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The Congestion Problem
by Regina McElroy and Rich Taylor

What are the causes, what are the consequences, and what can be done?



(Above) "Congestion Ahead" signs like this one are all too familiar to motorists, but the transportation community is exploring ways to avoid the tagline, "Next 20 Years."

All road users have experienced traffic congestion, some more than others. Most probably have an intuitive sense of what congestion is and what causes it. Americans know it makes a difference in their lives because it makes them wait in their cars, losing the opportunity to do other things.

Congestion also influences where they choose to live and where they work. In 2003, in Washington, DC, congestion robbed the average commuter of 69 hours. This is the equivalent of nearly 2 workweeks every year that could have been spent with family or friends, volunteering in the community, pursuing a hobby, or even simply resting. Commuters in other major cities report similar losses.

The business community understands congestion. Retailers, manufacturers, and shippers have to adjust their operating practices to compensate for time wasted in traffic. Because of congestion, transporting goods and services to their destinations takes longer. The associated surprise factor makes congestion even more problematic. Individuals must allow more time to arrive at important appointments. When calculating the time to travel to a given location, they must add a "buffer factor." Often, this means that they arrive early and, once again, must wait.

Businesses interested in just-in-time delivery also must allow a buffer factor. In recent years, the high levels of

economic prosperity that this country has enjoyed have been built on the efficiencies of just-in-time delivery. Finely tuned production and distribution systems have enabled companies to operate with tight margins and therefore a competitive edge. Boxes of toothpaste no longer sit in storage rooms waiting for the tubes on the store shelves to be sold. Rather, the retailer and manufacturer know when a tube will be sold and more will be needed. The toothpaste is shipped to the retailer so that it will arrive just in time. Some manufacturers have built their marketing plans on just-in-time delivery. Computers are built to order, for example, and shipped only days after an order is placed. When just-in-time delivery schedules are not met, consumer prices increase and services decrease. Dependable freight transportation enables businesses to be responsive to changes in demand, reduce product cycle times, and decrease inventory holdings.

A Time to Act

Dissatisfaction with the effects of traffic congestion is growing. Not only is congestion increasing in major cities, it is spreading to medium-size communities as well. In many cities, congestion is becoming a subject of political debate.

In October 2006, Secretary of Transportation Mary E. Peters summed up the challenge: "Mobility is one of our country's greatest freedoms, but congestion across all of our transportation modes continues to limit predictable, reliable movement of people and goods, and poses a serious threat to continued economic growth. Congestion no longer affects only roads in larger urban areas, but is spreading across America."



U.S. Transportation Secretary Mary E. Peters is standing with U.S. Senator Lindsey Graham and Brad Dean, president and CEO of the Myrtle Beach Area Chamber of Commerce, at a busy intersection along the heavily congested primary route into Myrtle Beach, SC. Planned construction of the I-73 project would help relieve traffic congestion on this road.

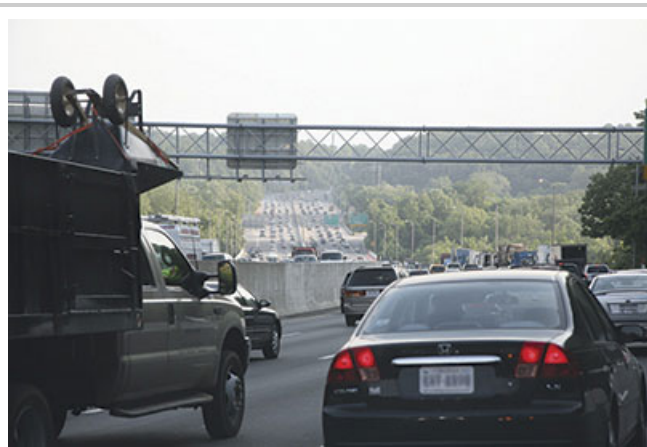
The community of transportation professionals has developed methods and technologies to reduce

congestion by making the transportation system operate more efficiently. This issue of Public Roads focuses on the traffic congestion problem and the U.S. Department of Transportation's (USDOT) Congestion Initiative. Recognizing the growing issue, the USDOT leadership chose congestion reduction as a top transportation priority. In May 2006, USDOT announced the *National Strategy to Reduce Congestion on America's Transportation Network* (otherwise known as the Congestion Initiative). This initiative focuses on meaningful, near-term reductions in congestion.

The Dimensions of Congestion

Congestion usually is defined in terms of excess vehicles on a portion of roadway at a particular time resulting in speeds that are slower — sometimes much slower — than normal or "free flow" speeds. Travelers experience congestion as unintended stopped or stop-and-go traffic. Congestion in the top 85 urban areas (in terms of population) has grown in the past 20 years — in duration, extent, and intensity.

According to Tim Lomax, a research engineer with the Texas Transportation Institute (TTI), "Since we began analyzing congestion data back in 1982, congestion has grown in pretty much every dimension."



Congestion causes concern for motorists and freight haulers who may be attempting to make just-in-time deliveries.

The *duration* of congestion has increased from 4.5 hours to 7.0 hours per day from 1982 to 2003. Specifically, duration is the percentage of the day with speeds below a threshold of 72 kilometers per hour, kph (45 miles per hour, mph) on a freeway, for example, and 48 kph (30 mph) on an arterial. Peak periods typically stretch for 2 or 3 hours in the morning and evening in metropolitan areas above 1 million people. Larger areas can see 3 or 4 hours of peak periods.

The *extent* of congestion has grown from 33 to 67 percent of highway travel from 1982 to 2003, indicating that congestion affects more of the transportation

system. Many cities, such as Los Angeles, CA, or New York City, NY, have a few sections of road where any daylight hour might see stop-and-go traffic. Weekend traffic delays have become a problem in recreational areas, near major shopping centers and sports arenas, and on some constrained roadways.

The *intensity* of congestion as measured by the average delay penalty (the extra travel time each day due to congestion) has increased from 13 to 37 percent in the past 20 years. In other words, peak-period trips required 37 percent more travel time in 2003 than a free-flow trip at midday, up from 28 percent 10 years earlier. Trips to work and school take longer, but so do shopping trips, doctor visits, and family outings.

Most of the demographic factors that influence travel demand suggest that without decisive policy changes, congestion will continue to worsen. According to U.S. Census Bureau projections, the total U.S. population is expected to grow by nearly 30 percent between 2000 and 2030 (from 281 million to 363 million). This growth will not be evenly distributed geographically. Although population in the Northeast and Midwest is expected to grow by less than 10 percent, the South and West are projected to grow by more than 40 percent. "Sunbelt" cities are heavily highway-oriented, with little or no rail, light rail, or Bus Rapid Transit service to absorb the increased travel demand. Vehicle miles of travel continue to grow at an annual rate of about 1.7 percent.

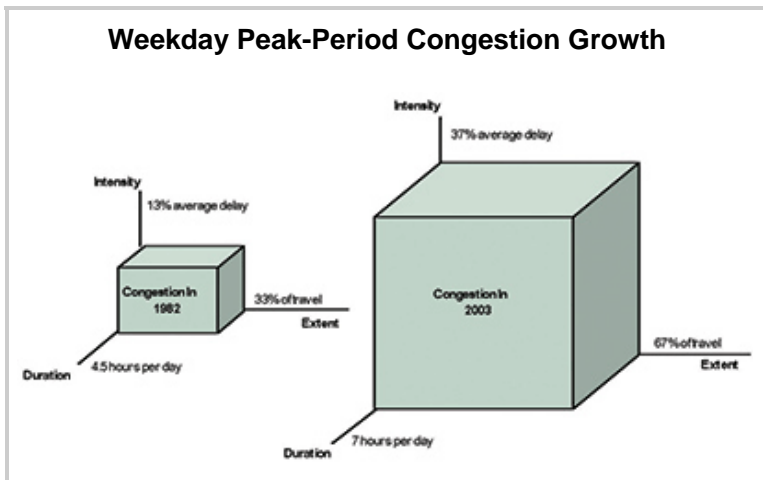
A Virtual "Congestion Tax" on Large Urban Areas

Metro Area	Total Cost (\$ millions)	Cost Per Peak Traveler
Los Angeles-Long Beach-Santa Ana, CA	\$10,686	\$1,598
San Francisco-Oakland, CA	\$2,604	\$1,224
Washington, DC-VA-MD	\$2,465	\$1,169
Atlanta, GA	\$1,754	\$1,127
Houston, TX	\$2,283	\$1,061
Dallas-Fort Worth-Arlington, TX	\$2,545	\$1,012
Chicago, IL-IN	\$4,274	\$976
Detroit, MI	\$2,019	\$955
Miami, FL	\$2,485	\$869
Boston, MA-NH-RI	\$1,692	\$853
Phoenix, AZ	\$1,295	\$831
New York-Newark, NY-NJ-CT	\$6,780	\$824
Philadelphia, PA-NJ-DE-MD	\$1,885	\$641

The Sources of Congestion

What causes the day-to-day frustrations of traffic congestion? With the exception of physical bottlenecks, the sources of congestion occur with annoying irregularity; nothing is ever the same from one day to the next. In addition to causing delay to travelers, the sources of congestion produce another effect: variability in congested conditions. This variability in congestion is known as travel time reliability, or how reliable day-to-day travel conditions are. Reliability is of intense interest for transportation professionals who deal with congestion.

By its very nature, roadway performance is consistent and repetitive and yet highly variable and unpredictable. It is consistent and repetitive in that the peak usage periods occur regularly and can be predicted with a high degree of reliability (the relative size and timing of rush hour is well known in most communities). At the same time, it is highly variable and unpredictable in that, on any given day, unusual circumstances ranging from flat tires to crashes can change the performance of the roadway dramatically, affecting travel speeds and throughput volumes.



The traveling public experiences these large performance swings, and their expectation of unreliable traffic conditions affects both their view of roadway performance and how, when, and where they choose to travel. If a road is known to have highly variable traffic conditions, a traveler using that road to catch an airplane routinely leaves extra time to get to the airport. In other words, according to the Federal Highway Administration's (FHWA) 2005 *Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation*, the reliability of this traveler's trip is related directly to the variability in the performance of the route taken.

The Costs of Congestion

The cost of congestion for the 85 urban areas in TTI's *The 2005 Urban Mobility Report* was estimated to be \$63 billion based on the 3.7 billion hours of delay and

2.3 billion gallons of wasted fuel calculated in those areas. This congestion cost to the U.S. economy in 2003 was equivalent to 0.6 percent of the gross domestic product (GDP). Moreover, these congestion costs are growing at 8 percent per year, more than double the growth rate of the economy, so that in 20 years congestion costs are expected to rise to 1.6 percent of GDP.

But these published estimates likely account for less than half of the overall costs of transportation congestion. Additional costs include the following:

- Costs of congestion in rural areas and smaller cities outside the 85-city TTI sample
- Loss of productivity due to the economic consequences and smaller labor pools resulting from commuting time/costs
- Safety costs
- Vehicle wear and tear
- Costs of freight delays
- Inventory costs of larger stocks required by congestion-related unreliability in shipment times
- Costs to passengers of leaving early for a destination because of congestion-related unreliability in travel times

The Cost of Congestion to the Economy of the Portland Region, a 2005 report prepared for the Portland [Oregon] Business Alliance, the Port of Portland, and the Oregon Department of Transportation, concluded that increasing congestion would "significantly impact the region's ability to maintain and grow business, as well as our quality of life." More specifically, the report stated that "being a trade hub, Portland's competitiveness is largely dependent on efficient transportation, and congestion threatens the region's economic vitality. Businesses are reporting that traffic congestion is already costing them money."

The Congestion Initiative

USDOT's Congestion Initiative focuses on six areas of interest with corresponding activities that have the potential to reduce congestion in the short term and to build the foundation for successful longer term congestion reduction efforts.

Relieve Urban Congestion. USDOT is seeking to enter agreements with model cities, Urban Partners, that will agree to implement an aggressive, innovative, and comprehensive policy response to urban congestion. The response will include a congestion-pricing demonstration

supported by enhanced transit services; increased use of telecommuting, flex scheduling, and other travel demand strategies; and deployment of advanced technologies.

Remove Obstacles to Private Sector Investments. USDOT will work to reduce or remove barriers to private sector investment in the construction, ownership, and operation of transportation infrastructure. USDOT is using existing Federal program authorities to encourage the formation of PPPs and has provided information and expertise to State leaders contemplating an expanded role in transportation for the private sector.

Promote Operational and Technological Improvements. USDOT is working to advance low-cost operational and technological improvements aimed at congestion reduction. USDOT is encouraging and supporting State efforts to (1) provide real-time traffic information to all users; (2) deploy incident management strategies such as the formation of roving response teams, quick clearance, and "Move It" laws; (3) improve traffic signal timing; and (4) improve work zone safety and mobility.

Establish a "Corridors of the Future" Competition. USDOT is accelerating development of multi-State, multiuse transportation corridors through a competition to select three to five major growth corridors in need of long-term investment. This activity will accelerate development of major projects to reduce congestion on interstates and rail capacity projects.

Target Major Freight Bottlenecks and Expand Freight Policy Outreach. USDOT is working to find and implement solutions to freight transportation and border congestion that will facilitate trade and travel without compromising highway safety or the vital mission of securing America's borders. This area of interest emphasizes a Southern California Freight Outreach effort that will broker consensus on immediate and longer term transportation solutions by bringing together key stakeholders. If successful, this approach will be made available to other locations.

Accelerate Major Aviation Capacity Projects and Provide a Future Funding Framework. USDOT is addressing congestion in the aviation system by designing and deploying the Next Generation Air Transportation System. This system will provide more capacity and less congestion. In addition, USDOT will advance reforms — via the Federal Aviation Administration's reauthorization proposal — that lead to improved management of airport and airspace congestion. Priority treatment and agency resources will be given to projects that

enhance aviation system capacity, and environmental reviews for aviation capacity projects will be streamlined.

The report calls for significant investment in transportation and congestion education, stating that "failure to invest adequately in transportation improvements will result in a potential loss valued at \$844 million annually by 2025 — that's \$782 per household — and 6,500 jobs. It equates to 118,000 hours of vehicle travel per day — that's 28 hours of travel time per household in Oregon annually." The report also cited specific reactions from the business community to the increased congestion in the Portland area. For example, Sysco Food Services, Inc., opened a new regional distribution center in Spokane, WA, to improve service to its market area because serving its market from Portland was taking too long. Another company, OrePac Building Products, "has increased inventories by 7 to 8 percent to mitigate for congestion delays, which represents a lost opportunity for other investment."

Can the Level of Congestion Be Reduced?

A useful way of thinking about the congestion problem might be to consider transportation as a resource that is incrementally distributed to customers. At present, the resource is limited; there is not enough to meet everyone's requirements. Society has several options: Make more of it (add new capacity), use it more productively (operate the system at peak condition and performance), provide alternatives to highway travel (encourage traffic demand management strategies, such as telecommuting) and ensure that consumption levels accurately reflect individual and commercial requirements and preferences (apply direct charges to users).



Construction zones, as announced by this "Road Work Ahead" sign, as well as inclement weather and special events can create capacity constraints that lead to nonrecurring traffic congestion.

The transportation industry is evolving to pursue new ways to finance, design, build, and operate highways. But the industry faces significant challenges. First, the physical system is out of sync with current demands, but capacity additions are increasingly difficult to implement. Second, some in the transportation community have yet to bring their business practices and operating procedures into alignment with the postinterstate construction era (with a heavier emphasis on operating the existing infrastructure to peak performance); their business models are geared more toward project delivery. The transportation industry tends to focus more on outputs than outcomes and may have a difficult time assessing the relative merits of operational strategies and implementing practices to improve operations. And, third, customers fail to link their travel decisions to the resulting impacts of adding additional trips to an already strained system or to the additional costs of these impacts.

Making More of It: Strategic Addition of Capacity

At the beginning of the interstate era, Federal funding provided incentives to build new highways. Today, concerns about air pollution, noise, and urban sprawl often stand in the way of capacity additions. Equally significant, adding new capacity can be enormously expensive and physically challenging.

Despite the barriers, new construction that serves critical strategic purposes must go forward or system performance will continue to decline. The demand for new highway capacity is not only increasing but also is dynamic in nature and location. For example, locations that were rural communities in the early 1960s are now major metropolitan areas. Trade routes are not just east-west, but now, because of the success of the North American Free Trade Agreement, are also north-south. Further, enormous increases in international trade have expanded freight access requirements at seaports and major cargo hubs.

Although widespread capacity increases are a thing of the past, many of the barriers may be addressed through increased expenditures. Environmental concerns may be mitigated and physical challenges overcome (for example, through tunneling). However, the resources to fund such improvements simply are not available through traditional sources. For this reason, many professionals in the transportation community are enthusiastic about the opportunities potentially afforded by public-private partnerships (PPPs) and road pricing. Both of these options provide effective ways of financing, managing, and operating roads while reducing the requirement for public sector contributions. Included

within this issue of Public Roads are articles on each of these strategies.

Using It More Productively: System Operations and Management

Capacity constraints arise when physical capacity is insufficient and when capacity is temporarily taken away due to traffic incidents, work zones, inclement weather, or special events. As traffic volumes have grown over time and physical capacity has remained relatively constant, the system has become less able to absorb "surprise" — or nonrecurring — events. In the realm of managing the highway system, the margin for error is very small and continues to decline.

"Operating and managing the system to maintain peak performance is imperative," says FHWA Associate Administrator for Operations Jeffrey F. Paniati. "We must operate the system to maximize system performance in the first place and be prepared to take actions to recover as quickly as possible when disruptions occur. Operational strategies can make a major contribution to effective performance of the highway system."



Recurring congestion like the long traffic backup shown here can be improved by alleviating bottlenecks and by better timing of traffic signals.

Such strategies include managing temporary disruptions in a way that will return the system to full capacity quickly; ensuring more effective day-to-day operations through coordinated and up-to-date traffic signal timing and operational improvements to relieve bottlenecks; and providing real-time information about the system so that travelers can make immediate decisions about when, where, and how to travel, and transportation agencies can make immediate adjustments to improve system operations.

Despite the availability of management and operations (M&O) options and their proven benefits, it appears that the transportation community largely has yet to embrace

them fully. Much remains to be done before M&O strategies are routinely considered as viable and appropriate strategies for improving highway system performance. This situation arises because many agency organizational structures are legacies of the interstate construction era. In other words, many agencies have not yet transitioned to the current reality that calls more for operating the existing system efficiently than it does for expanding the system. For the most part, many of today's transportation agencies continue to emphasize the delivery of capital *projects*, not *services*. Consequently, funding priorities reflect projects and not services, and agency operating practices are not supportive of delivering service-based M&O programs.

FHWA coined the term "the 21st century DOT" to refer to departments of transportation (DOTs) that are well positioned to bring about the optimal operation of their highway facilities. Many agencies are on their way toward becoming 21st century DOTs by changing their cultures, the ways they operate, and the ways they make decisions. Currently underway are two efforts that will provide extra impetus in this natural evolution.

The 21st Century DOT

Twenty-first century DOTs place a strong emphasis on effectively managing and operating their existing systems to peak performance. First and foremost, these agencies are *customer focused* and *performance driven*. They have identified their customers (passengers as well as freight), and they know what those customers need. The agencies are accountable to their customers, actively obtaining feedback and responding accordingly. Outcomes — the effects of actions on system reliability — are more important to the 21st century DOT than are outputs — the miles of road resurfaced. The 21st century DOT understands that it is in the business of providing mobility.

The 21st century DOT places a premium on *real-time traveler information*. Such agencies understand that this information helps them to better respond to their customers' needs and to better measure performance. These agencies use the information to locate deficiencies so that they may make the appropriate responses. In addition, these agencies seek to share real-time information with travelers using dynamic message signs, telecommunications (511 travel information), and the Internet so that travelers can make informed decisions about when and how to travel.

The 21st century DOT is organized to anticipate potential service disruptions and to eliminate or reduce the consequences, bringing the system back to normal operations more quickly; it is *proactive*. For example, the agency plans ahead for weather events and is prepared to respond with anti-icing

tactics and quick broadcast of road closures. Not only does the 21st century DOT think ahead, it also is *responsive*. The agency recognizes that delays can happen any time and any place, and for many reasons. Therefore, it manages the system 24 hours a day, 7 days a week.

An agency concerned about improving operations requires a regional, integrated *systems approach* to managing the transportation system. Such an agency recognizes that travelers care about the quality and reliability of their trips from end to end regardless of which agency or jurisdiction "owns" the roadway. The 21st century DOT provides seamless regional services without sacrifice to jurisdictional controls or boundaries. The performance of the transportation system largely is determined by the ability of agencies to work cooperatively by sharing data and coordinating responsibilities.

Finally, the 21st century DOT is *innovative*. The agency understands that M&O strategies designed to promote operating efficiencies are facilitated by new technologies that gather information (for example, surveillance and detection cameras); share information with travelers through 511, dynamic message signs, in-vehicle devices, and satellite systems; control traffic (for example, advanced traffic signal timing and ramp meters); collect payments (for example, electronic toll tags); and share information within and across agencies to support coordinated regional and multiagency operations.



At the end of the day, seamless cooperation between State, regional, and local agencies helps keep busy highways, like this one with heavy traffic in both directions, flowing smoothly.

First, the transportation community is exploring approaches for bringing M&O into the planning process. Underscoring the move to link planning and operations are provisions in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) calling for both the congestion

management process and the long-range transportation plan to reflect consideration of M&O strategies. FHWA is advancing a comprehensive program that assists DOTs and metropolitan planning organizations in implementing SAFETEA-LU provisions. In a nutshell, the program lays out a path for transportation agencies to move from the traditional project-oriented planning approach to an approach that is based on outcomes.

Second, FHWA has established a robust program providing guidance, technical assistance, and training in performance measurement. Just as outcome-based performance measures provide the means for linking planning and operations, so too can they link transportation agencies directly to their customers. Performance information explains not only an agency's performance in providing transportation services, but also helps guide agencies (and stakeholders) toward investments and strategies with the highest payoffs for reducing congestion. An emphasis on performance outcomes will provide a common platform for transportation agencies to communicate with their customers. FHWA contends that when the customer understands the value of M&O strategies (and the associated investment tradeoffs) the project-oriented business model will change to one that is more service oriented.

Reducing System Demand: Providing Better Transportation Choices

Just as M&O strategies provide "virtual" capacity additions through more effective operation of the highway system, travel demand management (TDM) initiatives indirectly can change the demands on the system. TDM strategies include parking pricing, transit and vanpool benefits, flexible work schedules, compressed workweeks, telecommuting, satellite work centers, dynamic message signs, and decreased transit fares.

TDM increases the use of travel alternatives; spreads the timing of travel to less congested periods; reduces the need for travel; and shifts the routing of vehicles, including trucks and single-occupant vehicles, to less congested facilities. TDM has the potential to provide travelers with choices of location, route, time, and mode. Some transportation agencies have yet to take full advantage of the informational, technological, and financial mechanisms available to deploy robust TDM programs. However, a number of trends will facilitate innovative TDM practices. For example, the technologies used for transportation systems and services enable operators to gather, share, and deliver information to travelers through more timely and useful ways. Recent changes in the Federal tax code have made financial mechanisms a more compelling feature of TDM, especially for influencing commuting behavior. Finally, as road-pricing strategies are implemented, TDM options will provide viable alternatives for those not willing or able to pay to travel on a priced facility.

Creating an Efficient Transportation Market: Road Pricing

Although the building of new facilities and better M&O of roads that currently are part of the system are effective strategies in relieving congestion, they do not address one of its root causes: that most travelers do not pay the full cost of receiving transportation services. When making travel decisions, travelers consider only their own travel times and vehicle operating costs; they do not consider the effects that their trips will have on others using the same facilities. This is why congestion often returns to newly constructed facilities, and why facilities with state-of-the-art operating practices remain congested.

In many cases, what occurs today on the highways is rationing by delay. In any market — efficient or not — when demand exceeds supply, the market will find a way to allocate goods and services. In the case of highway travel, a notably inefficient market, travel is distributed according to the amount of time users are willing to wait. Congestion pricing — charging a price that will bring supply and demand into balance — relies on market forces and recognizes that trip values vary by individual, depending on time, location, destination, and cost, and more broadly among individuals, depending on personal preference and access to alternative travel options. Congestion pricing incorporates both the direct cost to the traveler and the cost of delay that the traveler imposes on others. Travelers are encouraged to eliminate some lower value trips or take them at different times, or to choose alternate routes or modes of transportation, such as transit or carpooling.

In the United States, priced facilities are in limited use. Where they are operational, priced facilities are highly popular with the public, as evidenced by the acceptance of pricing on I-394 in Minneapolis, MN, and I-15 in San Diego, CA. In other areas, the public is skeptical. FHWA has undertaken an aggressive program to encourage jurisdictions that have extra capacity on their high-occupancy vehicle facilities to consider allowing single-occupant vehicles the choice of using these facilities for a price that varies with demand. This program, combined with the broad congestion pricing demonstrations that will be conducted by the USDOT Urban Partnership program, will address local congestion immediately and will establish the benefits of congestion pricing.

Theoretical Foundation for Pricing:

Markets and Prices

In an efficient market, resources are allocated so that their consumption will generate the highest benefit to the individuals engaged in making the transactions and to society as a whole. A market characterized by optimal distribution of resources is possible only when the players know the total cost of goods or services and make decisions

based on that understanding.

Total costs include both internal and external costs. Internal costs are borne directly by the user, and their existence is readily perceived. The cost of fuel is an example of an internal cost. External costs are borne by others that had no say in the decision that created the costs. Travel time (congestion) is an example of an external cost. The entry of just one additional vehicle onto an already congested facility can reduce travel times substantially for all travelers on the facility. Without a pricing mechanism in place, the driver who caused this extra cost does not directly pay that extra cost.

External costs are rarely avoided completely. They generally show up someplace else in the economy. This phenomenon becomes clear when considering that congestion can make system travel times unreliable, creating problems for just-in-time deliveries and ultimately increasing the cost of consumer goods.

Changing the Paradigm: The Congestion Initiative

USDOT and the transportation community have identified several options to bring about a less congested system that would best serve society: Make more of it, use it more productively, reduce highway system demand, and create an efficient transportation market. The USDOT Congestion Initiative establishes a firm base from which transportation agencies can pursue these options aggressively. In particular, the Urban Partnership program will demonstrate the benefits of congestion pricing (bringing efficiency to the market for highway transportation services). Urban Partnerships also will demonstrate the value of a comprehensive approach that includes transit, TDM, and enhanced system operations.

The Congestion Initiative provides several ways to supplement traditional funding sources and support the introduction of new capacity and maintenance of existing capacity: congestion pricing, PPPs, and facilitation of strategic investment through the Corridors of the Future program.

The Congestion Initiative also focuses on the role that operations and advanced technologies can contribute to congestion reduction. This focus will help transform transportation agencies into 21st century DOTs with a commitment to excellence in service, ready and able to take full advantage of the technologies and applications now available.

In addition to providing key foundational pieces to underpin congestion reduction policies, the Congestion Initiative highlights the serious challenges affecting freight transportation in this country.

All in all, the Congestion Initiative expands the choices available to travelers to include the availability of facilities with guaranteed congestion-free travel, and expands the options available to owners and operators interested in reducing congestion on their facilities.

Looking Forward

Congestion affects the day-to-day lives of American citizens as well as commercial enterprises: It degrades productivity, increases consumer costs, influences location decisions, and deprives all Americans of leisure time. The problem is growing, and will not abate unless fundamental reform is made in the way the Nation manages and operates its transportation system. The evidence shows that the status quo in transportation is not working. To provide congestion relief now and in the future, new approaches are needed. The Congestion Initiative is intended to put the Nation on the path to benefiting from those new approaches.



Providing multiple lanes dedicated to electronic tolling, as shown here on the Golden Gate Bridge in San Francisco, CA, can speed throughput at tollbooths.

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traffic incident management, work zones, and road weather management. From 1999 to 2003, she served as team leader in the Office of Asset Management, where she implemented key initiatives to institutionalize the emerging discipline of transportation asset management. She began her transportation career as an economist with the American Trucking Association. She joined FHWA as a transportation specialist in 1987.

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