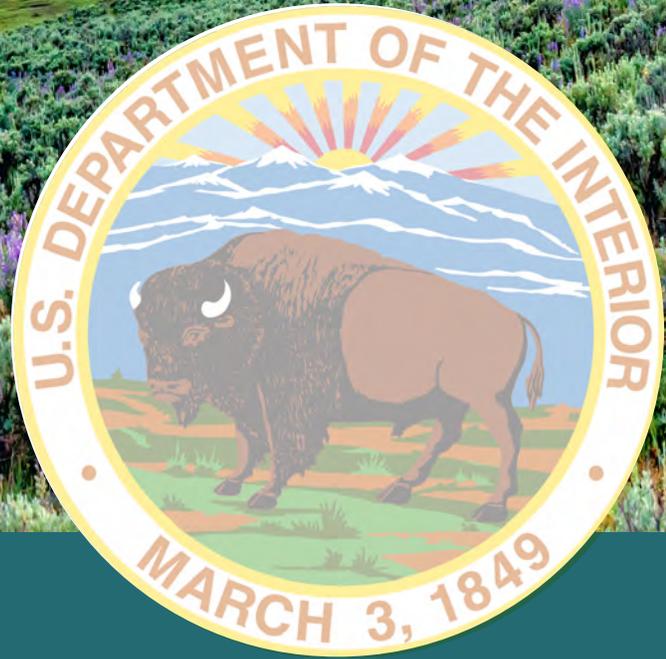




OFFICE OF
INSPECTOR GENERAL
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Evaluation



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MAR 19 2025

Memorandum

To: Jessica Bowron
Acting Director, National Park Service

From: Kathleen Sedney 
Assistant Inspector General for Audits, Inspections, and Evaluations

Subject: Final Evaluation Report – *The National Park Service Can Improve Cost Estimates for Great American Outdoors Act Construction Contracts*
Report No. 2022-CGD-051

This memorandum transmits our evaluation report on the National Park Service's (NPS') cost estimates for Great American Outdoors Act construction contracts. The objective of our evaluation was to assess NPS' process for estimating and adjusting project cost estimates for construction contracts awarded using Great American Outdoors Act (GAOA) funds. We reviewed how NPS developed and adjusted budgetary estimates for GAOA projects and the accuracy of those estimates. We also reviewed how NPS obtained independent government cost estimates (IGCEs) for GAOA construction contracts and how the IGCEs impacted contract price analysis and negotiations.

We will track open recommendations for resolution and implementation. We will notify Congress about our findings, and we will report semiannually, as required by law, on actions you have taken to implement the recommendations and on recommendations that have not been implemented. We will also post a public version of this report on our website.

If you have any questions about this report, please contact me at aie_reports@doioig.gov.

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Results in Brief

Objective

To assess the National Park Service's (NPS') process for estimating and adjusting project costs for construction contracts awarded using Great American Outdoors Act (GAOA)¹ funds. We reviewed how NPS developed and adjusted budgetary estimates for GAOA projects and the accuracy of those estimates. We also reviewed how NPS obtained independent government cost estimates (IGCEs) for GAOA construction contracts and how the IGCEs impacted contract price analysis and negotiations.

Findings

We found that NPS used "conceptual estimates" to create budgets for 14 of the 25 GAOA projects we reviewed, rather than the more refined budgetary estimates NPS typically uses to prepare budgets for construction projects.² The use of conceptual estimates ultimately led to less accurate budgets for GAOA projects. Of the 14 conceptual project estimates in our sample, the budgeted amount differed from the contract prices by a total of \$23.2 million. However, we noted that the accuracy of conceptual estimates improved when NPS performed a scope and cost validation assessment on projects. We also found that NPS prepared inaccurate IGCEs for 19 of 28 (68 percent of) GAOA-funded contracts reviewed.³ This occurred because of several interrelated factors including that estimators who prepared the IGCEs often did not visit the project site when preparing the IGCE. NPS also did not track IGCE accuracy or hold contracted estimators accountable, which makes it harder to improve IGCEs in the future.

Impact

By using conceptual estimates rather than more refined budgetary estimates, the GAOA construction projects we reviewed were frequently over or under budget during project execution. Projects that cost less than their estimated budgets can cause funds to sit idle throughout project completion, making them unavailable for other potential projects, while projects that cost more than their estimated budgets risk delays in completion due to lack of funds. Inaccurate IGCEs put NPS at a disadvantage when analyzing contractor price proposals and conducting price negotiations, and ultimately, these IGCEs may result in NPS paying more for construction contracts. We observed that when estimators performed a site visit while preparing the IGCE, NPS negotiated price reductions totaling \$3.5 million on projects. In contrast, when estimators did not perform a site visit, NPS negotiated no price reductions. Additionally, if NPS begins to track IGCE accuracy and hold contracted estimators accountable, IGCE accuracy may improve. Improved IGCEs may enable NPS to save money and make funds available for additional projects.

Recommendations

We make four recommendations to NPS that, if implemented, will help NPS improve budgetary estimates and IGCEs, and thereby improve the administration of GAOA projects. The recommendations will also help NPS to save money through improved construction contract price negotiations.

¹ Pub. L. No. 116-152, enacted August 4, 2020.

² We reviewed a total of 27 GAOA projects. We evaluated NPS project budgetary estimates by comparing the project budgetary estimate to the eventual contract price. We removed two projects in our scope from our analysis because the contracts in our scope were only for a portion of their overall projects, leaving 25 projects in our analysis.

³ We evaluated contract IGCEs by comparing the IGCE to the eventual contract price for all 27 projects. For one project, NPS awarded two separate contracts, so we performed this analysis on 28 contracts.

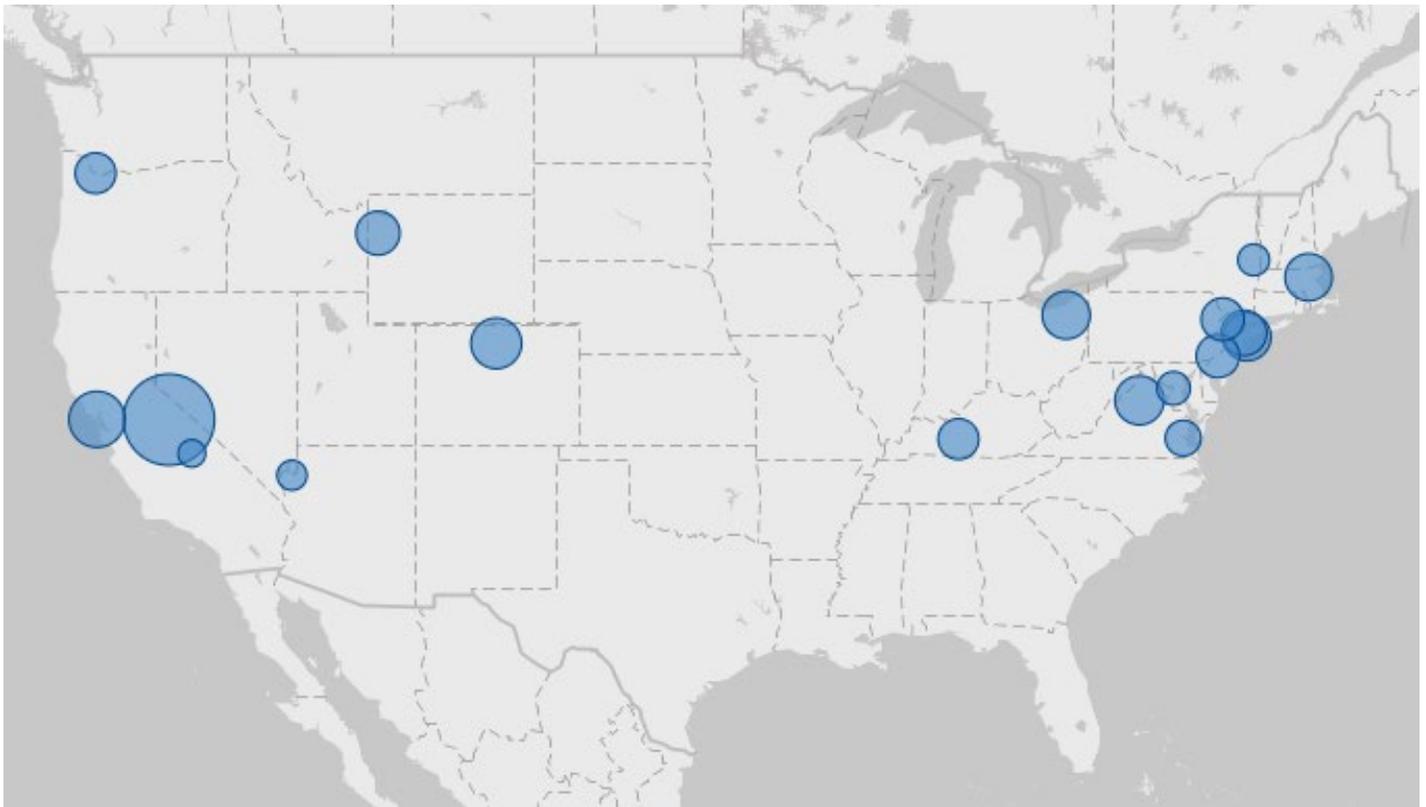
Introduction

Objective

The objective of our evaluation was to assess the National Park Service's (NPS') process for estimating and adjusting project costs for construction contracts awarded using Great American Outdoors Act (GAOA)⁴ funds. We reviewed how NPS developed and adjusted budgetary estimates for GAOA projects and the accuracy of those estimates. We also reviewed how NPS obtained independent government cost estimates (IGCEs) for GAOA construction contracts and how the IGCEs impacted contract price analysis and negotiations.

The scope of our review included NPS estimates for all GAOA construction projects that had contracts awarded during fiscal years (FYs) 2021 and 2022. These projects were dispersed across the continental United States and had approved funding totaling \$323 million. Figure 1 shows the locations of the FY 2021 and FY 2022 GAOA construction projects, with the marking size reflecting the total approved funding amount by park location. Figure 2 presents the five largest individual projects in terms of approved construction funding.

Figure 1: Disbursement of GAOA Funding for FY 2021 and FY 2022



⁴ Pub. L. No. 116-152, enacted August 4, 2020.

Figure 2: Five Largest NPS GAOA Projects for FY 2021 and FY 2022

NPS Park (State)	Project	Funding
Golden Gate National Recreation Area (California)	Stabilize Alcatraz Wharf	\$30,997,678
Minute Man National Historical Park (Massachusetts)	Rehabilitate and repair structures and landscapes	\$23,140,504
Rocky Mountain National Park (Colorado)	Rehabilitate Headquarters East water system and Moraine Park Campground electrical distribution	\$22,840,000
Shenandoah National Park (Virginia)	Pavement preservation along 54 miles of Skyline Drive and 19 overlooks associated with Skyline Drive	\$21,127,000
Cuyahoga Valley National Park (Ohio)	Stabilize riverbank at high priority areas along Towpath Trail and Valley Railway	\$21,099,330

See Appendix 1 for our evaluation scope and methodology. See Appendix 2 for a list of the projects we reviewed.

Background

GAOA provides up to \$1.3 billion⁵ annually over five years to NPS through the National Parks and Public Land Legacy Restoration Fund (LRF).⁶ The LRF is the largest funding source available to NPS for major maintenance and construction. GAOA projects include infrastructure and utility improvement, structure rehabilitation, land and shoreline stabilization, and other repairs to improve visitors' experience.

GAOA was enacted, in part, to address deferred maintenance to improve infrastructure and expand recreation activities in national parks and other public lands. At the end of FY 2023, NPS reported that it had accumulated an estimated \$23.3 billion in deferred maintenance—which NPS defines as maintenance that has not been completed on schedule and is delayed until a future period.

In September 2023, we issued an evaluation report⁷ in which we found that NPS was unable to effectively identify and manage its deferred maintenance. This was due in large part to inaccurate and unreliable data in NPS' Facility Management Software System (FMSS), which is a work identification, management, and analysis program that allows NPS to track all aspects of work related to a specific asset at the individual park level. These deficiencies cast doubt on the NPS' deferred maintenance estimates—possibly underestimating the figures in some cases and overestimating them in others. The scope of the evaluation covered the process in place for estimating deferred maintenance from FY 2016 through FY 2021.

During FY 2022, NPS began implementing a new approach to estimating and calculating deferred maintenance. The new process, which utilizes a tool called "parametric condition assessment" (PCA), estimates deferred maintenance by conducting a rapid visual assessment of major facility components and systems. During the scope of our 2023 evaluation, and while NPS worked to fully implement the use of PCAs, it continued to use work orders to estimate deferred maintenance for assets that did not have a completed PCA. NPS stated that once it fully implements the use of PCAs, work orders will only be generated for funded projects.

⁵ Up to \$1.9 billion will be appropriated through GAOA each year from FY 2021 through FY 2025. NPS will receive 70 percent, and the U.S. Fish and Wildlife Service, Bureau of Land Management, and Bureau of Indian Education will each receive 5 percent. The remaining 15 percent is allocated to the U.S. Forest Service under the U.S. Department of Agriculture.

⁶ The LRF is funded from an amount equal to 50 percent of all energy development revenues due and payable to the United States from oil, gas, coal, or alternative or renewable energy development on Federal land and water credited, covered, or deposited as miscellaneous receipts under Federal law in the preceding fiscal year.

⁷ *The National Park Service Faces Challenges in Managing Its Deferred Maintenance* (Report No. 2020-CR-066). The report is available at: <https://www.doi.gov/reports/inspection-evaluation/national-park-service-faces-challenges-managing-its-deferred>.

NPS Estimates for GAOA Construction Projects

GAOA-funded projects are selected based upon NPS deferred maintenance work orders. To initiate projects to address deferred maintenance at national parks, park personnel enter work orders into FMSS. For construction projects that are not funded by GAOA, NPS uses three estimate class levels, as outlined in its 2011 *National Park Service Cost Estimating Requirements Handbook*,⁸ for estimating construction project costs. Depending on the construction project's size, NPS' estimate formulation process can take up to three years for projects to progress through the three estimate classes:

- **Class C: Conceptual estimates** are prepared without a fully defined scope of work. They are general in nature, representative of a broad-based vision rather than focused on specific details and require a great deal of interpretation and assumptions on the part of the estimator to fill in the blanks between programmed elements. Class C estimates are typically generated from NPS' bundled work orders and are used for feasibility studies, preliminary budgets, and scope and cost validation assessments.⁹
- **Class B: Budgetary estimates** are prepared with a partially defined scope of work. The project programming and major project elements are generally well defined; design efforts are becoming focused on key systems and development of specific details; however, some of the final details are still evolving and portions of the statement of work still require some level of interpretation and assumptions to prepare a comprehensive cost estimate. Class B estimates are used to develop preliminary design submissions for the project.
- **Class A: Actual estimates** are generally prepared with a fully defined scope of work. The project programming¹⁰ and major project elements are completely defined, with all drawings and construction details provided as well as a complete set of project specifications. Class A estimates are used as IGCEs, which represent actual costs based on fully developed scopes and are prepared in as much detail as if the Government was competing for the award.

NPS managed construction projects funded by GAOA differently than construction performed under its other programs and processes. NPS officials stated that during the first two years of GAOA, they selected projects from traditional NPS procurement channels and included projects from all three estimate classes. NPS also explained that it based the selections on project readiness, fair geographic distribution, and whether the completion of a project would result in a substantial reduction in deferred maintenance.

Figure 3 provides a high-level overview of the lifecycle of an NPS deferred maintenance project funded by GAOA. While the September 2023 evaluation reviewed step 1, the scope of our review focused on steps 2 and 4.

⁸ We conducted this evaluation using the 2011 version of the *National Park Service Cost Estimating Requirements Handbook*. NPS' Denver Service Center issued updates to the handbook in 2022 and 2023, but the contracts reviewed in this evaluation were awarded or in planning before NPS issued either update. The 2023 update changed the name of the handbook to the *National Park Service Denver Service Center Construction Cost Estimating Requirements Handbook*.

⁹ A scope and cost validation assessment is a project review that verifies the validity of the original project scope and budget to achieve a viable project. The review compares the original scope with current conditions, proposed project needs, and changes in costs.

¹⁰ Project programming refers to the strategic phase where project objectives, scope, constraints, and goals are defined.

Figure 3: Lifecycle of GAOA Deferred Maintenance Projects

1.  Work orders are developed.

Step 1: Work order development. To determine the condition of assets, NPS staff at each park perform condition assessments. To initiate a new deferred maintenance project, park staff enter work orders into FMSS. NPS also hires contract cost estimating teams to develop project estimates for larger projects, which are also entered into FMSS.

Step 2: Identification of GAOA-funded projects. GAOA requires NPS to submit a list of construction projects with the President’s annual budget submission to Congress. To determine potential funding amounts needed for this budget submission, NPS’ GAOA Program Management Office (PMO) bundles deferred maintenance work orders into projects, then prioritizes projects based on readiness and critical need. GAOA PMO officials then enter the projects into a separate system, the Project Management Information System (PMIS), and use the compiled information to support the budgetary submission to the NPS Bureau Investment Review Board, which reviews NPS’

2.  Work orders are bundled into a project for budget submission.

annual budget submission and approves the projects that will then be included in the President’s annual budget.

Step 3: Adjustment of project scope and costs using the budget recast process. For previously approved projects funded by GAOA, NPS has used what is called the budget recast process to adjust budgetary estimates.¹¹ During this process, NPS is able to recast its initial budget submissions for GAOA projects by

3.  NPS uses the budget recast process to adjust project scope and/or costs.

updating previously submitted budget amounts and providing them to the congressional appropriations committees. NPS cannot add to the projects, but it can make changes based on scope gaps identified through estimate formulation. The congressional appropriations committees authorize the revised budget amounts and funding, and the revised budget is considered recast. This process is unique to projects funded by GAOA and can occur for any year the project is active. The Consolidated Appropriations Acts for FYs 2022 and 2023

allowed NPS to reallocate excess project funding to the NPS Contingency Fund in the next budget submission. However, the budget recast process allows NPS to reallocate funding for previously approved projects in response to scope changes, project removals, or additional funding requests, which often can be attributable to a volatile construction market and price fluctuations.

4.  NPS obtains an independent government cost estimate for the project.

Step 4: IGCE formulation. Once a project is submitted and approved, NPS prepares or obtains detailed estimates, called IGCEs (Class A estimates). Federal Acquisition Regulation (FAR) § 36.203(a) requires these estimates for construction projects to evaluate proposed contractor prices if the price is expected to exceed the simplified acquisition threshold.¹² IGCEs are final estimates, which, according to the FAR, must be “prepared in as much detail as though the Government were competing for award.”

NPS staff either prepare these IGCEs themselves or hire architect and engineering (A&E) firms to prepare them.¹³ IGCEs are prepared in advance of contract solicitation and award and support the contracting officer through the contract negotiation and award process.

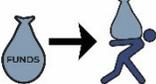
¹¹ Pub. L. No. 117-103, enacted March 15, 2022.

¹² During the scope of our evaluation, the simplified acquisition threshold was \$250,000. The 28 contracts we reviewed all exceeded this amount.

¹³ NPS officials hired A&E firms to prepare the IGCEs for 21 of the 28 contracts reviewed.

5.  NPS awards the contract.

Step 5: Contract solicitation and award. NPS issues a solicitation for contractors to submit proposals. After NPS receives and evaluates the proposals, it negotiates and issues a contract for the deferred maintenance construction project.

6.  NPS uses contingency funds to address funding shortfalls.

Step 6. Contingency funds address funding shortfalls. NPS may reallocate amounts from its Contingency Fund to GAOA projects if unforeseen cost overruns could jeopardize the completion of a project. Contingency Fund amounts may be reallocated only for adjustments and changes within the original scope of effort for GAOA projects.

7.  Project is completed, contract closed, and deferred maintenance reassessed.

Step 7. Project completion, contract closure, and deferred maintenance reassessment. When the project reaches substantial completion,¹⁴ NPS performs a post-construction condition assessment to reassesses the deferred maintenance associated with the project and updates FMSS. Also at substantial completion, a one-year warranty period begins. Additionally, if a project has

excess project funds, once a project is closed, NPS can transfer these excess project funds to the Contingency Fund in the next budget submission or through the recast process.

¹⁴ Substantial completion means the point at which the constructed facility can function for its intended purpose.

Results of Evaluation

We reviewed how the National Park Service (NPS) developed and adjusted budgetary estimates for GAOA projects and the accuracy of those estimates. We also reviewed how NPS prepared or obtained IGCEs for GAOA construction contracts and how the IGCEs impacted contract price analysis and negotiations.

We found that NPS' process for estimating and adjusting project cost estimates for construction contracts awarded using GAOA funds resulted in insufficient estimates. Specifically, NPS used conceptual estimates to support 14 of the 25 GAOA project budget submissions during FYs 2021 and 2022.¹⁵ We determined that, in its submission, NPS used conceptual GAOA project estimates, which were not, by nature, precise enough for a budgetary submission. NPS used these more conceptual estimates due to congressional deadlines and increased funding. NPS informed us it plans to continue to use these conceptual, less developed estimates "out of necessity." We determined that NPS can improve the accuracy of the estimates by adjusting the estimates after performing a scope and cost validation assessment on the estimates before use for budgetary submissions. Better estimates reduce the likelihood of both (1) idle funds losing value and not being available for other potential projects and (2) reduced scopes or project delays due to a lack of funding.

We also found NPS awarded contracts with inaccurate IGCEs for 19 of the 28 (68 percent) contracts reviewed. The 19 IGCEs were inaccurate because they were over 12 months old (and therefore of limited value) and NPS did not update them prior to use. The inaccuracy was compounded by significant price fluctuations caused by the high inflationary period of 2021 and 2022. Additionally, the NPS staff and A&E firms that prepared IGCEs sometimes misunderstood project requirements and did not always conduct site visits before preparing the IGCEs. Inaccurate IGCEs place NPS contracting personnel in a weaker position to negotiate fair and reasonable contract prices, particularly for contracts awarded without competition. NPS also did not track IGCE accuracy or hold contracted estimators accountable.

NPS Can Improve Estimates Used for Budgetary Submission for Construction Projects Funded by GAOA

As annotated in its 2011 *NPS Cost Estimating Requirements Handbook*, the NPS uses a tiered class approach for distinguishing three different levels of estimates associated with construction projects: Class C (conceptual) estimates, Class B (budgetary) estimates, and Class A (actual) estimates. NPS develops Class C estimates before the project is designed. It next obtains Class B estimates during the schematic design and design development phase and then generates a Class A estimate after design development is completed.

The handbook also establishes a recommended accuracy range for each estimate class, which it used to measure accuracy by comparing the final contract award value to the net construction value of each estimate class. The accuracy ranges for the estimate classes are:

- **Class C:** 30 percent under to 50 percent over the Class C estimate amount.
- **Class B:** 15 percent under to 30 percent over the Class B estimate amount.
- **Class A:** 5 percent under to 15 percent over the Class A estimate amount.

According to the handbook, Class B estimates are intended to be used for budget purposes. However, DOI's *Deferred Maintenance and Capital Improvement Planning Guidelines*, issued in June 2018, allows NPS to use Class C estimates for budgetary purposes for projects that are estimated to be \$2 million or less. For projects exceeding \$2 million, the guidelines recommend a Class B estimate for budgetary purposes.

¹⁵ We removed two projects in our scope from our analysis of project budget estimates to contract prices analysis because the contracts in our scope were only for a portion of their overall projects, so it would not have been a valid comparison.

NPS Used Conceptual Estimates for Budgetary Submissions

The *NPS Cost Estimating Requirements Handbook* states a preference for but does not require a Class B estimate for budget purposes. We found that 14 (56 percent) of the 25 GAOA construction estimates we reviewed as part of NPS' annual budgets for FYs 2021 and 2022 were Class C estimates. All 14 estimates exceeded \$2 million.

NPS GAOA management acknowledged that Class C estimates are unsuited for budgetary submissions because they:

- Are generated directly from work orders that may not be supported by a professional cost estimate or study.
- Do not include sufficient detail to demonstrate that the design will fulfill the functional and technical requirements of the project.
- Have a broad estimate accuracy range (30 percent under to 50 percent over the estimate).

We observed that NPS has continued to use predominantly Class C estimates for GAOA budgetary purposes beyond the scope of our evaluation. While we did not analyze the GAOA budgetary submissions for FYs 2023 and 2024, we did obtain data to determine what class of estimates were used in their preparation. For the FY 2023 budget submission, all 26 project estimates used were Class C. For FY 2024, 20 of the 25 project estimates (80 percent) were Class C estimates. We did not obtain data for FY 2025 during our evaluation, however, GAOA program management stated NPS would continue to use Class C estimates for the FY 2025 GAOA budgetary submission.

Compressed Timelines Created the Need for NPS To Use Conceptual Estimates for Budgetary Submission

According to the NPS GAOA Program Management Office, even though it typically uses Class B or Class A estimates when submitting budget requests for non-GAOA projects, it has continued to use Class C estimates in GAOA budgetary submissions primarily because GAOA budgetary submission timelines are shorter than traditional NPS procurement timelines. NPS was required to submit the FY 2021 list of GAOA construction projects approximately 60 days after GAOA was enacted and the FY 2022 list of GAOA construction projects approximately 180 days after GAOA was enacted. In addition, the Consolidated Appropriations Acts of FYs 2021 and 2022 required the Secretary of the Interior to allocate amounts available from the LRF within 45 days of their enactment. As a result of these constraints, there are not enough projects with a complete Class B or Class A estimate when GAOA's required budgetary submission lists are due each year.

NPS has acknowledged that the volume of GAOA projects, which is 10 times NPS' typical construction project volume, makes developing and using Class B estimates unrealistic given the compressed GAOA budget timeframe.

NPS' Use of Conceptual Estimates Adversely Impacted Budget Accuracy

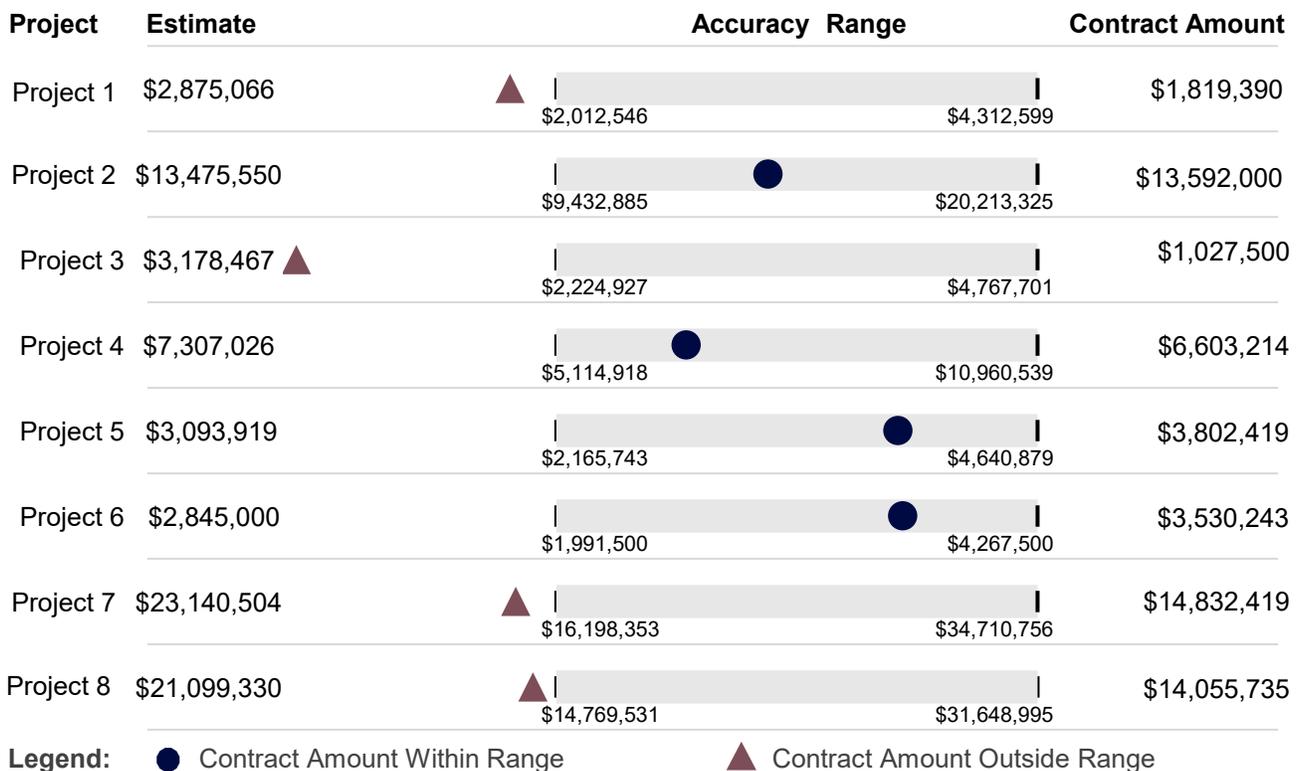
The GAOA LRF is funded through FY 2025 and reauthorization is under consideration. If GAOA is reauthorized, NPS will continue to use Class C estimates for budgetary submissions. Accordingly, NPS should implement a control to reduce the risk of budgeting inaccurate amounts for these projects. Specifically, before the budget submission, NPS can complete project scope and cost validation (SCV) assessments on Class C estimates, which NPS and A&E firm personnel perform to verify whether a project is viable. SCV assessments typically take 90 to 120 days to complete. NPS officials agreed that completing these assessments would improve accuracy, and, according to NPS officials, they are currently conducting SCV assessments on Class C estimates as part of the recast process and updating the budgets.

Based on the projects we reviewed that used a Class C estimate for budgetary submission, we found that Class C estimates with SCV assessments were more likely to be closer to the contract award amount. Specifically, the eight Class C estimates without SCV assessments were under budget by an average of 23 percent, while the six Class C estimates that had an SCV assessment prior to budget formulation were under budget by an average of only 6 percent (see Figure 4). Additionally, only four of the eight Class C estimates without a SCV assessment resulted in contract prices within the estimate accuracy range (see Figure 5).

Figure 4: Impact of SCV Assessment on Class C Estimate Accuracy

Status	Projects	Net Construction Budget Amount (A)	Contract Amount (B)	Difference (A-B=C)	Percent Under Budget (C/A)
With SCV	6	\$86,470,199	\$81,036,186	\$5,434,013	6%
Without SCV	8	\$77,014,862	\$59,262,920	\$17,751,942	23%
Totals	14	\$163,485,061	\$140,229,106	\$23,185,955	14%

Figure 5: The Impact of SCV Assessments on Class C Estimate Accuracy and Contract Prices (for Estimates without SVC Assessments)

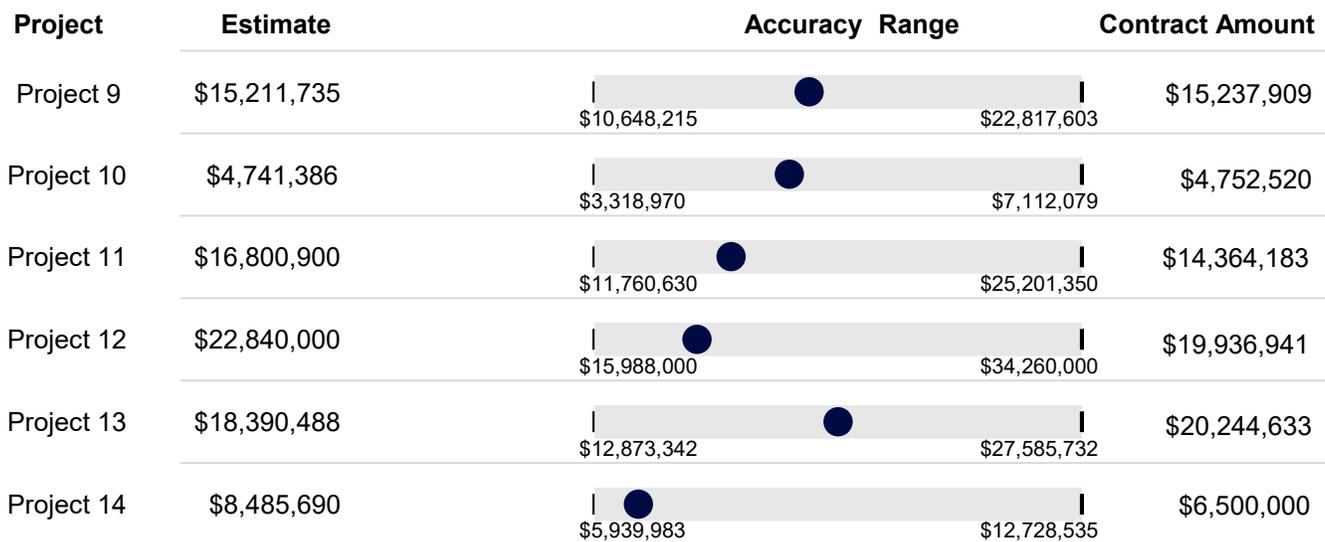


Source: DOI OIG

As an example of a project outside the accuracy range, in FY 2022, NPS awarded a contract to stabilize the Cuyahoga riverbank alongside trails in Cuyahoga Valley National Park (Project 8). NPS used a Class C estimate of \$21,099,330 to establish the budget, but did not conduct an SCV assessment prior to budgetary submission. NPS awarded the contract for a price of \$14,055,735, which was approximately 33 percent lower than the budgetary estimate.

In contrast, in FY 2021, NPS awarded a contract to rehabilitate the Tuolumne Meadows Campground in Yosemite National Park (Project 13) (see Figure 6). NPS conducted a SCV assessment on its Class C estimate for the project. NPS subsequently awarded the contract for a price of \$20,244,633, which was approximately 10 percent higher than the budgetary estimate of \$18,390,488 and within the estimate’s accuracy range. Further, all six Class C estimates with an SCV assessment resulted in a contract price within the estimate accuracy range.

Figure 6: The Impact of SCV Assessments on Class C Estimate Accuracy and Contract Prices (for Estimates with SVC Assessments)



Legend: ● Contract Amount Within Range

Source: DOI OIG

Budget accuracy by project is consequential, as under budget projects can cause funds to sit idle throughout project completion, while over budget projects risk reduced scopes and delays in completion if needed funds are not available. Using Class C estimates for budgetary purposes without appropriate controls can lead to projects running significantly under and over budget. As shown in Figure 4, of the 14 Class C project estimates in our sample, the budgeted amount differed from the contract prices by \$23.2 million.

This difference is important because the net construction budget amount¹⁶ determines the additional amounts NPS allocates and budgets for contingencies (10 percent of net construction), contracted construction management costs (8 percent of net construction), and NPS project management costs (5 percent of net construction), which are combined into the overall project budget. Therefore, under budget projects lead to idled funds that NPS cannot reallocate until the original construction project is closed, which limits the number of additional GAOA projects that could be started to address NPS’ deferred maintenance backlog.¹⁷ Conversely, over budget contracts could impact the ability to fully complete ongoing projects due to funding shortfalls. While most Class C estimates in our scope resulted in contracts that were under budget, NPS officials noted that many of the projects with Class C budgetary estimates after the period of our scope have resulted in contracts that were over budget.

¹⁶ The net construction budget amount includes direct construction costs plus regular indirect construction costs and profit.

¹⁷ While NPS has the ability to invest idle funds, the construction industry can be affected by inflation and volatile market conditions. Specifically, in FYs 2021 and 2022, every idle dollar’s value diminished during the unused period due to market fluctuations.

Recommendation

We recommend that NPS:

1. Develop and implement guidance requiring scope and cost validation assessments for Class C conceptual estimates before they are used for budgetary submission for Great American Outdoors Act projects funded by the National Parks and Public Lands Legacy Restoration Fund.

NPS Can Improve Its Process for Creating IGCEs

NPS awarded contracts with prices that were outside of the IGCE accuracy range for 19 of the 28 (68 percent) contracts reviewed. Interrelated factors affected the accuracy of IGCEs, including instances where estimators misunderstood project requirements, based estimates on outdated information, and did not conduct visits to the project site before preparing estimates.

Contract Prices Were Outside IGCE Accuracy Ranges

The 2011 *National Park Service Cost Estimating Requirements Handbook* established a recommended accuracy range for IGCEs that compares the final contract award value against the IGCE. The recommended accuracy range for IGCE estimates was from 5 percent under to 15 percent over the IGCE estimate. For example, if the IGCE is \$1 million, then the accuracy range was from \$950,000 to \$1,150,000. The IGCE is considered accurate if the contract price is within that range.

Additionally, the 2011 handbook recommended, but did not require, that the estimator visit the local site and local market areas as part of a market survey for projects with an estimated net construction cost greater than \$4 million, or when the NPS project manager requested a site visit.

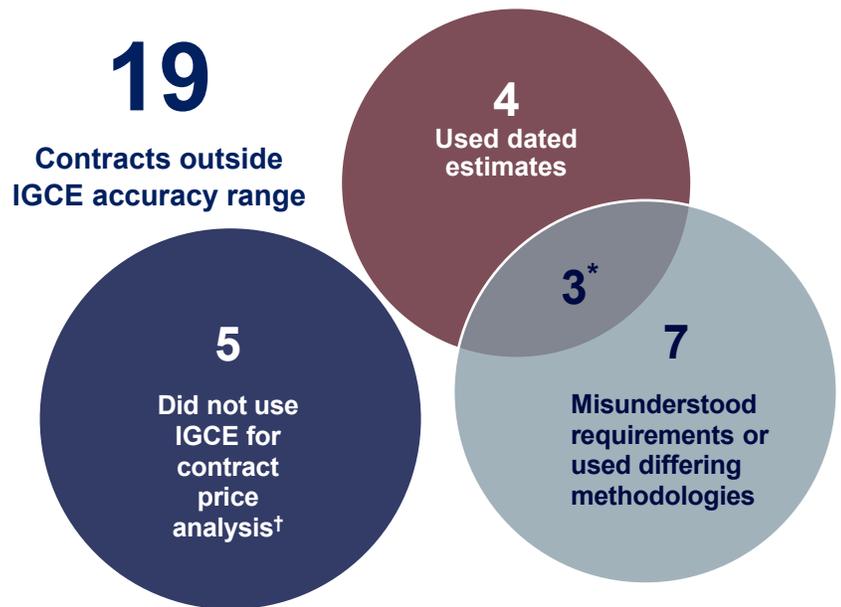
We found that NPS awarded 19 of 28 contracts reviewed (68 percent) with prices outside the IGCE accuracy range. IGCEs are prepared before contract solicitation and provide the contracting officer with a baseline that contractor proposals are compared against. When NPS receives multiple proposals, the IGCE can help NPS identify whether offers are unreasonably high or low and determine whether offerors understand project requirements. An accurate IGCE is particularly crucial when NPS receives only one proposal in response to a solicitation. In these instances, NPS cannot establish price competition by comparing multiple proposals to one another. When only one proposal is received, the IGCE generally becomes the starting point for the contracting officer's price analysis and negotiations.

Factors Affecting IGCE Accuracy

Interrelated factors affected the accuracy of IGCEs. We recognize that due to the complexity and volatility of the construction market, NPS may not always award contracts at prices within the IGCE accuracy range. However, we identified systemic issues that contributed to inaccurate IGCEs and that NPS can address.

Figure 7 illustrates the various deficiencies in the 19 contracts with inaccurate IGCEs. First, NPS contracting officials stated that generally, information in IGCEs is considered useful for 12 months; after that, the information may no longer accurately reflect the market. However, we identified seven instances in which NPS used estimates with inaccurate information due to either the passage of time or the volatile market conditions. For two of those seven contracts, the IGCEs were over 1.5 years old when GAOA funding became available and NPS was able to award the contract. When we asked about the dated IGCEs, NPS officials confirmed that NPS does not have a procedure to review older IGCEs for accuracy before use. NPS contracting officials also attributed the dated information to the compressed timeframes for GAOA, asserting that they did not have sufficient resources or time to update the estimates before use. (We discuss this issue earlier in our report.)

Figure 7: Deficiencies in Contracts Outside Accuracy Range



Second, IGCEs for 10 projects were outside of the accuracy range because either NPS cost estimators and A&E firms misunderstood project requirements or the methodologies that NPS and A&E estimators proposed in the IGCEs differed from the contractor’s proposal. NPS contracting staff stated that estimators preparing IGCEs may not have understood project requirements because they were unfamiliar with unique NPS requirements, current site conditions, or both.

* Three IGCEs both used dated information and misunderstood project requirements.

† For five IGCEs, we could not determine the reason the contract price differed significantly from the IGCEs. In these instances, the contracting officer did not use the IGCE for price analysis due to price competition or did not evaluate the difference between the IGCE and the contractor’s proposal.

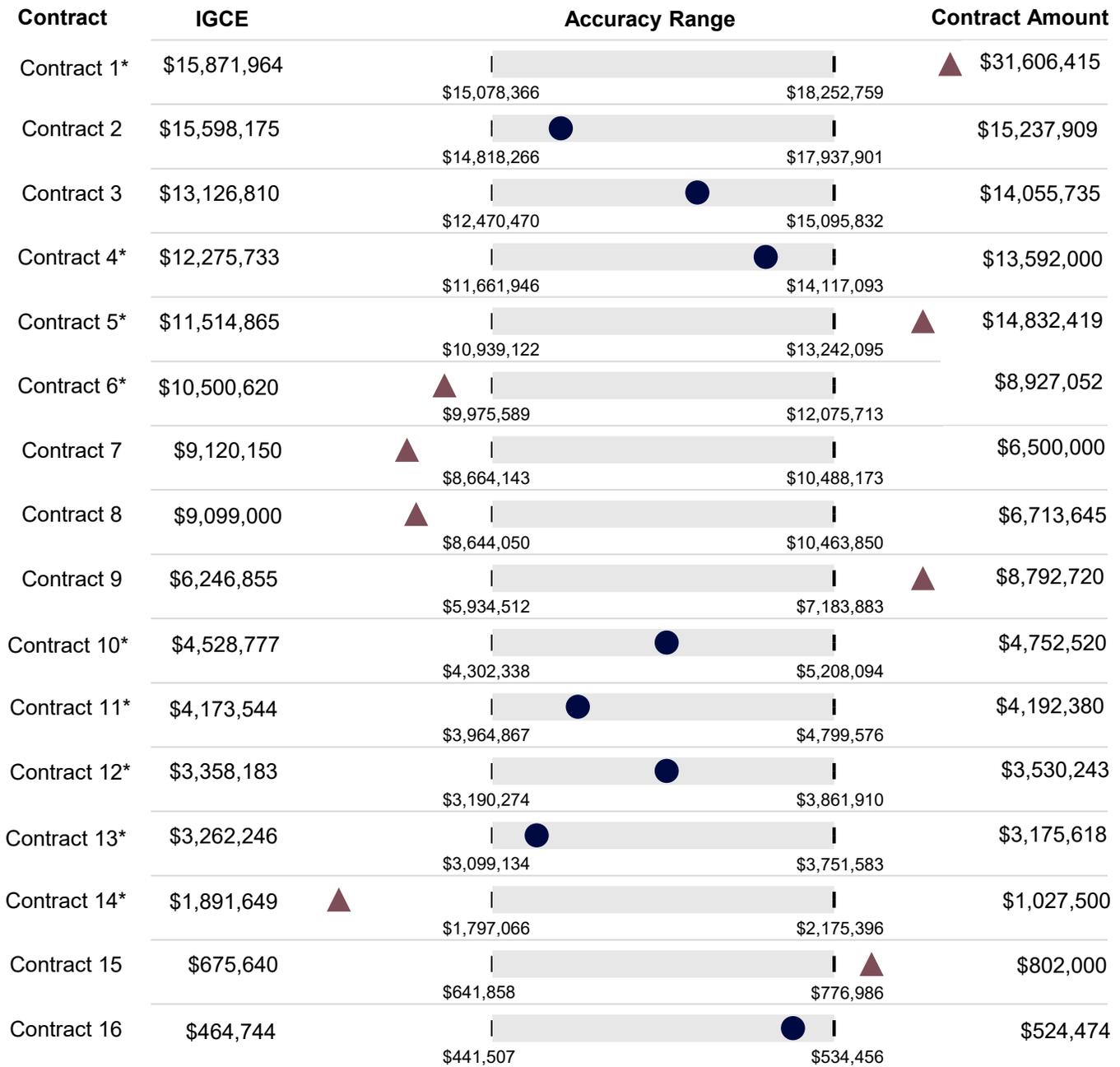
NPS maintains a complex portfolio of more than 75,000 assets, including historic structures, roads, bridges, trails, campgrounds, and utility systems. Many of these assets require highly skilled, technical craftsmen with specific, detailed knowledge of historical construction techniques to maintain and restore complex period structures. Due to the scope, complexity, and diversity of NPS deferred maintenance projects funded by GAOA, it can be difficult for estimators to gain a complete understanding of project requirements unless they perform site visits and speak to and collaborate with knowledgeable personnel onsite.

However, estimators did not always conduct site visits while preparing the IGCEs. Site visits can serve as a valuable tool to improve accuracy. According to the *National Park Service Cost Estimating Requirements Handbook*, site visits can help determine:

- Availability of major materials, labor crafts, and special equipment;
- Capability of local fabricators, pre-cast yards, concrete plants;
- Anticipated capacity of local contractors during proposed solicitation period;
- Local escalation experience; and
- Site accessibility and special conditions that may influence price proposals.

We determined that when the estimator performed a site visit, contract prices were within the IGCE accuracy range more often. Figure 8 shows that of the 16 IGCEs in our sample where estimators visited the site, 8 contract prices (50 percent) were within the accuracy range.

Figure 8: Contract Value Compared to IGCE Accuracy Range (with Site Visit)

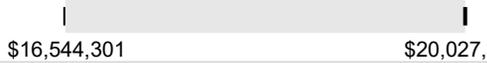


Legend: * 1 Proposal Received ● Contract Amount Within Range ▲ Contract Amount Outside Range

Source: DOI OIG

Conversely, as Figure 9 shows, of the 12 IGCEs where estimators did not visit the site, only 1 contract amount (8 percent) was within the IGCE accuracy range.

Figure 9: Contract Value Compared to IGCE Accuracy Range (Without Site Visit)

Contract	IGCE	Accuracy Range	Contract Amount
Contract 17	\$28,780,819	 ▲	\$35,499,950
Contract 18	\$24,215,397	▲ 	\$19,936,941
Contract 19	\$17,415,054	 ▲	\$22,150,000
Contract 20	\$16,262,362	▲ 	\$14,372,200
Contract 21	\$15,498,969	 ▲	\$20,244,633
Contract 22*	\$15,089,624	● 	\$14,364,183
Contract 23	\$9,530,339	▲ 	\$6,482,419
Contract 24	\$7,079,227	▲ 	\$6,603,214
Contract 25*	\$3,022,252	▲ 	\$1,819,390
Contract 26	\$2,985,930	 ▲	\$3,802,419
Contract 27*	\$2,814,408 ▲		\$1,167,700
Contract 28*	\$510,049		▲ \$849,033

Legend: * 1 Proposal Received ● Contract Amount Within Range ▲ Contract Amount Outside Range

Source: DOI OIG

Collaborating with parks staff onsite can provide valuable insight and help guide estimates. Even if estimators visit a site, if they do not leverage the expertise of staff working at the national park who are familiar with the project needs, it is still possible for an estimator visiting the site to struggle to comprehend the scope of the project.

In response to our observations during fieldwork, the Denver Service Center updated the *National Park Service Cost Estimating Requirements Handbook* in November 2023 to require estimators “to conduct a site visit to meet with the Park and inspect the project site for existing conditions, logistics, constructability vendor access, remoteness, and other issues specially related to the site which may not be seen on any existing documents.” At that time, the name of the handbook was also updated to the *National Park Service Denver Service Center Construction Cost Estimating Requirements Handbook*. We believe this update addresses some of the concerns we identified in our evaluation, and NPS would benefit from implementing this handbook requirement throughout the entirety of NPS, in addition to using it at the Denver Service Center. Additionally, to ensure this new requirement is fully implemented by all estimators preparing IGCEs, NPS should also update new contracts and task orders with A&E firms to include requirements for estimators to conduct site visits.

Inaccurate IGCEs’ Impact on Price Analysis and Negotiations

Inaccurate IGCEs lead to additional steps to validate cost information, as NPS contracting personnel must conduct additional price analysis to support the Government’s negotiation position. Additionally, inaccurate IGCEs can place NPS contracting personnel in a weaker position to negotiate fair and reasonable contract

prices, particularly for contracts awarded without competition. While competition can help ensure a fair and reasonable price in instances where only one contractor submits a proposal, the IGCE can become the starting point for price analysis and negotiations. We identified that 13 of the 28 contracts in our sample (46 percent) received only 1 proposal (see Figures 8 and 9).

As stated above, IGCEs were more accurate when estimators performed site visits. We also found that site visits had a positive effect on contract prices. For the 13 contracts that received only one proposal, 9 had a site visit. Of the nine contracts with a site visit, NPS was able to negotiate price reductions for five. The overall price reduction totaled \$3.5 million, which was a 4.7 percent less than the original proposed prices. Conversely, NPS did not negotiate any price reductions for the four contracts that did not have site visits.

Recommendations

We recommend that NPS:

2. Develop and implement accuracy and data validation checkpoints for independent government cost estimates prior to contract solicitation for Great American Outdoors Act projects funded by the National Parks and Public Lands Legacy Restoration Fund.
3. Develop servicewide guidance to aid National Park Service staff when determining whether National Park Service cost estimating personnel and contracted architect and engineer firms should be required to conduct site visits when developing construction estimates.

NPS Should Track IGCE Accuracy and Hold Contracted Estimators Accountable

We also found that NPS does not track and monitor IGCE estimate accuracy. While NPS officials were aware of factors contributing to IGCE inaccuracy, they did not have a method to track and monitor accuracy and instead rely on A&E firms' internal quality control practices. Although there is no requirement to track IGCE accuracy, the practice would provide insights and information into the factors driving inaccuracy, the types of projects that consistently have inaccurate estimates, and which A&E firms prepared accurate estimates. NPS' tracking of IGCE accuracy could not only lead to a reduction in inaccurate estimates but also reduce the risk that NPS would award work to A&E firms that consistently prepare inaccurate IGCEs. Further, more accurate IGCEs will aid NPS in its ability to negotiate fair and reasonable contract prices.

Recommendation

We recommend that NPS:

4. Develop a method to track and monitor independent government cost estimate accuracy for Great American Outdoors Act Legacy Restoration Fund construction projects and develop a process to evaluate trends that lead to inaccurate estimates, to include the types of construction projects.

Conclusion and Recommendations

Conclusion

NPS can improve its process for estimating and adjusting project cost estimates for construction contracts awarded using GAOA funds. While our review involved a sample of GAOA-funded projects and contracts, our findings highlight issues that are applicable across all NPS construction projects.

NPS established GAOA project budgets based on Class C conceptual estimates rather than more refined Class B Budgetary estimates. As a result, the budgetary estimates were less accurate and projects became more significantly over or under budget. Under budget projects can cause funds to sit idly throughout project completion and remain unavailable for other potential projects, while over budget projects risk delays in completion due to lack of funds to complete the work. However, when NPS performed a scope and cost validation assessment on Class C estimates, accuracy improved.

NPS obtained inaccurate IGCEs that it used for price analysis when awarding GAOA construction contracts, which placed NPS contracting personnel in a weaker position to analyze contractor price proposals and negotiate fair and reasonable prices.

We make four recommendations that, if implemented, will help NPS improve budgetary estimates and IGCEs, and thereby more accurately budget GAOA projects. The recommendations will also help NPS to save money through improved construction contract price negotiations.

Recommendations Summary

We provided a draft of this report to NPS for review. During the review process, we met with NPS to discuss its requested changes to the recommendations set forth in the draft report. Based on these discussions, we determined that it was appropriate to modify these recommendations to give NPS more flexibility in implementing the recommendations. NPS concurred with the four updated recommendations. In addition, NPS provided technical comments to the draft report which we have incorporated into the final report. We consider Recommendations 1 and 2 implemented and Recommendations 3 and 4 resolved. Below we summarize NPS' response to our recommendations, as well as our comments on its response. See Appendix 3 for the full text of the NPS response; Appendix 4 lists the status of each recommendation.

We recommend that NPS:

1. Develop and implement guidance requiring scope and cost validation assessments for Class C conceptual estimates before they are used for budgetary submission for Great American Outdoors Act projects funded by the National Parks and Public Lands Legacy Restoration Fund.

NPS Response: NPS concurred with our recommendation and stated that it prepared a *Facility Investment Strategy*, effective October 2023, which provides “guidance for navigating an Investment Review Board review and approval process to ensure that all NPS Capital Investments are in alignment with applicable laws, policies, and guidance, and to inform NPS leadership decision-making.” The *Facility Investment Strategy* requires a Scope and Cost Validation Report be submitted prior to pre-design activities of major construction projects, including the GAOA National Parks and Public Land Legacy Restoration Fund. The Scope and Cost Validation Reports are used to inform budgetary submissions if a higher class of estimate is not available.

OIG Comment: We consider this recommendation implemented based on NPS' response and supporting documentation. We reviewed the *NPS Facility Investment Strategy* and confirmed that it requires NPS to use Scope and Cost Validation Reports for budgetary submission for GAOA National Parks and Public Legacy Restoration Fund projects with Class C estimates.

2. Develop and implement accuracy and data validation checkpoints for independent government cost estimates prior to contract solicitation for Great American Outdoors Act projects funded by the National Parks and Public Lands Legacy Restoration Fund.

NPS Response: NPS concurred with our recommendation, stating that its *Facility Investment Strategy* establishes guidance for creating cost estimates during project development. Upon completion of a contract package and before solicitation, a review of the final scope, cost, and schedule is conducted to ensure alignment with all previous approvals. NPS stated that it is expected that, in general, a final contract cost estimate, scope, and schedule are documented and ready for solicitation.

OIG Comment: We consider this recommendation implemented based on NPS' response and supporting documentation. We reviewed the NPS *Facility Investment Strategy* and confirmed that it requires a cost estimate review prior to solicitation.

3. Develop servicewide guidance to aid National Park Service staff when determining whether National Park Service cost estimating personnel and contracted architect and engineer firms should be required to conduct site visits when developing construction estimates.

NPS Response: NPS concurred with our recommendation and stated that, in November 2023, NPS updated the Denver Services Center cost engineering and estimating standards to include requirements for architect and engineering cost estimating personnel to travel to the project site with members of the NPS project team, including park personnel, "to evaluate scope of work, site, remoteness challenges, logistics, local subcontractors, suppliers, etc., and insert findings into the cost estimate." NPS stated that it will develop additional servicewide guidance to aid NPS staff when determining whether cost estimating personnel and contracted architect and engineer firms should be required to conduct site visits when developing construction estimates.

NPS provided a November 2025 target implementation date.

OIG Comment: We consider this recommendation resolved based on NPS' response. We will consider this recommendation implemented when NPS provides documentation to support that it has established servicewide guidance to aid NPS staff when determining whether cost estimating personnel and contracted architect and engineer firms should be required to conduct site visits when developing estimates.

4. Develop a method to track and monitor independent government cost estimate accuracy for Great American Outdoors Act Legacy Restoration Fund construction projects and develop a process to evaluate trends that lead to inaccurate estimates, to include the types of construction projects.

NPS Response: NPS concurred with our recommendation and stated that it has implemented process improvements aimed at improving the confidence level of estimates. Additionally, NPS is developing a process to track and monitor estimate accuracy. NPS stated that the Denver Services Center Technical Branch cost estimating specialists have requested access to the Financial and Business Management System to track actual contract award amounts and are working with the Cost Estimating Software System to develop a historical cost database that can be used to validate estimates in the future. NPS further stated that the Denver Services Center, working with the Major Construction Division, will evaluate software and tools to track cost variances and trends for GAOA Legacy Restoration Fund major construction investments across the service.

NPS provided a November 2025 target implementation date.

OIG Comment: We consider this recommendation resolved based on NPS' response. We will consider this recommendation implemented when NPS provides documentation to support that it has developed a process to track and monitor government estimate accuracy.

Appendix 1: Scope and Methodology

Scope

We evaluated the National Park Service's (NPS') process for estimating and adjusting project costs for construction contracts awarded using Great American Outdoors Act (GAOA) funding. Our scope included all contracts for GAOA projects awarded during fiscal years (FYs) 2021 and 2022.

We reviewed all GAOA-funded contracts awarded during our scope and performed analysis on all contracts that had individual budget submissions and independent government cost estimates (IGCEs). We evaluated NPS project budgetary estimates by comparing the project budgetary estimate to the eventual contract price. We eliminated two projects in our scope from our analysis because the contracts in our scope were only for a portion of their overall projects, so we performed this analysis on 25 of the 27 projects. We evaluated contract IGCEs by comparing the IGCE to the eventual contract price for all 27 projects. For one project, NPS awarded two separate contracts, so we performed this analysis on 28 contracts. The 27 projects we reviewed were dispersed across the continental United States and had approved construction funding totaling \$323 million.

Methodology

We conducted our evaluation in accordance with the *Quality Standards for Inspection and Evaluation* as put forth by the Council of the Inspectors General on Integrity and Efficiency. We believe that the work performed provides a reasonable basis for our conclusions and recommendations.

We evaluated NPS' construction cost estimating activities for GAOA-funded contracts awarded during FYs 2021 and 2022. We compared budgeted amounts to contract awards, reviewed costs to develop construction cost estimates, assessed how NPS managed and updated budgets and cost estimates during a period of high inflation, and reviewed NPS price analysis and negotiations for GAOA construction contracts.

We assessed whether internal control was significant to the evaluation objective. We determined that NPS' control and monitoring activities and the following related principles were significant to the evaluation objective:

- Management should design control activities to achieve objectives and respond to risks.
- Management should establish and operate monitoring activities to monitor the internal control system and evaluate the results.

We tested the operation and reliability of internal controls over activities related to our evaluation objective. Our tests and procedures included:

- Obtaining and reviewing NPS cost estimating policies.
- Interviewing NPS GAOA and contracting management and personnel.
- Interviewing management and personnel at NPS-contracted architect and engineer firms.
- Reviewing contract files, including contract awards, modifications, cost estimates, invoices, and supporting documentation.

We found deficiencies in internal control resulting in our finding of inaccurate IGCEs. The internal control deficiencies we found are discussed in the "Results of Evaluation" section of this report.

We relied on computer-generated data provided by NPS. Specifically, we received contract files electronically, which were exported from NPS' computer-based contract management system. We found no discrepancies in the contract files that resulted of that system. We determined that the data we used as a basis for our findings and conclusion were sufficiently reliable for the purposes of this evaluation.

Appendix 2: GAOA Construction Projects for Fiscal Years 2021 and 2022

The following table displays the National Park Service (NPS) Park, location, number of contracts, and approved construction funding for each of the 27 Great American Outdoors Act (GAOA)-funded construction projects we reviewed.¹⁸ Generally, NPS awarded one contract for each project, however it divided the project located at Saratoga National Historical Park into two contracts.

NPS Park	State	No. of Projects	No. of Contracts	Approved Construction Funding
Colonial National Historical Park	VA	1	1	\$8,857,000
Cuyahoga Valley National Park	OH	2	2	\$23,974,396
Delaware Water Gap National Recreation Area	PA	1	1	\$16,394,248
Fort Vancouver National Historic Site	WA	1	1	\$15,211,735
Gateway National Recreation Area	NY, NJ	1	1	\$18,055,849
Golden Gate National Recreation Area	CA	1	1	\$30,997,678
Grand Teton National Park	WY	2	2	\$18,216,936
Independence National Historical Park	PA	1	1	\$16,800,900
Lake Mead National Recreation Area	NV	1	1	\$3,178,467
Mammoth Cave National Park	KY	2	2	\$15,792,716
Minute Man National Historical Park	MA	1	1	\$23,140,504
National Mall and Memorial Parks	DC	2	2	\$6,523,797
Rocky Mountain National Park	CO	1	1	\$22,840,000
Saratoga National Historical Park	NY	1	2	\$5,014,720
Sequoia & Kings Canyon National Parks	CA	1	1	\$722,681
Shenandoah National Park	VA	2	2	\$24,107,000
Statue Of Liberty National Monument	NY	1	1	\$18,435,000
Yosemite National Park	CA	5	5	\$54,702,492
Totals		27	28	\$322,966,119

¹⁸ We removed the projects at Delaware Water Gap National Recreation Area and Gateway National Recreation Area from our analysis of Class C estimates because the contract was only for a portion of the project, so a comparison of the project budget to the contract price would not have been valid.

Appendix 3: Response to Draft Report

The National Park Service's response to our draft report follows on page 22.



United States Department of the Interior

NATIONAL PARK SERVICE
1849 C Street, NW
Washington, DC 20240

IN REPLY REFER TO:
9.A.2 (700-PPFL)

Memorandum

To: Acting Assistant Inspector General for Audits, Inspection, and Evaluations,
Office of the Inspector General, Department of the Interior

From: Comptroller, Exercising the Delegated Authority of the Director, **JESSICA BOWRON**
National Park Service

Subject: National Park Service (NPS) responses to: Office of Inspector General (OIG)
Draft Evaluation Report titled: The National Park Service Can Improve Cost
Estimates for Great American Outdoors Act Construction Contracts (GAOA)
(Report No. 2022-CGD-051)

Digitally signed by
JESSICA BOWRON
Date: 2025.02.13
13:49:39 -05'00'

Thank you for the opportunity to review and comment on the subject OIG Draft Report. We appreciate OIG's review of how NPS developed and adjusted budgetary estimates for GAOA projects and the accuracy of those estimates. The following are comments on the report document and are intended to provide additional clarification or correction. Please reach out if you would like to discuss in more detail:

- Pg. 1 – Findings paragraph – References two different number of projects reviewed: 25 and 28. Please confirm total projects reviewed throughout the document.
- Pg. 1 – Recommendations – Change number of recommendations from “six” to “four”.
- Pg. 2 – Objective second paragraph – Correct this sentence, “The scope of our review included NPS estimates for all GAOA construction projects that had contracts issued during fiscal years (FYs) 2021 and 2022.” The scope only included GAOA construction projects that NPS *awarded* during FY2021 and FY2022. It did not include construction projects in planning, design, or solicitation phases or projects delivered by Federal partners.
- Pg. 3 – Title of Figure 2 – Change the second “FY 2021” to “FY 2022”.
- Pg. 5 – Step 2: paragraph – Delete “and the Denver Service Center (DSC) Major Construction Division” and the word “DSC”. The Major Construction Division is the NPS GAOA Program Management Office (PMO) that identifies GAOA funded projects. The Denver Service Center is a separate organization focused on project delivery and does not perform any Step 2 functions.
- Pg. 5 – Step 2: paragraph – Delete reference to “geographic distribution”. Geographic distribution based on deferred maintenance and repair backlog was a consideration in DOI GAOA PMO guidance that did not come into play until development of the FY

2023 project list, which is beyond the scope of the OIG evaluation (FY21 -FY22 projects awarded by the end of FY22).

- Pg. 5 – Step 3: paragraph – Please update the following inaccurate sentence, “The Consolidated Appropriations Acts for FYs 2022 and 2023 allowed NPS to reallocate excess project funding or make project-to-project transfers throughout the performance of an approved construction project only if the amount was less than 10 percent of the construction costs.” The movement of funds between projects was not permitted regardless of percentage of change. Only movement of funding from the Contingency Fund to Projects was permitted. Excess project funding could only be moved to the Contingency Fund in the next budget submission or through the recast process.
- Pg. 6 – Step 7: paragraph – It is unclear what the following sentence is trying to convey, “After this period, the project is closed to further expenditures and tracking.” Also, please correct the following sentence, “Additionally, if a project has excess project funds, once a project is closed, NPS can transfer these excess project funds to the Contingency Fund.” Excess project funding can only be moved to the Contingency Fund in the next budget submission or through the recast process.

Below are the NPS responses to each recommendation:

Recommendation #1: Develop and implement guidance requiring scope and cost validation assessments for Class C conceptual estimates before they are used for budgetary submission for Great American Outdoors Act projects funded by the National Parks and Public Lands Legacy Restoration Fund.

Response: Concur

Responsible Official: Division Manager, Major Construction Division

Target Date of Implementation: Completed

Implemented Actions: The NPS Facility Investment Strategy (FIS), effective October 2023, provides guidance for navigating an Investment Review Board (IRB) review and approval process to ensure that all National Park Service (NPS) Capital Investments are in alignment with applicable laws, policies, and guidance, and to inform NPS leadership decision-making. The strategy describes processes and requirements to follow when considering the development, submission, and execution of Capital Investment proposals and aligns with the Department of the Interior (DOI) asset management guidance. The FIS requires a Scope and Cost Validation Report (SCVR) be submitted prior to pre-design activities of major construction projects, including the GAOA National Parks and Public Land Legacy Restoration Fund (LRF). The SCVR is used to establish a consistent understanding of project scope, formulated budgets, and schedule among all project stakeholders. It determines if the proposed solution’s scope and cost are accurate, given physical and administrative/market conditions may have changed since the project was approved at a concept level. The Major Construction Division (MCD) reviews SCVRs for major investments and briefs fund source managers and NPS leadership on a biweekly basis. The SCVR is used to inform budgetary submissions, if higher class of estimates are not available.

Recommendation #2: Develop and implement accuracy and data validation checkpoints for independent government cost estimates prior to contract solicitation for Great American Outdoors Act projects funded by the National Parks and Public Lands Legacy Restoration Fund.

Response: Concur

Responsible Official: Division Manager, Major Construction Division and Director, Denver Service Center

Target Date of Implementation: Completed

Implemented Actions: The NPS Facility Investment Strategy requires a submission at the completion of project planning and predesign (aka Gate 3 Submission). To pass this gate, a project must be well developed, all predesign activities complete, and a Class B cost estimate developed. A technical review by subject matter experts is conducted to ensure consistency with previous submittals, as well as to confirm that previous comments or stipulations have been addressed and align with all prior Investment Review Board (IRB) and fund source manager approvals. Any deviations must be clearly articulated, justified, and documented at this gate. Upon completion of a contract package and before solicitation, a review of the final scope, cost, and schedule is conducted to ensure alignment with all previous approvals. This may occur at different stages of project design development, depending on the acquisition strategy. In general, the expectation is that a final contract cost estimate, scope, and schedule is documented and ready for solicitation. A Gate 4 Director's Approval Form is required to release the construction funds. The Associate Director (AD) of the Park Planning, Facilities & Lands Directorate (PPFL), as the Chair of the Bureau IRB, has delegated approval from the NPS Director to approve with concurrence from the Washington Area Support Office Budget Office.

The Denver Service Center (DSC) is the primary construction project execution office, managing most major construction projects and is the primary delivery office for the GAOA LRF program. The NPS also uses other federal agencies and federally recognized partners to deliver construction projects. All park, region, DSC, and partner managed GAOA LRF projects follow the FIS process. In addition, for DSC delivered projects, the Technical Branch provides Quality Assurance reviews of the A&E cost estimates at each design deliverable milestone. This has been a long-time standard practice. On a typical Design/Bid/Build project, this review would occur at Predesign, Schematic Design, Design Development, 100% Draft Construction Documents (CD), and 100% Complete CD design submissions. The DSC Technical Branch provides review comments and mark ups of the estimates. Technical specialists also participate in meetings with the A&E Design team and the Estimator to ensure the accuracy of the estimate as it moves through stages of refinement.

Recommendation #3: Develop servicewide guidance to aid National Park Service staff when determining whether National Park Service cost estimating personnel and contracted architect, and engineer firms should be required to conduct site visits when developing construction estimates.

Response: Concur

Responsible Official: Division Manager, Major Construction Division and Director, Denver Service Center

Target Date of Implementation: Complete in November 2025.

Implemented Actions: The NPS has implemented some process improvements aimed at improving the confidence level of cost estimates. All DSC managed construction projects are designed and estimated by A&E consultants and their subcontractors. The DSC Cost Engineering & Estimating Standards were updated in November 2023 to include requirements for A&E cost estimating personnel to travel to the project site with members of the NPS project

team, including park personnel, to evaluate scope of work, site, remoteness challenges, logistics, local subcontractors, suppliers, etc., and insert findings into the cost estimate. The A&E cost estimators are an integral part of the design team and actively participate in major design meetings and value methodology workshops and are required to validate the impact of the current conditions, site specific remoteness factors, design constructability, feasibility, and market research interviews with park staff and local contractors. This new requirement has also been added to DSC's A&E scopes of service templates. These updated requirements and templates are currently available on the DSC workflows (A) for all NPS staff to use servicewide.

The NPS will develop additional servicewide guidance to aid National Park Service staff when determining whether cost estimating personnel and contracted A&E firms should be required to conduct site visits when developing construction estimates.

Recommendation #4: Develop a method to track and monitor independent government cost estimate accuracy for Great American Outdoors Act Legacy Restoration Fund construction projects and develop a process to evaluate trends that lead to inaccurate estimates, to include the types of construction projects.

Response: Concur

Responsible Official: Division Manager, Major Construction Division and Director, Denver Service Center

Target Date of Implementation: In progress. Complete in November 2025.

Implemented Actions: The NPS has implemented process improvements aimed at improving the confidence level of cost estimates, however, Independent Government Estimates (IGE) are generally prepared well in advance of contract procurement. The procurement administrative lead time for most major construction projects is over 230 days for design-bid-build and 300 days for design-build. The IGEs, as of the date of the estimate, are used to price direct unit costs and an adjustment for inflation is added to the bottom-line total of the estimate. This escalation is based on a careful analysis of market trends and published construction economic predictions available at the time the estimate is prepared. The IGE is projected to the proposed mid-point of construction after contract award; however, the actual mid-point of construction may be delayed due to funding issues, procurement processes and reviews, APAC reviews, and schedule delays resulting from insufficient or lack of fair and reasonable proposals. Schedule impacts may result in significant cost variances between the IGE and construction contract award amount.

A process to track and monitor IGE accuracy is under development. DSC Technical Branch cost estimating specialists have requested access to the Financial and Business Management System (FBMS) system to track actual contract award amounts and are working with the Cost Estimating Software System (CESS) to develop a historical cost database that can be used to validate estimates in the future. The DSC, working with the MCD, as the NPS construction policy office, and the GAOA PMO, will evaluate software and tools to track cost variances and trends for GAOA LRF major construction investments across the service.

Appendix 4: Status of Recommendations

Recommendation	Status	Action Required
<p>[2022-CGD-051-01] We recommend that the National Park Service (NPS) develop and implement guidance requiring scope and cost validation assessments for Class C conceptual estimates before they are used for budgetary submission for Great American Outdoors Act projects funded by the National Parks and Public Lands Legacy Restoration Fund.</p>	Implemented	No action is required.
<p>[2022-CGD-051-02] We recommend that NPS develop and implement accuracy and data validation checkpoints for independent government cost estimates prior to contract solicitation for Great American Outdoors Act projects funded by the National Parks and Public Lands Legacy Restoration Fund.</p>	Implemented	No action is required.
<p>[2022-CGD-051-03] We recommend that NPS develop servicewide guidance to aid National Park Service staff when determining whether National Park Service cost estimating personnel and contracted architect and engineer firms should be required to conduct site visits when developing construction estimates.</p>	Resolved	We will track implementation.
<p>[2022-CGD-051-04] We recommend that NPS develop a method to track and monitor independent government cost estimate accuracy for Great American Outdoors Act Legacy Restoration Fund construction projects and develop a process to evaluate trends that lead to inaccurate estimates, to include the types of construction projects.</p>	Resolved	We will track implementation.



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