



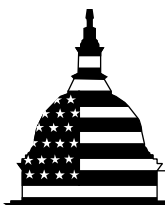
Report to the Chairman, Committee on  
Veterans' Affairs, House of  
Representatives

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April 2013

# VA CONSTRUCTION

## Additional Actions Needed to Decrease Delays and Lower Costs of Major Medical-Facility Projects



G A O

Accountability \* Integrity \* Reliability

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Highlights of [GAO-13-302](#), a report to the Chairman, Committee on Veterans' Affairs, House of Representatives

## Why GAO Did This Study

The VA operates one of the nation's largest health care delivery systems. Charged with addressing the issues of increasing medical demands and aging medical facilities, VA currently manages the construction of 50 major medical-facility projects, each costing at least \$10 million, some in the hundreds of millions of dollars. As requested, GAO examined VA's management of such projects. GAO reviewed (1) changes to costs, schedule, and scope for selected new medical-facility construction projects and (2) actions VA has taken to improve management and any opportunities that exist for VA to improve its management of costs, schedule, and scope of these construction projects. GAO analyzed documents, VA data as of November 2012 on selected major construction projects, and interviewed VA officials, architecture and engineering, and construction firms.

## What GAO Recommends

GAO recommends that VA (1) develop and implement agency guidance for assignment of medical equipment planners to major medical construction projects; (2) develop and disseminate procedures for communicating to contractors clearly defined roles and responsibilities of VA officials who manage major medical-facility projects, particularly the change-order process; and (3) issue and take steps to implement guidance on streamlining the change-order process. VA concurred with GAO's recommendations, but expressed concerns about the depiction of cost increases and schedule delays; GAO believes its methodology is accurate as discussed in this report.

View [GAO-13-302](#). For more information, contact Lorelei St. James at (202) 512-2834 or [stjamesl@gao.gov](mailto:stjamesl@gao.gov).

April 2013

## VA CONSTRUCTION

### Additional Actions Needed to Decrease Delays and Lower Costs of Major Medical-Facility Projects

## What GAO Found

Costs substantially increased and schedules were delayed for Department of Veterans Affairs' (VA) largest medical-center construction projects in Denver, Colorado; Las Vegas, Nevada; New Orleans, Louisiana; and Orlando, Florida. As of November 2012, the cost increases for these projects ranged from 59 percent to 144 percent, with a total cost increase of nearly \$1.5 billion and an average increase of approximately \$366 million. The delays for these projects range from 14 to 74 months, resulting in an average delay of 35 months per project. In commenting on a draft of this report, VA contends that using the initial completion date from the construction contract would be more accurate than using the initial completion date provided to Congress; however, using this date would not account for how VA managed these projects prior to the award of the construction contract. Several factors, including changes to veterans' health care needs and site-acquisition issues contributed to increased costs and schedule delays at these sites.

Although VA has taken some actions to address problems managing major construction projects, the agency has opportunities for further improvement. For example, VA established a Construction Review Council in June 2012 to oversee the department's development and execution of its real property programs. However, construction management challenges remain, and opportunities exist for VA to avoid further cost increases and schedule delays.

- Given the complexity and speed of medical advances, many health care organizations have enlisted the services of experts in planning the procurement and installation of medical equipment for new medical centers. VA has used these planners at various phases for some projects and is reviewing its overall procurement of medical equipment. However, VA has not taken full advantage of medical equipment planners on all projects, in part because there is no guidance for doing so. Not using a medical equipment planner can lead to increased design and construction changes resulting in cost increases and schedule delays.
- VA has not yet clearly defined roles and responsibilities of VA construction management staff, even though the agency previously identified the need to do so. GAO found that conflicting direction from VA to contractors can cause some confusion and lead to cost increases and construction delays. For example, contractor officials at one site said that VA's project manager directed them to defer the design of specific rooms until medical equipment was selected for the facility; however, VA's central office then directed the contractor to proceed with designing the rooms. This conflicting direction from VA will require the contractor to redesign the space, further expending project resources.
- The federal government's regulations and VA's policy specify that changes to construction contracts, known as change orders, should be issued in a timely manner; however, VA's change-order approval process requires time-consuming reviews at multiple organizational levels that have resulted in extensive delays and increased costs for some projects. VA is reviewing options to shorten the decision cycle for approval of construction contract modifications but has not yet streamlined the process.

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## Abbreviations

CFM	Office of Construction and Facilities Management
DBB	Design-Bid-Build
DB	Design-Build
IDC	Integrated Design and Construction
MOU	Memorandum of Understanding
OMB	Office of Management and Budget
VA	Department of Veterans Affairs
VHA	Veterans Health Administration

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United States Government Accountability Office  
Washington, DC 20548

April 4, 2013

The Honorable Jeff Miller  
Chairman  
Committee on Veterans' Affairs  
House of Representatives

Dear Mr. Chairman:

The Department of Veterans Affairs (VA) provides services for over 6 million veterans through the Veterans Health Administration (VHA), one of the largest health care systems in the country.<sup>1</sup> However, much of VHA's infrastructure was designed and built decades ago under an older concept of health care delivery that focused on hospital-centered, inpatient care. In addition, VA has experienced a gap between its existing medical infrastructure and the infrastructure needed to provide medical services for returning veterans from Afghanistan and Iraq, who increasingly require specialized care for injuries such as the treatment of spinal cord and traumatic brain injuries. According to VA's fiscal year 2013 budget submission to Congress, VHA's infrastructure does not fully align with the current health care needs of the veteran population.<sup>2</sup>

To help address this situation, VA has 50 major medical-facility projects<sup>3</sup> under way, including new construction and the renovation of existing medical facilities at a cost of more than \$12 billion. Completing these projects is a large endeavor for VA, considering that until the construction of the Las Vegas, Nevada, medical center, VA had not built a major medical center in over 15 years.

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<sup>1</sup>U.S. Department of Veterans Affairs, Healthcare, VHA, accessed December 12, 2012, <http://www.va.gov/health/aboutVHA.asp>.

<sup>2</sup>VA, *Fiscal Year 2013 Budget Request. Construction IV* (Washington, D.C.: 2012).

<sup>3</sup>The term "major medical-facility project" means a project for the construction, alteration, or acquisition of a medical facility involving the total expenditure of more than \$10 million. See 38 U.S.C. § 8104. These projects cost at least \$10 million, some in the hundreds of millions of dollars. The projects types include new construction, renovation of existing structures, expansion, or a combination of types. The total number of major VA medical-facility projects is based on agency data from November 2012.

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In 2009, we reported that many of VA's major medical-facility projects were over budget and behind schedule for various reasons, including changes to project scope, land acquisition issues, and unforeseen events, such as site contamination.<sup>4</sup> Although we concluded that VA met most of our best practices for preparing cost estimates and construction schedules, we recommended that VA take actions to reduce potential cost increases and schedule delays to its major construction projects. VA is in the process of implementing these recommendations.<sup>5</sup>

Because of questions regarding cost increases and schedule delays to major medical-facility projects,<sup>6</sup> you asked us to examine how VA manages medical facilities construction projects. This report reviewed (1) changes to cost, schedule, and scope for selected new medical-facility projects and (2) actions VA has taken to improve its construction management practices, and any opportunities that exist for VA to improve its management of costs, schedule, and scope of these construction projects.

To address these objectives, we reviewed VA data as of November 2012 on VA's current 50 major medical-facility projects, including the original cost estimates and completion dates and the projects' current status.<sup>7</sup> We reviewed and analyzed construction documents, VA's *Strategic Plan* Fiscal Year 2011 to 2015, and other relevant documents. We interviewed officials from VA; veterans support organizations; architectural and engineering firms; general contractor construction firms; and construction management firms. To examine specific projects in greater detail, we

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<sup>4</sup>GAO, *VA Construction: VA Is Working to Improve Initial Project Cost Estimates, but Should Analyze Cost and Schedule Risks*, [GAO-10-189](#) (Washington, D.C.: Dec. 14, 2009).

<sup>5</sup>Consistent with our recommendations, VA is in the process of implementing integrated master schedules for the largest of its major medical center projects, which include all phases of a project including design and construction work. VA is also instituting a requirement that for all of these large projects, it develop a schedule risk analysis that can identify issues that could affect VA's ability to complete a project on time must be performed.

<sup>6</sup>See e.g., House Committee on Veterans' Affairs. *The New Orlando VA Medical Center: Hearing before the House Committee on Veterans' Affairs*, 112th Cong. (2012).

<sup>7</sup>We identified reasons for selected facilities' overall cost and schedule changes, but were not able to identify the extent to which specific reasons changed these costs and schedules, unless specifically noted.

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selected the four largest and most expensive major medical-facility projects based on cost, current status of the project, and type of facility. These ongoing projects are located in Denver, Colorado;<sup>8</sup> Orlando, Florida; New Orleans, Louisiana; and Las Vegas, Nevada. We visited the construction sites in Denver, Orlando, and New Orleans to talk to officials on-site and determine the reasons for changes in costs and schedules. We updated our prior work on the Las Vegas facility with information on the project completion costs and the change-order process.<sup>9</sup> The information from our site visits is illustrative and cannot be generalized to sites agency-wide. We assessed the reliability of the data through interviews with knowledgeable VA officials and a review for completeness and any unexpected values. VA data were sufficiently reliable for the purposes of this report. In addition, we researched and reviewed relevant legislation pertaining to the amounts that were authorized and appropriated for these projects. Additional information on our scope and methodology appears in appendix I.

We conducted this performance audit from April 2012 to April 2013 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## Background

VA operates one of the largest direct health-care delivery systems in the United States. As well, VA is one of the largest federal property-holding agencies, with 35,352 acres of land, 5,873 buildings, and over 149 million square feet of medical facilities and administrative space.<sup>10</sup> VA provides health care to veterans in 152 medical centers, and nearly 1,400 community-based outpatient clinics, nursing homes known as community-

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<sup>8</sup>The site that we refer to throughout this report as the Denver VA Medical Center is actually located in Aurora, Colorado, near Denver.

<sup>9</sup>[GAO-10-189](#). The prior review was conducted from October 2008 through December 2009.

<sup>10</sup>VA, *The Construction Review Council Activity Report* (Washington, D.C.: November 2012).

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living centers, veteran-counseling centers and live-in facilities.<sup>11</sup> VA medical facilities offer services which range from primary care to complex specialty care, such as cardiac or spinal cord injury. VA has specialized services at some of its medical facilities for those veterans with post-traumatic stress disorder, whose condition cannot be managed in a primary care or general mental health setting.

According to VA, the average age of VA medical facilities is approaching 60 years. The department is updating its infrastructure to allow for cost-effective management of an aging inventory under increased workload demands, changing veteran patient demographics, advances in medical technology, complex treatment protocols, new advanced procedures, and evolving federal requirements. Additionally, VA's facility program has struggled to keep pace with advancements in health care services that often dramatically change the physical infrastructure requirements of hospitals and clinics. Furthermore, changes in veteran demographics, ranging from the illnesses and care required for veterans of different generations and conflicts to the population shifts among different areas of the country, place a continued demand on the capital-asset portfolio.

To plan for future infrastructure needs, VA established its Strategic Capital Investment Planning process for the 2012 budget submission.<sup>12</sup> As part of this planning effort, VA annually reviews its real property priorities and conducts a gap analysis to identify the needs of its medical facilities across the country. Local plans are centrally validated, evaluated, and consolidated into a prioritized national project list. VA also uses this planning process to develop a 10-year capital plan, which prioritizes a list of projects targeted to reduce the gaps. From the 10-year capital plan developed for the agency's 2013 budget submission, VA estimated that it would cost approximately \$21.7 billion to address all capital infrastructure costs for major medical-facility projects while also remediating all existing and projected gaps in medical facilities. However,

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<sup>11</sup>Vet Centers offer readjustment and family counseling, employment services, bereavement counseling, and a range of social services to assist veterans in readjusting from wartime military service to civilian life. Vet centers are also community points of access for many returning veterans, providing them with information and referrals to VA medical facilities.

<sup>12</sup>VA, *Fiscal Year 2013 Budget Request, Construction IV* (Washington, D.C.: 2012).



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this does not include life-cycle costs for infrastructure maintenance.<sup>13</sup> According to VA, it is important to note that this estimate is a snap shot in time, based on current market conditions, baseline capital portfolio and demographic data, and projected needs.<sup>14</sup> The agency's 2013 budget submission stated that the \$21.7 billion in costs will likely change as projects move through the planning process and project requirements are more refined.

The VA Office of Construction and Facilities Management (CFM) is responsible for administering major construction projects, including major medical-facility projects.<sup>15</sup> No funds may be used for any major medical-facility construction project over \$10 million, unless the funds have been specifically authorized by law, and VA is required to submit a prospectus to the House and Senate Committees on Veterans' Affairs that contains information about each planned major medical-facility project. This information includes an initial estimate of the overall cost of the project and, in some cases, a completion date for the project.<sup>16</sup> To begin a project, CFM hires an architectural and engineering firm to develop an architectural design for the project and a cost estimate for the project's completion. The cost estimate provided by the architectural and engineering firm is generally more detailed and accurate than the initial cost estimate VA provides to Congress in a prospectus. After the project has been designed, VA requests construction funding. CFM then solicits bids for project construction and awards a construction contract.<sup>17</sup> The construction contractor is responsible for developing a detailed construction schedule that reflects the contract duration. CFM reviews the construction schedule and also assigns CFM engineers—known as resident engineers—to work on-site to monitor the construction process until the facility is ready to be turned over to local VA medical staff. Once construction begins, the construction firm is generally responsible for cost

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<sup>13</sup>GAO, *VA Real Property, Realignment Progressing, but Greater Transparency about Future Priorities Is Needed*, [GAO-11-197](#) (Washington, D.C.: Jan. 31, 2011).

<sup>14</sup>VA, *Fiscal Year 2013 Budget Request, Construction IV* (Washington, D.C.: 2012).

<sup>15</sup>CFM executes these projects under the oversight of the Office of Acquisition, Logistics, and Construction.

<sup>16</sup>38 U.S.C. §§ 8101, 8104.

<sup>17</sup>In an Integrated Design and Construction model, VA can hire the architecture and engineering firm and contractor at the beginning of a project.

increases and schedule overruns under the terms of the firm-fixed-price contract, unless VA and the contractor agree to a change to modify the scope, account for unforeseen conditions, or remedy a design error.<sup>18</sup>

VA classifies the phases of construction projects in the following terms: planning; design (developing the design and construction documents); construction; and activation (staffing and activities that are needed to begin operations at a new medical facility). (See table 1 for more detail on these construction phases).

**Table 1: VA Classification of Construction Phases**

Construction phase	Construction phase description
Planning	VA analyzes its needs for medical facilities. During the conceptual planning phase, VA conducts various feasibility studies to define the scope or statement of work based on expectations for facility performance, quality, cost, and schedule. VA can consider several alternative design solutions during this phase, leading up to the selection of a single preferred approach. The preferred approach may specify functional requirements such as square footage estimates for various functions that are desirable.
Design	VA develops construction design documents for medical facilities that meet its needs. VA usually begins the design phase once it develops the statement of work and preferred design approach. From early schematic designs <sup>a</sup> the design matures into final construction documents comprising the plans and specifications from which VA procures equipment and, depending on the construction method used, solicits construction bids. VA gives estimated facility cost and scheduling issues increasingly intense review during the design phase so that VA is confident prior to bid that it can meet the performance, quality, cost, and schedule objectives defined during the conceptual-planning phase.
Construction	The medical facility is contracted for and built. Complex facility projects usually include a procurement phase in order to expedite the purchase, manufacture, and delivery of long-lead-time equipment such as unique process machinery and large electrical and mechanical equipment. Such equipment's procurement involves separate contracts and budget sources and may proceed in parallel with construction phase activities, so that VA is able to furnish long-lead-time equipment to the construction contractor in a timely manner. Early in the construction phase a formal construction management plan, or schedule, is developed describing the intended sequence and method of construction activity as well as the relationships, responsibilities, and authorities of all parties. One of the biggest challenges during the construction phase is managing changes resulting from sources such as scope of work changes by VA, errors and omissions in the construction documents, and unknown or changed site conditions.
Activation	VHA occupies and maintains the medical facility. VHA tests building components individually and then in system with other components to measure and compare their performance against the original design criteria. VHA tests, implements, and refines facility operation and maintenance plans, as appropriate.

Source: GAO analysis of VA data.  
<sup>a</sup>According to VA officials, a "schematic design" is a design that is approximately 35 percent complete.

<sup>18</sup>Many of the VA contracts for major construction are firm-fixed-price contracts—based upon a completed design. The uncertainty of site conditions and design flaws are examples of the reasons to expect changes to a firm-fixed-price contract.

VA uses three project delivery methods for managing major medical-facility projects: “design-bid-build,” “design-build,” and “integrated design and construction” (IDC). Although VA has mainly used the traditional design-bid-build method, it has recently employed design-build and integrated design and construction. See table 2 for details on these project delivery methods. (App. II includes the project delivery methods used for each of VA’s 50 major medical-facility projects).

**Table 2: VA’s Project Delivery Methods**

Project delivery method	Project delivery method description
Design-bid-build	This method is the most frequently used delivery method for VA construction projects. VA (the owner) contracts with an architect for design, uses the design documents produced by the architect to secure competitive bids from contractors and, based on an accepted bid, contracts with a contractor for construction of the building. This method generally includes three sequential project phases: design, procurement, and construction.
Design-build	This method combines architectural and engineering design services with construction performance under one contract. Once design is completed, design documents are incorporated into a Request for Proposal. One team consisting of an architectural and engineering firm and a construction contractor is selected to complete the design and construct the project. This method may permit a faster project completion with greater risks being assumed by the successful bidder. According to VA’s Program Managers’ Handbook, selecting design-build as a procurement method can save approximately 6 months of schedule time (the time typically used for advertising, selection, negotiation and award approval of the project specific architectural and engineering firm) compared to the design-bid-build method.
Integrated design and construction	This method allows the construction contractor to be involved in the project from design to completion. VA believes this can help identify any potential issues early and speed the construction process. IDC is similar to a private sector approach called Construction Management At-Risk.

Source: GAO Analysis of VA information.

VA staff at various organizational levels participate in the construction management process for major medical-facility projects. For example, a contracting officer is ultimately responsible for managing the execution of the construction contract, while local site-level staff,—such as a project manager, senior resident engineers, and resident engineers—oversee the actual construction, with assistance provided by the contracting officer. In some instances, officials from CFM’s regional offices and VA’s central office, including the Office of General Counsel, provide assistance to the contracting officer. VA staff from CFM and VHA, such as medical center directors, also provide support during the construction of major medical-facility projects.

During the construction phase of any federal government project, changes need to be made to the construction contract. VA contracts

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contain specific language and requirements, in accordance with applicable Federal Acquisition Regulations, which give the government the right to make changes within the scope of the contract.<sup>19</sup> Generally, government contracts contain a changes clause that permits the contracting officer to make unilateral changes, in designated areas, within the general scope of the contract. Contractors can also request changes to the contract. Changes can occur for a variety of reasons, such as design changes resulting from the addition of new medical equipment.

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## Cost Increases and Schedule Delays at the Four Largest Projects Occurred for a Variety of Reasons

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### Cost Increases and Schedule Delays

For VA's four largest medical-facility construction projects, when comparing November 2012 construction project data with the cost and schedule estimates first submitted to Congress, cost increases ranged from 59 percent to 144 percent,<sup>20</sup> representing a total cost increase of nearly \$1.5 billion and an average increase of approximately \$366 million per project. The schedule delays ranged from 14 to 74 months with an average delay of 35 months per project (see table 3).

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<sup>19</sup>48 C.F.R. § 43.201.

<sup>20</sup>According to the Office of Management and Budget (OMB), federal agencies should keep a contingency fund of 10 to 30 percent above total estimated costs to address increased costs on construction projects. However, this guidance applies after construction has begun, and many of the cost increases we observed occurred before that time. The construction contractor is generally responsible for cost increases and schedule overruns under the terms of the fixed-price contract. OMB Circular No. A-11, Appendix 8 (2012).

**Table 3: VA Major Medical-Facility Projects Cost Increases and Schedule Delays, as of November 2012**

Project location	Initial total estimated costs	Total estimated costs	Percent increase	Initial estimated completion date	Current estimated completion date	Number of months extended	Total estimated years to complete <sup>a</sup>
Las Vegas	\$325 million	\$585 million	80	April 2009	June 2014	74	10.25
Orlando	\$254 million	\$616 million	143	April 2010	July 2013 <sup>b</sup>	39	8.5 <sup>b</sup>
Denver	\$328 million	\$800 million	144	February 2014	April 2015	14	10.5
New Orleans	\$625 million	\$995 million	59	December 2014	February 2016	14	8.5

Source: GAO Analysis of VA data.

<sup>a</sup>The column titled “total estimated years to complete” is reported to the nearest quarter year and is calculated from the time VA approved the architecture and engineering firm to the current estimated completion date. We calculated the “number of months extended” column by counting the months from the initial estimated completion date to the current estimated completion date, as reported by VA. According to VA, the dates in the initial estimated completion dates are from the initial budget prospectus, which assumed receipt of full construction funding within 1 to 2 years after the budget submission. In some cases, construction funding was phased over several years and the final funding was received several years later. Naval Facilities Engineering Command officials we spoke with told us that historically, medical facility projects take approximately 4 years from design to completion. We calculated the percentage change in cost by using the initial total estimated costs and total estimated costs, as reported by VA.

<sup>b</sup>VA provided time extensions to the Orlando, Florida contractor extending the contract completion date to July 2013. Because of an ongoing dispute between VA and the general contractor regarding performance of the contract in Orlando, Florida, VA issued a show cause notice to the contractor on January 31, 2013. The show cause notice provides the contractor an opportunity to present any facts relevant to the dispute. As of the publication of this report, VA has yet to determine the next steps to resolve this matter. July 2013 is considered the current completion date provided to us by VA officials. However, the general contractor disagrees with this date, and has estimated that it will be spring 2014.

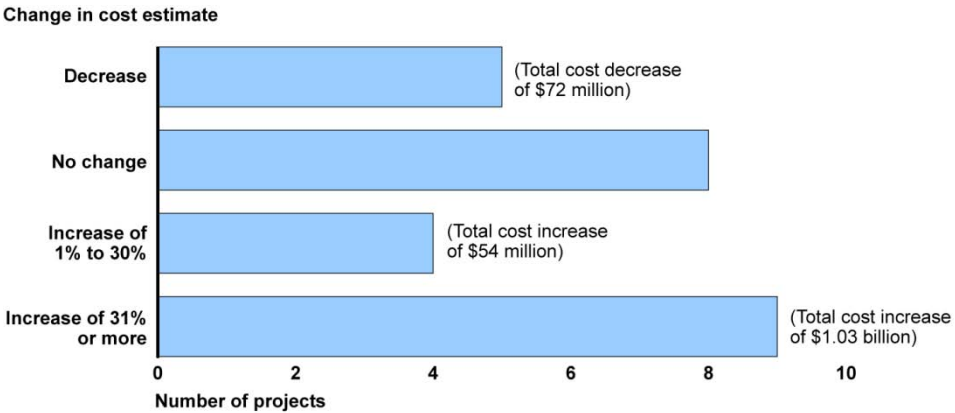
In commenting on a draft of this report, VA stated that project designs, initial cost estimates, and completion dates are developed years prospectively, several years before Congress appropriates funds and the construction contract is awarded, which determines the cost to complete the project and the completion date. VA provided information indicating that after the Department received appropriations for these four projects, and the construction contract was awarded, the magnitude of cost increases and schedule delays was significantly less. For example, the costs for the four projects decreased or remained unchanged, and the number of months the completion dated extended ranged from 0 to 10 months.<sup>21</sup> VA officials said that using the initial completion date from the construction contract would be more accurate for measuring schedule delays; however, using this start date would not account for how VA

<sup>21</sup>VA officials provided further detail in comments responding to this report in Appendix IV.

managed these projects prior to awarding the construction contract. By using the methodology VA suggests, the schedule delays and cost increases are significantly lower. We believe that the methodology in this report and in our past report on VA construction provides an accurate depiction of how cost and schedules for construction projects can change from the time they are first submitted to Congress.<sup>22</sup> It is at this time that expectations are set among stakeholders, including the Veterans community, for when projects will be completed and at what cost. We recognize that many factors can affect cost and schedules over the life of a project and that some of these factors, including when appropriations are actually received, are beyond VA's control. We also acknowledge that after Congress appropriates funds and contractors are selected for projects, VA and the contractors develop more accurate cost estimates and schedules and the likelihood increases that cost and schedule risks are mitigated or realized.

Of the remaining 46 major medical-facility projects, 26 are under construction or were recently completed. As shown in figure 1, of these 26, half have experienced cost increases, but the other half experienced either no change in costs or a decrease in costs. (See app. II for detailed information on all 50 ongoing projects.)

**Figure 1: Range of Cost Changes for 26 Major Medical-Facility Projects, as of November 2012**



Source: GAO analysis of VA data.

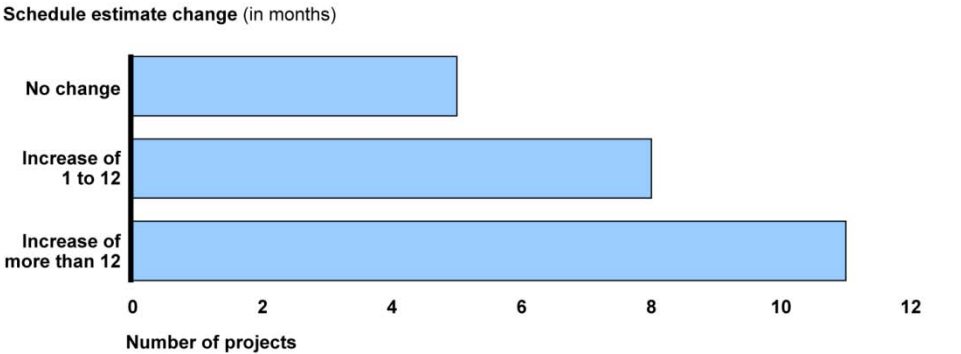
Note: This figure contains data provided by VA in November 2012. We calculated the percentage change in cost by using the initial total estimated costs and total estimated costs, as reported by VA.

<sup>22</sup> [GAO-10-189](#)

The 26 VA major ongoing construction projects are currently underway or recently completed. The 4 largest projects are not included in the figure: Denver, Colorado; Las Vegas, Nevada; New Orleans, Louisiana; and Orlando, Florida.

Nineteen of 24 construction projects currently under construction or recently completed have experienced schedule delays.<sup>23</sup> (See fig. 2 for an overview of schedule delays for these 24 projects).

**Figure 2: Changes in Schedules by Number of Months for 24 Major Construction Projects**



Source: GAO analysis of VA data.

Note: VA's 26 major ongoing construction projects are currently under way or recently completed. We calculated the change in schedule by counting the months from the initial estimated completion date to the current estimated completion date, as reported by VA. The 4 largest projects are not included in the figure: Denver, Colorado; Las Vegas, Nevada; New Orleans, Louisiana; and Orlando, Florida. For the purpose of our analysis, we consider complete schedule data as being projects that reported both initial estimated completion date and current estimated completion date. VA did not provide schedule data for both initial estimated completion date and current estimated completion date for two projects under construction. As such, this analysis is comprised of 24 of VA's 26 major medical-facility projects that are under construction or recently completed.

Reasons for Cost Increases and Schedule Delays at VA's Four Largest Projects

At each of the four locations we reviewed, different factors contributed to cost increases and schedule:

- Changing health care needs of the local veteran population changed the scope of the Las Vegas project.
- Decisions to change plans from a shared university/VA medical center to a stand-alone VA medical center affected plans in Denver and New Orleans.

<sup>23</sup>VA did not provide schedule data for both initial estimated completion date and current estimated completion date for two projects under construction.

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## Changing Veterans' Health Care Needs

- Changes to the site location by VA delayed efforts in Orlando.
- Unanticipated events in Las Vegas, New Orleans, and Denver also led to delays.

In the case of the Las Vegas facility, the evolving needs of veterans drove the scope of the construction changes. VA officials told us that the Las Vegas Medical Center was initially planned to be an expanded clinic collocated with Nellis Air Force Base. However, VA later determined that a much larger medical center was needed in Las Vegas after it became clear that an inpatient medical center VA shared with the Air Force would not be adequate to serve the medical needs of local veterans. As a result, the cost of the project increased from an initial estimate of \$325 million to a final estimate of \$585 million—an increase of 80 percent. Since the estimate for the Las Vegas Medical Center was based on a preliminary design for an expanded clinic, additional functions, such as a specialty care unit and inpatient rehabilitation care, had to be added to the clinic's design to provide the services necessary for the medical center. In addition, after the mental health ward was designed, VA Mental Health guidelines changed to require more space to treat veterans, which caused VA to re-design the space.<sup>24</sup> Construction was completed for most of the Las Vegas medical center in August 2012; however, VA is building additional phases to the project that are expected to be completed in June 2014.<sup>25</sup>

## Decisions to Change from Shared Facilities to Stand-alone Facilities

For Denver and New Orleans, VA revised its original plans for shared facilities with local universities to stand-alone facilities after proposals for a shared facility could not be finalized. In Denver, plans went through numerous changes after the prospectus was first submitted to Congress in 2004. In 1999, VA officials and the University of Colorado Hospital began discussing the possibility of a shared facility on the former Fitzsimons Army base in Aurora, Colorado.<sup>26</sup> Negotiations over different aspects and revisions of this proposal continued until late 2004, at which time VA decided against a shared facility with the University of Colorado Hospital because of VA concerns over the governance of a shared facility

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<sup>24</sup>GAO-10-189, see appendix pages 58–60.

<sup>25</sup>VA officials told us that VA is still constructing an operating room, administration building, and education center, while also expanding the emergency department and upgrading the women's clinic, at the site of the Las Vegas Medical Center.

<sup>26</sup>Fitzsimons Army base was closed in 1999 as part of the Department of Defense's base realignment and closure process.



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and space limitations.<sup>27</sup> In 2005, VA selected an architectural and engineering firm for a stand-alone project, but VA officials told us that the firm's efforts were suspended in 2006 until VA acquired another site at the former Army base adjacent to the new university medical center. Design restarted in 2007 after land acquisition proceedings began, but the architectural and engineering firm's design efforts were once again suspended in January 2009, when VA reduced the project's scope because of lack of funding. By this time, the project's costs had increased by approximately \$470 million, and the project's completion was delayed by 14 months. The cost increases and delays occurred because the costs to construct operating rooms and other specialized sections of the facility were now borne solely by VA, and the change to a stand-alone facility also required extensive redesign. Since construction commenced at the current site in 2009, the project has not experienced any further cost increases or delays, according to VA officials. The Denver VA Medical Center is expected to be completed in April 2015.

Hurricane Katrina devastated the New Orleans VA hospital in 2005, flooding several floors. Initially, VA was going to build and operate the hospital with Louisiana State University; however, VA changed its decision in response to veterans' concerns about the quality of care they would receive at a facility shared with the general public and because several analyses VA conducted on the project indicated that a shared facility presented financial and operational issues. In late 2007, VA selected the architectural and engineering firm and signed a memorandum of understanding (MOU) with the city of New Orleans. The original MOU with the city of New Orleans provided that after VA selected a site, the city had 365 days for the city to turn it over to VA. As such, the site should have been turned over to VA in November 2008. However, the city had to remove numerous homes and businesses, and the first parcel of the land was not transferred until June 2010. The remaining parcels were transferred to VA in April 2011.

#### Changes to Site's Location

In Orlando, VA's site location changed three times from 2004 to 2010. It first changed because VA, in renovating the existing VA hospital in Orlando, realized the facility site was too small to include needed services. However, before VA could finalize the purchase of a new larger

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<sup>27</sup>VA, *VA Health Care: Experiences in Denver and Charleston Offer Lessons for Future Partnerships with Medical Affiliates*, [GAO-06-472](#) (Washington, D.C.: Apr. 28, 2006).

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site, the land owner sold half of the land to another buyer, and the remaining site was again too small to accommodate a medical center. Finally, VA selected another nearby site and the architectural and engineering firm had to revise the design to accommodate the new site (see fig. 3). As a result of these changes, all dates for the project slipped and the design schedule was compressed.

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**Figure 3: Current Site and Construction of the Orlando VA Medical Center Project**



Source: GAO.

## Unanticipated Events

The Las Vegas project experienced scope changes after construction started because of new security requirements and changing construction market conditions. After September 11, 2001, the Department of Homeland Security instituted new security requirements for federal facilities, which increased construction costs for this and other medical facilities. After this cost increase was absorbed, VA officials stated that the cost of material and labor subsequently increased, because demand for construction increased nationwide, due in part to the rebuilding in the New Orleans area following Hurricane Katrina. Moreover, construction costs had increased locally because of the previous construction boom in Las Vegas. For example, the Las Vegas area had several multi-billion dollar projects under way when construction began on the Las Vegas facility in 2006. Locally, construction costs increased over 20 percent from 2004 to 2006. VA staff told us that at that time Las Vegas builders were employing almost 80 percent of the nation's large cranes used to build tall buildings.<sup>28</sup> Conversely, as construction of the medical facility progressed,

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<sup>28</sup>[GAO-10-189](#).

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the economic recession that began in 2008 drove construction costs lower than what was estimated. As a result, VA was able to add features back into the project that had been eliminated and still stay on budget. VA is now using some of the savings to construct an administrative building at the facility.

Unforeseen issues also increased costs and exacerbated delays in Denver and New Orleans. For example, VA officials at the Denver project site discovered they needed to eradicate asbestos and replace faulty electrical systems from pre-existing buildings. They also discovered and removed a buried swimming pool and found a mineral-laden underground spring that forced them to continually treat and pump the water from the site (see fig. 4). In New Orleans, the city began demolishing existing structures on the site in November 2010 and completed demolition in April 2011. After the property was transferred to VA, VA had to make provisions for the removal of hazardous materials discovered on-site.

**Figure 4: Underground Spring Located at the Denver VA Project Site**



Source: GAO.

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## VA Has Taken Steps to Improve Its Construction Management Practices and Has Opportunities for Further Improvement

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### Creation of a Construction Management Review Council

In April 2012, the Secretary of Veterans Affairs established the Construction Review Council to serve as the single point of oversight and performance accountability for the planning, budgeting, execution, and delivery of the VA real property capital-asset program.<sup>29</sup> The council issued an internal report in November 2012 that contained findings and recommendations that resulted from meetings it held from April to July 2012.<sup>30</sup> According to the council report, multiple internal and external VA reviews have found systemic deficiencies in a range of areas, including defining requirements, estimating costs, designing and scoping the project, managing the contract, overseeing the program, and activating completed projects. The analyses revealed that the challenges identified on a project-by-project basis were not isolated incidents but are indicative of systemic problems facing VA. The council report has several recommendations including that VA streamline processes and procedures for change orders and link the purchase of medical equipment with the coordination of the construction schedule. VA officials are reviewing specific options to address this issue and began receiving progress updates on these topics and others on a monthly basis in February 2013. However, VA has not yet developed specific guidance or instructions on how to implement these recommendations, which would provide specific

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<sup>29</sup>The Council was comprised of officials from the VA, including the secretary, deputy secretary, chief of staff, under secretaries, and assistant secretaries, as well as key leaders across the department. The Secretary of VA chaired nine meetings from April 18 through June 15, 2012, to review the VA construction program and identify challenges that led to changes in scope, cost over-runs, and scheduling delays of major projects.

<sup>30</sup>VA, *The Construction Review Council Activity Report* (Washington, D.C.: November 2012).

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steps on the new process to help ensure VA avoid problems involving the purchase of medical equipment on future construction projects. As discussed later in this report, VA is taking steps to address some of the council's other recommendations.

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## Collaborating with Other Federal Agencies and the Construction Industry

We have emphasized in previous work the need for federal agencies to collaborate with other agencies to leverage each others' resources, thus obtaining additional benefits that would not be available if they were working separately.<sup>31</sup> VA's *Strategic Plan* also recognizes the importance of such collaboration and of 1) addressing construction management issues by increasing communication and collaboration across organizations, such as federal agencies, to share best practices, and 2) identifying and addressing other opportunities to improve performance management.<sup>32</sup>

VA has taken some action to tap the experience of other federal agencies involved in constructing medical facilities. VA stated that it has collaborated with Department of Defense agencies such as the Tricare Management Activity, U.S. Army Corps of Engineers, and Naval Facilities Engineering Command as well as other federal agencies such as the National Institute of Building Sciences and the Federal Preservation Institute to discuss general construction issues.<sup>33</sup> Additionally, VA participates in the VA/Department of Defense Joint Executive Council and

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<sup>31</sup>GAO, *Results-Oriented Government: Practices That Can Help Enhance and Sustain Collaboration among Federal Agencies*, [GAO-06-15](#) (Washington, D.C.: Oct. 21, 2005).

<sup>32</sup>VA, *Strategic Plan Refresh: FY2011–FY2015* (Washington, D.C.).

<sup>33</sup>The Tricare Management Activity manages the TRICARE health care program for active duty members and their families, retired service members and their families, National Guard/Reserve members and their families, survivors, and others entitled to Department of Defense medical care. The Army Corps of Engineers managed the Army military construction program between 2006 and 2013, which totaled approximately \$44.6 billion. The U.S. Naval Facility Engineering Command manages the planning, design, and construction of shore facilities for the U.S. Navy, Marine Corps, and other federal clients. The National Institute of Building Sciences is a non-profit, non-governmental organization that brings together representatives from government and the professions of industry, labor and consumer interests to focus on the identification and resolving problems that hamper the construction of safe, affordable structures for housing, commerce, and industry throughout the United States. The Federal Preservation Institution provides education and information to federal agencies to carry out historic preservation efforts.

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the Federal Facilities Council, as well as federal agency construction forums.

VA has also taken steps to reach out to the construction industry. In June 2011, VA convened a construction industry forum to facilitate communications with the construction industry about ways to improve medical facilities construction practices. VA hosted attendees from 75 contractor firms, who provided written feedback. According to a summary of the proceedings issued by VA, attendees said that VA needed to improve communication among project team members. VA construction officials noted that the participant suggestions have been valuable and have assisted them in their effort to improve medical-facilities construction practices. VA plans to host another industry forum in the future.

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## Evaluating Project Delivery Methods

To better manage the cost and schedules for major medical-facility projects, VA has taken steps to implement a new project delivery method, such as the Integrated Design and Construction (IDC).<sup>34</sup> In response to the construction industry's concerns that VA and other federal agencies did not involve the construction contractor early in the design process, VA and the Army Corps of Engineers began working to establish a project delivery model that would allow for earlier contractor involvement in a construction project, as is often done in the private sector. However, in Denver and New Orleans VA did not implement IDC early enough to garner the full benefits.

VA officials stated that Denver and New Orleans were initiated as design-bid-build projects and later switched to IDC after the projects had already begun. According to VA officials, the IDC method was very popular with industry, and VA wanted to see if this approach would be effective in delivering a timely medical facility project. Thus while the intent of the IDC method is to involve both the project contractor and architectural and engineering firm early in the process to ensure a well coordinated effort in designing and planning a project, VA did not hire the contractor for Denver until after the initial designs were completed. New Orleans officials said that they were delayed in bringing on the contractor because of a bid protest.<sup>35</sup> The designer was allowed to continue with design

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<sup>34</sup>See table 2 for an overview of project delivery methods.

<sup>35</sup>*Nova Builders*: B-402091; B-402091.2; B-402091.3 (Washington, D.C.: Jan. 19, 2010).

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development during the resolution of the protest, which did not allow the project to fully benefit from the IDC method. According to VA officials, had the award not been protested, sufficient interaction between the architectural and engineering and construction firm could have taken place during design development, which should have greatly limited or mitigated many of the design issues. According to VA, in both Denver and New Orleans, because the contractors were not involved in the design of the projects and formulated their bids based on a design which had not been finalized, these projects required changes that increased costs and led to schedule delays. VA staff responsible for managing both projects said it would have been better to maintain the design-bid-build model throughout the entire process rather than changing mid-project because VA did not receive the value of having contractor input at the design phase, as the IDC method is supposed to provide. For example, according to Denver VA officials, the architectural design called for curved walls rather than less expensive straight walls along the hospital's main corridor. The officials said that had the contractor been involved in the design process, the contractor could have helped VA weigh the aesthetic advantages of curved walls against the lower cost of straight walls.

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## Using Medical Equipment Planners

VA officials have emphasized that they need the flexibility to change their health care processes in response to the development of new technologies, equipment, and advances in medicine.<sup>36</sup> Thus, for new health care facilities, VA seeks to ensure that the most up-to-date equipment is installed, and that space and electrical installations support the equipment. However, this can be a challenge for projects that take a number of years to complete, as advances in technology can require design changes. Given the complexity and sometimes rapidly evolving nature of medical technology, many health care organizations employ medical equipment planners to help match the medical equipment needed in the facility to the construction of the facility. Naval Facilities Engineering Command officials told us that they use medical equipment planners on all medical facility projects, hired through the architectural and engineering contract. Army Corps of Engineers officials said they also use medical planners from the Department of Army's Office of the Surgeon General on all of their medical facility projects. Officials from contracting firms currently working on VA projects told us that in their

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<sup>36</sup>VA, *Strategic Plan Refresh: FY2011–FY2015* (Washington, D.C.).



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experience with other federal agencies, including the U.S. Army Corps of Engineers, medical equipment planners have helped avoid schedule delays. VA officials told us that they sometimes hire a medical equipment planner as part of the architectural and engineering firm's services to address medical equipment planning. The planner can be brought on early in the design phase and remain through construction phases of the project. The planner should help coordinate with the architectural and engineering firm to ensure that the project's design and construction will accommodate the necessary medical equipment. However, we found that for costly and complex facilities, VA does not have guidance for how to involve medical equipment planners during each construction stage of a major hospital.

VA has sometimes relied on VHA staff to make medical equipment planning decisions. For example, in Orlando, VA relied on local VHA staff with limited experience in procuring medical equipment for a new hospital.<sup>37</sup> Orlando VA officials recommended hiring a consulting firm to assist them with various aspects of medical equipment planning, procurement, delivery, and installation in 2011. However, VA was unable to implement this recommendation until fiscal year 2012, at which point the design decisions had already been made. Because the medical equipment specifications changed several times, construction design documents for various parts of the medical facility had to be changed. Consequently, the facility also had to be altered, and some previously constructed areas required minor demolition to accommodate the medical equipment. These and other alterations led to cost increases of at least \$14 million in addition to schedule delays. In other areas of the facility, medical equipment issues forced VA to suspend construction until the issues were resolved.

VA officials recognized in Orlando that the procurement of medical equipment was not successful because there was no guidance on determining the need for medical equipment procurement when building a major new facility. CFM headquarters and Orlando officials acknowledged

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<sup>37</sup>According to VA officials, in Orlando, the architecture and engineering firms used a medical equipment planner during design to develop the equipment list and coordination comments. The planner used equipment planning guides, spacing plans, and medical center user group meetings to develop the design requirements. This planner has been involved throughout the construction phase to assist with coordination efforts and to answer requests for information.



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that these problems might have been avoided if experienced medical equipment planners were used to coordinate the construction schedule and select medical equipment. They also agreed that a medical equipment planner is needed for future large scale projects. Procedures supporting the timely use of medical equipment planners—so that design decisions are coordinated with construction—would help ensure that medical equipment specifications such as space and electrical needs are included in planning and construction efforts and help to avoid added cost and construction delays later.

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### Sharing Information on the Roles and Responsibilities of VA's Construction-Management Staff

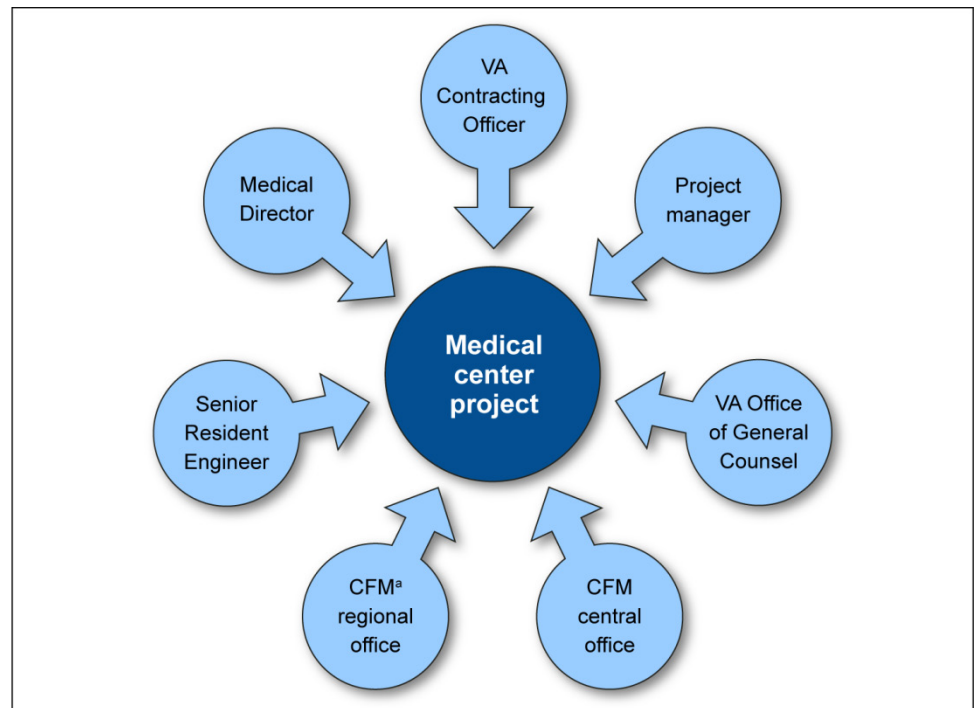
Construction of large medical facilities involves numerous staff from multiple VA organizations. For example, VA staff involved in the projects we visited included local on-site officials and staff from VA's regional and central office. In its 5-year *Strategic Plan*, VA identified the need for each organizational unit, including CFM, to review its spans of control and establish clear roles and responsibilities and make changes where necessary.<sup>38</sup> Additionally, CFM stated that during the construction process, effective communication is essential and must be continuous and involve an open exchange of information among VA staff and other key stakeholders.<sup>39</sup> See figure 5 for a depiction of the main VA officials and offices involved in the construction management process.

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<sup>38</sup>VA, *Strategic Plan Refresh: FY2011–FY2015* (Washington, D.C.).

<sup>39</sup>VA, *Construction Primer* (Washington, D.C.: January 2013).

**Figure 5: Example of VA Staff Involvement in Construction Management Decisions at Multiple Organizational Levels**



Source: GAO analysis of VA information.

<sup>a</sup>The term CFM refers to the Department of Veterans Affairs' Office of Construction and Facilities Management.

We found that because the roles and responsibilities of CFM and VHA staff are not always well communicated, it is not always clear to general contracting firms which VA officials hold the authority for making construction decisions. VA's contracting officer is the only VA official with the direct line of authority to alter contracts for VA's major medical-facility projects. However, we found the level of involvement from other VA officials can cause some confusion for contractors and architectural and engineering firms, ultimately affecting the relationship between VA and the general contractor. For example, contractor officials at one site said that VA's project manager directed them to defer the design of specific rooms until medical equipment was selected for the facility; however, VA's central office then directed the contractor to proceed with designing the rooms. This conflicting direction from VA is expected to require the contractor to redesign the space, further expending project resources. Additionally, staff from a general contractor said they work with the resident engineer or contracting officer depending upon the nature of the

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issue, in addition to working with the VHA medical director. However, this can be a time-consuming process and sometimes results in unresolved issues. Architectural and engineering officials told us that non-construction VA officials—such as VHA medical center officials who develop the types of care needed and the subsequent medical equipment needed—do not always understand the lines of authority for making construction decisions for major medical-facility projects. As a result, decision making on projects can be delayed, creating a cumulative effect where various issues go unresolved, possibly resulting in schedule delays. For example, contractors we interviewed at all three sites we visited said that although CFM's contracting officer is the only official contractually allowed to request the architectural and engineering officials to make changes to the project, VHA medical center staff request the construction contractor and architectural firm to make construction changes without consulting with the contracting officer. According to these officials, when such a situation occurs, the changes have to be re-submitted by the contracting officer, a resubmission that can result in delays in their implementation.

Participants from VA's 2011 industry forum reported that VA roles and responsibilities for contracting officials were not always clear. To address these issues, industry participants made several recommendations to VA. For example, they recommended using a matrix of roles and responsibilities for each project to clarify how teams will work together and who is responsible for which decisions. They also recommended that VA officials communicate to all parties—staff, designer and builder—regarding the construction project budget from the start of the project so that everyone can be working towards a common purpose.

VA developed a primer in January 2013 that generally outlines the responsibilities of VA staff involved in construction projects. VA headquarters officials told us the primer is not available on the VA web site, and there is no requirement that it be transmitted to contractors selected for construction projects. The officials stated that local VA project staff can share it with the contractor at their discretion. It was not clear that VA staff had provided the primer to contractor staff at the sites we visited, since VA developed the document after our visits. Tailoring the guidance with specific local VA project team information and communicating it to contractor staff for major construction sites could potentially help VA avoid confusion that could lead to cost increases and construction delays.

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## Managing the Change-Order Process

Most construction projects require some degree of change to the facility design as the project progresses, and typically, organizations have a process to initiate and implement these changes through change orders. Federal regulations<sup>40</sup> and agency guidance<sup>41</sup> state that change orders must be made promptly, and that equitable adjustments resulting from change orders are negotiated in the shortest practicable time. However, VA does not specify any time frames for how long it should take to issue change orders, nor does it systemically track the amount of time it takes to process change orders despite the possibility that delays in processing can affect project costs and schedules. According to VA officials, the agency has formed an informal working group that is evaluating how the change-order process can be improved. This group is looking at comparing VA processes with other federal entities, benchmarking the stages in the VA process, and seeing how VA processes compare with the other federal entities involved in medical facilities construction. VA officials acknowledge that setting a single time frame for the change-order process is difficult because some changes take more time than others, but they recognize that the agency needs to speed the process. VA officials at the sites we visited stated that change orders that take more than a month from when they are initiated to when they are approved can result in schedule delays; however, officials noted some change orders in their experience have taken much longer than a month. For example, officials at two sites we visited said that it was common for VA to take 6 months to process a change order, even though VA has directed its staff to eliminate or minimize delays.<sup>42</sup> Although officials at one of these sites said that VA's timeliness of the change-order process has improved, they noted that a change order still takes an average of 2 to 3 months, indicating to them that further improvement is needed. Officials from the Naval Facilities Engineering Command and the U.S. Army Corps of Engineers—two federal agencies that also construct large medical projects—told us that while the time frame for change orders and contractual modifications can vary for each case; it should not take more

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<sup>40</sup>48 C.F.R. § 43.201.

<sup>41</sup>VA, *VA Resident Engineer Handbook*, "Chapter 3: Major Construction: Contract Changes" (3.24), (Washington, D.C.).

<sup>42</sup>VA, *VA Resident Engineer Handbook*, "Chapter 3: Major Construction: Contract Changes" (3.24), (Washington, D.C.).

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than a few weeks to a month to issue most change orders.<sup>43</sup> Contracting firm officials at two VA project sites told us that in their opinion, the U.S. Army Corps of Engineers generally resolved change orders in a reasonable time frame thus avoiding delays. In addition, two VA officials who previously worked at the Naval Facilities Engineering Command stated that the command resolved change orders in a timely manner and required fewer levels of review than VA.

One factor that can add to processing delays is the difficulty involved in VA's and contractors' coming to agreement on the costs of changes. After conducting a data analysis, VA staff at the Orlando site indicated that costs for some proposed changes submitted by the contractor varied significantly from the costs that VA determined were justified. VA Orlando officials said the analysis also concluded that one of the contractors averaged more than 100 days to submit cost estimates for change orders, indicating that the delays can arise from the contractor. One general contractor told us that delays from the change-order process can affect the project schedule and can require the contractor to pay out-of-pocket for specific tasks until VA approves the change orders or the contractor must stop work. At one point, according to the contractor, the firm was owed more than \$8 million for work that it completed on the project but VA had not yet approved the change orders. VA officials stated that once disagreements between the contractor's proposals for payment versus independent government estimates are resolved, the contractor will receive payment.

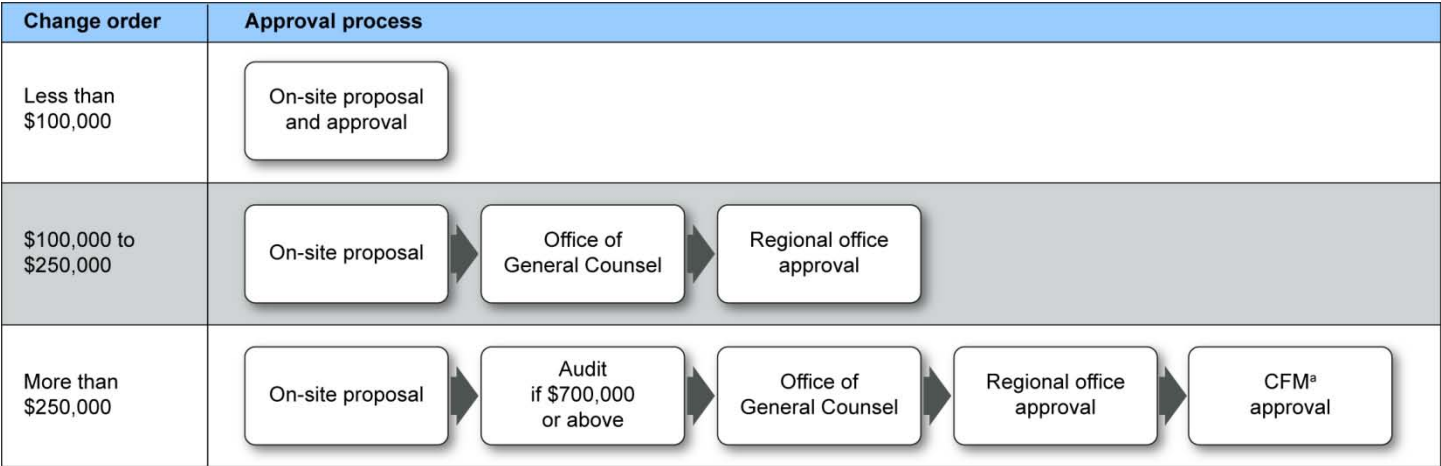
VA requires multiple levels of review for many of VA's change orders, which can be another factor that can increase the time it takes to finalize them. According to VA, these reviews are necessary to ensure that VA is in accordance with its regulations and reduce the risk that changes will result in unwarranted costs to the government. VA's change-order process requires contracting officers to obtain a legal review and concurrence from VA's Office of General Counsel for proposed contract modifications if any of the following occur 1) the total value of the modification is \$100,000 or more; 2) a time extension of more than 60

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<sup>43</sup>We recognize that the U.S. Army Corps of Engineers, Naval Facilities Engineering Command, and the Department of Veterans Affairs serve different populations in the defense community—active duty military personnel and veterans, respectively. However, these organizations construct similar medical facilities, in addition to being subject to federal government regulations for construction projects.

days is sought; or 3) the contractor has taken exception to the proposed modification.<sup>44</sup> For proposed contract modifications ranging from \$100,000 to \$250,000, the contracting officer reviews the proposed modification; if the contracting officer recommends approval, the proposed modification is submitted to Office of General Counsel through or by an official at least one level above the contracting officer. The Office of General Counsel must review it before it can be approved by the regional office.<sup>45</sup> When the change exceeds \$250,000, the proposed modification must also be finalized by the CFM regional office. All change-order proposals in excess of \$700,000 require an audit by the Defense Contract Audit Agency, VA Office of Inspector General, or another contracted audit organization. See figure 6 for the change-order process.

Figure 6: VA Construction Change-Order Process



Source: GAO analysis of VA information.

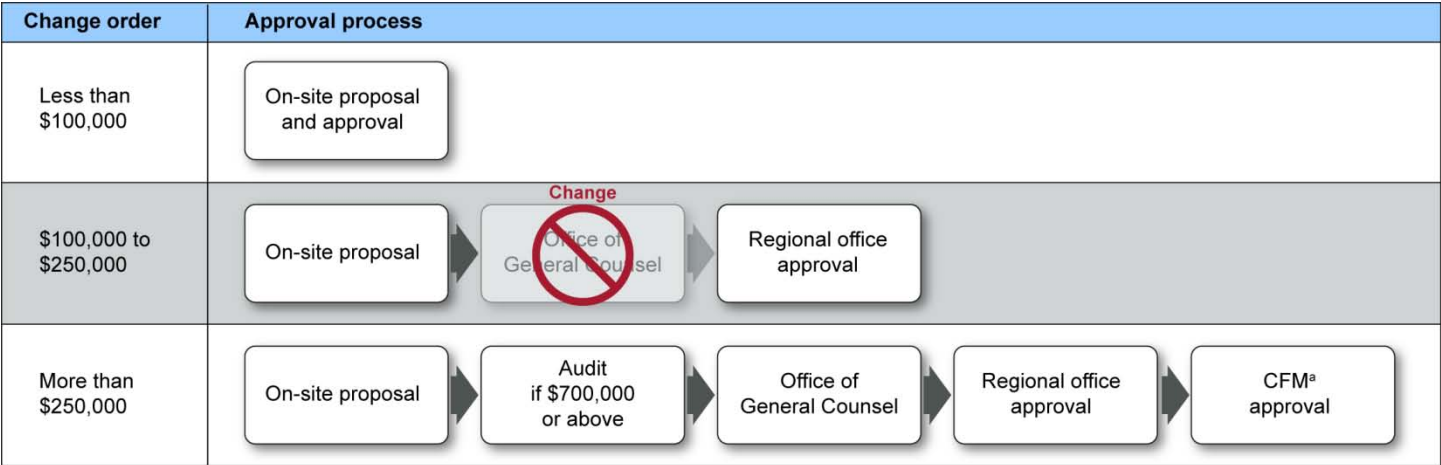
<sup>a</sup>The term CFM refers to the Department of Veterans Affairs' Office of Construction and Facilities Management.

<sup>44</sup>Contract modifications issued only to exercise contract options are exempt from this review requirement.

<sup>45</sup>The Veterans Affairs Acquisition Regulations requires Office of General Counsel to complete reviews as expeditiously as possible, with due regard for procurement actions that require an unusually short period for completing the procurement. 48 C.F.R. § 801.602-85.

VA officials at four major medical facilities we visited said change orders needed to be processed and approved more quickly to avoid further delays. To speed the process, VA issued a memorandum in July 2012 that raised the Office of General Counsel review threshold for the Denver, New Orleans, Orlando, and Palo Alto medical facilities from \$100,000 to the current \$250,000. Because of the size and cost of these projects, VA anticipated a large number of change orders over \$100,000, and reviewing all of them could delay construction at these sites.<sup>46</sup> However, this change does not address the multiple levels of review that many change orders must still undergo. See figure 7 to see the new process at the four VA sites, which raises the threshold for Office of General Counsel review to \$250,000.

**Figure 7: New VA Construction Change-Order Process for Sites with a Higher Threshold for VA OGC Review**



Source: GAO analysis of VA information.

<sup>a</sup>The term CFM refers to the Department of Veterans Affairs' Office of Construction and Facilities Management.

VA is aware of change order delays and is taking some steps to address this issue. One of the Construction Review Council’s responsibilities is the

<sup>46</sup>In the memorandum, VA authorized a deviation from VA Acquisition Regulation for New Orleans VAMC, Denver VAMC, Orlando VAMC, and the Palo Alto tower which required OGC review for all change orders above \$100,000. 48 C.F.R. § 801.602-83. In this memorandum, VA cites that it anticipates a large number of modifications over \$100,000 for these sites because of their size, and that these modifications may result in delays. The Palo Alto tower is a project for Ambulatory Care/Polytrauma Rehabilitation.

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review of the effectiveness and efficiency of processes used on construction projects, including change orders. During the council's meetings, VA officials said they consistently were told by project staff that change orders were taking too long and delaying the completion of projects. In its report, the council recommended that VA review the opportunity to shorten the decision cycle for approving change orders. As a part of this effort, the council recommended 1) that VA examine the authority levels of contracting officers in the field to execute change orders without additional review and (2) that VA consider support for hiring three additional attorneys to review change orders. However, VA is reviewing the options proposed by the council and began receiving progress updates on this review in February 2013.

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## Conclusions

VA has made improvements in its management of major medical-facility construction projects, but many of these projects continue to experience cost increases and schedule delays similar to those we reported in 2009. Although we recognize that some cost increases and schedule delays result from factors beyond VA's control, our review of VA's four largest projects indicates that weaknesses in VA's construction management processes also contributed to cost increases and schedule delays. The Construction Review Council has also identified a number of these same weaknesses, including in particular a review process that hinders the timely processing of change orders. VA is considering the council's recommendations for addressing construction management weaknesses.

As part of its action involving the council's recommendations, VA is confronted with addressing a lack of guidance and procedures for some important aspects of construction management, specifically, guidance and procedures for using medical equipment planners on projects, clearly communicating the roles and responsibilities of VA construction staff to stakeholders, and streamlining the change-order process. Such guidance would help institutionalize the types of changes that the Construction Review Council and others say are needed in VA's construction management process. Without guidance on which projects require medical planners and at which the stage they should be used, VA could continue to experience delays and cost increases resulting from late-stage design changes to accommodate medical equipment. Furthermore, the lack of clear guidance delineating the roles and responsibilities of VA staff for managing each aspect of construction projects, can make it difficult for VA and contractors to communicate clearly, which also contributes to schedule delays and cost increases. Moreover, while the Construction Review Council has identified opportunities to streamline



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VA's multi-layered change-order process, VA has yet to develop guidance to ensure that change orders are approved in a prompt manner to avoid project delays. Given that VA is currently involved in 50 major medical-facility construction projects, including four large medical centers, such guidance could help to strengthen the management of these projects.

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## Recommendations for Executive Action

To improve the management of VA's major construction projects, we recommend that the Secretary of Veterans Affairs should take the following three actions:

- develop and implement agency guidance for assignment of medical equipment planners to major medical construction projects;
- develop and disseminate procedures for communicating, to contractors, clearly defined roles and responsibilities of VA officials who manage major medical-facility projects, particularly the change-order process; and
- issue and take steps to implement guidance on streamlining the change-order process based on the findings and recommendations of the Construction Review Council.

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## Agency Comments and Our Evaluation

We provided a draft of this report to VA for review and comment. In its written comments, VA concurred with our recommendations, generally agreed with our conclusions and discussed actions underway or planned to implement the recommendations. However, VA stated that it had significant concerns with how we portrayed medical center cost and scheduling issues, particularly with respect to the table in the draft report showing cost increases and schedule delays for these projects. In our analysis of changes in cost and schedules for these projects, we considered the initial cost estimates and completion dates to be those that were first submitted to Congress. Cost estimates at this stage should be as accurate and credible as possible because Congress uses these initial estimates to consider authorizations and make appropriations decisions. We used a similar methodology to estimate changes to cost and schedule of construction projects in a previous report issued in 2009 on VA construction projects. VA has been working to improve its initial cost estimates, as noted in our 2009 report. In its comments, VA stated that designs, initial cost estimates, and initial completion dates are developed several years before Congress appropriates funds and the construction contract is awarded, actions that then determine the cost and completion date. According to VA, a more accurate depiction of the

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project's cost would be to make a comparison between the total appropriations received and the current total estimated cost, and a more accurate depiction of the schedule would be to compare the initial completion date established at the award of the construction contract with the estimated or actual completion date. In its letter, VA provided information on the changes to cost and schedules for the four projects after the final congressional appropriation was received and the construction contract was awarded. By using the methodology VA suggests, the schedule delays and cost increases are significantly lower. VA asked that we include this new information to supplement the information on cost and schedule changes already included in the report.

We believe that the methodology we used in this and our prior report on VA construction provides an accurate depiction of how cost and schedules for construction projects can change from the time they are first submitted to Congress. It is at this time that expectations are set among stakeholders, including the veterans community, for when projects will be completed and at what cost. As noted earlier, we recognize that many factors can affect cost and schedules over the life of a project and that some of these factors, including when appropriations are actually received, are beyond VA's control. We also recognize that VA and the contractors develop more accurate cost estimates and schedules after Congress appropriates funds and contracts are awarded, and the likelihood increases that cost and schedule risks are either mitigated or realized. We therefore incorporated information in the report indicating how cost increases and schedule delays for the four projects have decreased in the stages after VA received appropriations. In addition, VA suggested a number of technical corrections which we incorporated as appropriate. VA's letter is reprinted in appendix IV.

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As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to the appropriate congressional committees, the Secretary of Veterans Affairs, and other interested parties. In addition, the report will be available at no charge on GAO's website at <http://www.gao.gov>.

If you or your staff have any questions regarding this report, please contact me at (202) 512-2834 or [stjamesl@gao.gov](mailto:stjamesl@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found

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on the last page of this report. GAO staff who made key contributions to this report are listed in appendix V.

Sincerely yours,

A handwritten signature in black ink that reads "Lorelei St. James". The signature is written in a cursive, flowing style.

Lorelei St. James  
Director  
Physical Infrastructure Issues

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# Appendix I: Scope and Methodology

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To determine changes to costs, schedule, and scope for selected Department of Veterans Affairs' new major medical-facility projects, we obtained and analyzed data that VA provided on the status of VA's 50 active major medical-facility projects as of November 2012, including the original cost estimates and completion dates and the project's current status. The data included a short project description, project location, the original and current total estimated cost of the project, the original and current completion date, and the type of acquisition strategy selected for the project. We analyzed the current cost and completion dates to determine any increases in costs and the extent to which projects may have exceeded time allotted and summarized the results. We also collected VA information on reasons for cost increase and schedule changes to VA projects based on scope changes. We assessed the reliability of the data through interviews with knowledgeable VA officials and a review for completeness and any unexpected values. We determined that the data was sufficiently reliable for the purpose of this report. To identify the reasons for cost, schedule, and scope changes in VA's construction projects, we interviewed VA's headquarters officials regarding the status of all major medical-facility projects and examined project documents and interviewed on-site managers and engineers. We selected the four most expensive ongoing major medical-facility construction projects based on cost, current status of the project, and type of facility, located in Denver, Colorado; Orlando, Florida; New Orleans, Louisiana; and Las Vegas, Nevada.<sup>1</sup> We obtained specific information from VA's ongoing major medical-facility projects as of November 2012. We visited the construction sites in Denver, Orlando, and New Orleans to talk to officials on site to determine the reasons for changes in costs and schedules. We updated our prior work on the Las Vegas facility with information on the project completion costs and the change-order process.<sup>2</sup> The information from our site visits is illustrative and cannot be generalized to sites agency-wide.

To identify which actions VA has taken to improve its construction management, and any opportunities that exist for VA to further improve its management, we reviewed VA's management practices of construction projects at the three locations we visited and interviewed VA

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<sup>1</sup>The site that we refer to throughout this report as the Denver VA Medical Center is actually located in Aurora, Colorado, near Denver.

<sup>2</sup>[GAO-10-189](#). This review was conducted from October 2008 through December 2009.

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headquarters' officials from the Veterans Health Administration, Office of Construction and Facilities Management, Office of General Counsel, as well as project managers and senior resident engineers at the construction sites we visited. We reviewed and analyzed construction documents, agency policy and guidance, previous VA reports, and interviewed officials from VA, veterans support organizations, architecture and engineering firms, general contractor construction firms, and construction management firms. We also reviewed the Federal Acquisition Regulations, VA's *Strategic Plan*, and GAO past reports. In addition, we interviewed officials from the Naval Forces Engineering Command and the U.S. Army Corps of Engineers to discuss their current construction practices in major medical-facility projects.

We conducted this performance audit from April 2012 to April 2013 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

# Appendix II: Changes in Cost for Department of Veterans Affairs Major Medical-Facility Projects

In November 2012, VA provided GAO with data for its 50 ongoing major medical-facility projects. The term “major medical-facility project” is defined as “a project for the construction, alteration, or acquisition of a medical facility involving the total expenditure of more than \$10 million.”<sup>1</sup> We calculated the percentage change in cost by using the initial total estimated costs, which were first submitted to Congress and total estimated costs, as reported by VA. Included is a summary of cost data arranged in descending order by the percentage change for each of VA’s 50 major medical-facility projects.

**Table 4: Cost of VA’s 50 Major Medical-Facility Projects as of November 2012**

Location	Project description	Initial estimated cost	Estimated cost as of November 2012	Cost increase/decrease	Percentage change	Project status	Project type <sup>a</sup>
<b>Projects experiencing cost increases</b>							
St. Louis (JB), MO	Medical Facility Improvements & Cemetery Expansion	\$69 million	\$367 million	\$298 million	432%	Construction	DBB
Bronx, NY	Spinal Cord Injury (SCI)	82 million	226 million	144 million	176	Construction Documents	DBB
Denver, CO	New Medical Facility	328 million	800 million	472 million	144	Construction	IDC
Orlando, FL	New Medical Facility	254 million	616 million	362 million	143	Construction	DBB
West Los Angeles, CA	Seismic Correction of 12 Buildings	155 million	347 million	192 million	124	Construction Documents	DBB
San Juan, PR	Seismic Corrections-Building	145 million	277 million	132 million	91	Construction	DBB
Las Vegas, NV	New Medical Facility (Multiple Phases)	325 million	585 million	260 million	80	Construction	DBB
Dallas, TX	Spinal Cord Injury (SCI)	89 million	155 million	66 million	74	Construction Documents	DBB
Biloxi, MS	Restoration of Hospital/Consolidation of Gulfport	175 million	304 million	129 million	74	Construction	DBB
Syracuse, NY	Construct Addition for SCI Center	54 million	92 million	38 million	70	Construction	DBB
New Orleans, LA	New Medical Facility	625 million	995 million	370 million	59	Construction	IDC
Palo Alto, CA	Ambulatory Care/ Polytrauma Rehab	450 million	717 million	267 million	59	Construction	DBB

<sup>1</sup>See 38 U.S.C. § 8104.

**Appendix II: Changes in Cost for Department  
of Veterans Affairs Major Medical-Facility  
Projects**

<b>Location</b>	<b>Project description</b>	<b>Initial estimated cost</b>	<b>Estimated cost as of November 2012</b>	<b>Cost increase/ decrease</b>	<b>Percent- age change</b>	<b>Project status</b>	<b>Project type<sup>a</sup></b>
Palo Alto, CA	Seismic Corrections Building. 2	34 million	54 million	20 million	59	Construction	DBB
Pittsburgh, PA	Consolidation of Campuses (Multiple Phases)	191 million	283 million	92 million	48	Construction	DBB
Fayetteville, AR	Clinical Addition	56 million	88 million	32 million	57	Construction	DBB
Lee County	Outpatient Clinic	65 million	88 million	23 million	35	Physically Complete	DBB
Long Beach, CA	Seismic Corrections-Buildings 7,126	103 million	130 million	27 million	26	Construction	DBB
Seattle, WA	B101 Mental Health	179 million	222 million	43 million	24	Construction Documents	DBB
Seattle, WA	Correct Seismic Deficiencies B100,NT, and NHCU	43 million	52 million	9 million	21	Construction Documents	DBB
Gainesville, FL	Correct Patient Privacy Deficiencies	85 million	102 million	17 million	20	Physically Complete	DBB
San Antonio, TX	Ward Upgrades And Expansion	19 million	21 million	2 million	11	Physically Complete	DBB
San Diego, CA	Spinal Cord Injury and Seismic Deficiency	183 million	195 million	12 million	7	Design Development	DBB
Tampa, FL	Polytrauma/Bed Tower	224 million	232 million	8 million	4	Construction	DBB
<b>Totals for the 23 projects experiencing cost increases</b>		<b>\$3.9 billion</b>	<b>\$6.9 billion</b>	<b>\$3 billion</b>	<b>77%</b>		
<b>Projects experiencing no cost increases</b>							
West Los Angeles, CA	Construct New Essential Care tower/B500 Seismic Correction and Renovation	\$1.03 billion	\$1.03 billion	\$0	0%	Construction Documents	DBB
Omaha, NE	Replacement Facility	560 million	560 million	0	0	Design Development	DBB
St. Louis (JC), MO	Replace Bed Tower & Clinic Expansion	433 million	433 million	0	0	Schematics/Design Development	DBB
Canandaigua, NY	Construction and Renovation	370 million	370 million	0	0	Schematics/Design Development	DBB
Livermore, CA	Realignment and Closure	354 million	354 million	0	0	Schematics/Design Development	DBB
Long Beach, CA	Seismic Cor.-Mental Health and Community Living Center	258 million	258 million	0	0	Design Development	DBB

**Appendix II: Changes in Cost for Department  
of Veterans Affairs Major Medical-Facility  
Projects**

<b>Location</b>	<b>Project description</b>	<b>Initial estimated cost</b>	<b>Estimated cost as of November 2012</b>	<b>Cost increase/ decrease</b>	<b>Percent- age change</b>	<b>Project status</b>	<b>Project type<sup>a</sup></b>
San Francisco, CA	Seismic Retrofit/Replace Buildings.	225 million	225 million	0	0	Selection of the AE Firm for Design	DBB
Reno, NV	Upgrade of Building 1 Seismic, Life Safety, Utility Corrections & Expand Clinical Services	214 million	214 million	0	0	Selection of the AE Firm for Design	DBB
Alameda Point, CA	Outpatient Clinic and Columbarium	209 million	209 million	0	0	Schematics/Design Development	DBB
Brockton, MA	Long-Term Care Spinal Cord Injury	188 million	188 million	0	0	Design Development	DBB
Dallas, TX	Clinical Expansion for Mental Health	156 million	156 million	0	0	Design Development	DBB
Perry Point, MD	Replacement Community Living Center	90 million	90 million	0	0	Schematics/Design Development	DBB
Walla Walla, WA	Multi-Specialty Care	71 million	71 million	0	0	Construction	DB
San Antonio, TX	Polytrauma Center	66 million	66 million	0	0	Construction	IDC
American Lake, WA	Seismic Corrections Building 81	53 million	53 million	0	0	Design Development	DBB
Anchorage, AK	Outpatient Clinic	75 million	75 million	0	0	Physically Complete	DBB
American Lake, WA	Seismic Corrections-NHCU & Dietetics	38 million	38 million	0	0	Physically Complete	DBB
Biloxi, MS	Gulfport - Environmental Cleanup	36 million	36 million	0	0	Physically Complete	DBB/DB
Martinsburg, WV	Capital Region Data Center	35 million	35 million	0	0	Physically Complete	DB
Indianapolis, IN	7th & 8th Floor Ward Modernization Add	27 million	27 million	0	0	Physically Complete	DBB
Columbia, MO	Operating Suite Replacement	26 million	26 million	0	0	Construction	DBB
<b>Totals for the 21 projects experiencing no cost increases</b>		<b>\$4.5 billion</b>	<b>\$4.5 billion</b>	<b>\$0</b>	<b>0%</b>		
<b>Projects experiencing cost savings</b>							
Cleveland, OH	Brecksville Consolidation	\$105 million	102 million	(\$3 million)	-3%	Physically Complete	DBB
Tampa, FL	Upgrade Essential Electrical Dist. Sys.	49 million	46 million	(3 million)	-6	Physically Complete	DBB



**Appendix II: Changes in Cost for Department  
of Veterans Affairs Major Medical-Facility  
Projects**

Location	Project description	Initial estimated cost	Estimated cost as of November 2012	Cost increase/ decrease	Percent- age change	Project status	Project type <sup>a</sup>
Bay Pines, FL	Inpatient/Outpatient Improvements	174 million	158 million	(16 million)	-9	Construction	DBB
Milwaukee, WI	Spinal Cord Injury Center	33 million	28 million	(5 million)	-15	Physically Complete	DB
Temple, TX	Information Technology Facility	56 million	11 million	(45 million)	-80	Construction	DB
<b>Totals for the 5 projects experiencing cost decreases</b>		<b>\$417 million</b>	<b>\$345 million</b>	<b>(\$72 million)</b>	<b>-17%</b>		
Projects Awaiting Cost Estimates							
Louisville, KY <sup>b</sup>	New/Renovate Medical Facility	TBD	\$900 million	TBD	TBD	Master Planning	DBB
<b>Total cost increases for all projects</b>		<b>\$8.9 billion</b>	<b>\$11.8 billion</b>	<b>\$2.9 billion</b>	<b>33%</b>		

Source: GAO Analysis of VA data

Note: This table contains data provided by VA in November 2012.

<sup>a</sup>At VA's 50 ongoing major medical-facility projects, VA utilized three construction types including: design-bid-build (DBB); integrated design and construction (IDC); and design-build (DB). The large majority of projects are being constructed using DBB. For further information regarding these construction types, see table 2.

<sup>b</sup>The Louisville, Kentucky, project is not part of the included calculations since no data was available for the projects initial estimated costs.

# Appendix III: Changes in Schedule for Department of Veterans Affairs Major Medical-Facility Projects

In November 2012, VA provided GAO with data for its 50 ongoing major medical-facility projects. The term “major medical-facility project” is defined as “a project for the construction, alteration, or acquisition of a medical-facility involving the total expenditure of more than \$10 million.”<sup>1</sup> We calculated the “total months delayed” column by counting the months from the initial estimated completion date, which was first submitted to Congress, to the current estimated completion date, as reported by VA. According to VA, the dates in the initial estimated completion dates are from the initial budget prospectus, which assumed receipt of full construction funding within 1 to 2 years after the budget submission. In some cases, construction funding was phased over several years and the final funding was received several years later. Included is a summary of schedule data arranged in descending order by the number of months delayed for each of VA’s 50 major medical-facility projects.

**Table 5: Schedule of VA’s 50 Major Medical-Facility Projects as of November 2012**

Location	Project description	Initial estimated completion date	Estimated completion date as of November 2012	Total months delayed	Project status	Project type <sup>a</sup>
<b>Projects experiencing schedule delays</b>						
San Juan, PR	Seismic Corrections-Building 1	August 2009	October 2016	86	Construction	DBB
Las Vegas, NV	New Medical Facility (Multiple Phases)	April 2008	June 2014	74	Construction	DBB
Palo Alto, CA	Seismic Corrections Building 2	November 2007	September 2013	70	Construction	DBB
Long Beach, CA	Seismic Corrections-Buildings 7,126	March 2010	August 2014	53	Construction	DBB
San Antonio, TX	Ward Upgrades And Expansion	August 2007	December 2011	52	Physically Complete	DBB
Walla Walla, WA	Multi-Specialty Care	February 2012	January 2016	47	Construction	DB
Syracuse, NY	Construct Addition for Spinal Cord Injury Center	August 2009	February 2013	42	Construction	DBB
Orlando, FL	New Medical Facility	April 2010	July 2013 <sup>b</sup>	39	Construction	DBB
San Antonio, TX	Polytrauma Center	December 2010	December 2013	36	Construction	IDC

<sup>1</sup>See 38 U.S.C. § 8104.

**Appendix III: Changes in Schedule for  
Department of Veterans Affairs Major Medical-  
Facility Projects**

<b>Location</b>	<b>Project description</b>	<b>Initial estimated completion date</b>	<b>Estimated completion date as of November 2012</b>	<b>Total months delayed</b>	<b>Project status</b>	<b>Project type<sup>a</sup></b>
Palo Alto, CA	Ambulatory Care/Polytrauma Rehab	February 2015	December 2017	34	Construction	DBB
Indianapolis, IN	7th & 8th Floor Ward Modernization Add	April 2008	March 2010	23	Physically Complete	DBB
West Los Angeles, CA	Seismic Correction of 12 Buildings	March 2012	December 2013	21	Construction Documents	DBB
Milwaukee, WI	Spinal Cord Injury Center	December 2009	July 2011	19	Physically Complete	DB
New Orleans, LA	New Medical Facility	December 2014	February 2016	14	Construction	IDC
Denver, CO	New Medical Facility	February 2014	April 2015	14	Construction	IDC
Columbia, MO	Operating Suite Replacement	May 2012	June 2013	13	Construction	DBB
Temple, TX	Information Technology Facility	September 2011	September 2012	12	Construction	DB
American Lake, WA	Seismic Corrections- NHCU & Dietetics	March 2009	March 2010	12	Physically Complete	DBB
Pittsburgh, PA	Consolidation of Campuses (Multiple Phases)	March 2013	February 2014	11	Construction	DBB
Lee County	Outpatient Clinic	November 2011	April 2012	5	Physically Complete	DBB
Gainesville, FL	Correct Patient Privacy Deficiencies	March 2011	June 2011	3	Physically Complete	DBB
Bay Pines, FL	Inpatient/Outpatient Improvements	December 2014	February 2015	2	Construction	DBB
Tampa, FL	Upgrade Essential Electrical Dist. Sys.	July 2010	September 2010	2	Physically Complete	DBB
Tampa, FL	Polytrauma/Bed Tower	August 2011	October 2011	2	Construction	DBB
<b>Projects experiencing no schedule delays</b>						
Cleveland, OH	Brecksville Consolidation	March 2011	March 2011	0	Physically Complete	DBB
Fayetteville, AR	Clinical Addition	July 2014	July 2014	0	Construction	DBB
Anchorage, AK	Outpatient Clinic	March 2010	March 2010	0	Physically Complete	DBB
Biloxi, MS	Gulfport - Environmental Cleanup	February 2010	February 2010	0	Physically Complete	DBB/DB
Martinsburg, WV	Capital Region Data Center	June 2010	June 2010	0	Physically Complete	DB

**Appendix III: Changes in Schedule for  
Department of Veterans Affairs Major Medical-  
Facility Projects**

<b>Location</b>	<b>Project description</b>	<b>Initial estimated completion date</b>	<b>Estimated completion date as of November 2012</b>	<b>Total months delayed</b>	<b>Project status</b>	<b>Project type<sup>a</sup></b>
<b>Projects awaiting schedule estimates</b>						
Dallas, TX	Spinal Cord Injury	TBD	December 2014	TBD	Construction Documents	DBB
Seattle, WA	B101 Mental Health	TBD	June 2015	TBD	Construction Documents	DBB
Seattle, WA	Correct Seismic Deficiencies	TBD	September 2015	TBD	Construction Documents	DBB
Biloxi, MS	Restoration of Hospital/Consolidation of Gulfport	TBD	June 2016	TBD	Construction	DBB
Alameda Point, CA	Outpatient Clinic and Columbarium	TBD	TBD	TBD	Schematics/Design Development	DBB
American Lake, WA	Seismic Corrections Building 81	TBD	TBD	TBD	Design Development	DBB
Brockton, MA	Long-Term Care Spinal Cord Injury	TBD	TBD	TBD	Design Development	DBB
Bronx, NY	Spinal Cord Injury	TBD	TBD	TBD	Construction Documents	DBB
Canandaigu, NY	Construction and Renovation	TBD	TBD	TBD	Schematics/Design Development	DBB
Dallas, TX	Clinical Expansion for Mental Health	TBD	TBD	TBD	Design Development	DBB
Livermore, CA	Realignment and Closure	TBD	TBD	TBD	Schematics/Design Development	DBB
Long Beach, CA	Seismic Cor.-Mental Health and Community Living Center	TBD	TBD	TBD	Design Development	DBB
Louisville, KY	New/Renovate Medical Facility	TBD	TBD	TBD	Master Planning	DBB
Omaha, NE	Replacement Facility	TBD	TBD	TBD	Design Development	DBB
Perry Point, MD	Replacement Community Living Center	TBD	TBD	TBD	Schematics/Design Development	DBB
Reno, NV	Upgrade of Building 1 Seismic, Life Safety, Utility Corrections & Expand Clinical Services	TBD	TBD	TBD	Selection of the AE Firm for Design	DBB
San Diego, CA	Spinal Cord Injury and Seismic Deficiency	TBD	TBD	TBD	Design Development	DBB
San Francisco, CA	Seismic Retrofit/Replace Buildings	TBD	TBD	TBD	Selection of the AE Firm for Design	DBB

**Appendix III: Changes in Schedule for  
Department of Veterans Affairs Major Medical-  
Facility Projects**

<b>Location</b>	<b>Project description</b>	<b>Initial estimated completion date</b>	<b>Estimated completion date as of November 2012</b>	<b>Total months delayed</b>	<b>Project status</b>	<b>Project type<sup>a</sup></b>
St. Louis (JC), MO	Replace Bed Tower & Clinic Expansion	TBD	TBD	TBD	Schematics/Design Development	DBB
St. Louis (JB), MO	Medical Facility Improvements & Cemetery Expansion	TBD	TBD	TBD	Construction	DBB
West Los Angeles, CA	Construct New Essential Care tower/B500 Seismic Correction and Renovation	TBD	TBD	TBD	Construction Documents	DBB

Source: GAO Analysis of VA data

<sup>a</sup>This table contains data provided by VA in November 2012.

<sup>b</sup>At VA's 50 ongoing major medical-facility projects, VA utilized three construction types including: design-bid-build (DBB); integrated design and construction (IDC); and design-build (DB). The large majority of projects are being constructed using DBB. For further information regarding these construction types, see table 2.

<sup>c</sup>VA provided time extensions to the contractor extending the contract completion date to August 2013. The contractor has not submitted a recovery schedule reflecting its efforts to meet that date as of January 31, 2013.

<sup>d</sup>This calculation only includes the 29 of the 50 that currently have "initial scheduled completion date" and "estimated completion date" data available as of November 2012.

# Appendix IV: Comments of the Department of Veterans Affairs

VA sent our agency  
comments 3/29/13.



DEPARTMENT OF VETERANS AFFAIRS  
Washington DC 20420

Ms. Lorelei St. James  
Director, Physical Infrastructure  
U.S. Government Accountability Office  
441 G Street, NW  
Washington, DC 20548

Dear Ms. St. James:

The Department of Veterans Affairs (VA) has reviewed the Government Accountability Office's (GAO) draft report, ***"VA CONSTRUCTION: Additional Actions Needed to Decrease Delays and Lower Costs of Major Medical-Facility Projects"*** (GAO-13-302). VA has significant concerns regarding the content of this report.

VA understands that opportunities exist to improve project management planning and execution processes, and continues to take action to close gaps in order to deliver the state of the art medical facilities our Veterans deserve, on time and on budget. However, VA has significant concerns with the methodology and construction data used to portray medical facility construction scheduling and cost issues, particularly with respect to Table 3 on page 11 and Table 5 on page 39 of the subject report. Designs, initial cost estimates, and schedule completion dates are developed years prospectively, well before Congress appropriates funding and the contract to construct is awarded which determines the cost to complete the construction project and the completion date. VA recommends that GAO include the table provided in the enclosure, which provides a more complete picture of project costs and schedules for VA's major medical facility projects.

VA appreciates the opportunity to comment on your draft report.

Sincerely,

A handwritten signature in black ink that reads "John R. Gingrich".

John R. Gingrich  
Chief of Staff

Enclosure

Enclosure

Department of Veterans Affairs (VA) Comments to  
Government Accountability Office (GAO) Draft Report  
***“VA CONSTRUCTION: Additional Actions Needed to Decrease Delays and  
Lower Costs of Major Medical-Facility Projects”***  
(GAO-13-302)

**GAO Recommendation:** To improve the management of VA's major construction projects, we recommend that the Secretary of the Department of Veterans Affairs should take the following three actions:

**Recommendation 1:** Develop and implement agency guidance for assignment of medical equipment planners to major medical construction projects.

**VA Comment:** Concur. VA concurs that medical equipment planning is critical to mitigating project cost and schedule risks.

In coordination with the Veterans Health Administration (VHA), the Office of Acquisition, Logistics, and Construction (OALC) is evaluating criteria for the assignment of medical equipment planners to major construction projects, as well as medical equipment planner project roles and responsibilities, and will develop and implement the appropriate VA guidance. Additionally, VA has ensured that medical equipment planners are incorporated into the Denver and New Orleans major construction project teams.

**Recommendation 2:** Develop and disseminate procedures for communicating to contractors clearly defined roles and responsibilities of VA officials that manage major medical-facility projects, particularly the change order process.

**VA Comment:** Concur. VA concurs with the importance of establishing and communicating clearly defined roles and responsibilities, particularly with respect to the change order process.

VA currently addresses the roles and responsibilities under the contract with the designer at the design kickoff meetings and with construction contractors at the pre-construction conference. Roles and responsibilities, relative to changes, are discussed in detail and followed in writing. The contracting officer provides a letter specifically naming individuals with the authority to execute changes and the limits of their authority. The contractor is required to sign the letter, acknowledging understanding of the stipulated authorities and limits.

VA's project management plan (PMP) template requires the creation of a communications plan and matrix to assure clear and consistent communications with all parties. The communications plan must address the following:

- a. generation, collection, dissemination, and storage of project information;
- b. regular project communication, such as meetings and in-progress reviews;
- c. frequency and method of communication (e.g., e-mail, phone); and
- d. stakeholder roles and responsibilities.

Enclosure

Department of Veterans Affairs (VA) Comments to  
Government Accountability Office (GAO) Draft Report  
***“VA CONSTRUCTION: Additional Actions Needed to Decrease Delays and  
Lower Costs of Major Medical-Facility Projects”***  
(GAO-13-302)

An appendix to the plan provides more specific information on the development of the plan and provides a sample of a typical communications plan matrix. VA will continue to review and define these communications plans and develop procedures to ensure distribution to all the stakeholders.

VA has also added a Construction Peer Excellence Review to assure effective communication and collaboration are incorporated on projects during construction. This program is an adaptation of the General Services Administration (GSA) program. VA has GSA staff on loan to stand up the program and perform the initial reviews. The program involves industry leaders visiting the site and assessing individual and “team” effectiveness.

**Recommendation 3: Issue and take steps to implement guidance on streamlining the change order process based on the findings and recommendations of the Construction Review Council.**

**VA Comment:** Concur. VA is developing and will implement guidance to streamline the change order process to reduce review time and increase proactive action. These strategic activities include:

- a. Establishing time goals for processing change orders and modifications to the contract. These time goals for processing will clearly convey to the staff the acceptable performance level. These time goals will be benchmarked with other Federal agencies to assure VA incorporates best practice initiatives; and
- b. Standing up a metrics program that will allow leadership to monitor change order processing time in order to affect resources to bring the change order processing time within acceptable standards.

In order to immediately streamline the process, VA has placed contracting officers on site in New Orleans, Louisiana; Orlando, Florida; Denver, Colorado; Manhattan, New York; and Palo Alto, California, and has additional contracting officers available to deploy to any site requiring support to shorten review and processing time. VA has also hired four additional attorneys dedicated to the major construction program. These attorneys are being integrated into the project teams to assure timely counsel and review of actions.



Enclosure

Department of Veterans Affairs (VA) Comments to  
Government Accountability Office (GAO) Draft Report  
***"VA CONSTRUCTION: Additional Actions Needed to Decrease Delays and  
Lower Costs of Major Medical-Facility Projects"***  
(GAO-13-302)

**General Comments:**

VA emphasizes that during the Orlando project, the Joint Venture of two architecture/engineering firms, AECOM (formerly Ellerbe Becket) and RLF, used a medical equipment planner during design to develop the equipment list and coordination notes/comments. They used the Technical Information Library equipment planning guides, space plan, and medical center user group meetings to develop the design requirements. This same planner has been involved throughout the construction phase to assist with coordination efforts and to answer requests for information.

VA also has significant concerns with Table 3 on page 11 of the report and Table 5 on page 39 regarding the calculation of cost increases and schedule delays. Designs, initial cost estimates, and schedule completion dates are developed several years before Congress appropriates funding and the contract to construct is awarded which determines initial cost and ultimate completion date of the construction project.

As an example, Orlando indicated a completion date of April 2010 in the first prospectus included in the budget (referred to throughout the report as "Initial Estimated Completion Date"). However, Orlando did not receive its final funding for the main hospital building until fiscal year 2010, making it impossible to complete the project any time during that fiscal year.

VA believes the following language should be included as a clarifying/amplifying footnote to the Initial 'Estimated Completion Date' column, "The dates represented here are from the initial budget prospectus, which assumed receipt of full construction funding within 1 to 2 years after budget submission. In some cases, construction funding was phased over several years and the final funding was received several years later."

A more accurate depiction of the project cost and construction schedule would be to make a comparison between the total appropriations received and the current total estimated cost. For schedule issues, a more accurate comparison would be the initial completion date established at the award of construction contract and the actual or estimated construction contract completion date.

Enclosure

Department of Veterans Affairs (VA) Comments to  
Government Accountability Office (GAO) Draft Report  
***"VA CONSTRUCTION: Additional Actions Needed to Decrease Delays and  
Lower Costs of Major Medical-Facility Projects"***  
(GAO-13-302)

Therefore, VA recommends adding the table below to supplement Table 3 on page 11:

Location/ Description	Last FY that Construction Appropriations were Received	Total Appropriations Received (\$M)	Current Total Estimated Costs (\$M)	Difference between Total Appropriations Received & Current Total Estimated Costs (%)	Initial Contract Completion Date at Award	Actual/ Estimated Construction Contract Completion Date	Months Extended	Actual/ Estimated Years to Complete Construction
Las Vegas	2008	\$600	\$585	-2.6%	8/2011	4/2012	8	5.5
Orlando	2008	\$665	\$616	-7.4%	10/2012	8/2013	10	4.0
Denver	2012	\$800	\$800	0.0%	4/2015	4/2015	0	5.7
New Orleans	2012	\$995	\$995	0.0%	2/2016	2/2016	0	4.7

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# Appendix V: GAO Contact and Staff Acknowledgments

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## GAO Contact

Lorelei St. James, (202) 512-2834 or [stjamesl@gao.gov](mailto:stjamesl@gao.gov).

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## Staff Acknowledgments

In addition to the contact named above, Ed Laughlin, Assistant Director; Nelsie Alcoser; George Depaoli; Raymond Griffith; Joshua Ormond; Amy Rosewarne; James Russell; Sandra Sokol; and Crystal Wesco made key contributions to this report.

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## GAO's Mission

The Government Accountability Office, the audit, evaluation, and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

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