

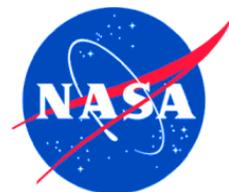
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AUDIT REPORT

OFFICE OF AUDITS

NASA'S USE OF RECOVERY ACT FUNDS TO REPAIR HURRICANE DAMAGE AT JOHNSON SPACE CENTER

OFFICE OF INSPECTOR GENERAL



National Aeronautics and
Space Administration

Final report released by:

A handwritten signature in black ink, appearing to read 'PKMA', written in a cursive style.

Paul K. Martin
Inspector General

Acronyms

CLIN	Contract Line Item
CO	Contracting Officer
COTR	Contracting Officer's Technical Representative
CSC	Computer Sciences Corporation Applied Technology Division
FAR	The Federal Acquisition Regulation
JSC	Johnson Space Center
OIG	Office of Inspector General
OMB	Office of Management and Budget

OVERVIEW

NASA'S USE OF RECOVERY ACT FUNDS TO REPAIR HURRICANE DAMAGE AT JOHNSON SPACE CENTER

The Issue

The American Recovery and Reinvestment Act of 2009 (Recovery Act) requires a significant level of transparency and accountability to ensure that Recovery Act funds are expended in accordance with the Act's requirements and to make information about these expenditures readily available to the public. In support of these objectives, Federal Offices of Inspectors General oversee agency compliance with the Office of Management and Budget's (OMB) Implementing Guidance for the Act.¹ This guidance sets forth the requirements agencies must follow in awarding and modifying contracts funded with Recovery Act funds. NASA's Procurement Information and Grant Information Circulars provide additional guidance for NASA contracts.

In 2009, NASA received a total of \$1 billion in Recovery Act funds.² Of this amount, NASA allocated \$50 million to Johnson Space Center (JSC) for the repair of buildings and facilities damaged in September 2008 by Hurricane Ike. Between June 15, 2009, and September 30, 2010, JSC, using Recovery Act funds, issued new contracts and modified several existing contracts to repair roofs and loggia on several dozen buildings; replace leaking windows; waterproof exterior building panels; repair street, parking lot, and sidewalk lights; reconstruct a hangar at Ellington Field; and refloat a barge dock on Clear Lake.

The objective of our audit was to assess cost, schedule, and performance of the JSC contracts, as well as JSC's compliance with applicable OMB and NASA guidance. We reviewed the performance of nine of the largest contractors hired by JSC to perform Recovery Act work. This group included one quality assurance contractor; seven construction contractors that performed repair work directly; and JSC's existing facilities support services contractor, Computer Sciences Corporation Applied Technology Division (CSC), which performed construction oversight. In total, we reviewed \$41 million of the \$50 million in Recovery Act contract actions awarded by JSC.

¹ Office of Management and Budget, "Updated Implementing Guidance for the American Recovery and Reinvestment Act of 2009" (M-09-15, April 3, 2009).

² NASA also received \$52 million in reimbursable funds from other Federal agencies, including the National Oceanic and Atmospheric Administration and the Department of Energy, to assist these agencies in meeting their Recovery Act goals.

Results

In general, we found that the work performed by the nine contractors in our review met cost, schedule, and performance milestones, and that JSC's use of Recovery Act funds for these contracts generally complied with OMB and NASA guidance. However, we identified a number of issues pertaining to the construction-related delivery orders JSC awarded to CSC. Specifically, we found that by awarding delivery orders to CSC rather than to a contractor that had the resources to perform the repair work directly, JSC incurred up to \$1.8 million in excessive project oversight costs. In addition, we found that JSC did not negotiate with CSC project oversight costs that significantly exceeded independent Government estimates or otherwise appeared excessive. We also found that JSC project management officials approved the payment of \$348,534 in questionable risk-related costs to CSC. We question the methodology CSC used to calculate these costs and whether they were reasonable under the Federal Acquisition Regulation (FAR). Lastly, we found that JSC officials allowed unauthorized individuals to recommend payment of CSC invoices.

JSC's Award of Three Delivery Orders Resulted in Payment of up to \$1.8 Million in Excessive and Questionable Costs. CSC is NASA's fourteenth largest contractor with over \$253 million in contract actions in fiscal year (FY) 2009, including a facilities support services contract with JSC.³ Through a series of delivery orders on this contract, JSC awarded approximately \$12.5 million to CSC for construction-related hurricane repair work using Recovery Act funds. CSC in turn hired qualified subcontractors to perform the work and charged JSC a fee for oversight of the subcontractors' work. We reviewed cost proposals for three of the delivery orders with a combined value of approximately \$8.2 million and found that the amount allocated to the subcontractors who performed the actual repair work totaled \$5.9 million, while CSC's charge for overseeing their work totaled nearly \$2 million, or 33 percent of the subcontractors' costs.

JSC's Recovery Act Project Manager told us that at the time the decision was made to award the delivery orders to CSC, JSC officials did not believe they had sufficient time to compete, award, and obligate Recovery Act funds to ensure the hurricane repairs were completed in a timely manner. Therefore, in an effort to speed distribution of the funds, JSC officials decided to use the existing CSC contract rather than compete and award the work directly to contractors to perform the repairs. However, we found that JSC competed other Recovery Act contracts and disbursed the associated funding within similar timeframes as the CSC delivery orders.

JSC further contends that awarding the delivery orders to CSC was necessary to ensure the projects were properly managed and supervised and that the required safety personnel

³ Federal Procurement Data System, "Federal Procurement Data System – Next Generation Top 100 Contractors Report FY 2009," <https://www.fpds.gov/fpdsng/cms/index.php/reports> (last accessed February 28, 2011).

were on-site. However, all of the repair work JSC awarded, including the work awarded to contractors other than CSC, required proper supervision and management, and it is unclear to us why another qualified contractor could not have satisfied this requirement. With regard to the need for on-site safety personnel, JSC personnel could not explain why only CSC was capable of satisfying this requirement. We believe that had JSC awarded the work covered by the CSC delivery orders directly to qualified construction companies, as it did for other Recovery Act funded hurricane repair work, it could have saved up to \$1.8 million in project oversight costs.⁴

JSC Did Not Negotiate Project Oversight Costs with CSC. We found that JSC did not negotiate with CSC regarding its Recovery Act cost proposals to ensure NASA was receiving the best value for the three delivery orders we reviewed. Specifically, two of CSC's cost proposals exceeded the independent Government estimate and the third proposal contained project oversight costs of nearly 40 percent of total subcontractor costs. Although the technical evaluation prepared by JSC officials for one of the delivery orders noted that the project oversight costs proposed by CSC exceed the amount provided in the Government estimate by 16 percent, it did not recommend that JSC negotiate with CSC in an effort to reduce these costs. Similarly, JSC accepted without negotiation project oversight rates of 35 and 40 percent for the other two delivery orders.

Best practices in the construction industry indicate that the costs for general conditions – which comprise project oversight costs including supervision, overhead, profit, and a portion of general and administrative costs – should equal 15 percent of direct construction costs. JSC Recovery Act project staff agreed that this was a reasonable rate for organizations other than NASA, but noted that “JSC’s project requirements for an on-site Safety & Health System Professional increase project costs substantially.” However, even taking this additional requirement into account, CSC’s project oversight rates were significantly above the industry standard. Accordingly, we question the reasonableness of CSC proposed costs and believe that JSC should have negotiated the proposed rates with CSC to ensure it was receiving the best value for its money.

JSC Paid \$348,534 for Questionable Risk-Related Costs. We found that two CSC delivery orders for Recovery Act-funded hurricane repair work included \$348,534 in questionable charges. The FAR requires that contractors exclude from proposals costs “for events whose effect cannot be measured so precisely as to provide equitable results to the contractor and the Government,” but provides that such costs “should be disclosed separately (including the basis upon which the [cost] is computed) to facilitate the negotiation of appropriate contractual coverage.” JSC’s contract with CSC permitted CSC to include “risk of poor subcontractor performance” and “other risks of doing business.” Accordingly, in their cost proposals, CSC included risk-related charges involving such events as subcontractor default, property damage, grounds cleanup, and hurricane mobilization. However, JSC did not obtain the information necessary to

⁴ We excluded from our questioned costs the approximately \$140,000 JSC paid CSC for the on-site safety professional on the assumption that these costs would have been necessary no matter who performed the work.

determine if CSC's basis for these costs was appropriate and reasonable. In addition, we found that in several instances CSC used different probabilities to account for the same risk. For example, for the risk of "Property Damage," CSC indicated a 50 percent probability of occurrence under one delivery order and a 60 percent probability under another. Similarly, for the risk event "Hurricane Mobilization," CSC estimated the probability at 50 percent for one delivery order and 55 percent for another. CSC's inconsistent application of the methodology used to develop these risk-based costs coupled with JSC's failure to review the basis for these costs prior to agreeing to pay them leads us to question the \$348,534 in risk-based costs that JSC paid to CSC.

Unauthorized Persons Recommended Payment of CSC Invoices. The contracting officer's technical representative (COTR) delegation letter for CSC's contract allows only the COTR to recommend the payment of contractor invoices.⁵ However, we found that JSC project and program managers, who were not delegated this responsibility, recommended the payment of seven invoices totaling over \$9 million.

The JSC Recovery Act Project Manager stated that the JSC program managers were involved in reviewing and recommending CSC invoices for payment as part of their "monitoring contractor progress" duties, which is permissible under NASA's FAR Supplement. While we agree that it is permissible and indeed advisable for COTRs to receive assistance from project managers in monitoring contractor progress, we do not believe this provision authorizes JSC's program managers to recommend payment of invoices without proper delegation. Moreover, allowing unauthorized individuals such as the project or program manager to make payment recommendations increases the risk that improper payments will occur.

Management Action

JSC incurred up to \$1.8 million in excessive project oversight costs and paid \$348,534 in questionable risk-related costs to CSC. However, JSC agreed to pay these amounts as part of a fixed-price contract and therefore was obligated to pay CSC for these charges. To address the issues we identified, we recommended the Recovery Act Implementation Executive work with NASA's Assistant Administrator for Procurement to: (1) provide updated guidance or training to address the proper selection of contract vehicle, including considerations for use of existing contracts in lieu of new awards and a reminder to evaluate proposals for excessive pass-through costs in accordance with the FAR; (2) include in cost analysis training presentations and materials procedures to ensure that contracting officers verify contractor-proposed charges for individual cost elements against appropriate supporting documentation, evaluate rates proposed by the contractor to ensure their reasonableness, and document this determination in the contract files; and (3) remind contracting officers that for contracts where a COTR has been appointed, only the COTR is authorized to recommend invoices for payment. If, on a particular contract,

⁵ NASA FAR Supplement (NFS) 1842.270(b) requires contracting officers to sign a separate COTR delegation letter for each COTR assigned to a contract.

someone other than the assigned COTR is in a better position to review technical progress for payment purposes, remind contracting officers that a formal delegation naming that individual as an alternate COTR is required.

In response to our draft report, NASA's Chief Financial Officer concurred with our recommendations, stating that the Agency's Recovery Act Executive will work with NASA's Assistant Administrator for Procurement to improve existing processes. Specifically, by October 2011 NASA's Assistant Administrator will add a training module to NASA's cost and pricing training to ensure the proper selection of contract vehicles. Further, the Assistant Administrator will ensure that presentations and materials for upcoming cost analysis training scheduled to be conducted by November 2011 includes procedures on analyzing the individual cost elements of non-standard rates such as those proposed by CSC in a risk coefficient. Additionally, Agency training will continue to emphasize rate review and analysis, cost reasonableness determinations, and file documentation. The Assistant Administrator will also remind contracting officers that for contracts on which a COTR has been delegated authority to recommend invoices for payment, only the COTR is authorized to recommend invoices for payment to the contract officer. We consider the Agency's proposed actions responsive and will close the recommendations upon completion and verification of those actions.

The Agency also provided technical comments on our draft report, which we incorporated as appropriate.

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Background

On February 17, 2009, the American Recovery and Reinvestment Act (Recovery Act) became law. The Recovery Act seeks to strengthen the U.S. economy by creating new jobs, spurring technological advances in science and health, and investing in infrastructure. The Act requires a significant level of transparency and accountability to ensure that funds are expended in accordance with its requirements and that information about expenditures is readily available to the public. In addition, the Act provides that whenever possible agencies should compete contracts and utilize small businesses when awarding Recovery Act funds.

NASA received approximately \$1 billion under the Recovery Act, which it allocated to the following mission areas:⁶

- **Science:** \$400 million to accelerate the development of the Tier 1 set of Earth Science climate research missions recommended by the National Academies Decadal Survey, increase the Agency's supercomputing capabilities, and maintain current workforce levels on and increase the likelihood of achieving the scheduled launch date of the James Webb Space Telescope.
- **Aeronautics:** \$150 million for system-level research, development, and demonstration activities related to aviation, safety, environmental impact mitigation, and the Next Generation Air Transportation System.
- **Exploration:** \$400 million to develop safe and robust capabilities for human space exploration and stimulate efforts within the private sector to develop and demonstrate technologies that enable commercial human spaceflight capabilities.
- **Cross-Agency Support:** \$50 million to restore NASA-owned facilities damaged by natural disasters in 2008.

All of the direct funds NASA designated for Cross-Agency Support were made available to the Johnson Space Center (JSC) to restore NASA-owned facilities damaged in September 2008 by Hurricane Ike, the most expensive weather catastrophe in Texas history and the third costliest hurricane to strike the United States.⁷ JSC closed for 6½ business days due to damage from the hurricane.

⁶ NASA also received approximately \$52 million in reimbursable Recovery Act funds from other Federal agencies, including the National Oceanic and Atmospheric Administration and the Department of Energy.

⁷ Purva Patel, "Pricetag for Ike: \$15 billion, insurers say," January 28, 2010, <http://www.chron.com/dispatch/story.mpl/business/6839732.html> (accessed February 28, 2011).

The repairs of hurricane damage at JSC were performed in two phases. The first phase involved high-priority repairs paid for with Space Shuttle facilities program funds. The second phase of work was funded with the \$50 million in Recovery Act funds. This second phase of work included:

- Repair of roofs on more than 20 buildings;
- Replacement of 2,370 windows in Building 1;
- Replacement of more than 100 street, parking, and sidewalk lights;
- Repair of exterior panels on 36 buildings, including replacing over 200,000 linear feet (nearly 40 miles) of caulking, and cleaning and waterproofing over 1 million square feet of building panels;
- Repair of loggia ledges on 11 buildings
- Reconstruction of an aircraft hangar at Ellington Field;
- Repair of the JSC barge dock on Clear Lake; and
- Replacement of damaged carpet in one building.

Figure 1. Damage to JSC Building Caused by Hurricane Ike



Source: Johnson Space Center

To accomplish this repair work, JSC created nine work packages of activities of a similar kind, area, or operation: two large roof and loggia packages covering more than two

dozen individual projects and seven smaller packages each totaling less than \$3.5 million. JSC competitively awarded the two larger packages through an invitation-for-bid process and directly awarded the seven smaller packages to small disadvantaged businesses. In addition, JSC awarded 19 firm-fixed price delivery orders to Computer Sciences Corporation Applied Technology Division (CSC) using an existing facilities support services contract. In total, JSC awarded approximately \$45 million in Recovery Act contract actions for repair work to eight construction companies and CSC. As part of this audit, we reviewed the performance of CSC and seven of the eight construction firms.⁸

JSC also awarded over \$5 million in Recovery Act funds for support services such as building inspection, institutional safety, environmental services, facilities support, and administrative support. JSC awarded one task order to CSC for facilities support services and made awards to four other support services contractors. We reviewed the performance of one of these contractors – Gilbane Building Company – that received \$3.5 million in Recovery Act funds. Table 1 provides a summary of the contract actions we examined.

⁸ We did not review one award totaling \$82,578.73 due to its small size.

Table 1. Johnson Space Center Cross-Agency Support Recovery Act Contracts Actions as of December 31, 2010			
Contractor's Name	Total Awarded	Total Reviewed	Percent
All American Brothers Company, LLC	\$898,180.00	\$847,300.00	94
Competitive Choice, Inc.	\$82,578.73	\$0	0
CSC Applied Technology Division ^{a,b}	\$12,493,313.69	\$5,488,369.00	44
DRI Commercial Corporation	\$8,027,463.70	\$8,027,463.70	100
Gee Cee	\$2,883,758.00	\$2,883,758.00	100
Rycars Construction	\$10,040,522.92	\$10,040,523.00	100
SIA Construction	\$1,834,945.78	\$1,834,945.78	100
Specpro Environmental Services ^c	\$4,359,716.92	\$4,359,716.92	100
W.A. Robbins	\$3,985,607.02	\$3,985,607.02	100
Subtotal Construction Contracts	\$44,606,086.76	\$37,467,683.42	84
Anadarko Industries, Inc.	\$438,998.09	\$0	0
CSC Applied Technology Division ^d	\$207,246.00	\$0	0
Earth Resources Technology, Inc.	\$425,025.82	\$0	0
Gilbane Building Company	\$3,522,977.06	\$3,522,977.06	100
4W Solutions	\$791,489.72	0	0
Subtotal Support Services Contracts	\$5,385,736.69	\$3,522,977.06	65
Total Construction and Support Services Contracts	\$49,991,823.45	\$40,990,660.56	82

^a Due to issues identified during fieldwork with CSC's charges for risk and project oversight, we expanded our sample to include an additional delivery order valued at \$2.7 million.

^b JSC classified the contract actions for the building repair tasks as construction, even though the awards were delivery orders under CSC's facilities support services contract.

^c We reviewed 2 separate Specpro contracts.

^d In addition to the construction delivery orders, CSC received a separate task order to provide facilities support services as required during the execution of hurricane repairs completed by other contractors.

Source: Adapted from JSC's Cross-Agency Support Overview Update, Recovery Act contracts and contract modifications documentation (August 31, 2010).

Objectives

The overall objective of our audit was to assess JSC's use of Recovery Act funds to achieve cost, schedule, and performance milestones, as well as compliance with OMB and NASA guidance. Specifically, we examined whether JSC used reliable cost estimates in expending these funds, accomplished milestones within cost estimates,

completed work within established schedule baselines, accomplished stated goals and objectives, and monitored the use of small business contractors.

To accomplish our objective, we reviewed approximately \$41 million of the \$50 million in Recovery Act contract actions awarded by JSC for hurricane repair work and other associated tasks. We selected nine of the largest contractors that received JSC awards, including eight that performed hurricane repair work and one support services contractor that inspected the work. We interviewed Agency officials and reviewed contracts, contract modifications, delivery orders, task orders, proposals, invoices, technical progress reports, and other documentation. We also assessed NASA's and the contractors' compliance with NASA and OMB guidance and with applicable requirements of the Federal Acquisition Regulation (FAR). We reviewed internal controls as appropriate. See Appendix A for details of the audit's scope and methodology, our review of internal controls, and a description of prior related audit coverage.

JSC'S AWARD OF THREE DELIVERY ORDERS RESULTED IN PAYMENT OF UP TO \$1.8 MILLION IN EXCESSIVE AND QUESTIONABLE COSTS

The nine firms in our sample of contractors JSC hired to perform repair work all met cost, schedule, and performance milestones. However, we found that by awarding three delivery orders to CSC, the Center's existing support services contractor, rather than directly to construction firms with the resources to directly perform the work, JSC incurred up to \$1.8 million in excessive costs. We also found that JSC did not negotiate with CSC on the proposed project oversight costs that exceeded independent Government estimates or otherwise appeared excessive; JSC project management officials approved the payment to CSC of \$348,534 in questionable risk-related costs; and JSC contracting personnel permitted individuals other than the contracting officer's technical representative (COTR) to recommend payment of CSC invoices, increasing the risk of improper payment under the contract.

JSC Incurred up to \$1.8 Million in Excessive Project Oversight Costs

In FY 2008, JSC competitively awarded CSC a large facilities support services contract with a combined estimated base value of over \$291 million through FY 2011. Under this contract, CSC provides support services in areas such as administration; repairs and maintenance; utility operations; information technology; and engineering, design, and construction. Other NASA Centers have similar contracts for support services with other firms. Since September 2009, JSC has awarded CSC 19 delivery orders for Recovery Act-funded hurricane repair work totaling over \$12.5 million under this competitive contract.

We reviewed three of the Recovery Act delivery orders awarded to CSC worth approximately \$8 million. We found that of this amount, \$5.9 million paid for subcontractor costs and nearly \$2 million, or 33 percent of the total subcontractor costs, went to CSC for its project oversight (see Table 2).⁹ CSC hired subcontractors to perform a majority of the construction work identified on the three delivery orders, and acted in a project oversight capacity supervising the work of the subcontractors it hired. According to CSC's cost proposals, its project oversight costs consist of the project oversight team's labor, risk (which CSC identifies as costs from project delays), general

⁹ CSC's project oversight costs included the cost of CSC's project oversight team, risk, general and administrative costs, and profit.

and administrative costs, and profit. In accordance with the support services contract, CSC was permitted to charge these costs as a percentage of subcontractor costs.

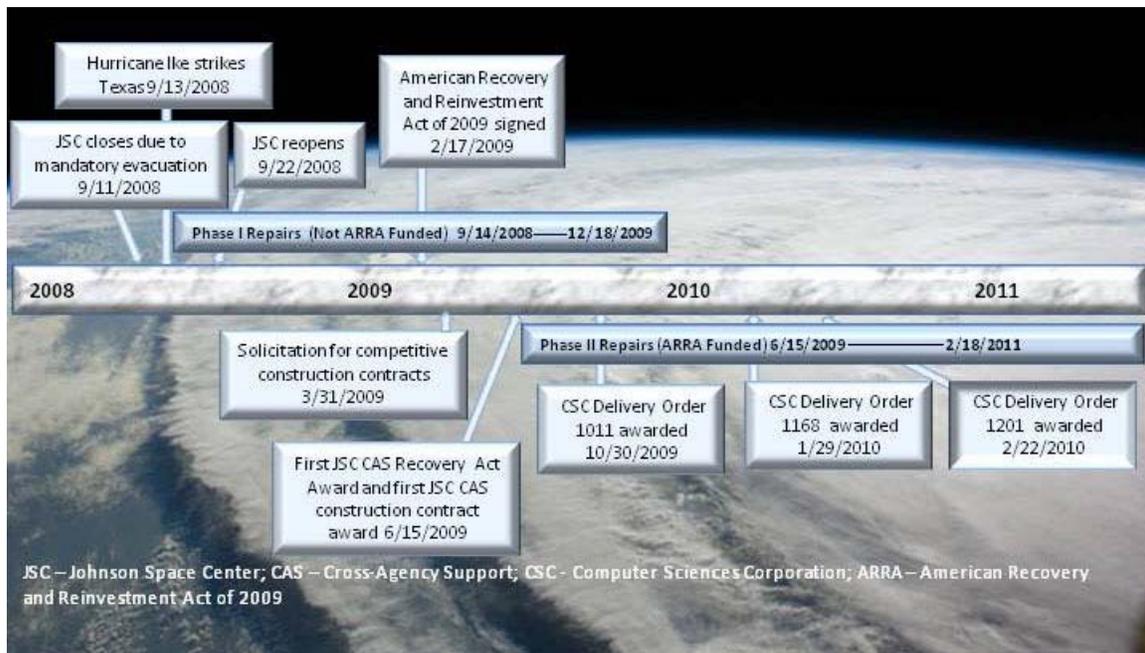
Table 2. Subcontractor Cost and CSC Project Oversight Amounts for Delivery Orders 1011, 1168, and 1201^a				
Delivery Order	Subcontract Base Dollar Amount	CSC Project Oversight Amount	CSC Project Oversight (Percent)	Description
1011	\$2,117,170	\$550,464	26.00	Replace roof on cafeteria building
1168	\$1,714,278	\$599,997	35.00	Repair, caulk, and waterproof panels on 13 JSC buildings
1201	\$2,083,181	\$827,335	39.72	Repair, caulk, and waterproof panels on 17 JSC buildings
Total	\$5,914,629	\$1,977,796	33.44	

^aThe CSC Recovery Act awards included 19 delivery orders for facility repairs totaling \$12.5 million. We selected three of these delivery orders for review, totaling approximately \$8.2 million or 65 percent of the total Recovery Act award.

Source: CSC's delivery order proposals.

JSC's Award of Three Delivery Orders to CSC Resulted in Excessive Oversight Costs. JSC's Recovery Act Project Manager indicated that JSC awarded the delivery orders to CSC rather than to qualified construction firms through a new competition for several reasons. First, JSC personnel believed that they needed to utilize the existing CSC contract to ensure the repairs were completed in a timely manner. However, we found that JSC conducted a new competition for other large Recovery Act contracts and disbursed that funding to individual contractors within timeframes that were similar to, and sometimes shorter than, the time it took to award the delivery orders to CSC. For example, for two of the large Recovery Act construction contracts, 74 and 108 days elapsed between issuance of the solicitation and award. In contrast, for CSC delivery order 1168, 122 days elapsed between the dates JSC issued the request for quote and awarded the delivery order (see Figure 2). In addition, the periods of performance for the newly competed contracts and the delivery orders under the competitive CSC facilities support services contract were not materially different, ranging from 180 to 436 days for the construction contracts and 220 days to 336 days for the delivery orders.

Figure 2. Sequence of Three CSC Delivery Orders Reviewed in Line with JSC’s Recovery Act Contract Awarding Events



NASA Procurement Information Circular 09-06 states that “[t]he Recovery Act, and all associated guidance, expresses a clear preference for award of fixed-price, competitive contracts. [Contracting officers] shall support these principles and maximize the use of fixed-price, competitive contracts, as appropriate, in awarding contracts that use Recovery Act funding.”¹⁰ Further, the “Competition in Contracts” paragraph of NASA’s Revised Recovery Plan states, in part:

The Recovery Act states that funds are to be awarded primarily using competitive procedures. NASA practices full and open competition where prudent. There are instances where in the highly complex and specialized business of space that non-competitive contract mechanisms are warranted.

JSC carried out these principles in creating nine work packages of activities similar in kind, area, and operation, and competitively awarding the two larger work packages and directly awarding the seven smaller packages to small disadvantaged businesses. However, for the remaining hurricane repairs, JSC did not obtain bids from other qualified construction contractors. Instead, JSC used the competitively awarded facilities support services contract to award delivery orders to CSC to complete the hurricane repairs. We believe that by using the existing facilities support services contract to award this work to CSC, JSC, while not violating NASA’s Recovery Act principles or OMB’s Recovery Act guidance, missed an opportunity to realize potential cost savings that could have been achieved by newly competing some or all of this work.

¹⁰ NASA Procurement Information Circulars 09-06D – H, General Principles (b), dated August 10, 2009 – November 23, 2010.

Second, JSC contends that awarding the delivery orders to CSC was necessary to ensure the projects were properly managed and supervised and that on-site safety personnel were provided. However, all of the repair work JSC awarded, including the work awarded to contractors other than CSC, required proper supervision and management, and it is unclear to us why another qualified contractor could not have satisfied this requirement. Indeed, the proposals submitted by CSC's subcontractors for delivery orders 1168 and 1201 indicated that they would provide insurance, labor, materials, equipment, and supervision for the proposed projects. With regard to the need for on-site safety personnel, JSC personnel could not explain why only CSC was capable of satisfying this requirement.

In our view, if JSC had awarded these delivery orders to a qualified construction contractor with the resources to conduct the necessary repair work, thus eliminating the intermediary, the Center could have saved up to \$1.8 million of the nearly \$2 million in project oversight costs paid to CSC (see Appendix C for a Schedule of Questioned Costs).¹¹

JSC Did Not Negotiate Excessive Project Oversight Costs with CSC

We found that CSC's project oversight costs for delivery order 1011 substantially exceeded the independent Government estimate of 10 percent for such services. The technical evaluation prepared by JSC personnel for this delivery order noted this disparity. However, the technical evaluator neither questioned CSC's proposal nor recommended further negotiation; instead, the evaluator recommended adjusting the Government estimate to allow for CSC's higher project oversight percentage and accepting CSC's proposal.

The technical evaluations of the proposals for the two other CSC delivery orders we reviewed did not specifically discuss CSC's oversight costs and associated rates in relation to the independent Government estimate, so we were unable to conduct a similar comparison for those two proposals. However, our review of those technical evaluations showed that JSC did not raise concerns about the percentages of the proposed project oversight costs – 35 percent for delivery order 1168 and nearly 40 percent for delivery order 1201 – or the amounts CSC was charging for project oversight. Instead, the technical evaluations recommended accepting CSC's proposed costs as fair and reasonable.

Best practices in the construction industry indicate that the costs for general conditions, which include project oversight plus overhead, profit, and a portion of general and administrative costs, should equal 15 percent of direct construction costs. JSC Recovery Act project staff agreed with the rates identified by the industry guidance but indicated

¹¹ We excluded from our questioned costs the approximately \$140,000 JSC paid CSC for the on-site safety professional on the assumption that these costs would have been necessary no matter who performed the work.

that “JSC’s project requirements for an on-site Safety & Health System Professional increase the percentage substantially.” However, even considering this additional cost, the project oversight rates charged by CSC significantly exceeded the industry standard. In our view, JSC should have negotiated these rates to ensure the Government was receiving the best value.

The FAR states that the contracting officer is responsible for negotiating a price that is fair and reasonable to both the Government and the contractor. However, there were no negotiations related to delivery orders 1168 and 1201. The price negotiation memoranda prepared by JSC contracting personnel for these delivery orders states that negotiations were not conducted based on information provided in the technical evaluations. The technical evaluation for delivery order 1168 states, “Even though the overall Contractor’s costs are greater than the IGE (Independent Government Estimate), the Contractor’s proposed costs should be accepted, as the basis of the estimate was not given a definitive quantity.” We question this rationale given that for this delivery order, CSC was performing specified repairs on 13 JSC buildings. Therefore, we believe that JSC did not have sufficient justification for allowing proposed project costs that exceeded the independent Government estimate or for accepting CSC’s project oversight costs as reasonable without negotiation of these costs with CSC.

JSC Paid \$348,534 for Questionable Risk-Related Costs

The FAR requires contractors to exclude from estimates costs “for events whose effect cannot be measured so precisely as to provide equitable results to the contractor and the Government,” and provides that such costs “should be disclosed separately (including the basis upon which the [cost] is computed) to facilitate the negotiation of appropriate contractual coverage.”¹²

We found that two of the CSC delivery orders included charges for risk of \$348,534.¹³ The underlying CSC facilities support services contract permitted the inclusion of these costs based on the elements of “risk of poor subcontractor performance and re-performance” and “other risks of doing business.” In calculating these costs, the contract allowed CSC to consider such risk events as property damage, subcontractor dispute, subcontractor default, legal action, environmental non-compliance, worker injuries, other mishaps, Recovery Act audit, unanticipated barriers/protection, grounds cleanup, and hurricane mobilization/demobilization costs.

The JSC Recovery Act Project Manager told us that the CSC contract provision regarding these costs “represents a reasonable, allowable, and necessary basis for pricing risk items in the delivery orders” and that “the [Contracting Officer] views this practice as a cost of

¹² FAR 31.205-7 (c)(2)

¹³ JSC did not require CSC to provide documentation to support the project management oversight costs for delivery order 1011; therefore, we were unable to determine the amount of risk charged to NASA for that delivery order.

doing business that is not necessarily captured in the contractor's rates and factors” However, we found no evidence in JSC's CSC contract files that would explain the basis for the risk-based costs associated with the two delivery orders. Accordingly, we requested that JSC obtain this information from CSC for our review.

In their initial response, CSC did not provide JSC any documentation to support how they had calculated these costs. We then requested further clarification from JSC regarding the basis for CSC's calculations. In response, the JSC Recovery Act Project Manager stated:

CSC built a list of risks associated with performing a project of this magnitude and applied a probability impact against each risk. The contractor [CSC] determined that the primary risk in these two projects was the uncertainty of delays and the associated labor costs of the oversight team. The project duration and project variables listed above created uncertainty (risk) for CSC in approaching this fixed-price project. The contractor did not have applicable history data on these uncertainties. CSC management brainstormed and used expert judgment to identify and quantify the risk events. The costs included in the risk coefficient were only those associated with the CSC Project Oversight Team labor.

As part of their response to our request for clarification, CSC provided a document for each delivery order entitled “Risk Estimate.” According to these documents, CSC developed the cost for risk events using project oversight labor costs and the probability that a particular risk event would occur. However, CSC did not provide this information to JSC as part of its cost proposals, and JSC only requested the information from CSC as a result of our inquiries. We therefore question how JSC could have determined that these costs were appropriate when the basis for them was not disclosed at the time the proposals were submitted or approved. As a result, we believe that JSC's actions were inconsistent with the FAR in permitting the inclusion of these contingency costs in CSC's proposals without first determining the basis for these costs and whether they were reasonable.

In addition, based on our review of the documents CSC provided, we question the methodology CSC used to develop the costs associated with certain risk events. Both delivery orders 1168 and 1201 were for the restoration and waterproofing of building panels, and both provided for the use of the same subcontractor and for all of the work to be performed during the same time period. However, we noted that in several instances CSC used different probabilities on each delivery order to account for the same risk. For example, for the risk “Property Damage” CSC indicated a 50 percent probability of occurrence under delivery order 1168 and a 60 percent probability under delivery order 1201. Similarly, for the risk event “Hurricane Mob[ilization]/Demob[ilization],” CSC estimated the probability at 50 percent for delivery order 1168 and 55 percent for delivery order 1201. We also question the basis on which CSC quantified this risk because researchers at the University of Houston, using available prior-year reference data from

the National Hurricane Center and NOAA, predicted the probability of a hurricane hitting anywhere in the state of Texas in 2010 at only 35 percent.¹⁴

The FAR states that a cost is allowable only when it is reasonable, allocable, and complies with the terms of the contract and the limitations set forth in FAR subpart 31.2.¹⁵ A cost is reasonable if it does not exceed the amount that a prudent person would pay under similar circumstances in the conduct of competitive business. To ensure compliance with acquisition regulations, contracting officers must review proposed costs for reasonableness and allowability.

We are concerned about CSC's methodology for calculating risk and that JSC did not request or review this methodology at the time the proposals were submitted or approved. Consequently, we question whether the \$348,534 in risk costs JSC paid to CSC was reasonable within the meaning of the FAR (see Appendix C for a Schedule of Questioned Costs).

Unauthorized Persons Recommended Payment of Invoices

We reviewed seven CSC invoices totaling over \$9 million and noted that individuals other than the contracting officer (CO) or the COTR recommended them for payment. Specifically, either the JSC project manager or program manager recommended these seven invoices for payment. The NASA FAR Supplement requires contracting officers to sign a separate COTR delegation letter for each COTR assigned to a contract.¹⁶ Further, section 3(g) of NASA's COTR Delegation requires the designated COTR to review contractor invoices and recommend approval for payment, as appropriate; COTRs cannot re-delegate their duties and responsibilities.¹⁷

According to the JSC Recovery Act Project Manager, JSC does not delegate the authority to recommend payment to the project manager overseeing performance of the delivery orders. However, the Recovery Act Project Manager stated that "it's permissible under NASA's FAR supplement for the COTR to receive assistance for the purpose of monitoring contractor progress and gathering information. It is from this perspective that we engage the [program managers] in the review of [Recovery Act] invoices." While we agree that it is permissible and indeed advisable for COTRs to receive assistance from project managers in monitoring contractor progress, we do not believe that a provision allowing for such review justifies managers recommending payment of invoices. Moreover, allowing unauthorized individuals such as the project or program manager to make payment recommendations increases the risk that improper payments will occur.

¹⁴ Erin D. McKenzie, "UH Researchers Predict Probability of Hurricane Hitting Texas," University of Houston Engineering News, June 15, 2010.

¹⁵ FAR 31.201.2.

¹⁶ NASA FAR Supplement (NFS) 1842.270(c).

¹⁷ NASA Form 1634.

Recommendations, Management's Response and Evaluation of Management's Response

JSC incurred up to \$1.8 million in excessive project oversight costs and paid \$348,534 in questionable risk-related costs to CSC. JSC agreed to pay these amounts as part of a fixed-price contract and therefore was obligated to pay CSC for the work it performed. However, to address the issues we identified, we recommended that the Agency's Recovery Act Implementation Executive work with NASA's Assistant Administrator for Procurement to:

Recommendation 1. Provide guidance or training to address the proper selection of contract vehicle, to include considerations for use of existing contracts in lieu of new awards. Such guidance or training should include a reminder to evaluate proposals for excessive pass-through costs in accordance with the FAR and ensure proper documentation in the file for determinations of value added by the prime when a large portion of the work will be subcontracted.

Management's Response: Concur. The Assistant Administrator for Procurement will add a training module to NASA's cost and pricing training to ensure the proper selection of contract vehicles.

Estimated Completion Date: October 2011

Evaluation of Management's Response. Management's proposed actions are responsive to the intent of the recommendation. Therefore, the recommendation is resolved and will be closed upon completion and verification of the proposed action.

Recommendation 2. Include in cost analysis training presentations and materials procedures to ensure that contracting officers verify contractor-proposed charges for individual cost elements against appropriate supporting documentation; evaluate rates proposed by the contractor to ensure their reasonableness; and document this determination in the contract files.

Management's Response: Concur. The Assistant Administrator for Procurement will assure that, in upcoming cost analysis training, presentations and materials will include procedures on analyzing individual cost elements which make up non-standard rates, such as those proposed by CSC in a risk coefficient. Additionally, Agency cost analysis training will continue to emphasize rate review and analysis, cost reasonableness determinations, and file documentation.

Estimated Completion Date: November 2011

Evaluation of Management's Response. Management's proposed actions are responsive to the intent of the recommendation. Therefore, the recommendation is resolved and will be closed upon completion and verification of the proposed action.

Recommendation 3. Remind contracting officers that for contracts that have an appointed COTR, only the COTR is authorized to recommend invoices for payment. If, on a particular contract, someone other than the assigned COTR is in a better position to review technical progress for payment purposes, then remind contracting officers that a formal delegation naming that individual as an alternate COTR is required.

Management's Response: Concur. The Assistant Administrator for Procurement will remind contracting officers that for contracts on which a COTR has been delegated authority to recommend invoices for payment, only the COTR is authorized to recommend invoices for payment to the contract officer.

Estimated Completion Date: October 2011

Evaluation of Management's Response. Management's proposed actions are responsive to the intent of the recommendation. Therefore, the recommendation is resolved and will be closed upon completion and verification of the proposed action.

- NASA Procurement Information Circular (PIC) 09-06E, “Contracting with Recovery Act Funds,” December 24, 2009;
- NASA Procurement Information Circular (PIC) 09-06F “Contracting with Recovery Act Funds,” April 1, 2010;
- NASA Procurement Information Circular (PIC) 09-06G, “Contracting with Recovery Act Funds,” April 7, 2010; and
- NASA Procurement Information Circular (PIC) 09-06H, “Contracting with Recovery Act Funds,” November 23, 2010.

Use of Computer-Processed Data. We used computer-processed data to perform this audit. The NASA Shared Services Center records JSC’s Recovery Act disbursement data in SAP, NASA’s financial management system, when invoices are processed. This data is recorded at the contract line item number (CLIN) level to enable tracking of specific Recovery Act disbursements against project costs. We reviewed the invoices submitted by CSC and traced them to SAP to verify invoice disbursements were posted against the proper project line item. In several instances, we found that project costs were incorrectly posted in SAP based on the identified CLIN. As a result, SAP did not identify the disbursement information at the project level. These incorrect postings did not have an impact on the overall cost of the contract, and therefore this issue is not included as a finding in our report. However, these incorrect postings do indicate internal control deficiencies at the NASA Shared Services Center (NSSC), which we brought to the attention of NASA management.

We also used data from federalreporting.gov, Recovery.gov, and the Federal Procurement Data System to perform this audit. These systems are maintained by other agencies. We confirmed the reliability of data obtained from these systems by comparing it to selected hard copy source data (contract award documents, contractor invoices), without issue.

Review of Internal Controls

We reviewed NASA’s policies, procedures, and internal controls that address the JSC Cross-Agency Support: Institutional Investments Program’s compliance with the requirements of the Recovery Act as identified in the “Updated Implementing Guidance for the American Recovery and Reinvestment Act of 2009,” issued by OMB, April 3, 2009. We also reviewed the Program’s compliance with NASA Procurement Information Circular (PIC) 09-06E, “Contracting with [Recovery Act] Funds,” December 24, 2009, by obtaining and reviewing technical progress reports, financial reports, invoices, and other project deliverables. We met with the Recovery Act Implementation Executive and NASA Office of Procurement officials to gain an understanding of NASA’s processes for awarding Recovery Act contracts and modifications to existing contracts as detailed in the Procurement Information Circular. We reviewed this Circular to determine whether the Agency documented the internal controls required to award contracts and whether the controls were sufficient to ensure NASA was complying with Recovery Act provisions, OMB Guidance, and NASA

policy. Further, we interviewed procurement officials at JSC and asked them to identify the internal control mechanisms in place at the Center level to ensure compliance with the Recovery Act. In addition, we asked them to discuss the contract performance process and provide supporting documentation to ensure their internal controls were functioning effectively. As discussed in this report, NASA's process for awarding Recovery Act contracts could be improved. Our recommendations, if implemented, will improve the controls over the Recovery Act award process.

Prior Coverage

During the last 5 years, the NASA Office of Inspector General (OIG) and the Government Accountability Office (GAO) have issued three memorandums and four reports related to the subject of this report. Unrestricted reports can be accessed over the Internet at <http://oig.nasa.gov/audits/reports/FY11> (NASA OIG) and <http://www.gao.gov> (GAO).

We considered the following memorandums and reports in planning and performing our audit activities:

NASA Office of Inspector General

“Final Memorandum on Analysis of NASA’s Final Program-Specific Recovery Act Plans” (IG-10-005, January 5, 2010)

“Final Memorandum on Analysis of NASA’s Final Agency-Wide Recovery Act Plan” (IG-10-006, January 5, 2010)

“Final Memorandum on Review of Open Audit Recommendations Affecting Recovery Act Activities” (IG-10-014, May 20, 2010)

“Audit of NASA’s Recovery Act Procurement Actions at Johnson Space Center, Goddard Space Flight Center, Langley Research Center, Langley Research Center, and Ames Research Center” (IG-10-017, July 27, 2010)

Government Accountability Office

“NASA: Assessments of Selected Large-Scale Projects” (GAO-10-227SP, February 1, 2010)

“NASA: Key Management and Program Challenges” (GAO-10-387T, February 3, 2010)

“Recovery Act: Contracting Approaches and Oversight Used by Selected Federal Agencies and States” (GAO-10-809, Jul 15, 2010)

**SCHEDULE OF QUESTIONED COSTS
PAID TO CONTRACTOR**

Questioned Costs ^a	Amount	Page
Unreasonable Costs		
Amount paid for project oversight, less Safety Specialist	\$1,837,796	10
Amount paid for risk events	<u>\$348,534</u>	13
Total questioned costs	\$2,186,330	

^a Questioned Costs are expenditures that are questioned by the OIG because of an alleged violation of legal, regulatory, or contractual requirements, are not supported by adequate documentation at the time of the audit, or are unnecessary or unreasonable.

MANAGEMENT COMMENTS

National Aeronautics and Space Administration

Headquarters
Washington, DC 20546-0001



September 1, 2011

Reply to Attn of: Office of the Chief Financial Officer

TO: Assistant Inspector General for Audits

FROM: Chief Financial Officer
American Reinvestment and Recovery Act Senior Accountable Official

SUBJECT: OIG Draft Report, "NASA's Use of Recovery Act Funds to Repair Hurricane Damage at Johnson Space Center" (Assignment No. A-10-013-00)

We appreciate the opportunity to review and provide comments on the Office of the Inspector General (OIG) draft report entitled, "NASA's Use of Recovery Act Funds to Repair Hurricane Damage at Johnson Space Center" (Assignment No. A-10-013-00) dated July 20, 2011. In the draft report, the OIG makes four findings and three recommendations directed to NASA's Recovery Act Implementation Executive. NASA's response to these findings and recommendations, including projected completion dates, is outlined below.

As your office highlighted, NASA received \$1 billion from the American Recovery and Reinvestment Act (Recovery Act) of 2009. Of that, \$50 million was provided to the Johnson Space Center (JSC) to restore facilities crucial to NASA's human spaceflight missions, which were damaged by Hurricane Ike in September 2008. This funding was provided for the second phase of the construction. The first phase of work was not Recovery Act funded.

In total, more than 50 buildings received repairs using Recovery Act funds, and NASA appreciates that your findings reflect the good contractor performance received for these funds. The extensive list of construction accomplishments was also achieved within budget, on an aggressive schedule and without a significant safety incident. Moreover, the repairs incorporated sustainable, green infrastructure improvements that updated the JSC's habitability and environmental footprint. As demonstrated, the Recovery Act funded repair work was successfully completed, by all measures.

To accomplish this work, NASA employed a strategy that was best suited to the scope, in the timeframe for which that scope was to be completed, and that would assure the Agency would receive the requested performance. Nine work packages, each to be awarded via a new contract, were initially planned and all were accomplished, so that, at the beginning of calendar year 2010, funds held in contingency were able to be redirected to additional repairs. To assure an expedited award of five more work packages, before the heart of a new hurricane

season and within the period of funds availability, the acquisition strategy called for utilizing the existing competitively awarded Computer Sciences Corporation (CSC) facilities support contract and issuing firm fixed price delivery orders. CSC had been the prime contractor for the first phase of repairs, had prior knowledge of JSC infrastructure, and had established relationships with multiple roofing, waterproofing, and other subcontractors.

The Agency agrees with the OIG's conclusion that this acquisition strategy was consistent with NASA's Recovery Act principles and OMB's Recovery Act guidance. The Agency's use of contracts, both competitive and firm-fixed price, was in alignment with the intent of the Recovery Act. Further, the use of the existing contract with CSC was in accordance with the Office of Management and Budget (OMB) direction to leverage existing contractual vehicles to avoid duplication and gain efficiency. A sound acquisition strategy was coupled with JSC's effective contract oversight, including reviews during the contract award and execution processes, to assure the results highlighted above. Additional details may be found in the JSC Center Director's letter, dated on August 5, 2011.

To build on the effective execution of this project by Johnson Space Center, NASA concurs with the report's recommendations. Together with NASA's Assistant Administrator for Procurement, the Recovery Act Implementation Executive will address the recommendations and will continue to improve existing processes.

Recommendation 1: Issue updated guidance or training to address the proper selection of contract vehicle, to include considerations for use of existing contracts in lieu of new awards. Guidance should include a reminder to evaluate proposals for excessive pass through costs in accordance with the FAR and ensure proper documentation in the file for determinations of value added by the prime when a large portion of the work will be subcontracted.

Management's Response: Concur. The Assistant Administrator for Procurement will add a training module to its cost and pricing training.

Estimated Completion Date: October 2011

Recommendation 2: Include, in cost analysis training presentations and materials, procedures to ensure that contracting officers verify contractor-proposed charges for risk against appropriate supporting documentation; evaluate rates proposed by the contractor to ensure their reasonableness; and document this determination in the contract files.

Management's Response: Concur. The Assistant Administrator for Procurement will assure that, in upcoming cost analysis training, presentations and materials will include procedures on analyzing individual cost elements which make up non-standard rates, such as those proposed by CSC in a risk coefficient. Additionally, Agency cost analysis training will continue to emphasize rate review and analysis, cost reasonableness determinations, and file documentation.

Estimated Completion Date: November 2011

Recommendation 3: Remind contracting officers that for contracts that have an appointed contracting officer's technical representative (COTR), only the COTR is authorized to recommend invoices for payment. If, on a particular contract, someone other than the assigned COTR is in a better position to review technical progress for payment purposes, then remind contracting officers that a formal delegation naming that individual as an alternate COTR is required.

Management's Response: Concur. The Assistant Administrator for Procurement will remind contracting officers that for contracts on which a COTR has been delegated authority to recommend invoices for payment, only the COTR is authorized to recommend invoices for payment, to the contract officer.

Estimated Completion Date: October 2011

Again, we appreciate the opportunity to provide a written response to the subject draft audit report, as well as the courtesies extended to NASA, by the OIG, during the course of the audit. If any additional information regarding our response is required, please contact Julie A. Pollitt at (202) 358-1580.

Sincerely,



Elizabeth M. Robinson

REPORT DISTRIBUTION

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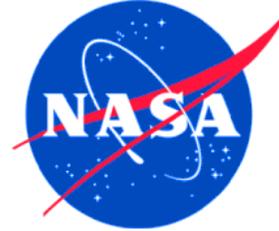
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September 1, 2011

REPORT No. IG-11-025



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