

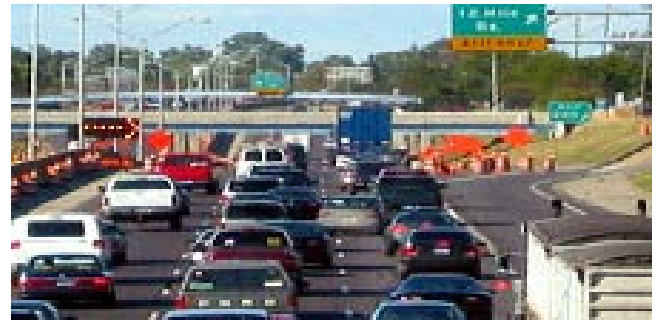
# Successes **in** Stewardship

<http://www.environment.fhwa.dot.gov/strmlng/es4newsltrs.asp>

October 2007

## The Congestion Initiative: Working for Relief

When traffic demand approaches or exceeds the available capacity of the highway system, the end result is congestion. Congestion is increasingly being recognized as a problem of national importance that adversely affects both the economy and quality of life. In 2003, congestion cost an estimated \$63 billion in wasted fuel and time alone. The environmental, social, economic, health, and safety costs, while more difficult to quantify, were similarly dramatic. The U.S. Department of Transportation's (USDOT) ongoing [Congestion Initiative](#) is designed not only to address transportation-system congestion and increase freight reliability, but to reduce the environmental, social, economic, and health impacts of congestion and thus enhance the quality of life for US citizens.

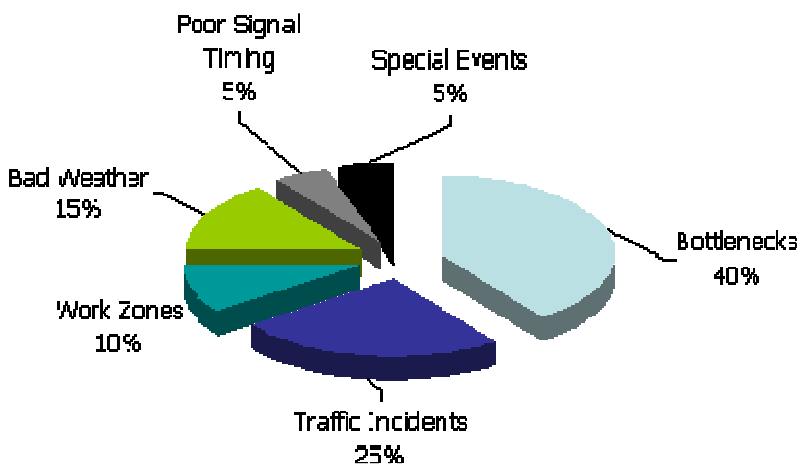


Work zones account for roughly 10 percent of all traffic congestion. (Photo courtesy of FHWA)

### Traffic Congestion: Causes and Solutions

Several factors are known to contribute to traffic congestion, as depicted in the chart below. Bottlenecks are the most significant factor, accounting for 40 percent of all congestion and reflecting the fact that the number of vehicles on the road has been increasing at a faster rate than the growth in road system capacity. Additionally, many drivers are driving longer distances in any given trip. These trends are a result of rapid population growth in conjunction with changes in driving habits, land-use patterns, housing, and other variables. The road network is unable to keep up with demographic changes, especially as available land and other resources become more scarce.

#### Causes of Congestion



Bottlenecks are the most common cause of road congestion, but other factors, such as traffic incidents and work zones, are also significant. (Source: FHWA [http://www.ops.fhwa.dot.gov/congestion\\_report/](http://www.ops.fhwa.dot.gov/congestion_report/))

A number of proven strategies for decreasing congestion are already available. Many of these approaches focus on enhancing service on existing roads—for example, by improving incident management and signal timing or by adding capacity. Travel demand management measures may also be effective. Newer strategies, such as congestion pricing, have already been implemented in several European and Asian cities and are being promoted for their potential environmental benefits. These promising approaches need further testing here in the United States.

### The Congestion Initiative: A Blueprint for Reducing Congestion

In May 2006, USDOT announced a major initiative to reduce system congestion. The National Strategy to Reduce Congestion on America's Transportation Network, generally referred to as the Congestion Initiative, is a blueprint for Federal, State, and local officials to work together to reverse the alarming trends of congestion. A major objective of this Initiative is to test innovative strategies for decreasing congestion and to implement successful methods more widely in the future.

The Congestion Initiative is a seven-step approach that looks at congestion from various perspectives, using both short- and long-term solutions.

1. *Urban partnership agreements (UPAs)*: Using a competitive process, cities are selected to implement one or more innovative strategies, such as congestion pricing or variable tolling, enhanced transit services, telecommuting and flex-time agreements, and advanced technology and operational approaches (see sidebar). Reducing vehicular traffic in crowded downtown areas is expected to decrease criteria air-pollutant emissions in non-attainment and maintenance areas.
2. *Public-private partnerships (PPPs)*: Barriers to private sector investment in infrastructure are reduced by providing support and resources to States and by developing model legislation.
3. *Corridors of the Future program (CFP)*: This initiative is aimed at accelerating development of major corridor projects that have already been funded or are in the project-development stage. [Executive Order 13274](#) of September 18, 2002, on Environmental Stewardship and Transportation Infrastructure Project Reviews, authorized the Secretary of Transportation to list high-priority projects for expedited review by Federal resource agencies. CFP is expected to play a major role in reducing congestion by identifying the selected Corridors of the Future as high-priority projects under Executive Order 13274.
4. *Reducing border congestion*: Trade and travel are facilitated through implementing new solutions to border congestion while maintaining border security.
5. *Reducing Southern California freight congestion*: The focus of this initiative is to build on strategies to relieve bottlenecks at major freight gateways in Southern California.
6. *Increasing aviation capacity*: Projects and technologies that offer congestion-reducing benefits, streamline environmental reviews, and facilitate the development of NextGen (a more flexible and adaptable aviation system designed to increase capacity) are given high priority.
7. *Operational and technological improvements*: The latest technologies to manage and operate the system at peak efficiency are applied, using strategies that include traveler information, traffic-incident management, work-zone safety and mobility, traffic-signal timing, and localized bottleneck reduction.

### Urban Partners Selected

On August 14, 2007, USDOT Secretary Mary E. Peters announced that five metropolitan areas had been selected to participate in the Urban Partnership program to fight traffic gridlock.

New York City, which had received considerable media attention for its proposal to implement congestion pricing in lower Manhattan, received \$354.5 million. Miami, Minneapolis, San Francisco, and the Seattle metro area each received between \$63 and \$159 million.

Each Urban Partner proposed some form of congestion pricing. These direct-user fees reduce the enormous costs of congestion and also promise to be more effective than the gas tax in raising funds to help States and cities build and maintain critical transportation infrastructure. Plans to improve and expand bus and ferry service were also funded to make it easier for commuters in Urban Partnership communities to leave their cars at home.

### Introducing the Corridors of the Future

Secretary Peters announced the selection of six Corridors of the Future on September 10<sup>th</sup>, 2007. The six winning proposals were selected from a pool of 38 applications for their potential to use public and private resources to reduce traffic congestion within the corridors and across the country.

The selected corridors span the country. They include I-95 from Florida to the Canadian border; I-70 in Missouri, Illinois, Indiana, and Ohio; I-15 in Arizona, Utah, Nevada, and California; I-5 in California, Oregon, and Washington; I-10 from California to Florida; and I-69 from Texas to Michigan.

For more information on the Corridors of the Future, visit <http://www.fightgridlocknow.gov/corridors.htm>.

## Congestion and the Environment

The pollution created by the extraction and burning of extra fuel has major environmental implications. Vehicles stuck in traffic worsen surface runoff from pavement, negatively impacting water quality. Air quality also suffers; the additional fuel burned by vehicles in slow-moving traffic can have adverse effects both locally and regionally. Carbon dioxide emissions are also increased by the burning of extra fuel. In 2003, excess fuel burned due to congestion released 23 million tons of carbon dioxide into the atmosphere, equivalent to the climate-change impact of an additional 3.8 million cars on the road. These facts argue persuasively that aggressive measures to reduce congestion can provide substantial benefits to the environment.

The overall contribution of congestion to pollution and fuel use is far more complex. While it is a well-established fact that vehicles moving at suboptimal speeds create more pollution over the course of a trip than they would in the absence of congestion, studies have shown that congestion-reducing measures such as road widening actually increase fuel consumption and pollutant emissions. When streets are congested with vehicles,

### Congestion Facts

- Seventy-nine percent of drivers report that traffic congestion has worsened during the past five years.
- In the largest cities, the annual average travel delay increased from 10 hours in 1982 to over 60 hours in 2002.
- The number of total vehicle miles traveled climbed 89 percent between 1980 and 2003, while road miles increased only 3 percent and interstate highway miles increased 13 percent.
- The interstate highway system makes up only 1 percent of total U.S. road miles but carries almost 25 percent of all traffic.
- In 2003, road congestion wasted 2.3 billion gallons of fuel and released 23 million tons of carbon dioxide into the air.

some people will choose a different mode of transportation or will make fewer trips. Successful efforts to decrease congestion may therefore make driving a more attractive option, leading people to drive more often. It is important to consider all potential impacts of congestion-reducing measures on environmental conditions.

## **CMAQ: Improving Air Quality and Relieving Congestion**

The Congestion Initiative's goal of reducing congestion across the nation's transportation network is closely linked to that of the Congestion Mitigation and Air Quality (CMAQ) program. CMAQ is one of the major funding sources for Transportation Control Measures (TCM), strategies that decrease or control air pollution by reducing vehicle use or improving traffic flow. CMAQ has been in place since 1991, when it was authorized by the Intermodal Surface Transportation Efficiency Act (ISTEA) to help reduce and control emissions of criteria air pollutants specified by the Clean Air Act Amendments of 1990 and to mitigate congestion. CMAQ has funded countless measures to reduce transportation-related air-pollutant emissions, many of which have also provided congestion relief. Together, the Congestion Initiative and the CMAQ program promote operational and technological improvements, target freight bottlenecks, and relieve urban congestion.

## **Future Trends in Congestion**

The current population of the United States now exceeds 300 million people. With over 220 million vehicles on the roads and the population projected to pass the 400 million before 2050, congestion can be expected to remain a major challenge if cars and trucks remain the dominant mode of travel. The lessons learned from the Congestion Initiative will be a critical component in identifying future strategies for fighting traffic congestion.

For more information on congestion, go to these websites:

- USDOT Congestion Initiative: <http://www.fightgridlocknow.gov>
- FHWA Focus on Congestion Relief: <http://www.fhwa.dot.gov/congestion/index.htm>
- FHWA CMAQ program: <http://www.fhwa.dot.gov/environment/cmaqpgs/>
- FHWA Transportation Control Measures: <http://www.fhwa.dot.gov/environment/tcm/>

## **Sources**

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*Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation*. Prepared for FHA by Cambridge Systematics, Inc., with Texas Transportation Institute, September 1, 2005; [http://www.ops.fhwa.dot.gov/congestion\\_report/](http://www.ops.fhwa.dot.gov/congestion_report/).

*Emission Facts: Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel*. EPA420F-05-001, February 2005; <http://www.epa.gov/otaq/climate/420f05001.htm>.

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### Look What's New!

FHWA is sponsoring a peer exchange on October 4-5 in Portland, OR on the use of GIS in Planning and Environment Linkages (PEL). The exchange, hosted by Oregon DOT, will include participants from Florida, Idaho, Oregon, South Carolina, and Tennessee and will discuss noteworthy GIS applications used in the PEL area. Look for information on the exchange to be added to the **PEL website** (hyperlink to: <http://environment.fhwa.dot.gov/integ/index.asp>) and **GIS in Transportation Website** (hyperlink to: <http://www.gis.fhwa.dot.gov>).

*Successes in Stewardship* is a Federal Highway Administration newsletter highlighting current environmental streamlining and stewardship practices from around the country. To subscribe, visit [http://environment.fhwa.dot.gov/sis\\_registration/Register.aspx](http://environment.fhwa.dot.gov/sis_registration/Register.aspx) or call 617-494-3137.