

**TRANSPORTATION TECHNOLOGY
INNOVATION AND DEMONSTRATION
PROGRAM (TTID)**

Federal Highway Administration

Report Number: MH-2010-030

Date Issued: December 8, 2009



Memorandum

**U.S. Department of
Transportation**

Office of the Secretary
of Transportation
Office of Inspector General

Subject: **ACTION:** Transportation Technology Innovation and Demonstration Program
Federal Highway Administration
Report No. MH-2010-030

Date: December 8, 2009

From: Joseph W. Comé 
Assistant Inspector General
for Surface and Maritime Program Audits

Reply to
Attn. of: JA-40

To: Federal Highway Administrator

This report presents the results of our audit of the Federal Highway Administration's (FHWA) management and oversight of the \$54 million awarded under the Transportation Technology Innovation Demonstration Program (TTID).¹ TTID was conceived as a partnership between the public and private sectors. The private partner would install and operate technology that collected traffic data from public roadways in exchange for the exclusive right to generate revenue from the data, such as by marketing on-air traffic reports. If revenue reached a certain threshold, the private partner would share the proceeds with the public partner. The private partner would also give the data to the public partner to manage traffic congestion—such as locating and responding to traffic crashes and planning infrastructure projects for congested road segments. Congestion costs Americans \$78 billion annually, including 4.2 billion hours of excess travel time and 2.9 billion gallons of extra fuel.²

To implement TTID, FHWA paid the private partner (referred to in this report as the *service provider*) \$2 million per metropolitan area to provide traffic data services through installation and operation of sensors and data transmission equipment in public rights-of-way. The service provider then negotiated agreements with metropolitan areas—addressing terms such as where, when, and how the service provider would install its equipment and how the partners would calculate the service provider's revenue sharing and use the collected traffic data.

¹ TTID was previously known as the Intelligent Transportation Infrastructure Program (ITIP). Throughout this report, we refer to the program as TTID.

² Texas Transportation Institute, 2007 Urban Mobility Report, Texas A&M University System, September 2007.

Based on requests from U.S. Senator Orrin Hatch and U.S. Representative Anthony Weiner, we reviewed FHWA's management of TTID, including the process to select private partners after 2005 amendments to the authorizing statute. In discussions with staff, we agreed to assess whether FHWA (1) achieved statutory goals and optimized TTID benefits for the public partners and (2) complied with 2005 statutory provisions for a competitive private partner selection process. To accomplish these objectives, we analyzed legislation, contract provisions, and congressional communication and performed audit work focused on Federal and metropolitan area program oversight related to non-Federal funding, revenue sharing and reinvestment, data rights, and data quality. Additional information on our scope and methodology is in exhibit A.

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards. These standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

RESULTS IN BRIEF

TTID addressed statutory goals,³ but FHWA did not optimize the program's benefits for the public partners. The private service provider deployed traffic data collection systems in metropolitan areas, shared revenues, and produced software to generate traffic reports for Federal, state, and metropolitan agencies. FHWA provided assistance, such as sample contracts, to the states and metropolitan areas as they negotiated agreements with the service provider. However, FHWA allowed the service provider to control significant aspects of the program that, as a result, diminished TTID's value to the public partners. For example, the public partners received a lower share and limited use of TTID revenue, and were restricted from freely communicating certain traffic data to the traveling public. Additionally, FHWA did not enforce the task order's data quality requirements, which reduced the reliability of travel time estimates and traffic operations. FHWA did not optimize the public partner benefits because FHWA focused on addressing congressional interest and minimizing the service provider's financial risk to prevent program disruption. Specifically, FHWA officials told us that the statutory provisions established how the program was to work and FHWA did not

³ *Transportation Equity Act for the 21st Century* (TEA-21), Public Law 105-178, Section 5117(b)(3), June 9, 1998, as amended by *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU), Public Law 109-59, Section 5508, August 10, 2005, identifies the following objectives: (1) build or integrate an infrastructure of traffic measurement; (2) provide private technology commercialization initiatives to generate and reinvest gross revenues; (3) aggregate data into reports for multipoint data distribution; and (4) utilize an entity with experience with high-reliability, mission-critical voice and data systems.

have flexibility to manage the program in any other way. Although Congress directed FHWA to extend the existing service provider's task order and members of Congress sent letters regarding TTID expansion, FHWA could have done more to protect the public interest. Moreover, because FHWA was concerned about the service provider's financial risk, FHWA paid the service provider for installation of specified equipment, rather than paying for the data services as they became available. TTID is intended to generate public partner benefits during the several years remaining on FHWA's task order with the current service provider. Consequently, we are recommending that FHWA modify its TTID implementation to enhance the public benefits of the program. Our recommendations are listed at the end of this report.

Regarding competition for TTID service provision, FHWA took action to comply with the 2005 statutory provisions calling for a competitive private partner selection process. However, FHWA had limited TTID funds remaining and experienced delays during the competitive solicitation process. Congress rescinded the remaining money before FHWA completed the competition.

BACKGROUND

In the 1998 statute that created TTID, Congress directed the Secretary of Transportation to initiate a program to deploy an operational intelligent transportation infrastructure system. About \$11.8 million was made available for 1998 through 2005 to introduce the program in multiple metropolitan areas.

In April 1999, the Department, using an accelerated procurement process, awarded a lump sum task order for 5 years of data services.⁴ The prime contractor retained a 5-percent management fee and subcontracted with a service provider for all program work. The service provider then negotiated local agreements with Philadelphia and Pittsburgh, the metropolitan areas Congress specified in law.

In October 2000, Congress authorized an additional \$50 million for TTID.⁵ FHWA planned to award these funds on a competitive basis; however, in January 2002 before FHWA did so, Congress authorized the Secretary to extend the original task order, which required use of the existing service provider and task order terms.⁶ In June 2002, FHWA awarded to the original service provider a \$50 million lump sum, firm-fixed-price task order for data services in 25 metropolitan areas at \$2 million each, which required the completion of 10 milestones with specific deliverables. Between June 2002 and August 2005,

⁴ The Department awarded a subsequent 10-year task order.

⁵ *Fiscal Year 2001 DOT Appropriations Act*, Public Law 106-346, Section 378, October 23, 2000.

⁶ *Fiscal Year 2002 Defense Appropriations Act*, Public Law 107-117, Section 1101, January 10, 2002.

the service provider negotiated local agreements with 14 states and metropolitan areas totaling \$28 million.

In August 2005, Congress modified the TTID statute to replace the revenue sharing provision with a revenue reinvestment provision, among other changes.⁷ It also created part I and part II. Part I permitted the current service provider to complete the original task order in specified metropolitan areas. The service provider then negotiated agreements with 11 metropolitan areas for \$22 million, which completed the June 2002 \$50 million Federal task order. Part II directed the Department to award contracts on a competitive basis and required that the deployed technology in one geographic area be compatible with the technology in other areas.

TTID ADDRESSED STATUTORY GOALS, BUT FHWA DID NOT OPTIMIZE BENEFITS FOR PUBLIC PARTNERS

TTID addressed the four goals laid out in the 1998 and 2005 statutes. However, FHWA allowed the service provider to control significant aspects of the program and diminish TTID's value to the public partners. That is, FHWA allowed the service provider to interpret ambiguous task order language on revenue sharing to provide less to the public partners. Further, because the task order granted the service provider complete control and ownership of the data collected through the federally funded program, the participating metropolitan areas did not achieve the extent of infrastructure integration FHWA anticipated when it approved the program. Also, FHWA's inadequate enforcement of its service quality requirement reduced the reliability of travel time estimates and traffic operations.

TTID Addressed Statutory Goals

Through TTID, a traffic measurement infrastructure has been established and is growing—the first statutory goal. In June 2008, the service provider had deployed traffic measurement systems in 11 of the 27 participating metropolitan areas.⁸ Data sensors were installed that capture traffic volume, lane occupancy, speed, and vehicle type data, updated in 5-minute intervals. The remaining 16 participating metropolitan areas had signed agreements with the service provider and were in various stages of establishing their infrastructure.

TTID has also generated revenue for sharing and reinvestment through commercialization incentives—the second statutory goal. Specifically, in

⁷ SAFETEA-LU, Section 5508, August 10, 2005.

⁸ June 2008 refers to the date when we selected the metropolitan areas to include in our audit. According to FHWA, in October 2009, TTID had partnership in 27 metropolitan areas.

exchange for traffic data, the service provider sells advertising time and charges license fees, such as in the following examples.

- In exchange for traffic reports, the service provider sold advertising slots on WTAE-TV in Pittsburgh, Pennsylvania.
- Through a multi-year agreement, The Weather Channel pays the service provider an annual fee for traffic related content.

The service provider shares with the participating metropolitan areas a portion of its gross revenues from radio and television advertising, content and license fee contracts, and interactive online advertising. The service provider periodically deposits each metropolitan area's share of revenue into an escrow account to be used primarily for reinvestment in the TTID system or to cover the service provider's operating expenses in the metropolitan area. For 2003 through 2008, the service provider distributed approximately \$1 million to the 11 metropolitan areas with deployed systems.

TTID also addressed the third statutory goal—to aggregate data into reports for multipoint distribution. FHWA, state transportation departments, and participating metropolitan areas have access to real-time and historical traffic data. The data can be used for planning, analysis, and maintenance. The service provider's web site makes available to the public basic traveler information, with red, yellow, and green traffic flow indicators, and traffic incident and event data. The software applications include an incidents and events monitor; speed display; sensor information management system; and a data warehouse system that allows users to create customized reports on specific areas, routes, sensors, and dates. The service provider also distributes travel data reports to commercial subscribers through cellular phones and global positioning system (GPS) units. The archived data were included in FHWA's "Urban Congestion Report."

Finally, FHWA hired a contractor with experience in voice and data systems—the fourth statutory goal. FHWA awarded the original TTID task order to a diversified technology services company through the Information Technology Omnibus Procurement (ITOP), an accelerated contracting program. Under ITOP, the Department prequalified vendors to provide information technology services for Government agencies, including state and local governments. The vendors signed multiple award contracts with the Department that allowed them to work on task order assignments related to voice and data systems, information systems engineering, systems/facilities management and maintenance, and information system security support services. Two ITOP vendors submitted proposals for the first TTID task order. FHWA selected one proposal, making this vendor the TTID prime contractor responsible for managing a subcontractor that provided the data

services. The prime contractor had previous contracts with the Department and other Federal agencies.

FHWA Did Not Optimize Public Partner Benefits

Although TTID addressed each of the statutory goals, FHWA did not optimize public partner benefits with regard to revenue sharing, integrated data networks, and data availability. Consequently, participating metropolitan areas received less shared revenue, achieved less than full infrastructure integration, and obtained less reliable travel time estimates and traffic operations. These issues are particularly significant because TTID is intended to generate public partner benefits for several years after the deployment of data collection and transmission technology.

Lower Revenue Sharing

FHWA allowed the service provider to determine the basis for calculating the public partners' shares, but FHWA did not ensure that the determination was optimal. As a result, the service provider excluded more than 60 percent of its gross revenue before calculating the metropolitan areas' shares. Moreover, FHWA permitted the service provider to define the timing of revenue sharing, resulting in the service provider sharing approximately \$900,000 less with 11 participating metropolitan areas through 2008. Also, although the task order specified that funds would be shared with the public partners, FHWA allowed the service provider to reserve the public partners' shares for system operations and capital improvements. FHWA has not formally incorporated these allowances into the Federal task order.

The Federal task order requires the service provider to share with the public partners the revenue it earns from the sale and marketing of TTID information, in accordance with the following formula per metropolitan area:⁹

- 0 percent for gross revenue up to \$250,000,
- 5 percent for gross revenue between \$250,000 and \$1 million, and
- 10 percent for gross revenue above \$1 million.

⁹ Metropolitan areas negotiated slight variations of payment and other terms in their local agreements with the service provider. However, all agreements retained this basic formula.

FHWA allowed the service provider to determine how much of its revenue derived from TTID and how much derived from non-TTID sources. FHWA officials have accepted the service provider's numbers without verifying or auditing them. FHWA staff informed us that FHWA planned to conduct an audit when more metropolitan areas were generating revenue. According to the service provider, non-TTID revenue sources include police radio dispatch reports; state-owned sensors and cameras; and revenue from the sale of media time that did not relate to traffic data. Before computing the shared amounts, the service provider reduces total gross revenue by the amount it attributes to non-TTID sources. From 2003 to 2008, the reductions totaled more than \$40.8 million, about 62 percent of revenue (table 1).

Calendar Year	Gross Revenue (\$ millions)		
	Total	Service Provider Reductions	Adjusted Total
2003	\$1.586	\$0.650	\$0.936
2004	\$5.169	\$3.437	\$1.732
2005	\$7.769	\$4.867	\$2.902
2006	\$11.822	\$6.975	\$4.847
2007	\$20.814	\$11.987	\$8.827
2008	\$19.047	\$12.911	\$6.136
Total	\$66.207	\$40.827	\$25.380
Percentage reduction from total			- 62%
Source: OIG analysis of service provider data			

In 2002, an independent report on the service provider's capabilities recommended that FHWA consider clearly determining the source of data for the revenue sharing calculations.¹⁰ The report stated, "FHWA should consider obtaining documentation supporting [revenue] on an on-going basis," and "there will be a need to continually keep track of recognized revenue from multiple locations, in various phases since initial deployment." FHWA staff was unable to provide us evidence of action taken on these considerations. Although FHWA had some communication with the service provider, it did not fully analyze the service provider's revenue sources or the merit of not including certain revenue when computing the metropolitan areas' shares.

With regard to the timing of revenue sharing, FHWA permitted the service provider to negotiate local agreements stating that revenue sharing would occur on an annual basis, rather than a cumulative basis. The task orders did not address whether revenue sharing would be calculated on an annual or cumulative basis. Using cumulative gross revenue would have led to about \$2.0 million shared with

¹⁰ FHWA contracted with a certified public accounting firm to assess and report on the service provider's finances, management, and operational functions and its ability to successfully execute the proposed TTID expansion. The contract also called for the firm to identify risks related to contracting with the service provider. Mitchell & Titus, LLP, *Federal Highway Administration Due Diligence Report related to Mobility Technologies, Inc.*, April 15, 2002.

metropolitan areas, \$900,000 more than the \$1.1 million the service provider shared based on annual gross revenue for calendar years 2003 through 2008 (table 2).

Table 2. Annual and Cumulative Shared Revenue by Year			
<i>Calendar Year</i>	<i>Number of Metropolitan Areas OIG Reviewed</i>	<i>Shared Revenue based on Earnings</i>	
		<i>Annual</i>	<i>Cumulative</i>
2003	2	\$22,000	\$22,000
2004	5	\$49,000	\$72,000
2005	7	\$116,000	\$211,000
2006	10	\$173,000	\$347,000
2007	11	\$470,000	\$776,000
2008	11	\$253,000	\$566,000
Total 2003 to 2008		\$1,083,000	\$1,994,000
Source: OIG analysis of service provider data			

Exhibit B contains an illustrative example of the annual revenue sharing calculation for a single metropolitan area.

Finally, although the Federal task orders specified that the public partners would share TTID revenue, FHWA allowed the service provider to reserve the public partners' shares for system operations or capital improvements related to the service provider's assets. The certified public accounting firm's 2002 report quotes the service provider's financial statements that said, "[the shared revenue] will be reinvested in the Company for upgrades to the digital traffic systems."¹¹ Statutory changes in 2005 revised the revenue sharing provision to provide for reinvestment. The provision now calls for reinvesting the metropolitan areas' shares in the local intelligent transportation infrastructure system; it does not require reinvestment exclusively in TTID.

Restricted Data Rights Limited System Integration

In addressing the TTID goal of initiating private technology commercialization, FHWA granted the service provider exclusive data rights. This decision restricted the widespread communication of travel information, which resulted in limited integration. Of the 11 metropolitan areas we tested, 9 did not integrate their traffic data networks with the service provider's network, leading to redundancy and inefficiency. For example, in the San Francisco metropolitan area, the state

¹¹ Mitchell & Titus, LLP, page 15.

processes and distributes to the public traffic data it collects, while keeping the service provider's traffic data separate. The state uses the TTID data for limited purposes within its traffic control center.

The 2002 Federal task order specified that the integration of traffic data among the existing data networks was critical. This task order stated, "From the Department's perspective, [TTID] would enhance existing surveillance infrastructure through integration, along with strategic deployment of supplemental surveillance infrastructure." Additionally, FHWA's 2002 program approval decision memorandum specified that data generated by service provider sensors was to be integrated with major highway traffic data that the local agencies were collecting electronically and used for real time traveler information and traffic management purposes.

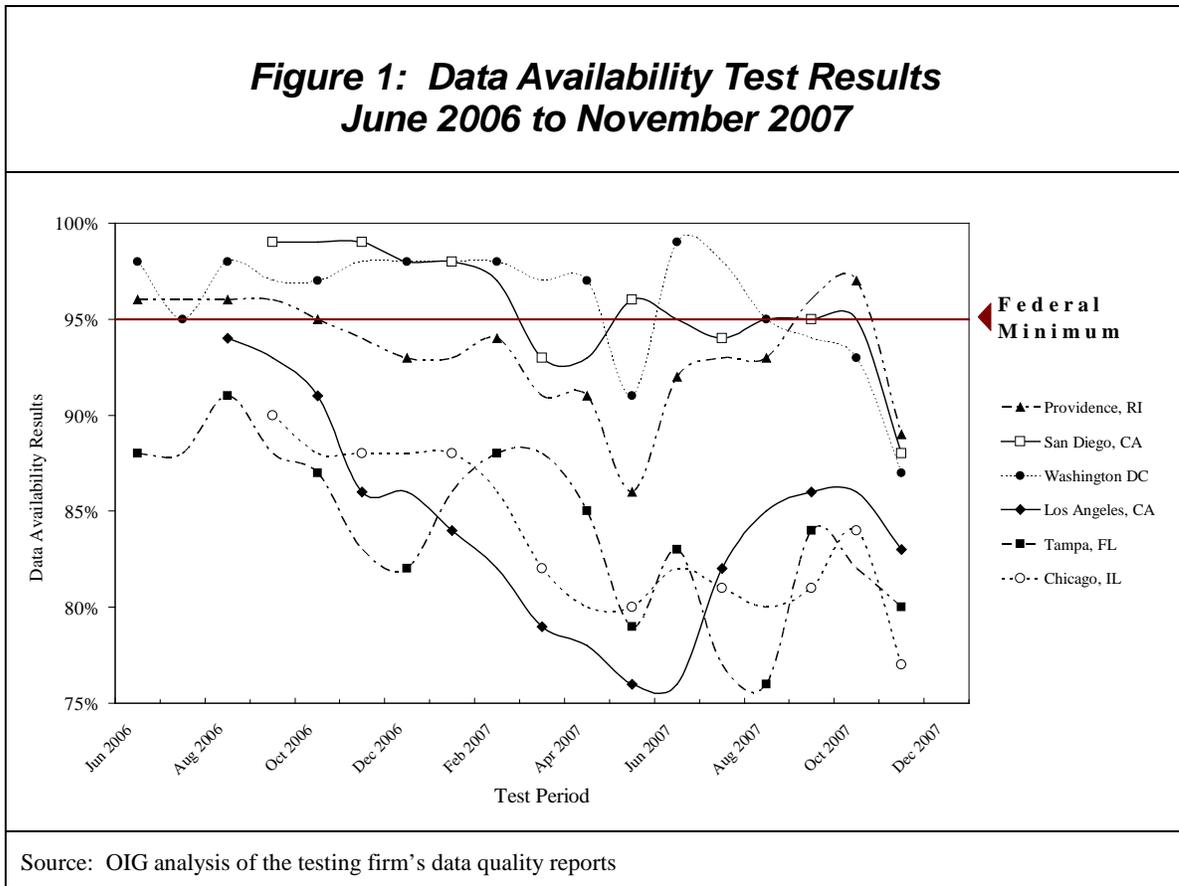
During the task order negotiations, however, the service provider told FHWA it would not proceed unless it controlled the travel data it collected. The service provider said that without exclusive data rights, it could not sustain the program, according to FHWA officials. FHWA accepted the service provider's control of the traffic information. The data restrictions created a conflict between the metropolitan areas' interest in communicating traffic information widely and the service provider's interest in controlling the data for commercial purposes. When the service provider negotiated the local agreements with the metropolitan areas, the public partners agreed not to make the data available in a form that could be commercially exploited. Consequently, TTID data collected by sensors on the publicly-owned right-of-way could not be posted on any state or metropolitan area web sites without paying the service provider.

Further, the service provider did not permit some metropolitan areas to post traffic data on their highway message signs. For example, Massachusetts Highway Department officials told us that in the Boston area, the service provider restricted the posting of traveler delay times on publicly-owned highway message signs. The service provider told us it had rethought this restriction, but such a change would require the public partners to modify the terms of the local agreements before message postings would be permissible.

Substandard Data Service Quality

The Federal task order required the service provider to ensure at least 95 percent data availability, that is, 95 percent of the expected number of data sets would be received from the service provider's sensors on the dates tested. Beginning in its September 2006 quarterly report, FHWA's oversight contractor reported that it

found chronic substandard data availability.¹² In December 2007, data availability was less than 90 percent in three of six metropolitan areas tested during the prior year (figure 1).



FHWA notified the service provider about the report, with which the service provider disagreed. In February 2008, FHWA communicated the service provider's rebuttal to the oversight contractor, but took no further action to resolve the issue until after OIG inquired in August 2008.

In October 2008, FHWA initiated direct communication between the oversight contractor and the service provider. Under this arrangement, the oversight contractor communicates to the service provider monthly about data anomalies it observes, rather than waiting to submit a quarterly report to FHWA. The service provider also agreed to update the oversight contractor directly on sensor in-service status.

¹² Noblis, Inc., *Quality Analysis for Data in the Intelligent Transportation Infrastructure Program [TTID] Data Warehouse*, September 2006 through November 2007.

The oversight contractor's March 2009 quarterly report showed improved data availability. For December 2008 through February 2009, the oversight contractor reported that all tested metropolitan areas averaged above 95 percent data availability, consistent with the task order requirement.

Despite Limitations and Challenges, FHWA Had Opportunities to Increase Public Benefits

Two factors influenced FHWA so that it did not optimize public partner benefits. FHWA focused on addressing congressional interest, based on legislation and correspondence. Also, FHWA focused on minimizing the service provider's financial risk to prevent program disruption. FHWA used an atypical payment schedule and helped ensure availability of the non-Federal matching share.

FHWA officials told us their overarching position was that Congress drove TTID—statutory provisions established how the program was to work, and FHWA did not have flexibility to manage TTID in any other way. In 2001, FHWA planned to use a competitive selection process when Congress authorized the \$50 million expansion. The FHWA Deputy Executive Director's April 2001 memo stated, “. . . there may be less expensive ways of acquiring the data. We believe that competition will allow the marketplace to sort this out and result in the greatest return on the public investment in these data.” However, FHWA referred us to at least nine letters from members of Congress that generally directed the Department and FHWA to use the ITOP accelerated procurement process, rather than full and open competition, to select a service provider. The fiscal year 2002 *Defense Appropriations Act*¹³ required FHWA to use the existing service provider with the same task order terms and conditions as agreed upon in 1998. Nevertheless, the statute and the letters did not preclude FHWA from taking prudent measures to protect the public interest more fully.

Using the existing service provider required FHWA to focus on minimizing the service provider's financial risk to prevent program disruption. When legislation called for expanding TTID, the service provider had few revenue sources. If the service provider became insolvent, TTID would have experienced a significant interruption, or ceased to exist, causing this legislative program to fail. FHWA's June 2002 Decision to Proceed memorandum highlighted the risk of default, if TTID did not generate sufficient revenues to sustain the service provider's operation or keep the service provider's investors satisfied. In such circumstances, “. . . default would be likely,” according to the letter. In 2000 and 2001, the service provider reported net losses of \$17.1 million and \$24.6 million, respectively. At that time, the service provider also had a debt of \$20 million,

¹³ *Fiscal Year 2002 Defense Appropriations Act*, Public Law 107-117, Section 1101, January 10, 2002.

secured with all its assets.¹⁴ The service provider's long-term viability depended on its ability to generate cash for operating needs and debt service. Positive cash flow from TTID was not expected until June 2004. FHWA was also aware that the service provider wanted cash for aggressive sales and marketing in major markets.

To improve the service provider's fiscal stability, FHWA used some atypical measures. Most notably, FHWA paid the service provider most of the Federal \$2 million per metropolitan area well in advance of receiving any traffic data, even as FHWA noted, "The primary Federal interest [was] in the data, not the infrastructure."¹⁵ FHWA explained, "Unlike a typical services contract, however, the Federal funding would be provided on the front end of the 10-year period to support the development and deployment of the data collection system." Additionally, FHWA specified that "in order to fulfill the legislative objectives for this program, it was necessary for the required infrastructure to be developed and implemented before any traffic data could be provided." Therefore, FHWA established milestone payments based on development and deployment of the system, which included installation of equipment. FHWA typically paid about 90 percent of the \$2 million per metropolitan area within the local agreement's first year—before any traffic data were delivered.

While Federal funds could be used for 80 percent of the costs, many of the metropolitan areas were either unable or unwilling to provide the non-Federal match. In this instance, FHWA used other measures to help the service provider meet the 20 percent non-Federal share. FHWA credited the service provider's capital equipment spending toward the non-Federal share. The service provider retains ownership of the equipment. Accordingly, FHWA allowed the service provider to report capital purchases in total and not by metropolitan area; therefore, spending more than 20 percent in one metropolitan area could count as matching funds for another metropolitan area.

FHWA WAS NOT ABLE TO COMPLY WITH COMPETITIVE SELECTION PROVISIONS

In 2002, Congress directed the Department to expand TTID with the existing service provider. In 2005, Congress created part II of the statute, which directed the Department to select TTID private partners on a competitive basis. Although

¹⁴ Based on information provided by the service provider in its U.S. Securities and Exchange Commission, Registration Statement Form S-1, filed on August 30, 2005.

¹⁵ FHWA, Decision to Proceed memorandum from the Acting Associate Administrator for Operations to the Federal Highway Administrator, June 7, 2001.

FHWA took action to comply with part II, delays and limited funding prevented completion of the competitive process.

In October 2005, FHWA issued a public notice announcing the extension and expansion of TTID and soliciting metropolitan areas and service providers to participate.¹⁶ By February 2006, 24 metropolitan areas had responded to the notice and had expressed interest in participating in TTID expansion. In February 2007, FHWA issued a pre-solicitation notice for a service provider competition¹⁷ and in June 2007, issued the final solicitation.¹⁸ The existing service provider submitted the only bid. A potential competitor advised FHWA that it would not submit a proposal. According to the potential competitor, the solicitation showed little difference from the original program and thus gave an unfair competitive advantage to the existing service provider. In September 2007, FHWA cancelled the solicitation and started developing a new one.

More than 1 year elapsed between the due date for responses to FHWA's initial public notice about TTID expansion and FHWA's solicitation for service provider bids. FHWA staff informed us that the delay until February 2006 was due to FHWA's focus on identifying metropolitan areas that would be willing to participate. From February 2006 until June 2007, FHWA focused on establishing a scope of services with a specific metropolitan area and seeking potential competitive service providers.

While part II directed FHWA to conduct a competition, the provision known as part I in the same 2005 legislation reduced the amount of funds available for such a competition. Part I required FHWA to complete the incumbent service provider's \$50 million task order for 25 metropolitan areas. As a result, FHWA had enough funds, \$5.5 million from previous authorizations, for up to three metropolitan areas under part II. Congress rescinded the funds for part II in December 2007.

CONCLUSIONS

TTID has benefited the public by expanding the deployment and use of traffic data systems in metropolitan areas, generating revenues for reinvestment, and producing software to generate traffic reports for Federal, state, and metropolitan agencies. However, FHWA allowed the service provider to control significant aspects of the program, consequently diminishing TTID's value to the public partners. With several years remaining on FHWA's task order with the current

¹⁶ Federal Register, page 60870, October 19, 2005.

¹⁷ FedBizOpps, February 28, 2007.

¹⁸ Solicitation No. DTFH61-07-R-00123, June 25, 2007.

service provider, TTID can generate public partner benefits well into the future. A more optimal distribution of benefits between the public and private partners is possible through better FHWA stewardship.

RECOMMENDATIONS

To enhance the public benefits of the TTID program, we recommend that the Federal Highway Administrator:

1. Define and document a more optimal methodology for revenue sharing between the service provider and the metropolitan areas, considering any exclusions or deductions from the service provider's gross revenues.
2. Test the service provider's revenue sharing for accuracy according to the documented methodology.
3. Develop and implement options to increase integration of traffic information and posting on highway message signs.
4. Develop and implement a plan regarding data service availability that requires:
 - a. Timely communication of the oversight contractor's test results to the service provider and participating metropolitan areas, and
 - b. Prompt remediation of any results below the task order specified minimum performance level.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

We provided a draft of this report to FHWA for review and comment on September 24, 2009. FHWA provided us formal comments on December 4, 2009, and additional informal comments. We incorporated the comments into this report, as appropriate. FHWA's formal comments are included as an appendix to this report.

In its formal comments to our draft report, FHWA requested a more balanced representation of the TTID program and its benefits. FHWA also pointed out that execution of the program in 1998 required innovative approaches, since virtually no precedents existed at the time for providing traffic information using public-private partnerships. In our final report, we note FHWA's efforts to enhance public benefits by assisting the states and metropolitan areas as they negotiated

agreements with the service provider. We, however, continue to maintain that FHWA can do more to optimize public benefits, especially given the experience the agency now has implementing the program.

FHWA concurred with recommendations 2, 3, and 4, and provided target completion dates for recommendations 2 and 3. FHWA stated that it has completed actions to implement recommendation 4. With regard to recommendation 1, FHWA partially concurred, stating that the formula is reasonable and fair for both public and private partners. Further, FHWA stated that it does not have the latitude to redefine and dictate new terms for revenue sharing under the task order. We recognize the circumstances surrounding renegotiation of the task order. Nevertheless, as FHWA defines and documents the revenue sharing methodology, we encourage FHWA to identify opportunities to improve revenue sharing for the public partners. In addition, given FHWA's target completion dates for recommendations 1 and 2, we question how FHWA plans to test the service provider's revenue sharing prior to defining and documenting the methodology. FHWA plans to complete the testing by February 1, 2010, while it does not plan to complete defining and documenting the methodology until March 31, 2010. Finally, to ensure consistency with the report body, we changed the wording of recommendation 1—from *equitable* in the draft report to *optimal* in the final report. This rewording does not change the intent of our recommendation.

ACTIONS REQUIRED

We consider FHWA's planned actions for recommendations 1, 2, and 3 to be reasonable and resolved, subject to the follow-up provisions in Department of Transportation Order 8000.1C. We request that within 30 days of the date of this report FHWA clarify in writing the target completion dates for recommendations 1 and 2. We agree that FHWA's actions already taken fulfill the intent of recommendation 4 and we consider it closed.

We appreciate the courtesies and cooperation of FHWA representatives during this audit. If you have any questions concerning this report, please call me, or Rosalyn G. Millman, Deputy Assistant Inspector General, at (202) 366-5630.

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EXHIBIT A. SCOPE AND METHODOLOGY

We conducted this performance audit from February 2008 through July 2009 in accordance with Generally Accepted Government Auditing Standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

To assess whether FHWA addressed statutory goals and optimized the TTID benefits to the public partners, we reviewed the legislative history, regulations, and implementing guidelines; non-Federal match requirements; Federal task orders; congressional communications; April 2002 due diligence report on the service provider's financial condition; and local agreements between the service provider and the 27 participating metropolitan areas. We also interviewed service provider officials and financial staff, conducted an internal control review of its TTID cost and revenue financial systems, and reviewed supporting information. We interviewed FHWA Office of Operations officials and Division Office officials with management responsibility for the program's metropolitan areas. We also interviewed FHWA's data quality oversight contractor and reviewed its reports on TTID. We relied on OIG's prior work on the ITOP procurement process that resulted in the original Federal task order.

Additionally, we communicated with the state and metropolitan area traffic control center managers and related program officials that manage the data services local agreements with the service provider for the 11 metropolitan areas where the service provider had completed all Federal task order milestones by June 30, 2008. The areas were Boston, Chicago, Detroit, Oklahoma City, Philadelphia, Pittsburgh, Providence, San Bernardino, San Francisco, St. Louis, and Tampa.

In requesting this audit, Senator Orrin Hatch and Representative Anthony Weiner stated that FHWA did not follow 2005 congressional direction to select TTID private partners through competition. In the requestors' view, the 2005 legislated changes would have increased competition, thereby, reducing the likelihood of a taxpayer funded traffic data services monopoly. To assess whether FHWA complied with 2005 statutory provisions for a competitive private partner selection process, we reviewed relevant legislation, documents, and the Department Office of Chief Counsel's position and interviewed FHWA officials.

EXHIBIT B. ILLUSTRATIVE EXAMPLE OF SERVICE PROVIDER'S CALCULATION OF REVENUE SHARING

Step 1: The service provider reduces gross revenue by amounts it does not attribute to TTID activity.

<i>Adjustments</i>	<i>Source of Revenue</i>				
	<i>Radio</i>	<i>TV</i>	<i>Content and Licensing</i>	<i>Interactive Advertising</i>	<i>Total</i>
Gross Revenue	\$996,000	\$300,000	\$88,000	\$35,000	\$1,419,000
Revenue attributed to exchange of media time slots with advertising firms	\$712,000	\$0	\$0	\$0	- \$712,000
Revenue attributed to data from non-TTID sensors*	\$0	\$0	\$66,000	\$0	- \$66,000
Adjusted Gross Revenue	\$284,000	\$300,000	\$22,000	\$35,000	\$641,000
* Probe vehicles, police radio dispatch reports and state-owned traffic sensors and cameras.					
Source: OIG analysis.					

Step 2: The service provider calculates the metropolitan area's share of TTID revenue.

<i>Metropolitan Area Share of \$641,000</i>		
0% for revenue up to \$250,000	0% x (\$250,000)	\$0
5% for revenue between \$250,000 and \$1 million	5% x (\$641,000 - \$250,000)	\$19,500
10% for revenue over \$1 million	10% x (\$0)	\$0
Total Metropolitan Share		\$19,550
Source: OIG analysis		

Exhibit B. Illustrative Example Of Service Provider's Calculation Of Revenue Sharing

EXHIBIT C. MAJOR CONTRIBUTORS TO THIS REPORT

Name	Title
Rosalyn G. Millman	Deputy Assistant Inspector General for Surface and Maritime Program Audits
Peter F. Babachicos	Project Manager
William R. Lovett	Senior Auditor
P. David McBride	Senior Analyst

APPENDIX. MANAGEMENT COMMENTS



Memorandum

Subject: **INFORMATION:** Federal Highway Administration (FHWA)
Response to Office of Inspector General (OIG) Draft Report,
“Transportation Technology Innovation and Demonstration
Program (TTID)”

Date: December 4, 2009

From: Victor M. Mendez
Administrator

Reply to
Attn. of: HOP/HAIM

To: Calvin L. Scovel III
Inspector General (JA-40)

The material below responds to the recommendations in the subject report. In general, FHWA requests that the OIG report present a more balanced representation of the TTID program and its benefits for the general public, public agencies, and the private partner. The execution of the program through a public-private partnership required innovative approaches with virtually no precedents when the program was initiated in 1998. Information management, and more specifically transportation information, has been a very dynamic market sector over the past decade since the program began. As reflected in our responses below, we have worked with the public agencies and a private partner in affecting changes to respond to changing conditions in the industry, within the constraints of the contract documents. The general public now has unprecedented access to transportation information because of the increased role that private firms, including the TTID private partner, have assumed in making information available through various and evolving techniques. The public benefits through this increased awareness by being able to make better decisions regarding travel choices.



We do appreciate the OIG's recognition that FHWA's implementation of TTID necessarily balanced statutory requirements in order to achieve the legislative objective of providing private technology commercialization initiatives to generate revenues. The FHWA protected the public benefit in the public-private partnership arrangement by negotiating the terms of travel data made available to the general public as well as revenue sharing provisions, while also enabling the private partner to generate revenues as required by statute.

The FHWA negotiated a basic framework for administering the shared revenue that was included in a sample local agreement for consideration by the public partners, or State participants, who had the flexibility to further negotiate how they would receive and use shared revenue based on their local needs. State participants struck optimal deals in their negotiations and determined specific contract provisions as part of a local agreement that describes how revenue will be reported, accounted for, and allocated. Three State participants, for example, require the private partner to pay the State (in the form of monetary compensation) a percentage of revenues attributable to sensor systems installed within their metropolitan area. Five State participants, on the other hand, require earned revenue to be used for transportation system management or Intelligent Transportation System projects. Participating States had the flexibility to negotiate a way for receiving and using the shared revenue that best suited their circumstances and needs.

We also appreciate the OIG's mention in the draft report that FHWA used some atypical measures to improve the service provider's fiscal stability. This is yet another good example to illustrate the careful balance inherent to successful public-private partnerships. The FHWA's concern with the private partner's fiscal stability was intrinsic to protecting the public partners' interests. Actions taken to ensure the private partner's ability to remain in business and to continue providing traffic data to the public partners during the life of the agreement and beyond were critical to meet the public partners' needs and to enhance the public benefits of the program, all the while fulfilling the legislative objectives of TTID.

Recommendation #1: "Define and document a more equitable methodology for revenue sharing between the service provider and the metropolitan areas, considering any exclusions or deductions from the service provider's gross revenues."

Response: Concur in part. An equitable methodology for revenue sharing was developed when the task order was negotiated with the private partner. The FHWA conducted the necessary due diligence and determined the revenue sharing formula to be reasonable and fair for both public and private partners. While FHWA does not have the latitude to redefine and dictate new terms for revenue sharing under the current task order, we have continued to formalize our processes and will finalize documentation of our methodology for revenue sharing by March 31, 2010.

Recommendation #2: "Test the service provider's revenue sharing for accuracy according to the documented methodology."

Response: Concur. The FHWA planned to conduct an audit on revenue share calculations when more cities were completed and generating revenue. With the recent completion of more cities, on August 7, FHWA awarded a purchase order to an independent accounting firm to perform a review of the private partner's financial and cash flow statements. The accounting firm will also audit

Appendix. Management Comments

revenue sharing reports submitted over the past 5 years, as required under the task order. This audit will be conducted to determine the amount of revenue derived from TTID and non-TTID sources and to verify that revenues generated from the sale of traffic data have been properly shared with local public agencies, as also required by the terms of the task order. The audit requires the accounting firm to verify the following:

- Gross revenue calculations are appropriate and consistent
- Gross revenue are not significantly overstated or undervalued
- Gross revenue calculations are in accordance with the formula/arrangement
- Procedures used to calculate the revenue are appropriate
- Revenue share calculations are appropriate
- Deductibles from gross revenues are accurate
- Revenue reinvestment amounts placed in escrow account are adequate and accurate

The target date for completing this recommendation is February 1, 2010.

Recommendation #3: “Develop and implement options to increase integration of traffic information and posting on highway message signs.”

Response: Concur. The FHWA is working with its division offices where their State partners have participated in the TTID program, but have yet to implement travel time messages on dynamic message signs. We requested the assistance of these offices in working with their respective States to identify locations where the posting of travel times will serve the greatest good for motorists in the area. Once we receive this information, we will work with the private partner to provide the necessary travel time data to the DOT. On October 16, FHWA met with the private partner to discuss this issue. The target date for completion is April 30, 2010.

Recommendation #4: “Develop and implement a plan regarding data service availability that requires: a) Timely communication of the oversight contractor’s test results to the service provider and participating metropolitan areas, and b) Prompt remediation of any results below the task order specified minimum performance level.”

Response: Concur. The FHWA recognized that there had been instances of substandard data service quality in the past and, as OIG points out, FHWA has taken appropriate corrective actions and implemented procedures regarding the data quality reports. The private partner is now required to provide the oversight contractor monthly information on omitted “inactive stations” due to construction and communication issues, along with a combined table at the end of the 3 months. The private partner will make the information available in the data archives the next time the software is updated. To more effectively manage speed and volume data, the private partner has implemented a plan to review these reports weekly in order to address sensors that have failed their respective tests. Furthermore, a monthly conference call has been established between the private partner and oversight contractor to exchange information regarding any short and long-term issues with data. Between December 2008 and February 2009, all tested metropolitan areas averaged above 95 percent data availability, and FHWA does not foresee any additional problems concerning this issue. Implementation of the procedures described above addresses the recommendation and we consider this recommendation closed.

Appendix. Management Comments

We appreciate the OIG's work relating to this matter and have provided technical comments separately to offer clarifications to a number of the findings in the report. If you have any questions or comments regarding this response, please contact Robert Rupert at 202-366-2194 or Jimmy Chu at 202-366-3379.