Article Portfolio Selections

Group 6

Transportation Projects, Programs, and Policies

Domestic Transportation Funding Challenges Receiving Greater Attention
(01/2014)

Public Advocacy for ITS Research, Applications Steadily Advancing
(04/2013)

U.S. Passenger Rail Expansion: Idling or Leaving the Train Station?
(04/2011)

Urban Transportation Infrastructure Gets Low Marks in Mobility Report
(07/2005)

TxDOT Moves Forward with Innovative Transportation Partnership
(05/2005)

Automated People-Mover System Coming to Washington Dulles Airport
(03/2003)

Recent Study on Pedestrian Safety Draws Criticism from AASHTO, States
(02/2003)

President Bush Seeks Streamlining of Planned Transportation Projects
(11/2002)

Virginia Oceanside Travel Made Easier Through Engineering Marvel
(06/2000)

A New Dawn Rises for High-Speed Rail Transportation in Florida
(05/1998)

Domestic Transportation Funding Challenges Receiving Greater Attention

By Steven J. Storts
Dublin, Ohio

FLYING under the radar of recent congressional debate on the national debt ceiling was the less-publicized crisis looming over the Highway Trust Fund (HTF). Setting a precautionary tone, U.S. transportation officials contend that highway and transit programs potentially face their own "fiscal cliff" unless legislative action is taken this year to address major funding challenges.

The Infrastructure for the Future Summit, held in Washington, D.C., in November, explored sustainable solutions to an impending transportation crisis and the best ways to implement effective change. Hosted by the American Highway Users Alliance and Volvo Group, the event examined issues confronting the nation's infrastructure and specific challenges that threaten the U.S. economy. Attending were congressional staff, transportation stakeholders, federal and state policy makers, logistics experts, and business leaders whose bottom lines depend on efficient, safe, and reliable roads and bridges.

In his presentation, Bud Wright, executive director of the Association of State Highway and Transportation Officials, noted that surface transportation has long relied on user fees, and the backbone of federal surface transportation has been the HTF since 1956. However, he reported that national investment on roads and transit has gradually declined over decades in terms of federal transportation spending as a percentage of the gross domestic product, according to both the Congressional Budget Office and the Office of Management and Budget.

"In 2011, motor fuel taxes comprised 91 percent of Highway Trust Fund revenues," the AASHTO official points out, "but they face an uncertain long-term future." Of that 91 percent HTF revenue, 66 percent is generated through gasoline fuel taxes, with the other 25 percent coming from diesel and special fuel taxes. Truck/bus/trailer taxes, tire taxes, and heavy vehicle use fees comprise the remaining 9 percent of revenue.

Wright cites three HTF "headwinds." First, he says, Americans are not driving as much. According to Federal Highway Administration (FHWA) statistics, the number of miles driven annually peaked in March 2008 and has declined since then. Next, the gas tax has lost its purchasing power, as much as 37 percent from 1993 to 2012. Wright predicts that the purchasing power loss will be 52 percent by 2023. Finally, alternative fuel vehicles will further erode future HTF receipts, with substantial drops occurring between 2012 and 2022.

To date, general fund transfers have avoided the fiscal cliff, with transfers totaling $53.3 billion since 2008, but Wright says that "outlays are outpacing HTF receipts, and that about $15 billion per year and more will be required for a foreseeable future." The impending fiscal cliff, he forecasts, is that federal highway obligations will fall nearly 100 percent in fiscal year 2015 without new revenue.

The positive news, AASHTO reports, is that some states are already addressing the transportation revenue challenge, not waiting for a federal fuel tax increase. For instance, fuel tax hike proposals have been approved or are under consideration in California, Idaho, Indiana, Maryland, Massachusetts, Michigan, Minnesota, Nevada, New Hampshire, Pennsylvania, Utah, Vermont, West Virginia, Wisconsin, and Wyoming. Another state initiative has Indiana directly allocating gas-tax revenue to direct transportation uses, and in Oregon, transportation stakeholders recently began testing a vehicle-mileage-tax pricing system.

Virginia has actually reduced its gas tax, while increasing other state taxes (including sales, vehicle registration, and other variable taxes or fees), yielding a net increase for transportation uses. Pennsylvania is also considering this approach. Arkansas is directing its state sales tax toward transportation uses, with Idaho and West Virginia looking to do the same.

Using initiatives similar to those in Pennsylvania and Virginia, the following have approved or are considering sales taxes on fuel, increased vehicle registration fees, or other variable taxes or fees: the District of Columbia, Idaho, Illinois, Indiana, Maryland, Massachusetts, Michigan, Minnesota, New Hampshire, South Carolina, Utah, West Virginia, and Wisconsin.

On the federal front, U.S. Rep Earl Blumenauer (D-Ore.) in December introduced H.R. 3636, the Update, Promote, and Develop America's Transportation Essentials (UPDATE) Act. The bill aims to phase in a 15-cent-per-gallon tax increase over the next three years on gasoline, mov-

ing it upward to 33.4 cents per gallon. The diesel fuel would also see an increase, topping out at 39.4 cents per gallon. "The gas tax hasn't been increased since the beginning of the Clinton administration," says Blumenauer. "Today, with inflation and increased fuel efficiency for vehicles, the average motorist is paying about half as much per mile as [he or she] did in 1993. It's time for Congress to act."

In 2009, FHWA estimated that more than $70.9 billion worth of repairs were needed just to maintain safe infrastructure. That number has since increased, *Blumenauer adds, and the* American Society of Civil Engineers estimates that surface transportation in the United States now requires more than $2 trillion of investment in order to remain economically competitive. In addition to ASCE showing early support for the UPDATE Act, the American Council of Engineering Companies (ACEC), Associated General Contractors of America, and the American Public Transportation Association have voiced their strong approval.

ASCE Executive Director Pat Natale, P.E., cites his group's *2013 Report Card for America's Infrastructure*, an assessment of infrastructure across 16 sectors, in which the cumulative grade-point-average for the nation's infrastructure rose slightly to a D+ from a D in 2009. "This bill represents a major step forward in addressing how to fix America's surface transportation infrastructure," he emphasizes. On a similar scale, ACEC says H.R. 3636 "will avoid debilitating cuts in highway and transit investment with predictable, sustainable, and growing revenue from user fees, an effective model that has long enjoyed significant public support."

However, garnering public favor for the UPDATE Act in a struggling U.S. economy could prove challenging. Opponents point to the already-high total tax rate on gasoline, which, between federal, state, and municipal duties, can range as high as 20 percent in many regions. Additionally, falling fuel costs in some states have aided many motorists in making commuting and traveling more affordable — gains that could all be erased by the proposed federal tax.

Indeed, the motoring American public may be trapped in a no-win situation, conserving energy and fuel costs by driving less and driving more fuel-efficient vehicles, but paying higher taxes at the pump because they are going less to the pump.

January 2014

Public Advocacy for ITS Research, Applications Steadily Advancing

By Steven J. Storts
Dublin, Ohio

FROM an outside-the-box perspective, many engineers would contend that the best and safest intelligent transportation system (ITS) would be one in which passenger vehicles operate themselves totally, unimpeded by the decision-making of subjective, emotional, and sometimes careless drivers. This scenario is often futuristically displayed on-screen in theater and television productions. The fact, however, is that driverless or "autonomous" vehicles are already being developed, prototyped, and road-tested by manufacturers, with some commercialization around the corner.

Currently, three U.S. states — California, Florida, and Nevada — have approved vehicle statutes permitting driverless, smart cars. Future economic markets, of course, will determine the overall availability, affordability, and viability of these ITS vehicles. In the meantime, engineers in public service are being tasked with advancing a smarter transportation infrastructure.

The goals for engineering a broader ITS spectrum are significant: maximizing use of the current transportation infrastructure and reducing the need for additional highway capacity; improving traffic flow; reducing congestion and emissions; and collecting real-time data to measure and improve transportation system performance.

Among the tangible benefits, current ITS technologies are helping drivers to avoid accident sites, obtain real-time traffic updates, and pay roadway tolls at normal driving speeds. Newer technologies under research and development by the U.S. Department of Transportation will allow vehicles to wirelessly exchange data regarding intersections and street locations to prevent the occurrence of accidents and to connect with infrastructure networks to decrease congestion and improve efficiency and mobility. These initiatives are part of a broader DOT strategy, including a core project called IntelliDrive.

Directed by the agency's Research and Innovative Technology Administration, IntelliDrive envisions an ITS where roadway accidents and their tragic consequences are rare because vehicles of all types can sense and communicate any events or potential hazards happening around them. Such a capability will require a fully connected, information-rich environment where travelers, transit riders, freight managers, system operators, and other users are aware of all aspects of the system's performance. For urban, more congested traffic patterns, IntelliDrive is focusing on ways that vehicles of all types can communicate with traffic signals to eliminate unnecessary stops and encourage driving in a more fuel-efficient manner.

Advancements in ITS technologies by states and municipalities are gaining momentum, too, some a mirror reflection of those supported by federal research. Local governments are realizing the value of vehicles that can communicate the status of onboard systems and provide useful information for travelers and system operators to mitigate the impact of vehicles on the environment or make more informed choices about travel modes. Rural areas have also made great strides the last few years in deploying ITS technology toward a number of purposes: enhancing safety; improving emergency response; providing information on road and weather conditions; making public transportation more accessible and efficient; deterring large animals from dangerous roadways; and promoting tourism and recreation.

The Council of State Governments points out that the Dallas and San Diego metropolitan areas are among the nation's first to use advanced ITS technologies to help fight congestion and enhance travel, with other cities expected to launch new or expanded smart transportation capabilities. CGS further notes that more than 40 local, state, or regional agencies around the country disseminate traffic information through 511 traveler information services via telephone and Internet access in all or parts of 36 states, with Tennessee and Florida recently expanding their traffic-monitoring systems.

In 2009, more than 20 states sought American Recovery and Reinvestment Act funds to invest in ITS technologies, including traffic cameras, express toll lanes, and improved traffic signals or accident alert systems. Additionally, the I-95 Corridor Coalition between North Carolina and New Jersey, the North/West Passage Coalition in the upper Midwest, and the Transportation Operations Coordinating Committee in the New York City metro area are providing updated traffic information.

Although there is evidence of ITS advancements nationwide, the speed of implementation is not quite as evident, according to one advocacy group. The Information and Technology and Innovation Foundation, a think-tank based in Washington, D.C., reports that the United States lags behind other industrialized nations in utilizing these new technologies, due primarily to a lack of investment and a greater focus on research rather than deployment.

The foundation recommends a significant increase in federal funding for ITS initiatives, at least $3 billion annually. As a comparison, much smaller countries such as Japan and South Korea allocate $700 million and $230 million, respectively, toward their smart transportation programs.

The arrival of newer ITS technologies is not without its challenges, though, CSG contends. While some deployments are local, many others must be limited to a national scale. Moreover, transportation funding is sometimes allocated without consideration of performance, giving transportation planners little incentive for investments that can have a maximum impact on optimizing ITS performance. Oftentimes, too, ITS projects have to compete for funding with road repairs and maintenance that may be more immediately pressing — and more politically popular — but don't deliver the same long-term returns.

CSG cites case studies showing that although highway capacity investments can deliver a benefit-cost ratio of 2.7-to-1, ITS technologies can deliver a 9-1 ratio. For instance, a national real-time traffic information system is estimated to cost $1.2 billion, but it would deliver value benefits of $30.2 billion, a 25-1 return ratio on the initial investment. Other research shows that a $9.9 million annual cost of a traffic operations management system in Broward County, Florida, yielded a benefit of $142 million in reduced travel time, fuel consumption, emissions, and secondary accidents, a 14-1 ratio.

As the general public expands use of personal communication technologies and more smart features are added to vehicles, undoubtedly, states will push ahead with testing and implementation of more ITS components into their transportation infrastructures. These advancements will address connected vehicle applications and technology, including enhanced vehicle-to-vehicle and vehicle-to-infrastructure safety communications, improved mobility systems, real-time data monitoring, active traffic management, and smarter roadside assistance.

April 2013

U.S. Passenger Rail Expansion: Idling or Leaving the Train Station?

By Steven J. Storts
Dublin, Ohio

THE answer to that question, of course, depends on whom you ask. Nevertheless, it is fact that escalating fuel costs at the pump amid a continuing sluggish economy have spurred new interest in passenger rail systems and catalyzed state transportation initiatives that have been lingering in the planning stages.

Federal grants totaling $8 billion were announced early last year as part of the American Recovery and Reinvestment Act to help advance more efficient high-speed and intercity rail systems in the United States. Another $2.482 billion in grants was added to that allocation last October. The Federal Railroad Administration (FRA) reported in March that nearly half of all available funding has been obligated to 29 states and the District of Columbia.

Some of those states that already have a vested interest in high-speed/intercity passenger rail projects include Arizona, California, Colorado, Delaware, Illinois, Maine, Maryland, Massachusetts, Michigan, Missouri, New York, North Carolina, Vermont, and Washington.

States still awaiting funds are in the process of meeting a number of federal requirements, one of which stipulates that states with projects along the nation's six major high-speed rail corridors must reach stakeholder agreements with host freight railroads. One of those agreements, recently tendered by the state of Washington with Amtrak, Burlington Northern Santa Fe Railroad, and the FRA, will direct $590 million in federal funding toward moving state passenger rail projects forward.

Amtrak Cascades in Washington has grown from 100,000 passengers during its inaugural year in 1994 to 840,000 passengers last year—a 10 percent increase over 2009. And the Missouri Department of Transportation (MDOT) notes that Amtrak's Missouri River Runner has seen a jump in passengers of nearly 16 percent. Nationwide, Amtrak use has increased six percent during the last fiscal year.

North Carolina Transportation Secretary Eugene Conti affirms that Recovery Act dollars have allowed his agency to make substantial gains. "We have a major passenger rail station under development in downtown Charlotte," he points out, "and with additional investment in the way of public-private partnerships, we're convinced that the entire downtown area will be transformed."

In the 2010 fiscal year, North Carolina's state-owned Piedmont rail service, which is operated by Amtrak, had the largest percentage increase in passenger use of any Amtrak service in the nation, 46 percent. Overall, general Amtrak use within the state is up 15 percent.

Paula Hammond, secretary of the Washington State Department of Transportation, says the goal of her agency's recent passenger rail agreement is to "boost the rail-line capacity and relieve mainline congestion, allowing Amtrak Cascades to offer more frequent and reliable passenger rail service between Portland and Seattle."

"People like the convenience of riding the train and are finding it's a very economical way to travel," adds Rod Massman, MDOT's rail administrator. "We are pleased that the Missouri River Runner service has grown in reliability, especially for those Missourians who depend on alternative transportation options to connect them to their families, businesses, and jobs."

But not all states have a green light for passenger rail. In fact, some have derailed the process, arguing that taxpayer funds should be allocated toward more economically viable infrastructure improvements. Florida rejected $2.4 billion in federal funding for a rail project connecting Orlando International Airport to downtown Tampa; Wisconsin opposed the $810 million in grant funds for a rail line between Madison and Milwaukee; and an Ohio campaign said no to a $400 million federal grant that would have created high-speed passenger rail service between Cleveland, Columbus, and Cincinnati.

Newly elected Republican Florida Gov. Rick Scott had to defend his opposition to a proposed passenger rail plan before the Florida Supreme Court, which decided that the governor was not compelled to accept a $2.4 billion federal grant and was not bound by a 2009 state legislative vote to accept federal money that had not yet been appropriated. And the newly elected Republican governors in Wisconsin and Ohio contended that personal vehicle transportation was still more cost effective, more convenient, and faster for their resident motorists.

Farther west, California is moving forward with its 800-mile high-speed rail project—running from the Central Valley in Southern California to the

Bay Area, Fresno, Los Angeles, and San Diego. However, skeptics are already voicing concern about the price tag. The proposed $43 billion in 2009 for the project has now escalated to an estimated $65 billion, according to a public watchdog group called Californians Advocating Responsible Rail Design.

Undoubtedly, the success or failure of passenger rail systems in America will continue as a matter of speculation for years to come. Controversy notwithstanding, though, new specifications for diesel-electric locomotives were recently approved by the Next Generation Corridor Equipment Pool Committee, a collaboration of public and private sector interests created by Congress in 2008 to develop procurement and manufacturing strategies for the nation's next generation of passenger rail cars and equipment. Any state using federal funds for its passenger rail program must now only use equipment that meets these new specifications.

April 2011

Urban Transportation Infrastructure Gets Low Marks in Mobility Report

By Steven J. Storts
Dublin, Ohio

THE recent urban mobility report issued by the Texas Transportation Institute states bluntly—urban areas are not adding adequate roadway or transit capacity, improving operations, or managing traffic demand well enough to keep congestion from growing larger.

Over the most recent three years, the contribution of operations improvements has grown from 260 million to 340 million hours of congestion relief, but delays have still increased by 300 million hours over the same period, according to *The 2005 Urban Mobility Report*. Congestion occurs during longer portions of the day and delays more travelers and goods than ever before, note TTI researchers Tim Lomax and David Schrank, authors of the report.

Despite the slow economic growth and travel in 2003, congestion caused 3.7 billion hours of travel delay and 2.3 billion gallons of wasted fuel—an increase of 79 million hours and 69 million gallons from 2002—to a total cost of more than $63 billion, the report states. And if current fuel prices had been factored into the study, "the total cost would be more like $65 billion," Schrank adds.

Pete Ruane, president of the American Road & Transportation Builders Association, claims that the root cause of traffic congestion in America is the "failure of government at all levels to make the transportation capital investments necessary to keep pace with the mobility demands of an ever-growing U.S. population and economy."

And according to the U.S. Census Bureau, this is no mystery, Ruane adds. Since 1982, the U.S. population and economic growth have driven a 74% increase in vehicle miles traveled. Over the same period, road lane mileage has increased only 6%. "Serious public investment in new public transit, rail, airport, and waterway capacity has similarly been neglected," the ARTBA president points out.

The report's reference to 2.3 billion gallons of wasted fuel due to urban congestion is no small matter, Ruane contends. In fact, Federal Highway Administration data show the wasted fuel to be more than the combined annual motor fuel consumption of Alaska, Delaware, Hawaii, North Dakota, Rhode Island, and Vermont.

The TTI researchers used data from 1982 to 2003 to assess road congestion in cities across the U.S., finding that the number of cities where commuters were stuck in traffic for more than 20 hours a year grew from five in 1982 to 51 in 2003. The annual amount of time the average urban commuter spends in traffic delays increased from 16 hours in 1982 to 47 in 2003, says Lomax, noting that the worst congestion levels increased from 12% to 40% during peak travel periods.

"Mobility problems have increased at a relatively consistent rate during the two decades studied," he explains. "Congestion is present on more of the transportation systems, affecting more of the trips and a greater portion of the average week in urban areas of all sizes, but particularly the larger ones."

Lomax and Schrank do point out, however, that the focus of city and state transportation officials on traffic management techniques saved 336 million hours and $5.6 billion in 2003, compared with 301 million hours in 2002 and $5 billion in 2002. The expedited clearance of wrecks, disabled vehicles, and spills; the use of entrance ramp meters to smooth traffic flow; and coordination of traffic signals are all practices that are proving successful in operations management.

"This new data supports the excellent value state transportation departments are getting from operational improvements, which squeeze maximal efficiency from our existing road system," says Jack Lettiere, president of the American Association of State Highway and Transportation Officials and commissioner of the New Jersey Department of Transportation.

The 2005 Urban Mobility Report concludes that the congestion problem has grown too rapidly and is too complex for only one technology or service to be "the solution." The increasing trends also indicate the urgency for transportation improvements, which should be addressed with a balanced approach, the report recommends.

Citing the need for continued reauthorization of federal aid highway and transit programs, Lomax and Schrank emphasize that more road and public transportation improvement projects are part of the equation, and that transportation planning must allow for greater capacity. Also, the researchers encourage local and state governments to continue their aggressive pursuit of all operations improvements that meet with success.

"The way that travelers use the transportation network can also be modified to accommodate more demand," Lomax and Schrank note. "And there are a variety of techniques that are being tested in urban areas to change

the way that commercial, office, and residential developments occur. These also appear to be part, but not all, of the solution."

Finally, the TTI report calls for realistic expectations. "Large urban areas will be congested," the researchers contend. "Some locations near key activity centers in smaller urban areas will also be congested. But congestion does not have to be an all-day event. Identifying solutions and funding sources that meet a variety of community goals is challenging enough without attempting to eliminate congestion in all locations."

The report further points out that the solutions will vary not only by the state or city where they're implemented, but also by the type of development, level of activity, and constraints in particular subregions, neighborhoods, and activity centers. "Portions of a city might be more amenable to construction solutions," the report explains. "Other areas might use more demand management, efficiency improvements, and land-use pattern or redevelopment solutions."

July 2005

TxDOT Moves Forward with Innovative Transportation Partnership

By Steven J. Storts
Dublin, Ohio

AN HISTORIC change in the way major transportation assets are constructed and financed in Texas is drawing acclaim. What's the attraction? It's an innovative partnership aimed at providing private capital to fund transportation improvements and reduce congestion in the Interstate 35 corridor.

In March, the Texas Department of Transportation and Cintra-Zachry—an international coalition of engineering, construction, and financial firms—formalized an agreement to develop TTC-35, the first element of the Trans-Texas Corridor from Oklahoma to Mexico. Parts of the 600-mile section of roadway will roughly parallel I-35, running north-south through Texas.

The comprehensive development agreement was signed at a ceremony in Austin by TxDOT Executive Director Michael Behrens; Rafael del Pino, executive chairman of Grupo Ferrovial, Cintra's parent company; and David Zachry, chief executive officer of Texas-based Zachry Construction Corporation.

Through the partnership, the state can take advantage of private sector innovation and resources in the development of TTC-35 to reduce congestion, improve safety, and address long-term mobility needs in the I-35 corridor. As envisioned, the multiuse corridor would include lanes for passenger vehicles, trucks, and rail transportation, and dedicated zones for water, electric, telecommunications, and other utility lines.

Cintra-Zachry has proposed to invest $7.2 billion to help build the project, the first phase of which calls for constructing a $6 billion, 316-mile, four-lane divided highway between Dallas and San Antonio by 2010. In exchange for building and operating the highway as a toll facility, the consortium will pay the state an additional $1.2 billion, which it may use to fund road improvements or high-speed and commuter rail projects along the I-35 or TTC-35 corridors.

"Texas is a national example for all states and a leader in unleashing the resources, innovation and efficiency of the private sector to bring transportation improvements to the public faster and at less cost to American taxpayers," says Federal Highway Administrator Mary Peters, who was present during the agreement signing ceremony. She was accompanied by Texas Gov. Rick Perry and Ric Williamson, chairman of the Texas Transportation Commission.

Cintra-Zachry's proposal also includes funding options for a route connecting southeast San Antonio to State Highway 130 and for relocating—to the east—the existing Union Pacific Railroad between San Antonio and Austin. Future projects under consideration include separate lanes for cars and trucks on S.H. 130, a relief route around the west side of Fort Worth, a TTC-35 route from San Antonio to the Rio Grande Valley, and rail service between Dallas and San Antonio.

"The private sector is willing and able to invest in transportation improvements to reduce congestion, improve safety, provide economic development, and protect our quality of life," Williamson points out. "There are many details to be worked out and separate environmental studies must be completed. Without a doubt, the private sector is knocking at our door with a nearly incredible opportunity for Texas."

The agreement authorizes Cintra-Zachry to begin the master development and financial plan, which will guide the development of a new system of roads, rails, and utilities. The plan will include a project list, implementation schedule, and funding options. For each project identified, the consortium will develop a conceptual design plan, preliminary cost estimates, toll feasibility studies, and a plan for complying with environmental requirements.

"We at Cintra and Grupo Ferrovial are delighted to play a role in helping Governor Perry and TxDOT bring billions of investment dollars to Texas and create new jobs for Texans," says del Pino. "In fact, we consider this to be a major jobs producer because estimates show this project will create more than 140,000 direct and indirect jobs. And that's good news for Texas."

The alignment for TTC-35 will not be determined until environmental studies have been conducted by TxDOT and the Federal Highway Administration. The first phase is expected to be completed by next spring. Additional environmental studies will be required to determine the final route alignment before construction can begin.

Although the agreement authorizes a $3.5 million planning effort, it does not set the alignment for TTC-35, authorize construction, set toll rates, or eliminate competition for future services. The master plan will also be

updated regularly to account for environmental, financial, and other factors.

"Zachry has been a long-time supporter of identifying processes to deliver highway projects better, faster, and cheaper for the state," Zachry notes. "We believe the Trans-Texas Corridor will accomplish that and serve as a model for future expansion of the state's highway system."

May 2005

Automated People-Mover System Coming to Washington Dulles Airport

By Steven J. Storts
Dublin, Ohio

MUCH of the engineering innovation showing up in more recent airport construction and expansion projects is targeting customer convenience, specifically, transporting passengers between airline concourses or terminals. Washington Dulles International Airport is the latest facility that will showcase a modern, automated people-mover system in 2008.

Last November, the Metropolitan Washington Airports Authority selected New York-based Sumitomo Corporation of America to construct the state-of-the-art APM system, a $200 million contract that includes design, engineering, construction, and vehicle delivery, in addition to the operations and maintenance of the new system for five years. SCOA will partner with Mitsubishi Heavy Industries—a manufacturer of ships, airplanes, heavy equipment, and transit systems—to supply and build the APM network.

Together, Sumitomo and MHI have 30 years of experience in developing people-mover networks, with seven systems currently installed in places such as Singapore, Hong Kong, and Japan. The team recently entered the construction phase to build a "Crystal Mover" system for Miami International Airport's North Terminal.

Dulles International's version of the Crystal Mover will have four stations with trains riding on rubber wheels below ground for two miles. The automated system will connect the main terminal with Concourses A, B, and C. Departing passengers using the APM will have already cleared security and will remain "secure" during their brief ride to airport terminals and gates.

"APMs speed the flow of people and play a valuable role in the future efficiency and security of our nation's airports," says Gino Antoniello, SCOA vice president for transportation systems. "We are pleased to introduce the Crystal Mover to the U.S. and be part of this important project in the nation's capital."

The same APM technology is currently utilized in the Far East and other locations. The clean lines and unique diamond shape of the Crystal Mover makes it an aerodynamic work of art, according to Sumitomo officials, who tout it as a pleasing, high-quality system with a solid record for efficient, safe operation in a wide range of environments. The Crystal Mover's high-tech interiors also provide exceptional visibility and a smooth, comfortable ride.

In addition to Alcatel Transport Automation Solutions serving on the Dulles project team as the automatic train control supplier, SCOA has teamed with more than 20 local subcontractors in the Washington, D.C. area, 18 of which are companies certified as local disadvantaged business enterprises.

These include Eastern Electrical, a Virginia-based company that will perform electrical and communications installations; Prince Construction Co. Inc., a Washington, D.C.-based company that will supply and install rebar and concrete; and VARCO/MAC, a Maryland-based company that will provide the power delivery for the APM system.

MWAA officials point out that Sumitomo has a strong track record for organizing sophisticated project teams that enhance LDBE companies and programs.

"We are proud of the LDBEs we have partnered with on the Dulles project, and we look forward to working with MWAA and the local community to maximize the economic benefits to the region," Antoniello notes. "Our experience has proven that local companies are critical to the success of large projects."

SCOA, a wholly owned subsidiary of Sumitomo Corporation with 12 offices nationwide, has developed, managed, and delivered transit systems in California, Illinois, Maryland, New York, and Washington, D.C., including cities such as Chicago, Los Angeles, and New York City.

March 2003

Recent Study on Pedestrian Safety Draws Criticism from AASHTO, States

By Steven J. Storts
Dublin, Ohio

CONTROVERSY continues over a report from a national advocacy group alleging that state transportation departments are not dedicating enough federal funds to pedestrian safety.

In its latest study, the Surface Transportation Policy Project faults states for dangerous street designs and a lack of investment in pedestrian safety, citing 4,955 deaths and an estimated 78,000 injuries that occurred in 2001, up from the toll of 4,843 in 2000. This is the first yearly increase in pedestrian deaths since 1955.

STPP's *Mean Streets 2002* report also ranks the most dangerous metropolitan areas for pedestrians, according to the number of deaths per capita and the amount of walking in the community. The national study cites the metropolitan area of Orlando as the most dangerous region for walking.

The Pedestrian Danger Index (PDI) shows that after citing the Orlando region, the most dangerous places (in ranked order) for pedestrians are Tampa, West Palm Beach, Memphis, Miami, Jacksonville (Florida), Houston, Phoenix, Dallas-Ft. Worth, and Nashville. According to STPP, the deadliest metro areas tend to be those in newer, high-growth areas in the Sunbelt states that boomed in the late 20th century.

The study notes that while only about 5% of all trips are made on foot, about 12% of all traffic deaths are pedestrians, making walking one of the most dangerous modes of travel. *Mean Streets 2002* looks at where pedestrian deaths are occurring, what makes streets dangerous, and how states are responding to those dangers. More significantly, the report, which analyzes federal safety and spending databases, contends that less than 1% of federal transportation dollars go toward protecting pedestrians.

In fact, the study found that nine of the top 10 most dangerous metro areas for walking are below the national average in spending of federal funds on pedestrian safety, averaging just 62 cents per person. The national average is 87 cents per person. Orlando, which has ranked high in the PDI in the past, is now spending well above average at $1.89 per person.

Additionally, STPP's analysis found that the top 10 most deadly roads for pedestrians closely correspond to the top 10 most dangerous areas for walking. As ranked by the PDI, seven of the 10 deadliest roads are located in those same dangerous metro areas. The deadliest roads tend to be high-speed arterials with high traffic volumes and without visible crosswalks, adequate sidewalks, or walking amenities.

It is STPP's finger-pointing at the allocation of transportation dollars that has drawn targeted responses from state transportation departments and national organizations such as the American Association of State Highway Transportation Officials.

AASHTO and several state DOTs are defending their longstanding commitment to pedestrian safety and overall highway safety and citing pedestrian- and bicycle-safety improvements through better engineering, context-sensitive design, and the Federal Transportation Enhancements Program.

They also claim that STPP's reported allegations of insufficient spending ignored any funding dedicated to the issue by municipalities or counties, even though those government entities own most of the roads in the urban areas where pedestrians are most prevalent. Though no national figure is readily available, according to AASHTO, Wisconsin transportation officials note that in their state, 80% of pedestrian fatalities occur off of state-system roads.

"Adding those [locally spent] funds to the totals spent for pedestrian safety would not only better reflect reality, it would also give some credit to many local programs that are making breakthroughs in pedestrian safety," says AASHTO Executive Director John Horsley.

Further, state DOTs have invested heavily in such programs, including California's "Safe Routes to School" initiative, which will spend $67 million over three years on bike and pedestrian projects, and Wisconsin DOT's investment of $22 million to $25 million annually on pedestrian safety improvements.

AASHTO is among several organizations that have worked over the past year with the Federal Highway Administration on a national public service campaign on pedestrian safety. Pedestrian-safety issues are also a viable part of AASHTO's Strategic Highway Safety Plan.

"Highway fatality numbers of all kinds—in or out of vehicles—are simply too high," Horsley emphasizes. "Pedestrian safety is part of this larger picture. AASHTO and its member state transportation departments are as dedicated to saving lives on our roadways as we are to providing ever-improving infrastructure for travelers."

February 2003

President Bush Seeks Streamlining of Planned Transportation Projects

By Steven J. Storts
Dublin, Ohio

EMPHASIZING transportation infrastructure as "essential to the well-being of the American people" and a strong economy, President Bush recently issued an executive order to promote environmental stewardship and streamline the review and development of high-priority transportation projects.

The executive order establishes an interagency Transportation Infrastructure Streamlining Task Force to ensure that environmentally sound projects are not held up unnecessarily by inefficient review procedures. The task force will primarily focus on the environmental reviews of specific, high-impact transportation construction projects—airport, highway, transit, and intermodal.

Members of the task force, chaired by U.S. Transportation Secretary Norman Mineta, will include the federal secretaries of transportation, agriculture, commerce, the interior, and defense, the administrator of the U.S. Environmental Protection Agency, and the chairmen of the Advisory Council on Historic Preservation and Council on Environmental Quality.

Upon issuing the new directive, both the president and Mineta pointed to higher costs and delays spurred by lengthy reviews of environmental and historic impacts of proposed construction. "Too many transportation projects become mired for too long in the complex web of clearances required by federal and state law," Mineta noted in a letter to state governors and congressional committee members. "This initiative is intended to make our transportation investments more efficient, helping to ease congestion and reduce pollution."

In 2001, the median time to process environmental documents for major highway projects was four-and-a-half years, according to Mineta, who adds that over the past 10 years, the average environmental review time for major transit projects was three years and 10 months. He cites the same review process for airport runways as taking about one-third of the 10-year planning time for a new commercial service runway. In summary, the transportation secretary says the total time required for a major new highway or airport to go from the planning stage to completion averages 13 years and 10 years, respectively.

As part of the environmental streamlining initiative, agencies and departments now must "formulate and implement administrative, policy, and procedural mechanisms that promote the timely and environmentally responsible completion" of transportation project reviews.

Also, the transportation secretary is requested to coordinate with agencies to "advance environmental stewardship through cooperative actions with project sponsors that promote protection and enhancement of the natural and human environment in the planning, development, operation, and maintenance of transportation facilities and services."

In response to predicted opposition from various environmental groups, Mineta emphasizes that all activities flowing from the new directive will still be required to comply with the National Environmental Policy Act and other environmental statutes, and that the president's order goes beyond just compliance.

In fact, Mineta says the executive order directs the U.S. Department of Transportation to continue and expand environmental stewardship for transportation projects. Transportation officials also contend that the new initiative builds upon ongoing efforts by DOT and other federal agencies and their transportation partners to streamline the decision-making process in response to the Transportation Equity Act for the 21st Century and the Aviation Investment and Reform Act for the 21st Century.

As one of the first tasks required by the executive order, DOT will designate a list of specific transportation streamlining projects that should receive expedited agency reviews. Mineta has already asked for project nominations from state governors, local authorities such as airport directors and metropolitan planning organizations, and other transportation leaders.

"Working with state and federal agencies, we expect to help cut through red tape and promote effective strategies for taking time out of the decision-making process," the transportation secretary notes. As part of its responsibilities, the task force will monitor work on expedited projects and assist agencies in their environmental review processes, evaluate all projects deemed high priority, and identify and promote policies that can effectively aid in streamlining.

Based on its experience in accelerating review of the initial list of high-priority projects, DOT will then develop a series of "best practices" for streamlining the decision-making process on all transportation infrastruc-

ture projects and enhancing environmental stewardship.

At least once a year, the task force will report to the president, describing the results of the coordinated and expedited reviews on a project-by-project basis and identifying those procedures and actions that proved to be most useful and appropriate in streamlining the review of the projects. Likewise, any laws or regulations, procedures, and other requirements that may impede task force actions must be reported, too. Additionally, the executive order calls for recommendations that can help simplify and harmonize streamlining requirements and resolve interagency controversies at the local, state, or federal levels.

November 2002

Virginia Oceanside Travel Made Easier Through Engineering Marvel

By Steven J. Storts
Dublin, Ohio

WHAT engineering marvel allows you to view the mighty Atlantic Ocean surf and the beauty of Chesapeake Bay at the same time, while allowing travel convenience between Virginia Beach, Norfolk, and destination points north of Wilmington, Delaware? Why, of course, it's the Chesapeake Bay Bridge-Tunnel.

Following its opening in April 1964, the bridge-tunnel was selected "One of the Seven Engineering Wonders of the Modern World" in a worldwide competition involving more than 100 major projects. Not surprising, more accolades followed, including the project's distinction in 1965 as an "Outstanding Civil Engineering Achievement" by the American Society of Civil Engineers.

To date, more than 67 million commercial and passenger vehicles have crossed the bridge-tunnel. The original bridge-tunnel (now the northbound span), constructed at a cost of $200 million, crosses over and under open waters where the Chesapeake Bay meets the Atlantic Ocean. The waterway connection provides a direct link between Southeastern Virginia and the Delmarva Peninsula (Delaware plus the Eastern Shore counties in Maryland and Virginia) and cuts 95 miles from the journey between Virginia Beach and Wilmington.

From shore to shore, the Chesapeake Bay Bridge-Tunnel measures 17.6 miles and is considered the world's largest bridge-tunnel complex. Construction required undertaking a project of more than 12 miles of low-level trestle, two one-mile tunnels, two bridges, almost two miles of causeway, four man-made islands, and 5-1/2 miles of approach roads, totaling 23 miles.

Although the individual components are not the longest nor largest ever built, the bridge-tunnel is unique in the number of different types of structures it includes. In addition, construction was accomplished under severe conditions imposed by hurricanes, northeasters, and the unpredictable Atlantic Ocean.

To meet future traffic demands, provide for safer crossing, and allow for proper maintenance and major repair projects, the construction of an adjacent, parallel crossing project began in summer 1995 and opened to four-lane traffic in April 1999. No less challenging than construction of the original span, this project once again drew focus to a remarkable achievement in construction engineering.

With construction costs totaling about $197.2 million, the adjacent structure (now the southbound span) expanded the two-lane facility into four lanes and included expansion of toll plazas, trestles, bridges and roadways, and maintenance and repair on the original span. The project, however, did not include the expansion of the four man-made islands nor additional tunnels, the latter of which will be constructed at a later date.

The expansion project was financed by monies from the Chesapeake Bay Bridge and Tunnel District and through the sale of additional revenue bonds. More significantly, no local, state, or federal tax monies were utilized for the construction costs of either span of the bridge-tunnel.

The bridge-tunnel was officially named the Lucius J. Kellam Jr. Bridge-Tunnel in August 1987, in honor of the person who spearheaded the project as it moved from a vision to a reality. Kellam served as a member of the Chesapeake Bay Bridge and Tunnel Commission from 1954 until his death in 1995. In order to preserve the structure's identity and name recognition, however, it continues to be known as the Chesapeake Bay Bridge-Tunnel.

June 2000

A New Dawn Rises for High-Speed Rail Transportation in Florida

By Steven J. Storts
Dublin, Ohio

PAST failures in high-speed rail development have been largely the result of an unrealistic concept that these systems could be totally built without public funding, according to Florida Overland Express, the designated franchisee of the Florida Department of Transportation. FOX is putting into place a major high-speed rail system within the state.

"They all basically failed for the same reasons—no public will, no strong leadership, no strong local support legislatively, and no commitments of local funding," says Eugene Skoropowski, director of rail planning for FOX. A licensed architect who has 28 years of experience in the transportation business, Skoropowski also currently serves as director of transportation services for Fluor Daniel. He says Florida is different.

"They have a public policy enacted in the 1980s, the Florida High-Speed Rail Act, followed by the Florida High-Speed Rail Act of 1992," Skoropowski explains. "Their public program designated the state transportation department to carry out their high-speed rail operation, and Florida has committed $70 million a year for 40 years as the state's share of the investment."

The private sector also has responded. According to Skoropowski, FOX was chosen because of its proven technology and the financial depth and experience of the firms that comprise it: Fluor Daniel, largest publicly traded engineering and construction firm in America; Odebrecht Contractors of Florida, the U.S. arm of a large, international Brazilian company; Bombardier, largest railcar manufacturer in North America; and GEC Alsthom, manufacturer of the successful TGV (train à grande vitesse) trains that were initially developed in France.

FOX will design, build, operate and maintain this project for a term of 40 years as a private transportation business, unsubsidized. The $70 million investment, primarily to make the debt service payments, is secured by public ownership of the fixed facilities. "The state will invest in the system and will own the infrastructure," Skoropowski emphasizes. "In essence, shared risk, shared reward."

When Florida put together this public/private partnership, he says, it achieved something that is very unusual in the public sector—creation of a business that not only has the indirect benefits that any public sector project accrues, but also has a direct cash stream back to the public entity that is making the initial investment.

"The cash that comes back to the state is more than quadruple the state's net capital investment," Skoropowski notes. "After the bonds are retired in 30 years, the project turns into a significant revenue stream for the state. And the state's annual $70 million investment buys a $5 billion intercity transport system."

As the first, new, intercity passenger rail system in North America in more than 100 years, the Florida high-speed rail system employs a state-of-the-art TGV system covering 320 miles with trains operating at 200 miles per hour. "The safest mode of transportation on the planet," Skoropowski touts, "there has not been one passenger fatality in 16 years with one-half billion passengers. The safety factor helps to make it bankable."

The project will connect Tampa, Orlando and Miami, including stops at the international airports in both Miami and Orlando. Trains will connect at the airports with airlines, perhaps on one ticket, with baggage moved as easily from train to plane as it now moves from plane to plane. There will be perhaps as many as eight stations on the system, and U.S. Customs Service areas will make it convenient for international travelers to go directly to the train.

Requiring 162 bridges (mostly highway) and 60 miles of roads in addition to the train stations, this project will require about 10 years to complete. The first segment of the system will most likely be from Orlando to Miami, Skoropowski points out, because rights of way are more readily available for construction. The system will open in 2006 to Tampa—with a benchmark year of 2010—expecting to carry about 6.4 million passengers per year, just slightly over 10% of the potential travel market in that transportation corridor.

"By rethinking traditional train station logistics and circulation, the design team decided on a plan more similar to airports," Skoropowski says, "with upper-level departures and lower-level arrivals to separate traffic. Stations will be located so they are easily accessible, not forcing people to travel on the most congested roads to the most congested places at the most congested times, just to dump their automobiles."

Additionally, he says, the stations will house totally enclosed rotundas with climate-controlled platforms on both sides of the trains, allowing passengers to get off on one side before others enter from the opposite side.

In a search for solutions to issues that may not yet have arisen, Skororpowski says, FOX officials have built constituency groups to work with the local communities, the partnership in Florida, and all levels of government. “They have tried to make this project an example of the best cooperative effort to build a project that satisfies the needs of all the interests,” he explains. “When consensus cannot be reached, they are committed to the least invasive and least intrusive solution.”

May 1998