AUDIT OF THE MISSISSIPPI DEPARTMENT OF TRANSPORTATION'S AWARD OF SELECTED HURRICANE KATRINA EMERGENCY REPAIR CONTRACTS

Federal Highway Administration

Report Number: MH-2006-065
Date Issued: September 6, 2006

Memorandum

U.S. Department of Transportation
Office of the Secretary of Transportation
Office of Inspector General

Subject: <u>ACTION</u>: Report on the Audit of the Mississippi Department of Transportation's Award of Selected Hurricane Katrina Emergency Repair Contracts
Report No. MH-2006-065

Date: September 6, 2006

From: Kurt W. Hyde
Assistant Inspector General
for Surface and Maritime Programs

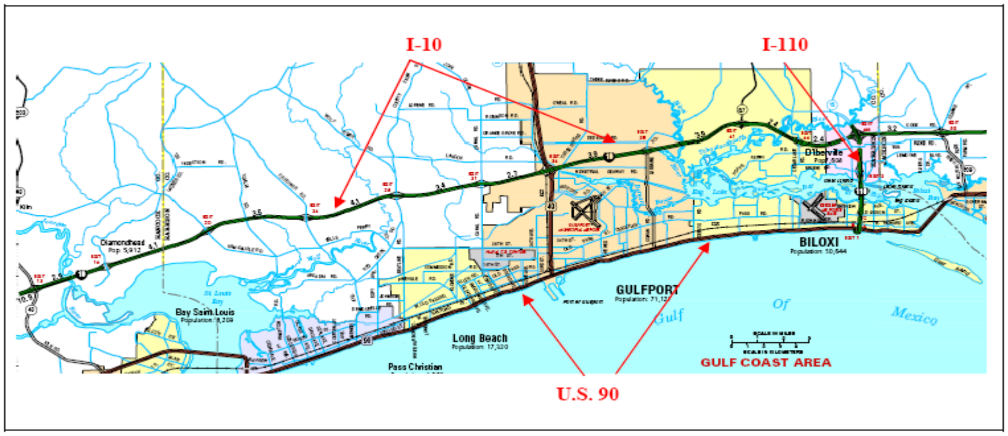
Reply to Attn. of: JA-40

To: Federal Highway Administrator

This final report presents the results of our audit of the Mississippi Department of Transportation's (MDOT) management of the award of selected Hurricane Katrina emergency repair Federal-aid contracts. It is important to note the extraordinary circumstances involved in awarding contracts in the immediate aftermath of Hurricane Katrina, which devastated many of Mississippi's highways and bridges. A basic tenet of Federal-aid contracting is that construction contracts are normally awarded competitively to the contractor that submits the lowest responsive bid. Noncompetitive construction contracting or negotiated contracts may be used if an emergency exists and if time is a critical factor, as it was for residents and public safety personnel who experienced the catastrophic conditions caused by Hurricane Katrina.

This audit covered 13 emergency repair contracts that MDOT awarded in 2005—8 in September, 4 in October, and 1 in early November. These contracts were either competitive or negotiated (noncompetitive) and were awarded to repair damaged bridges and highways in an effort to facilitate the transportation of vital supplies and people to and from hurricane-ravaged areas. The highways and bridges most affected by Hurricane Katrina included Interstates 10 and 110 (also known as I-10 and I-110) and United States Highway 90 (U.S. 90) (see Figure 1 on page 2).

Figure 1. Damaged Highways in the Mississippi Gulf Coast Area



Source: State of Mississippi

The objectives of our audit were to determine whether MDOT's emergency repair contract award processes were consistent with applicable Federal and State procurement requirements, and whether prices received were fair and reasonable under the emergency conditions that resulted from Hurricane Katrina. Our audit was based on requirements contained in the Mississippi procurement statutes; MDOT's procurement policy; Code of Federal Regulations (CFR) 23, Highways; and related Federal procurement guidance.

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards prescribed by the Comptroller General of the United States and we performed such tests as we considered necessary to detect fraud. Exhibit A contains details on the objectives, scope, and methodology we used in conducting this audit. Exhibit B lists the activities we visited or contacted.

RESULTS IN BRIEF

The transportation infrastructure damages resulting from Hurricane Katrina were unprecedented in Mississippi. In the aftermath of this natural disaster, MDOT awarded 13 emergency highway and bridge repair contracts priced at $1 million or more (see Exhibit C), among other contracts. MDOT used two different procurement methods to award these contracts—six were competitively bid[1] totaling $20.3 million and seven were negotiated (sole-sourced) totaling $24.8 million. The six competitively bid contracts were awarded using an

---

[1] Competitively-bid contracts rely on multiple bidders competing for construction work based on a well-defined scope. The lowest responsive bid is used to establish the price of the contract award. This type of award has limited risk provided a sufficient number of qualified contractors are available to bid on and perform the work and the lowest responsive bidder is selected.

expedited award process. Of the seven negotiated contracts, five were cost-plus[2] totaling $20.2 million and two were lump-sum[3] totaling $4.6 million. The total value of these 13 contracts was $45.1 million (see Figure 2).

Figure 2. MDOT Issued 13 Emergency Highway and Bridge Repair Contracts Totaling $45.1 million

Six Competitively Bid Contracts

Project	Contract Amount ($ in millions)
Pascagoula I-10 Bridge (Wallace)	$5.2
I-10 Lane Widening (Warren)	$2.0
U.S. 90 Westbound (Stockstill)	$2.6
U.S. 90 Westbound (Warren)	$3.7
U.S. 90 Westbound (Mallette)	$4.9
Henderson Point Bridge (Hill Brothers)	$1.9
Total	**$20.3**

Seven Negotiated Contracts

Project	Contract Amount ($ in millions)
Cost-Plus	
U.S. 90 Eastbound (Stockstill)	$7.0
U.S. 90 Eastbound (Warren)	$7.0
U.S. 90 Eastbound (Mallette)	$4.0
Casino Barge (Parnell)	$1.2
Bridge Inspections (Volkert)	$1.0
Subtotal	$20.2
Lump-Sum	
I-110 Bridge (Wallace)	$2.5
Bay St. Louis (ESCO Marine)	$2.1
Subtotal	$4.6
Total	**$24.8**

Source: MDOT

Notwithstanding the catastrophic conditions created by Hurricane Katrina, we found that the Federal Highway Administration (FHWA) and MDOT officials worked together to ensure MDOT's emergency repair contract award processes were generally consistent with Federal and State procurement requirements. However, we also found that the lack of standard construction contract provisions caused MDOT to award some contracts without the assurance of fair and reasonable prices. Further, FHWA should strengthen its Emergency Relief

[2] Cost-plus contracts, based on actual costs plus a reasonable profit, are commonly used when performing construction work where the full scope of work and cost estimate cannot be easily established beforehand. Contractors are expected to provide documentation that supports the actual cost of the work performed. Actual costs generally include labor, materials, equipment, insurance, subcontractors, and home office overhead. In addition to the payment of the cost of the work, the contractor and subcontractors are entitled to an agreed upon fee or profit.

[3] Lump-sum contracts are priced up front, which require a well-defined description of the construction work to be performed and a full and detailed analysis of the cost estimate to establish a price before the initiation of work. This type of award involves significant risk, especially if a full and complete analysis of the estimated cost is not done before the award.

Manual and the related Federal regulations to better assist states in awarding emergency repair contracts.

Specifically, we found that:

- **Six competitively bid contracts totaling $20.3 million met Federal and State procurement requirements, but Hurricane Katrina's effects inflated the costs.** We found that the six competitively bid contracts were issued generally in accordance with Federal and Mississippi procurement requirements. This type of contracting is the most preferred method and is required by Federal and State procurement laws for non-emergency procurements. Although we found the six emergency repair awards to be appropriate given the circumstances and many unknown risk factors facing the contractors, the winning bids were above historical or pre-Katrina prices.[4]

  Although the six competitively bid contract prices were higher than experienced before Hurricane Katrina, MDOT and FHWA officials agreed to them because of the exigent circumstances and the fact that the contracts were competitively bid. These competitive procurements included from two to five bids per contract, with the lowest responsive bidder in all cases receiving the contract.

- **Five negotiated (sole-sourced), cost-plus contract awards totaling $20.2 million were generally consistent with Federal and State procurement requirements, but two resulted in equipment billing rates that were significantly higher than rates based on an alternative pricing methodology used in the industry.** These types of awards are appropriate provided the state conducts a thorough cost/price analysis before work begins and conducts a post-payment review to ensure the contractor billed only actual costs and that those costs were reasonable. Normally, these contracts also include a requirement that costs, especially costs for heavy equipment, not exceed reasonable rates based on ownership and operating costs. With those provisions in place, MDOT would have reasonable assurance that it paid a fair price for the services received. However, as discussed below, MDOT did not have this assurance because two of its negotiated, cost-plus emergency repair contracts lacked a provision for an alternative equipment pricing methodology.

  We noted that two of the cost-plus contracts for U.S. 90 repairs included $1.7 million in subcontractor charges for storm drain cleaning equipment that were higher than what may be considered reasonable. On both contracts, a

[4] Pre-Katrina prices represent estimates based on historical unit prices that were included in highway construction contracts competitively awarded by MDOT up to 3 years prior to Hurricane Katrina or pricing data from other states when historical prices were not available.

subcontractor billed MDOT's contractors (Warren Paving, Inc. and Huey Stockstill, Inc.) for specialized, high-powered storm drain cleaning equipment—known as a Sewer Hog—at the rate of $935 per hour.[5] These MDOT contracts included a standard provision to establish a maximum equipment rate, which required the contractors to use a standard construction industry publication, called the Rental Rate Blue Book[6] (Blue Book), to determine reasonable prices for heavy equipment. However, because the Sewer Hog was not listed in the Blue Book, MDOT officials could not use the Blue Book price to verify the appropriateness of the rates billed. The contract also did not include a provision for an alternative equipment pricing methodology, which is normally included in MDOT's construction contracts. This provision would have allowed the use of a methodology developed by the U.S. Army Corps of Engineers to establish a reasonable ownership and operating rate for specialized equipment, such as the Sewer Hog.

We applied the Army Corps of Engineers' methodology to calculate ownership and operating costs for the Sewer Hog. Under this methodology, the rental rate for this specialized equipment should have been $163 per hour. This hourly rental rate included an additional 15 percent for the contractors' increased operating expenses, as specified in MDOT's emergency repair contract provisions. If MDOT had included the alternative pricing methodology in its cost-plus contracts, it would have had a basis for paying only $294,000 for the Sewer Hog—about $1.4 million less than the $1.7 million the contractors charged and MDOT paid.

The significant cost difference demonstrates that MDOT should have taken additional steps to assure the fairness and reasonableness of equipment billing rates for the Sewer Hog. Although other standard sewer cleaning equipment was used on U.S. 90, MDOT engineers viewed the Sewer Hog as the most efficient and effective option for completing certain segments of the work in a timely manner. The fact that the contractors billed MDOT a rate almost six times higher than the rate we computed using the Army Corps of Engineers' methodology also raises the question of whether the subcontractor's billing rates were reasonable even given the dire post-Katrina conditions.

Given that MDOT paid about $1.4 million more than what may be considered reasonable for Sewer Hog equipment costs, FHWA needs to determine whether there is any legal recourse to recover these costs. FHWA should also

---

[5] To compute the $935 hourly billing rate for the Sewer Hog (a patented, high-speed extraction system), the subcontractor added a 15 percent markup of $122.50 to the $812.50 billing rate received from the lower-tier subcontractor.

[6] The Rental Rate Blue Book, an EquipmentWatch product, is a construction industry publication that is commonly used to determine reasonable billing rates to reimburse contractors for the use of specialized or heavy construction equipment, based on their ownership and operating costs.

limit its participation to the amount that it determines is fair and reasonable under the emergency circumstances.

- **Two negotiated, lump-sum contracts totaling $4.6 million were awarded without the assurance of fair and reasonable prices—one was significantly overpriced.** A negotiated (sole-sourced), lump-sum contract establishes a fixed price at the time the contract is awarded. This type of contract involves significant risk to the State government, especially when the award official has not conducted a full and thorough cost/price analysis. This procurement method is an extremely risky contracting approach because there is no competition to assure that the price was fair and reasonable at the time of the award. Given this risk, lump-sum contracting should be used only in extraordinary situations. Further, even if there is not enough time to competitively bid a contract, a negotiated, cost-plus contract provides more assurance that prices will be reasonably related to costs incurred than a negotiated, lump-sum contract.

  When a negotiated, lump-sum contract is used during extraordinary circumstances, the State government needs to conduct a thorough cost/price analysis to assure that the price is reasonable before award. For the two negotiated, lump-sum contracts awarded for work on highway bridges damaged by Hurricane Katrina, MDOT should have, but did not: (1) prepare an independent cost estimate, (2) request a detailed cost estimate from the contractor, and (3) document in a memorandum of negotiation how the price was established.

  Given that MDOT used cost-plus or competitive contracts to quickly repair other roads and bridges damaged by Katrina, it is unclear why a negotiated, lump-sum contract—a high-risk approach—was used to award emergency repair contracts for bridge work on I-110 and the demolition of bascule leaves[7] at the Bay St. Louis Bridge. In both cases, senior MDOT officials invited an individual contractor to bid on the work required for each contract and negotiated the price with the contractor directly, bypassing the MDOT procurement officials who are normally involved in awarding highway contracts. Our analysis showed that the contract price was reasonable for the demolition of the bascule leaves at the Bay St. Louis Bridge. However, the price was not reasonable for the repair of the I-110 Bridge.

  We found that the negotiated, lump-sum emergency repair contract for the I-110 Bridge was significantly overpriced. MDOT awarded a $2.487 million lump-sum contract to T.L. Wallace Construction, Inc., (T.L. Wallace) to shore

[7] Bascule leaves are the moveable spans or sections of a drawbridge that swing upward for boat traffic.

up a single pier on the I-110 Bridge. The FHWA Division Office, which had expected MDOT to award a cost-plus contract rather than a lump-sum contract, estimated that the contract should have cost about $400,000. Given the emergency circumstances, FHWA officials concluded that a hurricane adjustment was needed, and lacking a quantifiable basis to estimate a fair price, they used their professional judgment to determine that the cost could have doubled in this case to $800,000.

Accordingly, FHWA informed MDOT that Federal participation in the T.L. Wallace contract would be limited to $800,000. Our analysis of the T.L. Wallace contract also supported FHWA's determination that the $2.487 million award was overpriced. In view of the emergency circumstances, we agree with FHWA's decision to limit Federal participation to no more than $800,000 and, therefore, are not making a recommendation.

- **FHWA's Emergency Relief Manual (Manual) and related Federal regulations need to be strengthened to better assist MDOT and other states in awarding emergency repair contracts.** We found that FHWA's Manual and related Federal regulations provide only limited guidance to states that need to award emergency repair highway construction contracts. Specifically, the Manual does not:

  - prioritize each of the contracting methods available to states from the lowest risk (most preferred) to extremely high-risk (least preferred) as follows—competitively bid, negotiated, cost-plus and negotiated, lump-sum contracts.

  - identify the risks associated with each contracting method and develop essential criteria that state officials should consider before making emergency repair award decisions.

  - advise states to limit the use of high-risk negotiated, lump-sum contracts and *first* consider less risky negotiated cost-plus contracts, if competition can not be reasonably developed.

  - advise states of the procurement procedures that should be followed in order for FHWA to consider negotiated contracts eligible for Federal reimbursements.

  - encourage states to use pre-negotiated emergency contracts that would allow state transportation agencies to issue task orders immediately in response to natural disasters and other unexpected occurrences.

FINDINGS

Six Competitively Bid Contracts Totaling $20.3 Million Met Federal and State Procurement Requirements, but Hurricane Katrina's Effects Inflated the Costs.

We found that the six competitively bid contract awards were issued generally in accordance with Federal and Mississippi procurement requirements, but these award prices were higher than experienced before Hurricane Katrina. In awarding these emergency repair contracts, FHWA Division Office and MDOT officials worked together to adhere to both Federal and State laws and requirements for competitively bidding and issuing contracts for construction projects.[8] These requirements are based on the fundamental principles of fairness and reasonableness to obtain the best contract prices for services acquired with taxpayer dollars. They provide basic guidance on issuing and advertising proposals, bid opening and tabulating procedures, reviewing and awarding contracts, and Federal concurrence with awards.

We also found that these six competitively bid contract awards were provided to the lowest responsive bidders and the ultimate prices were fair and reasonable, given the exigent circumstances and many unknown risk factors facing the contractors. Due to the extreme devastation to the Gulf Coast region's transportation infrastructure, MDOT quickly acted to execute essential emergency repair contracts and accomplished the task using the competitively bid awards. This type of contracting is the most preferred method and is routinely required by Federal and state procurement laws for non-emergency procurements.

[8] These requirements are specified in 23 CFR 635, Sections 112 through 115; Mississippi Code of 1972, Sections 31-7-13 and 65-1-85, as amended; and the "Mississippi Standard Specifications for Road and Bridge Construction," 2004 edition.

Within 9 days of Hurricane Katrina, MDOT issued its first and most expensive competitively bid award to T.L. Wallace for the I-10 Bridge at Pascagoula (see Figure 3). This $5.2 million contract award provided for the reconstruction of the eastbound bridge spans that were impassable after the hurricane. The timely completion of this repair was significant to the entire Gulf Coast region, as this bridge was a vital part of the I-10 highway system that provided a critical east-west link needed to carry food, water, medicine, clothing, and emergency personnel to devastated areas of Mississippi and Louisiana. Just after the hurricane, traffic could not travel on the eastbound lanes because major segments of the bridge's spans had been shifted from its piers after being struck by two barges and other smaller vessels. As a result of this damage, bridge traffic could use only the westbound lanes on I-10 and motorists experienced delays of up to 1 hour because of waiting times and slow traffic.

Figure 3: I-10 Bridge Repair at Pascagoula

Source: FHWA

Although MDOT and FHWA Mississippi Division officials confirmed the importance of completing the Pascagoula Bridge contract quickly to return the Gulf Coast region to normal traffic flows, they had concerns about obtaining a reasonable award price for this contract under post-Katrina emergency conditions. Primarily, they were concerned about obtaining a sufficient number of bidders to ensure fair and open competition. They were also concerned about immediately facilitating shipments of emergency resources to devastated areas in Louisiana and Mississippi.

To expedite the issuance of the Pascagoula Bridge contract, FHWA Division Office and MDOT officials met with potential bidders and reviewed available information concerning the project. The project proposal was issued with a 5-day advertising period and included an incentive/disincentive clause of $100,000 per day. The primary purpose of this clause was to provide an additional incentive to complete the project earlier than the accelerated 31-day planned opening. The contractor ultimately mobilized its resources and completed the work 10 days early, allowing MDOT to reopen this major roadway to full traffic within 21 days.

Although the contract award price was almost 300 percent higher than historical or pre-Katrina prices, the contract was competitively awarded and the other responsive bid was about 80 percent higher than the contract award price. These facts provide assurance that the contract award price was reasonable. The higher post-Katrina price was primarily due to the compressed timeframe to complete the work, difficult working conditions, and unknown risks assumed by the contractor that could have prevented completion of the work in a timely manner.

To complete the Pascagoula Bridge project, the contractor was required to remove several obstructions at the water level that had struck the bridge, reconstruct the damaged bridge spans, and restore normal traffic to both the eastbound and westbound bridge spans. The contractor also advised that the mobilization was extremely costly due to its need to provide living accommodations for up to 50 workers, which included the rental of a community center, purchase and shipment of trailers for sleeping quarters, on-site meals, and lighting and power generation around the clock. The contractor also contended with a shortage of construction materials and noted that its suppliers faced the risk of not finding enough truck drivers because of competition from the Federal Emergency Management Agency and other Government agencies, which were also providing emergency services.

FHWA and MDOT officials believed the higher post-Katrina contract price award was justified because a sizable portion of it related to potential labor shortages and the inability to find scarce materials and equipment needed to complete the work. They stated that the contractor's price addressed the risk of delays due to work requirements that were less than ideal. In particular, the work included the removal of damaged tugs and barges and a submerged boat. The boat, which was underneath a barge, was not discovered until after the contract was awarded.

MDOT used a more effective contract award process for the remaining five competitively bid contracts. It was evident to Federal and State officials involved with the competitive contract award process for the Pascagoula Bridge—the first after Katrina—that a different approach was needed, particularly since the contract award price was almost 300 percent higher than historical or pre-Katrina prices. FHWA Division Office and MDOT officials agreed that it would take too long to execute the traditional competitive bidding process and decided that a more focused procurement strategy was needed to expedite the emergency repair work. To expedite the procurement strategy, they agreed to use competitive bidding requirements to significantly compress the award process to 8 days by:

- reducing the advertisement period from 21 days to 7 days,
- selecting the winning bid immediately after the advertisement period, and
- issuing the notice to proceed the day following bid selection.

MDOT used this compressed award process to award the remaining five competitively bid emergency repair contracts—one for the lane widening of I-10 at a price of $2 million, three for debris removal and repair of the westbound lanes of U.S. 90 at a price of $11.2 million, and one for $1.9 million to repair the Henderson Point Bridge. Although the price of these competitively bid contracts ranged from 20 percent to 65 percent above historical or pre-Katrina prices, these higher prices were not as much as the first contract award. This situation was aided by the fact that the remaining contracts were awarded up to 6 weeks after the first award for repairing the Pascagoula Bridge and some of the Gulf Coast region's logistical problems had been addressed.

Five Negotiated, Cost-Plus Contract Awards Totaling $20.2 Million Were Generally Consistent With Appropriate Federal and State Procurement Requirements, but Two Resulted in Equipment Billing Rates That Could Have Been Significantly Lower If MDOT Had Used a Standard Alternative Pricing Methodology.

MDOT also awarded five negotiated, cost-plus contracts for emergency repairs on U.S. 90. These awards generally adhered to Federal and State procurement requirements. However, a subcontractor charged MDOT's prime contractors rates for equipment on two of the negotiated, cost-plus contracts that were higher than what may be considered reasonable. This occurred because MDOT officials did not include a standard provision for an alternative equipment pricing methodology in these contracts, which would have allowed the use of a methodology developed by the Army Corps of Engineers to establish reasonable equipment usage rates when the industry-standard Blue Book rates were not available.

The negotiated, cost-plus contracts required contractors to submit progress billings to support labor, equipment, and other costs that were used to clear debris and clean the storm drains on U.S. 90 (see Figure 4). To evaluate the contractors' billings, MDOT's project offices maintained records on labor and equipment usage, while its audit department independently reviewed progress bills by checking supporting invoices for the reasonableness of labor rates and possible duplicate charges between contracts. We confirmed that MDOT's audit activities identified some improper labor and equipment charges that resulted in it making adjustments to contractors' billings.

Figure 4: U.S. 90 Storm Drains

Source: OIG

Although MDOT's review procedures were appropriate under the post-Katrina emergency circumstances, we found that two cost-plus contracts included $2.8 million in equipment billing rates. These MDOT contracts included a standard provision to establish a maximum equipment rate, which required the contractors to use a standard construction industry publication, called the Rental Rate Blue Book (Blue Book), to determine reasonable prices for heavy equipment. We calculated that about $1.7 million of the $2.8 million, or 61 percent, of these equipment billings were accepted without MDOT first determining the reasonableness of the billing rates.

Further, the contract did not include a customary or standard construction clause that could have been used to determine billing rates when Blue Book rates were not available. For example, a storm drain cleaning subcontractor (Gulf Coast Hydro-Vac, L.L.C.) billed two prime contractors (Warren Paving, Inc. and Huey Stockstill, Inc.) for storm drain cleaning equipment that its lower-tier subcontractor (Garner Gulf Coast) provided (see Exhibit D). This equipment, known as a Sewer Hog (see Figure 5), was billed at a rental rate of $935 per hour.[9] MDOT officials told us, and our audit work confirmed, that the Sewer Hog billing rates were not listed in the Blue Book. Consequently, they could not establish the appropriateness of these rates because the contract did not include standard construction contract language commonly used for heavy equipment, which would have provided an alternative computation method for establishing fair and reasonable prices. This provision would have required MDOT to use a methodology developed by the Army Corps of Engineers to establish reasonable ownership and operating rates for specialized equipment.[10]

To calculate ownership and operating costs for the Sewer Hog, we applied the Army Corps of Engineers' methodology and determined that the rental rate for this specialized equipment would have been $163 per hour (rather than the $935 per hour rate billed to MDOT by prime contractors Warren Paving, Inc. and Huey Stockstill, Inc.). Our calculation included equipment purchase cost information and an additional 15 percent for increased operating costs that was allowed by MDOT's negotiated, cost-plus contracts. In our opinion, a rental rate of $935 per hour for the Sewer Hog was higher than what may be considered reasonable, even under the catastrophic conditions that were created by Hurricane Katrina.

---

[9] To compute the $935 hourly billing rate for the Sewer Hog (a patented, high-speed extraction system), Gulf Coast Hydro-Vac, L.L.C. added a 15 percent markup of $122.50 to the $812.50 billing rate received from Garner Gulf Coast and its affiliated companies, Garner Environmental Services, Inc. and Garner West.

[10] "Mississippi Standard Specifications for Road and Bridge Construction," Section 109.04(d) allows the use of the Army Corps' methodology to compute equipment ownership and operating costs.

Figure 5. Sewer Hog

Source: OIG

In response to our inquiries, MDOT officials advised that after they reviewed initial project billings, they had concerns about the rental rates associated with the Sewer Hog. When MDOT's engineers inquired about these rates, they learned that a subcontractor would not continue to work unless the billing rates were accepted. Further, no other companies can provide the Sewer Hog, which was developed and patented by the subcontractor. Consequently, MDOT accepted the equipment rental rates as billed without further analysis or negotiation.

We understand the emergency circumstances in which MDOT was working and that contract provisions may have been inadvertently excluded. Such inadvertent mistakes highlight the need for pre-negotiated contracts. If MDOT had included the Army Corps of Engineers' alternative pricing methodology in its negotiated, cost-plus contracts, it would have had a basis for paying only $294,000 for the Sewer Hog—about $1.4 million less than the contractors charged and MDOT paid. The fact that MDOT's contractors billed an equipment rental rate almost six times greater than the rate we computed using the Army Corps of Engineers' methodology also raises the question of whether FHWA had sufficient guidance or regulations in place to ensure that equipment billing rates and other charges were reasonable even given the dire post-Katrina conditions.

Two Negotiated (Sole-Sourced), Lump-Sum Contracts Totaling $4.6 Million Were Awarded Without the Assurance of Fair and Reasonable Prices—One Was Significantly Overpriced.

Although MDOT had effectively used competitive contracting early in the Katrina crisis situation, it noncompetitively awarded two negotiated, lump-sum contracts—a risky method for contracting—without preparing an independent cost/price analysis, analyzing the contractor cost details, or documenting the negotiation in a memorandum. The completion of these key procurement actions is essential to assure Federal and State officials that fair and reasonable prices were obtained. It is not clear why MDOT senior officials chose the risky negotiated method even though MDOT had used a competitive method immediately after the devastation. Further, we found that the two lump-sum contracts were negotiated and awarded by MDOT officials without the assurance that the prices were fair and reasonable.

MDOT senior officials awarded a lump-sum contract to T.L. Wallace Construction for bridge repairs on I-110, at the price of $2.487 million, without assuring that the price was fair and reasonable. This contract was awarded to shore up a single pier on the I-110 Bridge (see Figure 6). After the T.L. Wallace contract was awarded and before the work started, FHWA questioned the lump-sum method used by MDOT and the price of the work. FHWA Division officials told us that it was MDOT's initial intention to negotiate a sole-sourced contract with T.L. Wallace. FHWA agreed to this type of procurement because T.L. Wallace had the workforce and equipment that could be mobilized easily to make needed repairs to the damaged pier at the I-110 Bridge. FHWA officials also stated that they expected and would have preferred MDOT to award a cost-plus contract for the repair work at the I-110 Bridge.

Figure 6. I-110 Bridge Repair

Source: FHWA

If MDOT had used the cost-plus method, it would have been easier to verify the contractor's direct and indirect costs and mark-ups and question billings it considered unreasonable. However, FHWA later learned that MDOT senior officials had decided not to use the cost-plus method and opted to negotiate a lump-sum contract for the I-110 bridge repairs. A negotiated, lump-sum contract is extremely high risk and a less than desirable method of contracting. In fact, under a negotiated, lump-sum contract, contractors are not required to disclose actual costs.

After FHWA Division officials were informed of the $2.487 million anticipated price, they decided to prepare an independent cost/price estimate. Without access to actual cost information, the Division's bridge engineer developed a cost/price estimate of about $400,000, which consisted of a 30-day, 10-hour work schedule, equipment, materials, overhead, and profit. In addition, the FHWA Division officials determined that a hurricane adjustment for higher costs in the Gulf Coast area would be appropriate. As a result, FHWA estimated that costs could double under the circumstances and advised MDOT that it would limit the Federal Government's participation to $800,000. MDOT immediately contested FHWA's $800,000 cost/price estimate.

Our analysis of the T.L. Wallace contract for a single pier repair on the I-110 Bridge supports FHWA's determination that the $2.487 million award was overpriced. Based on our analysis of on-site records that were maintained by a State inspector who oversaw the project (such as the project diary, actual work schedule, and other project records), we estimate that a reasonable price for the repairs should have been about $583,000. This estimate includes $133,000 for direct labor, materials and equipment and an estimate of $450,000 for other variables, such as price escalation on materials and labor, mobilization, indirect costs, and a reasonable profit. Our estimate is less than precise because we did not have access to the contractor's actual costs. Overall, given that FHWA limited its participation to $800,000, MDOT paid at least $1.687 million more than necessary to repair the I-110 Bridge.

We agree with FHWA's $800,000 limit on its participation in the contract. However, we have reservations about the use of such lump-sum contract awards when award officials do not: (1) take appropriate actions to fully analyze the contractor's cost data or pricing details, (2) perform a thorough and independent cost/price analysis, and (3) document the negotiations in a memorandum.

MDOT also negotiated a second lump-sum contract with ESCO Marine, Inc. for the demolition of bascule leaves at the Bay St. Louis Bridge at the price of $2.1 million, without initially assuring that the price was fair and reasonable. The bridge's bascule leaves were locked in a closed position, which restricted the shipping lane.[11] Initially, FHWA Division Office officials agreed with the sole-source selection of a contractor to do the work, but they neither agreed nor disagreed with the price because it was their understanding that the price could be adjusted later, if necessary. However, MDOT awarded the contract before conducting an analysis to verify the cost estimate.

After the contract was awarded, both the FHWA Division Office and MDOT prepared separate cost/price estimates. The Division Office's bridge engineer developed a cost estimate of $1.077 million by anticipating what it would cost to perform the work under normal or non-emergency conditions. In subsequent consultation with the Assistant Division Administrator, the two agreed that a hurricane adjustment—similar to an adjustment of about 100 percent for the

[11] According to MDOT officials, they were directed by the U.S. Coast Guard to immediately open the lane. Coast Guard officials agreed with the need to open the shipping lane, but did not specify the timing.

bridge repairs on I-110—was an appropriate factor to apply to the FHWA engineer's cost estimate because the demolition of the bascule leaves at the Bay St. Louis Bridge was also performed within days after Hurricane Katrina devastated the area. Subsequently, MDOT's bridge consultant estimated the price of the demolition of the bascule leaves to be $1.944 million. Although a less risky negotiated contracting method such as a cost-plus contract should have been used for this project, the post-award price estimates prepared by FHWA and MDOT provided adequate evidence that the pricing was fair and reasonable on the ESCO Marine, Inc. contract.

FHWA's Emergency Relief Manual and Related Federal Regulations Need to be Strengthened to Better Assist MDOT and Other States in Awarding Emergency Repair Contracts.

We found that FHWA's Manual and related Federal regulations provide only limited guidance to states that need to award emergency repair highway construction contracts. To ensure that the states have adequate guidance before entering into emergency repair contracts, the Manual needs to be strengthened in several key ways. First, the Manual needs to prioritize the use of each contracting method from the lowest risk (most preferred) to extremely high-risk (least preferred) as follows—competitively bid; negotiated, cost-plus; and negotiated, lump-sum. Second, the Manual needs to identify the risks associated with each method and develop essential criteria that state officials should consider before making emergency repair award decisions. Third, the Manual needs to provide guidance using pre-negotiated emergency contracts that would allow state transportation agencies to issue task orders immediately in response to natural disasters and other unexpected occurrences.

When states are faced with emergency repairs, the Manual does not specifically prioritize the various methods for awarding emergency repair contracts. Although the Manual encourages states to use competitive bids for emergency repairs, it does not provide specific steps about how to expedite the competitive bidding process during emergencies. Responding to Hurricane Katrina, MDOT and FHWA Division Office officials appropriately used their collective experiences to successfully prepare abbreviated plans and shortened advertisement periods in awarding six competitively bid emergency repair contracts. Including guidance in the Manual to better define these approaches would help others to expedite competitive contract awards.

If competition can not be reasonably developed, the Manual allows the use of alternative (non-competitive) contracting methods—including negotiated contracts—but it does not adequately address how the states are to award and administer these types of contracts. Principally, the Manual and related Federal regulations do not advise states to *first* consider negotiated, cost-plus contracts, which require contractors to demonstrate actual costs with an added reasonable profit and include contract provisions that provide alternative methods for computing equipment usage rates, when the Blue Book or other equipment rates are not available. Further, the Manual and related Federal regulations do not state that a cost/price analysis should be prepared before the award of negotiated contracts to assure that prices are fair and reasonable.

Moreover, the Manual and related Federal regulations do not advise states of the procurement procedures that should be followed in order for FHWA to consider negotiated contracts eligible for Federal reimbursements. In the aftermath of Katrina, two of MDOT's five negotiated, cost-plus contract awards for emergency repairs had equipment usage charges that were higher than what may be considered reasonable. Consequently, the Manual and related Federal regulations need to include language to ensure that equipment billing rates and other charges were reasonable even given the dire post-Katrina conditions. Enhancing the Manual to address how states can manage these situations would help stretch scarce Federal-aid highway funds.

Most importantly, if competition can not be used for emergency contracts, the Manual does not advise states to limit the use of high-risk negotiated, lump-sum contracts and *first* consider negotiated cost-plus contract awards. The Manual also does not specifically address when states should use negotiated, lump-sum emergency repair contracts, which are not based on the actual cost of the work that must be completed. Further, the Manual does not discuss the critical assessment steps that should be made by State officials before the award of lump-sum agreements. Moreover, the Manual and related Federal regulations do not discourage the use of risky negotiated, lump-sum contracts, such as MDOT's $2.487 million lump-sum contract with T.L. Wallace to shore up a single pier on the I-110 Bridge. FHWA needs to ensure that the Manual and related Federal regulations more completely address this type of risky contracting scenario. The key lessons learned in the aftermath of Hurricane Katrina will require FHWA to take immediate actions to better prepare states to respond to future hurricanes and other natural disasters.

In addition, the Manual needs to be strengthened to adequately address the responsibility of FHWA's Division Offices during emergency circumstances. As written, the Manual does not clearly define the role of the Division Offices or describe the steps they will take to assess the reasonableness of negotiated contract prices or review the supporting documentation to justify Federal reimbursements for emergency repairs. Furthermore, the Manual does not describe how FHWA will minimize its participation in negotiated contracts if prices are not deemed reasonable.

Finally, the Manual does not address expanding the oversight responsibilities of the Division Offices by directing them to encourage states to develop and use pre-negotiated emergency contracts. These contracts would allow state transportation agencies to issue emergency task orders immediately in response to natural disasters and other unexpected occurrences. Such planning efforts would give states ready access to multiple contractors and pre-established pricing methods that could be evaluated before the start of emergency work. Pre-negotiated emergency contracts should also result in more cost-effective contracts and dollar savings.

RECOMMENDATIONS

We recommend that FHWA:

1. Determine whether there is any legal recourse for recovering a potential $1.4 million in equipment charges for the Sewer Hog and limit Federal participation to the amount FHWA determines to be fair and reasonable under the emergency circumstances that existed after Hurricane Katrina.

2. Revise and strengthen FHWA's Emergency Relief Manual and related Federal regulations to better address how states should award emergency repair contracts by including language that:

    a. Prioritizes emergency repair contracts to strongly encourage states to first use expedited, competitively bid awards; use negotiated, cost-plus contract awards when competition is not feasible; and use high-risk lump-sum contract awards only under extreme circumstances.

    b. Advises states to conduct a cost/price analysis before the award of negotiated contracts to assure that prices are fair and reasonable.

    c. Provides alternative methods for computing equipment usage rates in negotiated, cost-plus contracts, when the Rental Rate Blue Book or other equipment rates are not available.

    d. Advises states on the procurement procedures they should use to be eligible for Federal reimbursements when awarding negotiated contracts and on how FHWA reserves the right not to participate or to minimize its participation in negotiated contracts when prices are not deemed reasonable.

    e. Encourages states to work with their Division Offices to develop pre-established, emergency repair contracts with multiple contractors in an effort to provide quick action and ensure that contract prices will be fair and reasonable.

MANAGEMENT COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

We provided a draft of this report to FHWA on July 21, 2006. On August 3, we met with FHWA officials to discuss their verbal and informal written comments. Subsequently, we incorporated those comments into this report. In its formal response memorandum dated August 29, 2006, FHWA concurred with our audit report results and recommendations and agreed to take corrective actions to implement both recommendations. FHWA's complete comments on the recommendations and other general comments on the entire report are presented in the Appendix to this final report.

Recommendation 1. FHWA concurred with our recommendation to determine whether there is any legal recourse for recovering a potential $1.4 million in equipment charges for the Sewer Hog and limit Federal participation to the amount FHWA determines to be fair and reasonable under Katrina's emergency circumstances. FHWA plans to work with MDOT to ascertain the specific rationale behind the use and pricing of the Sewer Hog. Based on this information, FHWA will assess the reasonableness of the charges billed to MDOT in light of the services provided, any unique requirements, and the circumstances associated with responding immediately after Hurricane Katrina. Contingent on this assessment, FHWA will determine whether the fees paid should be considered an overcharge and whether recoveries can and should be pursued. FHWA's target completion date for this action is December 31, 2006.

We consider FHWA's proposed actions responsive to this recommendation. As requested, we will share with FHWA our calculations related to ownership and operating costs for the Sewer Hog.

Recommendation 2. FHWA concurred with our recommendation to revise and strengthen FHWA's Emergency Relief Manual and related Federal regulations by: (1) prioritizing the specific types of emergency repair contracts, (2) advising states to conduct cost/price analysis before awarding negotiated contracts, (3) providing alternative methods for computing equipment usage rates, (4) advising states on the procurement procedures for Federal reimbursements and FHWA's right to minimize its participation, and (5) encouraging pre-established emergency repair contracts.

FHWA advised that it has already begun a review of the Manual to identify any required updates. FHWA also stated that it will carefully consider each OIG recommendation and incorporate any that it deems appropriate into the Manual and related Federal regulations. FHWA's target completion date for updating the Manual is December 31, 2006.

We consider FHWA's proposed actions responsive to this recommendation. However, we request that FHWA inform the OIG when and how it implements each recommendation regarding the Manual and related Federal regulations. If FHWA determines that any of the OIG recommendations should not be included in its Manual and related Federal regulations, we request that FHWA formally advise the OIG of the rationale for such a determination.

ACTIONS REQUIRED

The Department's proposed actions to address recommendation 1 in this final report are responsive. However, we are requesting to be informed when and how FHWA implements recommendation 2. In accordance with Department of Transportation Order 8000.1C, we request that FHWA provide a schedule for updating its Manual and related Federal regulations within 30 calendar days of this final report.

We appreciate the courtesies and cooperation of FHWA and other Department representatives during this audit. We also appreciate the courtesies and cooperation extended to our staff by FHWA's Mississippi Division Office and the Mississippi Department of Transportation during our site visits and subsequent data requests and communications since our site visits. If you have any questions regarding this report, please call me at (202) 366-5630 or Brenda R. James, Program Director, at (202) 366-0202.

EXHIBIT A. OBJECTIVES, SCOPE, AND METHODOLOGY

Our objectives were to assure that MDOT's emergency repair contract award processes were consistent with applicable Federal and State procurement requirements, and that prices received were fair and reasonable under the emergency conditions that resulted from Hurricane Katrina. To fully address these objectives, we reviewed the procedures FHWA used to oversee the emergency repair contracts in Mississippi. We interviewed officials in FHWA Headquarters, FHWA's Mississippi Division Office, and MDOT.

Using the list of emergency repair contracts that MDOT awarded, valued at $47 million, we selected contracts to review. Our sample included six competitively bid and seven negotiated construction contracts that MDOT reported at more than $1 million each, for a total of $45.1 million. We reviewed supporting source documentation, such as contract agreements, cost and price information, bid and negotiation documents, contractor submissions, and project records.

To evaluate the contract oversight process, we reviewed the FHWA Emergency Relief Manual and related sections of the Stewardship Agreement between the FHWA Mississippi Division Office and MDOT. We identified the process used by the Division Office to review and approve emergency repair requests and contracts. We also identified the State of Mississippi's procedures for submitting its project requests to the Division Office. We determined FHWA officials' involvement in the review of the contracting methods used by the State—competitive and negotiated contacts, including both lump-sum and cost-type agreements.

To evaluate the methods used by MDOT to obtain emergency repair work, we identified the State's contract statutes, procurement policies and procedures, and determined whether the agency's processes were consistent with this guidance. We established whether MDOT obtained contactor bids or cost estimates; prepared independent cost estimates; conducted bid evaluations or contract negotiations; and monitored the delivery of contract repair services, including the review of contractor billings.

To determine whether FHWA's oversight resulted in the State obtaining fair and reasonable prices, we identified the strengths and weaknesses of the procurement controls related to MDOT's centrally awarded emergency repair contracts. We also prepared an independent cost/price analysis to establish the fairness and reasonableness of the I-110 bridge repair lump-sum contract, based on data available in MDOT and FHWA records.

To determine what rental rates should have been billed to MDOT for specialized, high-powered storm drain cleaning equipment, we analyzed information that was not available in project files at MDOT and FHWA. We used the hourly rate methodology developed by the Army Corps of Engineers to establish the fairness and reasonableness of the equipment rental rates billed to MDOT. To compute the hourly rate, we used the equipment purchase cost information provided by Garner Environmental Services, Inc. We then applied the Army Corps of Engineers' methodology that resulted in a $163 combined hourly ownership and operating rate for the Sewer Hog.[12] This rate also included an additional 15 percent for increased operating costs that was allowed by MDOT's negotiated, cost-plus contracts.

We conducted this performance audit from December 2005 to June 2006 in accordance with Generally Accepted Government Auditing Standards prescribed by the Comptroller General of the United States and we performed such tests as we considered necessary to detect fraud.

[12] The resulting $163 per hour does not include field overhead and profit, which are not usually applied directly to equipment. On cost-plus contracts, field overhead and profit are generally negotiated separately and applied to the overall contract.

EXHIBIT B. ACTIVITIES VISITED OR CONTACTED

Federal Highway Administration

Office of Program Administration
Office of Chief Counsel
FHWA Mississippi Division Office

Other Federal Agencies

U.S. Army Corps of Engineers
U.S. Coast Guard
   Eighth Coast Guard District (New Orleans, Louisiana)
   Marine Safety Office (Mobile, Alabama)

Mississippi State Agencies

Department of Transportation
   Gulfport Project Office
   Ocean Springs Project Office
Office of Attorney General

Other State Agencies

Florida Department of Transportation
Massachusetts Highway Department
Massachusetts Water Resource Authority

Contractors

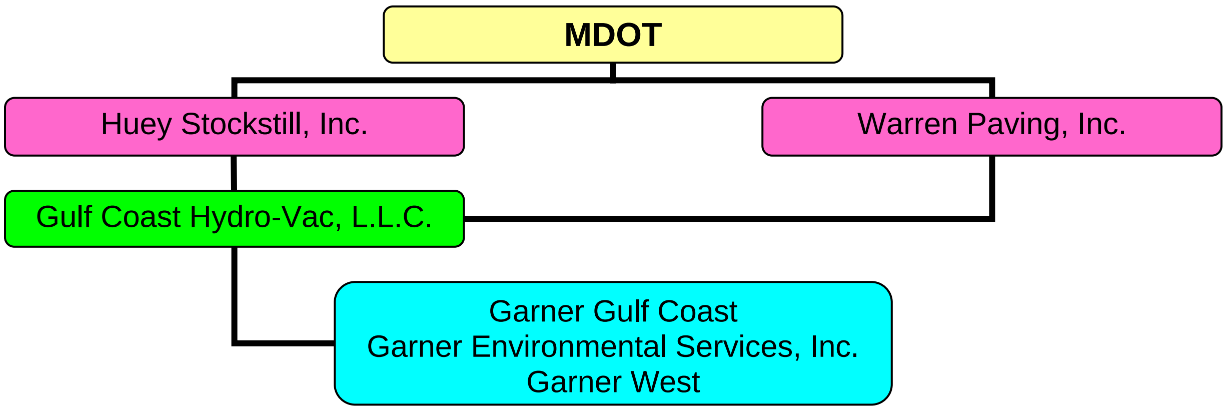
Garner Environmental Services, Inc.
Garner Gulf Coast
T.L. Wallace Construction, Inc.
URS Corporation
Warren Paving, Inc.

EXHIBIT C. MDOT HURRICANE KATRINA EMERGENCY REPAIR CONTRACTS OVER $1 MILLION

Contractor	Project Name	Contract Amount	Contract Type
T.L. Wallace Construction, Inc.	I-10 Bridge Repair at Pascagoula	$5,153,796[a]	Competitively Bid
Warren Paving, Inc.	I-10 Lane Widening	$1,991,647[a]	Competitively Bid
Huey Stockstill, Inc.	U.S. 90 Debris Cleanup and Repair (Westbound)	$2,648,519	Competitively Bid
Warren Paving, Inc.	U.S. 90 Debris Cleanup and Repair (Westbound)	$3,720,718	Competitively Bid
Mallette Brothers Construction Company, Inc.	U.S. 90 Debris Cleanup and Repair (Westbound)	$4,946,767	Competitively Bid
Hill Brothers Construction Company	U.S. 90 Bridge Repair at Henderson Point	$1,945,726	Competitively Bid
T.L. Wallace Construction, Inc.	I-110 Bridge Repair	$2,487,000	Negotiated, Lump-Sum
ESCO Marine, Inc.	Bay St. Louis Bridge Removal of Bascule Leaves	$2,100,000	Negotiated, Lump-Sum
Huey Stockstill, Inc.	U.S. 90 Debris Cleanup and Repair (Eastbound)	$7,000,000[b]	Negotiated, Cost-Plus
Warren Paving, Inc.	U.S. 90 Debris Cleanup and Repair (Eastbound)	$7,000,000[b]	Negotiated, Cost-Plus
Mallette Brothers Construction Company, Inc.	U.S. 90 Debris Cleanup and Repair (Eastbound)	$4,000,000[b]	Negotiated, Cost-Plus
Tony Parnell Construction, Inc.	Demolish and Cleanup of Casino Barge on U.S. 90	$1,200,000	Negotiated, Cost-Plus
Volkert and Associates, Inc. (Consultant)	Bridge Inspections and Assessments	$1,000,000	Negotiated, Cost-Plus
Total		**$45,194,173**	

[a]These amounts do not include the incentive/disincentive contract clause amounts that MDOT used to encourage early completion or penalize late work.
[b]Each negotiated, cost-plus contract had a ceiling that allowed the contractor to bill MDOT up to $10 million.

EXHIBIT D. MDOT'S CONTRACTORS THAT USED THE SEWER HOG FOR EMERGENCY REPAIRS ON U.S. 90



Source: OIG

Exhibit D. MDOT's Contractors That Used the Sewer Hog for Emergency Repairs on U.S. 90

EXHIBIT E. MAJOR CONTRIBUTORS TO THIS REPORT

THE FOLLOWING INDIVIDUALS CONTRIBUTED TO THIS REPORT.

Name	Title
Kurt W. Hyde	Assistant Inspector General for Surface and Maritime Programs
Brenda R. James	Program Director
Peter F. Babachicos	Project Manager
William R. Lovett	Senior Auditor
Marvin E. Tuxhorn	Senior Auditor
Brett Kramer	Analyst
Seth Kaufman	Associate Counsel
Amy Berks	Associate Counsel
Clayton Boyce	Communications Advisor
Harriet E. Lambert	Writer-Editor

APPENDIX. MANAGEMENT COMMENTS

U.S. Department of Transportation
Federal Highway Administration

Memorandum

Subject: **INFORMATION:** Federal Highway Administration Response to Office of Inspector General (OIG) Draft Report, "Audit of the Mississippi Department of Transportation's Award of Selected Hurricane Katrina Emergency Repair Contracts"

Date August 29, 2006

From: J. Richard Capka
Administrator

Reply to
Attn. of: HIPA-1

To: Kurt Hyde
Assistant Inspector General
for Surface and Maritime Programs (JA-40)

Thank you for the opportunity to review and comment on the OIG Draft Report, "Audit of the Mississippi Department of Transportation's (MDOT) Award of Selected Hurricane Katrina Emergency Repair Contracts." The findings of the audit report affirm the Federal Highway Administration's (FHWA) continued diligence in our stewardship responsibilities. We concur with the recommendations and plan to implement them as described herein. Following are our comments and planned actions on the specific audit report recommendations.

Recommendation 1: "Determine whether there is any legal recourse for recovering about $1.4 million in excess equipment costs for the Sewer Hog and limit Federal participation to the amount FHWA determines to be fair and reasonable under the emergency circumstances that existed after Hurricane Katrina."

Response: The FHWA concurs with this recommendation. We will work with MDOT to ascertain the specific rationale behind the use and pricing of the "Sewer Hog." Based on this information, we will further assess the reasonableness of the charges in light of the services provided, any unique requirements, and the circumstances associated with responding immediately after Hurricane Katrina. Contingent on this assessment, we will work with MDOT to determine whether the fees paid for the use of this equipment should be considered an overcharge and whether recoveries can and should be pursued. The FHWA's ability to successfully pursue this response is dependent on obtaining copies of the calculations and analyses developed by the OIG regarding pricing for the "Sewer Hog" equipment. The target completion date for this recommendation is December 31, 2006.

Celebrating 50 Years 1956 2006 Eisenhower Interstate System

BUCKLE UP AMERICA

Recommendation 2: "Revise and strengthen FHWA's Emergency Relief Manual and related Federal regulations to better address how states should award emergency repair contracts by including language that:

a. Prioritizes emergency repair contracts to strongly encourage states to first use expedited competitively bid awards; use negotiated, cost-plus contract awards when competition is not feasible; and use high risk lump-sum contract awards only under extreme circumstances.

b. Advises states to conduct a cost/price analysis before the award of negotiated contracts to assure that prices are fair and reasonable.

c. Provides alternative methods for computing equipment usage rates in negotiated, cost-plus contracts, when the Rental Rate Blue Book or other equipment rates are not available.

d. Advises states on the procurement procedures that they should use to be eligible for Federal reimbursements when awarding negotiated contracts and on how FHWA reserves the right not to participate or to minimize its participation in negotiated contracts when prices are not deemed reasonable.

e. Encourages states to work with their Division Offices to develop pre-established, emergency repair contracts with multiple contractors in an effort to provide quick action and ensure that contract prices will be fair and reasonable."

Response: The FHWA concurs with this recommendation. We are committed to continually improving the Emergency Relief (ER) Manual and have already begun a review of the ER Program that will identify any required ER Manual updates. Following our ER Program review, FHWA will revise the manual including the specific aspects of the recommendation, as appropriate. The target completion date for updating the ER Manual is December 31, 2006. In addition to revising the manual, we are committed to updating related Federal regulations, as appropriate.

The efforts of the OIG auditors in performing this review are greatly appreciated. If you have any questions or comments regarding this response, please contact Mr. Dwight Horne at (202) 366-5530.