle responsibility, we are partnering in funding all the modes. Increasing population and employment levels will generate rising demand for goods movement via all modes. Truck traffic is forecast to increase by 85% between 2001 and 2025, rail traffic by 65%, air traffic by 171%, and water traffic by 48%. Employment is expected to grow by 51% over the same time frame. Demand for all types of transportation will grow faster than population over the next two decades.

The transportation planning process in Florida is governed by state statutes. We like to characterize the system as a policy-driven process well supported by data. But, the data is not what drives us. What drive us are the policies, both statutory and other types.

Transportation investment decisions in Florida are made in the context of a strong statutory framework. This framework establishes statewide policies, allows significant local input in project selection to achieve local growth goals while providing a balance to achieve statewide and regional goals, and provides for a very stable work program that local governments can rely upon for land use decisions. It also implements the federal environmental streamlining philosophy to discover and resolve project planning and implementation decisions early in the process.

We have traditionally used a bottom-up system of project prioritization, which is the norm when you have a statutory formula to distribute money. This approach is changing a little, however. While we have many needs-based programs, mostly in the area of preservation, we also have a lot of programs that are not needs based.

Florida's statewide need for transportation is increasing, creating conflicts for our bottom-up approach. Tom Lewis from Disney Corporation spoke yesterday about growth management and concurrency. Part of our responsibility at Florida DOT is making absolutely sure we can deliver on those transportation promises we have made. Local governments take those promises into account as they grant building and other permits because development is tied into transportation delivery. Therefore, we create this tie-in between planning and project delivery not only for ourselves, but also to benefit local governments and developers like Tom Lewis.

We also have more very large projects today, as well as projects that address inter-regional needs. Traditionally, we have had a statewide program for the Florida Intrastate Highway System (FIHS). This year the legislature approved development of a strategic intermodal system. Thus, we are increasingly concerned that we make the right decisions on investing state dollars for the benefit of statewide facilities for all modes.

When I spoke about the linkage to growth management, I mentioned that program stability is very important. One reason is because our performance is monitored by the Florida Transportation Commission. Because we are measured according to the stability of our program, we have to be sure we deliver. We also have a very strong commitment to environmental stewardship and community values.

The flowchart in [Figure 11](#) depicts the relationships between all the various pieces of our policy framework. Beginning at the top, the Florida Transportation Plan (FTP) or policy plan has a 20-year horizon. While a lot of states move from there to their STIP, Florida DOT does not. We move from our 20-year plan to our short-range component. This phase incorporates broad policies developed in harmony and unison with many Floridians' interests, bringing them down to the 5- and 10-year horizon. We set goals and develop short-range objectives to support them. This short-range component is a very important bridge document between the 20-year plan and STIP development.

The next item is the program and resource plan, the annual process of reviewing our revenues against our needs at the program level. In the program and resource plan, we compare our management information systems regarding pavements and bridges against our objectives in the FTP Short-Range Component, to make decisions on programs. This approach allows us to look at needs over a 10-year horizon for specific programs, such as capacity and preservation programs.

Abby McKenzie discussed Minnesota's process at the district level. Florida uses a mix of levels, beginning with the executive committee or an executive board comprised of agency leaders. The leadership of the agency reviews all the data coming from the different programs. The data is examined on an annual basis, usually in the April through June time period. We spend significant time reviewing the data, program by program, examining needs assessment and forecasts, and setting program targets. Every district director, who is called district secretary in Florida, is involved in this process. If there is a problem, we go back and look at data to reach an agreement. Once consensus is reached, we go to the actual programming phase.

The programming of everything but the statewide programs is performed at the district level. Statewide programs are an exception because they are large-capacity projects with the FIHS. We develop a 5-year work program called our capital improvement program which, after being approved by the legislature, becomes our work program and budget. We then work with the local governments to reach a consensus among those district directed programs using bottom-up priorities. At this point a project is implemented.

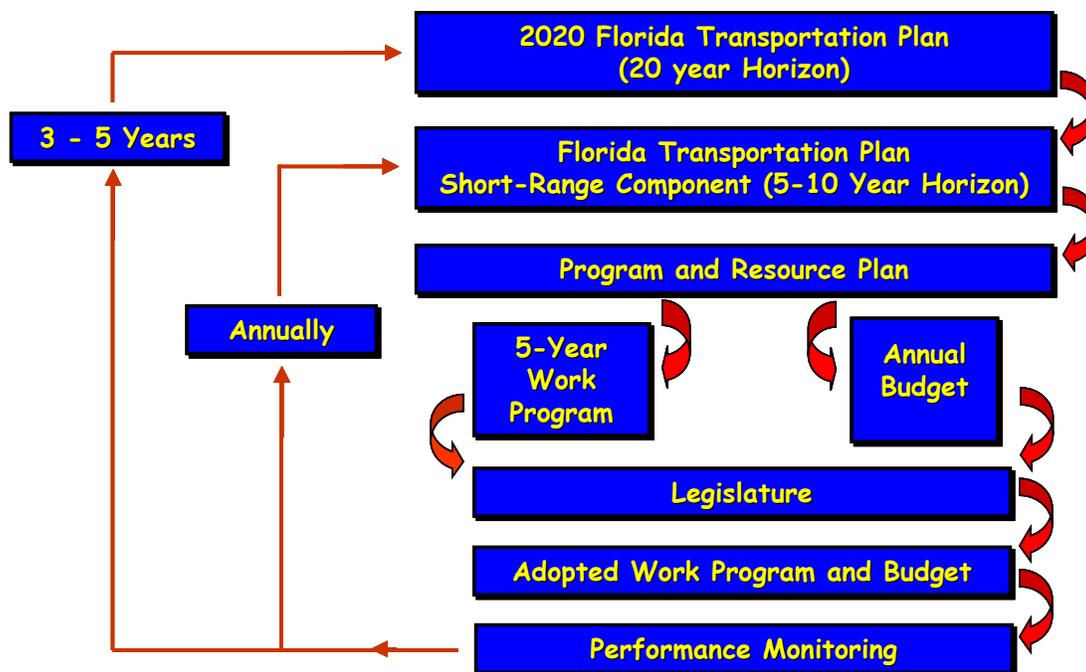


FIGURE 11 Florida DOT policy framework.

As illustrated in [Figure 12](#), the process is a continuous cycle. Florida DOT views the relationship between planning and programming as a continuous cycle of events linking policies to the allocation of funds, leading to the selection and implementation of projects and services. This process also includes a performance monitoring function that looks not only at established performance measures but also at future trends and conditions important to the policy development process.

As shown in [Figure 12](#), Florida DOT first establishes the policies and plans. From that, we develop the financial policies embedded in the program and resource plan, matching needs at the program level to the available resources. Then we do programming and project delivery. Monitoring our performance is an important component throughout the entire process.

The first step in documenting our policy framework for investment decisions is policy guidance. Like most state transportation agencies, we have been largely focused on mode-based programs. This approach will be changing over the next several years, however, which means we face an incredible challenge. Under the new strategic intermodal system, we can no longer make decisions based on the traditional funding amounts previously received for modal programs. We must step outside our comfort zone and figure out how to forecast the future by more scientific means.

This need leads to our work program instruction. Being a decentralized agency, some of our districts have a great deal of resources. The agency, the districts, as well as the central office, puts great effort into synchronizing programs and priorities. To facilitate the task of synchronizing a very large program within a very large complex state, we developed the work program instructions. It is an enormous document, probably the largest we produce, but it contains every detail on the process from the program targets to programming projects. It is

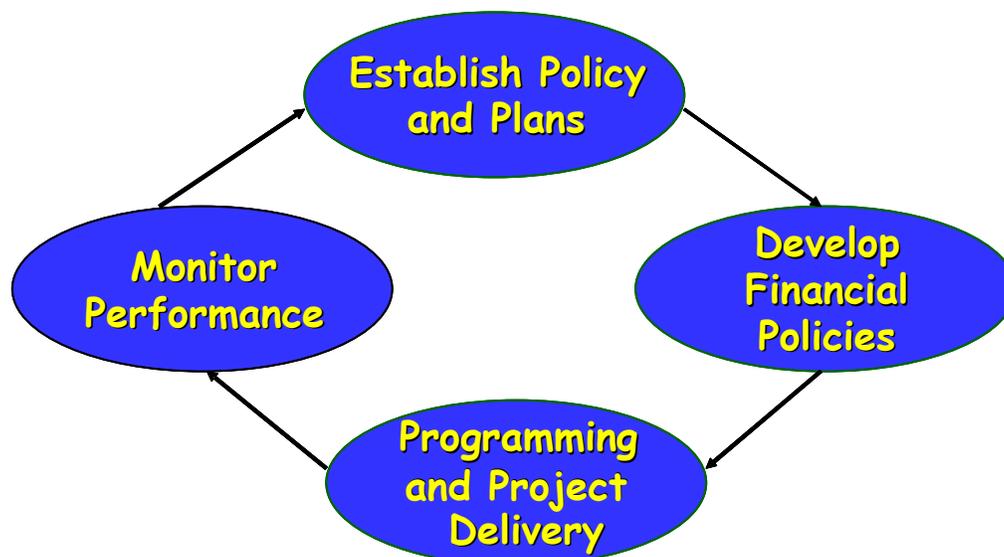


FIGURE 12 Continuous cycle.

another bridge document between targets at the program level and the actual projects, and answers such questions as what is the decision process that ought to be made; what are the issues that need to be looked at; and what are the mechanics of getting it done?

When the 5-year work program is adopted, we go through very traditional preliminary engineering and project production implementation. However, we are not traditional in how we monitor the program. I explained earlier that stability is very important in Florida DOT. Therefore, when a project is programmed and included in the 5-year work process, we fully expect it to move to each subsequent phase at year four, year three, and year two. We monitor each and every step of the way to ensure that, unless there is a sound need for a priority shift, the project remains on schedule. Because we are aware that, if monitoring is too difficult, it will not happen, we provide documentation to management, enabling them to monitor progress easily and efficiently.

The performance monitoring program is specifically tailored to very different users. There is a great deal of interest in our capital improvement program. After all, you do not get \$6 billion to spend every year unless you are getting results. The governor and our legislature are very interested in how we are using the money, whether we are using it the way we said we would, and whether we are delivering on our promises.

One of the Florida Transportation Commission's duties is to examine everything Florida DOT does on an annual basis, using agreed upon performance measures. The Commission reports their finding to the public in an open forum. Florida DOT's management does performance monitoring also. But the most important part for the agency is to make sure we are meeting goals through our investment program that we established at the planning process, in harmony with our partners. It is not unusual that the interests of the governor and the legislature are not the same things that interest the department's management. We have sets of performance measures for legislative staff and we have very detailed sets of performance measures for the agency managers.

Our effort has been to move the department from outputs to outcomes. It has not been easy because often, when performance measures are set, everything is not totally clear. To give you a case in point, the legislative staff is very interested in knowing our per-lane mile cost of construction. It sounds quite easy and, looking at subsequent years, it appears the costs are going up. While that may be true, the components of those costs have to be isolated to determine which are increasing. For years we thought it was a good thing to add more projects all at once because it was less disturbing to the public than stretching out a project over a number of years. Interfering with traffic for such an extended period of time would not have been a smart business decision. However, if you are able to measure each isolated component per year, you can determine if it is good to go up or down. It requires a lot of discussion to set these performance measures and to ensure that they are useful to others, particularly the people gathering data.

We have also worked a lot with mobility measures, trying to get a better idea of our system's level of reliability. Freight measures are one of the areas of our focus. It is important for users of the transportation system to know how reliable the system is over time, particularly in critical areas.

In the bridge area, a major objective of the FTP is to make sure we protect the public's investment in transportation, which means we place preservation before capacity. Then we set very specific objectives in our short-range component so that 90% of the bridges meet Florida DOT standards. Embedded in that objective is what Florida DOT standards are by types of activities. We look at our needs and set targets based on how many structures need to be replaced and when to meet those standards. In the project delivery phase, we select the projects to meet that need in a fairly straightforward manner. Finally, on a yearly basis, we evaluate the data, reporting as to whether or not we meet the standards.

There are some advantages to our way of doing business. Our system is reliable. If we make a promise, we make sure we deliver. That has its own advantages, such as improving stakeholder buy-in. People really like a credible system that delivers on its promises.

Unfortunately, there are also some disadvantages to our system because it is very complex. It requires a lot of data systems and a considerable amount of resources. Also, in to ensure that we deliver on our promises, we must be fairly inflexible in the early years of our program. We cannot change priorities unless there is an extremely good reason. This tendency to not change priorities means sometimes you have to wait in line for your program priority.

Of course the other challenges we are dealing with at this point in time are our changing program and goal scopes—from modal silos to a strategic intermodal system. We have a lot invested in our data systems and to processes that we have in place. Change requires challenging staff to move out of their comfort zones, creating different data systems, and establishing new analysis tools to support different goals.

I want to end today by giving you citations for some of our websites that have a lot more detail about the things I have talked about. The following websites provide additional information on the different plans and approaches used in Florida.

- Agency Overview: http://www.dot.state.fl.us/financialplanning/AGENCY_OVERVIEW_2003_JULY-1AMEND.pdf (amended from original reference to March 3 Overview).
- 2020 Florida Transportation Plan: <http://www.dot.state.fl.us/planning/2020ftp/default.htm>.

- Short-Range Component: <http://www.dot.state.fl.us/planning/2020ftp/default.htm#src>.
- Program and Resource Plan: <http://www.dot.state.fl.us/programdevelopmentoffice/Program%20and%20Resource%20Plan%20Document.htm>.
- Work Program Instructions: <http://www.dot.state.fl.us/programdevelopmentoffice/work%20program%20instructions.htm>.
- Annual Performance Report: <http://www.dot.state.fl.us/planning/policy/pdfs/apr.pdf>.
- Production Management: <http://inonet.dot.state.fl.us/productionmanagement/>.

Figure 13 provides an example of a page from a production management report. We go over this data with all our district agency leadership every month to monitor the actual delivery of our program. On the left are different categories, such as the public transportation program, consultants, right-of-way certifications, parcel acquisition, eminent domain, lettings, maintenance, and construction. On the right are the districts, as well as the central office and our statewide programs. It also shows the targets that we set jointly. This is our commitment as managers to delivering our program. We develop annual plans for each one of these items. If people are meeting their plan target of productivity, you will not see the nasty yellow bar (highlighted with black text). If the plan is not being met, there had better be a good reason why. Sometimes we see short-term losses when we do not meet our production targets for that month, but it all comes together by the end of the year because we are very serious about our commitments to our public.

Figure 14 highlights Florida DOT's statewide consultant acquisition plan, by month and by millions of dollars. It shows that we have our targets and plans set for the year, and where we are today. We go through this same exercise in the central of office in Tallahassee on a monthly basis, as well as in every district in preparation for the Tallahassee meeting.

<u>Executive Board Report</u>			01	02	03	04	05	06	07	TP	CO	SW
<u>Production Management Report</u>												
Public Trans	\$	90% of Plan	145.2%	132.6%	120.5%	113.7%	112.9%	182.7%	144.6%		85.5%	124.4%
Consultant	\$	90% of Plan	104.0%	85.5%	115.7%	123.1%	84.7%	117.7%	106.1%	109.6%		102.6%
	#	95% of Plan	106.4%	100.0%	105.7%	107.0%	103.3%	101.9%	106.8%	112.8%		104.9%
R/W Cert	#	90% of Plan	100.0%	128.6%	100.0%	90.0%	78.6%	100.0%	75.0%	0.0%		98.3%
R/W Parcel Acq			173.6%	139.3%	109.0%	106.9%	96.6%	121.2%	91.5%	20.0%		113.5%
Eminent Domain			198.0	247.0	279.0	177.0	152.0	49.0	92.0	12.0		1,206.0
Lettings	\$	90% of Plan	88.9%	84.3%	101.2%	93.5%	75.6%	44.6%	104.3%	83.9%	0.0%	87.4%
	#	95% of Plan	98.4%	95.4%	96.8%	95.4%	98.0%	87.0%	97.4%	93.3%	0.0%	95.5%
Maintenance	\$	90% of Plan	116.7%	125.9%	108.9%	102.7%	110.8%	112.6%	108.3%	113.6%	90.5%	112.6%
Construction	\$	10% of Change	3.9%	11.5%	5.5%	18.5%	7.8%	3.5%	7.2%	7.6%		9.2%
	Time	20% of Change	5.2%	17.2%	15.8%	20.1%	14.8%	0.3%	18.7%	9.7%		14.0%

FIGURE 13 Example page from Florida DOT production management report.



FIGURE 14 Florida DOT production management.

STATEWIDE TRANSPORTATION PLANNING PROCESS: AN AGENCY HEAD'S PERSPECTIVE

Tom Barry, *Florida Department of Transportation*

It is a pleasure to provide a slightly different perspective on the statewide transportation planning process in Florida. As an agency head and a former assistant secretary and a district secretary, I see our planning process as evolutionary. The planning process has been continually improving. I would like to share some thoughts with you on the recent changes.

I also want to focus on process improvements we have undertaken in Florida that may be of interest to other states. How these improvements relate to integrating the planning process and environmental streamlining has been of interest at a national level. I would also like to touch briefly on how we handle the trade-off between modes.

One area which seems to have suffered a lack of attention is the regional planning aspects. If "regional" is in the mind of the beholder, then to a city mayor, regional may refer to a county or a couple of counties; to a county commission it may refer to a multiple county region; and to Florida DOT, it may mean something else. In some of our local planning processes where the regional aspects of our plan fall short, the state steps up and takes over.

While I was at Florida DOT we stressed the importance of linking back to the 20-year long-range plan developed in cooperation with the people of Florida. The 2020 FTP guides the improvements to our system and has the following four primary goals:

- Safety;
- System management: in the previous long-range plan it was just system preservation;
- Economic competitiveness; and
- Quality of life for both the natural and the built environment.

The 2002 Short-Range Component involves the following specific strategic goals:

- Preserve and manage a safe, efficient transportation system;

- Enhance Florida’s economic competitiveness, quality of life, and transportation safety; and
- Pursue organizational excellence by improving customer satisfaction, delivering the work program and strengthening the effectiveness of the department.

State DOTs are improving in the last area, but do not highlight it enough. This strategic goal is a good way to engage all of the Florida DOT employees, without narrowing to select groups in a program area, causing others to feel unneeded or unappreciated. In Florida we try to ensure that process improvements are in place and organizational excellence is a goal engaging all the employees within the department.

Figure 15 illustrates Florida’s efficient transportation decision-making process (ETDM). The process starts with the examination of needs and the identification of projects to address those needs. Projects are included in the Transportation Improvement Plan (TIP) and the 5-year work program. At that point environmental resource assessments begin, followed by design, and finally, permitting. In the past during this considerable period of time, there was no agency involvement outside Florida DOT or the MPOs. There could be a 5-year gap between the time a project gets in the STIP or the TIP and when the actual process begins, meaning agency involvement occurred very late.

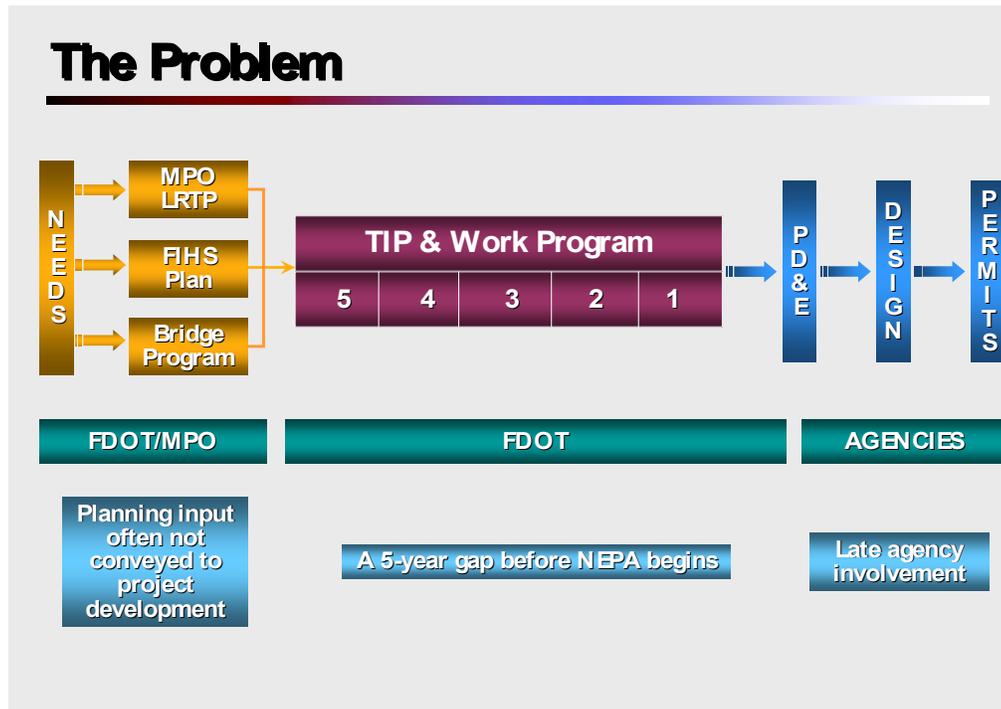


FIGURE 15 Florida’s ETDM process.

The Florida ETDM vision statement is presented in [Figure 16](#). The following benefits are expected from the ETDM process:

- Early identification of problems—minimization options;
- Socioeconomic effects balanced with natural environment;
- Disputed projects addressed before programming;
- Attention focused on key technical issues—not on proving the negative;
- Agencies and affected communities have ready access to quality data; and
- Summary reports provide feedback.

[Figure 17](#) shows how the ETDM balances and integrates the interests of federal, state, and local agencies, as well as the public. The process begins with mobility planning and moves into the more detailed project development and then into final design. Community outreach and agency involvement are incorporated at critical stages through the process. The NEPA process is conducted before a project goes to final design. Environmental permits are granted under the condition that, if there is a major scope change, the NEPA process will be revisited. If there are no substantial changes in the project scope through final design, these permits would remain intact.

As shown in [Figure 18](#), projects must go through a dispute resolution process prior to getting into the 5-year work program. The process provides a check to be sure any significant issues are identified and addressed before funds are spent on a particular project or corridor.

In relation to project manager duties and responsibilities, this approach is a fundamental change from the traditional NEPA and project development environmental process. Involving the permitting agencies very early in the process has traditionally been difficult to accomplish. However, in Florida, agencies like the U.S. Fish and Wildlife Service are involved early in the planning process.

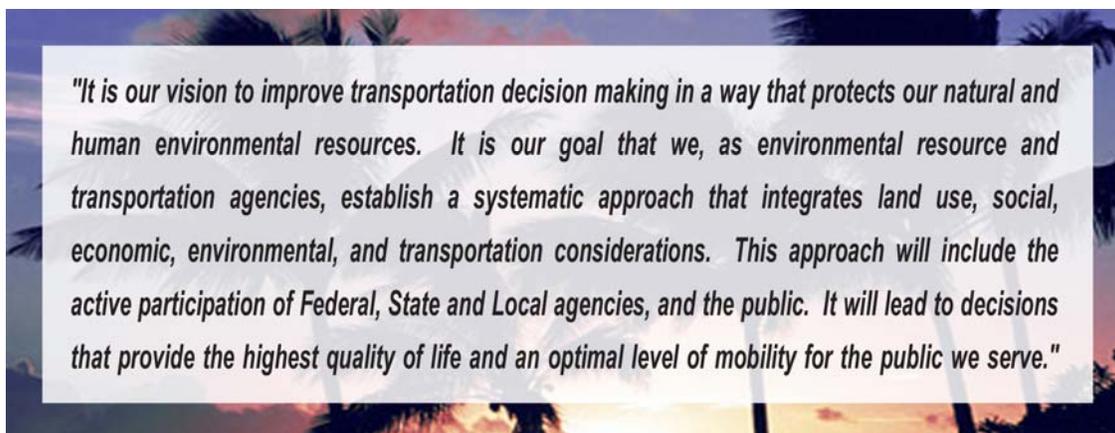


FIGURE 16 Florida ETDM process vision statement.

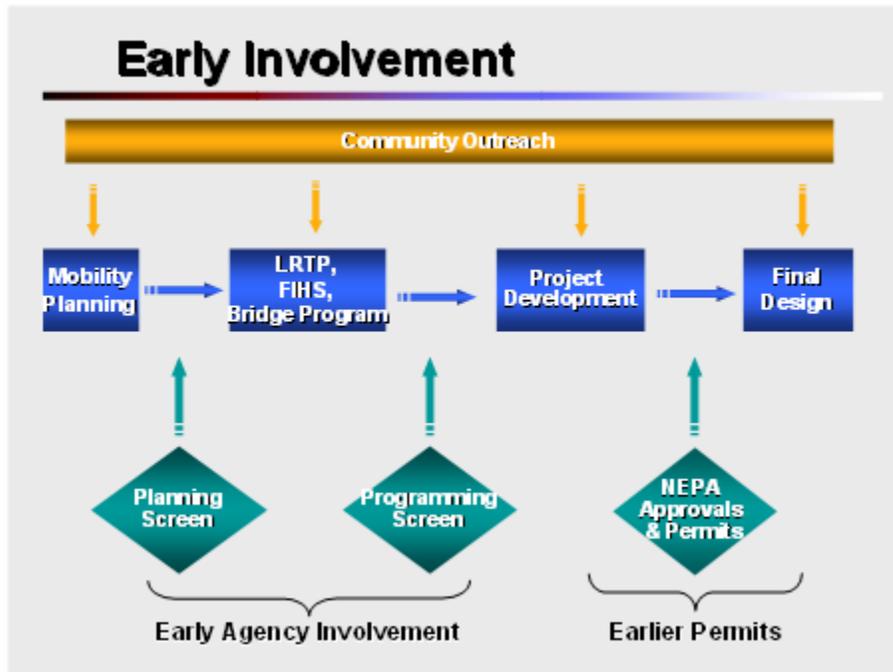


FIGURE 17 Agency involvement in the ETDM process.

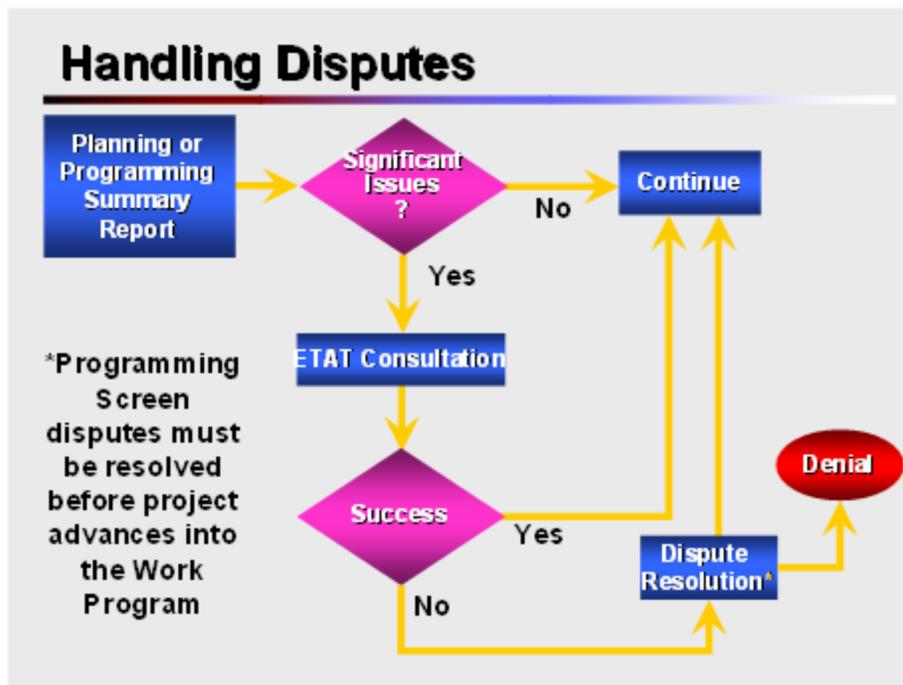


FIGURE 18 Dispute resolution process.

Figure 19 illustrates the feedback process that eventually culminates in a project development summary report. Two years in the making, training is now underway and pilot projects are being identified. The expected benefits include the early identification of potential issues and addressing disputed or controversial projects prior to their inclusion in the work program.

The FIHS is both a bottom-up and a top-down approach to regional planning in the state. The elements listed below highlight the multimodal nature of the FIHS and the transportation network in Florida for the movement of people and goods.

- Major interconnected transportation network—moves people and goods throughout Florida.
- Stimulates Florida's economy—moves commodities into global markets, moves people to and from work trips, serves tourist and recreational travel.
- Connects urban and rural areas, and global markets—through airports, seaports, and rail.
- Composed of 3,935 mi of existing and planned facilities—limited access (Interstate, turnpike, and expressways) 2,113 mi; controlled access, 1,721 mi; planned facilities, 96 mi; and under construction, 5 mi.
- Created by Florida Legislature in 1990—initial plan developed in 1991—planned, built, and maintained by Florida DOT in cooperation with local governments.
- System carries 32% of total Florida traffic—on only 3% of road network.
- Makes travel safer—special corridors for through travel, buses, rail service, and vehicles with more than one person. Improved emergency evacuation routes.
- Improvements to the system will be systematically staged—availability of funds and priority of corridors will dictate timing and extent of improvements.

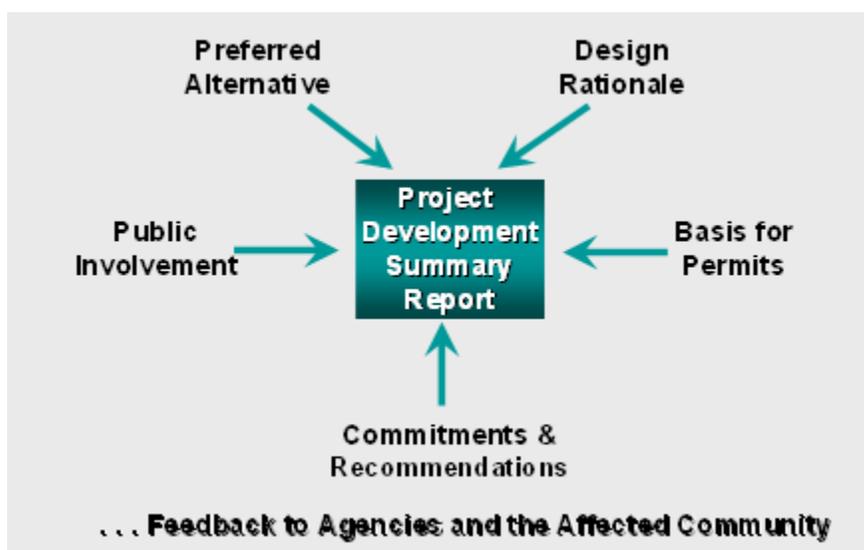


FIGURE 19 Florida DOT development project feedback.

- Planning, project development and environmental, and design staff develops network—to FIHS standards, to meet state and federal engineering and operational standards in cooperation with local governments.

Figure 20 illustrates the existing FIHS and the planned elements. There are a few areas in Florida where a new corridor could still be constructed.

Linkage to the Short-Range Component of the 2020 FTP is important. There are two short-range objectives for meeting Strategic Goal 2: enhancing Florida's economic competitiveness, quality of life, and transportation safety. They are

1. Through 2007, at a minimum, maintain the rate of change in person hours of delay on the FIHS. This goal is simply to maintain the rate at which the person hours of delay are increasing so the “bad line” does not worsen. This objective is realistic given the fact that there is not enough money to bring the trend down or even level the delays out; and
2. Through 2011, commit approximately 50% of the highway capacity improvements to the FIHS.

The Strategic Intermodal System (SIS) came from a recommendation in the 2020 FTP. The plan recommends an SIS be established, constructed, and managed to enhance Florida's economic competitiveness. The SIS should

- Be composed of corridors, facilities, and services of statewide and interregional significance; and
- Include appropriate components of the FIHS, seaports, spaceports, airports, rail, transit, paratransit, regional freight distribution facilities, and bicycle and pedestrian accommodations.

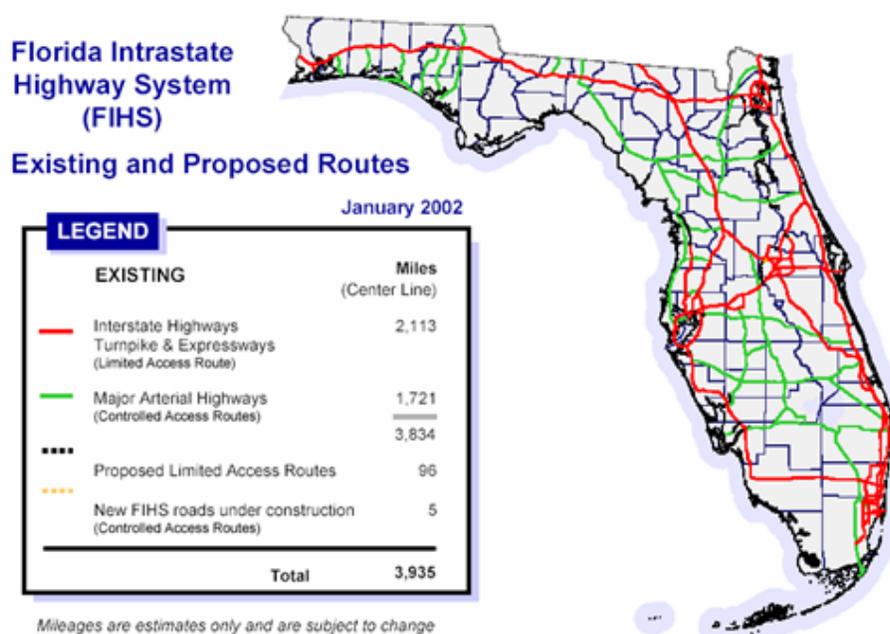


FIGURE 20 FIHS existing and proposed routes.

The development of the SIS involved a partnership between Florida DOT, other agencies, and stakeholders. A 41-member public–private steering committee helped guide the process. Policies in the SIS focused on transportation infrastructure and operations, economic competitiveness, and community and environment. The SIS provides policy guidance, designation criteria, and maps with initial recommendations developed in 2002. A strategic plan to guide future investment and management was developed in 2003.

Legislation was passed this year creating the SIS. While the legislature considered how the system and projects would be governed and prioritized, the recommendations of the steering committee formed the base of the SIS. Assuming the governor signs the bill, the plan will move forward. One difficulty in establishing an SIS was dealing with stakeholders who had a vested interest in a particular mode. They wanted to talk about finance from the first day, and it was a challenge for them to set that aside and work to establish criteria for creating the system. Future steps include developing a needs assessment prioritization method and a finance plan for implementation of the SIS. As shown in [Figure 21](#), the SIS will be an integral part of Florida’s future transportation system.

While creating a criteria-based system was critical, it was difficult to create environmental and community criteria. The resulting criteria were driven by the Thousand Friends of Florida, and the concept that a project should rest lightly on the natural and built environment. For those who normally think in terms of asphalt and concrete, that is a whole different perspective. This approach actually resonated quite well with the steering committee, however.

As shown in [Figure 22](#), a potential facility will be subject to a screening process that addresses environmental and community concerns. Alternatives will be examined if issues emerge. For example, for a highway project connecting to a port, the process would examine if a rail alternative is feasible. If an alternative is available, the original facility is rejected and the alternative is considered. If there is no viable alternative, more study focuses on contact sensitive design, flexible design standards, and things of that nature in an attempt to strike a balance.

SIS Will Be an Integral Part of Florida’s Transportation System			
Florida’s Transportation System			
	SIS	Supporting Facilities	
		Emerging	Other
<i>Description</i>	Statewide and interregional significance	Candidates for future SIS updates	Rest of system
<i>Criteria based on...</i>	Passenger and freight activity	Size, access to markets, service to emerging areas	N/A
<i>Funding</i>	Focused state & federal funding	Existing or newly created programs and sources	

FIGURE 21 Key elements of SIS.

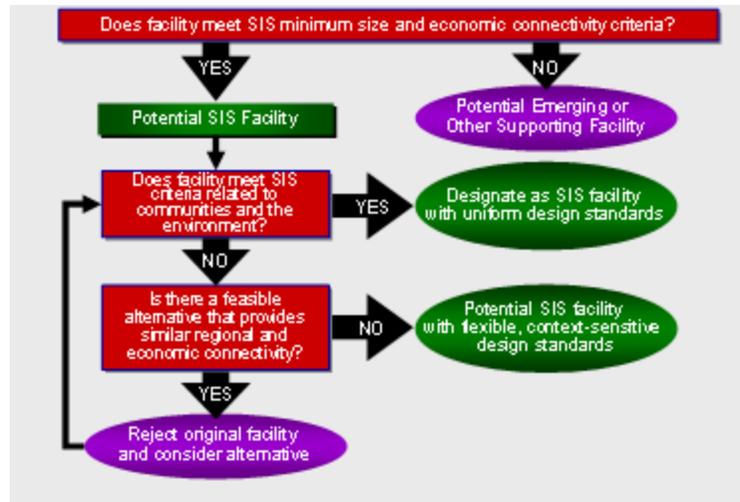


FIGURE 22 Community and environmental screening process.

An example is the connection between the Port of Tampa and the Crosstown Expressway, which goes through a historic neighborhood. Probably 8,000 trucks a day pass by a restaurant that is over 100 years old. While there may be no alternative to a new highway, attempts would be made to balance some of the community desires and potential environmental issues.



FIGURE 23 Existing SIS facilities.

I will close by highlighting the maps shown in Figures 23 and 24. **Figure 23** shows the existing SIS facilities. It covers all modes. **Figure 24** shows the emerging facilities that have been designated and, pending the governor's signature, basically approved to move forward. Thank you very much for the opportunity to be here today.



FIGURE 24 Emerging SIS facilities.

PLENARY SESSION

Conference Wrap-Up

Charlie Howard
Washington State Department of Transportation
Moderator

SUMMARY OF FIRST GROUP OF PLENARY SESSIONS

Ysela Llort, *Florida Department of Transportation*

My charge is to summarize the major points from the plenary sessions during the first 2 days of the conference. The first session, Making Connection to the Political Process and Decision Makers, provided three different perspectives. The speakers included the mayor of a small city in Florida, a county commissioner from Montana, and the chief deputy director of the Michigan DOT. The speakers pointed out that most political leaders see transportation planning as very complex, technical, and jargon-laden. They also seem to stress that transportation planning is useful in the decision-making process.

One of the key themes from this session was that transportation planners need to do a better job of communicating with policy makers. Planners should use language that is easy to understand and should present information in a simple and a concise way. Planners should also be inclusive when dealing with policy makers and other groups. The speakers also stressed the need to show courtesy and respect when dealing with decision makers and other groups. Humanizing the planning process is more effective in obtaining positive responses from decision makers.

The speakers pointed out the need for planners to be strategic. Planners need to realize that just because we think something is important, others may not share our perspective. Our priorities may not be as critical to a decision maker. It is important to focus on key issues and to address why the topics are of concern to the policy makers' constituents. Decision makers deal with a wide range of critical issues and are very busy people. The speakers stressed the importance of presenting decision makers with the key information about a topic in a concise way, showing respect, and being strategic in your thinking.

The speakers pointed out that transportation planners should continue focusing on good, old-fashioned values such as courtesy, caring, and communication. These values are still important today and will help enhance your effectiveness. Assisting decision makers' focus on a common view of the future is also important.

Mr. Hiemstra challenged us to balance the past with the future, and to look at the viability of technological, economic, social, and political visions. He also noted that it may be harder to visualize future social and political changes than advances in technology. He cautioned us on the use of forecasting based on past trends. He suggested another means of back-casting is to look at trends outside the transportation community.

He suggested that the future of transportation will be shaped by many things outside the transportation community. His view that transportation will experience a major technological change, rather than the minor ongoing changes we have been experiencing is particularly

interesting. He also reminded us to make sure we look at what is probable, what is possible, and what is preferred in helping groups develop a shared vision the future.

Another session focused on learning from our customers. Representatives from AARP, Disney, and Landstar highlighted the needs of different user groups. The speakers challenged planners to develop a better understanding of their needs, to work closer with them in the planning process, and to partner with diverse groups on projects. Providing better information on the requirements and the limitations of the planning process was also noted as important.

The representatives from Disney and Landstar discussed the need to understand the motivators for business investments in developing partnerships. What motivates businesses is not necessarily what motivates the public sector. A common understanding among all groups must be established. In dealing with the private sector, focusing on the internal rate of return, net present value, and other commonly used business terms might be more productive than the discussing levels of service and long-range planning.

The speakers challenged us to expand our thinking beyond traditional transportation planning. Rather than focusing on federal legislation as the cause of recent changes in transportation planning, some of the speakers suggested that change has resulted from the needs of different user groups. The real drivers of change are outside of the transportation planning field.

The speakers also suggested that communication is critical, as is a better understanding of the needs of different user groups. They stressed that transportation planners should develop a better understanding of the issues and the perspectives of businesses, special interest groups, and other users.

SUMMARY OF BREAKOUT SESSIONS

Rob Bostrom, *Kentucky Transportation Cabinet*

My charge is to help summarize the key topics discussed in the breakout sessions. I would like to thank everyone who helped with the breakout groups. There was spirited discussion in all of the breakout sessions. You deserve thanks for actively participating in the sessions.

One set of breakout sessions focused on tools, data, and technology. Many participants felt that a great deal of data is available from a wide variety of sources. It was also pointed out, however, that what is often lacking is analysis of the available data. Data in and of itself is not of much use. Data needs to be turned into useful information. Targeting information to policy makers was discussed, as was the need to standardize analysis procedures.

Involving stakeholders early in the data analysis process was noted as important. For example, in Kentucky we intend to provide stakeholders, modelers, and politicians with the opportunity to question and comment on various aspects of the statewide traffic model. This process represents a different approach than just having transportation planners make all the decisions related to travel modeling.

Addressing privacy issues was identified as important. For instance, we have been talking about meta-data for a long time and, while it needs to develop quickly, it is still moving rather slowly. Better data on land use, modal use, and elderly driving characteristics are also needed. Many also pointed out that improvements in data quality, integration, and standardizations are needed.

Participants identified a need to involve more organizations and groups in the planning process and to reach out to all potential customers. The boundaries of traditional transportation planning are expanding and we need to interact with all groups in our communities. The value of partnering with academia and providing more analysis to determine the customers' need was also discussed. Additional synthesis reports on best practices would be of benefit.

Many participants cited the importance for leadership to start a dialogue on data utility, data quality, and benefits. Establishing organizational priorities on the precision and quality of data, as well as management support for these elements was stressed. In many organizations, the groups responsible for data collection are not integrated with the groups that need and use the data. Enhancing communication among all groups would be of benefit.

The discussion of research needs was very lively. The need for outreach to policy makers and other groups was discussed. The value of using visualization techniques to present and summarize data and to present information in a concise manner was noted. For example, Florida has a tool kit to help explain transportation planning to policy makers and other groups.

The importance of educating undergraduate and graduate students in transportation planning also was highlighted. Ensuring that individuals coming into the profession have an understanding of the process and the basic tools was stressed. Ongoing education for practitioners is also needed.

Areas identified for more research included freight, safety, aging population, land use, security and economics. Many of these topics are not adequately addressed in the transportation planning process. Incorporating technology into all aspects of the planning process would also be of benefit.

Focus groups and surveys were cited by some participants as good techniques to better define the needs of various customers. More market research could help to determine our customers and their specific needs.

Transportation planning overlaps with land use, housing, and other types of planning. Transportation planners today need a wider range of skills than in the past. Planners need good technical skills, but they also need good communication skills, and they must be able to interact well with other groups and policy makers.

It was suggested that planners need to be synergy experts. We need to be good at bringing diverse points of view together. Taking a page from Steven Covey, we should keep the end in mind, listen first and try to be understood later. All of us need to be doing things to balance demands and expectations, using careful consideration and tools.

Many participants highlighted the need for planners to build strong working relationships with decision makers and their staff. It takes time to build credibility with policy makers. Presenting accurate information and well thought-out concepts is important when dealing with decision makers.

A need for more consensus building as part of the public participation process was also noted. Increasing outreach activities to all groups continues to be important. As noted by the futurist specialist, we need to determine the possible and the probable and facilitate a decision for the preferred.

Participants also discussed the differences in missions among transportation agencies in some areas. Conflicts may arise between agencies due to these differences. The public does not care about these conflicts. The public expectation is that the problem can be solved. They do not care which agency does it. We are Americans, we need to solve the problem, we can and we will.

In conclusion, I want to thank all of the organizers of the conference and all of you for participating in the breakout groups. I think we have learned a great deal from all the speakers. I look forward to continuing the discussion on many of the topics raised during the conference.

SUMMARY OF CONCLUDING PLENARY SESSIONS

Tony Kane, *American Association of State Highway and Transportation Officials*

My charge is to summarize the last two general sessions and to provide a few concluding comments. As noted by the other speakers, the conference has provided a wealth of ideas for enhancing the transportation planning process.

The third general session focused on planning activities emerging at the local, state, and regional levels. These efforts include safety plans, security plans, emergency response plans, congestion management plans, incident management plans, growth management plans, economic development plans, environmental conservation plans, and asset management plans. The speakers focused primarily on safety, security, and economic development planning activities.

There were two main points that emerged from the discussion on safety. First, to solve the safety problem, someone has to own the problem. One agency needs to take overall responsibility for safety. State DOTs seem to be the appropriate agencies, with help from other organizations and groups. We are hosting a safety leadership forum in Kentucky to help foster such an approach. The forum will bring together our many partners at the state level and will focus on the partnerships needed to achieve a safe system, to lower fatalities, and to reduce injuries.

The second point related to existing tools to help enhance safety planning. It was suggested that a number of planning tools are available right now to improve the consideration of safety in the planning process. Additional tools and techniques will be available soon. More outreach is needed to help move these tools into practice.

The main discussion related to security focused on the physical infrastructure needs along the borders with both Mexico and Canada, and the need to work with our partners in both those countries. State DOTs and other agencies expanding facilities at our borders follow the same requirements related to the environmental and NEPA processes, and it was noted that they clearly need to work together on long-range plans. Together, they could be looking at the use of intelligent transportation system technologies, management strategies, physical capacity expansion, and other techniques.

The role economic growth plays in shaping transportation was highlighted by one of the speakers. It was suggested that transportation departments need staff and advisory group members with a clear focus and understanding of economic growth. It is important to understand the influence of growth on the transportation system, as well as the influence of the transportation system on growth. These individuals can also act as a link to the business community.

It was also suggested that a clearer focus on transportation planning as a derived demand is needed to achieve this partnership with the business community. It was also suggested that the transportation system lead, rather than follow, economic growth, land use, and development issues.

Mr. Hiemstra's point on the need to envision the future first—to think about what you are trying to achieve—was especially of interest to me. This approach is true in goal-based planning,

in performance-based planning, and in other planning methods. Having a goal or future vision in mind allows you to focus on strategies, objectives, and performance measures for achieving that end.

A number of topics were discussed in the session on planning and program delivery. Speakers stressed the importance of performance monitoring, including tracking at the district level. The need for financial planning, financial management, and financial forecasting was also highlighted. Focusing on outcomes, including physical assets, mobility, economic growth, and the environment was noted. The continuous cycle of planning and program delivery, including visions, goals, and policies; finance; program delivery; and performance monitoring was also discussed.

In the area of planning and program delivery, performance monitoring was a common focus in the presentations and in the breakout sessions. Florida's example of district-level tracking and feedback to the state plan ensures the goals, policies, and objectives laid out at the state level are actually being delivered at the local levels.

Making sure the process is outcome oriented was also stressed. It is vital to make sure the ends of the transportation planning process—sound physical assets, enhanced mobility and economic growth and, a sustainable environment—are being met in a continuous cycle. To be really effective, there should be a continuous system of performance monitoring and cycle-back.

Figure 25 helps highlight the three areas that need to converge to make connections for the future desired end state. The three areas of convergence are

- The customers the transportation system is trying to serve. Customers include the freight community, the traveling public, the elderly, and others;
- The authorizing environment under which transportation agencies are doing business. The authorizing environment includes federal laws/regulations, state laws/regulations, resourced by local, state, and federal governments, the economy, and other factors that influence how transportation agencies function; and

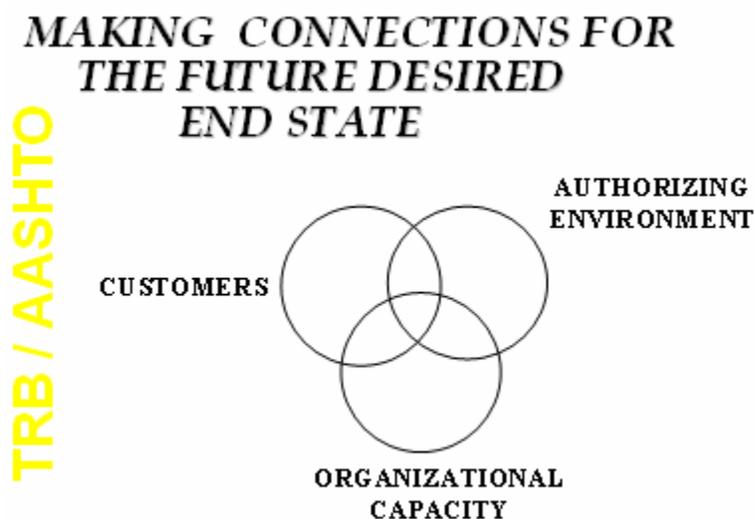


FIGURE 25 Three areas of convergence.

- The organizational capacity includes the human and monetary capital of transportation agencies, public/private partnerships, other agencies, and other groups.

The goal is to always look toward the future in terms of serving our customers' needs, the future authorizing environment, and our future organizational capacity. The degree to which we can bring those three things together, allowing them to intersect, indicates how much we can achieve.

This conference started on Sunday with a discussion of political decision making, including the authorizing environment and the organizational capacity transportation agencies have to deal with. We heard about public–private partnerships that can help us in that venture. The authorizing environment includes everything from federal and state legislation, political support, the economy, the environmental resource agencies, and other factors influencing transportation.

Our goal is to envision the future as we see fit and to focus on our customers, while remembering the organizing and authorizing environment we need to build the strongest organizational capacity possible, acknowledging that for planning to be successful, it has to focus on a shared future vision. We can then use program and project delivery and performance measurement, to determine if that vision is being met.

APPENDIX

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