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# PERFORMANCE AUDIT OF THE LA JOLLA CHILDREN'S POOL LIFEGUARD STATION

Several Issues Lead to Cost Increases and Lengthy Timelines for Completion. Some of These Issues Could Have Been Identified Earlier in the Design Process and May Have Reduced the Project Cost and Duration.

Office of the City  
Auditor

City of San Diego





# Highlights

## Why OCA Did This Study

As part of our Capital Improvement Program audit work, we were asked to review a specific capital improvement project, the La Jolla Children's Pool Lifeguard Station (Lifeguard Station) due to concerns over the construction of the station. The Lifeguard Station cost over \$4.3 million dollars and took three years to complete. There were also concerns over the quality of the final product.



## What OCA Recommends

We made three recommendations for the Public Works Department (Public Works) to help ensure that lifeguard station projects are timely and within cost expectations. We recommend that Public Works, in conjunction with the asset-owning departments, should conduct scoping/partnering meetings early in the process to discuss lifeguard station program needs, special scope requests, and the impacts of codes and regulations on the project's overall cost and schedule. Additionally, we recommend that Public Works should implement strict considerations for product and material applications applicable to the lifeguard station environmental and occupant requirements. Finally, we recommend that for facilities located in harsh environments such as a marine environment, Public Works should have a supplemental maintenance plan in place for high risk materials and components.

Management agreed to implement all recommendations. For more information, contact Eduardo Luna at (619)533-3165 or [cityauditor@sandiego.gov](mailto:cityauditor@sandiego.gov)

**City of San Diego, Office of the  
City Auditor**

## Audit of the La Jolla Children's Pool Lifeguard Station

### What OCA Found

The La Jolla Children's Pool Lifeguard Station (Lifeguard Station) was a challenging project that was built in an environmentally sensitive location, which had to meet community expectations as well as Fire-Rescue Lifeguard requirements. Further complicating the project was that construction operations were limited to 6 ½ months per year due to the seal pupping moratorium.

Public Works used a method of project delivery—design-build—that was not the traditional method for the City. In this type of project delivery, one entity provides engineering design and construction services.

To perform an analysis of the Lifeguard Station construction, the Office of the City Auditor hired a construction consultant to provide an expert opinion regarding the delays in completion and associated budget overruns, and whether these delays and overruns were reasonable. The consultants were also asked to perform a limited assessment of the quality of workmanship and materials based on a site visit and discussions with San Diego Fire-Rescue staff.

After review of the Lifeguard Station project the consultant provided an opinion with the following conclusions:

- Costs exceeding the original contract amount of \$2,707,127 was not due to a poorly bid or executed contract, but rather due to not factoring in design requests and upgrades well into the construction phase.
- Changes in design and special requests not only added to the cost, but also prolonged the completion date.
- The associated costs of prolonged environmental monitoring fees and temporary facilities caused by extended construction also impacted the overall cost.
- Prolonged completion date was also caused by construction stoppage due to nesting on the construction site by a migratory bird; unforeseen site conditions which caused additional work; and plumbing and sewer systems problems that required post-construction upgrades.
- The actual time spent on construction operations seemed reasonable for a project of this scope considering the design changes that were made throughout the project.

There was also a concern about quality after the Lifeguard Station was built because of rusting of the building exterior due to surface salt accumulation. According to Public Works, this has since been addressed by the builder.

Identifying special requests and needed design changes earlier in the design process would have given a better original estimation of project cost, and may have reduced the total project cost if project duration could have been shortened.





## THE CITY OF SAN DIEGO

September 19, 2017

Honorable Mayor, City Council, and Audit Committee Members  
City of San Diego, California

Transmitted herewith is a performance audit report of the La Jolla Children's Pool Lifeguard Station capital improvement project. This report was conducted in accordance with the City Auditor's Fiscal Year 2016 Audit Work Plan, and the report is presented in accordance with City Charter Section 39.2. The report is a PowerPoint presentation with talking points, and the Audit Objectives, Scope, and Methodology are presented on pages 3 and 4. Management's responses to our audit recommendations are presented after page 30 of this report.

We would like to thank staff from the Public Works Department, Fire – Rescue Department, and Lifeguard Services for their assistance and cooperation during this audit. All of their valuable time and efforts spent on providing us information is greatly appreciated. The audit staff members responsible for this audit report are Chris Kime, Sunny McLernon and Kyle Elser.

Respectfully submitted,

Eduardo Luna  
City Auditor

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# Office of the City Auditor

## Performance Audit of the La Jolla Children's Pool Lifeguard Station

Several Issues Led to Cost Increases and Lengthy Timelines for Completion. Some of These Issues Could Have Been Identified Earlier in the Design Process and May Have Reduced the Project Cost and Duration.

OCA-18-004



### Why we did this audit:

As part of our Capital Improvement Program audit work, we were asked to review a specific capital improvement project, the La Jolla Children's Pool Lifeguard Station (Lifeguard Station), due to concerns over the construction of the lifeguard station. The Lifeguard Station cost over \$4.3 million\* dollars and took three years to complete. There were also concerns over the quality of the final product.

### What we found:

Additional costs were not considered until well into the construction phase of the \$2.7 million design-build contract. The additional costs included pre-existing site conditions, infrastructure upgrades, lifeguard requests, and temporary facilities that were not included in the initial project. It is also important to note that the \$2.7 million was not the total budgeted cost of the Lifeguard Station. The total project amount authorized was \$3.6 million and included City internal charges and additional soft costs.

The construction schedule was halted by three seal pupping moratoriums lasting from December 15<sup>th</sup> to June 1<sup>st</sup> in 2014, 2015, and 2016. Other environmental issues, such as obtaining environmental permits and migratory bird nesting, also affected the schedule.

There were also delays for unforeseen site conditions, unplanned facilities upgrades, and client requests. Rusting of the exterior metal was also observed.

**We Recommended:**

1. Public Works, in conjunction with the asset-owning departments, should conduct scoping/partnering meetings early in the process to discuss lifeguard station program needs, special scope requests, and the impacts of codes and regulations on the project's overall cost and schedule. (Priority 2)
2. Public Works should implement strict considerations for product and material applications applicable to Lifeguard Station environmental and occupant requirements. (Priority 3)
3. For facilities located in harsh environments such as a marine environment, Public Works should have a supplemental maintenance plan in place for high risk materials and components. (Priority 3)

The Public Works Department has agreed to implement the recommendations.

\* This is an estimated amount as of January 27, 2017. Estimate is based on City accounting reports, vendor invoices, and Public Works' project cost reconciliations.

## Audit Objective

Review the La Jolla Children's Pool Lifeguard Station project:

- Why did the project exceed the budget and timeline for completion?
- Did the quality of the final project meet expectations?

## Audit Scope & Methodology

- Obtained documentation such as request for proposals, contracts, payments, project specifications, correspondence, and project schedules from the Public Works Department.
- Reviewed Public Works' project narrative, design/build timeline, and project cost breakdown.
- Contracted with GM Construction Group, Inc. (GMCG) to review the project construction timeline and to provide an opinion as a construction expert whether delays and budget overruns were reasonable. GMCG also did a walkthrough and noted any apparent quality issues.
- Internal control testing was limited to determining if objectives described in the Public Works design-build criteria were achieved in construction.
- Time period reviewed was FY 2001 to FY 2017.

Our audit scope was limited to the construction of the Lifeguard Station. The period reviewed was FY 2001 to FY 2017 with the primary focus on the construction period of calendar years 2013 to 2016.

The Public Works Department provided project documentation and GM Construction Group was engaged to provide an opinion as a construction expert on project cost and schedule. They also provided an observation on the quality of the final product based on a site visit and interviews. The consultant is a licensed general contractor in California.

The Public Works Department has a Design-Build Project Management Standard Operating Procedure which serves as a guideline for the design-build method of project delivery.

## Background

### The project included:

- Demolition of previous lifeguard station; and
- Construction of a new three story 1900 square foot station.
  - Observation level has an observation area, communications equipment, and a perimeter catwalk.
  - Plaza level has workstations, an observation room, a kitchen, a first aid station and an ADA accessible bathroom.
  - Lower level has restrooms (ADA accessible, public, and private), showers, storage, and a sewage pump room.

It is important to note that the structure includes both lifeguard facilities and public restrooms. According to the Public Works Department, the original structure was a lifeguard observation tower and public restrooms with showers. This design was carried through to the construction of the new lifeguard station.



## Background

- The original tower was built in **1967** and included an observation tower and public restrooms.
- In **1994**, a City department issued a memorandum addressing the structural integrity of the lifeguard tower.
- The La Jolla Community Planning Association approved the new lifeguard tower by a vote of 8-6 in **2008**.
- The previous lifeguard tower was declared a public nuisance in **September 2010**.

Preliminary design work began with RJC Architects in 2001 with a contract of \$96,100 which was amended in 2010 to a total of \$167,350. According to Public Works, RJC Architects had expended the contract funds by June 2010 after developing several iterations of the lifeguard station and meeting with community groups. RJC did not wish to continue the design and instead worked on bridging documents and obtaining Site Development and California Coast Development permits.

In September 2010, the City of San Diego Code Compliance Division (Code Compliance) declared the previous lifeguard station at La Jolla Children's Pool a public nuisance due to the dilapidated condition and recommended demolition as the most appropriate remedy. Code Compliance noted that "it appears the structure has been poorly maintained and neglected over the years which has resulted in the deterioration of the structural elements of the building."

## Background

- In **January 2012**, a Request for Qualifications was advertised and then interviews were conducted with four short-listed design builders.
- Stronghold Engineering was awarded the contract and a limited notice to proceed was issued in **December 2012**.
- The new lifeguard station and public restrooms were opened **July 2016**. The public restrooms were closed for repairs in July, and re-opened in **November 2016**.

For design-build projects, Public Works issues a Request for Qualifications (RFQ) and from this develops a “short list” of proposers best qualified to develop the project. According to the Public Works Design-Build Standard Operating Procedure, at this stage project requirements have not been identified sufficiently to request specific, meaningful information relative to project approach. Rather, evaluation factors may include but are not limited to; experience of firms, capability to perform the work, relevant past performance, commitment to customer satisfaction, safety record, and project understanding. Legal organizational documents, surety commitments, updated financials, and key personnel are evaluated in the Request for Proposal (RFP) stage.

A short list of five contractors was developed from the RFQ process and after the bids (also called RFP's) were evaluated, a City selection panel awarded the contract to Stronghold Engineering, Inc. Demolition of the previous lifeguard tower and public restrooms began in August 2013.

The Lifeguard Station and comfort station (public restrooms) opened in July 2016, but the restrooms were closed in the same month due to sewage system problems and then re-opened in November of 2016.



The observation level has an observation area, communications equipment, and a perimeter catwalk.

The plaza level has workstations, an observation room, a kitchen, a first aid station and an ADA accessible bathroom.

The lower level has restrooms (ADA accessible, public and private), showers, storage, and a sewage pump room.



Lifeguard Station nearing completion.

## Why did the project exceed the budget and timeline for completion?

- It is the consultant's opinion that additional cost exceeding the original contract amount were due to not considering other costs until well into the construction phase of operations. Higher costs were not the result of a poorly bid or executed contract.
- It is the consultant's opinion that the actual time spent on construction seemed reasonable for a project of this scope considering the changes in design, special requests, and environmental factors.

### GM Construction Group, Inc. Preliminary Analysis

#### *Cost Analysis*

GM Construction Group (GMCG) stated it was their opinion that additional costs exceeding the original contract amount with Stronghold Engineering, Inc. totaling \$2,707,127 was not due to a poorly bid/executed contract, but rather due to not factoring in design requests/upgrades (i.e., city facilities upgrades, ADA compliance/upgrades to site access, lifeguard requests/requirements, code compliance upgrades etc.) well into the construction phase of operations. A few examples are mentioned below:

- Lifeguard requests/requirements that were not established prior to the commencement of construction had a substantial impact on the cost and completion date of the project. These requests/requirements also affected the Lifeguard Station design.
- Above ground macerator pump was needed to accommodate the disposal of discarded public waste items. This system was redesigned during construction and later upgraded post-construction when the system failed.
- Mid-construction changes in the ADA code required changes/upgrades to the pre-existing site pedestrian access. Certain pre-existing conditions did not meet the code requirements and had to be changed.

These conditions may have been unforeseen at the time of design/proposal and significantly added to the overall construction costs (including future repairs). Environmental monitoring fees and temporary facilities also impacted the overall cost. Monitoring and temporary facility rental costs were compounding due to a lengthened construction schedule. Changes in design and special requests, as mentioned previously, ultimately prolonged the final completion date. These compounding costs were not factored into the original construction costs.

### ***Construction Schedule Analysis***

It is GMCG's opinion that the actual time spent on construction operations seem reasonable for a project of this scope considering the changes in design, special requests, and environmental factors.

GMCG was able to analyze and delineate important dates in the timeline of construction for the Lifeguard Station. Construction operations were limited due the annual seal pupping moratorium. This limited the construction timeframe to approximately 6 ½ months per calendar year. Other environmental related issues such as seal permits and migratory birds (seagulls) impacted the construction schedule significantly, thus delaying the completion date. Architectural/Structural design changes were ongoing into 2014 which indicate multiple changes/requests were being processed well into the construction phase of operations. Multiple delays due to unforeseen pre-existing site conditions such as infrastructure incompatibility, landscaping, facilities upgrades (sewer), and ADA compliance changes during construction delayed the progress of construction activities.

GMCG was not able to precisely establish an exact impact on the construction schedule due to changes and/or performance issues during construction. An analysis of project daily entries logged by an onsite supervisor of construction activities are needed to establish a cohesive timeline of events beginning at the procurement/mobilization stage to final inspections. Based on various documents analyzed, GMCG was able to piece together a timeline of events that shows an approximate completion time of 365 working days from mobilization to completion. Working days should be considered five (5) days a week outside the seal pupping moratorium.

## Examples of Contract Changes that added Time and Money to the Project

Description	Amount Charged	Days Added
Late start of contract for Seal Moratorium, Incidental Harassment Authorization receipt and relocation of seal camera	\$0	96 days
Upgrade sewer pump and basin	\$35,120	1 day
Upgrade sewer pump to include stainless steel parts	\$41,820	0 days
Relocate storm drain pipe	\$105,304	25 days
Portable toilets	\$33,410	0 days
Baby seagull on jobsite	\$0	39 days
Additional construction work from builder list	\$37,374	16 days
Replace concrete slab for ADA compliance and proper drainage	\$26,000	10 days
Bird proofing the building roof	\$25,364	1 day
Lifeguard exterior storage	\$18,539	0 days

The original Stronghold Engineering, Inc. authorized contract amount was \$2,707,127 with a project duration of 220 working days.

Over the life of the contract, change orders and contingency fund authorizations were used to charge over \$575,000 and add 281 working days to the Stronghold Engineering contract.

## Other Factors added Time and Money

### No construction due to Harbor Seal pupping season

- December 15, 2013–June 1, 2014 (~120 working days)
- December 15, 2014–June 1, 2015 (~120 working days)
- December 15, 2015–June 1, 2016 (~120 working days)

Environmental Monitoring	\$245,062
Preliminary Design	\$167,350
City Internal Charges	\$595,978
<b>Total</b>	<b>\$1,008,390</b>

In addition to contract change orders that increased construction time, there were mandatory construction work stoppages for the Harbor Seal pupping season.

There were also other project expenses for the Lifeguard Station such as environmental monitoring, preliminary design work, and City internal charges that added to the total project cost.



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<b>Total Project Cost</b>	
As of January 27, 2017	
<b>Total Project Costs</b>	<b>\$4,324,773</b>
Hard Cost	\$3,316,383
Soft Cost	<u>\$1,008,390</u>
<b>Total Cost</b>	<b>\$4,324,773</b>
Preliminary Design	\$ 167,350
City Internal Charges	\$ 595,978
Environmental Monitoring	<u>\$ 245,062</u>
Total Soft Cost	\$1,008,390

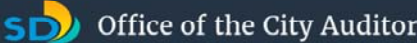
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Total estimated project cost as of January 27, 2017 was \$4,324,773 which was an increase of 21 percent over the beginning project budget of \$3,591,481. Construction costs are often categorized by hard cost and soft cost.

Hard cost represent amounts paid to the contractor for materials, labor, subcontractors, vendors, and general condition costs to construct all elements of a project including all site work, utility, and infrastructure work.

Soft costs are of an intangible nature such as contract administration, project management, and various fees. According to the California Benchmarking report for 2016, environmental monitoring and mitigation is not considered a hard cost of construction. Architectural fees and design work are generally considered soft cost, but in a design-build contract, design fees are included in the contract amount.

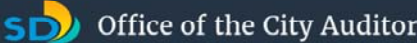
Therefore, in the Lifeguard Station contract some design soft cost is included in the \$3,316,383 total construction hard cost. This makes it difficult to compare design and construction management (City internal charges) cost to the California Benchmarking report which only has comparisons for the design-bid-build method of project delivery.

		
<b>Cost Breakdown by Vendor</b>		
Stronghold Engineering	\$3,202,431	Design-build contractor
Accent Electric	\$ 30,944	Communication equipment
GM Business Interiors	\$ 24,853	Desk and seating furniture
OAR Industries	\$ 24,525	Public showers contractor
Atos	\$ 12,144	Technology services
Smith Shades	\$ 11,184	Shading materials
United Site Service	\$ 4,566	Portable restroom and fence
Baker Marine	\$ 2,807	Binocular installation
Luth & Turley	\$ 2,604	Sewage spill emergency clean-up
Arenson Office Furniture	\$ 326	Observation chair installation
<b>Total Hard Cost</b>	<b>\$3,316,383</b>	
Hanan & Associates (soft)	\$ 245,062	Marine biology services
RJC Architects (soft)	\$ 167,350	Architectural consultant services
<b>Total Vendor Cost</b>	<b>\$3,728,795</b>	<b>(+\$595,978*=\$4,324,773)</b>
		*city charges

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The total vendor cost was \$3.73 million which does not include City internal charges. The bulk of the cost was the \$3.2 million design-build contract with Stronghold Engineering, Inc. According to Public Works, other notable vendor cost were:

- Hanan & Associates, Inc. conducted the environmental monitoring required by the National Marine Fisheries Services permit for the Incidental Harassment Authorization. The City was invoiced from December 2010 to July 2016 for permit applications and construction monitoring to prevent harassment of the seals and birds.
- RJC Architects conducted an initial study of the demolition and replacement of the existing Lifeguard Station and provided assistance to the City to respond to public comment.
- Accent Electronics installed the exterior public address system, keyless entry, and two-way intercom.
- GM Business Interiors supplied the furniture for the Lifeguards including storage cabinets, workstations, stools, chairs, benches, and tables.
- OAR Industries Corp. performed the concrete demolition, plumbing, and poured the new concrete for the public showers.
- Atos installed the network infrastructure at the facility.

	
<h2>Public Works Cost Breakdown</h2> <p>As of January 27, 2017</p>	
<p><b>Stronghold Engineering, Inc.</b></p>	
Original Contract Amount	\$2,707,127
<b>Change Orders and Contingency Fund</b>	<b>\$ 585,304</b>
Less Contingency in original contract	<u>\$ -90,000</u>
<b>Final Contract Amount</b>	<b>\$3,202,431</b>

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Change orders were used to add “contingency” amounts to the contract to offset additional contract cost which were approved by the City through a contingency fund authorization process. Seven change orders and 34 contingency fund authorizations were processed for the design-build contract.

These change orders were 21 percent of the original contract amount and exceeded the 10 percent threshold identified in the Institute of Internal Auditing “Blueprint to Construction Auditing.” However, this was a design-build contract and, as noted in the GMCG conclusion, there were many design requests that were not factored into the original contract amount.

## Reasons for Contingency Fund Authorizations

As of January 27, 2017

Cost

Sewer pump upgrade and replacement	\$153,296	
Lifeguard department requests	\$122,325	
Storm drain	\$105,304	
Temporary facilities	\$ 72,835	
Allocated across other categories	\$ 37,374	
ADA compliance	\$ 31,115	
Design changes	\$ 28,108	
Permits	\$ 20,035	
Repairs	\$ 5,949	
<b>Total change orders and contingency</b>	<b>\$576,343</b>	<b>(+\$8,961 unspent = \$585,304)</b>

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Similar to the facility composition in 1967, the new Lifeguard Station included a lifeguard tower and public restrooms.

To accommodate this design, the sewer pump went through several modifications after the initial design:

- The existing sewer pump had to be upgraded to include an above-ground masticating pump instead of the original injector pumps. These masticating pumps required a larger basin than originally proposed in the bid.
- Further upgrades were done for stainless steel parts and an exhaust fan.
- The sewer pump system was determined to be inadequate to serve public restrooms after opening. It was replaced and the City installed two new pumps with one spare pump, an audio/visual alarm, and shut-off valve.

Lifeguard Services requests were made to:

- Demolish the existing concrete at building lower level and replace with waterproofed concrete to prevent moisture leaks (the bridging document in the RFP indicated that the concrete slab was to remain);
- Bird-proof the roof;
- Install exterior storage lockers;

- Install sewer lines separate from the public restrooms;
- Change glazing angle for observation tower windows from 7 degrees, as specified in the RFP, to 13 degrees from vertical to increase the quality of the view;
- Construct communications cabinet, telephone gang box, and rooftop antenna support;
- Coat existing retaining walls by lower level restroom to improve appearance; and
- Install solid surface counter tops in the observation tower.

Many of these lifeguard request were identified in a January 28, 2013 project meeting with the design-build team. In that meeting it was noted that the design-build team was bound to the design as presented in the RFP, but would investigate the user requests and, if possible, include them within the cost limitations of the project.

The RFP bridging documents showed the storm drain in a different location than discovered upon excavation. The actual location of the storm drain interfered with the construction of the new building foundation and stairs. This was an unforeseen condition.

Stronghold Engineering was to provide two portable toilets, one accessible portable toilet, one handwashing station and a 250-gallon septic holding tank for the duration of the contract. However, unforeseen conditions did not allow the contractor to complete the construction as planned on the original project schedule. Stronghold was reimbursed for providing the previously mentioned temporary facilities for the duration of time that construction could not occur due to moratoriums.

Other contingency expenses were for a lower level exterior slab that had to have changes in the design because it was not ADA compliant, design changes for a vehicle gate and retaining wall, and permits in excess of the \$3,000 budgeted in the RFP.

## GM Construction Group Analysis

- **Delays to Construction Schedule**
  - Construction operations were limited due to a seal pupping moratorium.
  - Other environmental issues such as seal permits and migratory birds (seagulls) impacted the construction schedule significantly.
  - Architectural/Structural design changes were ongoing into 2014 with multiple changes/requests being processed well into the construction phase.
  - There were multiple delays due to unforeseen pre-existing site conditions such as infrastructure compatibility, landscaping and facilities upgrades and ADA compliance changes.

Delays began in 2013 with the late receipt of the Incidental Harassment Authorization permit and the relocation of the Seal Camera. Further delays were caused by the relocation of the existing storm drain and construction activity was already limited by the seal pupping moratorium. After the 2014 pupping moratorium ended in May 2014, construction was further delayed 39 working days by the presence of a baby seagull on the construction site.

As mentioned earlier, unforeseen conditions, unplanned upgrades, and client requests all added to the construction timeline.

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### GM Construction Group Analysis Construction Timeline

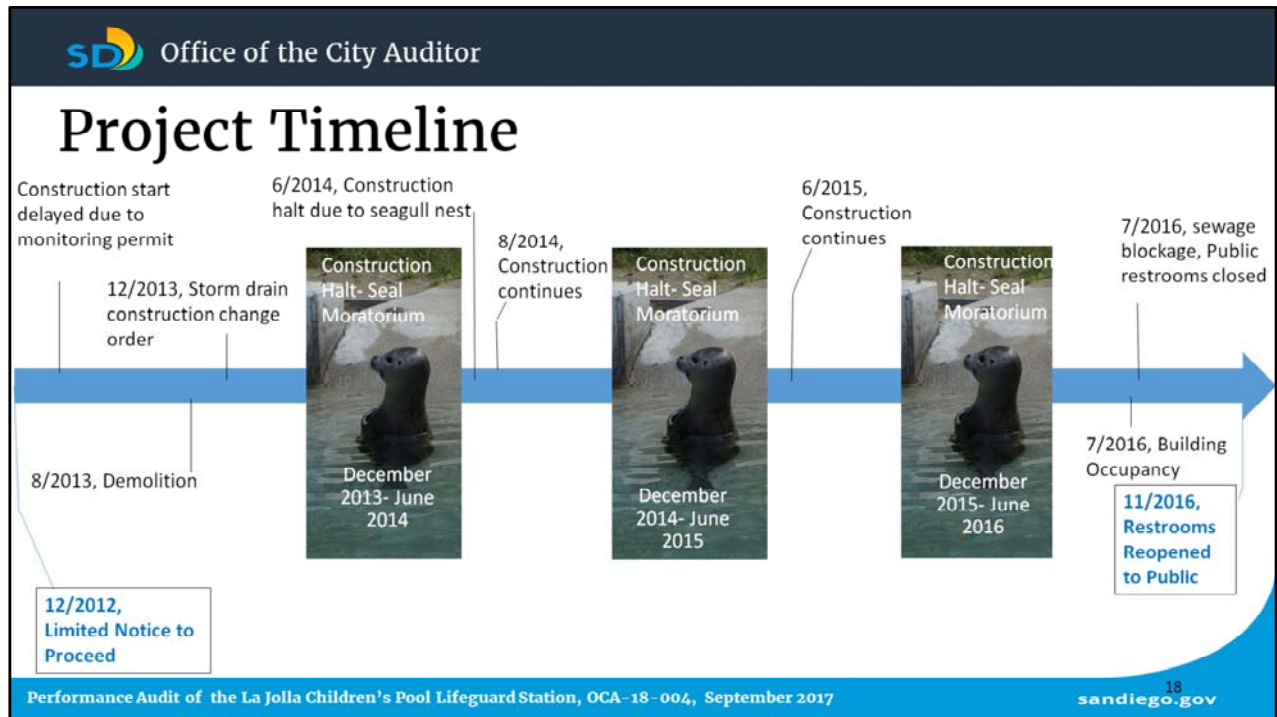
• Approx. 365 Working days from construction to final inspection

Stage	Start Date	End Date	Calendar Days	Working Day Span
Mobilization & Temporary Facilities	July 9, 2013	November 7, 2013	121	80
Demolition/Site Clearing	July 11, 2013	September 12, 2013	63	40
Site Utilities	November 18, 2014	October 12, 2015	328	110
Building Foundation (Pour)	December 3, 2013	December 5, 2013	2	5
Building Shell	December 13, 2013	June 2, 2015	536	110
Roofing	August 28, 2015	September 16, 2015	19	15
Building Exterior	August 12, 2015	December 17, 2015	127	90
Building Interior	August 12, 2015	December 9, 2015	119	85
Site Improvements	October 27, 2015	December 15, 2015	49	35
Final Inspection & Acceptance	December 5, 2015	June 27, 2016	205	30

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GMCG was not able to precisely establish an exact impact on the construction schedule due to changes and/or performance issues during construction. An analysis of project daily entries logged by an onsite supervisor of construction activities are needed to establish a cohesive timeline of events beginning at the procurement/mobilization stage to final inspections.

Based on various documents analyzed, GMCG was able to piece together a timeline of events that shows an approximate completion time of 365 working days from mobilization to completion. Working days should be considered five (5) days a week outside the seal pupping moratorium. It is GMCG’s opinion that the actual time spent on construction operations seems reasonable for a project of this scope considering the changes in design, special requests, and environmental factors.



Per the original contract, construction was to be completed by December 6, 2013. The first change order, dated October 7, 2013, added 96 working days to the contract with a new completion date of April 28, 2014. The last change order, dated December 12, 2016, showed a new contract completion date of September 8, 2015.

However, by the time of the last change order, the seal moratorium had halted construction again pushing the opening to July of 2016, at which point further delays were caused by the previously mentioned sewer pump issues.

While difficult to identify any one specific issue, the culmination of contract changes ultimately led to a critical miss of the December 2016 seal moratorium deadline and another delay of almost six months before construction could be completed.



## Did the Quality of the Final Project Meet Expectations?

### GMCG Site Visit

- Observed sporadic oxidation on the exterior metallic surfaces due to surface salt accumulation.
- Appears that there has been no effort to mitigate this damage through necessary maintenance protocol.

GMCG performed a limited review of the quality of materials and workmanship based on a visual inspection of the Lifeguard Station. The rusting of some exterior metal surfaces was noted.



The building exterior is showing signs of rust. According to GMCG, the contract specifications have some comprehensive requirements that should have mitigated the rusting.

According to Public Works, Stronghold Engineering, Inc. has since cleaned and recoated the exterior steel in accordance with the manufacturer's recommendations.



Going forward, a strict maintenance protocol is needed to slow the impact of saltwater on the steel exterior components of the Lifeguard Station.

## Public Works Design-Build Criteria

- One entity provides engineering design and construction services.
- Generally allows final project delivery in shorter period of time than design-bid-build.
- Reduced project duration leads to reduced soft costs.
- The project needs a well-defined, consistent scope of work. The scope should carry through any environmental or community commitments.

The traditional method of project delivery is the design-bid-build method. However, an alternative method was used for the Lifeguard Station. The method used was design-build which is described in a Public Works standard operating procedure.

Some of the advantages of the design-build method are:

- Schedule acceleration because the design and construction proceed concurrently and the design and construction interface is managed by a single entity.
- A single entity is responsible for both design and construction and generally allows final project delivery in a shorter period of time. Reduced project duration leads to reduced soft costs.

A successful design-build project needs a well-defined, consistent scope of work. The staff must spell out the needs and objectives and define the criteria and constraints. This does not mean that every element of the project has to be spelled out in minute detail. It does mean that the scope should not change significantly as the work progresses. The scope should carry through any environmental or community commitments.

As stated previously, environmental and community commitments were implemented throughout the duration of the project, but client requests, unplanned upgrades and unforeseen conditions that were not anticipated in the design phase had a significant impact on the scope of work.

## Conclusion

- The La Jolla Children's Pool Lifeguard Station was a challenging construction project built in an environmentally sensitive location.
- Several issues led to cost increases and lengthy timelines for completion. Some of these issues could have been identified earlier in the design process and may have reduced the cost and project duration. San Diego Fire Rescue now has design and construction standards for lifeguard stations.
- Strict consideration of materials and/or applications that resist rusting is needed for future lifeguard stations.
- The City needs a maintenance protocol to slow the rusting to the exterior of the building.

The Lifeguard Station and public restrooms was a challenging project that was built in an environmentally sensitive location which had to meet community expectations as well as lifeguard requirements.

Public Works used a method of project delivery that was not the traditional method for the City and early involvement of stakeholder personnel does much to assure the success of a design-build project. In the end, several issues led to delays and increases to the cost of the Lifeguard Station and restrooms. Some of these issues could have been identified earlier in the design process and reflected in the bid documents rather than identified later in the project. This would have given a better estimation of project cost for the RFP, and may have reduced the total project cost if project duration could have been shortened.

To mitigate the potential for unexpected delays and cost due to the requests made by Lifeguard Services, San Diego Fire-Rescue has developed a set of guidelines, "Lifeguard Station and Facilities Design and Construction Standards" as minimum requirements for lifeguard stations. The guidelines were last updated March 10, 2015 and state, "these guidelines are to be reviewed at the initial design meetings and through-out the design development. Specialty stations will have additional requirements. Plans shall be prepared showing all details and notes required to provide the contractor with sufficient clarification and information to construct the project to the intended design." The scoping/partnering

meetings in Recommendation #1 are also critical for bridging the Lifeguard Design and Construction Standards to any updated or unique design requests by Lifeguard Services for any new lifeguard station construction.

The exterior of the building is showing signs of rust. The building specifications appear to have the requirements needed to resist rusting. According to Public Works, Stronghold Engineering, Inc. has since cleaned and recoated the exterior steel in accordance with the manufacturer's recommendations.

A maintenance plan specific to the lifeguard station would be beneficial to reduce the effects of environmental exposure.

## Recommendations

1. Public Works, in conjunction with the asset-owning departments, should conduct scoping/partnering meetings early in the process to discuss lifeguard station program needs, special scope requests, and the impacts of codes and regulations on the project's overall cost and schedule. (Priority 2)
2. Public Works should implement strict considerations for product and material applications applicable to Lifeguard Station environmental and occupant requirements. (Priority 3)
3. For facilities located in harsh environments such as a marine environment, Public Works should have a supplemental maintenance plan in place for high risk materials and components. (Priority 3)

The Public Works Department has agreed to implement the recommendations.

## Compliance Statement

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



## Requested Action

We ask the Audit Committee to accept and forward the report to the City Council



THE CITY OF SAN DIEGO  
MEMORANDUM

DATE: September 15, 2017

TO: Eduardo Luna, City Auditor

FROM: James Nagelvoort, Director, Public Works Department and City Engineer  
via Paz Gomez, Deputy Chief Operating Officer, Infrastructure/Public Works

SUBJECT: Management's Response to the Performance Audit of the La Jolla Children's  
Pool Lifeguard and Comfort Station

A handwritten signature in black ink, appearing to read "Paz Gomez", written over the "FROM" field of the memorandum.

This memorandum is management's response to the audit recommendations for the Audit of the La Jolla Children's Pool Lifeguard and Comfort Station.

Public Works Department is continuously streamlining its Capital Improvement Program (CIP) implementation process. A number of these improvements have been implemented since this project was initiated that address several of the items you have identified. We generally agree with the three recommendations outlined in the audit report which validate several initiated streamlining efforts further outlined in our responses below.

**Recommendation 1:**

Public Works, in conjunction with the asset-owning departments, should conduct scoping/partnering meetings early in the process to discuss lifeguard station program needs, special scope requests, and the impacts of codes and regulations on the project's overall cost and schedule.

(Priority 2)

**Management Response: Agree with this recommendation**

This project was initiated in 2001, prior to the 2007 Engineering Business Process Reengineering effort which established the Preliminary Engineering Section in the Project Implementation Division of the Public Works Department. This section is responsible for preparing preliminary engineering packages for all of Public Works Department's CIP design and construction projects. As part of this preliminary engineering effort a project kick-off meeting is held amongst all of the City's key CIP stakeholders, in which all issues related to delivering (designing, constructing, and operating) the facility CIP are discussed in detail and which scope, schedule and budget objectives are documented in a project charter. Any proposed changes would undergo further discussion of the cost and schedule impacts among the stakeholders and be approved via a documented project charter amendment prior to implementation of the proposed scope changes. Public Works will, by March 2018, update its Standard Operating Procedures to include detailed steps of the project charter and charter amendment process.

**Target Implementation Date: March 2018**

**Recommendation 2:**

Public Works should implement strict considerations for product and material applications applicable to Lifeguard Station environmental and occupant requirements. (Priority 3)

**Management Response: Agree with this recommendation**

In 2011, the San Diego Fire-Rescue Department (SDFRD), in partnership with the Public Works Department, developed the Lifeguard Station and Facilities Design & Construction Standards (Attachment 1) for performance and operational requirements of lifeguard stations. This document included approved materials suitable for use in a marine environment typically encountered in lifeguard stations. It was used to establish the technical specifications section of contract documents for the La Jolla Children's Pool Lifeguard and Comfort Station, requiring the builder's installation of marine grade materials. The builder's compliance with the technical requirements of the contract documents are observed in a 1-year warranty period following the City's acceptance of the builder's completed product. SDFRD will, by March 2018, assess and update its Lifeguard Station and Facilities Design and Construction Standards to include any necessary design and approved material changes if the observation of the material used is determined to be unsuitable for future applications.

**Target Implementation Date: March 2018**

**Recommendation 3:**

For facilities located in harsh environments such as a marine environment, Public Works should have a supplemental maintenance plan in place for high risk materials and components. (Priority 3)

**Management Response: Agree with the recommendation**

The City of San Diego's construction contract documents require in their specifications that builders provide Operations and Maintenance (O&M) manuals for specialty materials and components in the technical specifications sections, as described in the Public Works Department's Standard Operating Procedure – Project Close-Out for CIP Projects (Attachment 2). As such, the specialty items' maintenance protocols of how and how often to maintain specific facility components would be included as part of the O&M manual which was contractually required as a submittal from the builder of the La Jolla Children's Pool Lifeguard and Comfort Station project. Once completed, the builder's O&M manual will be distributed to the Facilities Maintenance Division as well as the Asset Managing Departments for the La Jolla Children's Pool Lifeguard and Comfort Station project those departments are the SDFRD, Park & Recreation and Public Utilities. The Public Works Department will, by December 2017, provide the Office of the City Auditor a copy of the builder's completed O&M Manual.

**Target Implementation Date: December 2017**

In closing, we are thankful for the Office of the City Auditor's time spent working with staff on these findings and recommendations on this critical, unique and complex project. It is through this dialog that the City continues to seek out ways to improve on the valuable services it provides.



James Nagelvoort, PE  
Director, Public Works Department and City Engineer

JN/ajp

Attachments: 1. Lifeguard Station and Facilities Design & Construction Standards  
2. Standard Operating Procedure Project Close-Out for CIP Contracts

cc: Andrea Tevlin, Independent Budget Analyst  
Stacey LoMedico, Assistant Chief Operating Officer  
Kyle Elser, Assistant City Auditor, Office of the City Auditor  
Marshall Anderson, Director of Council Affairs, Office of the Mayor  
Erin Demorest, Director of Legislative Affairs, Office of the Council President  
Brian Fennessy, Fire Chief, San Diego Fire-Rescue Department  
Herman Parker, Director, Park and Recreation Department  
Halla Razak, Director, Public Utilities Department  
Rick Wurts, Lifeguard Chief, San Diego Fire-Rescue Department  
James Gaboury, Deputy Fire Chief, San Diego Fire-Rescue  
Mark Nassar, Interim Assistant Director, Public Works Department  
Chris Kime, Supervising Senior Performance Auditor, Office of the City Auditor