

# **TOP MANAGEMENT CHALLENGES**

*Department of Transportation*

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# Memorandum

U.S. Department of  
Transportation

Office of the Secretary  
of Transportation  
Office of Inspector General

Subject: INFORMATION: DOT's FY 2008  
Top Management Challenges  
Report Number PT-2008-008

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Reply to  
Attn. of: J-1

To: The Secretary  
Deputy Secretary

The Office of Inspector General (OIG) has identified nine top management challenges for the Department of Transportation (DOT) for fiscal year (FY) 2008. The traveling public's growing concerns about aging transportation infrastructure and increasing air travel delays will demand special attention from DOT in FY 2008. Key actions will include balancing funding needs to repair or replace aging systems while expanding capacity and determining requirements to advance new technologies and viable oversight structures.

The OIG's list for FY 2008 is summarized below. This report and the Department's response (see Appendix) will be incorporated into the DOT Performance and Accountability Report, as required by law. The exhibit to this report compares this year's management challenges with those published in FY 2007.

- **Continuing To Enhance Oversight To Ensure the Safety of an Aging Surface Transportation Infrastructure and Maximize the Return on Investments in Highway and Transit Infrastructure Projects**

- *Targeting Oversight Actions To Ensure the Safety of Tunnels and Bridges*
- *Ensuring That Major Projects Are Completed in an Efficient and Cost-Effective Manner To Maximize the Return on Federal Infrastructure Investments*

- **Addressing Long- and Short-Term Challenges for Operating, Maintaining, and Modernizing the National Airspace System**
  - *Hiring and Training Nearly 15,000 Controllers Over the Next 10 Years*
  - *Keeping Existing Modernization Projects on Track*
  - *Reducing Cost, Schedule, and Technical Risk With NextGen*
  - *Maintaining FAA's Aging Air Traffic Control Facilities*
  - *Properly Accounting for Capital Investment Projects*
- **Developing a Plan To Address the Highway and Transit Funding Issues in the Next Reauthorization**
  - *Facing a Near-Term Funding Crisis in the Highway Trust Fund*
  - *Developing a Comprehensive Highway Funding Framework Quickly*
- **Reducing Congestion in America's Transportation System**
  - *Reducing Delays, Improving Airline Customer Service, and Meeting the Anticipated Demand for Air Travel in the Near Term*
  - *Keeping Planned Infrastructure and Airspace Projects on Schedule To Relieve Congestion and Delays*
  - *Leading Stakeholders*
  - *Developing Innovative Funding Solutions for Infrastructure Needs*
- **Improving Oversight and Strengthening Enforcement of Surface Safety Programs**
  - *Improving Motor Carrier Safety With More Complete Information on Vehicle Crashes and Stronger Enforcement Against Repeat Violators*
  - *Closely Monitoring Mexican Motor Carriers Operating Throughout the United States Under the Department's Demonstration Project*
  - *Countering Fraud in the Commercial Driver's License Program*
  - *Resolving Hours of Service Rules for Commercial Drivers*
  - *Improving State Accountability in Programs for Reducing Alcohol-Impaired Driving*
  - *Further Reducing Railroad Collisions and Fatalities Through More Safety Oversight*
- **Continuing To Make a Safe Aviation System Safer**
  - *Taking Proactive Steps To Improve Runway Safety in Light of Recent Serious Incidents*
  - *Ensuring Consistency and Accuracy in Reporting and Addressing Controller Operational Errors*
  - *Strengthening Risk-Based Oversight Systems for Air Carriers, External Repair Facilities, and Aircraft Manufacturers*
  - *Maintaining a Sufficient Number of Inspectors*
  - *Strengthening Oversight of the Airman Medical Certification Program*

- **Strengthening the Protection of Information Technology Resources, Including the Critical Air Traffic Control System**
  - *Enhancing Air Traffic Control System Security and Continuity Planning*
  - *Testing and Strengthening the Information System Security Program at DOT Headquarters*
  - *Ensuring the Timeliness of Data Recording and Protection of Personally Identifiable Information When Interfacing With Non-Federal Systems*
  - *Continuing To Enhance Oversight of Information Technology Investments*
- **Managing Acquisition and Contract Operations More Effectively To Obtain Quality Goods and Services at Reasonable Prices**
  - *Increasing Incurred-Cost Audits of Procurement Contracts To Reduce Unallowable Charges*
  - *Developing Strategies for the Future Acquisition Workforce*
  - *Fostering High Ethical Standards Throughout the Department and Its Contracting Programs To Maintain the Public Trust*
  - *Enhancing Oversight on Federal-Aid Highway Construction Projects To Prevent Abuse in Contractor Quality Control Programs*
- **Reforming Intercity Passenger Rail**
  - *Improving Amtrak's Cost-Effectiveness To Sustain Its Financial Progress*
  - *Overcoming Challenges to Improving Amtrak's On-Time Performance*
  - *Reauthorizing Amtrak To Facilitate Reform*

If you have any questions concerning this report, please contact me at (202) 366-1959. You may also contact David A. Dobbs, Principal Assistant Inspector General for Auditing and Evaluation, at (202) 366-1427.

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## **1. Continuing To Enhance Oversight To Ensure the Safety of an Aging Surface Transportation Infrastructure and Maximize the Return on Investments in Highway and Transit Infrastructure Projects**

Recent fatal highway incidents highlight the need for the Department to focus on the safety of the Nation's surface transportation infrastructure, particularly for aging tunnels and bridges needing costly rehabilitation, repair, or replacement. The Department also needs to maximize the Federal transportation investment by ensuring that highway and transit projects are completed in a timely and cost-effective manner. This is critical at a time when infrastructure needs are increasing and the Nation's fiscal resources are struggling to meet growing demands. Going forward, the Department will be challenged to balance the need to provide funding for projects to repair or replace aging infrastructure with funding for projects to reduce congestion with new capacity.

We see two key challenges that need continued management emphasis:

- The Federal Highway Administration (FHWA) must target its oversight actions to ensure the safety of highway tunnels and bridges.
- FHWA and the Federal Transit Administration (FTA) must ensure efficient use of Federal funds for highway and transit projects. FHWA must also promote cost-saving practices such as value engineering (VE), and FTA must provide vigilant oversight to control costs and schedules on several massive transit infrastructure projects.

### ***Targeting Oversight Actions To Ensure the Safety of Tunnels and Bridges***

Recent tragic highway incidents underscore the need for FHWA to ensure that its oversight actions target tunnels and bridges that represent high-priority safety risks so that problems are identified, evaluated, and remediated in a timely and thorough manner. In the past 18 months, two major incidents shook the traveling public's confidence in the safety of the Nation's tunnels and bridges. Specifically, in July 2006, a motorist was killed by falling ceiling panels in a tunnel of the Central Artery/Tunnel Project in Boston. In August 2007, 13 people were killed when the Interstate 35W Bridge in Minneapolis, which spanned the Mississippi River, collapsed during the evening rush hour.

Accordingly, FHWA needs to take the following actions.

**Enhance the safety of the Nation's highway tunnels.** On August 16, 2007, we reported<sup>1</sup> that FHWA will need to exercise greater oversight to ensure that the Commonwealth of Massachusetts completes the remaining phases of its Stem to Stern Safety Review—a comprehensive, project-wide review of the Central Artery/Tunnel Project—and conducts remedial work to address safety risks in a timely, thorough, and independent manner. The timely completion of this review is critical to restoring public confidence in the safety of the project's structures, particularly in light of its troubled history of schedule delays, cost increases, and construction quality problems. The magnitude of the review and the intense public concern for safety will challenge FHWA and the Department beyond their normal oversight roles. Since the Stem to Stern Safety Review is planned to last well into 2008, FHWA's oversight actions must ensure that the review remains a top priority for the Commonwealth to restore the public's confidence.

In addition, the safety problems that surfaced in the Central Artery/Tunnel Project call into question the oversight and quality control processes for constructing and maintaining the Nation's highway tunnels. Considering the known problems of the Central Artery tunnels, FHWA should develop and implement a system to ensure that states inspect and periodically report on tunnel conditions. To begin addressing these problems, FHWA officials informed us that they will issue an advance notice of proposed rulemaking by December 2007 to seek input regarding the development of national tunnel inspection standards. FHWA should aggressively move forward on this rulemaking and establish rigorous inspection standards as soon as possible.

**Improve oversight of the Nation's structurally deficient bridges.** The collapse of the Interstate 35W Bridge in Minneapolis underscores the importance of vigilant oversight for structurally deficient bridges (those that have major deterioration, cracks, or other deficiencies in their structural components). In September 2007, we testified<sup>2</sup> that nearly 72,500 bridges across the Nation were designated as "structurally deficient." According to FHWA's estimates, about \$65 billion could be invested immediately to address current bridge deficiencies. However, only \$21.6 billion was authorized for the Highway Bridge Program through FY 2009.

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<sup>1</sup> OIG Report Number MH-2007-063, "Initial Assessment of the Central Artery/Tunnel Project Stem to Stern Safety Review," August 16, 2007. OIG reports and testimonies are available on our website: [www.oig.dot.gov](http://www.oig.dot.gov).

<sup>2</sup> OIG Testimony Number CC-2007-095, "Federal Highway Administration's Oversight of Structurally Deficient Bridges," September 5, 2007. OIG Testimony Number CC-2007-101, "FHWA Can Do More in the Short Term To Improve Oversight of Structurally Deficient Bridges," September 20, 2007.

Our September 2007 testimonies stated that Federal oversight of bridge inspections and funding for bridge rehabilitation and replacement constitute significant challenges. To enhance oversight, FHWA should take the following actions:

- Develop a data-driven, risk-based approach to bridge oversight to better identify and target those structurally deficient bridges most in need of recalculation of load ratings and postings.
- Finalize and distribute the revised Bridge Program Manual to its 52 Division Offices as quickly as possible and ensure that FHWA engineers make greater use of existing bridge data as part of the annual compliance review process.
- Ensure that all 52 Division Offices conduct rigorous and thorough assessments of any potential risks associated with structurally deficient bridges, as directed in February 2007. FHWA must also define how it will respond to any specific, high-priority risks that the Division Offices identify.
- Identify and implement a process to determine the amount of Federal funds expended on structurally deficient bridges.

***Ensuring That Major Projects Are Completed in an Efficient and Cost-Effective Manner To Maximize the Return on Federal Infrastructure Investments***

With the increasing demand for limited Federal resources, completing highway and transit projects in a timely and cost-effective manner is more critical than ever. To maximize the return on Federal infrastructure investments, both FHWA and FTA must provide vigilant oversight of their grantees to ensure that projects are completed on time and within budget.

**FHWA must reduce highway project costs by promoting the use of value engineering.** One way to more effectively use Federal highway funds is to lower project costs by increasing VE usage. VE is the systematic process of review and analysis of a project during the concept and design phases. A multi-disciplined team of persons independent of the project conducts the review. VE provides an opportunity for states to obtain the most value from Federal highway funds by saving on planned construction projects. It also serves as a key tool in FHWA's stewardship of Federal funds.

Our March 2007 report on FHWA's VE program<sup>3</sup> identified ways for FHWA to improve states' VE programs. We found that states have missed opportunities to

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<sup>3</sup> OIG Report Number MH-2007-040, "Value Engineering in the Federal-Aid Highway Program," March 28, 2007.



realize additional savings. For example, from FY 2001 through FY 2004, states collectively reported \$4.2 billion in VE-recommended savings. However, we estimated that during the same 4-year period, states could have saved an additional \$906 million (\$725 million in Federal funds) by conducting all required VE studies (\$117 million) and by achieving the national average of completing 44.4 percent of VE recommendations (\$789 million). These savings could have been reprogrammed to other transportation projects. To increase cost savings for federally supported highway projects in the future, FHWA should improve its VE program by revising policies, strengthening oversight activities, and disseminating best practices to states.

**FTA must provide vigilant oversight of transit projects to control costs and schedules.** FTA has several massive infrastructure projects in various stages of design or construction. The agency must ensure that project sponsors keep these projects on schedule and within budget, particularly those projects in the Washington, D.C., Metropolitan Area and New York City. Vigilant oversight of these projects will be particularly important as FTA simultaneously oversees a large portfolio of other nationwide transit infrastructure projects. In its “Annual Report on Funding Recommendations—Proposed Allocation of Funds for Fiscal Year 2008,” FTA reported 10 existing fully funded infrastructure projects (not including the Washington, D.C., and New York City projects) with total Federal funding of about \$4.6 billion. FTA reported that an additional 12 projects are currently competing for full funding.

The Dulles Corridor Metrorail Project in the Washington, D.C., Metropolitan Area will challenge FTA in several respects. In July 2007, we reported<sup>4</sup> on key risk indicators in this project that merit the Department’s close monitoring in light of a potential Federal investment of \$1.475 billion (including a \$900 million New Starts grant and a separate loan and line of credit). Among the risks we identified were increases in cost estimates of over \$1 billion and schedule delays of about 4 years. We observed that the reported cost increases could prevent the project from meeting FTA’s cost-effectiveness standards, which would make it ineligible for a New Starts grant.

After we issued our report, FTA examined the project cost estimate and identified that certain elements of the project were underestimated. FTA also found that the project did not meet cost-effectiveness standards. The project sponsors have since revised the project scope and submitted a new, lower estimate. FTA is examining the new estimate, but it could find that the project still does not meet cost-effectiveness standards. If the project goes forward, however, FTA will be challenged by the unusually complex organizational structure of the project. This

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<sup>4</sup> OIG Report Number MH-2007-060, “Baseline Report on Major Project Monitoring of the Dulles Corridor Metrorail Project,” July 27, 2007.

includes a large network of key Federal, state, local, and private sector players with a stake in the project as well as the possibility of further cost increases and schedule delays.

Further, the magnitude of ongoing major surface transportation projects in New York City with estimated costs of over \$16 billion (these include about \$8.5 billion in Federal funds) warrants close FTA oversight. These projects include the following:

- Lower Manhattan reconstruction and enhancement transportation projects resulting from the September 11, 2001, terrorist attacks. Federal funds of \$4.55 billion are allocated for this effort.
- The East Side Access project. Proposed New Starts funding for this project is \$2.63 billion.
- Phase I of the Second Avenue Subway. Proposed New Starts funding for this project is about \$1.3 billion.

Controlling costs and schedules will be especially critical in the case of the Lower Manhattan recovery projects because of the Federal funding cap of \$4.55 billion. Further, any costs that exceed Federal limits increase the pressure on a project sponsor to identify local funds to cover any cost overruns. Although the East Side Access and Second Avenue projects are not subject to the Federal cap, they still involve a large Federal funding commitment warranting close FTA oversight to ensure that project sponsors are exercising sound project and financial management.

***For further information, the following reports and testimonies can be found on the OIG web site at <http://www.oig.dot.gov>:***

- *Final Report on the Independence of Central Artery/Tunnel Project Inspection Contractors*
- *Initial Assessment of the Central Artery/Tunnel Project Stem To Stern Safety Review*
- *Audit of Oversight of Load Ratings and Postings on Structurally Deficient Bridges on the National Highway System*
- *Federal Highway Administration's Oversight of Structurally Deficient Bridges*
- *Value Engineering in the Federal-Aid Highway Program*
- *Baseline Report on Major Project Monitoring of the Dulles Corridor Metrorail Project*

## **2. Addressing Long- and Short-Term Challenges for Operating, Maintaining, and Modernizing the National Airspace System**

Over the last year, Congress, the Federal Aviation Administration (FAA), and aviation stakeholders have debated important questions about how best to finance FAA, reauthorize a wide range of aviation programs, and advance the Next Generation Air Traffic Management System (NextGen). Several alternatives have been proposed; these include imposing user fees, adjusting the existing excise tax structure, and allowing the agency to borrow for long-term capital investments. While there is disagreement over how to finance FAA, there is general agreement that the agency must fundamentally change how air traffic is managed to meet forecasted air travel demands.

Congress has established a short-term FAA financing measure that reflects the status quo, but a long-term reauthorization is needed. How FAA should be financed is clearly a policy decision for the Congress. Regardless of the funding mechanism that is ultimately selected, the Department and FAA will face challenges in operating and maintaining the current system while concurrently advancing NextGen. These include (1) hiring and training enough air traffic controllers to address the surge in retirements; (2) keeping existing modernization projects on track; (3) reducing cost, schedule, and technical risks with NextGen; (4) maintaining FAA's aging air traffic control facilities; and (5) properly accounting for capital investment projects.

### ***Hiring and Training Nearly 15,000 Controllers Over the Next 10 Years***

FAA anticipates a significant surge in controller attrition as the controllers who were hired after the 1981 strike begin retiring. To address this issue, FAA must hire and train over 15,000 new controllers through the year 2016. In December 2004, FAA developed a comprehensive workforce plan and issued the first in a series of annual reports to Congress. FAA issued the first update to the plan in June 2006 and the second in March 2007.

In February, we issued the results of our review of FAA's progress in implementing its controller workforce plan.<sup>5</sup> Overall, we found that FAA continues to make progress in implementing a comprehensive staffing plan to address the surge in retirements. For example, we found that FAA has significantly improved its hiring process and has reduced the time and costs to train new controllers. However, further progress is still needed in the following key areas:

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<sup>5</sup> OIG Report Number AV-2007-032, "FAA Continues To Make Progress in Implementing Its Controller Workforce Plan, but Further Efforts Are Needed in Several Key Areas," February 9, 2007.

- Completing validation of accurate facility-level staffing standards. This is a critical component because FAA has over 300 air traffic facilities with significant differences in air traffic levels and complexity.
- Establishing baseline metrics to measure the effectiveness of controller productivity initiatives. FAA must ensure that reductions in staffing are a result of increased productivity and not simply fewer controllers controlling more traffic.
- Continuing efforts to reduce the time and costs associated with on-the-job training. This is the longest and most expensive portion of new controllers' training.

We will continue to monitor FAA's progress and report on its actions to address this significant challenge. We are currently reviewing FAA's management of the controller on-the-job training process and plan to issue a report early next year.

### ***Keeping Existing Modernization Projects on Track***

FAA's major acquisitions have a long history of cost growth and schedule delays. For example, two acquisitions, the Wide Area Augmentation System (a satellite-based navigation system) and the Standard Terminal Automation Replacement System (new software and hardware for controllers who manage traffic in the vicinity of airports), have experienced cost growth in excess of \$4.2 billion since their inception. Problems with FAA acquisitions are the result of overly ambitious plans, changing requirements, complex software development, and poor contract oversight.

It will be important to keep existing modernization projects on track because about 30 of these are intended to serve as platforms for NextGen. These include the \$2.1 billion En Route Automation Modernization project to replace hardware and software for facilities that manage high-altitude traffic. We note that the project is within budget and is on schedule to be deployed at Salt Lake Center in 2008.

While FAA has done a better job of managing acquisitions over the last several years, some programs are still at risk for further cost growth, schedule slips, or diminishing benefits. For example, the benefits (expected cost savings) of the FAA Telecommunications Infrastructure program (an effort to replace and consolidate all telecommunications into a single system) have eroded as costs have increased and completion schedules have slipped. FAA needs to prevent cost growth, schedule slips, and performance shortfalls with ongoing projects that could delay the NextGen capabilities needed to enhance capacity.

### ***Reducing Cost, Schedule, and Technical Risk With NextGen***

Although the costs for developing and implementing NextGen remain uncertain, FAA expects to spend \$4.6 billion on various NextGen initiatives between 2008 and 2012. The bulk of these funds will be spent on developmental efforts. A key project includes the Automatic Dependent Surveillance-Broadcast program—a satellite-based system that allows aircraft to broadcast their position to controllers and other properly equipped aircraft. The development and execution of NextGen is the most complex, high-risk undertaking FAA has ever attempted and will require multibillion-dollar investments from the Federal government (for new ground automation systems) and airspace users (for new avionics).

In our February 2007 report, we examined progress with FAA’s Joint Planning and Development Office,<sup>6</sup> which is responsible for developing a vision for NextGen. We identified the range of actions needed to reduce risk with this complex, costly effort. We recommended, among other things, that FAA develop a strategy for obtaining the necessary expertise to execute NextGen initiatives and review existing modernization projects to determine required adjustments. FAA has begun addressing our concerns. FAA must also continue to address complex engineering and integration issues and develop an effective human factors program (for controllers and pilots) to ensure that anticipated changes can be safely introduced.

### ***Maintaining FAA’s Aging Air Traffic Control Facilities***

FAA will be challenged to focus on NextGen initiatives while concurrently attending to its aging air traffic control facilities and related equipment (e.g., electrical power systems). FAA has 21 En Route facilities, 214 terminal facilities, and over 22,000 unstaffed facilities. According to FAA, many of these facilities are over 25 years old; some may have exceeded their useful life expectancy and may not meet current operational requirements. For example, FAA’s En Route Centers are now over 40 years old. In 2007, FAA budgeted approximately \$400 million, or 16 percent, of its \$2.5 billion capital account for facilities. A longer term but controversial challenge for the Department and FAA is determining to what extent FAA can realign or consolidate its air traffic facilities based on new technology. FAA must develop a cost-effective strategy for maintaining its existing facilities commensurate with NextGen technologies that could potentially reduce operating costs.

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<sup>6</sup> OIG Report Number AV-2007-031, “Joint Planning and Development Office: Actions Needed To Reduce Risks with the Next Generation Air Transportation System,” February 12, 2007.

### ***Properly Accounting for Capital Investment Projects***

Congress provides more than \$2 billion annually to FAA to invest in modernizing air traffic control systems. It takes many years to develop and test capital investment projects (such as the En Route Automation Modernization program) before they can be deployed for operational use. All of these investments are recorded in the Construction in Progress (CIP) account. Properly accounting for billions of dollars in capital investment has been a longstanding challenge for FAA. For years, FAA has relied on a labor-intensive process to adjust the CIP account balance for the annual financial statements reporting. For FY 2006, however, FAA was unable to support the CIP account balance which totaled \$4.7 billion as of September 30, 2006. As a result, both FAA and the Department received a qualified audit opinion on the FY 2006 financial statements.

During FY 2007, FAA devoted extensive resources and management attention to cleaning up the CIP account balance to overcome the qualified opinion. As part of these correction efforts, FAA also implemented CIP business process enhancements. These included standardizing the methodology used to calculate unit costs, including overhead allocation, for asset deployment. The results were successful in overcoming the 2006 qualified opinion. However, weaknesses still remain in its implementation of the enhanced CIP business process and need to be addressed during FY 2008. To ensure the agency properly accounts for capital investment projects and avoids going back to prior period practices, FAA needs to institutionalize the enhanced CIP procedures throughout the organization.

***For further information, the following reports and testimonies can be found on the OIG web site at <http://www.oig.dot.gov>:***

- *Perspectives on FAA's FY 2007 Budget Request and the Aviation Trust Fund*
- *FAA Has Opportunities To Reduce Academy Training Time and Costs by Increasing Educational Requirements for Newly Hired Air Traffic Controllers*
- *Next Steps for the Air Traffic Organization*
- *Report on Controller Staffing: Observations on FAA's 10-Year Strategy for the Air Traffic Controller Workforce*
- *Addressing Controller Attrition: Opportunities and Challenges Facing the Federal Aviation Administration*
- *Opportunities To Improve FAA's Process for Placing and Training Air Traffic Controllers in Light of Pending Retirements*
- *Review of Staffing at FAA's Combined Radar Approach Control and Tower with Radar Facilities*
- *Joint Planning and Development Office: Actions Needed To Reduce Risks with the Next Generation Air Transportation System*

- *FAA Continues To Make Progress in Implementing its Controller Workforce Plan, But Further Efforts are Needed in Several Key Areas*
- *FAA's FY 2008 Budget Request: Key Issues Facing the Agency*
- *Actions Needed To Reduce Risk With the Next Generation Air Transportation System*
- *Inspector General Testifies Before the House Aviation Subcommittee Regarding FAA Financing Proposals*
- *Quality Control Review of Audited Financial Statements for FYs 2006 and 2005, Federal Aviation Administration*

### **3. Developing a Plan To Address the Highway and Transit Funding Issues in the Next Reauthorization**

The Department faces two significant challenges regarding Federal highway program funding. First, it must decide how to address Highway Trust Fund (HTF) revenue shortfalls that may require near-term reductions in Federal highway spending. Second, the Department must decide at what level it will propose that highway and transit programs be funded in the upcoming surface transportation reauthorization bill, and how that funding level will be financed.

#### ***Facing a Near-Term Funding Crisis in the Highway Trust Fund***

Highway funding levels are largely determined by the amount of revenue from the Federal motor fuel excise tax and other sources that are deposited into the HTF. HTF revenues for 2009 are now expected to fall far short of the levels previously anticipated. Unless addressed, this shortfall could lead to reductions in obligation limitations for Federal highway programs below the levels anticipated in the current authorization to prevent HTF insolvency. For instance, the American Association of State Highway and Transportation Officials (AASHTO) has projected a \$4.3 billion Highway Account revenue shortfall in 2009 that could require an obligation reduction in the highway program of about \$16 billion. The Department must help develop a consensus among the States, the highway community, and Congress as to if, and how, this shortfall in HTF revenues will be made up.

**Demand for More Investment and Rapid Cost Escalation Will Increase the Pressure To Expand Highway Funding.** The Department's most recent estimate<sup>7</sup> is that a 12-percent annual funding increase, in constant dollars, is required to maintain the Nation's highways and bridges.<sup>8</sup> This would require an average annual investment of about \$79 billion by all levels of government and the private sector (in constant 2004 dollars), compared with the \$70 billion of capital spent in 2004. Additional increases in investment would also be required above these amounts to offset the effects of inflation.

The amount needed to offset the effects of inflation in highway construction and maintenance costs has soared dramatically in recent years. As we reported in September 2007, highway construction and maintenance costs nationwide grew about three times faster from 2003 through 2006 than their fastest growth rate during any 3-year period between 1990 and 2003. These increases have

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<sup>7</sup> 2006 Status of the Nation's Highways, Bridges and Transit: Conditions and Performance. Report to Congress. U.S. Department of Transportation.

<sup>8</sup> This includes both structural maintenance and the maintenance of current congestion levels in light of increased usage. It also assumes no change in costs to users.



substantially reduced the purchasing power of highway construction funds and have led some state planners to cancel or delay projects.

These increases were largely the result of escalation in the cost of commodities used in highway projects, such as steel and asphalt, and reflect structural, not transitory, economic changes. Consequently, commodity costs can be expected to remain elevated and could possibly continue to expand in the near future. If highway construction costs continue to increase at the 2006 rate, they will have increased by 37 to 60 percent during the term of the current highway bill. The next highway bill may need to provide a significant increase in funding just to maintain the current level of highway construction nationwide.

The needed Federal investment in highways could be reduced by increased implementation of congestion pricing, accelerated deployment of operational technologies (such as Intelligent Transportation System technologies), and innovation in construction methods or materials. Further, innovative financing tools can reduce the requirement for near-term Federal highway program appropriations by permitting current revenues to be leveraged and highway construction to proceed more rapidly than would otherwise be possible. However, these tools are not all without controversy, particularly public/private partnerships and high occupancy toll (HOT) lanes. Wider support for these financing techniques needs to be developed if the Department proposes to expand their use.

### ***Developing a Comprehensive Highway Funding Framework Quickly***

The current highway authorization expires at the end of FY 2009. The Department will need to determine what level of highway funding it will propose in the reauthorization in light of the growing demand for these investments and the escalating costs of meeting this demand. It will also need to determine how this level of investment should be funded. To make these determinations, the Department will need to consider changes to the existing highway funding structure as well as alternative, innovative financing mechanisms; it will also need to develop support for new financing methods.

***For further information, the following report can be found on the OIG web site at <http://www.oig.dot.gov>:***

- *Growth in Highway Construction and Maintenance Costs*
- *Quality Control Review of Audited Financial Statements for FYs 2006 and 2005, Highway Trust Fund*

## **4. Reducing Congestion in America's Transportation System**

The Department is pursuing a national strategy to reduce congestion across all modes of transportation. Congestion limits economic growth, wastes billions of gallons of fuel, and costs billions of dollars in lost productivity each year. This will likely remain a prominent challenge for the Department for some time, particularly with regard to air travel. We are seeing record-breaking flight delays and cancellations, and forecasted air travel demands will continue to strain the capacity of the system. This year's airline customer service issues drew national attention and underscored the need for the Department's continued focus in this area. The Department must make it a top priority to reduce aviation delays and alleviate customer dissatisfaction.

While the Department has made progress on implementing several congestion-related initiatives this past year, the strategy was developed before this year's overwhelming air travel problems. The Department's accomplishments this past year in implementing its national strategy included selecting Miami, Minneapolis, New York, San Francisco, and Seattle to participate in the Urban Partnership Agreement program after an 8-month nationwide competition. These communities will demonstrate strategies with proven effectiveness in mitigating traffic congestion. The Department also selected the first six interstate highway corridors as participants in the Corridors of the Future Program: (1) I-95 from Washington, D.C., to Florida; (2) I-70 from Missouri to Ohio; (3) I-15 from California to Utah; (4) I-5 from California to Washington; (5) I-10 from California to Florida; and (6) I-69 from Texas to Michigan.

The Department's specific challenges for reducing congestion include:

- reducing aviation delays, improving customer service, and meeting near-term demand for air travel;
- keeping planned infrastructure and airspace projects on schedule to relieve congestion and delays;
- leading stakeholders that have divergent views on resolving transportation congestion; and
- meeting demands for additional resources in a tight budgetary environment.

***Reducing Delays, Improving Airline Customer Service, and Meeting the Anticipated Demand for Air Travel in the Near Term***

During the first 7 months of 2007, airlines' on-time performance was at the lowest percentage (72 percent) recorded in the last 10 years with nearly 28 percent of flights delayed, cancelled, or diverted. These rising flight delays are leading to more on-board tarmac delays. During the same period, over 54,000 scheduled flights—affecting nearly 3.7 million passengers—experienced taxi-in and taxi-out times of 1 to 5 hours or more. This is an increase of nearly 42 percent (from 38,076 to 54,029) as compared to the same period in 2006 (see table 4-1).

**Table 4-1. Number of Flights With Long, On-Board Tarmac Delays of 1 to 5+ Hours January Through July of 2006 and 2007**

| <b>Time Period</b> | <b>2006</b>   | <b>2007</b>   | <b>% Change</b> |
|--------------------|---------------|---------------|-----------------|
| 1-2 Hrs.           | 33,438        | 47,558        | 42.23           |
| 2-3 Hrs.           | 3,781         | 5,213         | 37.87           |
| 3-4 Hrs.           | 710           | 1,025         | 44.37           |
| 4-5 Hrs.           | 120           | 189           | 57.50           |
| 5 or > Hrs.        | 27            | 44            | 62.96           |
| <b>Total:</b>      | <b>38,076</b> | <b>54,029</b> | <b>41.90</b>    |

Source: Bureau of Transportation Statistics data

Consumer complaints are also on the rise. DOT's Air Travel Consumer Reports disclosed that for the first 7 months of 2007, complaints relating to flight problems (delays, cancellations, and missed connections) involving U.S. airlines more than doubled (1,096 to 2,468) for the same period in 2006. One-third of the Nation's air traffic passes through New York, and three-fourths of the chronic delays around the country can be traced to delays at the New York airports.

Airlines, airports, FAA, and DOT must work together to reduce delays and minimize the impact on passengers when these delays occur. Secretary Peters is committed to taking action, but the Department faces several challenges in addressing this issue. Although there is no "silver bullet," a cumulative mix of solutions could help. These include scheduling procedures, air traffic control modernization, and ground infrastructure (new runways). Complex policy questions, such as peak-hour pricing, will also complicate potential solutions.

Short- and long-term solutions to these delay problems must be pursued. It is also important to remember that the traveling public will likely face similar air travel problems in the spring and summer of 2008 and 2009 before they experience any real relief from capacity problems. The airlines and airports must do their part in the short term to effectively implement their customer service plans—including contingency plans—especially when extraordinary flight disruptions cause significant delays, cancellations, and diversions. The Department should also take

a more active role in overseeing customer service issues to ensure that airlines comply with their policies on flight problems.

### ***Keeping Planned Infrastructure and Airspace Projects on Schedule To Relieve Congestion and Delays***

While new technologies can help enhance arrival rates, FAA reports that new runways provide the most increases in capacity. Since 2000, new runways have been built at Detroit, Phoenix, Miami, and other airports. Without these new runways, congestion undoubtedly would have been much worse.

Seven key runway projects are currently underway, including projects at Washington Dulles and Chicago O'Hare International Airports. Table 4-2 provides information on major runway projects and expected completion dates from FAA's Operational Evolution Plan,<sup>9</sup> the agency's blueprint for enhancing capacity.

**Table 4-2. Status of Major New Runway Projects, September 2007**

| <b>Airport</b>                       | <b>Initial OEP<br/>(June 2001)<br/>Estimated<br/>Completion Date</b> | <b>Current<br/>Estimated<br/>Completion<br/>Date</b> | <b>Phase</b> | <b>Current Cost<br/>Estimate<br/>(in millions)</b> |
|--------------------------------------|--|--|--------------|--|
| Philadelphia*<br>(Runway 17/35)      | Not in initial OEP   | Jan 2009   | Construction | \$65   |
| Seattle-Tacoma<br>(Runway 16R/34L)   | Nov 2006   | Nov 2008   | Construction | \$1,129**  |
| Washington-Dulles<br>(Runway 1L/19R) | Not in initial OEP   | Nov 2008   | Construction | \$356  |
| Chicago O'Hare<br>(Runway 9L/27R)    | Not in initial OEP   | Nov 2008   | Construction | \$455**  |
| Chicago O'Hare*<br>(Runway 10L/28R)  | Not in initial OEP   | Nov 2008   | Construction | \$240**  |
| Chicago O'Hare<br>(Runway 10C/28C)   | Not in initial OEP   | 2012**   | Construction | \$1,265**  |
| Charlotte<br>(Runway 17/35)          | June 2004  | Feb 2010   | Construction | \$300  |

Sources: FAA with Airport Sponsor Updates

\*Extension of existing runway.

\*\*Update of FAA data obtained from airport sponsor.

These runway projects are expected to significantly enhance airport operations and decrease delays. The Department's challenge is to make sure the navigation

<sup>9</sup> FAA's Operational Evolution Partnership has been the agency's overall blueprint for enhancing capacity and includes runways, airspace changes, and new procedures. In June 2007, FAA expanded the scope of the plan beyond capacity to include commitments for the Next Generation Air Transportation System.

equipment, new procedures, and airspace modifications are in place when these projects are commissioned so that the expected benefits will be achieved.

As we have noted in the past, airspace redesign efforts are often overlooked but are important short-term initiatives. History shows that airspace changes are critical to realizing the full potential of new runways and can enhance capacity even without new infrastructure. Currently, FAA is pursuing seven airspace redesign projects throughout the Nation, including a major effort to revamp airspace in the New York/New Jersey/Philadelphia area. FAA expects this project to make better use of existing runways in the area and provide more flexibility to manage delays in severe weather. Once implemented, FAA believes the redesign effort could reduce delays by as much as 200,000 hours annually.

### ***Leading Stakeholders***

Targeted infrastructure investments can help to alleviate transportation congestion, but the Department faces a difficult challenge in convincing various stakeholders to make this a priority. The Department's role in funding or approving transportation projects varies greatly across the various modes. For example, while the Department funds and operates the air traffic control system, local and state agencies manage highway and transit priorities in their respective locales. Congress is also very active in deciding which highway and transit projects to fund. To successfully meet this challenge, the Department will need to leverage its available tools to influence stakeholder decisions on infrastructure improvement.

### ***Developing Innovative Funding Solutions for Infrastructure Needs***

The Department will need to decide on the level of Federal investment in infrastructure it can support given the current constraints of the Federal budget. The Department also needs to continue to develop innovative funding solutions for the transportation infrastructure by either identifying new sources of revenue or using existing sources more effectively. While the Department is working to reduce barriers to private sector investment, it needs to articulate its case that any divestitures of public transportation infrastructure assets are in the best interest of the taxpayers in the long term.

***For further information, the following reports and testimonies can be found on the OIG web site at <http://www.oig.dot.gov>:***

- *Airspace Redesign Efforts Are Critical To Enhance Capacity but Need Major Improvements*

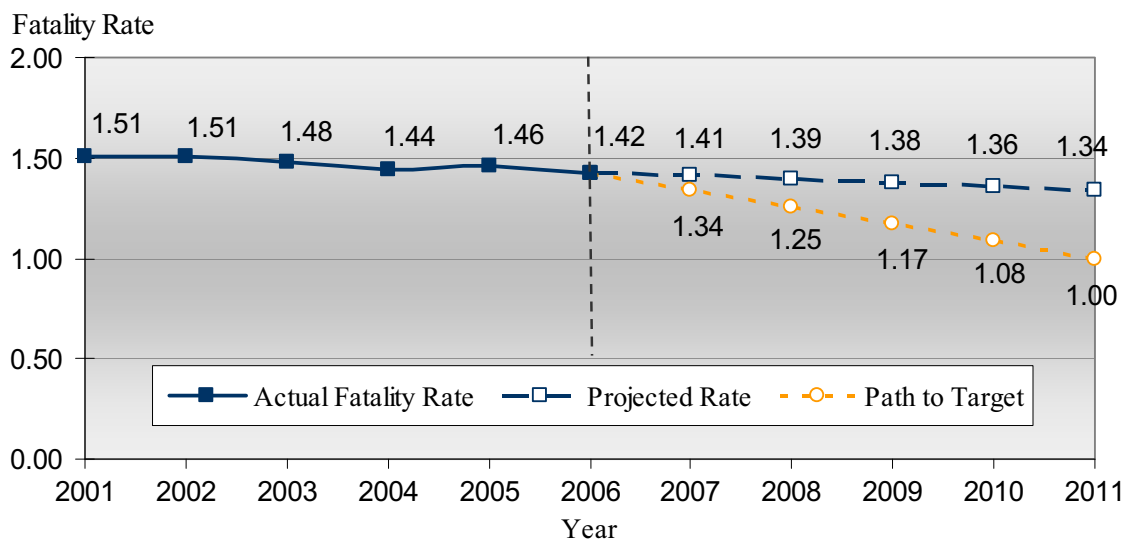
- *Aviation Industry Performance: Trends in Demand and Capacity, Aviation System Performance, Airline Finances, and Service to Small Airports (June 2005 and August 2006)*
- *Audit of Small Community Aviation Delays and Cancellations*
- *Observations on Current and Future Efforts To Modernize the National Airspace System*
- *Observations on the Progress and Actions Needed To Address the Next Generation Air Transportation System*
- *Follow-Up Review: Performance of U.S. Airlines in Implementing Selected Provision of the Airline Customer Service Commitment.*
- *Refocusing Efforts To Improve Airline Customer Service*
- *Actions Needed To Improve Airline Customer Service*
- *Actions Needed To Minimize Long, On-Board Delays*
- *Actions Needed To Improve Airline Customer Service and Minimize Long, On-Board Delays*

## 5. Improving Oversight and Strengthening Enforcement of Surface Safety Programs

Safety is central to the mission of the Department, and three of its Operating Administrations have extensive regulatory authority and safety programs—the Federal Motor Carrier Safety Administration (FMCSA), the National Highway Traffic Safety Administration (NHTSA), and the Federal Railroad Administration (FRA). In 2006, over 42,500 highway traffic deaths and 368 highway-rail crossing deaths occurred in the United States.

The number of fatalities declined in 2006, as did the rate of fatalities per 100 million vehicle-miles traveled (1.42). The Department's goal is to reduce the fatality rate to 1.0 by 2011; meeting this goal will clearly be a challenge. As shown in figure 5-1, we estimate a 2011 fatality rate of 1.34 based on past trends.

**Figure 5-1. In the Coming Years, the Highway Fatality Rate Will Need To Fall Below Projected Rates To Meet the Target Rate by 2011\***



Source: Actual fatality rates are from NHTSA's 2005 Transportation Safety Facts and 2006 Annual Assessment Report. Projected rates for 2007 through 2011 were calculated using NHTSA's forecasting methodology. The Path to Target line drops from 1.42 in 2006 to 1.00 in 2011 and assumes an equal annual decrease.

\*Fatality rates are shown as the number of fatalities per 100 million vehicle-miles traveled.

Our recent audit work points to areas in which the Department can better meet the challenge of reducing transportation fatalities through enhanced oversight of safety programs and stronger enforcement.

### ***Improving Motor Carrier Safety With More Complete Information on Vehicle Crashes and Stronger Enforcement Against Repeat Violators***

While quality crash data are vital to ensuring that high-risk motor carriers are targeted for additional oversight, states are not reporting significant numbers of nonfatal crashes to FMCSA; thus, these important data are not included in the calculations that identify high-risk motor carriers. No single solution will resolve this problem, but FMCSA could help by providing additional training for those who prepare crash reports and complete independent state assessments to identify reporting issues. Although 15 independent state assessments have been completed, FMCSA should ensure that the remaining states complete assessments by the end of FY 2008, as it has promised.

FMCSA has also committed to closing a loophole in its enforcement policy that allows hundreds of motor carriers to repeatedly violate significant safety regulations without exposure to maximum penalties. As we reported in April 2006, motor carriers with limited ability to pay fines can repeatedly violate the same regulation without being penalized as a “repeat offender.” FMCSA should close this enforcement loophole in FY 2008.

### ***Closely Monitoring Mexican Motor Carriers Operating Throughout the United States Under the Department’s Demonstration Project***

On September 6, 2007, the Department initiated a 1-year demonstration project to permit up to 100 Mexican motor carriers to operate beyond the commercial zones along the United States–Mexico border. Our report called on FMCSA to address the need for coordinated, site-specific plans for checking trucks and drivers participating in the demonstration project each time they cross the border into the United States.

Assuming future funding for this project is approved, FMCSA will need to coordinate with the states and U.S. Customs and Border Protection to carry out the plans for these checks. These checks must ensure that all Mexican drivers participating in the project are properly licensed and that all trucks display decals denoting recent safety inspections.

### ***Countering Fraud in the Commercial Driver’s License Program***

FMCSA should likewise continue to carry out its congressionally mandated enhancements to the commercial driver’s license (CDL) program to ensure that only drivers with requisite skills obtain CDLs. These mandates include FMCSA’s addressing our prior recommendations for countering fraud in the program. Over the past 6 years, with the support of FMCSA, we have carried out investigations with other law enforcement agencies that involved CDL fraud schemes in 26 states. These investigations have led to prosecutions in 20 states and the



identification of CDLs that were issued by corrupt state or state-approved third-party examiners.

To its credit, FMCSA has instituted a fraud component within its CDL compliance review program and is working with the states to identify vulnerabilities. FMCSA also followed through on its commitment, made in response to our 2006 audit report, to request that states track the status of drivers suspected of fraud. Nonetheless, FMCSA must take further action to implement regulatory changes being planned to tighten controls over CDL learner's permits, strengthen requirements for proving that CDL applicants are in the United States legally, and improve the ability of the states to detect and prevent fraudulent testing and licensing.

### ***Resolving Hours of Service Rules for Commercial Drivers***

In July 2007, the U.S. Court of Appeals for the D.C. Circuit vacated two provisions of the rules governing the hours of service of commercial drivers, which FMCSA issued in 2005. This was the second time in 3 years that the Court has vacated all or part of an hours-of-service rule. In 2004, the Court vacated a rule because the agency had failed to discuss driver health issues. Although the agency's treatment of that matter in the 2005 rule was challenged in the subsequent lawsuit, the Court declined to address the issue. Instead, it held that the 2005 rule had violated the Administrative Procedure Act by not providing an opportunity for comment on the methodology of a fatigue model that FMCSA used and that the agency failed to explain certain elements of that methodology. The Court, therefore, vacated the two provisions derived from the methodology in question. FMCSA asked the Court to delay its mandate for 1 year and has noted the scientific, economic, operational, and procedural complexity of hours-of-service rulemaking and the critical importance of the issue both to the trucking industry and highway safety groups. In September 2007, the court granted a 90-day stay. The agency should give high priority to resolution of this issue.

### ***Improving State Accountability in Programs for Reducing Alcohol-Impaired Driving***

In 2006, the number of alcohol-related highway traffic deaths (over 17,500) accounted for about 41 percent of all reported traffic deaths. Accordingly, no appreciable improvement in the number of highway fatalities can be achieved until alcohol-related fatalities drop dramatically. States are the linchpin in achieving this drop and ensuring that the \$555 million in Federal funding authorized for state alcohol-impaired driving incentive grants are targeted toward strategies that have the most impact.

NHTSA—the lead Federal agency responsible for reducing alcohol-impaired driving—could assist in this effort by ensuring that the states include more

meaningful measures linked to key program strategies in their performance plans. NHTSA has agreed to develop intermediate performance indicators that states can use to measure performance in priority program areas. NHTSA should complete development of such indicators by FY 2009 and, afterwards, periodically assess the extent to which states have adopted them.

***Further Reducing Railroad Collisions and Fatalities Through More Safety Oversight***

Over the past 10 years, significant progress has been made in reducing collisions and fatalities at highway-rail grade crossings. The number of such collisions fell by 31 percent from the end of 1996 to its end-of-2006 total of just over 2,900. FRA's grade crossing safety oversight activities have contributed to this progress. However, these grade crossing collisions continue to claim over 300 lives each year.

As we testified in May 2007, FRA can do more to reduce collisions and fatalities at the Nation's grade crossings. Specifically, its challenges are to focus its oversight activities on (1) ensuring compliance with mandatory reporting requirements, (2) increasing its involvement in investigations, (3) addressing sight obstructions at crossings without automated warning devices, (4) establishing reporting requirements for its national grade-crossing inventory system, and (5) requiring states with the most dangerous crossings to develop action plans that identify specific solutions for improved safety.

Further, FRA must continue to focus its inspection and enforcement resources on the issues and locations most in need of attention. In March 2006, it implemented a new National Inspection Plan, in response to our 2005 recommendations, that called for greater use of data analysis to help target FRA's regulations and oversight activities on problem areas. The plan uses trend analysis of rail safety data to identify and track predictive indicators to assist FRA in allocating inspection and enforcement activities within a given region, by railroad and by state. It is too soon to determine how effective these measures will be in the long term, but it is a very positive step.

***For additional information, the following reports and testimonies can be found on the OIG web site at <http://www.oig.dot.gov>:***

- *Motor Carrier Safety: Oversight of High-Risk Trucking Companies*
- *Letter to Representative Petri regarding the Motor Carrier Safety Status Measurement System (SafeStat)*
- *Significant Improvement in Motor Carrier Safety Since 1999 Act but Loopholes for Repeat Violators Need Closing*

- *Issues Pertaining to the Proposed NAFTA Cross-Border Trucking Demonstration Project*
- *Follow-Up Audit on NAFTA Cross-Border Trucking Provisions*
- *Federal Motor Carrier Safety Administration Oversight of Commercial Driver's License Program*
- *Audit of NHTSA's Alcohol-Impaired Driving Traffic Safety Program*
- *FRA Can Improve Highway-Rail Grade Crossing Safety by Ensuring Compliance With Accident Reporting Requirements and Addressing Sight Obstructions*
- *Reauthorization of the Federal Railroad Safety Program*
- *Actions Needed To Further Improve Railroad Safety*
- *Opportunities To Further Improve Railroad Safety*

## 6. Continuing To Make a Safe Aviation System Safer

Safety is the FAA's highest priority. For more than 5 years, FAA and the U.S. aviation industry have experienced one of the safest periods in history—even as the industry was undergoing dramatic changes. However, the August 27, 2006, crash of Comair Flight 5191 served as a reminder that we must continue to do more to make a safe system safer.

Key challenges for FAA are:

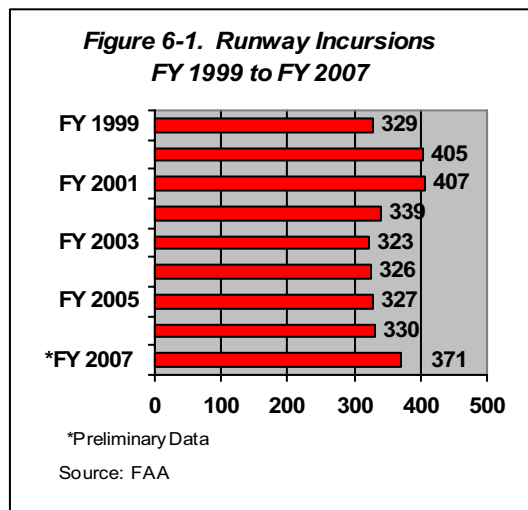
- Taking proactive steps to improve runway safety in light of recent serious incidents;
- Ensuring consistency and accuracy in reporting and addressing controller operational errors;
- Strengthening risk-based systems for external repair facilities, air carriers, and aircraft manufacturers;
- Maintaining a sufficient number of inspectors with the right skills and in the right locations to oversee a dynamically changing aviation industry; and
- Strengthening oversight of the Airman Medical Certification Program.

### *Taking Proactive Steps To Improve Runway Safety in Light of Recent Serious Incidents*

Reducing the risk of runway incursions (potential collisions on airport surfaces) is a critical safety issue that requires proactive and ongoing effort on the part of FAA, airlines, and airport operators. In fact, the last fatal commercial aircraft accident in the United States (Comair flight 5191) was the result of a runway incident in which the pilots attempted to take off from the wrong runway.

As shown in figure 6-1, the total number of runway incursions decreased from a high of 407 in FY 2001 to a low of 323 in FY 2003.

Since 2003, the number of runway incursions had leveled off until last year, when they increased to 371. Although the most serious runway incursions (category A and B events) decreased to 24 in 2007, very serious runway incursions continue to occur. For example:



- On July 19, 2007, at Chicago O'Hare International Airport, a collision was barely avoided when a United Airlines aircraft exited the wrong taxiway and taxied directly underneath the path of an arriving US Airways aircraft. Although the controller instructed the US Airways plane to go around, it overflew the nose of the United Airlines aircraft by an estimated 50 to 70 feet.
- On May 26, 2007, at San Francisco Airport, a controller mistakenly cleared a Republic regional aircraft to depart while a Skywest regional aircraft was landing on an intersecting runway. The Skywest aircraft was unable to stop short of the runway intersection and the Republic aircraft overflew it by an estimated 50 feet.

The seriousness of these incidents underscores the need for continual proactive and concerted efforts, including actions to address technological as well as programmatic solutions for improving runway safety.

A key technology for reducing runway incursions is the Airport Surface Detection Equipment–Model X (ASDE-X) program. FAA is developing ASDE-X to aid air traffic controllers in preventing ground collisions at airports and reducing runway incursions. In October, we issued a report<sup>10</sup> on FAA's progress in implementing this system.

We found that ASDE-X is at risk of not meeting its cost and schedule goals to commission all 35 systems for about \$550 million by 2011 and may not achieve all planned safety benefits. When we testified before the Senate in May 2007, FAA had already expended about \$288 million and obligated about \$350 million but had only deployed 8 of 35 systems for operational use. As of August 30, 2007, FAA deployed 11 of 35 systems for operational use. Of the 11 systems, eight are located at airports with intersecting runways. However, FAA has yet to implement the planned capability to alert controllers of potential collisions on intersecting runways and taxiways at four of the eight airports requiring these key safety capabilities.

To achieve the program's goals and more effectively manage the program, FAA needs to (1) improve ASDE-X management controls to reduce the risks of further cost growth and schedule delays; (2) resolve operational performance risks with key ASDE-X safety capabilities associated with detecting potential collisions on intersecting runways and taxiways, including during inclement weather; and (3) work with the airlines and airports to provide safety enhancements that were not

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<sup>10</sup> OIG Report Number AV-2008-004, "FAA Needs To Improve ASDE-X Management Controls To Address Cost Growth, Schedule Delays, and Safety Risks," October 31, 2007.

included in the ASDE-X program's rebaseline but are vital to reducing the risks of ground collisions caused by pilot and vehicle operator errors.

In May, we issued a report<sup>11</sup> on FAA's actions to address runway incursions at four major airports. Overall, we found that several national initiatives for promoting runway safety (undertaken by FAA as early as 2000) have subsequently waned as the number of incidents declined and FAA met its yearly goals for reducing runway incursions.

We identified several programmatic actions that FAA needs to take to help prevent runway incursions systemwide. They include:

- improving information sharing among users to identify root causes of pilot deviations and communicate best practices to reduce runway incursions;
- placing additional focus on controller human factors issues and training to improve individual, team, and facility performance; and
- assigning greater authority and accountability at the national level to ensure that runway safety remains a priority for all FAA lines of business.

FAA is in the process of addressing these concerns. For example, it appointed a permanent executive-level director for its Runway Safety Office in August 2007—a position that had been vacant for almost 3 years. FAA also plans to reinstate its National Plan for Runway Safety, which has not been prepared since 2002.

In August 2007, FAA also convened a meeting with airline and airport officials, and agreed to a five-point, short-term plan for improving runway safety. The plan's major focus includes:

- conducting safety reviews at airports where wrong runway departures and runway incursions are the greatest concern,
- accelerating the deployment of improved airport signage and markings at the top 75 airports ahead of the June 2008 mandated deadline, and
- reviewing cockpit procedures and air traffic clearance procedures.

The success of these positive actions will depend on ensuring that the current momentum continues and that runway safety remains a high priority for all users of the National Airspace System.

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<sup>11</sup> OIG Report Number AV-2007-050, "Progress Has Been Made In Reducing Runway Incursions, But Recent Incidents Underscore the Need for Further Proactive Efforts," May 24, 2007.

### ***Ensuring Consistency and Accuracy in Reporting and Addressing Controller Operational Errors***

Another serious safety issue that FAA must continue to address is operational errors—when controllers fail to maintain adequate separation between aircraft. In FY 2007, there were 1,393 operational errors,<sup>12</sup> up slightly from 1,338 in FY 2006. In addition, the most serious operational errors increased from 41 to 43 in the last year—about 1 serious operational error every 8 days.

FAA needs to ensure that all operational errors are being consistently and accurately reported; this is a significant concern. FAA currently relies on an inaccurate system of self-reporting of operational errors; only 20 of FAA's 524 air traffic control facilities have an automated system that identifies when operational errors occur.

FAA is taking steps to correct this weakness. It is in the process of developing the Traffic Analysis and Review Program to identify operational errors when they occur at its Terminal Radar Approach Control (TRACON) facilities (those facilities that currently have no automated reporting system). FAA plans to start fielding this system in FY 2008 and estimates its completion by FY 2011.

Keeping this technology on track must remain a priority for FAA. We continue to receive allegations that operational errors are going unreported or, in some cases, intentionally misclassified. For example, as a result of a whistleblower complaint, we are currently conducting an investigation at the Dallas/Fort Worth TRACON to determine if operational errors are being inappropriately classified as pilot deviations to deflate the number of errors attributed to the facility. This investigation is ongoing, and we expect to report our results later this year.

FAA has also modified its severity rating system for operational errors to make the ratings more reflective of potential collisions. The new rating system is based solely on the proximity of the two aircraft. FAA believes this will provide a better means for measuring the risk of a collision from an operational error so it can better focus on the most serious incidents. However, FAA must remain committed to finding the cause, applying remedies or mitigations, and taking action in response to all operational errors to identify trends and prevent future such errors from occurring.

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<sup>12</sup> FY 2007 numbers are preliminary.

### ***Strengthening Risk-Based Oversight Systems for Air Carriers, External Repair Facilities, and Aircraft Manufacturers***

In the past 9 years, FAA has made important progress in developing risk-based approaches to safety oversight of air carriers, aircraft manufacturers, and—most recently—aircraft repair stations. These systems are designed to permit inspectors to use safety data to focus their oversight on areas of higher risk. However, to meet the demands of an ever-evolving aviation industry, FAA must ensure that inspectors for air carriers transitioned to the Air Transportation Oversight System (ATOS) are properly trained in using the risk-based oversight approach; gather more complete data on the facilities air carriers use to complete critical maintenance; and modify its risk-based system for manufacturers to ensure that inspectors can effectively respond to the growth in use of both domestic and foreign suppliers.

**Risk-Based Oversight System for Air Carriers:** According to recent data provided by FAA, it has now implemented ATOS at 110 air carriers; however, there are 8 air carriers that still need to be converted to the new oversight system. FAA plans to complete this transition by the end of this calendar year.

In addition, ATOS requires the use of a team of inspectors with specialized expertise, not only in technical areas such as maintenance and electronics, but also in conducting risk assessments. Based on information provided to us, FAA has not developed a plan that details how this transition can be accomplished with its limited inspector resources. FAA has indicated that it is reconfiguring field offices to more efficiently use existing and newly hired inspectors in conjunction with the transition, but it has not fully addressed how it plans to ensure that these inspectors have the needed skills. FAA has reported that it is providing training for inspectors transitioned to ATOS. However, conducting risk assessments is a new skill set for FAA inspectors that may not come readily even with new hires. For the transition to be successful, FAA must ensure it has an adequate number of properly trained inspectors.

**Oversight Systems for External Repair Facilities:** During the past 2 years, FAA has worked to move its safety oversight for aircraft repair stations to a risk-based system; however, for this new system to be effective, FAA will have to establish a sound process for determining where critical aircraft maintenance is performed.

FAA developed new inspection guidance and air carrier processes to address this problem, but these efforts still fall short of providing FAA with the information it needs. For example, FAA developed a process for air carriers to report the top 10 critical maintenance providers used each quarter. The process is voluntary, however, and FAA inspectors are not required to validate the data air carriers



submit. Therefore, FAA cannot be assured that it is getting the accurate and timely information needed to determine where it should focus its inspections. FAA plans to issue a proposed rulemaking requiring this information; but, this process is not yet complete.

Further, FAA's new risk-based system does not include a process for oversight of critical repairs performed by non-certificated repair facilities. In 2005, we reported that over 1,400 non-certificated repair facilities were performing maintenance for U.S. air carriers and that more than 100 of these facilities were located in foreign countries. FAA's efforts to improve its oversight of non-certificated repair facilities are still underway. FAA needs to clarify its guidance so inspectors will be better equipped to identify non-certificated repair facilities that are performing critical maintenance.

**Risk-Based Oversight of Aircraft Manufacturers and Their Suppliers:** In FY 2003, FAA revised its oversight system for aircraft manufacturers and their suppliers to a more risk-based approach. However, FAA will need to modify this system so that inspectors can more effectively oversee manufacturing operations in the current aviation environment. The system was not designed to address the increasingly prominent role that aircraft parts and component suppliers now play in aviation. Rather than building the majority of their aircraft within their own manufacturing facilities using their own staff, manufacturers now have large sections of their aircraft built by domestic and foreign parts suppliers. For example, 1 major U.S. manufacturer uses major parts and components from close to 1,200 domestic and foreign suppliers to manufacture its aircraft. FAA needs to ensure that its risk-based system includes an assessment of the number of suppliers manufacturers now use.

### ***Maintaining a Sufficient Number of Inspectors***

The rapidly changing aviation environment makes it imperative for FAA to maintain a sufficient number of inspectors in the right locations. FAA has about 4,000 inspectors located in offices throughout the United States and in other countries. These inspectors must oversee both domestic and foreign aspects of American air carriers' maintenance and operations.

FAA expects to hire 297 aviation safety inspectors in FY 2008. During the same period, FAA expects to lose about 210 aviation safety inspectors, resulting in a net increase of 87 inspectors in FY 2008. FAA requested funding for these 87 inspectors in FY 2008, which would be an increase over FY 2007 staffing levels. However, FAA faces challenges in maintaining a sufficient staff because approximately 48 percent of the inspector workforce will be eligible to retire by 2012.

In addition, FAA must ensure adequate training for its inspectors. Using risk-based oversight systems is a foundational part of FAA's plan to meet future oversight challenges, but it requires that inspectors be skilled in risk analyses. Therefore, FAA must step up its hiring and training if it is to maintain a sufficient number of inspectors with the right skill set to provide oversight of a dynamic aviation industry.

### ***Strengthening Oversight of the Airman Medical Certification Program***

The Airman Medical Certification Program represents a key safeguard in making sure that the more than 600,000 licensed pilots in the United States are medically fit to fly. The OIG, the National Transportation Safety Board, and FAA, however, have documented hundreds of instances in which pilots failed to disclose potentially disqualifying medical conditions. These are conditions—ranging from heart problems to neurological and psychiatric disorders—that the Federal Air Surgeon has identified as able to compromise a pilot's ability to safely operate an aircraft.

Because of concerns about FAA's handling of falsified pilots' medical certificates, Congress held an oversight hearing on July 17, 2007, to better understand this fraud among pilots who hide serious medical conditions from examining physicians in order to retain medical certification for their pilots' licenses. At the hearing, FAA reiterated its commitment to ensuring the highest level of safety for the traveling public. In following through on its commitment, FAA needs to make certain it has an effective oversight and regulatory enforcement regimen with which to enforce this critical safety requirement in its licensing of pilots. This is an especially important issue, given possible regulatory changes to extend medical certificate expiration dates, which would result in fewer opportunities for physicians to evaluate pilots' medical fitness.

***For further information, the following reports and testimonies can be found on the OIG web site at <http://www.oig.dot.gov>:***

- *FAA Needs to Improve ASDE-X Management Controls To Address Cost Growth, Schedule Delays, and Safety Risks*
- *Staffing at FAA's Combined Radar Approach Control and Tower With Radar Facilities*
- *Progress Has Been Made in Reducing Runway Incursions, but Recent Incidents Underscore the Need for Further Proactive Efforts*
- *Safety Oversight of an Air Carrier Industry in Transition*
- *Letter to Representative Oberstar Regarding FAA Actions on Air Carriers' Use of Aircraft Repair Stations*
- *Controls Over the Reporting of Operational Errors*

- *Alleged Cover-Up of Operational Errors at DFW TRACON*
- *Review of Air Carriers' Use of Non-Certificated Repair Facilities*
- *Letter to Representative Oberstar Regarding FAA's Aging Airplane Safety Rule*
- *Falsification of FAA Airman Medical Certificate Applications by Disability Recipients*

## **7. Strengthening the Protection of Information Technology Resources, Including the Critical Air Traffic Control System**

Fiscal year 2007 was a particularly challenging year for the Department in managing its information technology (IT) resources. While the Department has completed most of its scheduled security recertification reviews, the overall effectiveness of its information security program declined because management had to divert resources and attention to resolving Headquarters move-related issues. In addition to establishing a common IT infrastructure for the new Headquarters, it had to review, test, and certify security protection in more than half of its information systems to meet the recertification requirement, as well as correct security weaknesses previously identified in the critical air traffic control system. FY 2008 will require continued management attention in several areas in order to strengthen the protection of the Department's IT resources:

- Enhancing Air Traffic Control System Security and Continuity Planning
- Testing and Strengthening the Information System Security Program at DOT Headquarters
- Ensuring the Timeliness of Data Recording and Protection of Personally Identifiable Information When Interfacing With Non-Federal Systems
- Continuing To Enhance Oversight of Information Technology Investments

### ***Enhancing Air Traffic Control System Security and Continuity Planning***

The President has designated the air traffic control system as part of the Nation's critical infrastructure due to the important role that commercial aviation plays in fostering and sustaining the economy and ensuring citizens' safety and mobility. In FY 2007, under the Deputy Administrator's (now the Acting Administrator) direction, FAA undertook renewed initiatives to develop a business continuity plan (BCP) to recover the catastrophic loss of any En Route Center and to improve the quality of security reviews for air traffic control systems outside of the computer laboratory. FAA has made modest progress in both areas by developing a detailed concept of operations that thoroughly details the expected operations of the BCP and creating a methodology for selecting high-risk operational air traffic control systems for security review. However, these are multi-year efforts, for which FAA faces the following challenges:

- **Measuring the loss of each En Route Center's impact on the National Airspace System (NAS):** FAA's plan estimates restoration of 80 percent of an

affected En Route Center's capabilities within 3 weeks; however, the impact that a disabled center will have on the NAS as a whole has not been assessed. Since each center relies on adjacent centers to efficiently manage air traffic, the loss of one center could cause a ripple effect throughout the NAS. In order for FAA to better understand the overall impact, it will need to conduct an impact analysis of the effect that the loss of 20 percent of operational capability at each En Route Center would have on the entire system. This analysis will help FAA not only determine whether the current plan provides adequate coverage for the entire NAS, but also prioritize BCP development efforts—the most critical En Route Centers receiving more attention. Also, because the plan would shift functionality of the disabled center to the FAA recovery site located at its Technical Center in Atlantic City, NJ, the analysis should determine the impact that an activated recovery plan would have on the Technical Center's core mission—developing and testing systems used to support air traffic control operations and aircraft safety.

- **Resolving technical and resource concerns:** The success of the BCP hinges on FAA's ability to overcome logistical challenges. These challenges include rerouting voice communications and surveillance signals from the affected En Route Center(s) to the recovery center, ensuring that the "spare" En Route Center at the Technical Center is properly staffed in the event that it is activated, and prior coordination with the appropriate labor unions for human resource management needs. Another resource concern involves funding. FAA has budgeted \$12 million for developing and implementing the continuity plan. However, this funding level was not based on sufficient analysis or cost estimates; rather, it was obtained by reallocating excess funds from current and ongoing FAA projects. FAA should complete a cost and schedule analysis to better determine estimated costs and use these figures to secure additional funding commitments, if needed.

Regarding reviews of operational air traffic control systems security, FAA developed a methodology to select high-risk systems located in the field for testing. In fact, FAA went beyond our recommendation and applied this methodology to systems other than those used for air traffic control. However, FAA did not meet its commitment to us to complete its reviews of all TRACON and tower systems by the end of FY 2007. Further, despite the improved site-selection method, FAA did not enhance its methodology to help identify software differences between the baseline systems at the Technical Center and the operational air traffic control systems in the field. This deficiency could weaken overall security protection because vulnerabilities could inadvertently be created when software changes are made to meet local (field site) operational needs, as evidenced in our previous audit reports. FAA needs to focus on identifying and testing for unauthorized software changes in field air traffic control systems.

### ***Testing and Strengthening the Information System Security Program at DOT Headquarters***

The Department will continue to face important challenges in FY 2008 as it seeks to enhance its information system security program, specifically in meeting tougher Federal government security standards, correcting identified security deficiencies, and securing its IT infrastructure—all at a time of heightened vulnerability.

Risk categorization is the key to determining the level of security protection needed for individual systems. Systems categorized as having a high-risk impact on the Department's mission must meet a more stringent security standard than moderate- or low-risk-impact systems. We have continued to find deficiencies in risk categorization and insufficient implementation of minimum security protection. For example, of about 100 systems used to direct air traffic control operations, none were reported as having high-risk impact. Systems identified by FAA as high-risk impact are primarily for administrative functions, such as the procurement system. After this was brought to management's attention, the departmental Chief Information Officer, the FAA Acting Deputy Administrator, and the FAA Chief Information Officer all agreed to collaborate with the Air Traffic Organization to ensure that air traffic control systems are individually reviewed and categorized in accordance with National Institute of Standards and Technology standards and DOT policy, as a key priority for FY 2008.

Also of concern is a reversal of the improvement we saw last year in which security deficiencies identified during certification reviews were well tracked and prioritized for correction. Management did not give the same amount of attention to correcting identified security deficiencies in FY 2007 as it did in FY 2006. The Department needs to better address the new Federal government security standards and correct its security deficiencies.

In addition, the Department has made little progress in configuring the commercial off-the-shelf software installed on DOT computers to comply with government or departmental security standards to reduce known vulnerabilities. As a result of improper configuration, DOT network computers remain vulnerable to attack. Also, with the new common IT infrastructure, the Department has significantly expanded its ability to utilize secure connections on the Internet by using virtual private network (VPN) access. However, when employees connect their home computers to Departmental networks, it creates security exposure because the home computers may not be properly secured. The Department needs to take stronger action to ensure secure configuration of commercial software and secure connections on its new IT infrastructure, particularly as it seeks to dramatically expand employees' use of telecommuting.

### ***Ensuring the Timeliness of Data Recording and Protection of Personally Identifiable Information When Interfacing With Non-Federal Systems***

The Department is responsible for maintaining the National Driver Register (NDR) information system, which contains tens of millions of profiles on drivers convicted of such offenses as driving under the influence of alcohol. State officials are required to report to the NDR drivers who receive traffic convictions, along with their personally identifiable information, such as name, date of birth, gender, height, weight, eye color, and social security number. Keeping problem drivers off the road is critical to reducing highway fatalities and injuries.<sup>13</sup>

Timely recording of drivers with traffic convictions in the NDR is critical to preventing problem drivers from “license shopping”—going to a different state to get a new driver’s license when their current licenses are suspended or revoked. The law requires states to submit problem drivers’ profiles to the NDR within 31 days of receipt of conviction information. However, only slightly more than one-third of our sample records met this requirement. Further, according to our estimate, state officials did not record 6 million problem drivers in the NDR until at least 1 year after conviction. This delayed reporting significantly impaired other states’ ability to keep problem drivers from getting licenses. The Department needs to work with the states to improve the timeliness of problem drivers’ profiles being sent to the NDR.

While drivers’ personally identifiable information was properly secured in the NDR mainframe database, it was exposed to unauthorized access or unapproved use when outside of the mainframe computer. For example, while Federal security standards require that sensitive information be encrypted when transmitted on networks, NDR records were not. Instead, they were transmitted in clear text and thus subject to unauthorized access during transmission. This security deficiency existed partly because a non-Federal entity is responsible for managing the transmission network. This network also supports transmission of other critical transportation-related data.<sup>14</sup> To protect the public’s personally identifiable information, the Department needs to ensure that security requirements and the associated authorities or responsibilities are properly specified and documented with its interfacing partners.

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<sup>13</sup> There are more than 200 million licensed drivers in the United States, of whom 42 million have records in NDR. In 2006, more than 70 million people applied for driver’s licenses, 9 million of whom were found to have a conviction recorded in NDR.

<sup>14</sup> The same network is also used to support Commercial Driver’s License Information System (CDLIS) operations, for which the Department has oversight responsibility.

### ***Continuing To Enhance Oversight of Information Technology Investments***

A challenge that still confronts the Department is completing the implementation of an earned value management (EVM) system. During FY 2007, the Department revised its Investment Review Board's charter by delegating more responsibilities to individual Operating Administration review boards to oversee their specific IT investments. Regardless of the change in governance responsibility, establishing clear measurement benchmarks against which to evaluate major investment projects such as EVM is key to effective management of cost, schedule, and performance of large (multi-year) development projects. In FY 2006, only 23 percent of major Departmental IT investment projects met at least half of the Office of Management and Budget's criteria for EVM implementation. During FY 2007, the figure was 35 percent—a modest improvement. The Department needs to continue to enhance EVM implementation to ensure fiscal discipline with major investment projects, which is especially critical in today's tight economic environment.

***For further information, the following reports and testimonies can be found on the OIG web site at <http://www.oig.dot.gov>:***

- *DOT Information Security Program*
- *Volpe Center's IT Security and Resource Management Activities*
- *DOT Delphi Financial System Controls*
- *Security and Controls Over the Remote Maintenance and Management System, FAA*
- *Security and Controls Over Technical Center Computer Systems, FAA*
- *Security and Controls Over En Route Center Computer Systems, FAA*
- *Office of the Chief Information Officer's Budget, DOT*



## **8. Managing Acquisition and Contract Operations More Effectively To Obtain Quality Goods and Services at Reasonable Prices**

With an annual procurement budget of about \$5.6 billion for goods and services, the Department needs to ensure that more attention is placed on acquisition and contract operations. We continue to find weaknesses throughout DOT. Our investigations also continued to identify fraud and abuse and other ethical issues involving DOT officials and contractors.

Providing increased attention to ensuring that procurement and acquisition activities are conducted in an efficient and effective manner and that taxpayer dollars are protected from fraud and abuse is a Government-wide priority. The Department is improving its administration of contracts and grants. For example, it has begun working more closely with the Defense Contract Audit Agency (DCAA) to help identify high-risk contracts for audit. In addition, the FHWA recently issued a manual containing best practices on overseeing grants and cooperative agreements.

Last year, we completed a major initiative to help improve contract and acquisition practices throughout DOT by establishing a contract and acquisitions audit group. The team will continue to meet with senior Department contracting officials to discuss procurement issues and will increase its efforts to review procurements, contracts, and acquisition programs to enhance controls.

While DOT agencies are cooperating on eliminating problems as they arise and implementing actions to improve oversight processes, DOT must be more proactive and enhance its vigilance and oversight. We have identified several areas in which the Department must focus its attention in order to enhance its acquisition and contract management oversight:

- Increasing Incurred-Cost Audits of Procurement Contracts To Reduce Unallowable Charges
- Developing Strategies for the Future Acquisition Workforce
- Fostering High Ethical Standards Throughout the Department and Its Contracting Programs To Maintain Public Trust
- Enhancing Oversight on Federal-Aid Construction Projects To Prevent Abuse in Contractor Quality Control Programs

### ***Increasing Incurred-Cost Audits of Procurement Contracts To Reduce Unallowable Charges***

Contract audit services provided by DCAA are a valuable tool for assisting contracting officers in combating excessive prices and unallowable charges. Monetary benefits from DCAA audits not only cover audit costs but can also reduce program costs. From FY 2001 through FY 2005, DOT Operating Administrations saved over \$4 for every \$1 spent on these audits.

The Department is doing more to obtain these needed audits. DOT's Office of the Senior Procurement Executive has been working with DCAA, the Operating Administrations, and the Office of Inspector General to find better methods for obtaining needed audits. Additionally, responding to our recommendation, FAA revised its guidance to require that all cost-reimbursable contracts over \$100 million and 15 percent of those contracts under \$100 million obtain post-award audits of allowable costs incurred. At other DOT agencies, incurred-cost audits are preferred, unless sufficient justification is documented for not obtaining them. Resolution of audit recommendations must be made within a maximum of 6 months after issuance of a final report.

However, these policies need to be implemented more effectively throughout the Department. Our recent report<sup>15</sup>, covering all DOT agencies other than FAA, discussed how many Operating Administrations did not consistently follow Departmental and Federal Acquisition Regulation guidance for obtaining incurred-cost audits. We also reported that they did not consistently take adequate action to resolve audit findings for the audits DCAA conducted. Contracting officers also need to take more consistent action in a timely manner to recover overpayments made to contractors. To illustrate, between FY 2001 and FY 2005, DCAA identified \$48 million in questioned costs, of which contracting officers resolved about \$36 million. However, contracting officers missed opportunities to recover the remaining \$12 million in questioned contract costs. The Department agreed with the findings and recommendations contained in the report. The Department needs to follow through on its commitment, in response to our report, to obtain more incurred-cost audits and resolve questioned contract costs in a timely manner.

### ***Developing Strategies for the Future Acquisition Workforce***

Having the right people with the right skills is critical to ensuring that DOT receives the best value for the \$5.6 billion it spends each year for goods and services. Like all executive agencies, DOT is required to collect, maintain, and utilize information on education, training, career development, and accession to ensure effective management of the acquisition workforce.

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<sup>15</sup> OIG Report Number FI-2007-064, "More Incurred-Cost Audits of DOT Procurement Contracts Should Be Obtained," August 29, 2007.

As required by the Office of Management and Budget, DOT is in the process of developing a human capital strategic plan for its acquisition workforce. However, DOT is facing a considerable challenge in developing such a plan. According to a senior Department official, they are having difficulty determining which positions comprise the acquisition workforce. Additionally, DOT lacks complete data on the acquisition workforce, such as information on workforce size, knowledge and skills, attrition rates, and retirement rates. Without such critical data, the Department cannot properly identify the current condition of the workforce and decide what needs to be done to ensure that it has the right composition, mix of skills, and talent for the future.

***Fostering High Ethical Standards Throughout the Department and Its Contracting Programs To Maintain the Public Trust***

DOT employees in contracting-related positions represent the first—and best—line of defense in ensuring program integrity, and a challenge for the Department (as with any government agency) is to develop and maintain robust ethics programs. Contracting officers and their technical representatives, cooperative agreement and grants administrators, and managers are relied upon for the timely recognition and reporting of fraud indicators. Along with effective internal controls and oversight mechanisms, their vigilance is essential to combating fraud.

An example of effective vigilance is a recent FAA case involving an almost \$2-billion multiple awards procurement program. FAA had conducted an internal review, finding evidence of a fraud scheme being perpetrated by multiple contractors. The ensuing investigation conducted by FAA and our office found that 13 of the 30 contractors had significantly overcharged FAA. Specifically, over a 3-year period, these 13 firms had billed FAA for employees at labor rates that were often considerably higher than their actual education and experience warranted, as specified by terms of the contract. As a result, FAA has recovered over \$8 million in overcharges and further tightened its internal controls to guard against recurrence.

Ethical lapses by DOT employees involved in contracting also sometimes occur. For example, at one Operating Administration, a former program manager pled guilty to felony charges for accepting \$160,000 in exchange for steering contracts worth about \$8 million to an IT services firm headed by a former employee. In another case, an Operating Administration contracting officer and a supervisor provided confidential bid information to a foreign-owned entity to help it underbid its competitor, a U.S.-owned firm, and win a \$4.3-million contract for construction of lighting system infrastructure. The two employees pled guilty to felony procurement fraud charges and are no longer employed by DOT.

In many of the cases we have investigated, DOT employees did not maintain an appropriate “arms-length” relationship with contractors and cooperative agreement recipients, presenting criminal implications for both employees and contractors alike.

The Department must continually promote and reinforce ethical standards to help guard against such breaches of integrity in its extensive contract, cooperative agreement, and grants programs. Prevention and deterrence of ethical lapses in any organization depends upon both the effectiveness of internal controls and oversight processes, and a robust ethics awareness and training program.

Agency ethics programs need to have particular emphasis placed on employees involved in awarding and administering contracts, cooperative agreements, and grants. Enhanced ethics training should include discussions of actual ethics violations and “what if” scenarios of situations to avoid. While computer-based training is beneficial, there is no substitute for personal contact between ethics officials and employees. Moreover, DOT ethics officials should periodically review the ethics programs of agency contractors to help prevent ethical breakdowns.

***Enhancing Oversight on Federal-Aid Highway Construction Projects To Prevent Abuse in Contractor Quality Control Programs***

A challenge facing FHWA is ensuring that taxpayers are provided the quality of products and services they pay for and expect from contractors on Federal-aid highway construction projects. To leverage scarce State oversight resources, State DOTs partner with industry and directly perform quality assurance materials testing only on a sample basis in order to validate the results of more extensive quality control testing by contractors. We, however, are seeing more cases involving fraudulent quality control testing by contractors. FHWA’s stewardship reviews of State DOTs conducted between 2003 and 2006 have also identified deficiencies in many State DOT quality assurance programs.

For example, during the last year, we investigated several cases in which company employees manipulated quality control test results to falsely earn contract incentives. In one such case, a contractor had delivered about 5,700 trucks’ worth of substandard concrete to the Central Artery/Tunnel Project in Boston. The contractor ultimately pled guilty to conspiracy to defraud the government and agreed to pay \$50 million in restitution and fines and to establish a corporate integrity program, among other penalties. FHWA needs to exercise continued vigilance of State DOT quality assurance oversight programs to better mitigate fraud.

*For additional information, the following reports can be found on the OIG web site at <http://www.oig.dot.gov>:*

- *Oversight of Cost-Reimbursable Contracts*
- *Audit of the Actions to Prevent Fraud on Cooperative Agreements With Universities*
- *More Incurred-Cost Audits of DOT Procurement Contracts Should Be Obtained*

## 9. Reforming Intercity Passenger Rail

Intercity passenger rail is an integral part of our Nation's transportation system, particularly in light of growing highway and aviation congestion. However, Amtrak's<sup>16</sup> contribution to the transportation system may be limited by its capital funding needs, which may be difficult to meet given constrained Federal resources. Therefore, the Department must use all tools at its disposal, including seeking consensus on a reauthorization, to ensure that Amtrak reduces its operating costs and improves its operating performance, thereby freeing funds for Amtrak's capital needs and increasing Amtrak's viability as a transportation alternative.

### *Improving Amtrak's Cost-Effectiveness To Sustain Its Financial Progress*

Amtrak projects a \$1 billion operating loss in FY 2007. While Amtrak continues to implement strategic reforms to improve its cost-effectiveness, the pace of these reforms has slowed. Amtrak implemented \$61 million in reforms in FY 2006, and planned to implement only \$46 million in reforms in FY 2007 and \$40 million in FY 2008. Since February 2007, the company reduced its projected FY 2008 savings from reforms by half.

While reforms have slowed, Amtrak faces significant and increasing financial challenges. Amtrak's recent improvements in revenues are due, in part, to factors beyond its control, such as the high cost of gasoline that contributed to increases in ridership. It is unclear whether Amtrak can sustain these revenue improvements. A labor agreement, when it is reached, will increase Amtrak's operating costs. A significant investment will be required to return Amtrak's physical infrastructure to a state of good repair, meet the Americans With Disabilities Act requirements, and replace Amtrak's aging passenger cars and locomotives.

The uncertainty and precarious nature of Amtrak's revenue structure, its inability to shed costs quickly to match revenues, and its near-term financial demands all require Amtrak to emphasize cost control and cost improvement. The Department needs to use its position as a member of the Amtrak Board of Directors and its role in approving funding for Amtrak's routes and capital projects to help maintain Amtrak's focus on improving the cost-effectiveness of its operations.

### *Overcoming Challenges to Improving Amtrak's On-Time Performance*

On-time performance continues to plague Amtrak service, threatening its ability to sustain increased revenues and reduce operational costs. Amtrak service outside the Northeast Corridor operates on freight railways, and these railways have experienced tremendous growth in tonnage shipped over the past 5 years. This has

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<sup>16</sup> Amtrak is the federally supported company established in 1971 to provide intercity passenger rail.

resulted in increased congestion and delays for both Amtrak and freight trains. In addition, the widespread loss of experienced dispatchers within the industry due to retirements has increased freight and passenger rail conflicts. The Department has worked with Amtrak and freight railroads in the Southeast to improve Amtrak's on-time performance. The Department will need to expand these efforts to improve Amtrak service reliability throughout its system.

### ***Reauthorizing Amtrak To Facilitate Reform***

Amtrak's efforts at reform are not a substitute for reauthorization. Its ability to achieve its stated goal of "continuous improvement" is limited within the current framework. To go beyond marginal cost and service improvements will require an authorization bill that realigns the size, operations, and governance of the intercity passenger rail system to match the levels and sources of funding available and provides Amtrak with the tools and incentives to provide cost-effective, high-quality service. The Department needs to work with Congress and other stakeholders to finally break the cycle of appropriations without authorization for Amtrak, and provide Amtrak with these needed tools and incentives.

***For further information, the following reports and testimonies can be found on the OIG web site at <http://www.oig.dot.gov>:***

- *Amtrak's Board of Directors Provides Leadership to the Corporation but Can Improve how it Carries Out Its Oversight Responsibilities*
- *First, Second, and Third Quarterly Reports on Amtrak's FY 2007 Operational Reform Savings and Financial Performance*
- *First, Second, Third, and Fourth Quarterly Reports on Amtrak's FY 2006 Operational Reform Savings and Financial Performance*
- *Intercity Passenger Rail and Amtrak*
- *Reauthorization of Intercity Passenger Rail and Amtrak*
- *Analysis of Cost Savings on Amtrak's Long-Distance Services*
- *Assessment of Amtrak's 2003 and 2004 Financial Performance and Requirements*

## EXHIBIT. COMPARISON OF FY 2008 AND FY 2007 TOP MANAGEMENT CHALLENGES

| Items in FY 2008 Report  | Items in FY 2007 Report   |
|--|---|
| <ul style="list-style-type: none"> <li>Continuing To Enhance Oversight To Ensure the Safety of an Aging Surface Transportation Infrastructure and Maximize the Return on Investments in Highway and Transit Infrastructure Projects</li> </ul> | <ul style="list-style-type: none"> <li>Making the Most of the Federal Resources That Sustain Surface Transportation Infrastructure Improvements by Continuing To Emphasize Project Oversight</li> </ul> |
| <ul style="list-style-type: none"> <li>Addressing Long- and Short-Term Challenges for Operating, Maintaining, and Modernizing the National Airspace System</li> </ul>  | <ul style="list-style-type: none"> <li>FAA Reauthorization – Reaching Consensus on a Financing Mechanism To Fund FAA and Establishing Funding Requirements</li> </ul>                                   |
| <ul style="list-style-type: none"> <li>Developing a Plan To Address the Highway and Transit Funding Issues in the Next Reauthorization</li> </ul>  | <p style="text-align: center;">—</p>  |
| <ul style="list-style-type: none"> <li>Reducing Congestion in America’s Transportation System</li> </ul>   | <ul style="list-style-type: none"> <li>Defining, Developing, and Implementing Strategies To Improve Congested Conditions on the Nation’s Highways, Ports, Airways, and Borders</li> </ul>               |
| <ul style="list-style-type: none"> <li>Improving Oversight and Strengthening Enforcement of Surface Safety Programs</li> </ul>   | <ul style="list-style-type: none"> <li>Strengthening Efforts To Save Lives by Improving Surface Safety Programs</li> </ul>  |
| <ul style="list-style-type: none"> <li>Continuing to Make a Safe Aviation System Safer</li> </ul>  | <ul style="list-style-type: none"> <li>Aviation Safety—Performing Oversight That Effectively Utilizes Inspection Resources and Maintaining Aviation System Safety</li> </ul>                            |
| <ul style="list-style-type: none"> <li>Strengthening the Protection of Information Technology Resources, Including the Critical Air Traffic Control System</li> </ul>  | <ul style="list-style-type: none"> <li>Protecting, Monitoring, and Streamlining Information Technology Resources</li> </ul>   |
| <ul style="list-style-type: none"> <li>Managing Acquisition and Contract Operations More Effectively to Obtain Quality Goods and Services at Reasonable Prices</li> </ul>  | <ul style="list-style-type: none"> <li>Improving Acquisition and Contract Management To Reduce Costs and Eliminate Improper Payments</li> </ul>   |
| <ul style="list-style-type: none"> <li>Reforming Intercity Passenger Rail</li> </ul>   | <ul style="list-style-type: none"> <li>Achieving Reform of Intercity Passenger Rail</li> </ul>  |
| <p style="text-align: center;">—</p>   | <ul style="list-style-type: none"> <li>Responding to National Disasters and Emergencies – Assisting Citizens and Facilitating Transportation Infrastructure Reconstruction</li> </ul>                   |
| <p style="text-align: center;">—</p>   | <ul style="list-style-type: none"> <li>Strengthening DOT’s Coordination of Research, Development, and Technology Activities and Funding</li> </ul>  |

**Exhibit. Comparison of FY 2008 and FY 2007 Top Management Challenges**



**APPENDIX. DEPARTMENT COMMENTS**

**U.S. Department of  
Transportation**

Office of the Secretary  
of Transportation

**Memorandum**

**ACTION:** Departmental Comments on the OIG Draft  
Subject: Report – Top Management Challenges, Department of  
Transportation

Date: October 30, 2007

Phyllis F. Scheinberg *Phyllis Scheinberg*  
From: Assistant Secretary for Budget and  
Programs/Chief Financial Officer

Reply to  
Attn. of:

To: Calvin L. Scovel III  
Inspector General

The U.S. continues to enjoy the world's foremost transportation system, which offers unprecedented connectivity and safety that is a bedrock of this Nation's economic prosperity. Throughout the last century, the U.S. built the most extensive highway system in the world and developed a far-reaching National Airspace System. However, today our transportation system faces significant challenges. We value the perspectives offered in the Office of Inspector General's (OIG) report on the Top Management Challenges and will make good use of the information it contains. However, several items cited reflect larger national policy issues, not simply departmental management and performance concerns. Therefore, we are taking this opportunity to offer some additional perspective on the top issues facing the Department.

Congestion and delays on the Nation's highways and airspace are now widespread and acute, affecting both passenger travel and freight movement, and ultimately the nation's economic well being. In the past 20 years, hours of delay and wasted fuel have each increased by more than 400 percent. In 2005, highway and transit congestion wasted 4.2 billion hours of time and 2.9 billion gallons of fuel. The cost for this wasted time, fuel and the lost productivity associated with it, exceeds \$170 billion per year, and continues to worsen. In aviation, while we continue to enjoy the safest period in aviation history, congestion and delays continue to grow, stretching the capacity of our aviation system to the limit. This past summer saw record delays in flights across the country, up nearly 20 percent compared to just one year ago. The sum total of aircraft delays during this period was more than 15 years, with nearly half of that in the New York/New Jersey/Philadelphia region alone.

The Department will continue to address these issues to the fullest extent of its authority. We are seeking to turn these challenges from the last century into the opportunities of this

century. Addressing these longstanding policy issues will require sustained and cooperative efforts not just by the Department but also by the Congress, transportation providers and users. While your Top Management Challenges Report examines these issues through the lens of the Department, it will only be through the combined action of all parties that we can move forward with innovative solutions to reduce congestion and increase efficiency, while continuing to improve transportation safety. We view the challenges facing the transportation community as falling into three groupings: (1) reshaping transportation financing to promote efficient use of existing infrastructure and to provide cost effective new infrastructure, (2) implementing congestion management initiatives to break the gridlock growing on our Nation's highway and airspace, and (3) continuing to improve the safety of our Nation's transportation system.

### **Reshaping Transportation Financing is Critical to Successful Transportation Investments**

The Department is at a funding crossroads, where several measures pending before the Congress have the potential to fundamentally reshape and improve our transportation future. With bold and courageous decisions, we can enjoy a future with less congestion, modernized transportation systems, and more efficient and productive use of increasingly limited taxpayer dollars. The alternative is the status quo, with increasing congestion, investment decisions made without cost benefit analysis or performance expectations, and a future of increasing costs and uncertain benefits. Three pieces of legislation are vital to shaping this future; aviation reauthorization, Amtrak reauthorization, and surface transportation reauthorization. The laws that ultimately result from these efforts have the potential to change our transportation system.

The Federal Aviation Administration (FAA) has been preparing to implement a cost-based user-funded structure that will base revenues on a specific, transparent assessment of what it costs to maintain the National Airspace System. Based on years of extensive analysis, FAA now has a viable cost allocation system. Using this capability, it is able to assess the cost users impose on the National Airspace System. While significantly more complex, this is the same basic approach that consumers experience in their use of electricity, water and natural gas. It is a model that promotes efficient use of these utilities. In contrast, our current method for funding the National Airspace System is analogous to charging households for electricity based on the size of their house, or the number of household occupants, rather than their actual utilization. Numerous bipartisan commissions have recommended cost-based funding for FAA over the last two decades, and we firmly believe that a cost-based funding structure offers the best means to efficiently make the major capital investments required for a transition to the Next Generation Air Transportation System (NextGen).

Amtrak has been operating without legislative reauthorization for over 6 years, preventing the types of fundamental reforms called for by multiple bodies of experts and this Department. The Nation currently has a flawed model for providing intercity passenger rail service that does not encourage innovation or emphasize accountability. The Administration's goal is to create sustainable, demand-driven service by,

empowering states and localities to direct rail investment and fostering opportunities for participation by alternative rail service providers. Key aspects were first spelled out by then-Secretary of Transportation Mineta in 2002, and remain valid today. The Department awaits Congressional action to (1) create a system driven by sound economics, (2) require that Amtrak transition to a pure operating company, (3) introduce carefully managed competition to provide higher quality service at reasonable prices, (4) establish a long-term partnership between states and the federal government to support intercity passenger rail service, and (5) create an effective partnership, after a reasonable transition, to manage the capital assets of the Northeast corridor. Amtrak continues to operate without making fundamental changes, resulting in excessive expenditures that fail to meet any reasonable cost benefit. Without the statutory framework necessary to achieve increased efficiencies and improve cost benefit, the Department can act only at the margins to affect positive change on Amtrak operations.

We are now more than halfway through the existing surface transportation authorization. The Department has already begun a dialogue with the Congress and transportation stakeholders to focus future surface transportation investments using data-driven, performance-oriented techniques that offer the greatest potential transportation benefit from each dollar of investment. In contrast, today's Federal investment strategy discourages the proper pricing of transportation infrastructure, fails to sufficiently reward innovation and technology development and does not prioritize investments based on performance and benefit. We are currently spending billions of dollars more than we collect in tax revenues each year. As a result, the Highway Account of the Highway Trust Fund is projected to experience a substantial cash shortfall for the first time in 2009. The Mass Transit Account is also expected to experience a shortfall in 2011. The Nation's transportation community must work together to increase the efficiency of our transportation investments, improve benefits to the taxpayers, and reduce congestion.

#### **Action Needed to Address the Gridlock in the Air and on our Nation's Highways**

The FAA is working to expand and further improve management of available airspace capacity. Since 2000, thirteen new runways have opened at major airports providing the capacity to accommodate 1.6 million more annual operations. Even the three more runways now under construction will not be enough to accommodate the projected growth in air travel. The Department faces a significant challenge of putting necessary airport capacity in place while simultaneously addressing environmental concerns. Nowhere is this more evident than in the New York/New Jersey/Philadelphia area. FAA has worked long and hard to improve the efficiency of this key area in the National Airspace System while accommodating the environmental concerns of those living in the vicinity. This airspace redesign project offers the potential to eliminate 200,000 hours of aircraft delays per year, and reduce airline operating costs by up to \$285 million per year, while reducing exhaust emissions.

We have also been taking other near-term actions to reduce air travel delays and better use existing capacity. For example, the Secretary and FAA are working with key airports and the airlines that use them to achieve a more realistic scheduling of flights and reduce

delays. In addition, FAA is constantly working to have an adequately staffed and expertly trained air traffic controller workforce. That is why FAA developed and has been implementing a comprehensive Controller Workforce Plan to address the wave of retirement-eligible controllers over the next ten years. FAA has taken proactive steps to ensure it has the right people in the right place and time. These steps include expanding the Collegiate Training Initiative, increasing recruiting through forums such as job fairs and streamlining clearance processes. FAA hired over 1,100 controllers last year, is on track to hire another 1,700 controllers this year, and will carefully monitor actual trends and the workforce plan to continue hiring the appropriate number of controllers in the future.

In the longer term, anticipated growth in the use of the National Airspace System will require a new approach to air traffic control, which FAA has embodied in the NextGen initiative. NextGen is a steady, deliberate and highly collaborative undertaking which focuses on leveraging the latest technologies, such as satellite-based navigation, surveillance, and network-centric systems. It is intended to be flexible enough to take advantage of even newer and better technologies as they emerge.

The Department is also pursuing innovative means to reduce surface transportation congestion. For example, the urban partnership program will provide over \$800 million to support tolling and other congestion-relief demonstration projects in Seattle, San Francisco, Minneapolis, Miami, and New York City. New York's congestion pricing plan, if fully authorized by the state, will provide incentives for off-peak travel in Manhattan and finance substantial upgrades to the Nation's largest transit system. The other cities also plan to experiment with tolling and transit improvements that we believe can have tremendous impact. In addition, the Corridors of the Future program has identified six critical multistate corridors that together carry nearly 23% of the Nation's traffic and has begun to work with applicants on making improvements to these facilities. Elements of the program include building new capacity, adding lanes to existing roads, building truck-only lanes and bypasses, and integrating real-time traffic technology such as lane management that can match available capacity on roads to changing traffic demands. These advances offer the hope of reduced congestion, reduced emissions, and greater value to the users.

### **DOT Maintains a Sharp Focus on Continuously Improving Aviation and Surface Transportation Safety**

While the U.S continues to enjoy the safest aviation system in the world, FAA is persistent in its drive to achieve further improvements. Fiscal year 2007 passed without a single major air carrier accident. By the end of calendar year 2007, FAA is on track to have all of the current 120 major air carriers regulated under 14 CFR part 121 transitioned to the data-driven, risk-based, Air Transportation Oversight System (ATOS). This is a significant achievement the organization has been working towards for years. In April 2007, FAA also took steps to enhance its oversight of maintenance programs to ensure that work performed by certificated and non-certificated repair facilities is accomplished within the scope of the contract and in compliance with the air carriers'

maintenance instructions for continued airworthiness. In addition, in May 2007, FAA completed a 10-year, Aviation Safety Workforce Plan, to address safety staffing, inspector attrition, and anticipated changes in the aviation industry. Finally, FAA has established recruiting plans to fill its most critical safety occupations. Each of these actions is a noteworthy accomplishment that will assist the agency in its relentless drive to further improve safety.

Highway crashes account for 99 percent of all transportation related fatalities and injuries and are the leading cause of death for Americans between the ages of 2 and 34. Alcohol is still the single largest contributing factor in fatal crashes and about 55 million people still do not use safety belts all of the time when driving. However, some progress is being achieved. In 2006, the number of people killed in motor vehicle crashes fell 2 percent to 42,642. Fatalities resulting from large truck and bus crashes account for about 12 percent of these of these fatalities while motorcycle fatalities continue to increase, now accounting for 11 percent of the total highway fatalities. Despite progress in some areas, the number of people losing their lives on the Nations' highways remains far too high.

Numerous initiatives are underway to further improve highway safety, better target inspection and compliance resources, increase safety belt use, reduce impaired driving, and improve the safety of the vehicles we drive. The Federal Motor Carrier Safety Administration has launched a major initiative called the Comprehensive Safety Analysis 2010 to better target its inspection and compliance resources. The National Highway Safety Administration (NHTSA) continues to work with the states to increase the percentage of drivers using safety belts from the current national average of 82.4 percent. In the area of impaired driving, NHTSA further enhanced its program to focus on high risk populations. Extra funding has been provided to the ten states with the highest impaired driving fatality rates, and NHTSA is evaluating technology such as ignition interlocks, as a potential means to further reduce deaths and injuries from impaired driving. NHTSA also continues its critical work to make vehicles safer. In April of this year, NHTSA issued a final rule to require Electronic Stability Control in vehicles. Data has shown that these systems can reduce fatal single vehicle crashes by 63 percent for sport utility vehicles and 36 percent for passenger cars. Finally, NHTSA is working to identify the most effective means to address motorcycle safety problems. It recently distributed a guide to assist states and communities in creating programs to improve motorcycle safety. It incorporated motorcycle operators in high visibility enforcement programs and completed a study to determine impairment levels for motorcycle riders. In the coming year, NHTSA plans additional actions to improve motorcycle training, improve helmets, and explore vehicle safety approaches to improving safety.

Thank you for the opportunity to offer management's perspectives on the Department's Top Management Challenges. We look forward to a continued constructive exchange of ideas and information with you in each of these areas.

The following page contains textual versions of the graphs and charts found in this document. These pages were not in the original document but have been added here to assist screen readers.

Figure 5-1: In the Coming Years, the Highway Fatality Rate Will Need To Fall Below Projected Rates To Meet the Target Rate by 2011

Note: Fatality rates are shown as the number of fatalities per 100 million vehicle-miles traveled.

| Year                 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|----------------------|------|------|------|------|------|------|------|------|------|------|------|
| Actual Fatality Rate | 1.51 | 1.51 | 1.48 | 1.44 | 1.46 | 1.42 | 0    | 0    | 0    | 0    | 0    |
| Projected Rate       | 0    | 0    | 0    | 0    | 0    | 0    | 1.41 | 1.39 | 1.38 | 1.36 | 1.34 |
| Path to Target       | 0    | 0    | 0    | 0    | 0    | 0    | 1.34 | 1.25 | 1.17 | 1.08 | 1.00 |

Source: Actual fatality rates are from the National Highway Traffic Safety Administration's 2005 Transportation Safety Facts and 2006 Annual Assessment Report. Projected rates for 2007 through 2011 were calculated using the National Highway Traffic Safety Administration's forecasting methodology. The Path to Target line drops from 1.42 in 2006 to 1.00 in 2011 and assumes an equal annual decrease.

Figure 6-1: Runway Incursions FY 1999 to FY 2007

| Fiscal Year | Runway Incursions |
|-------------|-------------------|
| FY 1999     | 329               |
| FY 2000     | 405               |
| FY 2001     | 407               |
| FY 2002     | 339               |
| FY 2003     | 323               |
| FY 2004     | 326               |
| FY 2005     | 327               |
| FY 2006     | 330               |
| FY 2007*    | 371               |

Source FAA

\*Preliminary Data