Stinson Beach Lifeguard and Concessioner Café Repairs and Replacement Alternatives

Golden Gate
National Recreation Area

SCOPING TRIP REPORT

100% DRAFT R3

PMIS 244253/251342

November 25, 2019

FFA
Architecture
+Interiors

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The National Park Service is considering whether to repair the existing 1966 Lifeguard Tower and connected 1970s era Concession Café, or to raze these structures and build new efficiently functioning buildings at Stinson Beach in the Golden Gate National Recreation Area. Repairs are needed immediately due to the poor condition of these structures, and are considered a short-term 7 to10 year remedy that does not address existing programmatic deficiencies. New building(s) would be designed to meet the functional needs identified in the functional program requirements and would be constructed to the NPS 50-year standard. Golden Gate National Recreation Area is experiencing a surge in visitation that can be assumed to be adversely affecting the Stinson Beach Lifeguard operations, as well as stressing the Concessioner Café (a.k.a. "Siren Canteen") capacity, although the café is also a beneficiary of the additional visitation. Complicating the problem is a lack of buildable area on the current site, which limits possible future expansion of both functional operations.

The existing building complex was originally designed by the California Department of General Services for the Division of Beaches and Parks as a lifeguard station that included a lookout tower, information station, office, first aid station, and open carport with limited storage. A remodel in the 1970s repurposed all but the lookout tower and carport for use as a concession building. Subsequent remodels both enclosed the carport with walls and overhead coiling doors and partially enclosed the Café deck for a dining area. The NPS Lifeguards now house their administrative support functions in "The TMU", a temporary modular building located in the parking area northeast of the present tower location. This split in lifeguard functions creates inefficiencies and presents additional challenges for communications, training, fitness exercise, and operational coordination.

Design alternatives have been prepared for both repair of the existing structures and for new construction. New construction includes a new 3,000 square foot Lifeguard Station and 800 square foot café on the existing site, as well as two other potential sites. Two new construction design alternatives relocate the Café to a site better suited for accessibility and service access, while constructing a new Lifeguard Station on the current site. Existing conditions were assessed on a visual basis, however much of the existing structures are not readily visible, which is likely to increase the anticipated construction cost. Congestion and pedestrian/vehicle conflicts will be reduced by separating the lifeguard and café uses which have no beneficial adjacency.

The PMIS 244253 project is written to address the Lifeguard Station repairs and new construction alternatives. Repairs include replacement of significantly deteriorated wood and metal components, abatement of hazardous materials, leaking roofing, corroded plumbing piping and electrical components, and insufficient mechanical ventilation.

The PMIS 251342 project is written to address repairs to the Concession Café such as deteriorated wood components at structural framing, floors, walls, and decks, replacement of broken and deteriorated windows, corroded mechanical/plumbing/electrical components as well as failed exterior paint, and ABAAS-compliant public access.

While the two projects will be designed under a single task order, each project is separately funded through different PMIS allocations. The two projects must adhere to the respective funds available for each project.

Estimated Construction Cost for the repair & new construction of the Lifeguard Station and Siren Café are:

Code Compliant Upgrade of existing Lifeguard Tower & Café (Repair Alt 3): **$532,239**
New Lifeguard Station LGS 2 without Multi-purpose and Gym/Exercise Rooms: **$3,055,212**
New Lifeguard Station LGS 3 with Multi-purpose and Gym/Exercise Rooms: **$3,673,402**
New Siren Canteen Café: **$1,884,580**

A/E August 2, 2018 SITE VISIT (repair rehabilitation of existing structures)

Arriving on site Wednesday, August 2, 2018, *FFA Architecture and Interiors* and *Structural Nexus* initially reviewed the existing conditions with the park personnel and concessioner staff. A project team meeting was held onsite to discuss the intent of the Title I Scoping Trip, identify the project goals, review existing conditions and discuss possible approaches to project design. Meeting participants were as follows:

- Michael Shane, NPS-GGNRA, COR
- Jesse Fritts, NPS-GGNRA, Project Manager
- Patrick Burns, NPS-GGNRA, Supervisory Lifeguard
- Mary Margaret, Siren Canteen, Owner
- Barbara Clement, FFA, Project Manager
- Tim Mitchell, FFA, Project Architect
- John Mayer, Structural Nexus, Structural Engineer

1. Project Goals

A. Repair building to provide additional 10 to 20-year operational lifespan
B. Repair identified deficiencies
C. Correct accessibility deficiencies at public areas in compliance with ABAAS

2. Program

A. Lifeguard Tower contains a combination men's and women's locker room with a single-user restroom, modular shower and a separate sleeping room on the ground floor. The former carport located at the east side of the building has been enclosed to function as a vehicle garage, safety equipment storage and washer/dryer area. The second floor of the tower provides a small office space with a desk, storage, refrigerator, microwave and telecommunications equipment. Third floor houses the lifeguard lookout space consisting of a simple wall-wall counter, sitting stools, and telephone. The third floor is surrounded by an exterior viewing platform accessed by a small wall hatch door.
B. The Concession Café provides daytime food and beverage service ordered from a service counter. The open-air deck surrounding the Café kitchen provides bench-type tables and traditional seating located both under roof covering and open sky. The interior areas of the Café include a service counter, grill and food assembly area, preparation and storage room, single-user restroom and lockable storage closet with exterior access.

3. Budget

A. PMIS Budget is $187,249 for the Lifeguard Tower repairs and $165,124 for the Concession Café repairs. The purpose of the Scoping Trip is to validate existing conditions with the PMIS Scope of Work and Budget.
B. While both building repair projects are being designed under a single task order, the cost of construction for each project must adhere to the available funds of the respective PMIS project for each building.
C. NPS Contracting Officer Representative/Project Manager Michael Shane indicated the available funding for the project may not be adequate to complete all the work described in the Project Management Information Statement (PMIS). If the current project scope of work cannot be completed within available funding, the project could either be undertaken as a single project with all necessary funding in place to complete the construction or as a phased project consisting of smaller construction activities. A single project approach requiring additional funding over the

currently available funding would require the project be repackaged to recompete in the PMIS system.

D. Estimated construction cost for repair and rehabilitation of the existing Lifeguard Tower and Café are:

Alt. 1 (Critical Life Safety & Condition Assessment Repairs): **$199,871**
Alt. 2 (Critical Life Safety & Systems Repair): **$278,248**
Alt 3 (Code Compliant Upgrade): **$532,239**

4. Schedule

A. The anticipated project duration from Scoping Trip through construction completion is two (2) years. Project completion is tentatively planned for Fiscal Year 2020.

B. A phased installation to project components could be employed with any of the three alternatives. Phasing would emphasize the park's primary need of providing safe visitor and employee facilities with secondary emphasis on facility repair and upgrade.

C. Alternatives 1 and 2 could be phased to allow for correction of major structural deficiencies during a scheduled seasonal shutdown (approximately 2-3 winter months) with minor deficiency repairs conducted during building occupancy. The degree of rehabilitation involved in Alternative 3 would require a construction period lasting beyond the seasonal shutdown.

5. Additional Project Considerations – Bid Alternatives

A. The review comments provided by GGNRA lifeguards identify deficiencies most of which were not included in the original PMIS. Correction of these deficiencies range from simple repair to extensive renovation and are not assessed in detail in this report. Lifeguard comments are attached to this report as an appendix for further consideration by NPS staff. The most relevant and significant of these deficiencies are included as possible Bid Alternatives below:

   a. Provide a separate women's locker room including single-user shower, dressing area and lockers. Proposed location is above the garage building.
   b. Provide kitchenette at the second floor of Lifeguard Tower including sink, counter, and water filtration equipment.
   c. Replace utility sink in locker room with floor drain and fiberglass wall covering to allow cleaning and drip drying of wetsuit equipment
   d. Provide tower mounted, Wi-Fi enabled time-lapse camera

CODES and STANDARDS

The following code standards would apply to the rehabilitation of these structures and new construction:

- 2016 California Building Code
- 2016 California Existing Building Code
- 2016 California Fire Code
- 2016 California Electrical Code
- 2016 California Mechanical Code
- 2016 California Plumbing Code
- 2016 California Energy Code
- 2016 California Green Building Standards Code (CAL Green)
- 2015 ABAAS (Accessibility Guidelines)
- 2017 California Retail Food Code

While an evaluation of land use policy is beyond the scope of this report, future services should include project review for federal consistency with the California Coastal Management Program as enforceable by the California Coastal Commission.

EXISTING CONDITIONS

Existing condition documentation is based on casual observation of exposed elements and are not considered a thorough or comprehensive condition assessment of the buildings. It is highly likely that the observed exterior deterioration resulting from water intrusion has migrated throughout the building structure. Given the exterior condition, a more in-depth assessment involving limited discovery demolition and a detailed assessment of the mechanical, electrical, and plumbing systems is recommended to determine the condition of building elements that are not readily visible. Component descriptions are organized by discipline and followed by general condition statements for observed deficiencies and recommendations for corrective action. Recommendations are categorized by their location, Lifeguard Tower (**LT**) or Concession Café (**CC**), and referenced to images located at the end of the report.

General Site

Stinson Beach is located on Bolinas Bay in Marin County, California approximately 23 miles north of San Francisco and 11 miles west of the town of Mill Valley along State Highway 1. NPS property at Stinson Beach is located on the Pacific Ocean adjacent to Bolinas Lagoon. Typical summer weather temperatures average 83 degrees F high and 53 degrees F low with predominant winds from a northwesterly direction while winter weather temperatures average 59 degrees F high and 42 degrees F low with predominant winds from a northwesterly direction. Although coastal fog and low clouds are a common occurrence at Stinson Beach, the majority of precipitation falls in the months November through March with a monthly average of approximately 8 inches.

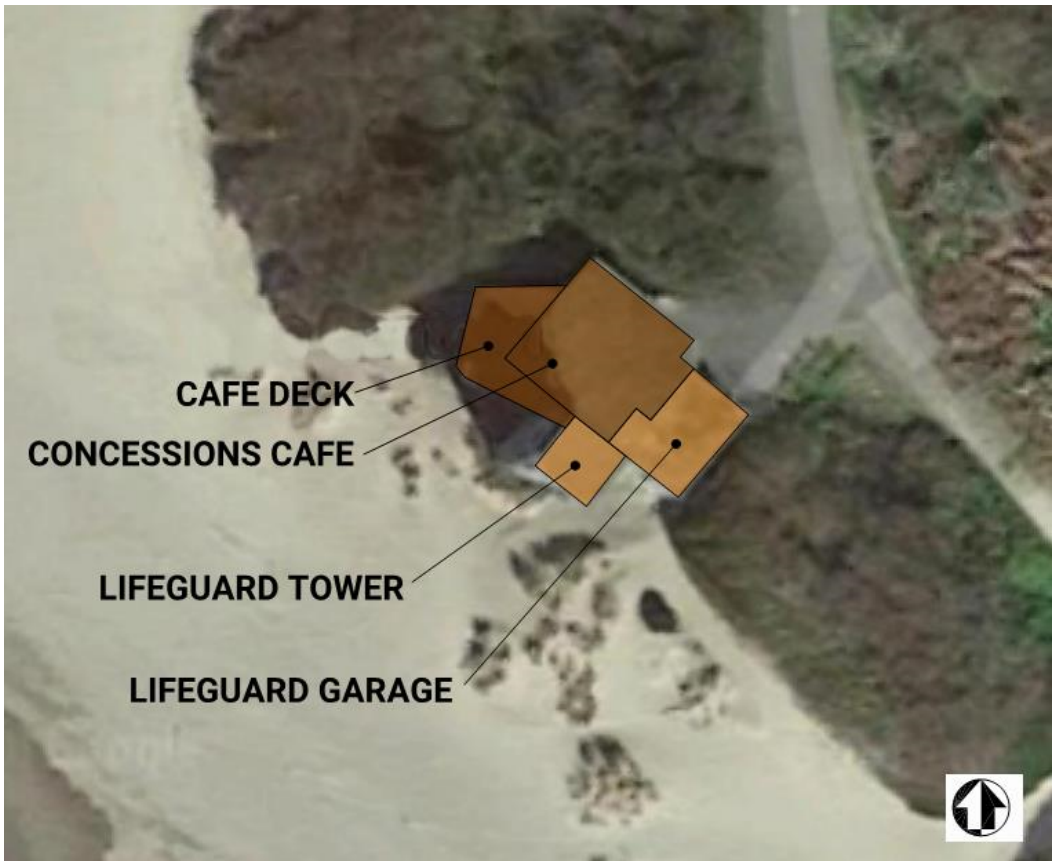
The Lifeguard Tower and Concession Café building complex is located on the southern end of Stinson Beach at the transition between sand and hillside coastal vegetation directly southwest of the central parking area. The buildings are accessed from the parking area via a paved walkway as well as directly from the beach area. While the Concession Café and first floor of the Lifeguard Tower are mostly protected by dune vegetation from direct exposure to the predominant winds, the Lifeguard Tower is approximately 31 feet tall with all sides of the building above the first floor subject to full wind forces.

Stinson Beach Area Plan

Architectural

General

Overall, the building facility maintains its area footprint, building massing and appearance as rendered in the original design drawings. Original building areas were approximately 663 square feet for the Concession Café structure and 511 square feet for the Lifeguard Tower. Renovations have increased and modified the enclosed building areas to approximately 723 square feet at the Concession Café and 1007 square feet at the Lifeguard Tower, including the enclosed garage. Building heights appear to be unmodified but the overall architectural character has changed from light-on-the-land poll-structures to buildings with exterior walls built down to surrounding grade. Older lifeguard personnel described much lower sand levels around the building historically with the resultant buildup of adjacent grade the product of sand deposition across several decades. The original Lifeguard Tower was designed for a 3-foot dimension between first floor and finished grade while today's condition is closer to a 1-foot separation with much of the first-floor framing buried in sand. Changes to the exterior appear to have been constructed early in the building's history, including the carport and café deck enclosures, as likely responses to changing facility operations and need for better weather protection. These changes have modified the facility appearance from one of distinct buildings separated by an enclosed walkway to one of a building-complex containing an irregular-shaped single-story building with an attached, central tower.



Building Site Plan

Exterior Decks, Walkways and Stairs

Wood deck at the Concession Café consists of 1 x 4 composite lumber surface screwed to the underlying joist structure. Deck boards are installed tight together with minimal joints but due to the radiused edges of the deck product, sand, debris and moisture collect in the valley created by adjacent deck boards. Drainage for the deck is provided by a single, flush-mounted surface drain which appears plugged from sand. Surface drain was placed after deck settling had occurred in an effort to alleviate ponding at the settled location. NPS staff conveyed to AE that surface drain is not connected to sanitary piping but simply drains to grade below deck. A cast-in-place concrete stair tread is placed at the west entry to the deck and appears to be set on top of the sand rather than part of a larger concrete foundation. East entry to deck consists of a cast-in-place concrete walkway which is flush with the deck surface and connects the Concession Café to the Lifeguard Tower and parking lot. The south side walkway of the garage is a 2 x 6 pressure treated wood plank boardwalk set flush with connecting concrete aprons at the west and east elevations. The underlying walkway structure is not observable and sand accumulation beneath the planks is significant. A similar pressure treated deck construction is used at the entry porch to the Lifeguard Tower where the 2x wood framing substructure is visible.

(Condition Evaluation)

Concrete elements are intact and functioning properly with little or no indication of settlement cracking or deterioration. Composite deck is intact at most locations but indicates evident substructure deterioration around the floor drain. Deck settlement at this location is significantly advanced warranting a safety cone be placed over the drain to indicate the safety issue to visitors. The deck surface appears to be washed on a regular basis by concessions staff and many of the boards exhibit areas of moisture absorption which do not dry out during the day. Moisture retention at the deck surface likely indicates saturated deck framing and potentially advanced wood deterioration. Wood boardwalk/deck locations at the Lifeguard Tower are

in poor condition exhibiting buckling, uneven walking surfaces, raised fasteners, wood deterioration and splintering.

(Recommendation)

- **CC-1** - Remove, inspect, and replace composite deck components including approximately 50 percent of individual deck boards and 90-100 percent deteriorated framing. Slope deck to drain away from building walls and toward edges of deck.
- **LT-1** - Replace wood deck walking surfaces at Lifeguard Tower with composite decking and pressure treated framing. Install rim joist closures at open ends of framing cavities.

Enclosure

The primary siding assembly at the original Lifeguard Tower and Concession Café buildings is 1 x 4 redwood tongue and groove boards oriented vertically and painted gray. The original construction drawings do not indicate a painted finish, but surface weathering of redwood coupled with an increase in maintenance efforts associated with the stained wood siding likely warranted a paint coating at some early point in the building's life. The tongue and groove siding is placed over a building paper weather barrier and attached to the underlying plywood sheathing. Siding at the garage and Café deck consists of painted T1-11 plywood over building paper weather barrier. At the third floor of the Lifeguard Tower, walls beneath the inclined windows consist of the original "1-1/8" cement asbestos insulating panels." Structural pole columns at the Lifeguard Tower are painted and exposed to the weather but original deck posts at the Concession Café have been cut down to below the floor level and replaced with hollow column surrounds constructed of plywood and 2x framing. There is no continuous foundation or other method for protecting the floor framing at either building from moisture, pests or blowing sand. The roof covering at the Lifeguard Tower, garage, and over conditioned spaces of the Concession Café is built-up asphalt and gravel. Exterior deck roof coverings at the Café are asphalt shingle with a shallow slope. Gutters and downspouts are absent at most roof edges with the exception of scupper outlets loosely connected to downspouts at the north and east elevation corners of the Concession Café and garage. Scuppers are cut into the copper edge flashing/gravel stops at these locations and appear to have originally directed water off the roof adjacent to the walls. Drainage from the Lifeguard Tower roof appears to be accomplished through overspill of the gravel stop. Roof fascia is typically 1x painted wood.

(Condition Evaluation)

Tongue and groove siding displays signs of moisture penetration through the paint finish as evidenced by rust stains, spalling and blistering paint, grain raising, and visible separation between boards at the tongue and groove joint. Board ends located on or near grade are visibly deteriorated.

T1-11 plywood siding is visibly deteriorated at the south elevation of the garage with large holes in the plywood allowing moisture and sand to enter the stud cavity. T1-11 plywood at this location demonstrates significant delamination and moisture retention.

Plywood column surrounds at Café are cobbled together and rest on pole remnants from the former deck posts. Structural continuity is questionable and plywood surfaces exhibit deterioration, delamination, rust stains and blistering paint. Plywood corner joints are separating and T1-11 plywood ends near the ground are deteriorated.

Roof coverings are functional but degraded at observed locations and likely nearing the end of their service life. Built-up roofing around the Café grill hood exhaust is visibly saturated with grease and the central roof drain is rusted and missing the dome strainer. Metal components at the upper roof soffit of the Lifeguard Tower exhibit significant rust indicating possible roof leaks. Coupled with the lack of a discernible drainage pathway, the upper roof requires additional investigation to determine overall condition.

(Recommendation)

- **LT-2**– Remove tongue and groove siding and underlying plywood sheathing at tower locations required to access structural framing. Scrape loose paint at tongue and groove siding and replace individual deteriorated boards. Replace salvaged boards, paint prep wood surface and apply alkyd-based primer and paint finish. Assume 25% board replacement.
- **LT-3** – Remove T1-11 plywood siding and weather barrier at south wall of garage. Clean and inspect wall framing for deterioration. Install new plywood sheathing, weather barrier and painted wood siding to match typical building color.
- **CC-2** – Remove plywood column surrounds and pole bases and replace with new pressure treated poles up to the roof framing. Remove and replace/reinstall tongue and groove siding as required for pole replacement and deterioration. Paint poles and siding to match typical building colors.
- **CC-3** – Replace hot mop built up and asphalt shingle roof coverings at Café including metal edge flashing, metal scuppers, pipe penetration flashing and roof drain
- **LT-4** – Replace hot mop built up roof coverings at Lifeguard Tower garage, lookout platform and upper roof including metal edge flashing and garage scupper. Provide downspout pipe drainage for garage and upper roof.

Exterior Doors, Windows, Louvers, Grilles

Passage doors are typically painted wood, flush solid core type with a combination of key in handle and deadbolt locking hardware. Screen doors, where used, are placed on the interior side of doors apparently for protection from vandalism and/or blowing sand. The Lifeguard Tower garage contains manually operated overhead coiling doors at the north and south elevations face mounted to the wall framing and the third floor of the tower has a small, lockable metal access door providing passage to the exterior lookout platform.

Windows at the Concession Café are a mix of fixed wood, divided lite at the deck area and double hung aluminum at the service counter. Many of the original window openings at the north and west elevations have been closed but it is unclear whether the openings and windows still exist, or walls have been infilled at these locations. The original combination wood fixed/aluminum horizontal sliding windows at the second floor of the Lifeguard Tower have been replaced with vinyl fixed/horizontal sliding windows with painted wood casing. Third floor tower windows appear to be the original painted, custom tube steel windows with original “1/4” glare reducing plate glass.” There is a single skylight located at the covered deck area constructed of a flat sheet of clear acrylic substituted for roof sheathing and asphalt shingle.

Louvers and grilles are used for various purposes at both buildings including ventilation of locker room, restrooms, soffits and the third-floor space of the Lifeguard Tower as well as for concessions cooking operations and general exhaust ventilation.

(Condition Evaluation)

Doors are in fair location at most locations with only minor paint failure and damage from impact. Door locksets are protected at the exterior from blowing sand with clear acrylic, hinged boxes mounted around the handle locksets. Building staff have commented that door locksets must be replaced every few years, despite the box protection, due to sand infiltration. The access door at the third floor of the tower has heavily rusted hardware components.

Wood windows at the Café are in extremely poor condition suffering from paint deterioration and subsequent wood deterioration. A single glass pane was observed to be cracked but many panes are loose in the frames due to deteriorated exterior wood stops.

Double-hung aluminum windows at the Café service counters are racked in their frames but appear to be functional and undeteriorated.

Custom steel window sash and tube steel frames at the third floor of the Lifeguard Tower are in extremely poor condition exhibiting significant paint and sealant failure, rust spalling, and loss of metal material. Due to the use of non-insulated glazing, it is anticipated there is substantial condensation on the interior faces of window frames and glazing as evidenced by paint spalling and rust on interior metal components.

(Recommendation)

- **LT-5** – Remove access door hardware at Lifeguard Tower and repaint door to match typical building color. Replace rusted hardware with Marine Grade Type 316 stainless steel components. Bronze hardware to be considered as option.
- **CC-4** – Replace all wood windows at Café with painted wood, operable windows to match existing window configuration. Include safety glazing at locations required by the building code. Fiberglass window units to be considered as option.
- **LT-6** – Remove paint and rust from metal window and frame components at Lifeguard Tower third floor windows. Sandblast and repair metal components to original section shape and repaint with a zinc-rich primer, epoxy topcoat base and silicon-alkyd enamel finish coat. Replace single pane glazing with tinted, insulated glazing units and adapt existing metal stop to utilize rubber gasket for glazing retention.

Interior Stairs, Handrails, and Guardrails

Access to the second floor of the Lifeguard Tower is via wood construction stairs protected with rubber treads and a metal spiral staircase from the second to third floors. Handrails and guardrails are painted steel tube sections in round configuration. The exterior guardrail at the third-floor lookout platform consists of 2x and 4x wood lumber anchored to the pole structure and painted to match the building color.

(Condition Evaluation)

Both wood and metal spiral stairs are in good condition, but handrails do not meet current accessibility code for handrails at both sides of stairs or required extensions at landings. Metal spiral stairs are allowed by California Building Code due to the limited area of the third floor but cannot serve an occupancy of greater than 5 persons. The metal stair risers exceed the code requirements for maximum riser height of 7-1/2 inches and do not provide the minimum head clearance of 78 inches. Stair locations and configurations appear to match the original drawings and were likely code-compliant at the time of their construction. The addition of compliant handrail extensions would not be required due to an exception in the California Existing Building Code, Chapter 4 that recognizes an increased hazard associated with handrail extensions in constricted floor plan layouts. Similarly, lifeguards have conveyed a concern over the limited width of the existing stairways and conflict with heavily equipped law enforcement personnel traversing the stairways. The addition of a second handrail at the first-to-second floor stair would exacerbate this conflict and negate the limited safety benefit associated with code compliance.

The wood guardrail at the lookout platform exhibits paint failure and rusting attachment hardware at numerous locations. AE did not measure openings at guardrail, but dimension may exceed allowable 21 inches maximum opening. Original construction drawings indicated 2 x 2 wood pickets between top and bottom rail components which are not present in existing construction.

(Recommendation)

- **LT-7** – Install new, code-compliant handrail at stair between first and second floors at Lifeguard Tower to supplement existing handrail. This recommendation is to be further evaluated for life-safety considerations during Title I Predesign and Schematic Design project phases.
- **LT-8** - Further investigation into the stability of the guardrail, including integrity of fasteners and wood, is highly recommended. Consider replacing existing wood guardrail with metal guardrail upgraded to meet code compliance and replicate original design.

Accessible Service Counter and Tables

Service counter at the Café does not meet ABA requirements for height or knee and toe clearance for a forward approach. Dining tables appear to meet height requirements but seating at tables does not provide for forward approach or requirements for back support.

(Recommendation)

- **CC-5** – Lower service counter to required height and provide compliant knee and toe space beneath counter. Replace (6) dining tables and (12) benches with barrier-free models.

Concession Café Grill Hood Fire Suppression

The existing electric cooking grill hood at the Concession Café is provided with a Fire Suppression system but the specifications for the system, including the hood type and automatic fire suppression system type, were not provided to the AE team. California Building Code, Section 904 requires commercial cooking systems to be provided with both a Type I Hood and an automatic fire extinguishing system. As discussed with NPS Project Manager, Café Operator is required to install and maintain the grill hood and hood fire extinguishing system as part of the concessioner agreement while NPS is responsible for the maintenance, repair and replacement of the grill hood's exhaust fan termination on the Café roof. Description and condition evaluation of the exhaust fan is included in the mechanical section of this report.

Structural

Lifeguard Tower

The Lifeguard Tower is founded on (8) 12-inch diameter wood piles. The original construction drawings show these piles with a minimum embedment of 10 feet into the sand. There are two wood piles at each corner of the Lifeguard Tower ((8) total) that extend to the upper/third floor level. These piles support double wood 4 x 12 floor girders at the first level and double wood 3 x 12 floor girders at the third level. Each floor level is framed with 2 x 8 wood joists spaced at 16 inches on center and 3/4-inch thick plywood sheathing. Exterior wood 2 x 6 walls run continuous from first to third levels and provide support for the second level floor framing. The upper level lookout space is inset from the tower perimeter on all sides and is attached to 4 x 8 wood beams within the third-floor space.

Lateral loads for the Lifeguard Tower are resisted by the cantilever action of the (8) embedded wood piles. These piles are embedded far enough into the ground to achieve a level of fixity that is likely capable of resisting current code prescribed wind and seismic loads from a global perspective. However, the structure appears to lack the detailing and connections required to adequately transmit these loads to the pile elements.

Concessioner Café:

The Concessioner Café is also founded on 12-inch diameter wood piles. The original construction drawings show these piles with a minimum embedment of 5 feet into the sand. The wood piles at the Concession Café are terminated just above the ground level and provide support for three equally spaced lines of 4 x 8 wood beams (running east/west) which, in turn, support the 2 x 8 wood floor joist framing and the exterior 2x wood walls. The 2x wood framed building walls are constructed on top of the floor platform. The roof framing for the concession Café consists of 2 x 8 wood joists spaced at 16 inches on center. A 4-foot cantilevered eave is constructed on three sides by 3 x 8 hip wood framing members, oriented at 45 degrees, at each corner. The back span of these hip members connects to a continuous double wood 2 x 8 which allows them to cantilever off the corner of the building and provide support for the 2 x 8 wood fascia. A garage along the east side of the building appears to have been originally open on three sides and functioned as a carport but was enclosed with 2x wood walls and overhead coiling doors at a later date.

The Concession Café does not appear to have any formal lateral system. The original construction drawings do not suggest "shear wall" elements and there is no indication of connection detailing that could resolve building shear and/or overturning loads.

Significant deterioration in both wood framing and metal fasteners was noted in both structures at the time of our site visit.

(Recommendation)

- **STRUC-1/2/3** – Replace double 4 x 12 girders and outriggers, including corroded anchorage hardware, at first, second and third floors.
- **STRUC-2** – Replace corroded structural fasteners at girder locations.

Mechanical, Plumbing, Electrical and Fire Protection

Limited mechanical equipment providing heat and ventilation was observed in the buildings. Mechanical equipment at the Café consists of a grill exhaust hood vented through the roof and two observed exhaust vents at north and south exterior walls. There was no mechanical heating or air conditioning equipment observed at the Café. Mechanical equipment at the Lifeguard Tower includes unit electric heaters at the locker room, second floor, and garage along with exhaust vents placed in walls or ceilings at the restroom, locker room and third floor.

Plumbing piping was concealed at most locations but observed beneath the Lifeguard Tower and at exposed locations in the Café. Piping beneath the building typically consisted of copper domestic water lines and cast-iron waste and vent piping. Interior piping observed at the Café was a combination of copper branch lines with braided stainless hoses to individual fixtures. Waste and vent were typically ABS plastic piping.

Electrical service consists of two separate electrical panels located at the north side of the building serving the Lifeguard Tower and Café separately. Subpanels are located both in the Café and in the garage for branch circuits. Individual circuit distribution is typically installed in EMT conduit where exposed. The subpanel at the Café is rated at 225 amps but staff commented that circuits were tripped on hot days when exhaust fans and refrigerator equipment were running continuously. Electricity is used throughout the Café at cooking, refrigeration, and reheating equipment.

There were no building level fire suppression systems observed in the building-complex, but the Lifeguard Tower and Café are provided with a building fire alarm system with fire alarm control panel located in the garage and fire alarm annunciator panel located in the tower vestibule. Fire extinguishers were located at miscellaneous locations. Further evaluation of the fire alarm system to be conducted in Title I Predesign & Schematic Design phases.

(Condition Evaluation)

Mechanical exhaust vents at the Café, other than the grill hood, appeared heavily soiled at their interior surfaces and rusted on exterior surfaces. The rooftop termination of the grill hood is heavily soiled and

depositing grease on the adjacent roof surface. Two automobile tires have been placed on top of the rooftop termination to dampen the noise of the exhaust fan but may be contributing to the grease deposition by limiting proper equipment operation. Electrical conduit providing power to grill hood exhaust fan is supported by a concrete block and appears saturated in grease.
Mechanical ventilation equipment at the Lifeguard Tower appeared to be older vintage but still functional. Heating equipment was not tested during the site visit but appeared to be newer condition than ventilation equipment.
All plumbing piping beneath the building is heavily corroded including valves, connectors and hangers. Cast iron piping is particularly degraded with layers of rusted metal delaminating from pipe surfaces.
Electrical panels at the exterior were heavily rusted and panel access doors were not locked. Total electrical loads were not assessed but electrical circuits appear to have been installed and extended at both the Café and garage. Instances of overloaded extension cords were observed at both buildings and the original electrical power system layout does not appear adequate for contemporary building uses.

(Recommendation)

- **CC-6** – Replace mechanical exhaust and ventilation equipment throughout the Café including reuse of grill hood with new rooftop termination and individual direct venting equipment at each space.
- **CC-7** – Replace water main at building complex including utility meter and vault at north elevation.
- **CC-8** – Replace all plumbing piping and fixtures throughout the Café. Reuse existing fixtures with remaining service life but provide new branch domestic water distribution piping, waste/vent piping, and floor drains.
- **LT-9** – Replace all below floor and exposed plumbing piping at Lifeguard Tower including domestic water and waste/vent piping.
- **LT-10** – Replace electrical service, distribution system and low voltage telecommunications system throughout the Lifeguard Tower. Increase service capacity to serve modern needs.
- **CC-9** – Replace electrical service, distribution system and low voltage telecommunications system throughout the Café. Increase service capacity to serve modern kitchen equipment needs.
- **LT-11** – Assess and replace as needed electrical heating units located at Lifeguard Tower.
- **LT-12 & CC-10** – Install fire suppression and fire alarm systems throughout the building complex.

Supplemental Services
The following are Supplemental Services anticipated to be required during Title I Services for Repair Alternatives:

- Hazardous Material Survey
- Building Code Analysis (Includes Building Occupancy, Fire/Life Safety, Structural, Energy Efficiency and Accessibility)
- Documentation of As-Constructed building conditions
- Structural Assessment of existing building structural system
- Mechanical Assessment of existing building mechanical and plumbing system
- Electrical Assessment of existing building electrical system

REPAIR ALTERNATIVES

Through discussion with the project team, three design alternatives are being explored for the building complex:

1. **Alternative 1 Critical Life Safety & Condition Assessment Repair** – Repair and/or replacement of failing structural building components in tandem with condition assessment deficiencies documented by the park.
2. **Alternative 2 Critical Life Safety & Systems Repair** – Repair and/or replacement of failing structural building components and associated architectural, mechanical, plumbing and electrical components and systems. Repair work to structural components will provide access for targeted repair of building components and systems concealed behind floors/wall/ceilings.
3. **Alternative 3 Code Compliant Upgrade –** Complete rehabilitation of buildings including replacement and upgrade of structural, architectural, mechanical, plumbing, electrical and fire protection to meet current code standards and user requirements.

Descriptions and related costs of each of these are as follows:

Repair Alternative 1: Critical Life Safety & Condition Assessment Repair

Lifeguard Tower:

- Replace 4 x 12 girders and outriggers at first level
- Replace 3 x 12 girders and outriggers at second and third levels
- At girder connections to existing piles, fill existing bolt holes with epoxy, re-drill, and install (2) 1" diameter stainless steel through bolts at each location. (8) connections at each level, (24) connections total, (48) bolts total
- Assess existing piles for concealed deterioration and integrity; epoxy repair as required
- Excavate ground under Lifeguard Tower to ensure a minimum 24-inch clearance from floor framing to surrounding grade
- Replace T1-11 plywood siding and wood decking at east elevation of garage
- Remove rust and repaint metal windows at third floor
- Replace wood railing at third floor
- Replace soffit vent at third floor
- Replace electrical panel and rusted conduit over garage
- Replace hot mop asphalt built up roof and repair associated flashings
- **Probable Net Cost of Construction: $199,871** (See appendix for estimate)

Concession Café:

- Remove flooring and structural sub-floor in areas of obvious water damage. Assess and replace any compromised floor framing
- Remove existing outdoor decking and evaluate existing framing. Replace deck framing as required
- Assess existing piles for concealed deterioration and integrity; replace as required (assume 5-foot embedment)
- Repair/Replace plywood siding and column surrounds at deteriorated locations
- Replace deteriorated fixed wood windows with new operable wood windows
- Replace building electrical panel and conduit over service window
- Provide new underground grease trap
- Excavate ground under Concession Café and Deck to ensure a minimum 24 inches clearance from floor framing to surrounding grade
- Provide ABA compliant service counter and dining tables/seating

- Replace hot mop asphalt built up roof and repair associated flashings
- Replace asphalt shingle roof
- Repair and weatherize pole penetration at asphalt roof
- **Probable Net Cost of Construction: $236,711** (See appendix for estimate)

Repair Alternative 2: Critical Life Safety & Systems Repair

- All architectural, structural and electrical deficiencies noted in Alternative 1
- Remove all tongue and groove siding at Lifeguard Tower to facilitate girder repair. Remove lead paint to bare wood at offsite location and reinstall with new weather barrier and flashings
- Replace all concealed plumbing piping (water, waste, and vent) and deteriorated electrical conduit made accessible at floors and walls during structural repairs
- **Probable Net Cost of Construction (Lifeguard Tower): $278,248** (See attached estimate)
- **Probable Net Cost of Construction (Cafe): $277,725** (See appendix for estimate)

Repair Alternative 3: Code Compliant Upgrade

Lifeguard Tower:

- All architectural, structural, and electrical deficiencies noted in Alternative 1
- Remove all tongue and groove siding at Lifeguard Tower to facilitate girder repair. Remove lead paint to bare wood at offsite location and reinstall with new weather barrier and flashings
- Demolish first floor restroom and shower and replace with ABA-compliant restroom/shower
- Replace handrails and guardrails with code-compliant installations
- Replace all mechanical equipment, plumbing piping, plumbing fixtures and electrical system components with code-compliant, energy-efficient equipment and systems
- Install code-compliant fire suppression and fire alarm system
- **Probable Net Cost of Construction: $532,239** (See appendix for estimate)

Concession Café:

- All structural deficiencies noted in Alternative 1
- Add approximately 40 feet of wood shear wall in each principal direction (east/west and north/south)
    - Shear walls located at the exterior of the kitchen area will sit on top of the floor platform. Additional 4x framing under the walls and holdown/connection hardware will be required to complete the lateral load path from the walls to the piles. Assume (24) holdown connectors at beam-to-beam and beam-to-pile locations
    - Shear walls located in the garage area will be founded on new concrete spread footings (assume 24 inches wide and 16 inches deep)
- Replace existing poles at deck; assume 5-foot embedment by 10 foot above grade
- Replace plywood column surrounds with exposed wood poles at the deck area
- Install code-compliant handrail at deck stair
- Remove roofing and re-nail roof diaphragm to span between new shear walls
- Replace all mechanical equipment, plumbing piping, water meter/shutoff, plumbing fixtures, electrical system components with code-compliant, energy-efficient equipment and systems
- Install code-compliant fire suppression and fire alarm system
- **Probable Net Cost of Construction: $447,033** (See appendix for estimate)

CC-1 Deteriorated Decking at Cafe

LT-1 Deteriorated Wood Decking at South Garage

LT-1 Deteriorated Wood Decking at Lifeguard Tower Entry

LT-2 Weathered Tongue and Groove Siding at Lifeguard Tower

LT-2 Weathered Tongue and Groove Siding at Lifeguard Tower

CC-2 Deteriorated Pole Bases and Plywood Surrounds

CC-3 & LT-4 Hot Mop Built up Asphalt and Asphalt Shingle Roofs

LT-5 Rusted Door Hardware at Third Floor Lifeguard Tower

LT-6 Rusted Metal Window Frames at Lifeguard Tower

CC-4 Deteriorated Wood Windows at Café

CC-4 Deteriorated Wood Windows at Café

LT-7 Non-Compliant Handrail at Lifeguard Tower

LT-8 Wood Guardrail at Third Floor Lifeguard Tower

CC-5 Non-Compliant Service Counter

CC-5 Non-Compliant Dining Table & Benches

STRUCT-1 Deteriorated Structural Wood Girders

STRUC-2 Corroded Structural Fasteners

LT-10 Existing Electrical Panels and Meters

CC-6 Grease Deposition at Café Roof

CC-6 Soiled Exhaust Grille at Café

CC-7 Building Complex Water Main and Meter

LT-9 Corroded Domestic Water and Sanitary Piping

NEW CONSTRUCTION ALTERNATIVES

DESIGN BACKGROUND and EXISTING OPERATIONS

The existing 1966 Lifeguard Tower and connected 1970s era Concession Café located at Stinson Beach in the Golden Gate National Recreation Area. The Concession Café (a.k.a. "Siren Canteen") is housed in the former 1,480 sq. ft. lifeguard administrative portion of the building. Today the site and facility has no accessible route connecting it with other accessible site features and amenities. Vehicular access to the lifeguard station (LGS) and café is limited to a shared asphalt paved service drive, which also provides pedestrian access from the primary north/south accessible route to the existing building. The lifeguard and café uses have no common functional requirements or necessary beneficial relationships. According to life-safety codes, there should be a fire-rated partition separating the station and café. Their proximity contributes to congestion that could adversely affect critical lifeguard operations. The original choice for siting the LGS was likely because it is the highest vantage point in the park, with an excellent 360-degrees of visibility up and down the beach and of the paved parking areas. Now, with the café operating in half the building, the lifeguard support spaces that are not essential to providing public beach safety have been displaced to a temporary modular building, the "TMU", which is 150 feet away, in the parking area northeast of the existing LGS. Consolidating lifeguard operations into a single building will provide space for the fluctuations in staff gender-mix, while improving operational efficiencies, internal communications, and overall coordination.

The café can easily be relocated to another site that is more suitable to its visitor enjoyment role, with improved accessibility, stronger visual presence, and proximity to public restrooms. Two potential sites have been identified as Site A and Site B where the café could be relocated. Both new sites possess the amenities mentioned above as well as additional visual exposure to beachgoers. The current character of the café is understandably appealing to its patrons, by being one of a kind, with a close intimate quality fitting a small beachside resort. If possible, it is desired that these qualities of the visitor experience are maintain in the new café building. The present café has insufficient dry and cold storage space, which generally occupy half the total floor area of similar operations. Service access to the café, trash, and recycling container space are limited and remote.

The lifeguard station and café serve very different visitor related functions. With the mission of providing lifesaving and protective services for all beachgoers, including those outside the formal park boundaries, the LGS has a higher functional priority or more essential service than the café, which serves food and refreshment to those visitors purchasing these services. The park has seen an increase in visitation recently which is placing additional stresses on the current undersized combined facility. While the café benefits from the increased visitation, it has reached its maximum spatial potential. Relocating the café will make space available for additional lifeguard functions. New construction alternatives explore a range of options addressing the current operational limitations and improving the visitor experience for all beachgoers. Alternatives include minor expansion to complete reconfiguration, as well as facilities moving to other sites.

Stinson Beach showing potential construction sites

A/E AUGUST 15, 2019 SITE VISIT

Arriving on site Thursday, August 15, FFA meet with park staff to review current operations for the lifeguard station. A project team meeting was held onsite to discuss the intent of the visit and the need to develop three conceptual alternatives for modifying, or relocating the Lifeguard Station and/or Siren Canteen and discuss possible design approaches. Meeting participants were as follows:

- Richard Melbostad, NPS-GGNRA, Project Manager
- Scott Palmer, NPS-GOGA Chief Lifeguard
- Sally Golub, NPS-GOGA Business Management
- Cal McGuiggan, NPS_GOGA Facility Management
- Sean Reynolds, NPS_GOGA Facility Management
- Barbara Clement, FFA, Project Manager
- Stewart Thompson, FFA Design Lead
- Tim Mitchell, FFA, Project Architect

Project Goals

A. Provide life-safety code compliant facilities
B. Provide ABAAS compliance for both Lifeguard Station and Concessioner Café
C. Improve operational efficiencies of Lifeguard Station and Concessioner Café
D. Develop new construction alternatives that can support continuous café operations and have potential for phased construction.

FUNCTIONAL PROGRAM

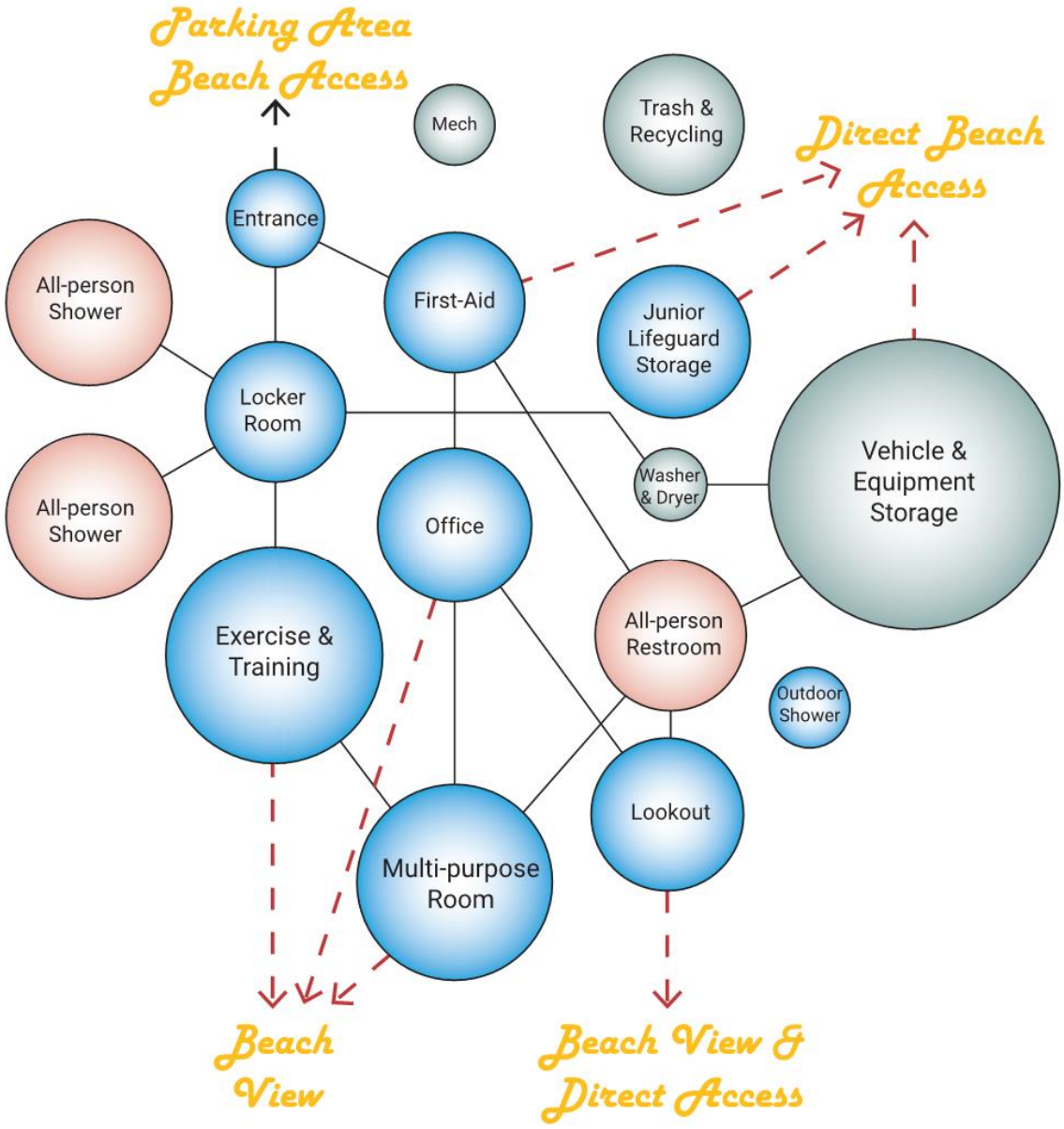
FFA toured the existing Lifeguard Tower, the modular building (The TMU) in parking area, and maintenance warehouse while interviewing NPS Lifeguard Scott Palmer. FFA followed up the interview with photographs and measurement taking. FFA also walked through the Concessioner Café to understand the basic operations and current space deficiencies. The information gathered during the site visit were compiled into a Functional Program for the Lifeguard Station and adjacency diagrams were products. (see Appendix for detailed Functional Program)

Architectural Barriers Act Accessibility Standards (ABAAS) require the Lifeguard Station to be fully accessible, with two possible exceptions:

F203.5 for limited access spaces which are "spaces accessed only by ladders…" This exception can be applied to the Command Tower Lookout.

F206.2.3 if it is a two-story building and one floor has an occupant load of 5 people or less. This translates into a floor with less than 500 sq. ft. This exception applies to the second floor and the ladder accessed mezzanine, or the Command Tower Lookout.

These requirements limit the overall building form and arrangement of functional adjacencies.

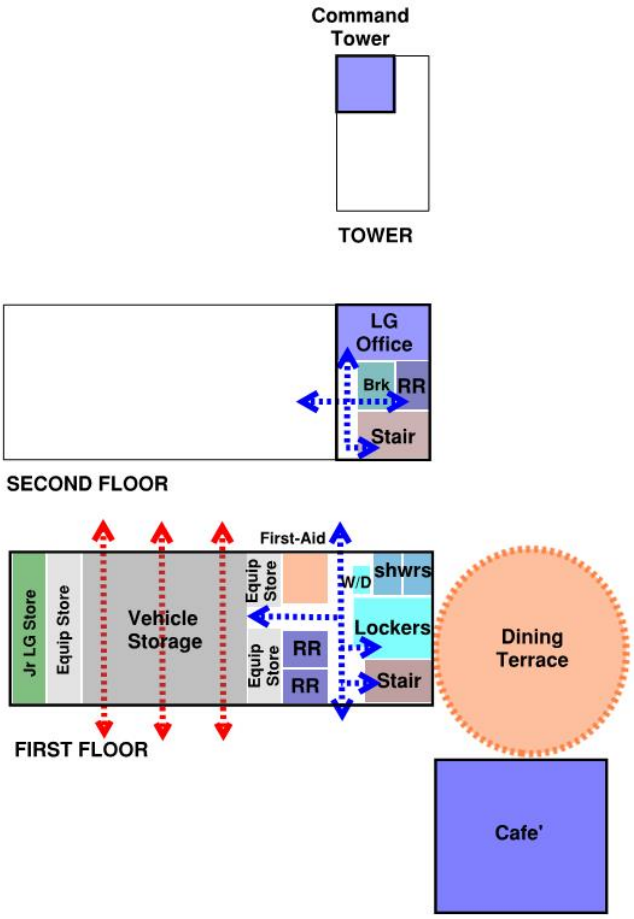


Functional Adjacencies Diagram

The Lifeguard Station is the heart of the beach safety system. Its tower provides an excellent unobstructed visual surveillance platform for command and coordination of lifeguard activities on Stinson Beach, as well as other public beaches to the north, due to its position on the highest point of the site. The Lifeguard Station supports the smaller portable satellite lifeguard lookouts situated on the beach. Command tower staff provide direction and coordination as well as "back-fill" staffing when lifeguards in the lookouts are actively engaged in rescue operations. The station is also home base for other lifeguard activities, including group meetings, fitness exercise, emergency first-aid care and victim transfer to outside ambulance service vehicles, beach and surf rescue vehicle storage with direct beach access, lifeguard administrative duties and management, along with training and the Junior Lifeguard program. The current facility is inadequate to support the full contingent of 15 lifeguards and splits functions between two separate buildings approximately 150 feet apart. Benefits realized by consolidating Lifeguard functions in a single facility are flexible private gender-neutral all-persons showers and restrooms, improved operational efficiencies, improved internal communications, and enhanced overall coordination.

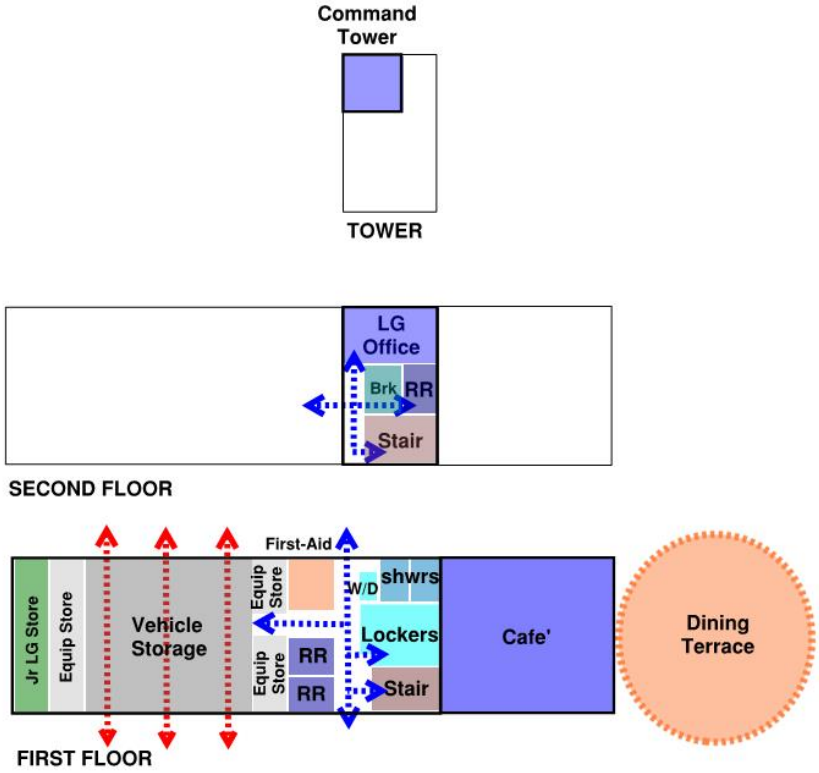
Lifeguard Station Functional Layouts

Three new alternative Lifeguard Station Layouts were developed. Two, Alternatives 2.1 and 2.2 retain the existing lifeguard and café functions on the existing site (Site A). The third Alternative 3 consolidates all the lifeguard functions, including those currently located in the Temporary Mobile Unit or TMU on the south end of the paved parking area east of the existing site, and relocates the café to one of two other possible sites. All three layouts are illustrated in plan and consist of three simple elemental forms; the "bar", a "tower", and the Café "block". According to the functional program, the lifeguard functions total approximately 3,000 square feet in area. Lifeguard functions are arranged on three levels, with most being on the ground floor. Only the Lifeguard Office, a small coffee counter, and small restroom are on the second floor. The Command Tower situated above the office is accessed via ship's ladder from the second floor. The Café is shown at approximately 800 square feet and there is an 800 square foot dining terrace, not shown where not formally programmed for this report.



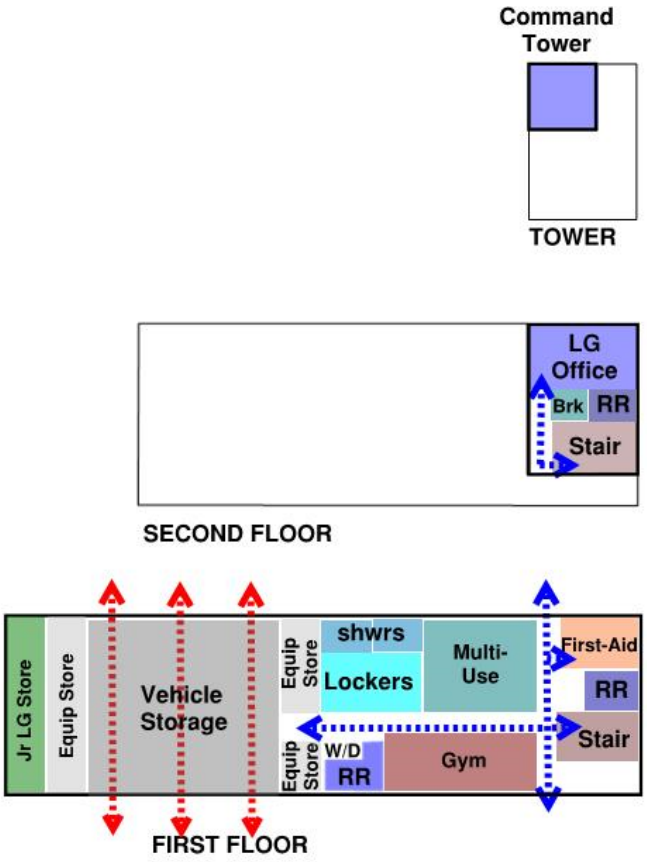
Alternative LGS-2.1 Lifeguard Station Layout

The first layout, **LGS-2.1**, retains the existing first floor lifeguard functions, per the functional program. Lifeguard functions currently housed in the TMU remain in that location. The Café is a separate structure off-set from the bar to provide a code required fire separation between the two different uses. The offset defines a dining terrace which has a beachfront view and direct beach access. It may also facilitate a phased project construction. Footprint areas are 2,100 sq. ft. for the Lifeguard Station and 800 sq. ft. for the Café. .



Alternative LGS-2.2 Lifeguard Station Layout

The second layout, **LGS-2.2**, simplifies the overall footprint creating a single bar with the Café attached to the north end. It is punctuated by the command tower and second floor office. A dining terrace works in conjunction with the Café on the northern end of the bar where it has beachfront views and direct access from the beach. A code required fire partition separates the two functions and nearby restricts openings. Footprint areas are the same as LGS 2.1; 2,100 sq. ft. for the Lifeguard Station and 800 sq. ft. for the Café.

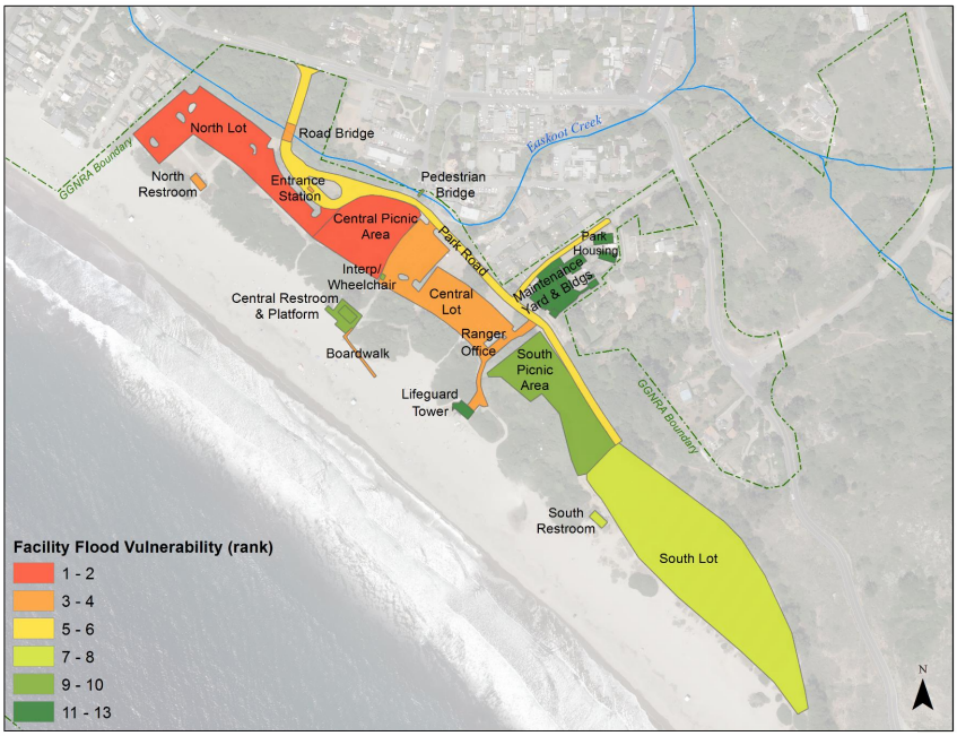


Alternative LGS-3 Lifeguard Station Layout

The third layout consist of a simple bar, like Alternative 2.2, however Alternative 3 consolidates all lifeguard functions in a single location, relocating the Café to one of two other potential sites. Consolidation of lifeguard functions will improve the efficiency of lifeguard operations, internal communications, and enhance coordination. The Lifeguard Station footprint is approximately 28 ft x 105 ft equaling 3,000 sq. ft. Relocating the café to another site offers enlarged footprint, greater accessibility, better visibility, better proximity to restrooms, improved service vehicle access, and reduced risk of fire damage to the Lifeguard Station.

EXISTING SITE FLOODING HAZARDS AND DESIGNATED WETLANDS

Minimum depth-to water recorded since well installation (highest groundwater condition), and designated wetland map, (from 2018 Facility Vulnerability Assessment)



Facilities symbolized by flood vulnerability ranking, (from 2018 Facility Vulnerability Assessment)

CONCEPTUAL SITE ALTERNATIVES

Stinson Beach showing potential construction sites for the Concessioner Café (Siren Canteen)

Two potentially viable sites were identified for new construction.

- **Site A** is the existing site and includes the Temporary Mobile Unit or TMU that sits on the southern edge of the paved parking area east of the current site. The dining area character of this site is small, intimate and strongly connected to the surrounding landscape that attracts beachgoers. Site A occupies the highest point on the site. It is presents challenges for accessibility and there is little space for amenities such as restrooms, trash/recycling enclosures, or service vehicle parking. With expanded building footprints, LGS Alternatives 2.1 and 2.2 maintain the Lifeguard Station and Café on Site A.
- **Site B** is where the existing central comfort station is sited. LGS Alternative 3 proposes a new Concessioner Café immediately east of the existing comfort station with dining nestled into the existing landscape, recalling the desired look and feel of the current Siren Canteen dining terrace. Site B sits along side a major pedestrian path connecting the parking areas to the beach and is easily accessible, while providing improved serviceability.

Alternative LGS 2.1 on Site A (Existing Site)

Alternative LGS 2.1 on **Site A** shifts the Café and Lifeguard Station northward and off-sets the café eastward on the existing site. Lifeguard operations remain split between two separate buildings. Offsetting the Café allows for a protected dining terrace with the same character while providing direct beach access and ocean views. This site arrangement facilitates phased construction and continued Café operation. A new accessible route to the Café and Lifeguard Station is required. Utilities are available for both buildings on site. Possibility of congestion and servicing conflicts are minimized with separate service parking for the Café.

Alternative 2.1 benefits include:

- Lifeguard Operations and Café remain at the present location
- Reduces congestion at Lifeguard Station with expanded service vehicle parking area
- Maintains Café dining terrace character, beach views and direct access
- Provides Café with greater accessibility
- Facilitates phased construction possibilities

Alternative LGS 2.2 on Site A (Existing Site)

Alternative LGS 2.2 on **Site A** relocates the Café and Lifeguard Station northward on the existing site, with the café remaining on the northern end of the Lifeguard Station. Lifeguard operations continue to be split between two separate buildings. Vehicle access is expanded with new larger vehicle storage bays. The Café dining terrace has the same character while providing direct beach access and ocean views. A new accessible route to the Café is required as shown. Utilities are available for both buildings. The possibility of congestion and servicing conflicts remain.

Alternative 2.2 benefits include:

- Lifeguard Operations and Café remain at the present location
- Reduces congestion at Lifeguard Station with expanded service vehicle parking area
- Maintains Café dining terrace character, beach views and direct access
- Improved Café visibility
- Provides Café Accessibility
- Conserves existing vegetation

Alternative LGS 3 on Site A (Existing Site)

Alternative LGS 3 on **Site A** relocates the Café to the paved parking area east of the station where the TMU. is the presently sited. The Café has improved commercial visibility from the paved parking areas and an expanse of lawn southeast for diners. Lifeguard operations are consolidated in the new station. Vehicle access is expanded with new larger vehicle storage bays. An accessible route to the station is required. Utilities are available in both building locations. This alternative accommodates phased construction and continued Café operation.

Alternative 3/Site A benefits include:

- Consolidates Lifeguard Operations at current Site A
- Reduces congestion at Lifeguard Station
- Improved Café visibility
- Provides Café Accessibility
- Provides open lawn area to the south for expanded dining
- Improved Café serviceability
- Provides future Café expansion possibility
- Conserves existing vegetation
- Facilitates phased construction possibilities

LGS Alternative 3 showing Siren Canteen on Site B

LGS Alternative 3 could also locate the new Café east of the existing central Comfort Station adjacent to the major accessible pedestrian pathway connecting the parking areas with the beach. This site has the possibility of tucking the Café dining terrace up against the vegetated dunes, capturing the desired character of the existing dining terrace. Servicing the Café will require coordination to avoid conflicts with beachgoers, but is more direct than offered by the current site. This alternative accommodates phased construction and continued café operation. **Site B** is in close to available potable water, sanitary sewer, and electrical infrastructure reducing construction cost.

Alternative 3/Site B benefits include:

- Consolidates Lifeguard Operations at current Site A
- Improved Café visibility as "gateway" element
- Provides Café Accessibility
- Maintains Café dining terrace character
- Improves proximity to Comfort Station
- Provides future Café expansion possibility
- Conserves existing vegetation
- Facilitates phased construction possibilities

Supplemental Services
The following are Supplemental Services anticipated to be required for New Construction:

- Hazardous Material Survey
- Building Code Analysis (Includes Building Occupancy, Fire/Life Safety, Structural, Energy Efficiency and Accessibility)
- Detailed Site Survey
- Geotechnical Investigation/Report
- Assessment of existing Infrastructure capacities including; electrical, domestic water, sanitary sewer

COST ESTIMATES

Construction Cost Estimates were prepared for two different new replacement Lifeguard Station Concepts: Conceptual Alternative LGS 3; is a 3,000 sf station with Multi-purpose and Gym spaces and Alternative LGS 2; are for a 2,100 sf station without Multi-purpose and Gym spaces. A separate estimate was prepared for a new 800sf Siren Canteen Cafe. Construction cost for LGS 2.1 and LGS 2.2 were estimated separately from the Siren Canteen cost. Depending on the building arrangement on each site the estimates may be combined to determine the cost for a site with a certain buildings/functions, for example, the construction cost for LGS 2.2 combines construction cost for LGS 2 plus the Siren Canteen Café cost or $3,055,212 + $1,884,212 = $4,939,424.

Item No.	Description	Quantity	Unit	Cost/Unit	Total	Total
1	Lifeguard Station - Alt. LGS 3	3,000	SF	$380	$1,139,273	
2	Lifeguard Station - Alt. LGS 2	2,100	SF	$451		$947,547
18	Not Used	1		$0		
	Subtotal Direct Construction Costs				**$1,139,273**	**$947,547**
	Value of Government Furnished Property (GFP) Included in Direct Cost (see footnote)*				**$0**	**$0**
				Direct Cost Subtotal without GFP	**$1,139,273**	**$947,547**
	Published Location Factor	28.50%			$324,693	$270,051
	Remoteness Factor	2.40%			$27,343	$22,741
	Federal Wage Rate Factor	0.00%			$0	$0
	State & Local Taxes - 40% of Direct Costs	8.25%			$37,596	$31,269
	Design Contingency	25.00%			$284,818	$236,887
	Total Direct Construction Costs				**$1,813,723**	**$1,508,495**
	Standard General Conditions	20.00%			$362,745	$301,699
	Government General Conditions	8.00%			$145,098	$120,680
	Historic Preservation Factor	0.00%			$0	$0
	Subtotal NET Construction Cost				**$2,321,565**	**$1,930,874**
	Overhead	12.00%			$278,588	$231,705
	Profit	10.00%			$232,157	$193,087
	Estimated NET Construction Cost				**$2,832,310**	**$2,355,666**
	Bonds & Permits	3.18%			**$89,954**	**$74,816**
	Contracting Method Adjustment	10.00%			$283,231	$235,567
	Inflation Escalation	24	Months	7.05%	$467,907	$389,164
	Total Estimated NET Cost of Construction				**$3,673,402**	**$3,055,212**

Estimated Construction Cost for the two versions of the Lifeguard Stations are:

LGS 3 New 3,000 sf Lifeguard Station with Multi-purpose and Gym/Exercise Rooms:..... **$3,673,402**
LGS 2 New 2,100 sf Lifeguard Station without Multi-purpose and Gym/Exercise Rooms:.... **$3,055,212**

Item No.	Description	Quantity	Unit	Cost/Unit	Total
1	Siren Canteen Café	800	SF	$731	$584,486
18	Not Used	1	VALUE	$0	
	Subtotal Direct Construction Costs				**$584,486**
	Value of Government Furnished Property (GFP) Included in Direct Cost (see footnote)*				**$0**
				Direct Cost Subtotal without GFP	**$584,486**
	Published Location Factor	28.50%			$166,578
	Remoteness Factor	2.40%			$14,028
	Federal Wage Rate Factor	0.00%			$0
	State & Local Taxes - 40% of Direct Costs	8.25%			$19,288
	Design Contingency	25.00%			$146,121
	Total Direct Construction Costs				**$930,502**
	Standard General Conditions	20.00%			$186,100
	Government General Conditions	8.00%			$74,440
	Historic Preservation Factor	0.00%			$0
	Subtotal NET Construction Cost				**$1,191,042**
	Overhead	12.00%			$142,925
	Profit	10.00%			$119,104
	Estimated NET Construction Cost				**$1,453,071**
	Bonds & Permits	3.18%			**$46,150**
	Contracting Method Adjustment	10.00%			$145,307
	Inflation Escalation	24	Months	7.05%	$240,052
	Total Estimated NET Cost of Construction				**$1,884,580**

Estimated Construction Cost for a new 800sf Siren Canteen Cafe:..... **$1,884,580**

FFA Architecture and Interiors, Inc.
520 SW Yamhill Suite 900, Portland, OR 97204
T 503-327-0335 F 503-222-1701
www.ffadesign.com