The Many Dimensions Of America's Congestion Problem – And A Solution Framework

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Mr. Chairman, distinguished members of the Subcommittee, thank you for the opportunity to discuss the future transportation issues and some solutions to our problems. I want to make sure you understand at the outset, that I have not changed any of my basic views since my last appearance before this Subcommittee. I still believe our transportation system faces a number of challenges – congestion among them – and that there are some solutions to what appears to be an intractable issue. The next few years will see some key opportunities with a number of transportation solution strategies. Congress can play an important role in helping Americans get to their jobs, schools, shops and health facilities, as well as moving the freight to support a desirable quality of life. I welcome your questions today, or at other times in the future.

First, let me summarize my ideas.

- Congestion problems will continue to challenge our metropolitan regions in the future. Travel delays and unpredictable travel times for people and freight will be a problem in many regions with populations below 1 million – this will not just be a big city problem.
- Safety and congestion problems are not different – and many solutions to one problem help the other. If we think of these as related problems, we are much closer to comprehensive improvements in the quality of life.
- We should think about the problems, the opportunities and the solutions in terms of niche marketing. There isn't one problem or solution. Some problems have a clear technology or infrastructure "fix", some can only be solved with better information and some will be best addressed by different policies, programs, incentives or institutional arrangements. Some problems require big solutions, but many agencies have found over the years that there are a lot of benefits that can be purchased with relatively little spending. And perhaps even more importantly, it is these simple ideas, obvious solutions that make a difference to the public, that build the trust to support bigger improvement programs. A transparent, data driven analytical approach typically yields a variety of solutions with a range of costs.
- The projects, programs and policies that each region uses to solve problems will be different. I think this is a good reflection of the creativity and diversity in our metropolitan regions. These strategies are also going to be different depending on where within a metropolitan region you are.
- This range of solutions will include strategies to get more productivity out of the current system, programs designed to provide travelers with choices of travel modes, departure times, prices and electronic options for trips and projects to increase person and freight moving capacity.
- It is also clear that the solutions need to be pursued in a comprehensive way that involves the public. In all of the fast growing areas there is not enough funding to keep congestion levels where they are, much less make improvements. Judging from successful approaches in recent years, comprehensive strategies that combine investments in "things" as well as people will be presented to the public along with a discussion about the benefits of investments in terms like quality of life and economic development, rather than traffic engineering terms.
- Finally, we know what works. Transportation is a service, and we need to treat the travelers and shippers as consumers of that service. Our ability to fund transportation needs rests on our ability to manage the system to get the most out of what we have and to communicate the benefits and costs of the service options. Institutional structures must be

organized around policies and programs that deliver reliable service and which prioritize spending around "get the most bang for the buck" principles.

I would like to expand on these ideas in five key elements: the problem, the future, solutions, benefits and principles for change.

The Problem

"Congestion" to citizens is a problem. Technically we might use words that describe elements of problems or solutions like accessibility, mobility, reliability, connectivity, seamless productivity. These are all useful distinctions and point to viable and important solutions, but the meaning of these various words may be lost on people and freight shippers who understand their congestion problem, but do not parse it in the way that experts do. People are concerned when it takes them longer to get where they want to go than they think it should. I think it is important to recognize this difference between what people call the problem and how we attack it.

Our research suggests that no matter what you call it, we've got several problems. A quick summary:

- We waste quite a lot of time – 3.7 billion hours in 85 cities in 2003
- We use more fuel than we should – 2.3 billion gallons in those 85 cities
- This has value - $63 billion in 85 cities in 2003
- We cannot reliably predict travel time very well due to several factors such as crashes, vehicle breakdowns, weather, special events and road work.
- Jobs, shops and homes are spread out for a variety of understandable reasons, many of which make transportation service more difficult to provide.
- There are fewer travel options than people say they want, but many of the existing options are underutilized.
- We have to plan around congestion during most daylight hours and on weekends.

This sounds like a transportation problem and it is. But it is also an economic problem. There are, of course, some places that wish they had more congestion because that often comes with more jobs and people. The analogy might be drawn as "congested roads are like crowded movie theaters and sold-out sporting events; everyone wants to be there." The difference, I think, is that roads and transit routes are the way we get to the crowded places, not the places that we want to go.

The reliability problem is perhaps less understood than the "average congestion" issue. Our research of traveler and business transportation choices and my understanding of how the solution strategies knit together leads me to believe we should pay more attention to the reliability aspect of congestion than we have because it clearly connects some of the public and private sector changes in operating practice and project construction with the improvements that the taxpayers, travelers and businesses demand.

When people tell us about their congestion problems, they usually overstate the amount of time they are delayed "on average". One could read this as "people just like to complain," but if you look at the detailed data on variation in travel time from day-to-day, what they are telling us is

how much travel time they have to plan around. We have only had access to this information in the last few years because of the investment in intelligent transportation systems that monitor the minute-to-minute performance of the freeways in some urban areas. A monthly report we help prepare for the Federal Highway Administration shows that in every one of the 22 regions we examine, you should plan on twice the extra travel time than normal if you have an important meeting, freight delivery or family event.

This reliability problem shows itself to be an important component of trip planning in many ways. Just-in-time manufacturing processes rely on the transportation network to provide predictable travel times to move components between factories or to final assembly plants. Rather than building a car from raw materials to a finished product in one place, for example, the parts arrive at one plant for final assembly. If this one plant can time the arrival of the pieces so that they arrive "just-in-time" to be put into the car or truck, the building will need much less space for inventory storage and can use the manufacturing space much more productively.

The same phenomenon occurs with moving people. Employers must endure workers who arrive late and harried from longer than normal trips, or those workers must time their commute so that they arrive early on most days. Travel between service calls or between jobs and school or day care must allow for this unreliability factor and typically winds up as either fewer service calls or longer "sitting around time" – neither of which benefits the travelers. Health care and other appointment-driven businesses allow for late arrivals by clients, forcing much more waiting room time (although the magazine industry probably views this as a good thing). Think how much time is wasted and frustration developed when meetings start because of "traffic".

The Future Situation

I believe I have some ideas of how the problems and solutions will look in the future, but I'd like to start with some idea of what type of land use and travel pattern we might be trying to serve. My colleague Alan Pisarski, author of "Commuting in America 3" (which should be required reading for anyone who votes on transportation improvements or funding), has identified a number of future demographic and development pattern characteristics that will exist over the next 20 to 30 years. Continued suburbanization of jobs and homes in very large metro regions will challenge the current transportation and land use planning structures that do not handle existing mega-region issues very well. As the baby-boom generation reaches retirement age, the worker-job balance will shift toward the workers, making their interest in a high quality-of-life a more significant concern of the business community. Mr. Pisarski refers to this as an "amenity-based" economy -- one where a greater percentage of workers can live in places away from their job (as decided by their weights on decision factors such as housing cost, school, health care and recreation quality) and can demand a combination of higher wages from the employer and better living conditions from their city/county/state. Providing workers several ways to get from low-cost, high-quality home locations to well-paid jobs may be even more difficult, but also much more important to regional economies, than it is now.

Many of the current homes, shops and offices will still be in place and other developments to handle the millions of new urban residents will look similar to the current mix. Suburbs will continue to grow, commuters will travel – sometimes long distances – between their home and

their job and not everyone will move into high-rise apartments or town homes. But it also appears that there will be more people with short commutes between home and job, whether that is because they move their home and job closer together, or their job involves an electronic connection to their office rather than a physical one. It is clear that people choose to live and work where they do for a variety of reasons and congestion is not at the top of that list in every case. The increase in freight movement will accentuate those concerns and provide unique difficulties at the local, regional and national level.

Today's teenagers will be key constituents, business leaders and decision-makers in less than the number of years it takes to build some major transportation improvements. They are much more active producers and consumers of information than you or I are. They are more comfortable with text messaging, producing their own videos and using the Internet to acquire what they need. They are not interested in waiting for *anything* – job satisfaction, arrival at work, access to information, etc. They want safe and secure travel, they appear to be ready to trade some job-related income and advancement possibilities for a better lifestyle and, if the high school and college students I know are any indication, they believe they will change the world just as every other generation has. I'm fairly certain they already have.

Desirable cities will have the same elements they currently do – mobility, low housing prices, good schools, recreation and entertainment opportunities, a supportive business environment and desirable quality of life. These cities can attract the 21st Century work force—a group of people who will increasingly be able to live where they want and use the Internet to make a nice living. Jobs in the service and information developing and providing sectors that can be performed from almost anywhere are likely to be a much larger part of employment growth than location-tied manufacturing sectors.

So I do not believe we can "get by" with a less than adequate transportation system. We need to aim for very well operated, cost-efficient systems that serve a wide variety of needs with exceptional reliability. I do not think that is considered an achievable vision in most regions or agencies. Congestion forecasts in Atlanta and the major metropolitan regions of California and Texas indicate a 50 percent to 100 percent increase in the problem over the next 25 years, based on expected revenues. If all the current flexible financing arrangements and creative public-private sector partnerships are used, this value will come down, but no one suggests that even today's unacceptable congestion levels are achievable by 2030 without additional funding, much less be able to improve mobility to desirable levels.

The Goal

The spread of congestion to more routes, more hours of the day, and more neighborhoods and job centers has resulted in longer travel times, less predictable arrival times, traveler frustration and business sector concerns. We've come through a period where no-toll and free-flow travel was a lofty but seemingly realistic goal for all hours of the day. I think those days are passed, but high-speed and reliable service is still an achievable target for most hours even in the largest megapolitan regions and all day for many medium and small cities. If there are going to be one to three million more people in an already congested metropolitan region, there needs to be an

expansion of roads, buses, trains, ferries, sidewalks and bike lanes. This expansion is very important.

Mobility goals have been developed in many regions and states (I am familiar with those in California, Atlanta and Texas). These are not constrained by financial resources; they are real "what do we want to become?" goals. They are a very useful component of the process that engages the customers, taxpayers and freight shippers to decide which improvement strategies are pursued and how much investment is appropriate. This is not a replacement for the financially-constrained long-range plan – it is a necessary addition that connects the projects and programs with the community aspirations.

The Solutions

To accomplish the community-developed visions, our transportation solutions cannot be a system of "or." The word "and" will be a common theme. We need to add roads *and* public transportation. We need to clear collisions quickly *and* tell riders when their bus or train will be here. We need to get workers to telecommute *and* have their employers see flexible hours, commuting mode options, transit fare subsidies and creative parking solutions as attractive employee hiring and retention factors. We need to solve local problems of access to jobs, health care and education *and* solve national problems such as port or intermodal terminal congestion that occur within a region. Cities must reduce regulatory barriers to downtown and near town development *and* recognize that many people wish to live in a nice house with a yard. And when the kids leave the house, those same people may choose to move to a condominium near their job, cultural venues or ballparks.

Our Urban Mobility Report has consistently recommended a broad set of strategies to solve congestion problems. Current private sector manufacturing and freight movement operations might be a good model for future personal travel systems – freight shippers have schedule expectations that vary by the goods being shipped, their importance and they react to incentives such as time savings and cost. But different than many current commuters, truck, ship and rail operators are also very well informed and are willing to change their trip plans, modes and routes to take advantage of time or cost incentives. Consider the commuting, safety and air quality parallels to these aspects of retailing and service delivery:

- Brick-and-mortar retailers have systems that let them know what item is sold and when, as well as the trends for each item on a daily, weekly and seasonal basis.
- Those companies have suppliers that react to trends in demand with incredible speed, changing the type of product and schedule as customer purchase patterns change.
- Delivery companies can tell where a shipment is at all times and can estimate when it will arrive or if there may be problems along a route be delivered.
- On-line merchandise companies can learn from transactions and search trends to tailor advertisements, discounts and products for each individual.

The solutions, therefore, are an integrated and related combination of:

- Operate and maintain what you have to get the most productivity from the system.
- Provide information and options to travelers, home buyers, businesses and other interested groups so that they might make choice to avoid long travel times.
- Expand the system where bottlenecks or growth make other options inadequate to meet community goals.
- Monitor the effect of the programs, projects and policies to make operational and design improvements and to provide an accountable and transparent reporting to the taxpayers.

The interrelationship of these factors has been clearly demonstrated. The California and Washington transportation programs (as only two examples) have received significant revenue increases based on a combination of:

- doing a good job with what they have,
- providing a clear plan for the additional spending that attacks problems, and
- committing to a communication effort that both informs the public about the effect of the programs and is used internally to refine the next set of project designs and operating strategies.

Expanding the systems, therefore, must be combined with efficient operations and information that allows choices to be made about current trips and about long-term investment strategies. The varying amount of extra time that travelers and freight shippers have to allow for crashes, breakdowns, weather problems and special events are a significant part of the congestion problem. Traveler frustration can be reduced (and taxpayer trust increased) if these seemingly simple issues can be dealt with. Of course the solutions are not always simple, but if we can clear collisions quickly, tell riders when their bus or train will arrive, time the traffic signals so that groups of cars move through a series of green lights and allow shoppers to get to stores without tying up traffic trying to move on major streets, we have a chance to meet expectations and convince the taxpayers their funds are being spent wisely.

Equally important, however, is the question of "who should implement the change?" There is a temptation to put the responsibility for addressing congestion, safety, air quality and other challenges on road and public transportation agencies or private sector road operators. This is a mistake. It ignores the aspects of the problems caused by poor decisions by travelers and eliminates the enormous power of employers and citizens to made choices that reduce congestion and improve safety. I do not think these choices would be made "to" reduce congestion; the objectives would be more relevant – improve profits, operational efficiency or the quality of life. But decisions to drive carefully, travel between home and office during off-peak hours or develop residential, office and commercial areas could have a range of beneficial transportation effects.

Some of the solution might also lie in modifying the expectations for transportation systems toward achievable goals. These would not represent surrender to economy-strangling congestion, but rather would recognize that there will be traffic congestion during one or two hours in both the morning and the evening peak hours in larger urban regions and near popular

rural tourist spots as a product of their desirability. This congestion does not, however, have to result in unpredictable arrival times, broken operating equipment, poor road quality, high collision rates or poor air quality.

Education can also play a role in attacking congestion. There are many available travel options and information on routes, modes, fares, tolls and travel times will be ubiquitous. The missing element may be properly motivated travelers and employers who understand that their communities and their bottom-line will benefit from a more flexible approach to commuting, working, manufacturing process and delivery processes.

Safety improvements traditionally come from a combination of design changes, education and enforcement of traffic laws. All of those elements can also benefit congestion – the Ohio DOT showed as much when their collision and congestion maps identified most of the same road links and intersections. Traffic crashes are the leading cause of death for people between 4 and 34 years of age; safety should be a significant priority in all the innovative mobility improving strategies we deploy.

The Benefits

Please do not make the mistake of thinking this issue is only about what to do and the often discussed topic of how to pay for it. I hope you also ask about the benefits of attacking the congestion problem. The fuel consumption, congestion delay, safety, air quality and other benefits are not only substantial, they are also the way to help citizens and businesses understand the reasons for doing the improvements. Transportation projects, after all, are not ultimately about faster travel, they are about supporting an economy that competes in a global market, supports families, encourages innovation and creates options that allow citizens to improve their lives.

A study for the Texas Governor's Business Council used information developed by the state's metropolitan planning organizations and the Texas DOT to estimate the benefits of improving mobility. To keep the relatively high level of congestion experienced in major Texas cities from getting worse will require an increase in spending from $108 billion to $123 billion between now and 2030. The more desirable outcome of eliminating serious congestion will increase spending to $174 billion. That $66 billion increase generates $540 billion in savings from lower travel delay, reduced fuel consumption and business efficiency, an 8 to 1 return ratio. Reductions in fuel purchases that would result from less stop-and-go driving were estimated at $37 billion alone, more than half of the cost of the program.

I'd like to suggest that benefit estimates like this are an important aspect of the challenge. Connecting projects, programs and plans to attributes that provide information for decision-makers like service quality, travel reliability, potential employee markets and quality of life should be a key component. If we focus our nation's transportation investments on programs, policies and projects that will enhance the quality of life, it will be easier to make a case for transportation investment. If all the discussion is on the cost of the program and funding mechanisms, we may be consigned to irrelevancy.

Suggested Guiding Principles for Change

I have a few suggestions on how to translate the future situation I have outlined and the challenges, we face into tangible advice for members of the Subcommittee. Many of the trends I describe exist in part because of the manner in which government at all levels has structured its decision making and how that structure has worked to produce a transportation system that enables these trends.

1. Recognize some problems are regional and interregional but many of the operating and governance structures are not. How do we make them match or work better?

Congress must recognize that the current system of decision making for transportation is based on states or metropolitan regions. States and regions examine their own boundaries when attempting to develop solutions to current transportation problems and in planning for their future transportation systems. The current federal highway program reinforces the natural inclination to stop solutions at borders, whether they are the edge of states or metropolitan regions. This results in a patchwork of solutions to large interregional problems with little to no continuity. The mismatch occurs where the current problems, and more perilously the future problems, do not track the decision-making entity boundaries. We already recognize regional and in some cases national consequences flowing from any of a number of transportation problems.

A good example of this is the consequence of rising transportation costs created by the bottlenecks at the ports along the West Coast. As congestion rises at these ports and in the inland infrastructure, costs rise. The costs are born by consumers thousands of miles away, in states other than California, Oregon and Washington. Under the current regime, downstream state transportation decision makers do not have incentives to trace back their consumer's costs to the West Coast and undertake a problem solving exercise with the West Coast states. Congress should consider ways to match the decision making and governing structure to the nature of the problems. Our problems are, and will continue to be, interregional and national.

The Ohio Turnpike and Ohio DOT created an innovative interjurisdictional arrangement that has the DOT supporting a lower toll rate on the Turnpike to keep the larger trucks off the DOT roads. This minimizes the pavement damage and operational problems on the state roads while providing the Turnpike with the funds needed to support the maintenance and capacity required to keep a key interregional highway in good condition.

This is the same kind of multi-use corridor program that sees buses, carpools and paying travelers on lanes that provide reliable high-speed service in California, Texas and Minnesota. One project, the I-10 West Freeway in Houston, will have four such "managed lanes" by 2008 that were purchased by the local toll road authority. The $237 million purchase price provided much needed cash flow to the Texas DOT and resulted in a 6-year construction schedule rather than the expected 12-year program. A savings of $2.4 billion in travel delay, fuel consumption, construction cost inflation and returns to the economy were obtained for an added cost of about $300 million for the 24-hour construction schedules, incentives and utility relocation.

2. People will react to incentives - price and time as examples - but we rarely provide them opportunities to do so. At the same time, states and regions have the responsibility to maximize the efficiency of their transportation infrastructure.

These two facts can work together to re-capture the unused, existing capacity through the use of tools that spread demand out over larger periods of time, reduce congestion and improve reliability. Concentrated travel demand is our single worst problem in highly urbanized cities. Transit, congestion pricing, car pooling, telecommuting etc, are all tools to manage concentrated travel demand. The options allow travelers and shippers the choice to say "I really need to make my destination on time and I am willing to pay or carpool or ride a bus for a reliable trip."

Congress, in past reauthorizations, however, has alternately encouraged tele-commuting or car pooling, and most recently congestion pricing and tolling. The problem with this approach is that Congress never collected these tools together in an incentive to commuters. Even the tax code changes that have been made to allow employers to underwrite public transportation service cost does not also extend to other commute alternatives such as carpooling, bicycling or walking trips to work. People react to incentives, but they also appreciate choice and when provided with it, as programs in many places including Los Angeles, Seattle and San Antonio show, they will make predictable choices to maximize their income and quality of life.

Instead of Congress elevating one choice over another, it should incentivize states to provide choices to commuters from among the many tools that make the choices as equal as possible. This empowers a commuter with choice. States and regions can also provide more options to commuters with emerging technologies and better information. If the goal is congestion reduction is there a role for a commodity market in peak period trips? Why shouldn't commuters be able to auction off their rights to travel by themselves in a car? Why shouldn't employers be able to support alternative travel modes and commute arrangements that employees desire and which improve office productivity instead of being encouraged to accept the parking offered as part of the "business as usual" office lease? Why shouldn't workers be able to declare the one day per week that they tele-work from home as a 20% share of a home office deduction? Or take a pre-tax mode-neutral commute subsidy from their employer?

3. No one is really paid for eliminating congestion. Why?

Agencies conduct many studies and evaluate options; many congested states and metro regions are managing roads and transit systems to achieve productivity improvements. But it is clear that more aggressive approaches exist. Operations and institutions that target serious problems with aggressive treatments plans usually combine technology, information, policies, regulatory changes, private sector partners and public agency operators – each element doing what it is best at, without regard for jurisdictional boundaries or "turf" issues. The federal program could reinforce these aggressive approaches with support for innovation and coordinate monitoring, reporting and performance standard development. States or regions could be rewarded for achieving and maintaining congestion and safety standards, as well as standards for reporting and communicating with their customers.

This concept could also be extended to other transportation program elements. A move away from budgets for specific programs or treatments and toward an emphasis on congestion, safety, asset value, pavement ride quality and other measurable factors could accentuate a shift from "what gets done" to a more relevant question like "how does it perform?" The *SAFEclear* towing program in Houston is a partnership between the City and towing companies that have a 6-minute response time goal for vehicle breakdowns and collisions. The program is in addition to a joint TxDOT, Harris County, Houston and Houston Metro program to assist stranded motorists. Collisions have been reduced by more than 15 percent in the two-year operation of the program and another $30 million in yearly delay and fuel savings have been realized for a $2 to $3 million per year project cost.

Focusing on the safety and congestion problems, for example, might lead to a focus on removing bottlenecks that artificially constrain travel or lead to unreliable travel times on the road or public transportation systems. Some of these projects require investments in the tens of millions of dollars, but there have been many improvements that cost less than one million dollars return twenty or thirty times their cost in crash, delay and fuel consumption savings. Short lane additions in the Dallas-Fort Worth region and several direct connection ramps between bus and carpool priority lanes and the park-and-ride lots in the Seattle area show the value of making spot improvements that solve multiple problems.

These kinds of improvements reduce the unpredictability of travel time. Many small cost improvements address problems that the public sees – lack of turn lanes, traffic signal malfunctions, collisions that take hours to clean up – and yet cannot understand why they are not solved. Fixing these problems reduces congestion, improves safety and also gives the public confidence that their tax dollars are being spent wisely.

The problems in states and metropolitan regions are similar but not the same and there's no reason to think the goals and solutions will be the same. We have much better access to monitoring data now than when the federal transportation program was begun. Emphasis could be placed on the process to develop standards and communication practices at the state and region level. Many processes and measures will result, but if every program examines the range of concerns, publicly supported improvements will happen.

4. Data driven and results-oriented approaches to problems have proven their effectiveness in many fields of government and business; we should expand them.

The analytical processes, monitoring data and communication strategies are all important for improving operations, better long-range planning and for generating the support of the public. The need for a comprehensive strategy for system and service improvement will characterize newer and more aggressive approaches to alleviating transportation problems. The cycle of planning, testing, deployment and evaluation may turn over much more rapidly in the future. As an example, agencies will need better data to both respond to customer requests for information and to change operations on an hourly or daily basis. Congressional support for data collection and analysis improvements will be returned in better service, improved communication with the public and reliable operations.

A new publication from the Transportation Research Board (Transportation Information Assets and Impacts, Electronic Circular #109) makes the case that decisions will be made with or without the data. If data is available, understandable and points to relevant to actions or decisions, it can be a critical link to improvement in many factors. One key aspect identified by the Committees and decision-maker interviews are the national datasets that form the basis for decisions that cannot be made using locally derived data. Very often the decision-makers, and sometimes the analysts themselves, are not aware of the national nature of these information sources. The methodologies and analytical procedures often form the best practices that are used to develop local datasets on subjects such as freight transportation, personal travel patterns and traffic counting. We cannot suggest that more detailed and sophisticated analyses should be conducted to make investment decisions without the information and analyses needed to make those trade-off judgments.

Providing data to individual travelers, as happens in the various 511 phone programs and traveler information websites, can also dramatically improve the service provided by the transportation system. These operations do not reduce congestion by themselves (like an added street lane would), but the information they provide helps travelers decide on their mode and route, and understand the time that might be needed for the trip in places as diverse as Ohio and Kentucky who had the first operating 511 system in the Cincinnati region, to Nebraska, Utah, Arizona and Minnesota that had statewide systems in 2002. The San Francisco-Oakland region 511 program has information on a comprehensive set of multi-modal travel options. Major metropolitan regions appear to be moving toward a single card or computer chip to pay tolls, transit fares, parking and other fees for transportation services. Centralized websites like the Bay Area's can present these options in ways that make travelers more comfortable with their choices – again, data to make decisions. Advanced applications of these systems might have your cell phone find the weather and traffic forecast for the day and automatically find your travel options based on your job and family schedule that day, your preferences for radio stations, conversation topics, job location, and then call the cell phones of possible carpool partners to see if they are interested in sharing a ride on a high-speed lane, or show you the transit map and fare info for the bus or train, or tell you how long the drive will be if you go by yourself at various times. You can think of this as a real-time combination of services like e-Harmony and traffic.com.

The real-time end of the information needs spectrum is improving with these market-based systems and the private sector data uses for both freight and passenger travel. But there are still many professionals who are faced with supervisors who say "I've been asked what sounds like a fairly logical question and we need an answer by this afternoon…." It is clear that "covered issues" with good long-term datasets – such as pavement and bridge condition – are in a better position to provide support for these types of questions, but many times the only option is to use data from older sources or other places. It is also clear that decisions will be made with whatever data are in the room when the options are considered. There are hundreds of these questions being asked each day – but no one to compile them and make a case for improving the data. No one comes to lobby their Congressman with "Better Data" as one of the 3 issues on their 8 ½ by 11 page.

Thank you for allowing me to share some ideas on the future we might be facing.

More information on mobility research at the Texas Transportation Institute can be found at: http://mobility.tamu.edu and http://tti.tamu.edu