



U.S. Forest Service

M/V Chugach and the Forest Service Ranger Boats

Book 2: Conceptual Design Plan—Content

5/23/2022

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PROJECT VISION & PARAMETERS

The M/V *Chugach* is a 62-foot wooden motor vessel that the U.S. Forest Service commissioned as a Ranger Boat, part of a fleet that served southcentral and southeast Alaska. Built in 1925, the M/V *Chugach* operated for 90 years along the coastlines of National Forests in Alaska. Today, the M/V *Chugach* is on the National Register of Historic Places and is exhibited at the Nolan Center in Wrangell, Alaska.

In 2015, the Forest Service brought the M/V *Chugach* to Wrangell for restoration at a local boat works. Following its restoration, the *Chugach* moved to the Wrangell shipyard for storage. The Forest Service decided to take the *Chugach* out of service in 2016.

Now, the restored M/V *Chugach* is on display under protective wrapping at the Wrangell Museum at the Nolan Center. Plans are underway to construct a shelter, walkway, and viewing platform to complete the new exhibit. The boat has already become a captivating attraction for visitors to the waterfront.

The Forest Service commissioned an Alternative Use Feasibility Study in August 2016. The study looked at several management options that included: return the *Chugach* to its dockage in Petersburg, retention and reuse as an Alaska Region (Region 10) asset, lease, donate to a Museum, adaptive reuse for Heritage Expeditions, adaptive reuse for recreation rental, or sale or donation. As part of the study, the Forest Service and heritage advisors conducted an extensive outreach campaign to inform the preservation and future adaptive use of the *Chugach*. In response, several public and private

organizations expressed interest in the future use of the *Chugach*, and the Forest Service received three formal proposals. While two proposals would preserve the historic significance and integrity of the *Chugach*, the Forest Service chose the Wrangell Museum proposal as the most feasible. As a result, the M/V *Chugach* enjoys pride of place on the Wrangell waterfront—an asset to the Museum at the Nolan Center, the City and Borough of Wrangell, and the U.S. Forest Service (Region 10).

A 2020 Memorandum of Understanding outlined the roles and responsibilities of the U.S. Forest Service, the City and Borough of Wrangell, and the Nolan Center. The Forest Service has loaned the *Chugach* to the Wrangell Museum at the Nolan Center and funded

the site preparation, the cradle construction, and ongoing maintenance. In addition, the Service provided funding for the interpretation and conceptual design of the infrastructure needed to support, display, and protect the *Chugach* in its exterior site location. The City and Borough of Wrangell is securing funding for the design, development, and construction of the infrastructure. The Nolan Center is providing support to the development of interpretation, providing exhibit space, and aiding in fundraising efforts.

The development of this Conceptual Design Plan is the next step in realizing the vision for this project: to raise awareness of, bring attention to, and celebrate the unique history of the *M/V Chugach*, a national treasure in the region's maritime history. The story of the *M/V Chugach* is the story of the U.S. Forest Service in Alaska.

Parameters

This narrative—along with the Conceptual Design of the Pavilion under separate cover—forms the complete Conceptual Design Plan. The documents are designed to be read side-by-side, ensuring that content direction and infrastructure meet the vision of all stakeholders invested in the success of this project. In developing this plan, the team addressed the following challenges and amplified the following strengths.

Infrastructure Challenges

- Site constraints: sufficient grades for ramp rise under the Americans with Disabilities Act requires the design to wrap around the boat, partially obscuring the *Chugach* from view.
- ADA constraints: while an ADA-accessible ramp can be provided, full access to the boat's interior is not possible.
- Exterior weather concerns: the infrastructure design needs to accommodate protection for severe weather, particularly in the off-season.
- Protection: a barrier system needs to be devised to prevent people from accessing the infrastructure and boat interior during off-hours.

Interpretive Challenges

- Holistic interpretive approach: due to funding constraints, the development of interpretation will need to be phased; critical interpretive exhibits are planned here for the initial installation, with concepts for future interpretation outlined.
- Interpretive balance: with limited ADA access to the interior of the *Chugach*, interior interpretation cannot take advantage of in-situ opportunities without the development of like experiences for those who cannot access the interior.
- Create historical context: the boat currently has modern instrumentation and structural alterations completed since the heyday of the service period of the *Chugach*.

Infrastructure Strengths

- Site opportunities:
 - The current placement of the M/V *Chugach* offers pride of place location for the boat. Visitors arriving from the Museum and the waterfront are drawn in from afar.
 - The site offers a stunning view of the surrounding waterways and islands and a view of the adjacent working boatyard.

Interpretive Strengths

- Macro-artifact: the boat itself is the main character in a nine-decade story that ties together Alaskan communities and the federal government with the natural resources of southcentral and southeast Alaska.
- Interpretive stakeholders: this work is being completed at a time when those who worked or traveled on the *Chugach* and their descendants are able to provide in-depth first-person accounts.
- Relevancy: most tourists will arrive by boat, allowing interpretation to drive home the ongoing relevance of how people in southcentral and southeast Alaska have always moved about the region and continue to do so today.

INTERPRETIVE APPROACH

As one of the first tasks, the Alchemy of Design team participated in on-site and virtual stakeholder meetings that welcomed the input of many participants from the U.S. Forest Service past and present, the Nolan Center, the City and Borough of Wrangell, and the State of Alaska. During the brainstorming sessions, the first question the groups discussed was *What Are the Big Ideas?* The many thoughtful and knowledgeable responses allowed the Alchemy team to consolidate the ideas into a handful of overarching concepts.

On day two of the brainstorming sessions, the group revisited the concepts, resulting in an additional concept: The Boat, itself as a big idea.

While not a comprehensive reflection of all the ideas, these concepts provide a series of big ideas that led to the development of theme statements.

The theme statements are the main ideas that will be revealed in interpretive exhibits and experiences. These main themes will be buoyed by subthemes and supporting topics. This interpretive approach will provide the foundation or roadmap for the development of exciting, engaging, and relevant visitor experiences.

In addition to the on-site/virtual stakeholder meetings, the Forest Service published a survey that provided in-depth responses to several questions that have helped direct this plan.

Narrative Walkthrough

This Conceptual Design Plan envisions a vibrant and engaging interpretive approach to the *M/V Chugach*. Attractive graphics will combine interpretive text in concise themes with high-quality designs using photography and illustrations. The following narrative describes the experiences visitors might have when visiting the site.

what are the big ideas?



Arriving at the Nolan Center, visitors find a section of the hallway devoted to exhibits about the Ranger Boats of southcentral and southeast Alaska. Interpretive wall graphics set the stage and provide context for the Ranger Boat Fleet, exploring the mission and management of the U.S. Forest Service in Alaska. Interpretive additions could include a display of artwork or a small wall-mounted artifacts case for logbooks or similar selected artifacts. A takeaway brochure would explore the entirety of the fleet that would allow visitors to trace the birth, growth, and conclusion of the Ranger Boats. A touchscreen would enable visitors to select from a range of oral histories from those who served and traveled on the Ranger Boats.

Leaving the initial exhibit behind, visitors exit through the double doors and find a wayfinding sign directing them to the right. Wayfinding signs might feature photography, the boat name, and directional text or arrows as needed for clarity. Continuing toward the waterfront, visitors get the first look at the size, beauty, and elegance of the *M/V Chugach*. A wayfinding sign directs visitors to the ramp to the *Chugach*.

As visitors follow the ramp to the entrance to the *M/V Chugach*, they see a series of graphics on the structural poles with brief interpretive messages, engaging photos, or quotes from captions. At each ramp platform and on selected inclines, visitors discover angled interpretive panels that tell the story of the *M/V Chugach*. Graphics could be accompanied by QR codes or NFC tags in some areas to find more information if desired.

Arriving at the top of the ramp, visitors can elect to step inside the *M/V Chugach*. Inside the boat, visitors can explore the various purpose-built spaces on the boat. Interpretive signage helps visitors understand how the captain piloted the boat and how crew and travelers existed on the boat. Potential graphics help explain the boat's instrumentation, propulsion, and technologies. Excerpts from the *Chugach* captains and crew reports bring to life the day-to-day experiences on the boat.

QR codes or NFC tags could be highlighted at the top of the ramp and elsewhere, encouraging visitors to access a virtual flythrough or guided tour video. This feature would maximize like-experiences for visitors who are unable to enter the boat or visitors who are unable to visit Wrangell.

Off-site Interpretation

Opportunities for interpretation beyond the Wrangell Museum are only limited by budget. Teaser graphics could encourage visitors to other U.S. Forest Service locations in Alaska and neighboring communities to visit Wrangell, the Nolan Center, and the boat display. Distribution could be handled by both the Forest Service and tourism bureaus.

An excellent opportunity to place the *M/V Chugach* and the Ranger Boat Fleet in the national context of the U.S. Forest Service exists at the National Museum of Forest Service History. There, visitors might experience a range of exhibit approaches, from a takeaway brochure on the Ranger Boat Fleet to interpretive panel exhibits or multimedia displays reflecting the themes found within this document.

INTERPRETIVE THEMES

The Alchemy of Design proposes the following main interpretive themes and associated subthemes.

Main Themes & Subthemes

Main Theme 1: Unique to the Forest Service in Alaska, ranger boats served as the “workhorses” of these northern coastal forests, playing a critical role in their management.

Subtheme 1-1

- The Ranger Boats became mobile maritime offices and home away from home for Forest Service rangers and other personnel who managed the National Forests resources and who often remained out for weeks at a time.
 - Since 1908, ranger boats have played a prominent role in administering the Chugach and Tongass National Forests.
 - The ranger fleet provided reliable and efficient transportation in the days before adequate aircraft services.
 - The dense coastal forests and islands were inaccessible by horse or motorized travel by land.
 - Known unofficially as the “Green Serge Navy,” the ranger boat fleet operated in Tongass and Chugach National Forests.
 - The first ranger boat built to Forest Service specifications was the 64-foot *Tahn* (1908) and operated in the Tongass out of Ketchikan.
 - The Forest Service purchased *M/V Restless* in 1911 for use in the Chugach.
 - 1913, the 35-foot *M/V Ranger 1* and *M/V Ranger 2* were added to the fleet.
 - 1919 - 1921, the Service acquired the *M/V Hiawatha*, a 98-foot former naval patrol boat, and the *Weepoose* from surplus World War I equipment.
 - At its peak in 1930, the fleet included *Ranger 1*, *Ranger 2*, *Ranger 4*, *Ranger 5*, *Ranger 6*, *Ranger 8*, *Ranger 9*, *Tahn*, *Weepoose*, *L-38*, and *Chugach*.
 - The Forest Service added two metal-hulled ranger boats in 1957—the *Sitka Ranger* and the *Tongass Ranger*—that remained in service until 2010.
 - Numerous captains and crew members operated the Forest Service Ranger Boats. Scores of rangers, scientists, resource specialists, recreational staff, and others traveled on the boats. Their stories reveal triumphs and challenges, as well as sights, sounds, and smells of time spent on the water.
 - Ranger boat captains did much of the maintenance and repair themselves since the boats were often far out; captains were known for “ingenious fixes.”

- Beyond official management duties, the Ranger Fleet provided vital assistance to communities in southcentral and southeast Alaska with emergency response, health care response, supply and delivery, and transportation among communities—this assistance greatly aided the regional economy and the welfare and safety of isolated communities.

Subtheme 1.2:

- Ranger boats evolved within this maritime context, adapting to changing needs for natural resources management and community connections.
 - Chugach and Tongass National Forests were called “maritime forests” because travel by water was necessary where few roads and trails existed.
 - Traditional Forest Service patrols in the lower 48 were typically conducted by horseback and later by motorized vehicles.
 - Early ranger boats surveyed homesteads, established river gauge stations, investigated cases of trespass, marked timber, enforced regulations, scaled log rafts, and mapped forest-use areas and structures (canneries, fox farms, cabins) as well as provided transportation for a wide variety of passengers.
 - Management:
 - Early governmental conservation policy reflected an interest in protecting local or regional water supplies and timber resources, particularly for resources with commercial value.
 - The establishment of national forests during the late 1800s pre-dates the creation of the Forest Service in 1905.
 - The rapid development of the salmon industry
 - W.A. Langille became the first forest supervisor in 1905. He advocated for boats as a necessity for effective management. Early supervisors had to charter boats or hitch rides on other boats to monitor and permit timber sales and survey totem poles.
 - As the ranger boat fleet grew, the Forest Service established a station on Gravina Island near Ketchikan in 1916 to maintain and service the fleet.
 - Chugach National Forest:
 - Created in 1907
 - Heavy timber workload during the construction of railroads
 - 1920s: boom in fox farming; U.S. Forest Service inspected farms annually and issued permits.
 - 1940s: timber production falls off
 - Forest Service moves to chartered boats, surplus Coast Guard boats, and aircraft
 - Tongass National Forest:
 - Created in 1907

- Post-WWII: heavy timber production for the post-war need for wood products in Japan and other industrialized nations.
- 1920 – 1950: the most active time for the ranger boat fleet
 - Rangers were in close personal contact with resources and communities
 - Ranger trips lasted weeks at a time.
 - Ranger boats visited small, isolated logging camps and other forest use areas.
 - Robust boats, such as the *Chugach*, operated year-round.
 - Forest Service supervisors first began to recognize the recreational potential as early as 1923.
- 1950s: the role of the ranger boats transitions
 - Highly organized bureaucracy to manage the 50-year timber contracts and large-scale logging
 - Rangers made shorter trips over smaller distances.
 - Ranger boats towed scows for engineering crews and supplied camps with fuel, food, and other supplies.
 - Search and rescue operations decreased with the growth of the Coast Guard presence.
 - Ranger boats visited large, clear-cut operations.
 - Ranger boats saw increased use for multidisciplinary resource teams.
 - Rangers spent approximately half as much time in the field as before. Access to timber sites could be reached in hours by floatplane or helicopter rather than days.
- 1968: The Forest Service shifts in policy away from clear-cutting and large timber sales due to legal challenges and exhaustion of timber resources.
- 1970: the ranger boat fleet decreased to three boats (*Chugach*, *Sitka Ranger*, and *Tongass Ranger*); the ranger fleet was not deemed expendable, but fleet reductions were proposed due to budgetary constraints.
 - A seasonal need for a boat fleet arose with the advent of the Youth Conservation Corps and the Young Adult Conservation Corps.
 - She was very instrumental in the 1970s and 80s long-term timber sale program, and in the 90s and 2000s, other resources, particularly Heritage but also including Wilderness, Special Uses, and Recreation, took advantage of her lessened timber use to greatly benefit the program reach and FS presence in remote locations.
- 2010: *Chugach*, *Sitka Ranger*, and *Tongass Ranger* spent a combined 100 days on the water.
- Present:
 - Some aspects of management remain constant: the need to take into account historical land use and the need to keep an eye on resources.
 - The Forest Service incorporated adaptive management strategies.
 - Healthy wildlife and salmon populations sustain subsistence and recreation as well as commercial fisheries and tourism that is vital to the Alaskan economy; the Forest Service works to balance business operations with the environment in striving for zero net consumption.

Main Theme 2: The M/V *Chugach* operated as part of the Forest Ranger Boat Fleet—she served for 90 years and remained the last wooden Forest Service boat in commission.

Subtheme 2.1:

- Renowned Seattle naval architect L.H. Coolidge designed the M/V *Chugach* to Forest Service specifications—many considered the purpose-built 62-foot, wooden-hulled crew vessel to be the top of the line, the best handling, and most seaworthy of the entire ranger boat fleet.
 - Designed by L.H. Coolidge of Spaulding & Associates and constructed by Olathe Enterprises in Seattle in 1925
 - Final construction and outfitting costs, including engine installation, totaled \$26,185. The price included the Atlas engine (\$5,890) and the exchange value of the *Hiawatha* (\$12,500).
 - Specifications:
 - Displacement: approximately 40 tons
 - Hull: 62-feet long and 14.5 feet wide; a round-bottomed displacement hull with a slightly forward-raked bow and a round, fantail stern
 - Engines:
 - Original engine: three-cylinder, 75 hp diesel Atlas Imperial manufactured by the Atlas-Imperial Engine Company of Oakland, California; speed: approximately 8 -9 knots
 - Second engine: installed in 1954 with a Gray Marine, 6-cylinder, 165 hp diesel engine, Model 64HN9
 - Present engine: installed in 1980 with an updated version of the Gray model
 - Generator: 32-volt electrical system could supply the needs for one or two days at anchor; batteries could be fully charged in one day's run
 - Fuel capacity: 5 tons
 - Propeller: original bronze propeller: 48 inches in diameter by 44 inches of pitch; quickly shortened to 46 inches
 - Materials:
 - Ribs: white oak steam-bent to shape
 - Stem: white oak
 - Deck planking: Douglas fir
 - Hull planking: Douglas fir
 - Design and Adaptations:
 - Below deck from stem to stern, the hull is comprised of the forecabin, engine room, trunk cabin, and galley
 - Above deck: pilothouse over the engine room, galley with oil-burning stove, dining room
 - Original wood and brass steering wheel and teak doors

- Initially outfitted with a wooden mast with a boom and block and tackle for lifting the lifeboat and skiff
- 1928: outfitted with auxiliary sailing rig
- 1930s: Marconi antenna, towing lights
- 1946: Type 395a radio transmitter and 736D receiver added
- 1960: mainmast removed
- 1980: original fir bulwarks replaced with aluminum, and a railing of galvanized iron stanchions was added to improve safety
- 1981: metal mast added for modern whip antennas and towing lights
- 1990s: addition of an inflatable life raft and radar gear
- The external appearance remains much the same, while the interior reflects updates for the needs of a working boat over time
- Color Scheme:
 - Original ranger boats sported yellow hulls and red deck houses
 - 1930s: *Chugach* sported white with crimson pilothouse and trunk cabin
 - 1940s: wartime gray
 - 1946: dark green (Heintzleman green named after B. Frank Heintzleman, the regional forester who became Governor of Alaskan Territory in 1953.)
 - 1950s: white with brown foredeck
- Refurbishment / Restoration:
 - The M/V *Chugach* underwent a major refurbishment in 1993 at the Port Townsend Boatworks and re-entered service on May 20, 1995.
 - Details about the restoration
 - After being removed from service, the M/V *Chugach* was restored at a local boatyard.
 - Details about the restoration
 - Construction of wooden boats (challenges and maintenance needs)
 - After restoration, the *Chugach* spent six years at the adjacent Wrangell Boatyard.
 - You can see the boatyard in action: the boatyard provides haul-out and repairs for large vessels and winter storage.
- Flag:
 - The Forest Service had its own flag for nearly 75 years. The design consisted of a blue background with 13 white stars encircling a white Forest Service shield. Forest Service officials preferred a green background; however, it was discovered that the green dye was not color-fast and faded in the rain, sun, and saltwater. The flag was discontinued in 1985.

Subtheme 2.2:

- Unique to the Ranger Boat Fleet, the *M/V Chugach* served the entire 14,500 miles of *both* the Chugach and Tongass National Forests—the two largest national forests in the nation.
 - The terrain of southcentral and southeast Alaska is characterized by steep topography with large glaciers that abut coastal waters and numerous islands.
 - During the decades of service, the *M/V Chugach* played an essential role in the successful administration of the nation's largest national forests as the Territory of Alaska moved into statehood (Territory: 1912; State: 1959)
 - Chugach National Forest:
 - Cordova served as the headquarters of the Copper River and Northwestern Railway (CR&NWR), which hauled ore from copper mines.
 - The Forest Service administered timber sales and permits for canneries, fish traps, wharves, fur farms, and homesteads.
 - Over the 90 years of its operation, the *M/V Chugach* has evolved in many ways to meet the needs of the U.S. Forest Service.
 - Since launching, the *Chugach* has been in continuous service associated with the broad patterns of administrative history and economic development of southcentral and southeast Alaska.
 - *Chugach* played a role in the safety and welfare of isolated communities, transporting doctors, nurses, and veterinarians.
 - *Chugach* carried game wardens to distribute hay for starving deer in winter.
 - *Chugach* relit U.S. Lighthouse Service lights and buoys.
 - *Chugach* carried prohibition agents, court officials, religious leaders, charity officials, and law enforcement officials to perform their duties.
 - *Chugach* carried the mail, food, and other supplies to far-flung communities.
 - *Chugach* responded to search and rescue efforts and emergencies.
 - 1927: search for S.S. *Pioneer*
 - 1929: search for the Gorst Air Transport, Inc. amphibian plane
 - 1938: search for the *Ya-Sure*
 - 1942: cannery tender *Taku*
 - 1989: *Exxon-Valdez*
 - Timeline of Service:
 - 1920s: the *Chugach* was a primary means of government transportation and communication in Prince William Sound and a primary role in emergency relief.
 - In the 1930s, the scope of the Forest Service work in Alaska increased when the Forest Service became the administrator of the Civilian Conservation Corps. The CCC worked to combat the effects of the Great Depression by employing young men in conservation-related projects. This work was primarily administered from the *Chugach*.

- The *Chugach* transported troops during World War II.
- Late 1940s, the fleet workload fell off in the Chugach National Forest as timber needed for railroad construction waned.
- In 1953, the *Chugach* was transferred from the Chugach National Forest to the Tongass National Forest, where timber production boomed in response to post-war needs in Japan and other industrial nations.
- 1992: *Chugach* placed on the National Register of Historic Places (Period of Significance 1925 – 1941)
- Captains:
 - Erland M. Jacobsen: 1926 – 1949
 - Harold “Andy” Anderson; 1949 - 1950
 - Spencer Israelson: 1950 – 1962
 - Erling W. Husvik: 1962 – 1967
 - Art Rosvold: 1967 – 1988

Subtheme 2.3:

- The M/V *Chugach* played a critical role in transporting dignitaries, government agents, scientists, and other passengers in their efforts to study and understand the natural resources and people of southcentral and southeast Alaska.
 - The M/V *Chugach* served as a floating station for scientific research and reconnaissance of the natural and cultural features of the region.
 - Service Details:
 - *Chugach* transported personnel from U.S. Biological Survey (today’s U.S. Fish and Wildlife Service), National Park Service, Bureau of Mines, Department of the Army, U.S. Coast Guard, Bureau of Indian Affairs, Bureau of Fisheries, and other agencies and organizations:
 - Foresters, archaeologists, geologists, soil specialists, hydrologists, biologists, and more
 - 1931 – 1936: archaeologist Dr. Ales Hrdlicka excavated on Kodiak Island
 - 1933: Dr. Frederica de Laguna: a prominent archaeologist who excavated extensively in coastal and interior Alaska, accompanied archaeologist and ethnographer Dr. Kaj Birket-Smith
 - Dr. Robert F. Heizer
 - *Chugach* transported important passengers, including a Congressman, a Washington D.C. agency chief, and Territorial Alaska bureau chiefs
 - *Chugach* accompanied the tribal canoes and Chief Shakes from communities to the dedication of the restored Longhouse.
 - A Day Aboard the *Chugach*
 - The work could be arduous, long days were not unusual, and days off were rare.

- Captains piloted the boats and escorted rangers to and from field outposts.
- Quotes:
 - William Weigle (Forest Supervisor, 1911 – 19191): *“The motor boat took the place of the saddle and pack horse; hip boots and a rain slicker the place of chaps; and it was much more essential that a ranger know how to adjust his spark plug than be able to throw a diamond hitch. His steed may do just as much pitching and bucking, but this is prompted not by a spirit of animal perversity but by the spirits of climatic adversity.”*
 - Nancy Jacobsen Lindholdt (daughter of Erland Jacobsen): *“We have fond memories of the boat. Dad drilled safety into us. When we went to the boat’s “head” situated in the engine room, we had to pass the large flywheel. Dad warned us that the flywheel could tear off your arm. When Dad docked the boat, he taught us to never stand in the doorway. One day we had a passenger on the boat who didn’t know not to stand there. Dad said, “Damn!” I had never heard Dad say that before.”*
 - Robert Kinville (Skipper 1995 – 2010): *“We towed wannegans for the Wrangell District to the Bradfield Canal area and brought them back in fall. I discovered many crab traps near the Back Channel Narrows, I had to station a look-out on the Chugach’s bow to help me dodge them.”*
 - Roy Mitchell (Supervisory Fleet Manager) exact quote to be requested: sharing a cup of coffee; coming home wet, cold, and tired to a hot home-cooked meal and a warm, dry, safe, and comfortable space; the warmth of a wooden boat; the camaraderie
 - Gina Esposito (Archaeologist) exact quote to be requested: it was warm and cozy before and after braving the elements; it was home in the middle of the remote wilderness; it could be loud—the boat creaking at anchor, the feel of small swells and rocking, cabinet doors clicking, whales breathing, rain on the deck above, you can hear the anchor chain going up and down, birds (gulls, shorebirds, seabirds), water breaking the bow, sights seen (whales and wolves)
 - Rachael Myron (Archaeologist) exact quote to be requested: you trusted the skipper; the skipper had extraordinary responsibilities for the boat; you trusted you could work and know you were in good care and that you would find safe harbor; there was no uncertainty, a feeling of competence

INTERPRETIVE PLAN

In the following matrix, the Alchemy of Design proposes how themes and subthemes might be expressed in experiences and exhibit media. Sub-topics in some cases have been condensed, but details of many themes will be represented in fully developed exhibits.

Possible Experience / Media	Relevant Themes, Subthemes, and Topics	Resources
1.0 Inside the Nolan Center		
1.1 Primary Interpretive Graphic	<p>Main Theme 1: Unique to the Forest Service in Alaska, ranger boats served as the “workhorses” of these northern coastal forests, playing a critical role in their management.</p> <p>Subtheme 1-1</p> <ul style="list-style-type: none"> • The Ranger Boats became mobile maritime offices and home away from home for Forest Service rangers and other personnel who managed the National Forests resources and who often remained out for months at a time. <ul style="list-style-type: none"> ○ Since 1908, ranger boats have played a prominent role in administering the Chugach and Tongass National Forests. ○ The ranger fleet provided reliable and efficient transportation in the days before adequate aircraft services. ○ The dense coastal forests and islands were inaccessible by horse or motorized travel by land. ○ Numerous captains and crew members operated the Forest Service Ranger Boats. Scores of rangers, scientists, resource specialists, recreational staff, and others traveled on the boats. Their stories reveal triumphs and challenges, as well as sights, sounds, and smells of time spent on the water. 	<p>Map of national forests in southeast and southcentral Alaska.</p> <p>Historical accounts</p> <p>Published sources</p> <p>Historical photographs</p>

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	<ul style="list-style-type: none"> ▪ Robust boats, such as the <i>Chugach</i>, operated year-round. ▪ Forest Service supervisors first began to recognize the recreational potential as early as 1923. ○ 1950s: the role of the ranger boats transitions <ul style="list-style-type: none"> ▪ Highly organized bureaucracy to manage the 50-year timber contracts and large-scale logging <ul style="list-style-type: none"> • Rangers made shorter trips over smaller distances. • Ranger boats towed scows for engineering crews and supplied camps with fuel, food, and other supplies. • Search and rescue operations decreased with the growth of the Coast Guard presence. • Ranger boats visited large, clear-cut operations. • Ranger boats saw increased use for multidisciplinary resource teams. • Rangers spent approximately half as much time in the field as before. Access to timber sites could be reached in hours by floatplane or helicopter rather than days. 	
1.2 Secondary Interpretive Graphic	<p>Subtheme 1.2:</p> <ul style="list-style-type: none"> • Ranger boats evolved within this maritime context, adapting to changing needs for natural resources management and community connections. <ul style="list-style-type: none"> ○ 1968: The Forest Service shifts in policy away from clear-cutting and large timber sales due to legal challenges and exhaustion of timber resources. ○ 1970: the ranger boat fleet decreased to three boats (<i>Chugach</i>, <i>Sitka Ranger</i>, and <i>Tongass Ranger</i>); the ranger 	<p>Historical accounts</p> <p>Published sources</p> <p>Historical photographs</p>

	<p>fleet was not deemed expendable, but fleet reductions were proposed due to budgetary constraints.</p> <ul style="list-style-type: none"> ▪ A seasonal need for a boat fleet arose with the advent of the Youth Conservation Corps and the Young Adult Conservation Corps. ○ 2010: <i>Chugach</i>, <i>Sitka Ranger</i>, and <i>Tongass Ranger</i> spent a combined 100 days on the water. ○ Present <ul style="list-style-type: none"> ▪ Some aspects of management remain constant: the need to take into account historical land use and the need to keep an eye on resources. ▪ The Forest Service incorporated adaptive management strategies. ▪ Healthy wildlife and salmon populations sustain subsistence and recreation and commercial fisheries and tourism that are vital to the Alaskan economy. 	
1.3 Artifact Labels		<p>Pilothouse logbooks, maintenance records, deviation cards, weather and boat diaries</p> <p>Painting of <i>M/V Chugach</i></p> <p>Instruments, tools, flags, etc.</p> <p>Forest Service flag</p> <p>Forest Service china</p>
1.4 Video	<p>Main Theme 1</p> <p>Main Theme 2</p>	<p>Oral histories</p> <p>Historical photographs</p>

	<ul style="list-style-type: none"> Narrated virtual tour in the Nolan Center and on websites for visitors unable to physically visit the M/V <i>Chugach</i> in Wrangell or physically enter the M/V <i>Chugach</i> interior. 	
1.5 Touchscreen	<p>Main Theme 2 Subtheme 2.3</p> <ul style="list-style-type: none"> A searchable database of oral histories and interviews 	<p>Oral histories</p> <p>Historical photographs</p> <p>Interviews with wooden boat builders, captains, scientists, family members, etc.</p>
2.0 Wayfinding Outside the Nolan Center		
<p>2.1 Wayfinding Graphic</p> <p>*Outside exterior door on the path to the M/V <i>Chugach</i> pavilion</p>		Historical photographs
<p>2.2 Primary Wayfinding Graphic</p> <p>*Upright blade panel mounted to piling</p>		Historical photographs

<p>3.0 Outside the M/V Chugach</p>		
<p>3.1 Angled Interpretive Panel</p>	<p>Main Theme 2: The <i>M/V Chugach</i> operated as part of the U.S. Forest Ranger Boat Fleet—she served for 90 years and remained the last wooden Forest Service boat in commission.</p> <p>Subtheme 2.2:</p> <ul style="list-style-type: none"> • Unique to the Ranger Boat Fleet, the <i>M/V Chugach</i> served the entire 14,500 miles of <i>both</i> the Chugach and Tongass National Forests—the two largest national forests in the nation. <ul style="list-style-type: none"> ○ The terrain of southcentral and southeast Alaska is characterized by steep topography with large glaciers that abut coastal waters and numerous islands. ○ During the decades of service, the <i>M/V Chugach</i> played an essential role in the successful administration of the nation’s largest national forests as the Territory of Alaska moved into statehood (Territory: 1912; State: 1959) <ul style="list-style-type: none"> ▪ Chugach National Forest: <ul style="list-style-type: none"> • Cordova served as the headquarters of the Copper River and Northwestern Railway (CR&NWR), which hauled ore from copper mines. • The Forest Service administered timber sales and permits for canneries, fish traps, wharves, fur farms, and homesteads. ▪ Timeline of Service: <ul style="list-style-type: none"> • 1920s: the <i>Chugach</i> was a primary means of government transportation and communication in Prince William Sound and a primary role in emergency relief. 	<p>Historical photos</p> <p>Published sources</p> <p>National Register of Historic Places nomination document</p> <p>National Forest coastline maps</p>

	<ul style="list-style-type: none"> • In the 1930s, the scope of the Forest Service work in Alaska increased when the Forest Service became the administrator of the Civilian Conservation Corps. The CCC worked to combat the effects of the Great Depression by employing young men in conservation-related projects. This work was primarily administered from the <i>Chugach</i>. 	
<p>3.2 Angled Interpretive Panel</p>	<p>Subtheme 2.1:</p> <ul style="list-style-type: none"> • Renowned Seattle naval architect L.H. Coolidge designed the <i>M/V Chugach</i> to Forest Service specifications—many considered the purpose-built 62-foot, wooden-hulled crew vessel to be the top of the line, the best handling, and most seaworthy of the entire ranger boat fleet. <ul style="list-style-type: none"> ○ Designed by L.H. Coolidge of Spaulding & Associates and constructed by Olathe Enterprises in Seattle in 1925 <ul style="list-style-type: none"> ▪ Final construction and outfitting costs, including engine installation, totaled \$26,185. The price included the Atlas engine (\$5,890) and the exchange value of the <i>Hiawatha</i> (\$12,500). ▪ Specifications: <ul style="list-style-type: none"> • Displacement: approximately 40 tons • Hull: 62-feet long and 14.5 feet wide; a round-bottomed displacement hull with a slightly forward-raked bow and a round, fantail stern • Engines • Fuel capacity: 5 tons • Propeller: original bronze propeller: 48 inches in diameter by 44 inches of pitch; quickly shortened to 46 inches 	<p>Design drawings and blueprints</p> <p>Historical photos</p> <p>Published sources</p> <p>National Register of Historic Places nomination document</p>

	<ul style="list-style-type: none"> • Materials: <ul style="list-style-type: none"> ○ Ribs: white oak steam-bent to shape ○ Stem: white oak ○ Deck planking: Douglas fir ○ Hull planking: Douglas fir 	
3.3 Angled Interpretive Panel	<p>Main Theme 1: Unique to the Forest Service in Alaska, ranger boats served as the “workhorses” of these northern coastal forests, playing a critical role in their management.</p> <p>Subtheme 1-1</p> <ul style="list-style-type: none"> • The Ranger Boats became mobile maritime offices and home away from home for Forest Service rangers and other personnel who managed the National Forests resources and who often remained out for months at a time. 	<p>Published sources</p> <p>Historical photographs</p>
3.4 Angled Interpretive Panel	<p>Subtheme 2.3:</p> <ul style="list-style-type: none"> • The <i>M/V Chugach</i> played a critical role in transporting dignitaries, government agents, scientists, and other passengers in their efforts to study and understand the natural resources and people of southcentral and southeast Alaska. <ul style="list-style-type: none"> ○ The <i>M/V Chugach</i> served as a floating station for scientific research and reconnaissance of the natural and cultural features of the region. ○ Service Details: <ul style="list-style-type: none"> ▪ <i>Chugach</i> transported personnel from U.S. Biological Survey (today’s U.S. Fish and Wildlife Service, National Park Service, Bureau of Mines, Department of the Army, U.S. Coast Guard, Bureau 	<p>Published sources</p> <p>Historical photographs</p>

	<p>of Indian Affairs, Bureau of Fisheries, and other agencies and organizations:</p> <ul style="list-style-type: none"> • Foresters, archaeologists, geologists, soil specialists, hydrologists, biologists, and more • 1931 – 1936: archaeologist Dr. Ales Hrdlicka excavated on Kodiak Island • 1933: Dr. Frederica de Laguna: a prominent archaeologist who excavated extensively in coastal and interior Alaska, accompanied archaeologist and ethnographer Dr. Kaj Birket-Smith • Dr. Robert F. Heizer <p>Subtheme 2.2:</p> <ul style="list-style-type: none"> ▪ <i>Chugach</i> transported important passengers, including a Congressman, a Washington D.C. agency chief, and Territorial Alaska bureau chiefs ▪ <i>Chugach</i> responded to search and rescue efforts and emergencies. <ul style="list-style-type: none"> • 1927: search for <i>S.S. Pioneer</i> • 1929: search for the Gorst Air Transport, Inc. amphibian plane • 1938: search for the <i>Ya-Sure</i> • 1942: cannery tender <i>Taku</i> • 1989: <i>Exxon-Valdez</i> 	
<p>3.5 Angled Interpretive Panel</p>	<p>Subtheme 2-1</p> <ul style="list-style-type: none"> • Design and Adaptations: <ul style="list-style-type: none"> ○ Below deck from stem to stern, the hull is comprised of the forecastle, engine room, trunk cabin, and galley ○ Above deck: pilothouse over the engine room, galley with oil-burning stove, dining room 	<p>Design drawings and blueprints</p> <p>Historical and contemporary photos</p>

	<ul style="list-style-type: none"> ○ Original wood and brass steering wheel and teak doors ○ Initially outfitted with a wooden mast with a boom and block and tackle for lifting the lifeboat and skiff ○ 1928: outfitted with auxiliary sailing rig ○ 1930s: Marconi antenna, towing lights ○ 1946: Type 395a radio transmitter and 736D receiver added ○ 1960: mainmast removed ○ 1980: original fir bulwarks replaced with aluminum, and a railing of galvanized iron stanchions was added to improve safety ○ 1981: metal mast added for modern whip antennas and towing lights ○ 1990s: addition of an inflatable life raft and radar gear ○ The external appearance remains much the same, while the interior reflects updates for the needs of a working boat over time <ul style="list-style-type: none"> ● Color Scheme: <ul style="list-style-type: none"> ○ Original ranger boats sported yellow hulls and red deck houses ○ 1930s: <i>Chugach</i> wore white with crimson pilothouse and trunk cabin ○ 1940s: wartime gray ○ 1946: dark green (Heintzelman green named after B. Frank Heintzleman, the regional forester who became Governor of Alaskan Territory in 1953.) ○ 1950s: white with brown foredeck ● Refurbishment / Restoration: <ul style="list-style-type: none"> ○ The M/V <i>Chugach</i> underwent a major refurbishment in 1993 at the Port Townsend Boatworks and re-entered service on May 20, 1995. <ul style="list-style-type: none"> ▪ Details about the restoration ○ After being removed from service, the M/V <i>Chugach</i> was restored at a local boatyard. <ul style="list-style-type: none"> ▪ Details about the restoration 	<p>Published sources</p> <p>National Register of Historic Places nomination document</p>
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	<ul style="list-style-type: none"> ○ Construction of wooden boats (challenges and maintenance needs) ● After restoration, the <i>Chugach</i> spent six years at the adjacent Wrangell Boatyard. <ul style="list-style-type: none"> ○ You can see the boatyard in action: the boatyard provides haul-out and repairs for large vessels and winter storage. 	
<p>3.6 Angled Interpretive Panel</p>	<p>Subtheme 2.2:</p> <ul style="list-style-type: none"> ● Unique to the Ranger Boat Fleet, the <i>M/V Chugach</i> served the entire 14,500 miles of <i>both</i> the Chugach and Tongass National Forests—the two largest national forests in the nation. <ul style="list-style-type: none"> ○ Timeline of Service: <ul style="list-style-type: none"> ▪ The <i>Chugach</i> transported troops during World War II. ▪ Late 1940s, the fleet workload fell off in the Chugach National Forest as timber needed for railroad construction waned. ▪ In 1953, the <i>Chugach</i> was transferred from the Chugach National Forest to the Tongass National Forest, where timber production boomed in response to post-war needs in Japan and other industrial nations. ▪ 1992: <i>Chugach</i> placed on the National Register of Historic Places (Period of Significance 1925 – 1941) <p>Subtheme 2.3:</p> <ul style="list-style-type: none"> ▪ On one of her last voyages, the <i>M/V Chugach</i> served as a support vessel for tribal canoes journeying from villages across southeast Alaska to participate in the dedication of the recently restored Chief Shakes Tribal House. 	<p>Published sources</p> <p>Historical photographs</p>

3.8 Infrastructure Graphics	<ul style="list-style-type: none"> Potential photos of the <i>M/V Chugach</i> used in graphics depending on the pavilion design approach 	Historical and contemporary photos Published sources
3.9 Discovery Graphics	Subtheme 2-1 <ul style="list-style-type: none"> Design and Adaptations Graphics placed around the <i>M/V Chugach</i> interpret the water line, the boat construction, the iron bark shields added for protection against logs and ice, the various propellers, and other vessel features that would not be seen when it was on the water. 	Historical and contemporary photos Published sources
4.0 Inside the <i>M/V Chugach</i>		
4.1 Interpretive Graphic	Subtheme 2-1 <ul style="list-style-type: none"> Specifications and Operations: <ul style="list-style-type: none"> Wheelhouse Subtheme 2.3: <ul style="list-style-type: none"> A Day Aboard the <i>Chugach</i> <ul style="list-style-type: none"> The work could be arduous, long days were not unusual, and days off were rare. Captains piloted the boats and escorted rangers to and from field outposts. Quotes 	Historical and contemporary photos Published sources
4.2 Interpretive Graphic	Subtheme 2-1 <ul style="list-style-type: none"> Specifications and Operations: 	Historical and contemporary photos Published sources

	<p>Subtheme 2.3:</p> <ul style="list-style-type: none"> ○ A Day Aboard the <i>Chugach</i> <ul style="list-style-type: none"> ▪ Quotes 	
4.3 Interpretive Graphic	<p>Subtheme 2-1</p> <ul style="list-style-type: none"> • Specifications and Operations: <ul style="list-style-type: none"> ○ Galley <p>Subtheme 2.3:</p> <ul style="list-style-type: none"> ○ A Day Aboard the <i>Chugach</i> <ul style="list-style-type: none"> ▪ Quotes 	<p>Historical and contemporary photos</p> <p>Published sources</p>
4.4 Interpretive Graphic	<p>Subtheme 2-1</p> <ul style="list-style-type: none"> • Specifications and Operations: <ul style="list-style-type: none"> ○ Berths <p>Subtheme 2.3:</p> <ul style="list-style-type: none"> ○ A Day Aboard the <i>Chugach</i> <ul style="list-style-type: none"> ▪ Quotes 	<p>Historical and contemporary photos</p> <p>Published sources</p>
5.0 Off-Site Interpretation		
5.1 “Teaser” Graphics	<p>Main Theme 1</p> <p>Main Theme 2</p> <ul style="list-style-type: none"> • A brief overview of the main themes is addressed in graphics to be placed in Forest Service sites, airports, visitor centers, and other public places in southeast and southcentral Alaska that encourage the public to visit Wrangell, Alaska, the Nolan Center, and the M/V <i>Chugach</i> pavilion. 	<p>Historical and contemporary photos</p> <p>Published sources</p>

<p>5.2 Museum Exhibit Installations</p>	<p>Main Theme 1 Main Theme 2</p> <ul style="list-style-type: none"> • Exhibit approach ranges from a pamphlet or small graphics to sophisticated exhibit installations featuring graphics, interactives, multimedia, and other media. • Exhibits could be displayed at the National Museum of Forest Service History in Missoula, MT, or Forest Service Headquarters in Washington, D.C. 	<p>Historical and contemporary photos</p> <p>Published sources</p>
<p>5.3 Traveling Exhibit</p>	<p>Main Theme 1 Main Theme 2</p> <ul style="list-style-type: none"> • Exhibit approach ranges from a pamphlet or small graphics to sophisticated exhibit installations featuring graphics, interactives, multimedia, and other media available to travel to maritime museums, regional institutions, educational spaces, and more. 	<p>Historical and contemporary photos</p> <p>Published sources</p>
<p>5.4 Online Educational Resources</p>	<p>Main Theme 1 Main Theme 2</p> <ul style="list-style-type: none"> • Online educational activities developed in conjunction with local educators. • Activities made available to all. 	<p>Historical and contemporary photos</p> <p>Published sources</p>
<p>5.5 Brochure</p>	<p>Subtheme 1-1</p> <ul style="list-style-type: none"> • The Ranger Boats became mobile maritime offices and home away from home for Forest Service rangers and other personnel who managed the National Forests resources and who often remained out for months at a time. <ul style="list-style-type: none"> ○ Known unofficially as the “Green Serge Navy,” the ranger boat fleet operated in Tongass and Chugach National Forests. 	<p>Historical accounts</p> <p>Published sources</p> <p>Historical photographs</p>

	<ul style="list-style-type: none">▪ The first ranger boat built to Forest Service specifications was the 64-foot <i>Tahn</i> (1908) and operated in the Tongass out of Ketchikan.▪ The Forest Service purchased M/V <i>Restless</i> in 1911 for use in the Chugach.▪ 1913, the 35-foot M/V <i>Ranger 1</i> and M/V <i>Ranger 2</i> were added to the fleet.▪ 1919 - 1921, the Service acquired the M/V <i>Hiawatha</i>, a 98-foot former naval patrol boat, and the <i>Weepoose</i> from surplus World War I equipment.▪ At its peak in 1930, the fleet included <i>Ranger 1</i>, <i>Ranger 2</i>, <i>Ranger 4</i>, <i>Ranger 5</i>, <i>Ranger 6</i>, <i>Ranger 8</i>, <i>Ranger 9</i>, <i>Tahn</i>, <i>Weepoose</i>, <i>L-38</i>, and <i>Chugach</i>.▪ The Forest Service added two metal-hulled ranger boats in 1957—the <i>Sitka Ranger</i> and the <i>Tongass Ranger</i>—that remained in service until 2010.	
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GRAPHIC PANEL DESIGN AND FABRICATION

The Alchemy of Design is designing and fabricating the following graphics:

- 1.1 Primary Interpretive Graphic: Main Theme 1, Subtheme 1-1, Subtheme 1.2
- 3.1 Angled Interpretive Panel: Main Theme1, Subtheme 2-2
- 3.2 Angled Interpretive Panel Subtheme 2-1
- 3.3 Angled Interpretive Panel Main Theme 1, Subtheme 1-1
- 3.4 Angled Interpretive Panel Subtheme 2-3, Subtheme 2-2
- 3.5 Angled Interpretive Panel Subtheme 2-1
- 3.6 Angled Interpretive Panel Subtheme 2-2, Subtheme 2-2
- 4.1 Interpretive Graphic Subtheme 2-1, Subtheme 2.3
- 4.2 Interpretive Graphic Subtheme 2-1, Subtheme 2-3
- 4.3 Interpretive Graphic Subtheme 2-1, Subtheme 2-3
- 4.4 Interpretive Graphic Subtheme 2-1, Subtheme 2-3

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The Nolan Center, www.nolancenter.org

Tongass National Forest, <https://www.fs.usda.gov/tongass/>

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