CITY OF UNALASKA, ALASKA
HISTORIC PRESERVATION COMMISSION
REGULAR MEETING
THURSDAY, NOVEMBER 16, 2023, 6:00 P.M.
AGENDA

ZOOM Meeting Link:
https://us02web.zoom.us/j/84505322171?pwd=TGFiZCtlRGJBTnVZYi9IS2djYW9KUT09
Meeting ID: 845 0532 2171 **Access Code:** 920078
Toll Free Numbers: (833) 548 0276 (833) 548 0282 (877) 853 5247 (888) 788 0099

CALL TO ORDER
ROLL CALL
REVISIONS TO THE AGENDA
APPEARANCE REQUESTS
ANNOUNCEMENTS

MINUTES: Draft minutes from the meeting October 19, 2023

PUBLIC HEARING
No items

OLD BUSINESS
No Items

NEW BUSINESS
No items

WORKSESSION
1. Discussion on interpretive signage.

ADJOURNMENT

City of Unalaska
HISTORIC PRESERVATION COMMISSION

Regular Meeting
Thursday, October 19, 2023
6:00 p.m.

P.O. Box 610 • Unalaska, Alaska 99685
(907) 581-1251
www.ci.unalaska.ak.us

Unalaska City Hall
Council Chambers
43 Raven Way

Commission Members
Ian Bagley
Virginia Hatfield

Travis Swangel, Chairman
City Representative: Bil Homka, City Manager
Secretary: Cameron Dean, Planning Director

Commission Members
Caroline Williams
Rainier Marquez

MINUTES

1. Call to order. Commissioner Swangel called the Regular Meeting of the Unalaska Historic Preservation Commission to order at 6:00 pm, on October 17, 2023, in the Unalaska City Hall council chambers.

2. Roll call

	Present:	Absent:
	Travis Swangel	Virginia Hatfield	Rainier Marquez
	Ian Bagley	Caroline Williams	
	Bil Homka	Cameron Dean	

3. Revisions to Agenda: None
4. Appearance requests: None
5. Announcements:
    1. Introduction of the New Planning Director, Cameron Dean
    2. The Planning Department is in the process of interviews for a new Administrative Assistant
    3. City Christmas Dinner December 2nd
6. Minutes: Minutes of February 16 and August 17 meeting approved with no edits.
7. Public Hearing: None
8. Old Business: None
9. New Business: None
10. Work session:
    1. Letter from Benjamin M. Storey, Regional Environmental Manager/PQI Archaeology, at the Alaska State Department Of Transportation & Public Facilities, Southcoast Region, regarding finding of effect for the demolition of the privately owned Naval Operating Transport Service Warehouse (NOTSW) building located within the Unalaska Airport in Unalaska -The Commission agreed with the notice. It was noted that the condition of the building relative to the limited historic significance of the building meant that the building did not warrant saving. The area would serve the community better as a new planned hanger facility. The Commission appreciated the opportunity to meet and review the case, however ultimately agreed with the assessment of the Department of Transportation Archeologist.
11. Adjournment: Having completed the agenda, the meeting was adjourned without objection at 6:13 p.m.

Cameron Dean
Secretary of Commission

Travis Swangel
Commission Chairman

Date

Date


Tanaxtaxax Archaeological Site
This mound represents the remains of a late prehistoric Aleut/Unangan village. One of the largest sites in Unalaska Bay, the site is about 450 feet long, 100 feet wide, and at least 20 feet deep, extending well below and under the modern roadway.
This site has been the scene of archaeological investigations for more than a century, including some of the first in Alaska. William Healy Dall (above) began excavations in the early 1870s, followed by Russian anthropologist Waldemar Jochelson's (below, far right) trench which reached a depth of 15 feet
During W.W.II a small lake at the foot of Dutch Harbor was filled in and parts of the site were destroyed in road building. A submarine net guarding Dutch Harbor was monitored from a concrete observation post which still stands. Troops stationed here were allowed to dig for artifacts on this site for recreation.
Although damaged, large portions

Margaret Bay Archaeological Site

It is unlawful to disturb or remove artifacts at this or any other archaeological site. This site is the property of the Qunalashka Corporation

Geological studies have shown that the relative sea level was at least six feet higher than it is today. The flat areas around you were once part of a shallow reef and lagoon system. The waters around the site began to recede in 3,500 BP (Before Present), with the onset of the Neo-glacial, a period of colder climate. Prehistoric refuse at Margaret Bay contained fish, shellfish, birds, and sea mammals. The remains of polar bear, ring seal, and beluga were also found here, indicating that the ancient mid-winter ice edge of the Bering Sea may have bordered Unalaska Island.

Archaeological excavations on this site uncovered more than 10,000 artifacts and the remains of stone lined semi-subterranean houses. Artifacts from this site are stored and displayed at the Museum of the Aleutians.

THE S.S. *NORTHWESTERN*

Plan view of "C" deck, S.S. Northwestern. Staterooms are denoted as solid grey.

"The echoes of her whistle rocked back from the hills and you thought 'Good old Northwestern*--bringing news from the states, bringing mail, bringing a can of fresh peaches.'"*

Seattle *Post-Intelligencer*, 18 July 1942

2:36 a.m., 26 July 1933, the S.S. Northwestern strikes at full speed a reef off Sentinel Island in Lynn Canal twenty-five miles north of Juneau. The vessel is beached on the sandy bottom of Eagle River to prevent sinking and 180 passengers are put in lifeboats and lowered over the side. At low tide, salvage crews hurry to staunch hull leaks with concrete. After it is apparent the ship will remain upright, passengers are relocated and at the return rush of high tide, the ship is floated. The Northwestern turns south for the five-day trip to Seattle, to dry dock and repairs totaling $60,000. On the evening of the accident the sky was clear, suffused with Alaska's long summer light. The Sentinel Island lighthouse beacon was lit, and the lighthouse keeper had repeatedly warned the Northwestern with his fog horn. In a much-publicized trial after the incident, both ship master and second officer receive license suspensions. On 13 October 1933, The Alaska Weekly reports "Wreck of Northwestern Blamed to Negligence." Above photograph captioned: "S.S. Northwestern ashore at Eagle River, Alaska-7-25-33." Image courtesy Puget Sound Maritime Historical Society Collections. Above left postcard published by Lowman & Hanford Co. Seattle, U.S.A. Photograph by Frank H. Nowell. Postcard courtesy Artcraphotos.

"They used to say in Alaska towns that the Northwestern *hit every rock in the Inland Passage—but they couldn't keep a good ship down."*

Catchfish Finn

The *Northwestern** is constructed on the cusp of the nineteenth century, so "ocean liner" they call the vessel in newsprint, built to work the open seas as cargo and passenger ship. It is laid down in 1889 by the Delaware River Company, Chester, Pennsylvania. The ship is imposing in size, 336 feet from stem to stern, 43 feet at the beam, and 221 feet deep. The hull is forged of wrought iron plates, rivets, and steel. Coal-fired steam drives the power plant, producing 2,600 horses to turn a single, four bladed screw. The propeller is cast on a grand scale, 13,760 pounds of solid bronze, 15 feet 4 inches in diameter. It can push the big ship an average 12.8 knots per hour.

23 November 1889, the *Northwestern* is launched. The vessel slides down the ways and strikes a tugboat. So its service begins.

For the next nine years the *Northwestern* sails without mishap the warm, tropical waters of the Gulf of Mexico and the Caribbean Sea. It ferries passengers and cargo between New York and points south—to Cuba and ports in Mexico. In 1898, the Spanish-American War begins and the *Northwestern* is chartered as troop transport. In 1906, the vessel sails once again in peace, this time to Colon, Panama as banana freighter.

March 1906, ownership of the *Northwestern* changes hands and the ship is brought round South America to work the cold waters of the Seattle/Alaska route. It will be eight more years before the Panama Canal will open its waterway. In the summer of 1906, the *Northwestern* must navigate the length of the South American coast, coming safely round Cape Horn off the tip of Argentina where the gale-whipped seas can reach heights of 65 feet and the sea bottom is littered with centuries of broken ships.

The ship has now traded oceans and seas, come to sail as flagship what many claim are the most troubled waters on earth, the Gulf of Alaska and the Bering Sea.

Ice rimmed foredeck of the S.S. Northwestern. Photograph courtesy Puget Sound Maritime Historical Society Collections.

Former Northwestern general passenger agent Robert C. Rose named Bert "(Alaska!) passengers danced, played cards, had a drink and dined . . . A great many families resulted from these voyages when boy met girl on the Northwestern . . ." Interior view of S.S. Northwestern lounge during her service as passenger ship. Image courtesy Puget Sound Maritime Historical Society Collections.

For 34 years the S.S. *Northwestern* runs the Alaska Route. It lays telegraph cable from Unalaska to St. Michael and Nome. In its holds, the ship carries Kennecott copper ore, livestock, and railway track. It ferries gold from Nome placer mines, transports mail, coal, and salmon pack. First class passengers sail in spacious accommodation with piped hot water, a dining saloon and saloon. On the hurricane deck they may watch the scenery pass in a glass-enclosed observation room or read the *Northwestern Wireless Tribune*, a little typewritten shipboard daily containing news and sports gathered from the airwaves.

"... the big ocean liner hit the beach and the grinding of the engines as they were reversed, was drowned in the splintering crash of the vessel ploughing high on the rocks."

S.S. *Northwestern* navigator,
San Juan Island grounding, December 1910

Bound to a schedule, the *Northwestern* sails, summer and winter, through bad weather and dirty seas. There are few buoys in the Alaskan waters of the early 1900s, few navigation lights. Often the vessel is lost in fog, relying upon ship's whistle and depth soundings to find its way. In its career, the *Northwestern* runs aground 40 times—offshore Nome; at Valdez; on Pile Point, False Bay; and Porter Rock, Tongass Narrows. It strikes other vessels eight times—the *H.B. Kennedy* and *Dwight Queen*, the S.S. *Tacoma*, the *Hulls of Clyde*, and *Glory of the Seas*... It turns docks, disrupts propellers, a rudder, and an anchor. Time and again, newspapers incorrectly announce the ship's loss and salvage for scrap, but it is not until October 1940, when the Northwestern is far gone in years, that it is brought to shore for what its owners believe is the final time.

Right: Ship's telegraph salvaged from the wreck of the S.S. Northwestern. Courtesy Museum of the Aleutians (MOTA), Dale Dorsey Collection.

A failure of the Northwestern's telegraph, 27 September 1911, causes the ship to lunge forward and strike the *Glory of the Seas* at the Ketchikan dock. The *Glory* is a once-famed, wooden clipper ship converted to a floating salmon cannery. It is a point of contention as to which vessel suffers most from the collision. The S. S. Northwestern is made of wrought iron and steel, but the *Glory* is fashioned of great oaken frames and covered in thick wood planking. Some argue that the star-crossed Northwestern has its stem stove in and its rivets sheared while the *Glory of the Seas* is left strong and sound as ever.

*The vessel is originally christened the *Oceanic* in honor of the highest volcanic peak in Mexico, 7 August 1908, its name is changed to the S.S. Northwestern.

"That was the day [the Japanese] *got the* Northwestern*, a hotel ship tied to the dock. Some of us were aboard having lunch. It was beautiful big pork chops, and I never got to eat one! We hailed off the ship and took cover where we could..."*

Walter R. Strong, Sierra-Drake civilian worker

The beached Northwestern, home to 280 civilian workers and Navy personnel. Photograph shows workers of the Sierra-Drake-Puget Sound Company accessing the grounded ship via a gangplank. Image courtesy MOTA, Norr Collection.

September 1940 the S.S. *Northwestern* makes its final voyage north. The ship ties up at the Standard Oil dock in service to the Sierra-Drake-Puget Sound Company, civilian contractors charged with construction of the Naval Operating Base, Dutch Harbor. Here the ocean liner is to spend the last of its years as a floating hotel, mess, and powerplant.

Twice storms force the *Northwestern* to abandon the dock and ride out bad weather anchored in Dutch Harbor. In a severe December storm, its captain purposely grounds the vessel north of the pier. As if afraid the willful ship will take to water again, workmen labor to fix it to shore. A cavity is scooped out of the beach. The *Northwestern* is dragged inside, then a gravel berm raised to its seaward side. When the other ships in port, wanted of the 4 June 1942 Japanese attack, cast off from their docks, the *Northwestern* stays moored to its berth, a permanent shoreline structure, unarmed and immobile.

1: You are here. 2: S.S. Northwestern. (Note modifications made to superstructure to retrofit vessel as civilian worker housing. Original extensive glass fenestration on upper decks have been enclosed and newly emplaced portholes covered with shutters. In the fall of 1943, the bomb-damaged vessel was relocated to the southern end of Captains Bay.) 3: Standard Oil dock. 4: Navy Barracks. 5: Molly Garfield House (North American Commercial Company building dating to the historic old town of Dutch Harbor. Structure razed during expansion of Naval Operating Base.) 6: Powerhouse. (Upon completion of this massive reinforced concrete building in September 1942, the Northwestern was relieved of her power generating duties. The powerhouse remains in operation to this day.) Photograph labelled: 23 March 1942 view of S.S. Northwestern at Dutch Harbor Naval Operating Base. Image courtesy MOTA.

Lieutenant Zenji Abe circles Amaknak Island searching for a break in the 6000 foot ceiling that blankets Dutch Harbor. Abe is twenty-six years old, born in the Great Depression of the early 1900s in a mountain village on Honshu Island, Japan. His father, a sake brewer, is a good man but unskilled in business. The family is poor. At the age of twelve, Abe attends military school, his instructors general officers of the Japanese Army. At age seventeen, he enters the Imperial Naval Academy. For four years Abe studies the art of war, the finer points of language, mathematics, physics, and history. His lifestyle is spartan, his ideology that of the Samurai—allegiance above all else to emperor and country.

4 June 1942, 5:55 p.m., Lieutenant Abe dives through a hole in the cloud cover over Dutch Harbor. Behind him, the remainder of his wing, 10 Japanese Val bombers follow. Nearly 6 months to the day earlier, 7 December 1941, Abe had commanded a company of dive-bombers in the devastating Pearl Harbor attack, his target the light cruiser *Raleigh*. This day his aircraft seek out ships in Dutch Harbor.

Lieutenant Zenji Abe with Val dive-bomber. Flying from the carrier *Junyo* during the Battle of the Philippine Sea, 19 June 1944, Abe is forced down on the islands of Rota near Guam. Abe secrets himself in a cave until the end of the war, then is held 15 months as a POW. For roughly 2 years, 7 months, his wife thinks him dead. Photograph courtesy Alaska Aviation Museum, Zenji Abe Collection.

"With my eyes glued to the bombsight, it seemed that fiery candy-colored bullets were being funneled directly into my eye ..."

Lieutenant Zenji Abe

"[The Japanese] *set the Northwestern on fire and it burned, killing one million rats.*"

Sergeant Robert M. Proffitt

From upwards of 12,000 feet in altitude the Val bomber pilot picks his target. Stick pressed forward, he noses his aircraft into a 55 degree angle of descent, then opens dive brakes to check dive-speed at 250 mph. The plane plummets earthward, the pilot adjusting ailerons to correct for wind drift and target movement. Eye pressed to the bomb-sight telescope, the pilot waits, burning a small lifetime in the 40 second descent towards earth. At 1500 feet he fingers a switch and the bomb is loosed from its belly cradle. The 550 pound missile swings down and forward from the fuselage, clearing the spinning airplane propeller and sailing towards target. In less than three seconds the missile will strike and detonate. The pilot pulls back on the control stick and climbs, the blood drawn down from his brain, his consciousness wavering as gravity fights to drag plane and man down to earth. Illustration by Artcraphotos. Val drawing courtesy *The Manu Mechanic*, May 1982.

The seaplane tender U.S.S. *Gillis*, and transport *President Fillmore* respond to the diving Vals with intense antiaircraft [AA] fire. The crew of the *President Fillmore* has transferred a shipment of AA guns from its hold onto the deck and sends skyward such a heavy volume of fire that the vessel is reported to be ablaze. The crew fights with the knowledge that a single bomb or well placed round could ignite the ship's cargo of explosives and disintegrate the vessel. Driven off by the two ships, the Vals turn to secondary targets.

Two Val bombers armed with 550 pound bombs target the S.S. *Northwestern*. One bomb misses its mark, damaging the nearby dock. The other strikes the ship squarely, piercing the forward port deck. The blast ignites the ship's fuel and fire sweeps through the vessel. For three days, the *Northwestern* burns furiously at its landing, the intense heat fusing machinery and melting the paint off the twisted steel hull. Fire crews flood the engine room to save the ship's boilers and battle to bring the blaze under control. Within a week of the attack, workers refire the *Northwestern*'s boilers, and its 200-kilowatt generators are once again producing electricity and steam for the Naval Operating Base. "Tokyo Rose," the Japanese propagandist, broadcasts to the men of Amaknak, "that the Japanese bombers destroyed a warship at the Dutch Harbor pier," but scarred and fire-blackened, the aged steamship survived the attack.

Civilian workers mess hall, S.S. Northwestern. Photograph courtesy MOTA.

Aerial view of bomb-damaged Northwestern. The warehouse at upper middle burned when flames from the Northwestern were blown shoreward by the wind. Photograph courtesy of MOTA.

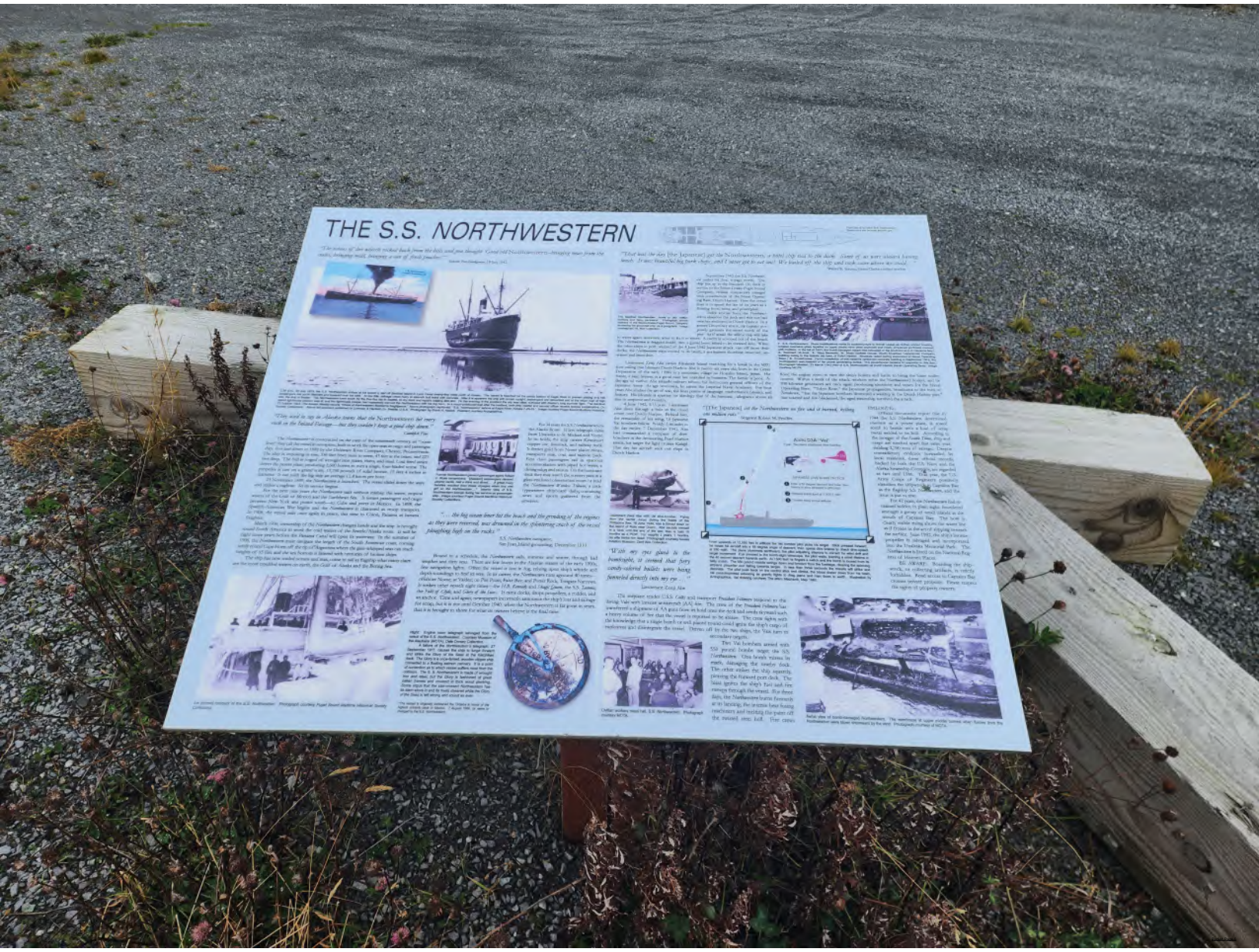
EPILOGUE:

Official documents report that in 1944 the S.S. *Northwestern*, determined obsolete as a power plant, is towed south to Seattle with a load of scrap metal welded to its hull. According to the morgue of the *Seattle Times*, ship and cargo are torched apart that same year, yielding 2,700 tons of salvage. Despite contradictory evidence forwarded by local residents, these official records, backed by both the U.S. Navy and the Alaska Steamship Company, are regarded as fact until 1986. That year, the U.S. Army Corps of Engineers positively identifies the shipwreck in Captains Bay as the flagship S.S. *Northwestern*, and the issue is put to rest.

For 42 years, the *Northwestern* remained hidden in plain sight, floundered amongst a group of small islands at the mouth of Captains Bay. The bow is clearly visible rising above the water line as if frozen in the act of slipping beneath the surface. June 1992, the ship's bronze propeller is salvaged and incorporated into the Unalaska Memorial Park. The *Northwestern* is listed on the National Register of Historic Places.

BE AWARE: Boarding the shipwreck, or collecting artifacts, is strictly forbidden. Road access to Captains Bay crosses private property. Please respect the rights of property owners.

THE S.S. NORTHWESTERN




THE UNDERGROUND HOSPITAL


THE UNDERGROUND HOSPITAL


FORCED TO LEAVE: 22 JULY 1942

THE NAVAL RADIO STATION

Radiotelegraph key or "bug". All messages sent from the Naval Radio Station during the bombardment of Dutch Harbor were transmitted in encrypted Morse code and totally designed by the Japanese. Object courtesy NCA.

"[At Dutch Harbor] there is a large brick 6-family apartment house and two or three frame buildings which are used as a radio office and powerhouse. The buildings here have oil heat and electric power and, except for coal stoves for cooking, are modern in every way. . . . In fact, they are so far superior to anything in the Aleutians, or, for that matter, in most of Alaska, that they could be classed as 'palatial' . . ."

Lt. Commander W. Lockhart, *U.S. Naval Institute Proceedings 1937*

Naval Radio Station Apartment House and Powerhouse, 4 June 1942, two days after the Japanese bombardment. Note the shuttered windows in the apartment building. National Archives.

"Lower Forty-Eight" mates fits well with its role as a dwelling for families far from the familiarities of home. In 1932, the apartment building stands as the only brick structure in the Aleutian Chain.

July 1939

Three years prior to the Japanese bombardment of Dutch Harbor, the military population of Amaknak Island, including families, numbers a mere forty. In the town of Dutch Harbor proper, the postmistress, Mrs. Elva M. Willis, can count eight civilian residents. Only two automobiles share the island's roads. In 1932, the basement laundry rooms of the Naval Radio Station Apartments are converted into an officer's club. Facilities include a game room, lounge-library and a dining area. The lounge features an aquatic mural with a tropical sea theme. Included in the wall painting are a turtle, a shark in pursuit of small, warm water fish, starfish, and seaweed.

1911

Dutch Harbor stands as a Gold Rush relic, the saloons, dance halls, and gambling houses deserted, the windows boarded closed. The North American Commercial Company holds tenaciously to the few functioning buildings though it has been seven years since the last of the stampeders to the Nome gold fields walked the streets. 3 July the arrival of a Navy expedition led by Captain C. Doggs breaks the monotony of town life. Doggs oversees the raising of two pole masts, antenna, and radio room at the Naval Radio Station site. Unbeknown to Doggs and his men, the raising of this rudimentary radio station is the first step towards the building of Dutch Harbor's extensive military installations—a frenzied construction that will eventually swallow whole the old town of Dutch Harbor.

1919

Structure 615, a two-room, reinforced concrete transmitter and powerhouse building is completed. In 1942, in efforts to further protect radio equipment and personnel from bomb strikes, two concrete "porches," or roofed blast walls, are constructed in front of the building's doors. This same year, the original power source is replaced with two 4-cylinder Lorimer Diesel 60 H.P. generators and transmitter equipment is upgraded. As of 3 June 1942, the day of the Japanese raid on Dutch Harbor, radiotelegraph transmissions from this station can reach as far east as the military installations at Cold Bay and Kodiak.

Plan view of the Naval Radio Station. The radio towers and antennae were removed in 1954 for safety reasons, leaving the concrete bases as footprints. The cottage is now a private residence and the apartment house and powerhouse are property of the Ounalashka Corporation. The other structures are in grave disrepair. Do not approach any of these buildings.

"In a raid, I want the men to think of their posts, not their families."

General Simon Bolivar Buckner

1922

Roughly thirty-three feet north of the powerhouse, a milled lumber cottage is raised. The cottage serves as quarters for families of the men stationed at the Naval Radio Station.

1932

Building 621, the two-story apartment known locally as the "red brick building" is completed. Designed as housing for the families of Naval Radio Station men, the building reflects the Tudor Revival form of architecture, a style popular in suburban homes of 1920s America. Seemingly incongruous for military construction, its nod towards the civilian building styles of the

1940

The town of Dutch Harbor is nearly erased by heightened pre-war military construction. For $155,000, the North American Commercial Company sells its property and structures. The buildings are razed and new Navy structures rise atop the old town. The streets grow crowded again, and by the year 1943, 5,625 seamen and officers are stationed at the Naval Operating Base. But even this $44 million endeavor will pass. When the base is decommissioned in 1947, Dutch Harbor must reinvent itself once again, not by fur traders, nor by Gold Rush entrepreneurs or military strategists, but by fishermen.

22 December 1941

Fifteen days after the bombing of Pearl Harbor, twenty-five military families are evacuated from Dutch Harbor in anticipation of enemy attack. All defense houses, including the six apartments at the Naval Radio Station Apartment, are converted to officers' quarters. The men of Dutch Harbor scan sea and sky and wait.

Interior of the the basement of the Naval Radio Station Apartment Building. Note the elements of the underwater mural: the starfish on the left wall and kelp in rear left corner. Photo taken during a September 1943 party. National Archives.

Detail of shark from seattle mural of Chief Petty Officer Club, Naval Radio Station Apartment Building. Contemporary image courtesy Historic American Buildings Survey, National Park Service.

"...about to be bombed by enemy aircraft."

Radiotelegraph transmission, Dutch Harbor 3 June 1942

5:55 a.m. 3 June 1942

Nine thousand feet above Unalaska Bay, a diamond-shaped formation of four Japanese Kate bombers track a southwesterly course towards Amaknak Island. They are three-seat, single-engine, carrier-launched aircraft. Only six months earlier, bombers such as these had helped decimate the U.S. Pacific fleet at Pearl Harbor. Now they appear high over the installations at Dutch Harbor like "black crosses against a background of grey sky." In the lead aircraft is Lieutenant Hiroichi Sanejima. Behind him in the enclosed cockpit of the Kate are his bombardier, and to the rear, his radio-operator. Sanejima approaches his target at 200 miles per hour, near the top speed of his aircraft. Underneath his plane, a 550-pound bomb is suspended from the belly rack and four more 150 pounders are mounted beneath the wings.

5:59 a.m.

Sanejima and his three wingmen maintain their tight defensive formation in spite of the heavy antiaircraft fire that bursts around them. Small dozen spread open in the bellies of the planes, and the Kate's bombardiers take sight through the apertures at the Naval Radio Station and its antenna farm far below.

"I led the first group of. . . Kate torpedo-bombers attacking the radio station...we encountered heavy anti-aircraft fire. . . in this northern remote island."

Lieutenant Hiroichi Sanejima, Imperial Japanese Navy

The Naval Radio Station Apartment House, at left, dwarfed by bomb explosions. Dramatic photographs such as this one were taken by Navy cameramen stationed at vantage points prior to the Japanese raid. There would be no cry of "forest attack" as there has been at Pearl Harbor. Dutch Harbor had been on war alert since 27 December 1941. National Archives.

A string of six bombs rumbles from the Japanese aircraft. One bomb strikes hard ground roughly 330 feet southwest of the red brick Naval Apartment Building. The apartment's windows shatter in the concussive blast. Shrapnel pocks the brickwork and severs a transmitter antenna. A second bomb obliterates a nearby Quonset hut. A third strikes a trench shelter.

"...Chief Petty Officers were housed in the Radio Tower [red brick building], where I was at that time, the Jap[anese] strafed us and high altitude bombed us, near misses, but none of the CPOs were injured."

Ed Froelich, PBY Squadron VP-41

The remaining three bombs explode harmlessly in soft ground. Smoke and debris from all six blasts boil skyward shrouding the Naval Radio Station and antenna farm from view. When the clouds subside, the station and farm stand largely unscathed. In the collapsed trench shelter close by, the body of George P. Deal, a Siems-Drake worker, lies buried. Deal is the only civilian to die in the Dutch Harbor aerial raids and the only casualty of the attack on the Naval Radio Station.

Workers of the Siems-Drake-Puget Sound Company. These construction workers are the primary builders of Dutch Harbor from September 1940 to the Japanese bombardment of 3 and 4 June 1942. The founding worker these men had responded to warnings that construction in Alaska "IS NO PICNIC." A further stated, "Men hired for this job will be required to work and live under the most extreme conditions imaginable." Museum of the Aleutians, Hamlin Brown Collection.

Navy radiotelegraph operators send real-time reports of the Japanese bombardment of Dutch Harbor as far east as the military installations at Cold Bay and Kodiak, but cannot make contact with the underpowered radio set at the Army Air Force Base on Umnak Island, only 65 miles distant. In consequence, Japanese Air Forces are able to fly the Dutch Harbor skies on 3 and 4 June uncontested by American P40 pursuit aircraft waiting on alert at the Umnak field.

EPILOGUE:

After the Japanese aerial bombardment of Dutch Harbor, 3 and 4 June 1942, the Aleutian Campaign pushes westward and the bases at Dutch Harbor slip quietly into the backwaters of World War II. Time is now here for camouflage, for paint and netting. The red-brick veneer of the Naval Radio Station Apartment House is painted olive-drab in hopes of blending the formidable building into the landscape. Over the years, the fierce Aleutian wind has blasted this camouflage paint from the Naval Apartment House exterior, but shrapnel damage from the Japanese bombardment on 3 June 1942 is still visible on the southwest face of the structure. Initial poor construction techniques and subsequent and continuous water damage have taken their toll on the building. Its future survival is uncertain.

BE AWARE, NO TRESPASSING!

The Naval Apartment Building is dangerously unstable and entrance is strictly forbidden. All land in this immediate area is privately owned. The Ounalashka Corporation accepts no responsibility for damages to persons or property of those who approach the Naval Radio Station beyond this interpretive sign.

Radio operators, interior of Building 615, the concrete transmitter building and powerhouse. National Archives.

EXPEDITION ISLAND & SUB BASE 151

"Perceiving that half a mile from our anchoring-place to the south-west of...[Amaknak] island, there was a better station for our vessel on the other side of a little island, I accordingly proceeded to the spot, and lay at cable's length between two shores."

Gavril A. Sarychev, 30 August 1791, upon mooring off Expedition Island, Iliuliuk Harbor

The ruins of Submarine Base 151, Iliuliuk Harbor. Most of the structures seen in this fall 1967 photograph have either been extensively altered or razed, and replaced with can-very buildings and shopping mall. In the background right, on the Amaknak Island shoreline, is the *Chapel of the Deep*. To provide shelter against the fierce backdrop. No trace of the Ship Repair Facility (SRF), still standing, the Marine Railway and Shop Building, a master component of on the western shore of Expedition Island is a copse of Sitka Spruce planted by the Russian Father Ioann Veniaminov in the mid 1800s. These trees can still be seen from the Airport Beach Road by the contemporary visitor. Photograph courtesy National Park Service.

Nine sixteens:

Circa 1840, the Russian priest Father Ioann Veniaminov directs nine seedlings to be planted on Expedition Island. The young trees are spruce brought north from the boreal woodlands of Sitka, Alaska. Veniaminov hopes they will spread into forest, provide fuel for iron stoves, and strong, white wood for ship-building and frame houses. The seedlings' old growth parents in the Sitka environs can reach heights of 200 feet and measure 5 feet or more round the trunk. They are prized for making pianos, guitars, boat masts and spars. But on Expedition Island, Veniaminov's trees remain forever stunted. It is the Aleutian environment that conspires against them—the poor soil, a cloud-obscured sun, and fierce winds. For more than 160 years, these dwarf trees have clung tenaciously to Expedition Island, vivid evidence that the transplanted must adapt to survive the Aleutians. Send to the environment or risk being broken.

In 1871, the American William H. Dall christens the small island in southern Iliuliuk Harbor, "Expedition Island." With the coming of the North Americans, a third culture lays its mark on the landform. Just 70 years later, the entire sweep of the Aleutian Chain will be thrust into global war, and the face of Expedition Island will be deeply and forever changed.

"A BETTER STATION..."

Today, one is hard pressed to imagine that Expedition Island once stood distinct and pristine, an island unto itself offshore Amaknak. Heavy machinery has shaved its grassy hills nearly flat; has raised at its northwestern end a thick neck of rock, merging the island with the Amaknak shore and making the once free-standing landform a peninsula. Under the modern buildings that crowd the bulldozed flats, lie the footprints of demolished WWII structures. In the disturbed landscape, fragments of a much earlier time could also once be found, broken bits of seal oil lamps and stone tools—sign of the first peoples of the Aleutian chain.

Portrait of a Native of Unalaska. John Webber, 1778. British Library. Add. Ms. 15514f.22

Plan view of Submarine Base with Marine Railway and Shop Building, circa 1942. 1: Consolidated Shop. 2: Torpedo Overhaul and Ordnance Shop. 3: Power Sub Station. 4: Shop Building. 5: Hull Shop. 6: Gymnasium and Battery Overhaul Shop. The only structure that retains both its historic appearance and original function is the Marine Railway and Shop Building, constructed in 1941. Illustration based upon map generated by Historic American Buildings Survey, National Park Service, K. Martin, 1985.

By the mid 1700s, Russian fur traders anchor their rough-fitted ships in Iliuliuk Harbor. In their hunger for sea otter pelts, the traders carry out the "most horrible...atrocities" against the indigenous Unangan populace. In 1791, the Russian Imperial Government sends Captain Gawriil Sarychev to determine the extent of their mistreatment. For over seven months, Sarychev winters his vessel in the protected waters close by Expedition Island. He is received by the Unangan, he notes, with "the greatest friendliness," assuring them that "their oppressors would be severely punished for their conduct..."

and word of profits finds it way south. In Seattle, like-minded entrepreneurs attempt to book travel to the territory. The Alaska Steamship Company denies them passage. It is of no consequence. The brothel on Expedition Island is short-lived, the house shut down by the U.S. Navy; the women refused relocation to Unalaska Island by a Federal Marshall. For those men who had taken the journey by rowboat, it had cost them two quarters to reach Expedition Island, but two dollars to make their way back.

"Pleasure Island"

Early September 1940, an advance party of 59 civilian construction workers arrive at Unalaska Village. They hang together a bunkhouse for themselves, then begin raising the frontier military base on Amaknak Island. In six months, the workers reach 430 in number. Many are from distant places in the "Lower Forty-eight," their homesickness blinding them to the rough beauty of the place. For every worker who arrives, one on the island flees south. Those who stay suffer from want of family and women. "Hackies" Unalaska Bar offers solace in a shot glass—fifty cents a whiskey. For another fifty cents passage by rowboat can be bought from Unalaska across Iliuliuk Harbor to Expedition Island. Here there is a small dock, a stand of melancholy spruce trees and a two-story frame house—home to five working women and madam. Business is brisk at "Pleasure Island," and word of profits finds it way south. In Seattle, like-minded entrepreneurs attempt to book travel to the territory. The Alaska Steamship Company denies them passage. It is of no consequence. The brothel on Expedition Island is short-lived, the house shut down by the U.S. Navy; the women refused relocation to Unalaska Island by a Federal Marshall. For those men who had taken the journey by rowboat, it had cost them two quarters to reach Expedition Island, but two dollars to make their way back.

"It was a rugged area for [submarine] pioneering—a wilderness of gray, blizzard-swept rock studded by islands: an inhospitable archipelago unpredictable storms raged in sudden tantrum. Worse were the fogs which curdled over the reefs like the blinding vapors of ammonia."

United States Submarine Operations in World War II

An S-Class submarine arriving at Submarine Base 151, circa 1942. The original New York Bureau caption to this photograph reads, "The Navy band was right on hand to strike up a merry tune and give this American submarine a rousing welcome as she made her way into port...the undersea fighter has sent five Japanese ships, two merchantmen only two Japanese destroyers and two patrol craft sunk. Image courtesy University of Alaska Fairbanks, Hanna Cali Collection, 79-11-27-N.

"...two dolphin tie-ups and a catwalk..."

27 January 1942, the S-Class submarine S-23 ties up temporarily at the Navy ship dock, Amaknak Island. The crew crowds the ice-rimmed deck, the men dressed in winter-weight woolens, heavy waterproofs, and ski masks. For the past 10 years, these submariners have been patrolling the warm waters of the south Pacific. They had put in regularly at Pearl Harbor for maintenance and relaxation, for black beaches, sunbathing and women. Now they stand and stare, taking in this strange new place—the snow capped mountains, the sun cold and grey as the moon. Lieutenant Commander J. R. Pierce, skipper of S-23, disembarks. He is taken by automobile on orientation. The vehicle skirts Fort Mears and Unalaska Bay, then turns east towards Iliuliuk Harbor and Submarine Base 151. Even the waters of protected Iliuliuk Harbor are broken by whitecaps. Pierce has never worked such cold, northern seas as these, where the shock of a dunking alone can strike a sailor incoherent. The automobile leaves Amaknak Island and crosses a narrow, crushed-rock causeway linking Amaknak and Expedition Islands. To his left, Pierce can see the wooden skeletons of two submarine docks, "*dolphin tie-ups*" rising from Iliuliuk Harbor. Workers in *tin* jackets and overalls clamber over the structures. Heavy machinery eats at the hills on Expedition Island and the adjacent Amaknak shore and in the roar of the machines, the near frenzied pace of the workers, it is difficult to discern whether the place is being raised or torn violently down. This is Submarine Base 151—a base in name only. From these primitive docks, Pierce must seek out the Imperial Japanese Navy in waters said to be the cruelest on earth.

"Heavy sea.... All hands on bridge bruised and battered. Officer on Deck suffered broken nose. Solid stream of water down hatch for 65 seconds..."

Log of Submarine S-23, 15 February 1942

Before the Japanese aerial bombardment of Dutch Harbor, 3 June 1942, five other S-boat captains will be subjected to the same somber orientation as Pierce. S-23 will be at dock in Dutch Harbor when the bombs fall. She will offload two of her crew injured by 20 foot waves, then put out to sea in search of the Japanese invasion fleet.

The Marine Railway and Shop Building. Heavy vessels up to the size of minesweepers were drawn into this repair shop by means of winch and railroad track. In conjunction with other specialized shops, the Marine Railway and Shop Building could carry out all duties necessary for ship maintenance and repair. Over time, the shop offices and warehouse space were converted to other uses. To this day, the Marine Railway and Shop Building continues to serve its original purpose, now servicing fishing vessels instead of warships. Image courtesy National Park Service.

A Navy Town

In over two years time, the "dolphin tie-ups and a catwalk" grow to 6 sub-berths—a total pier space of 1,494 feet. An electrical shop is built, radio hut, and general machine shops; a torpedo shop and optical shop for the repair of periscopes. By 1944, the sprawling Navy town can muster a maximum 1,600 personnel—their mission to maintain a squadron of S-Class submarines and care for their crewmen.

For sport, the base recreation hall is outfitted with a bowling alley, ping pong and pool tables. At the gymnasium, personnel can play basketball, handball, lift weights and box. Photographs of boxers courtesy National Archives. Digital reproduction by Anthgraphics.

"Sugar Boats," the submariners call the S-Class. They are aged ships, underpowered and poorly armed. Laid down in the early 1900s, the vessels measure roughly two hundred feet long, a mere twenty feet or so at the beam. In the Aleutians, these small craft are tossed about like driftwood, their superstructures torn away by breaking waves, their control planes, propellers, and rudders made useless. Even at periscope depth, the boats' fatigued hulls leak. Seawater shorts out electric lines, the cables burning red as candlesticks, spreading fire. Flooded batteries put off poisonous gas, driving crewmen topside in heavy seas, the ship left to founder unmanned. The subs descend only to hide or do battle. Submerged, the air is a sour perfume of exhausted oxygen, sweat, and diesel fuel. From the steel walls a strange rain falls, condensation from body heat and breath. "*Sewer pipes*," they call the S boats because of the stench. And always the terrible roll of the vessels in rough seas, knocking men down, breaking limbs and cracking skulls. At Sub Base 151, the injured are treated in a 15-bed sickbay. They are given physical therapy, dosed with restorative heat and sun lamps. Fresh baked goods grace the table, and a motorized ice cream machine churns out frozen dessert, the cool stuff a sweet memory of home. For care of the soul, there is the base church, *The Chapel of the Deep*, its pews crowded with men whose lives are touched daily by the threat of death. For over two years, Sub Base 151 will struggle to keep its squadron of antique Sugar boats afloat. There are few experienced repair personnel in this remote theatre and fewer spare parts. Motor mac and electricians must cannibalize subs in the base morgue to keep other wounded ships afloat. S-23 will survive its tour utilizing the burnt remains of its sister ship S-35. Sub S-23 will continue patrolling in the Aleutians until 1943, damaging no enemy ship and in turn only attacked and damaged by the sea. It will be awarded one battle star for the fight.

THE ALASKA NATIVE SERVICE HOSPITAL

"The [Unangan] *were the first in Alaska of its indigenous people…to sustain new diseases."*

Philemon M. Tutiakoff, Chairman of the Board, Aleutian/Pribilof Islands Association, Inc., FAO 1981

October 1933. At the depths of the Great Depression, a Native Hospital is viewed at Unalaska. The structure stands in the business heart of the City of Unalaska. Atop the former Alaska Commercial Company mail cooler. It is a two-story, wood frame structure, measuring roughly eighty-two feet by thirty. The building rests on a cement foundation with basement. Its back hard up against the Bulluk River. Patients reside on this first floor. Three Caucasian Alaska Native Service nurses occupy the second. Top left: Prominent view of Unalaska from the corner's nest of the United States Coast Guard Cutter Chelan. Original photograph taken between 1936 and 1938. Mole Alaska Native Hospital at right. Directly in the left of the hospital, abutting the shoreline, are two fenced, hard-surface tennis courts. At one time, a raised wooden walkway linked hospital and courts. Images courtesy Anchorgeflora.

"It was a terrific explosion."

Ward Attendant Martha Tutiakoff

East elevation of the Alaska Native Service Hospital damaged by Japanese bomb blast, 4 June 1942. Eyewitnesses and historians agree the attack on the hospital was accidental. It is thought the bomber pilot became disoriented during the battle swirling over Amaknak Island. He crossed Bulluk Harbor to find heavy antiaircraft fire above the City of Unalaska. The pilot jettisoned his bomb to increase airspeed and escaped. Photograph courtesy MOTA.

The winter of 1938, public service nurse Virginia H. Riley rents room 118 F of the Alaska Native Service Hospital in Unalaska. It is a "choice room" measuring roughly twelve feet by ten. Furnishings are spartan—a single metal bed, an occasional chair, a small library table and a wooden dresser. Riley and two other "interns" means share bathroom, kitchen, living and dining areas. The hospital is steam heated, and there is electric light twelve to sixteen hours a day. After hours, the nurses burn Coleman lamps to make their way about. This same year, Dr. M. E. Cortbell serves as physician. He lives with his wife and children on a rundown two-bedroom government house nearby. Together with the nursing staff and local ward attendants, Cortbell is responsible for the physical care of the Native people of the entire Aleutian Chain. For this purpose the hospital provides twelve beds.

"T.B. was bad here, tuberculosis. People died right and left. They didn't treat it. They didn't have no way to cure it."

Henry Swanson, Native Unalaska Resident

Since the mid-1700s, outsiders have brought to the Aleutians wave after wave of infectious disease for which the original inhabitants, the Unangan, have no immunity. Within forty-five years after European contact, epidemics, warfare, and starvation reduce a population once estimated at 16,000, to a few thousand persons at best.

Between 1835 and 1840, smallpox claims forty-two percent of those who remain. Survivors of the "pox" bear the deep facial scars of the plague. Children are left blinded, their faculties impaired.

In 1900, "The Great Sickness," a virulent cocktail of flu, measles, and smallpox strikes Alaska. Entire villages are annihilated, the dead left where they lie. In the Aleutians, the epidemic takes one quarter to one third of the Unangan.

In 1919, gold seekers en route to Nome bring Spanish Influenza to Unalaska. During days of cloudless, sunny weather—calm, quiet days with not even a whisper of wind—forty-four Native Unalaskans die.

And always, underneath these fast burning epidemics, lies tuberculosis: "consumption," the "White Disease." Tuberculosis can smolder in the afflicted for months, sometimes years. Not only does it attack the lungs, liquefying the tissue, but it damages organs, bone, and brain. In March 1934, it is estimated 55.5 percent of all Native deaths in Alaska are linked to pulmonary T.B. For the Unangan, a people on the verge of extinction, it is the single greatest threat to their survival.

At Unalaska there are no monies to build a sanatorium, and the tubercular share hospital space with other patients. Beginning 1941, on the cusp of World War II, there is no government physician at Unalaska to attend to them.

Unangan woman with labrets, labrets, nasal ornaments, and earrings. Such body adornment required the skillful hand of a surgeon using specialized instruments such as knifes, lances, and needles. Father Ioann Veniaminov, Unalaska District priest from 1824-34, noted that the "Aleut [Unangan] physicians were renowned for their skill." Pre-contact Unangan doctors (both male and female) had a thorough understanding of human anatomy, plant-based medicines, and complex surgical procedures. Their practice, though aided by early Russian fur traders, was repressed. Woman of Oonalashka by John Webber (1751-1793) original drawing in pencil and charcoal on paper. Image courtesy (MOTA).

"NO SISSY BOMBING"

Unalaska Mayor John Fletcher

For six days a storm rages over the City of Unalaska. Early morning, 3 June 1942, the fiercest winds, once strong enough to knock a man from his feet, suddenly abate. The clouds lift, and a dead calm settles over Unalaska and Amaknak islands.

Roughly 6:00 a.m. 3 June, Unalaska City Mayor John Fletcher and his wife awake to the sound of antiaircraft fire. Outside their window they see three such moving aircraft cut across the gray sky. Both believe the planes are American. "Hot dog," Mrs. Fletcher cries, "here comes…our fighters!"

At the west end of the city, Ward Attendant Martha "Monty" Tutiakoff is on duty at the Native Hospital. She hears what she believes are the engines of the mail plane taking off on its run to Kodiak. Martha Tutiakoff looks north across Dutch Bay to Amaknak Island, its military installations and the float plane ramp.

Mayor Fletcher can now make out the red circle of the rising sun marking the airplanes overhead. These are not U.S. aircraft, but Japanese fighter planes, incredibly fast and agile—like no plane he has ever seen. The Fletchers retreat to their basement. Through the open cellar doors, John Fletcher sees a formation of "four very large [Japanese] bombers" headed northwest, and "a moment later from the southwest …three more!" Bombs begin to fall on Amaknak Island—on its densely packed Army barracks and Navy radio station.

Martha Tutiakoff watches Japanese fighter planes strafe the oil tank farm on Amaknak, then wounds the hospital alarm. Hospital patient Pauline "Polly" Kudrin has been brought from the village of Kashega only days before. Polly can hear but not see the attack. Patches cover her troubled eyes. Young and persistent, Polly repeatedly tries to lift the coverings until a nurse drapes her cage over Polly's head. Nicholai S. Lekanoff is in hospital as well, visiting his little brother Lazar. Lazar is suffering from late stage tuberculous and "…is all hooked up." Nicholai hears the air raid siren and wishes to stay with his brother, but the staff "…kick[s] him out…"

Lazar, Polly, and Larry Shaishnikoff are three of thirteen patients in the hospital. In accordance with evacuation plans, Ward Attendant Martha Tutiakoff and staff hurry them to the hospital's cement basement.

Japanese fighter planes swoop over the city of Unalaska, raking homes and the Church of the Holy Ascension of Christ with machine gun fire. The citizens of Unalaska take cover in air raid shelters and dugouts that pock the town. The fighter planes fly so level and low, the pilot's faces can be seen behind their canopies. Mayor Fletcher commence: "The [Japanese] showed either great courage in coming so close, or they have absolutely no regard for their lives, whatsoever."

"Everyone had built an air raid shelter in his yard."

Mrs. James Parsons

The attack came as no surprise.

On 30 May 1942, the U.S. Army had ordered Mayor Fletcher to close all "liquor establishments" in Unalaska City. On the night of 2 June he was told of "a Japanese] carrier within 400 miles of Unalaska Island." With this information, Fletcher was to make ready the civilian defense of his town. "It may seem odd," the Mayor would later write, "that we should have been caught asleep in bed at the time the attack came. We learned the hard way, because we had many alerts before…practice alerts. We became indifferent to the danger ahead."

Ward Attendant Martha Tutiakoff would also write of this day—her clipped, precise language like that found on a patient's medical chart: "Although the bullets pierced buildings, they did not touch a single person and they caused no damage. No bombs of any kind were dropped on Unalaska; no fires were started." In this short passage, Attendant Tutiakoff describes the first foreign attack on a city of the United States since the War of 1812.

Pre-war Japanese intelligence of Amaknak and Unalaska islands was poor, consisting only of a twenty-year old photograph and incomplete shoreline map. Military planners were certain of only three structures: the fuel tanks and Navy radio station on Amaknak Island, and the Native Hospital on Unalaska. With the aid of aerial photographs taken during the 3 June raid, Japanese strategists pinpoint targets for a second attack.

[The Japanese] *"managed, believe it or not, to hit the only hospital in 500 miles."*

Keith Wheeler, *Arkansas Democrat*, 22 July 1942

5:40 a.m. 4 June, Ward Attendant Martha Tutiakoff transfers all patients from the Native hospital to dugouts as ordered.

5:55 a.m. Japanese "Val" bombers drop through holes in the 6,000 foot cloud cover over Amaknak Island. They dive towards their assigned targets, bombs slung under their bellies. The oil depot is struck, 57,000 barrels of fuel erupting into flame. Next the S.S. *Northwestern*, the aged steamship beached near the Dutch Harbor dock. A bomb strikes the vessel's forward deck and it too explodes into fire. Clouds of boiling smoke climb into the sky and it appears all of Amaknak Island is burning.

Over Unalaska Island, a lone bomber dives toward the city. Antiaircraft positions open fire, and the plane pulls up, bomb released. The missile strikes ground east of the Native Hospital. The concussive blast rips one end off the building, twists walls and roof. Like a child's doll house, the interior can now be seen—the nurses' rooms, furniture and metal beds, all their belongings thrown about as if in a rage.

In the hospital basement are Miss Margaret Quinn, Head Nurse, and the janitor gathering supplies. The blast punches a large hole through the cement foundation, but Miss Quinn and the janitor, unharmed, rush to a dugout.

Japanese fighter planes again strafe the City of Unalaska. "…women and children…were machine-gunned" writes Martha Tutiakoff. "…planes flew over them scattering bullets but by some miracle they missed…"

No one at the Native Hospital nor the City of Unalaska is harmed during this second attack either by bullets or bomb blast. After the all clear signal, men of the town—R.B. Patterson, Blackie Floyd, Ivan Ballenger and Clarence Sauters—transport patients in trucks to the Marco roller skating rink. From there they are divided among Native households for care.

Map showing 4 June 1942 Japanese bomb blast adjacent to Alaska Native Service Hospital. Grey-toned lots and structures indicate pre-war properties. Illustration adapted from National Park Service map "Downtown Unalaska Historic Properties" from Unalaska Preservation Plan, 1990.

Two young patients, Lazar Lekanoff (wearing Army helmet) and Larry Shaishnikoff (in hospital for appendicitis), take shelter in a dugout. "The soldiers were positively swell in their assistance to all the civilians," remembers Mayor John Fletcher. "They did everything to make the sick, women and children comfortable." Photograph courtesy Museum of the Aleutians (MOTA).

At least four of the displaced patients are tubercular children. One is transported south to a sanatorium in Tacoma. Within weeks of the attack, the boy Lazar Lekanoff passes away in Unalaska. The other tubercular children, together with Native citizens of Unalaska, will be removed to the internment camp at Burnett Inlet in [illegible], Alaska. Illness will follow the people there.

EPILOGUE: The Native H… and reused, not as a health fac… for the Pan Alaska Fisheries. … 1950s, the building catches fire … department responds, but as … water…like a yard sprinkler." … assites with his garden hose, b… to the ground.

NOTE: Today all that remains … Native Service Hospital is the cem… The property is privately owned. Vi… discouraged.

UNANGAM TANANGIN AYGAXSIX (WALKING THE UNANGAX̂ ISLANDS)

Qawalangim Tanangin
Fox Islands

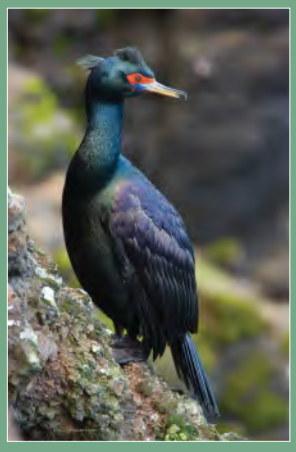
ISLANDS
Umnax, Umnagix̂, Unmax Umnak
Aĝasaaĝux̂ Tanax̂sidaaĝux̂ Bogoslof
Nawan Alaxsxa Unalaska
Sidaanax̂ Sedanka
Unalĝa Unalga
Akutanax̂ Akutan
Akungan Akun

Anim kangaa*, lupine, *Lupinus nootkatensis. Photo courtesy Suzi Golodoff

PLANTS OF THE ALEUTIANS

The Aleutian Islands encompass a unique floral region unlike any other on our planet. Although windswept and treeless, our maritime climate moderates temperatures, and there is no permafrost in the Aleutians. Plant life, especially along the coast, is especially lush. Our nearly constant winds, and the resulting patterns of snow accumulation, regulate the boundaries of our plant communities.

Migrating into the islands from Asia and North America, species slowly expanded their ranges into both ends of the chain. The central islands still show a gap in the distribution of many circumpolar and arctic alpine species.



BIRDS

The Aleutians are known throughout the world for their teeming bird populations. Remote and originally free from terrestrial predators, the islands are nesting habitat for millions of seabirds.

Left: *Ingatux̂*, red-faced cormorant, *Phalacrocorax urile*, a Beringian endemic, is a resident throughout the Aleutians.
Below: *Chilux̂*, Lapland longspurs, *Calcarius lapponicus*, nest abundantly throughout the Aleutians.
Photos courtesy Suzi Golodoff

STORIES OF OUR ANCESTORS

John Hall (1739-1797) and Samuel Middiman (1751-1831) after a drawing by John Webber (1751-1793), *Natives of Oonalashka and Their Habitations*, plate 57 from James Cook, *A Voyage to the Pacific Ocean* (London: Nicholl and Cadell, 1784).
Courtesy Graphic Arts Collection GC 106, Firestone Library, Princeton University

Mushkal' was a teenager when his uncle surrendered him as a security hostage to the Russians at Umnak Island in 1763. He was baptized as Ivan Glotov. He eventually became chief at Nikolski and a Paramount Chief over many villages. He was instrumental in sending a delegation to the Czar in 1796 to protest Russian abuses. He built the first Orthodox chapel in the Fox Islands in 1806 at Nikolski.

Kagalux̂ was a young man when he met Captain James Cook in 1778 on Unalaska Island. He was bilingual in Unangam tunuu and Russian and assisted the Billings Expedition in 1791 in compiling the first extensive census in the islands. As Yelisey Pupyshev, he was a chief of Imagna, near Morris Cove. He traveled to Russia in 1796 to present a petition to the czar. He died in Moscow.

Ivan Pan'kov, a bilingual chief of Akun in the early 19th century, collaborated with Father Veniaminov in designing an orthography for Unangam tunuu and in translating Russian church texts. Akun is in the Krenitzin Islands, east of Unalaska. It was among the most populated clusters of islands in the 18th and 19th centuries.

MUSEUM of the ALEUTIANS

Unangam tunuu is an ancient language and not a direct translation of the English or Russian names.

Made Possible by the Institute of Museum and Library Services and is a collaboration between the Museum of the Aleutians, Qunalaska Corporation, City of Unalaska, Qawalangin Tribe, the Aleut Community of St. Paul Tribal Government, Aleutian Pribilof Islands Association, U.S. Fish and Wildlife Service, Alaska Volcano Observatory, and National Oceanic and Atmospheric Administration.

UNANGAM TANANGIN AYGAXSIX (WALKING THE UNANGAX̂ ISLANDS)

Akuuĝun/Uniiĝun Tanangin
Islands of Four Mountains

BIRTHPLACE OF THE UNANGAX̂ PEOPLE

Oral traditions indicate that Unangax̂ have lived in the region since the beginning of time, and that Tanax̂ Angunax̂ (Big Island) in the Islands of Four Mountains is where, "according to Aleut traditions... their ancestors originated."

(Veniaminov, 1984)

BIRDS

Common and thick-billed murres nest in colonies of up to tens of thousands of birds. They incubate their single egg on top of their feet, perched on the sides of sheer cliffs. Not quite able to fly yet, chicks jump from the cliffs and glide (or tumble) down to begin their lives at sea after only three weeks.

THE LAND

The Islands of Four Mountains are a group of six volcanoes on five islands. Chuginadax̂ (Mount Cleveland) is the tallest and most active of these volcanoes and one of the most active in North America. Qigalĝan (Carlisle) and Qagaamila (Kagamil) have historic reports of activity. Tana was active thousands of years ago in the mid-early Holocene. Ulaĝa (Uliaga) hasn't erupted in more than 10,000 years.

The orientation and proximity as well as geochemical and geologic composition of the islands indicates that they may be part of the same central caldera system, with much hidden below the ocean's surface to connect the Islands as part of a large, previously unrecognized caldera.

The Islands of Four Mountains seen from the north. From left to right, Tanax̂ Angunax̂, Chuginadax̂, Kigalĝa/Qigalĝan, Chiĝulax̂, Qagaamila and Ulaĝa Tana, Cleveland, Carlisle, and Herbert. Kagamil and Uliaga are out of frame to the left (east). Photo courtesy Dave Clum, 138841

Far left: *Sakitax̂, Ulungtxax̂*, thick-billed murre colony, *Uria lomvia*. Photo by Nathaniel Wilder, courtesy U.S. Fish and Wildlife Service

Left: *Saquyax̂*, short-tailed shearwaters, *Ardenna tenuirostris*, feed among *alamax̂*, humpback whales, *Megaptera novaeangliae*, in the churning passes between islands. Flocks of a million birds have been recorded in the eastern Aleutians. Nesting in Australia, these seabirds make epic annual migrations into the Bering Sea. Photo courtesy Suzi Golodoff

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UNANGAM TANANGIN AYGAXSIX (WALKING THE UNANGAX̂ ISLANDS)

Niiĝuĝim Tanangis
Andreanof Islands

ISLANDS
Anangusix̂ Gareloi
Tanax̂ax Tanaga
Kanaga Kanaga
Adaax Adak
Qigalaxsix̂ Kagalaska
Sitxinax̂ Great Sitkin
Qanan Tanax̂ Kasatochi
Atx̂ax̂ Atka
Amlax, Amlagix̂ Amlia
Sax̂uugamax Seguam

STORIES OF OUR ANCESTORS

Atka Village has been key to the preservation of Unangam tunuu as both a spoken and written language. Iakov Netsvetov and Lavrenti Salamatov did pioneering translations in the 19th century. Netsvetov was the first Alaska Native priest and served Atka from 1829 to 1844. He was glorified (canonized) as St. Jacob of Alaska in 1994. In the 20th century, William Dirks, Senior and Junior, and Cedor Snigaroff provided invaluable texts. They were followed by Sally Snigaroff Swetzof, Lydia Dirks, and others in the 1970s. Dr. Moses Dirks of Atka is the foremost linguist in Unangam tunuu.

QANA-TANAX̂ KUUĜANAA NIIĜUĜIS UKUX̂TAQAA

Adang hadan tunumkaasazakungis tutazaqang. Kadim hadan anĝaĝinangis, akan naa-hadagaan angil, Aluuĝinas hadagaan angil, hingan Atx̂am angtan chuguuĝix̂ aaliisii, Chuguuĝix̂ Uĝalux̂ hiilaĝadaa, ilan chalakus sakang alaĝum ilan quganax̂ qawam chaa sanaa kuuĝal ax̂takux̂, ukux̂talaan txidix quyunax̂ akux̂txidigaan, hingan qilax̂ hingan tanĝix̂ sanahlii-aqaan sanal hulal ax̂tanax̂.

Ukul aqadaamdix wan hinas hiilax̂tadas:

"Qana tanax̂ al sakaax kuuĝal sakamax̂ saka?"

Hingayaa akux̂ Qana-Tanax̂ hiilax̂tadax̂. (Kasakas Kasatochi ngaan asaasaqaa.)

Courtesy Larry Dirks, Sr.

How Qana-Tanax̂ appears
Atkans saw it

I use to hear my father talk about it. In the former times people came from the west, they were coming from Aluuĝinas, heading to the end of Atka to Chuguuĝix̂ Aaliisii, a place called Chuuguuĝix Uĝalux̂ they landed there in their boats they saw a rock sticking out about a size of a sea lion flipper, there they went to bed the next morning they awoke there was an island formed to its current size.

Seeing this phenomenon, this is what they said:

"What island is it that appeared from out there?"

That island is called "What Island Is That?" (The Russians named it Kasatochi)

PLANTS

Quungdiix̂, purple orchid, *Dactylorhiza aristata* is found throughout the Aleutians, while the Aleutian shield fern *Polystichum aleuticum* is a species found only in the central Aleutians.

Above: photo courtesy Mike Boylan, courtesy U.S. Fish and Wildlife Service; below: photo courtesy Suzi Golodoff

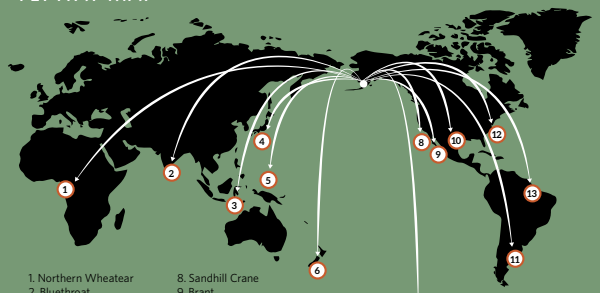
BIRDS

During spring and fall, the Aleutians are an essential 'fuel stop' for long-distance migrants like shorebirds, navigating their epic flyways between the hemispheres.

Bar-tailed godwits are the world's longest distance, non- stop migrants. Between their Arctic nesting grounds and New Zealand where they winter, they fly approximately 7,500 miles in a little over a week.

***Chuygix̂*, bar-tailed godwits, *Limosa lapponica*, on Atka in early May. Note the leg bands on some birds.** Photo courtesy Suzi Golodoff

FLYWAY MAP



1. Northern Wheatear
2. Bluethroat
3. Eastern Yellow Wagtail
4. Dunlin
5. Wandering Tattler
6. Bar-Tailed Godwit
7. Arctic Tern
8. Sandhill Crane
9. Brant
10. Smith's Longspur
11. American Golden Plover
12. Tundra Swan
13. Semipalmated Sandpiper

Information courtesy Arctic National Wildlife Refuge

MUSEUM of the ALEUTIANS

Unangam tunuu is an ancient language and not a direct translation of the English or Russian names.

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UNANGAM TANANGIN AYGAXSIX (WALKING THE UNANGAX̂ ISLANDS)

Qax̂um Tanangis
Rat Islands

MAPPING THE ALEUTIANS

How did the Rat Islands get their name and why does Unalaska Island have a "Beaver Inlet" when there are no beavers in the Aleutians? Where did the "Dutch" in "Dutch Harbor" come from? Why is this city called ***Un***alaska?

Early voyagers consulted Unangax̂ for their detailed knowledge. The most extensive Russian maps of Alaska, from the 1850s, drew on surveys conducted by Unangax̂ navigators and were engraved by Unangax̂ and Alutiiq individuals. While place names in Unangam tunuu are numerous, published maps usually carried names selected by Russian or American seamen and surveyors. Maps are continually updated, especially along a chain of volcanic islands. Surveys rely on information from local people, fishermen, sailors, and satellite images. Today, official names are set by the U.S. Board on Geographic Names to ensure uniformity. But place names change, and this board has a process for doing just that.


Illustration courtesy Mitchell Watley

QUXSUX̂TAX̂ (STELLER SEA COWS)

Steller's sea cow (*Hydrodamalis gigas*) are extinct, but they once lived in the Aleutian chain. Remains have been discovered on several islands, including Amchitka and the Commander Islands. These large and slow-moving mammals (some reaching lengths of 30 feet) feasted on kelp and are related to manatees and dugongs. The remains on Amchitka were found in ancient deposits (roughly 125,000 years old) that also included the remains of whale, walrus and Steller sea lion.

INVASIVE SPECIES

Arriving after a 1780s Japanese ship wreck, rats became a prominent resident of Hawadax̂ island. With almost no predators and seabird eggs as a staple food source, the population quickly grew. This rapid growth damaged the local ecosystem, destroyed seabird populations and disrupted the region's food chains. The population was strong enough that European explorers and government maps referred to Hawadax̂ as "Rat Island" until 2012. The name changed after a successful rat removal program in 2008 and 2009, using poisoned rat pellets. Despite some damage to other animals, the program successfully removed the rats and allowed the bird populations to recover.

Humans primarily introduced fox in the mid-1900s for commercial harvest. Isolated islands were seeded with fox, who were then, in subsequent years, harvested for furs. This system resulted in devastating results for seabird populations, whose eggs became a staple food source for the fox. In 1949, the federal government began removing fox from the Aleutian Islands, a successful program resulting in removal of invasive fox from over 40 islands.


***Uuquchiing,* Arctic fox, blue phase, *Vulpes lagopus*.**
Photo by Ian Shive, courtesy Alaska Maritime National Wildlife Refuge

UNYAX̂ (SEMISOPOCHNOI ISLAND)

Semisopochnoi is the Russion word forIsland of Seven Hills. Unyax̂ is the largest of the young volcanic islands in the Western Aleutians. It is composed of a variety of volcanic landforms, based around a large central caldera. This caldera formed early in postglacial (Holocene) time and was followed by basaltic through dacitic eruptions that have formed several intracaldera and extracaldera vents and cones.

Semisopochnoi is situated at the intersection of the Aleutian volcanic arc and the submarine Bowers Ridge.

LEFT: Major eruptive vents and geographic features of Semisopochnoi Island. Image courtesy Alaska Volcano Observatory


Courtesy Museum of the Aleutians, 2014008081

FOX TRAPPING

For thousands of years, Unangax̂ relied upon natural resources for sustenance and clothing. Unangax̂ historically made ingenious devices to catch fur mammals. Following the introdution of foxes to the island, these included fox traps that evolved over time. Bill Tcheripanoff from Akutan made fox traps from wood, sinew, and bone. He carved a hollow tube from wood and attached a flat arm to an opening on the side. With sinew and twist blocks, he attached a rotating arm into which he drilled ivory spikes. A trip wire was attached and the device was anchored near a fox path. Once sprung, the tripwire released the tightly wound arm driving the spikes into the animal. Fox trapping cabins were built up and down the Aleutian Islands.

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UNANGAM TANANGIN AYGAXSIX (WALKING THE UNANGAX̂ ISLANDS)

Sasignax̂/Saskinam Tanamlan Near Islands

ISLANDS
Atux̂, Atan Attu
Angatux̂ Agattu
Ingiginax̂ Alaid
Avayax̂ Nizki
Samiyax̂ Shemya

From left: Basket weaver on Attu, Maggie Prokopeuff.
Photo courtesy UAF1990-3-2, Murie Family Papers, Alaska and Polar Regions Collections and Archives, University of Alaska Fairbanks

Attu grass basket
Photo courtesy Museum of the Aleutians, 2008.002.001

Rye grass used for basketry
Photo courtesy Suzi Golodoff

STORIES OF OUR ANCESTORS

Vassa "Maggie" Prokopeuff (c. 1872-1937) of Attu was a master weaver who was instrumental in developing the Attu basket. Renowned for her energy and sense of humor, she had students from Attu, Atka, Nikolski, and Unalaska.

Woven from beach grass, Unangax̂ baskets have no equal in the world for fineness of weave and delicacy of design. Basketry is the most enduring of all Unangax̂ arts. While deeply traditional, it has evolved to meet the needs of the times.

BIRDS OF THE ALEUTIANS

The Aleutians are known throughout the world for their teeming bird populations. Remote and originally free from terrestrial predators, the islands are nesting habitat for millions of seabirds.

The emperor goose is a Beringian endemic. Nesting in western Alaska and the Siberian Subarctic, the entire world population winters in the Aleutians and along the Alaska Peninsula as far east as Kodiak.

Atrqatrukax̂, Rock Ptarmigan, *Lagopus muta*, are found throughout the Aleutians. Only Unimak Island, near the Alaska mainland, also has Willow Ptarmigan. Rock Ptarmigan's broader range extends from northern Eurasia into northern North America. Four Beringian subspecies are recognized, separated by island groups. The Everman's Rock Ptarmigan, of Attu and Agattu, have distinctly dark, nearly black, breeding plumage. Ptarmigan on Agattu were decimated by foxes, but successfully reestablished by USFWS with birds transported from Attu.

***Ilġiliẋ*, the emperor goose, *Anser canagicus*. In the Attuan dialect of Unangam Tunuu, the word for Emperor goose is *Ilġiliẋ*, but is better known as *Qagmangiẋ* in the Atkan (A) dialect, and *Qamgaangiẋ* in the Eastern (E) dialect. *Aġdiikax̂* (E,A), Rock ptarmigan, or *Atqatukax̂* in the Attu dialect.** Photos courtesy Suzi Golodoff

PLANTS

These plant species with western origins are found throughout the Aleutian Islands. Chocolate Lily and Crowberries have edible parts, and the latter is the only berry in the western Aleutians. The berries could be stored and preserved, either in seal oil or frozen in water barrels. The dense, springy crowberry plant material was also used for tinder and mattress material.

Clockwise from left:
***Rhododendron camtschaticum*. Kamchatka rhododendron.**
***Saranax̂*, Kamchatka lily or rice root lily, *Fritillaria camschatcensis*.**
***Kigyax̂*, crowberry, mossberry, *Empetrum nigrum L.* Also *qaayum qaxchikluẋ* (Eastern); *aangsux̂, kingdax̂* (Atkan); *kigyax̂* (Attuan).**

MUSEUM of the ALEUTIANS

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UNANGAM TANANGIN AYGAXSIX (WALKING THE UNANGAX̂ ISLANDS)

Unaaĝin Tanangin
Pribilof Islands

ISLANDS
Tanax̂ Amix̂ St. Paul
Anĝaaxchalux̂ St. George
Qawam Nuĝiix̂ Sea Lion Rock
Adux̂ Otter Island
Tanaadax̂ Walrus Island

Map courtesy National Park Service

BERING LAND BRIDGE

In the past, during the Pleistocene Epoch, much of the northern latitudes was covered in glacial ice. Much of the planet's ocean water was frozen in glaciers leading to sea levels as much as 300 feet lower than today.

In the Bering Sea, lowered sea levels exposed a broad expanse of land connecting the Asian and North American continents. This landmass is called the Bering Land Bridge because it served as a path of migration for many species. Plant and animal communities from both continents inhabited this landmass. The Bering Land Bridge was free of glacial ice and would have provided close to 1 million square miles of steppe and shrub tundra similar to the arctic coastal plains of the present. Though it forms the floor of a portion of the Bering Sea today, the Bering Land Bridge was exposed for thousands of years with vast inland areas and a southern coastline rich in resources utilized by hunter-gatherers. Archaeology of the adjacent portions of Alaska and Siberia shows that this was an important pathway for the human populations who initially settled in the Americas.

MIGRATIONS

The Pribilof Islands host remarkable migrations of sea mammals and birds. Demonstrating an amazing endurance of life, the spring migrations see hundreds of thousands of northern fur seals (*Callorhinus ursinus*) return to breed. Thousands of shorebirds and waterfowl make their way through seasonally, spring and fall. Ancient migrations of land animals reflect a time when the islands were connected to both the Asian and American continents—via the Bering Land Bridge—which brought mammoths to the islands.

MAMMOTHS

At the height of the last ice age (~21,000 years ago), sea levels were much lower, and St. Paul and St. George were part of the Bering Land Bridge connecting Asia to Alaska. Many different types of plants and animals, and even the first Alaskans, crossed between Asia and Alaska. After the last ice age, the climate warmed and sea levels rose. 13,000 years ago, the Pribilofs were cut off from the mainland by the rising sea level, which also isolated a population of mammoths. They survived and reproduced on St. Paul up until about 5,600 years ago. We know this because some mammoth remains were found in a cave on the island and were dated to this time.

NORTHERN FUR SEALS

Northern fur seals (laaqudax̂) spend much of the summer in breeding rookeries in the Pribilof, Bogoslof, Commander, Robben, and Kuril Islands, as well as two rookeries off the California coast. The Pribilof Islands support about half of the world's northern fur seal population. Fur seals spend the remainder of the year at sea in the north Pacific Ocean. Unangax̂ history is interwoven with northern fur seals, from Russian commercial fur trade to the U.S. purchase of Alaska, the end of commercial fur sealing in the 1980s and the current co-management of subsistence harvest of fur seals by NOAA Fisheries and the tribal governments of St. Paul and St. George.

***Hlaaqudax̂*, Northern fur seal, *Callorhinus ursinus*, female and pups.**
Photo courtesy Paul Hillman, NOAA Fisheries

Mammoth tooth found on St. Paul Island, dated to 5,600 years ago. Photo courtesy Douglas W. Veltre

BIRDS

Nesting colonies swirl with kittiwakes, gulls and cormorants and millions of alcids; murres, puffins, auklets and murrelets.

***Qagidax̂*, horned puffin, *Fratercula corniculata*.**
Photo courtesy Suzi Golodoff

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UNANGAM TANANGIN AYGAXSIX
(WALKING THE UNANGAX̂ ISLANDS)

Volcanoes

Great Sitkin Volcano, 2021.
Photo courtesy Alaska Maritime National Wildlife Refuge.

Map courtesy Alaska Volcano Observatory, 138841.

STORIES OF OUR ANCESTORS

Spirits inhabited volcanoes. Kamgiligan lived within Makushin and had a strong desire to become human. Chuginadak Volcano was used by a woman for breathing. She eventually traveled to Akutan where she married a man who could shoot rosy finches on the wing. Before sending his two sons on a prolonged trip to Kodiak, a father on Tigalda Island removed ribs from the demons inhabiting Akutan, Makushin, and Shishaldin volcanoes and used them to fortify his sons' skin boats.

Jealousy erupted between Makushin Volcano [Ayaĝin or Magusim Qiiĝuusii] on Unalaska and volcanoes on Umnak. They postured and shook and tossed pyrotechnics into the sky. The smaller volcanoes burst in embarrassment and were extinguished forever. Only Makushin and Recheshnoi [Ingaaĝinan] remained to fight. Fire and ash thickened the air and killed all the animals in the area. Finally, Recheshnoi shattered itself in a massive explosion. Makushin calmed down and now only smokes a little.

VOLCANO MONITORING

The Alaska Volcano Observatory (AVO) monitors volcanoes across Alaska with many different methods. Makushin Volcano has seismometers to record and measure earthquakes from possible magma movement below the surface. GPS sensors also measure any deformation of the volcano that may indicate rising pressure from below. Satellite data can look for heat changes in the crater or other vents, as well as visible changes to the surface, the presence of certain gasses, and deformation. Infrasound sensors can listen for very low frequency sounds given off by eruptions, and lightning can be detected in ash clouds. AVO has also installed webcams to keep an eye on the volcano's activity. Eyewitness reports from community members, ships, and pilots all help watch as well.

Jim Vallance (USGS) describes geologically young ash and tephra deposits from Makushin in an outcrop alongside the runway at Dutch Harbor Unalaska, July 2015.
Photo courtesy Jess Larsen, Alaska Volcano Observatory / University of Alaska Fairbanks Geophysical Institute

Makushin in 2019. Photo courtesy Malcolm Herstand, Alaska Volcano Observatory

AYAĜIN, MAKUSHIN

There are more than 50 volcanoes in Alaska with recorded activity since about 1760. Makushin Volcano is part of the Aleutian Island volcanic arc, along the northern portion of the Pacific "Ring of Fire." Makushin has had at least ten reported eruptions since 1769, ranging from small ash and steam plumes to a "most violent eruption with great clouds...rising from its crater" (Anchorage Daily Times, 1938). Geologic fieldwork and rock dating puts most of the Makushin stratovolcano less than one million years old, and major lava flows occurred during the Holocene Epoch, within the last 11,700 years. Three major eruptions have deposited ash in the Unalaska area in the last 10,000 years. The Driftwood Pumice layer erupted most recently, about 8,200 years ago. The Nateekin eruption was about 8,700 years ago, and deposited 20 cm of ash in the Unalaska area. The largest was the Makushin crater-forming eruption, or "CFE", about 9,000 years ago. This massive event sent pyroclastic flows of hot gas and volcanic material down the Makushin Valley, leaving deposits nearly 100 meters (330 feet) thick.

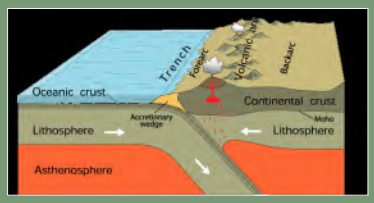

Image courtesy Alaska Volcano Observatory

Sections of the rigid upper layer of the earth (lithosphere) collide as the tectonic plates move around the planet. The dense and thinner oceanic crust subducts beneath the lighter and thicker continental crust. Soft sediments are scraped off and form the accretionary wedge at the plate margins.

As the lithospheric plate subducts, increasing heat and pressure cause magma formation, which being less dense than the surrounding rock, rises through the overlaying continental crust, forming a chain of volcanoes along plate boundary.

The boundary between the more rigid crust and the mantle is called the Moho and is marked by chemical changes and differences in seismic wave velocities.

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UNANGAM TANANGIN AYGAXSIX (WALKING THE UNANGAX̂ ISLANDS)

Alaska Maritime National Wildlife Refuge

THOUSANDS OF ISLANDS, MILLIONS OF BIRDS

The magical Aleutian Islands comprise part of the vast Alaska Maritime National Wildlife Refuge, which stretches across much of coastal Alaska. Alaska Native people have thrived on these lands for thousands of years, and continue to steward the lands today, often in partnership with the federal government. With special refuge designations that began with President Theodore Roosevelt, the Aleutian Islands have long been recognized as globally important breeding areas for seabirds and marine mammals. Today, the United States Fish and Wildlife Service works with others to protect these precious public lands to benefit people and wildlife for generations to come.

SAN, BIRDS

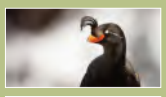
The Aleutians are famously known for their teeming bird populations. The thousand miles of remote and rugged islands, originally free of terrestrial predators, provide nesting habitat for millions of seabirds. The air above these colonies swirls with murres, auklets, puffins, kittiwakes, gulls and cormorants, including the red-faced cormorant, a Beringian endemic. Hundreds of thousands of short-tailed shearwaters feed among humpback whales in the passes. Across our treeless landscape, numerous songbird species hide their nests in the surrounding tundra.

During winter, the ice-free coastal waters shelter tremendous flocks of waterfowl and sea ducks, including harlequins, Steller's eiders, long-tailed ducks, scoters, scaups, mergansers, and the emperor goose, whose entire world population winters here in the Aleutians and along the Alaska Peninsula. During spring and fall, the Aleutians are an essential 'fuel stop' for long distance migrants like shorebirds, navigating their epic flyways between the hemispheres.

The presence and annual migrations of bird species have defined the seasons for Unangax̂ people for thousands of years. Many birds were depended upon for meat and eggs, and ingenious use was developed for traditional clothing, essential tools and ornamentation. The wing bones of albatross were skillfully grooved, split and sharpened into awls and very fine needles. Bird skins were sewn into parkas. Puffin beaks were made into dance rattles and sewn along the hems of garments.

Bird populations are just as essential today as they've ever been. Massive seabird die-offs in recent years, caused by warming sea temperatures, are of deep concern. Our commercial fishing economy depends entirely on a healthy Bering Sea ecosystem, and the continuous cycling of nutrients that millions of seabirds provide is essential and irreplaceable.

Photos courtesy U.S. Fish and Wildlife Service.



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UNANGAM TANANGIN AYGAXSIX (WALKING THE UNANGAX̂ ISLANDS)

Nanadan
Margaret Bay

MARGARET BAY

The Margaret Bay archaeological site exhibits one of the longest records of human habitation in Unalaska Bay and in the eastern Aleutian Islands. Beginning as early as 6,000 years ago Unangax̂ lived in semi-subterrannean homes (Ulan) on the hill top and used this location as a base for sea mammal hunting, fishing, and reef-foraging. During the exceptionally cold period known as the Neoglacial between 4,700 – 2,500 years ago, ulaa were constructed with stone-lined walls to conserve heat. Artifacts found here suggest that trade networks extended as far as the Alaska mainland and that Unangax̂ may have had regular interactions with people living on the Alaska Peninsula. Watercraft would have been essential for life in the eastern Aleutians and Unangax̂ are known for their sophisticated skin and frame kayaks capable of making long journeys over the rough seas of the Bering Sea and North Pacific.

CHAGAX̂, OBSIDIAN

Obsidian, or volcanic glass, was a preferred material for stone tools in the eastern Aleutian Islands and people traveled great distances to obtain it. The chemistry of volcanic magma and lavas are often unique, and therefore, obsidian flows possess a chemical signature that can be matched to the volcano from which it was formed. Using X-Ray Fluorescence obsidian from Margaret Bay has been traced to sources at Okmok volcano approximately 70 miles west and to Akutan volcano 25 miles to the east. One obsidian artifact was sourced to an outcrop in the Wrangle Mountains on the Alaska Mainland and likely was acquired through trade.

These kadax̂ (projectile points) made of obsidian were used on the ends of harpoons or spears for hunting, probably seals and sea lions and other marine mammals, as well as for hafted knives. The small Qaxaq style point are distinct in their small size, roughly 1" long. Obsidian sourcing has revealed that most of the obsidian from this site came from Okmok volcano and Akutan volcano. 0058, 0157, 0256, 0288, 6171-Okmok, photos courtesy Museum of the Aleutians

NEOGLACIAL AND PALEOENVIRONMENTAL RECONSTRUCTION

Between 2,500 and 4,700 years ago temperatures across southwest Alaska dropped and the region experienced what is known as the Neoglacial period—a time of pronounced cold leading to the expansion of glaciers and sea ice. Archaeological sites such as Margaret Bay serve as archives of evidence of past climates and environmental conditions. Change through time in plant or animal species indicate to scientists changes in historical ecological communities and, therefore, also in environmental factors such as temperature, sea surface temperature, and precipitation. The layers of occupation at Margaret Bay extend between 6,000 and 2,500 years ago including the time of the Neoglacial. While the majority of plant and animals remains stay consistent through time at Margaret Bay, species adapted to sea ice, such as walrus and bearded and ringed seals, were also hunted. The bones of these animals in an archaeological context provides circumstantial evidence that during the Neoglacial the seasonal sea ice pack on the Bering Sea extended significantly further south than it does today. People adapted to these colder conditions by employing new architectural styles such as stone-lined semi-subterranean houses with elaborate internal hearths.

Cunilgix̂ (harpoon heads) are part of harpoons or throwing lances. These harpoons are made from the bones of a sea mammal and would have been used as the the tips of spears and harpoons. 5871, 7954, 5873. Photos courtesy Museum of the Aleutians.

For thousands of years stone blades like these were used across the northern latitudes, including at Margaret Bay and other Aleutian Island sites. The tiny blades in the left of the picture were glued into grooves in bone projectile points and knives. These microblades were made by using pressure to remove them from a core (other photo); the technique creates pieces that are remarkably similar in shape and size allowing for quick repair of tools and the very efficient use of high-quality stone like the green chert pictured here. UNL048-4937, photos courtesy Museum of the Aleutians.

By 3500 years ago, the deep semi-subterranean houses were now lined with stone walls and had elaborate hearth systems; multiroom houses appear as well and villages are larger. The nearby Amaknak Bridge site, occupied between 3300 and 2700 years ago also had animal remains and architectural changes indicating the presence of more extensive ice in the Bering Sea region at this time. Photo courtesy Museum of the Aleutians.

Midden from the Margaret Bay site. Midden is a term archaeologists use to refer to accumulations of animal and plant remains and discarded items from stone and bone tool manufacture. Seen here are clams, small mammals and other animal remains as well as chips of stone. Photo by Rick Knecht, courtesy Museum of the Aleutians.

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UNANGAM TANANGIN AYGAXSIX (WALKING THE UNANGAX̂ ISLANDS)

Uglugax̂
Summer Bay

ARCHAEOLOGY

The system of sand dunes surrounding Summer Bay formed approximately 3,500 years ago following a drop in relative sea level. The dune system formed on the newly exposed land and Summer Bay Lake was cut-off from the sea. Over time, Summer Bay Lake and the creek leading to the ocean became the site of a substantial salmon run. Since that time, Unangax̂ have utilized the area for summer fish camps. Judging from material excavated at two archaeological sites in these dunes, camp activities were focused on salmon fishing, bird hunting, and manufacture and repair of tools made from the bones of birds and sea mammals. The overlooks also provide excellent views of Unalaska Bay and the Bering Sea.

Archaeologists examine midden at UNL-208 exposed by erosion in 2016. Photo courtesy Museum of the Aleutians

ARCHAEOLOGY OF UNANGAX̂ SETTLEMENT

Across the Aleutian Chain Unangax̂ maintained a system of settlement that included large permanent village sites occupied most of the year, and seasonal "camps" utilized as a base for summer subsistence activities such as fishing or foraging for bird eggs. This settlement pattern is still used today by many Unangax̂. Locations such as Summer Bay were likely chosen in the past to harvest the summer salmon run. At UNL-92 and UNL-208, evidence for short-term occupation, fishing, and other summertime activities dating to as much as 2,000 years ago confirms the seasonal use of this location and the long-standing pattern of settlement utilized by Unangax̂.

LIFE IN A SEASONAL CAMP

Based on the abundant artifacts recovered at sites in Summer Bay we can get a glimpse of the everyday activities of people living here in the past. The large number of hafted stone knives attest to the importance of food processing such as filleting of fish. Based on modern practices, fish at summer bay was dried and stored for wintertime. Another important activity was the manufacture of tools made from the bones of sea mammals and birds. Bone tools were found in all stages of manufacture from initial shaping to the repair or recycling of older tools. Tools made from animal bones include fish hooks, barbed spear and harpoon points, awls and needles.

Needles and awls made of bird bone were important tools used in everyday life. These items were essential for the manufacture of clothing and for attaching the hides of sea mammals to wooden frames of kayaks. Unangax̂ used a variety of awls and needles. Awls, generally called anxsilaasix̂ include some shaped to split sinew, called chagliisix̂, and some to undo stitchings, called siilax̂. Needles included chunkuusix̂ (used to push through skins and other tough materials) and hinguqax̂ (long bone needles for lacing iqyax̂). Many of the needles made by Unangan, such as the ones shown here, had finely-drilled eye holes.

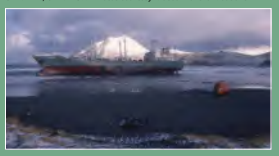
UNL92-2238, UNL92-580, Photos courtesy Museum of the Aleutians

The akaǧusix̂ (toggling harpoon, top) is a critical tool used for hunting in open water. The toggle head was tipped with stone point and connected to the shaft with a line made of kelp or sinew. Once embedded in the target, the toggle rotates 90 degrees, securely attaching the line and allowing the hunter to retrieve their quarry. A cunilgix̂ (bottom photo), is part of a throwing lance or harpoon and is tipped with a kadax̂ (stone harpoon head).

Photos courtesy Museum of the Aleutians

Qichx̂in (sharp knives), qitx̂uusix̂ (scrapers), umqisisix̂ (curved knives). These stone tools made of basaltic andesite were likely cutting and scraping.

UNL92-47, UNL92-877. Photos courtesy Museum of the Aleutians



In November of 1997, during a particularly strong storm, the MV Kuroshima ran aground spilling petroleum oil into Summer Bay. Oil contamination reached the shoreline and portions of the dune system, including the area of a prominent archaeological site UNL-92. As part of the restoration efforts, archaeologists from the Museum of the Aleutians initiated the first archaeological investigation in Summer Bay. Restoration efforts involved the removal of contaminated sediments and planting of native rye grass to enhance dune stabilization.

Photo courtesy Museum of the Aleutians

COMMUNITY ARCHAEOLOGY

For three years (2017 – 2019) the archaeological site UNL-208 was excavated as part of the Community Archaeology Program hosted by the Museum of the Aleutians. The site was chosen because it was in danger of being lost to erosion during winter storms. Locals helped to dig, screen, and document this interesting and atypical site. Unlike many sites in the Aleutians, UNL-208 was the location of a temporary camp where people harvested blue mussel and fish. Through careful digging it was possible to identify individual "dumps" of shell and fish bone probably carried away from the central camp in a basket or similar container.

Community Members participate in excavations at UNL-208 in Summer Bay alongside professional archaeologists. Photos courtesy Museum of the Aleutians

MUSEUM of the ALEUTIANS

Unangam tunuu is an ancient language and not a direct translation of the English or Russian names.

Made Possible by the Institute of Museum and Library Services and is a collaboration between the Museum of the Aleutians, Ounalashka Corporation, City of Unalaska, Qawalangin Tribe, the Aleut Community of St. Paul Tribal Government, Aleutian Pribilof Islands Association, U.S. Fish and Wildlife Service, Alaska Volcano Observatory, and National Oceanic and Atmospheric Administration.

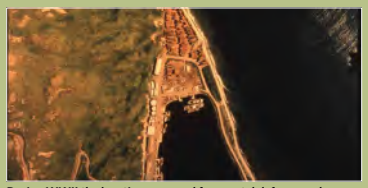
UNANGAM TANANGIN AYGAXSIX (WALKING THE UNANGAX̂ ISLANDS)

Udax̂tan Tanaxtaxak

ARCHAEOLOGY

Udax̂tan (also known as Tanaxtaxak or the Spit Site) was an Unangan village up until 500 years ago. For generations Unangax̂ lived at this location on the base of the Amaknak Spit overlooking Iliuliuk Bay to the east and to the west, the natural harbor known today as Dutch Harbor.

The mound formed between 1000 – 500 years ago as ordinary materials and food refuse were discarded. The loose soil was ideal for construction of Ulan, or semi-subterranean homes, the traditional housing utilized in the Aleutian Islands. Construction and repairs of these houses added unearthed soil to the ground surface. Over time, with repeated house construction and repairs, the mound rose to approximately 20 feet above the natural surface of the spit. The Unangax̂ village here was abandoned around 500 years ago. According to oral history during the Russian Colonial period, Unangan used the area for gardening as the richly organic soils of the former village produced excellent vegetables. The name of site, Tanaxtaxak, references gardening and probably originates from this period.



During WWII the location was used for coastal defense and a bunker was constructed into the mound from where crews monitored a submarine net that stretched across Iliuliuk Bay.
Photos courtesy Museum of the Aleutians

EXCAVATIONS THROUGH THE AGES

Photo courtesy Museum of the Aleutians

The large mound of Tanaxtaxak caught the attention of adventurers, ethnographers, anthropologists, paleontologists, and archaeologists through the centuries. French ethnographer Alphonse Pinart and William Healy Dall visited this site in the 1870s. Dall excavated house features and recovered artifacts that are now curated at the Smithsonian Institution. In 1909, as a member of the Russian-American Jessup Expedition, Waldemar Jochelson excavated to a depth of 16 feet revealing a deep profile of cultural deposits with natural beach shingle at the base. Jochelson identified 12 house pits on the surface of the mound, attesting to the size of the village during the late prehistoric period. During WWII, Tanaxtaxak and other Amaknak Island sites were disturbed by miliary construction. Navy officer and zoologist Alvin Cahn collected important information from Tanaxtaxak and other sites and sent a substantial collection of artifacts to be properly housed at the Field Museum of Natural History and American Museum of Natural History. More recently, extensive excavations at Tanaxtaxak were conducted through the Museum of the Aleutians and directed by Richard Knecht and Richard Davis. These excavations employed modern excavation methods and disciplinary standards. Several radiocarbon dates were obtained from controlled contexts, providing the timeline for village occupation and abandonment. The large collection of material recovered includes abundant animal bone; chipped and ground stone debitage and tools; bone tools including fish hooks, harpoons, needles and awls; lamps and cooking stones; and few examples of ornamental objects. These are housed at the Museum of the Aleutians on behalf of the Ounalashka Corporation.

Photo courtesy Museum of the Aleutians

Commonly known as an ulu, a woman's knife in Unangam Tunuu is called a *Udax̂tan.* UNL055.586. Courtesy Museum of the Aleutians.

This Kulitax̂ or Labret made of a sea mammal bone and was used for personal ornamentation. UNL055.124. Courtesy Museum of the Aleutians.

Bead made of jet, UNL55.2567. Courtesy Museum of the Aleutians.

In the millinium prior to European contact and subsequent colonization, Unangan living in the Eastern Aleutian Islands were at an apex of population size and maintained a rich and complex culture. Larger and more numerous village sites dotted the shorelines and housing styles expanded to include multiroom ulan and, in some locations, communal longhouses. Evidence for trade and contact with peoples living on the Alaska Peninsula and Kodiak Archipelago is seen in the presence of imported ornamental objects, and, most notably the appearance of ground slate ulus. Slate does not occur naturally in the Aleutian Islands and the presence of slate ulus in the Eastern Aleutians suggests habitual trade with Kodiak Islanders (Sugpiaq).

Signs of Social Complexity:
Ornamental objects such as this figurine become more common during the late prehistoric period. Labrets were worn in a hole in the lower lip and served as signals of social status. Labrets were often manufactured from bone or stone, but examples of labrets made from rare or imported materials such as petrified wood or coal are also seen.

Unangam tunuu is an ancient language and not a direct translation of the English or Russian names.

Made Possible by the Institute of Museum and Library Services and is a collaboration between the Museum of the Aleutians, Ounalashka Corporation, City of Unalaska, Qawalangin Tribe, the Aleut Community of St. Paul Tribal Government, Aleutian Pribilof Islands Association, U.S. Fish and Wildlife Service, Alaska Volcano Observatory, and National Oceanic and Atmospheric Administration.

CITY OF UNALASKA, ALASKA
PLANNING COMMISSION & PLATTING BOARD
REGULAR MEETING
THURSDAY, NOVEMBER 16, 2023, IMMEDIATELY FOLLOWING HPC MEETING
AGENDA

ZOOM Meeting Link:
https://us02web.zoom.us/j/84505322171?pwd=TGFiZCtlRGJBTnVZYi9IS2djYW9KUT09
Meeting ID: 845 0532 2171 **Access Code:** 920078
Toll Free Numbers: (833) 548 0276 (833) 548 0282 (877) 853 5247 (888) 788 0099

CALL TO ORDER
ROLL CALL
REVISIONS TO THE AGENDA
APPEARANCE REQUESTS
ANNOUNCEMENTS

MINUTES: Draft minutes from the meeting October 19, 2023

PUBLIC HEARING

1. **RESOLUTION 2023-08**: A RESOLUTION APPROVING THE PRELIMINARY PLAT OF ILIULIUK HEALTH CAMPUS, COMBINING BLOCK 1, RESERVOIR HILL SUBDIVISION PLAT 92-12 AND BLOCK 2-A, UNALASKA PEDESTRIAN PATHWAY RIGHT OF WAY ACQUISITIONS PLAT 97-14.

OLD BUSINESS
No items

NEW BUSINESS

1. **RESOLUTION 2023-08:** A RESOLUTION APPROVING THE PRELIMINARY PLAT OF ILIULIUK HEALTH CAMPUS, COMBINING BLOCK 1, RESERVOIR HILL SUBDIVISION PLAT 92-12 AND BLOCK 2-A, UNALASKA PEDESTRIAN PATHWAY RIGHT OF WAY ACQUISITIONS PLAT 97-14.

WORKSESSION

1. Discussion of the FY25-34 Capital and Major Maintenance Plan (CMMP).

ADJOURNMENT

Principles of the Unalaska Planning Commission

1. The Position: In any community, the position of Planning Commissioner is a highly respected and honored one.

2. The Job: The job of Planning Commissioner is to serve the public, as representatives of the City Council and to the best of their ability, in ensuring sound planning and growth management in Unalaska. All decisions of the Planning Commission should be based on sound planning principles and practices, and not on the personal opinion of individual Planning Commissioners. Once the Planning Commission makes a recommendation to the City Council, the job of the Planning Commissioners and Planning Commission is over, in terms of that particular action.

3. Integrity: Planning Commissioners are appointed by City Council. The actions, behavior, and comportment of each Planning Commissioner reflect not only on that Planning Commissioner's integrity – but also on the integrity of the City Council and of the entire City government.

4. Collaboration: An individual Planning Commissioner is not a "lone wolf," but is part of a collective body. As such, each Planning Commissioner is expected to act in a collaborative manner with his and her fellow Planning Commissioners.

5. Respect Each Other: While it is understandable to sometimes disagree with your fellow Planning Commissioners on issues brought before the body, and appropriate to publically vocalize that disagreement during Planning Commission meetings, a Planning Commissioner should always respect the opinion of their fellow Commissioners and treat each other with respect.

6. Majority Rules: It is important to remember that, at the end of the day, the majority rules. So, after each action is brought before the body, discussed, and voted upon, Planning Commissioners must accept and respect the rule of the majority – even if the ruling was counter to an individual Commissioner's position.

7. Respect Staff: A Planning Commissioner should respect the opinion of City Planning Staff, whether the Planning Commissioner agrees with staff or not. Planning Staff Members are professionals who are employed to serve not only the Planning Commission and general public, but the City Council.

8. The Las Vegas Rule: What comes before the Planning Commission must stay before the Planning Commission. This means there can be no outside negotiating with petitioners or with the public regarding applications brought before the Commission. And, all discussions – pro or con – concerning a petition before the Planning Commission, must take place solely within Planning Commission meetings.

9. Respect Applicants and Public: Each Planning Commissioner must always show professionalism and respect for applicants and the general public – regardless of the position held by that Planning Commissioner or by the Planning Commission.

10. Upholding the Principles: Any member of the Planning Commission who finds that he or she cannot uphold and abide by the above principles should resign from the Commission.

PROCEDURES FOR THE CHAIR

Approval of Minutes

The Chair states: “The minutes were included in the packet. Are there any corrections to the minutes?” [pause to wait for commissioners to object]. “Hearing none, if there are no objections, the minutes are approved as printed.”

OR

If there are objects to the minutes, then…

1. Ask for a motion to approve the minutes as printed. And a second.
2. Facilitate Commission discussion.
3. Amendments will need a motion and a second.
4. When there is no more discussion, call for a vote on any amendments.
5. Continue discussion until there is none further, then call for a vote on the minutes as amended.

Public Hearings

1. Open the public hearing.
2. Notify the public that they may raise their hand and speak from their seats.
3. Read the title of the first item.
4. Ask if any member of the public wishes to speak to the item. They may do so by raising their hand.
5. When discussion has ended, read the title of the second item.
6. Again ask for public discussion.
7. Continue until all items on the public hearing are complete.
8. NOTE: No commissioners or staff should give any input during the public hearing.

Resolutions under new business or old business

1. Read the title of the first resolution.
2. Ask for declaration of ex parte communications and conflicts of interest from commissioners.
3. Any question of whether a conflict of interest exists will be settled by a majority vote of the Commission. Members with a conflict will be asked to sit in the audience during this discussion/vote.
4. Ask for staff presentation.
5. Ask for questions from Commissioners of staff.
6. Ask for a presentation from the applicant.
7. Ask for questions from Commissioners of the applicant.
8. Ask for a motion to approve the resolution. And a second.
9. Facilitate commission discussion.
10. If any members of the public have signed up to speak on the topic, they will be given a chance to speak. The chair must set a time limit (such as 2 minutes) to each public comment. Time limits can be objected by commissioners and subsequently put to a vote if necessary.
11. Following public testimony, continue commission discussion until there is nothing further.
12. NOTE: Each member of the public only gets one chance to speak, but anyone who signs up with staff before the commission votes shall be given their one chance to speak before the vote occurs.
13. Call for a vote.
14. Repeat for each resolution on the agenda.

City of Unalaska
PLANNING COMMISSION

P.O. Box 610 • Unalaska, Alaska 99685
(907) 581-1251
www.ci.unalaska.ak.us

Regular Meeting
Thursday, October 19, 2023
6:00 p.m.

Unalaska City Hall
Council Chambers
43 Raven Way

Commission Members
Ian Bagley
Virginia Hatfield

Travis Swangel, Chairman

Commission Members
Caroline Williams
Rainier Marquez

MINUTES

1. Call to order. Commissioner Travis Swangel chaired the meeting. Commissioner Swangel called the Regular Meeting of the Unalaska Planning Commission to order at 6:28 p.m., on October 19, 2023 in the Unalaska City Hall Council Chambers.

2. Roll Call:

	Present:	Absent:
Travis Swangel	Caroline Williams	Rainier Marquez
Ian Bagley	Virginia Hatfield	

3. Revisions to Agenda: None
4. Appearance requests: None
5. Announcements: Roufos reported that Cameron Dean would start as Planning Director at the end of September and on the recent legislative visit to Unalaska.
6. Minutes: Chair Swangel asked for objections to the minutes of the August 17, 2023 regular meeting. Minutes approved with no objections

7. Public Hearing:
   1. **RESOLUTION 2023-07**: A RESOLUTION APPROVING A CONDITIONAL USE PERMIT FOR A CELLULAR TOWER ON A LOT ZONED HIGH DENSITY RESIDENTIAL ON A LEASED PORTION OF TRACT A, BLOCK 6, ILULAQ SUBDIVISION, PLAT 89-19, AIRD - No Comments.

8. Old Business: None

9. New Business:
   1. **RESOLUTION 2023-07**: A RESOLUTION APPROVING A CONDITIONAL USE PERMIT FOR A CELLULAR TOWER ON A LOT ZONED HIGH DENSITY RESIDENTIAL ON A LEASED PORTION OF TRACT A, BLOCK 6, ILULAQ SUBDIVISION, PLAT 89-19, AIRD – Commissioner Bagley motioned to approve Resolution 2023-07, seconded by Commissioner Hatfield. Staff read email comments against the resolution from Sherrie Doctor representing several property owners, and Karel and Marie Machalek. Tim Mahoney spoke online against the resolution. Denise Rankin from Ounalashka Corporation (the property owner) spoke in favor of the resolution. The resolution was approved 3-1, Commissioner Williams voting “No”.

10. Work session: None.
11. Adjournment: Having completed the agenda, the meeting was adjourned without objection at 6:56 p.m.

Cameron Dean Secretary of Commission	Travis Swangel Commission Chairman
Date	Date

City of Unalaska, Alaska
Planning Commission/Platting Board
Staff Report

RESOLUTION 2023-08: A RESOLUTION APPROVING THE PRELIMINARY PLAT OF ILIULIUK HEALTH CAMPUS, COMBINING BLOCK 1, RESERVOIR HILL SUBDIVISION PLAT 92-12 AND BLOCK 2-A, UNALASKA PEDESTRIAN PATHWAY RIGHT OF WAY ACQUISITIONS PLAT 97-14

Basic Information	
Application Type	Preliminary Plat
Land Owner(s)	City of Unalaska
Applicant	City of Unalaska
Proposed Use	Clinic Expansion
Exhibits	Draft Resolution 2023-08, Supplemental Materials, Location Map
Staff Recommendation	Approval of Resolution 2023-08

Legal Information	
Tax Parcel ID	04-09-234, 04-09-232
Address	34 Lavelle Court, Unalaska, Alaska 99685
Legal Description	Block 2-A, Plat 97-14 Unalaska Pedestrian Pathway, AIRD
Land Use Subarea	Haystack Hill Subarea

Area Description	
North	Public/Quasi-Public: City Hall
South	General Commercial and Public/Quasi-Public: Public Safety
East	General Commercial – NAPA/BC Rental
West	Single-Family/Duplex, used as open space

Current Site Description and Zoning Standards	
Zone	Public/Quasi-public (SFO) (UCO §8.12.120)
Existing Use	IFHS clinic
Permitted Uses	1) Airports; 2) Government offices; 3) Community buildings and halls; 4) Museums; 5) Public and private schools; 6) Park and recreation facilities; 7) Maintenance shops; 8) Public safety buildings; 9) Libraries; 10) Radio and television transmission towers and equipment; 11) Churches; 12) Medical facilities; 13) Warehouses; 14) Public and quasi-public buildings essential to the physical and economic welfare of the area, such as utility buildings and facilities, fire stations, electric substations, water treatment plants, telephone exchanges, and similar uses or public services
Conditional Uses	1) Power generation facilities; 2) Cemeteries; 3) Solid waste disposal sites and sanitary landfills; 4) Sewage treatment facilities; 5) Fuel storage facilities; 6) Correctional facilities; 7) Resource extraction

Parcel History	
Planning Commission Resolution	**Resolution 92-03:** A Resolution to the Unalaska City Council recommending approval to re-zone Reservoir Hill Subdivision Blocks, One, Two and Three from the current zoning designations, General Commercial, Single/Family – Duplex and Open Space Recreational to a Public-Quasi Public Zone Designation – APPROVED **Resolution 2023-06:** A Resolution recommending to the City Council the vacation of Lavelle court on Block 1, Plat 92-12 Reservoir Hill Subdivision and Block 2-A, Plat 97-14 Unalaska Pedestrian Pathway for the purposes of replatting as a single parcel – APPROVED
City Council Ordinance	**Resolution 2023-34:** A resolution of the Unalaska City Council approving the vacation of Lavelle court and combination of Block 1 of Reservoir Hill Subdivision, Plat 92-12, and Block 2-A of Unalaska Pedestrian Pathway, Plat 97-14 – Approved

ADDITIONAL CODE REQUIREMENTS

1. § 8.08.040(A)(4): (A) Notwithstanding other provisions of this chapter, an abbreviated plat procedure is established for a plat that will: … (4) Not require a vacation of a public dedication of land excepting utility easements;
2. § 8.08.070 Platting Procedures – All of section (A) Preliminary Plat

PLAN GUIDANCE

1. The Unalaska Comprehensive Plan 2020 identifies a vision for the future that includes the following:
   - Health and Wellbeing section has several actions relating to IFHS improving and expanding its infrastructure, services available and the creation of a regional hospital.

BACKGROUND

1. IFHS has received grant money to for expansion and provision of new services, including a CT machine.
2. In order to provide a lease for the expansion, the parcels must be combined into a single parcel.
3. The previous action regarding these parcels, was the vacation of the paper street, Lavelle Court.
4. A detailed as-built is attached showing the current building configuration.

DETAILED FINDINGS

1. The Plat meets the requirements except for the 1 inch to 100-foot resolution requirement. Staff determined in the interest of readability it would be best to increase the resolution and readability.
2. The plat shows the location of the electric utility easement on the rear of the lot. Utilities will likely be re-run with the construction expansion
3. This would normally be a straightforward combination of two parcels, handled administratively, however the vacation of Lavelle Court requires the plat have approval of the Commission.
4. The memorial will have a clause in the lease to cover its area.

CONDITIONS

1. N/A.

RECOMMENDATION

In accordance with the standards outlined in Unalaska City Code of Ordinances Chapter 8.08 (Platting), the City of Unalaska Department of Planning recommends approval of this preliminary plat request identified in Resolution 2023-08.

PLANNING REQUEST APPLICATION FORM

CITY OF UNALASKA, ALASKA

Department of Planning
PO Box 610
Unalaska, Alaska 99685-0610
Phone: (907) 581 3100 FAX (907) 581 4181
Email: planning@ci.unalaska.ak.us
Website: www.ci.unalaska.ak.us

The undersigned hereby applies to the City of Unalaska for approval of the following as per Title 8: Planning and Land Use Development, UCO.

APPLICATION FOR:
- ○ VARIANCE
- ○ ZONE AMENDMENT
- ○ CONDITIONAL USE
- ☒ PLAT

Brief Description of Request: (attach additional information to communicate request)

Combine 2 lots into one and Vacation of Lavalle Court in accordance with City Resolution 2023-34.

Current Zone Designation: Public/Quasi-Public Proposed Zone Designation(s) (if applicable): no change

Current Land Use(s): Health Clinic Proposed Land Use(s) (if changing): Health Clinic

Property Owner: City of Unalaska

Property Owner Address: P.O. Box 610 Unalaska AK 99685

Street Address of Property: 34 Lavelle Ct., Unalaska AK 99685

Applicant's Name: Noel Rea at Iliuliuk Family Health Services Clinic

Mailing Address: P.O. Box 144, Unalaska, AK 99685

Email: nrea@ifhs.org Day Time Phone: 907-581-1212 Message Phone: _____

FOR OFFICE USE ONLY		DATE	
Preliminary Plat Copies		Attachment A	
Applicant Letter		Site Plan	
Application Fee		Title Search/Certificate-to-Plat	

PROPERTY LEGAL DESCRIPTION: (Fill in applicable blanks)

Block one Plat 92-12 & Block 2-A Plat 97-14

Tax Lot ID No.: _____ Lot : _____ Block: B1 P92-12 & B2A P97-14 Tract: _____

Subdivision: P92-12 Reservoir Hill & P97-14 Unalaska Pedestrian Pathway USS: _____

Section(s): 10 Township: 73 S Range: 118 W

PROPOSED FUTURE DESIGNATION OF PROPERTY: (For Plat Application Only)

Platting Procedures and Requirements are described in detail in Chapter 8.08: Platting and Subdivision. A certificate to plat as proof of ownership shall accompany the submittal of a plat.

SUBDIVISION ILIULIUK HEALTH CAMPUS

Block(s) _____ **Lot (s)** _____ **Tract (s)** TRACT A **USS** _____

Containing: 3.83 **Acre(s)** _____ **Lot(s)** _____ **Tract(s)** 1

SURVEYOR INFORMATION

Surveyor Name : Bill McClintock

Firm Name : McCLINTOCK LAND ASSOCIATES, Inc.

Address : 16942 N. Eagle river Loop, Eagle River, AK 99577

Contact Details : Email bmcclintock@mappingalaska.com Phone Number 907-206-5000

Registered in Alaska: Yes (●) No ( )

REQUIRED SUPPLEMENTAL INFORMATION (For Variance, Zone Amendment and Conditional Use Application Only).

Subdivision Variance (8.08.110)

Applicant is encouraged to submit supporting documentation and a site plan to demonstrate how the requested Variance:

- Is needed due to special circumstances or conditions affecting the proposed subdivision such that strict application of the provisions of this chapter would clearly be impractical or undesirable to the general public or that strict application would be unreasonable or cause undue hardship to the applicant requesting the variance.
- Will not be detrimental to the public welfare or injurious to other property in the area in which the proposed subdivision is located;
- Will be in accord with the intent and purpose of this chapter and of the Comprehensive Plan of the city.

Zone Amendment (8.12.190)

Applicant is encouraged to submit supporting documentation to demonstrate how the requested Zone Amendment is reasonable, in the public interest, and in conformance with the goals and objectives of the Comprehensive Plan.

Conditional Use (8.12.200)

Applicant is encouraged to submit supporting documentation and a site plan to demonstrate how the requested Conditional Use:

- Furthers the goals and objectives of the Comprehensive Development Plan;
- Will be compatible with existing and planned land uses in the surrounding neighborhood and with the intent of its use district; and
- Will not have a permanent negative impact substantially greater than anticipated from permitted development within the district.

Zoning Variance (8.12.210)

Applicant is encouraged to submit supporting documentation and a site plan to demonstrate how the requested Variance:

- Need is not caused by the person seeking the variance and that exceptional or extraordinary circumstances apply to the property which do not apply generally to other properties in the same zoning district, and result from lot size, shape, topography, or other circumstances over which the applicant has no control. An argument of "financial hardship" when defined as causing a developer to spend more than he is willing to in order to conform, is not an over-riding factor in the granting of a variance;
- Is necessary for the preservation of a property right of the applicant substantially the same as is possessed by other landowners in the same zoning district;
- Will not materially affect the health or safety of persons residing or working in the neighborhood and will not be materially detrimental to the public welfare or injurious to property or improvements in the neighborhood; and
- Will not be materially detrimental to the intent of this chapter, or to properties in the same zoning district in which the property is located, or otherwise conflict with the objectives of the Comprehensive Plan and the variance requested is the minimum variance, which would alleviate the hardship.

*SITE PLAN (*TO SCALE*): Please show all existing and proposed structures, access, dimensions, utilities and parking as appropriate.

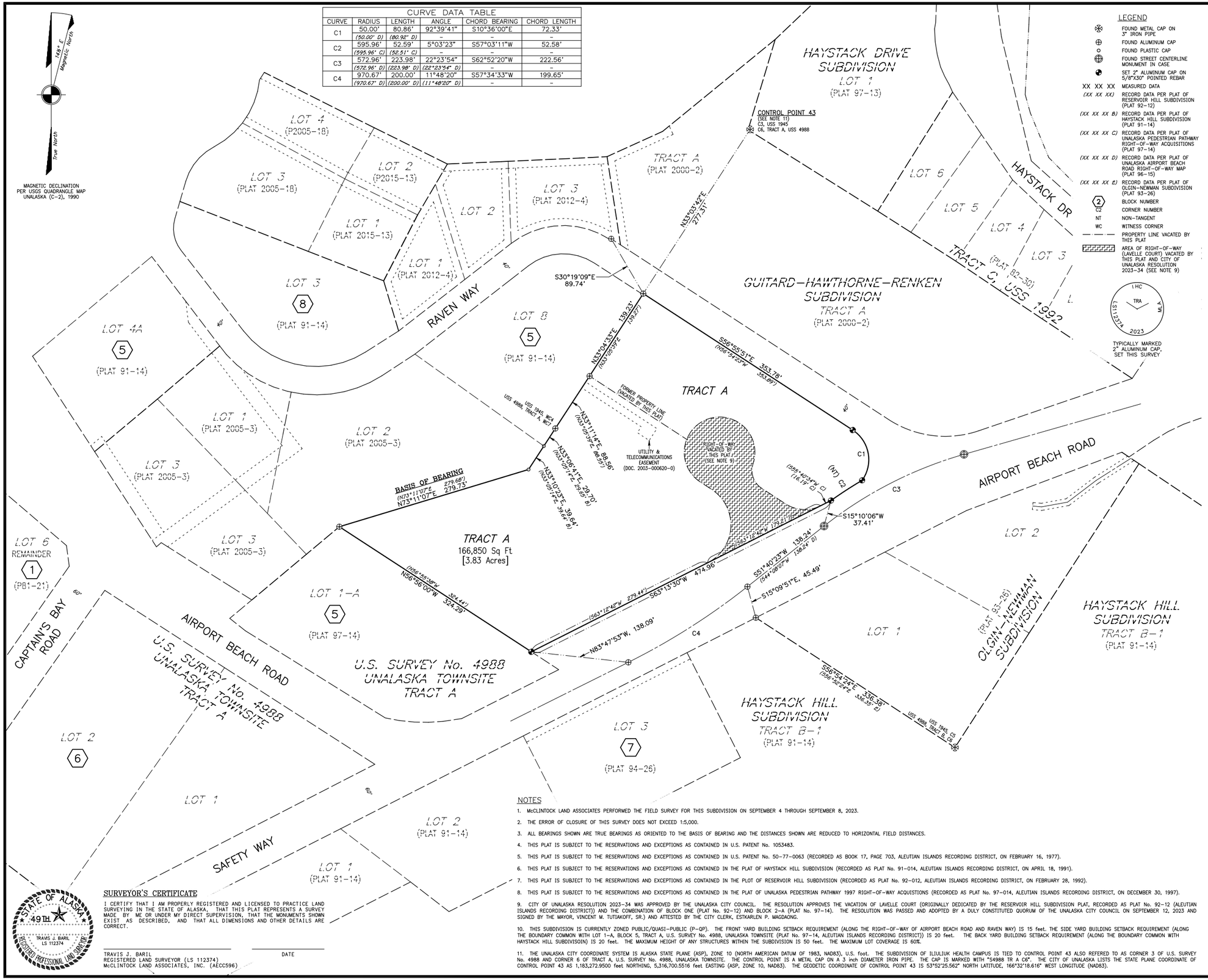
PLEASE NOTE : All applications must be received fifteen (15) days prior to the next regular meeting of the Planning Commission as per Section 8.12.200(A)(2), Section 8.12.210(B)(2) UCO, and Section 8.12.190 UCO. The Department of Planning will provide an examination of the City of Unalaska Real Property Tax Roll indicating that the signature of the landowner on the application form is in fact the latest owner of record. The Department of Planning will mail a notice of the public hearing to all landowners of record within 300 feet of the proposed request as shown in the City of Unalaska Real Property Tax Rolls.

CERTIFICATION:

I hereby certify that (I Am) (I have been authorized to act for*) the owner of the property described above and that I desire a planning action for this property in conformance with the Title 8, UCO and hereby dispose and say that all of the above statements are true. I am familiar with the code requirements and certify, to the best of my knowledge, belief, and professional ability, that this application meets them. I understand that payment of the review fee is non-refundable and is to cover costs associated with the processing of this application and that it does not assure approval of the request.

	10/20/2023
Signature	Date

***Please fill out and submit Authorization to Make Application by Agent form if acting as Owner's Agent**



CERTIFICATE OF OWNERSHIP AND DEDICATION

I, THE UNDERSIGNED, CERTIFY THAT THE CITY OF UNALASKA IS THE OWNER OF OF ILIULIUK HEALTH CAMPUS, AS SHOWN ON THIS PLAT. ON BEHALF OF THE CITY OF UNALASKA, I APPROVE THIS SURVEY AND PLAT AND DEDICATE OR RESERVE FOR PUBLIC OR PRIVATE USE, AS NOTED, ALL EASEMENTS, PUBLIC UTILITY AREAS, AND RIGHTS-OF-WAY AS SHOWN AND DESCRIBED ON THIS PLAT.

WILLIAM HOMKA, CITY MANAGER — DATE
CITY OF UNALASKA
P.O. BOX 610
UNALASKA, ALASKA 99685

NOTARY'S ACKNOWLEDGEMENT

SUBSCRIBED AND SWORN TO BEFORE ME THIS _____ DAY OF _____,

_____, BY _____WILLIAM HOMKA_____, _____CITY MANAGER_____,

PERSONALLY APPEARING BEFORE ME.

NOTARY FOR THE STATE OF ALASKA

MY COMMISSION EXPIRES: _____

CITY APPROVAL CERTIFICATE

THE CITY OF UNALASKA HEREBY APPROVES THE SUBDIVISION SHOWN ON THIS PLAT.

CITY CLERK — DATE

CHAIR OF THE PLATTING BOARD — DATE

TAX CERTIFICATE

I HEREBY CERTIFY THAT NO TAX PAYMENT IS CURRENTLY DUE FOR THE PROPERTY SHOWN HEREON.

TAX OFFICIAL, CITY OF UNALASKA — DATE

GRAPHIC SCALE

60 0 60 120 180 240

Scale in Feet
1 inch = 60 feet

SURVEYOR'S CERTIFICATE

I CERTIFY THAT I AM PROPERLY REGISTERED AND LICENSED TO PRACTICE LAND SURVEYING IN THE STATE OF ALASKA, THAT THIS PLAT REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION, THAT THE MONUMENTS SHOWN EXIST AS DESCRIBED, AND THAT ALL DIMENSIONS AND OTHER DETAILS ARE CORRECT.

STATE OF ALASKA 49TH TRAVIS J. BARIL LS 112374 REGISTERED PROFESSIONAL LAND SURVEYOR

TRAVIS J. BARIL — DATE
REGISTERED LAND SURVEYOR (LS 112374)
McCLINTOCK LAND ASSOCIATES, INC. (AECC596)

NOTES

1. McCLINTOCK LAND ASSOCIATES PERFORMED THE FIELD SURVEY FOR THIS SUBDIVISION ON SEPTEMBER 4 THROUGH SEPTEMBER 8, 2023.
2. THE ERROR OF CLOSURE OF THIS SURVEY DOES NOT EXCEED 1:5,000.
3. ALL BEARINGS SHOWN ARE TRUE BEARINGS AS ORIENTED TO THE BASIS OF BEARING AND THE DISTANCES SHOWN ARE REDUCED TO HORIZONTAL FIELD DISTANCES.
4. THIS PLAT IS SUBJECT TO THE RESERVATIONS AND EXCEPTIONS AS CONTAINED IN U.S. PATENT No. 1053483.
5. THIS PLAT IS SUBJECT TO THE RESERVATIONS AND EXCEPTIONS AS CONTAINED IN U.S. PATENT No. 50-77-0063 (RECORDED AS BOOK 17, PAGE 703, ALEUTIAN ISLANDS RECORDING DISTRICT, ON FEBRUARY 16, 1977).
6. THIS PLAT IS SUBJECT TO THE RESERVATIONS AND EXCEPTIONS AS CONTAINED IN THE PLAT OF HAYSTACK HILL SUBDIVISION (RECORDED AS PLAT No. 91-014, ALEUTIAN ISLANDS RECORDING DISTRICT, ON APRIL 18, 1991).
7. THIS PLAT IS SUBJECT TO THE RESERVATIONS AND EXCEPTIONS AS CONTAINED IN THE PLOT OF RESERVOIR HILL SUBDIVISION (RECORDED AS PLAT No. 92-012, ALEUTIAN ISLANDS RECORDING DISTRICT, ON FEBRUARY 28, 1992).
8. THIS PLAT IS SUBJECT TO THE RESERVATIONS AND EXCEPTIONS AS CONTAINED IN THE PLAT OF UNALASKA PEDESTRIAN PATHWAY 1997 RIGHT-OF-WAY ACQUISTIONS (RECORDED AS PLAT No. 97-014, ALEUTIAN ISLANDS RECORDING DISTRICT, ON DECEMBER 30, 1997).
9. CITY OF UNALASKA RESOLUTION 2023-34 WAS APPROVED BY THE UNALASKA CITY COUNCIL. THE RESOLUTION APPROVES THE VACATION OF LAVELLE COURT (ORIGINALLY DEDICATED BY THE RESERVOIR HILL SUBDIVISION PLAT, RECORDED AS PLAT No. 92-12 (ALEUTIAN ISLANDS RECORDING DISTRICT)) AND THE COMBINATION OF BLOCK ONE (PLAT No. 92-12) AND BLOCK 2-A (PLAT No. 97-14). THE RESOLUTION WAS PASSED AND ADOPTED BY A DULY CONSTITUTED QUORUM OF THE UNALASKA CITY COUNCIL ON SEPTEMBER 12, 2023 AND SIGNED BY THE MAYOR, VINCENT M. TUTIAKOFF, SR.) AND ATTESTED BY THE CITY CLERK, ESTKARLEN P. MAGDANO.
10. THIS SUBDIVISION IS CURRENTLY ZONED PUBLIC/QUASI-PUBLIC (P-QP). THE FRONT YARD BUILDING SETBACK REQUIREMENT (ALONG THE RIGHT-OF-WAY OF AIRPORT BEACH ROAD AND RAVEN WAY) IS 15 feet. THE SIDE YARD BUILDING SETBACK REQUIREMENT (ALONG THE BOUNDARY COMMON WITH LOT 1-A, BLOCK 5, TRACT A, U.S. SURVEY No. 4988, UNALASKA TOWNSITE (PLAT No. 97-14, ALEUTIAN ISLANDS RECORDING DISTRICT)) IS 20 feet. THE BACK YARD BUILDING SETBACK REQUIREMENT (ALONG THE BOUNDARY COMMON WITH HAYSTACK HILL SUBDIVISOIN) IS 20 feet. THE MAXIMUM HEIGHT OF ANY STRUCTURES WITHIN THE SUBDIVISION IS 50 feet. THE MAXIMUM LOT COVERAGE IS 60%.
11. THE UNALASKA CITY COORDINATE SYSTEM IS ALASKA STATE PLANE (ASP), ZONE 10 (NORTH AMERICAN DATUM OF 1983, NAD83), U.S. foot. THE SUBDIVISION OF ILIULIUK HEALTH CAMPUS IS TIED TO CONTROL POINT 43 ALSO REFERED TO AS CORNER 3 OF U.S. SURVEY No. 4988 AND CORNER 6 OF TRACT A, U.S. SURVEY No. 4988, UNALASKA TOWNSITE. THE CONTROL POINT IS A METAL CAP ON A 3 inch DIAMETER IRON PIPE. THE CAP IS MARKED WITH "54988 TR A C6". THE CITY OF UNALASKA LISTS THE STATE PLANE COORDINATE OF CONTROL POINT 43 AS 1,183,272.9500 feet NORTHING, 5,316,700.5516 feet EASTING (ASP, ZONE 10, NAD83). THE GEODETIC COORDINATE OF CONTROL POINT 43 IS 53°52'25.562" NORTH LATITUDE, 166°32'18.616" WEST LONGITUDE (NAD83).

A PLAT OF

ILIULIUK HEALTH CAMPUS

CREATING

TRACT A

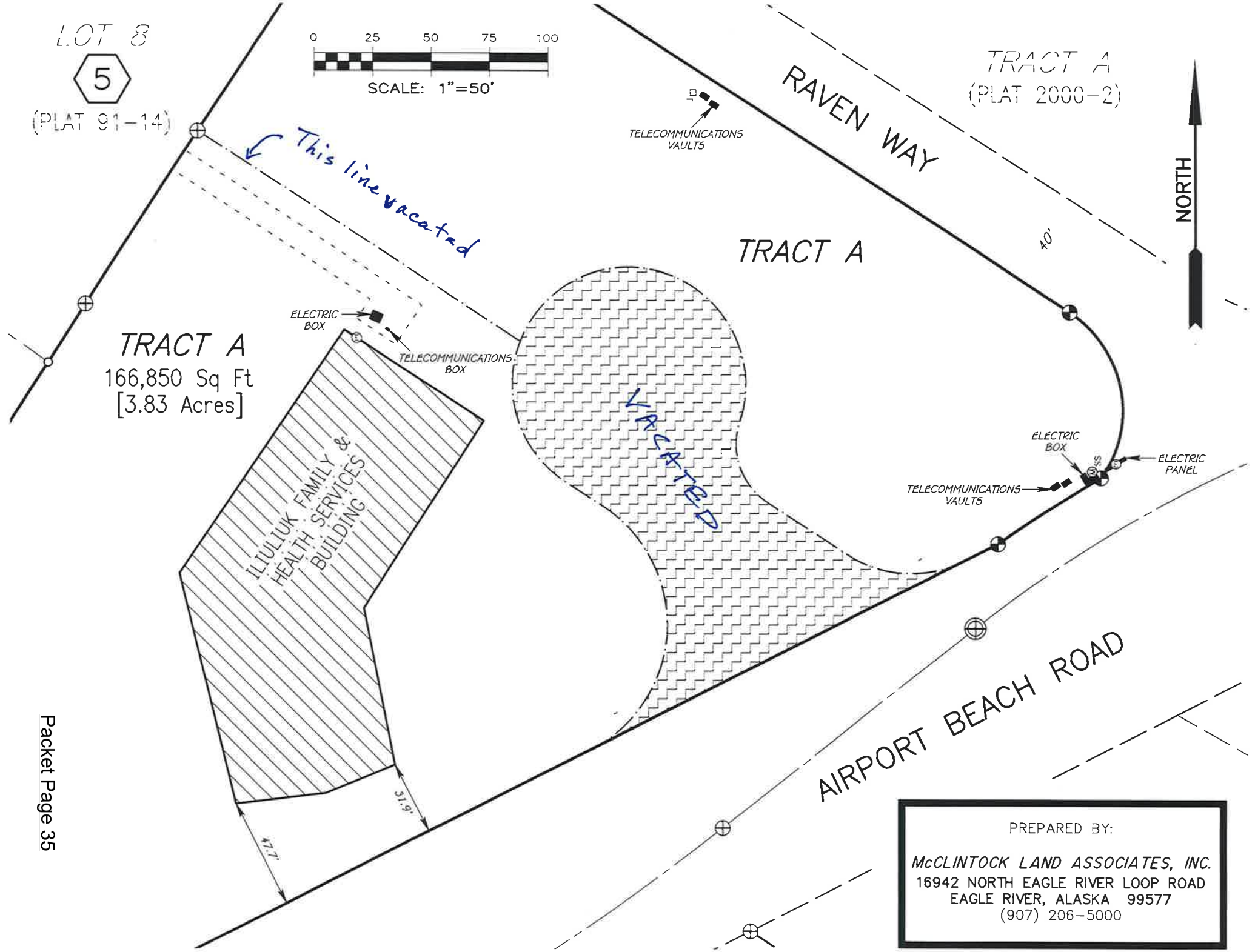
A SUBDIVISION OF
BLOCK ONE, RESERVOIR HILL SUBDIVISION (PLAT No. 92-12) and BLOCK 2-A, UNALASKA PEDESTRIAN PATHWAY RIGHT-OF-WAY ACQUISITIONS (PLAT No. 97-14) and
RIGHT-OF-WAY VACATION OF LAVELLE COURT
(CITY OF UNALASKA RESOLUTION No. 2023-34)
LOCATED WITHIN
SECTION 10, TOWNSHIP 73 SOUTH, RANGE 118 WEST
SEWARD MERIDIAN, ALASKA

CONTAINING 3.83 ACRES, MORE OR LESS

ALEUTIAN ISLANDS RECORDING DISTRICT

PREPARED BY:	PREPARED FOR:
McCLINTOCK LAND ASSOCIATES, INC. 16942 NORTH EAGLE RIVER LOOP ROAD EAGLE RIVER, ALASKA 99577 (907) 206-5000	CITY OF UNALASKA P.O. BOX 610 UNALASKA, ALASKA 99685 (907) 581-1251

PLOT: 1"=60'	CHK: BM	JOB: 23-244	DWG: PL23244B	FB NO: LL	
GRID: UNALASKA	DWN: JC	DATE: 11-03-23	DISK: MLASERVER	SHEET: 1 OF 1	


LOT 8
5
(PLAT 91-14)
0 25 50 75 100
SCALE: 1"=50'
TELECOMMUNICATIONS VAULTS
RAVEN WAY
TRACT A
(PLAT 2000-2)
NORTH
This line vacated
TRACT A
40'
ELECTRIC BOX
TELECOMMUNICATIONS BOX
TRACT A
166,850 Sq Ft
[3.83 Acres]
VACATED
ILIULIUK FAMILY & HEALTH SERVICES BUILDING
ELECTRIC BOX
ELECTRIC PANEL
TELECOMMUNICATIONS VAULTS
31.9'
47.7'
AIRPORT BEACH ROAD
PREPARED BY:
McCLINTOCK LAND ASSOCIATES, INC.
16942 NORTH EAGLE RIVER LOOP ROAD
EAGLE RIVER, ALASKA 99577
(907) 206-5000

City of Unalaska, Alaska
Planning Commission/Platting Board
Resolution 2023-08

A RESOLUTION APPROVING THE PRELIMINARY PLAT OF ILIULIUK HEALTH CAMPUS, COMBINING BLOCK 1, RESERVOIR HILL SUBDIVISION PLAT 92-12 AND BLOCK 2-A, UNALASKA PEDESTRIAN PATHWAY RIGHT OF WAY ACQUISITIONS PLAT 97-14.

WHEREAS, UCO §8.08.070 sets forth the procedures for platting; and

WHEREAS, the City of Unalaska, is the owner of Block 1, Plat 92-12 Reservoir Hill Subdivision and Block 2-A, Plat 97-14 Unalaska Pedestrian Pathway, filed in the Aleutian Islands Recording District; and

WHEREAS, the City has initiated the platting process to combine the lots for the purposes of leasing to the IFHS Clinic; and

WHEREAS, the preliminary plat is the second step in the combination of these lots; and

WHEREAS, the encouragement, and support of the needs of the IFHS Clinic is desirable from the standpoint of public interest, as identified in the Unalaska Comprehensive Plan 2020; and

WHEREAS, the City of Unalaska Planning Commission held a public hearing on November 16, 2023 to consider this request and to hear testimony of the public, and

WHEREAS, the Planning Commission reviewed the application and finds that recommending the plat to be in the interest of the City and its residents;

THEREFORE, BE IT RESOLVED, that the Planning Commission approves the preliminary plat combining Block 1, Plat 92-12 Reservoir Hill Subdivision and Block 2-A, Plat 97-14 Unalaska Pedestrian Pathway, Aleutian Islands Recording District, as Block 1, Iliuliuk Heath Campus.

APPROVED AND ADOPTED THIS 16TH DAY OF NOVEMBER, 2023, BY THE PLANNING COMMISSION OF THE CITY OF UNALASKA, ALASKA.

Travis Swangel	Cameron Dean, Planning Director
Commission Chair	Secretary of the Commission

FY24-33 CMMP

Captains Bay Electric Line Installation

Electric

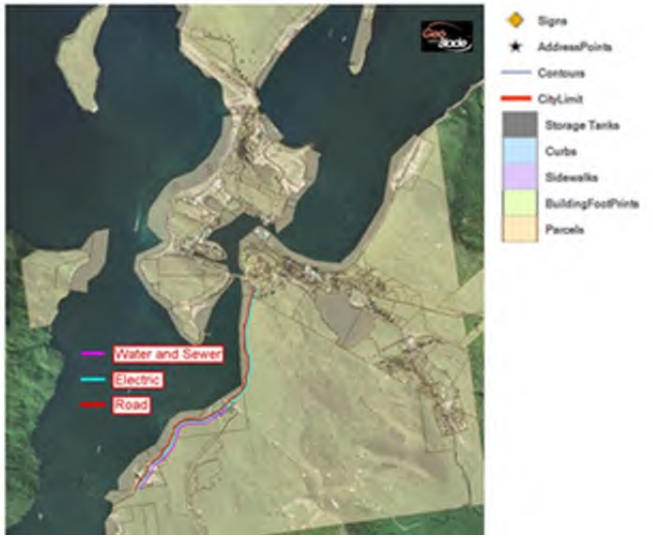
Project Description: This project consists of the installation of a 35,000 volt electrical service from the corner of Airport Beach Road and Captains Bay Road to Westward Fish Processing Plant. The total distance of this installation is 6,300 feet and will require 19,849 feet of 38,000 volt Okanite conductor, 12,600 feet of 6 inch conduit, 11 vaults, 16 bollards, six 3 phase 35 kV sectionalizes, two 4 way 35kV oil switches, and associated equipment.

Project Need: The purpose of this project is to upgrade the Captains Bay road electrical infrastructure from a single 15,000 volt system to a 35,000 volt system. At this time the 15,000 volt system is at its maximum capacity. The installation of a 35,000 volt system will prolong the life of the existing 15,000 volt system. Westward Sea Foods will be the first immediate customer on this service. Westward Sea Foods has requested an increase of electrical power from 1MW to 4.5MW. The existing service to Westward is 15,000 volt service and is at its maximum capacity. The only way to accomplish this is to upgrade from 15,000 volt service to a 35,000 volt service.
The immediate economic benefits to the community is the annual 10 million kWh increase in electrical sales to Westward Sea Foods. The Electrical Proprietary Fund has a debt load that was incurred from building the new powerhouse. The more electricity sold to the rate payers decreases the amount of debt that each rate payer has to pay, and decreases the likelihood that we will have to increase electrical rates in the future.

Development Plan & Status : The costs of the project is estimated at $2,650,836, which was determined using figures from the cost of extending the 35 kV line to the new water plant in Pyramid Valley. Funding for this project will be provided by the General Fund as a loan to be paid back by the Electric Proprietary Fund, and it is projected to have a very short payback with significant increased revenues expected. If Westward uses a projected 10,000,000 kWh annually, the project cost will be recovered in 1.8 years due to an annual revenue increase of $1,444,700.

Estimated Project & Purchase Timeline
Pre Design: FY27
Engineering/Design: FY27
Purchase/Construction: FY27

Captains Bay Road and Utilities



Cost Assumptions	
Engineering, Design, Construction Admin	
Other Professional Services	
Construction Services	$2,300,000
Machinery & Equipment	
Subtotal	$2,300,000
Contingency (30%)	
Total Funding Request	$2,300,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Electric Proprietary Fund	2,650,836	0	0	0	0	0	0	0	0	0	0	0
1% Sales Tax	2,900,000	0	0	0	0	0	0	0	0	0	0	0
General Fund	2,800,000	2,300,000	0	0	0	0	0	0	0	0	0	2,300,000
Total	8,350,836	2,300,000	0	0	0	0	0	0	0	0	0	2,300,000

FY24-33 CMMP

Electrical Breakers Maintenance and Service

Electric

Project Description: All Generation and distribution/feeder breakers at the New and Old Powerhouse and Town Substation will be serviced by a qualified industry service company. Breakers will be assessed and serviced. A detailed report indicating condition of the specific breakers will be provided along with recommended service maintenance intervals per the relevant industry codes.

Project Need: The City operates two powerhouses and one substation. Each of these facilities has at least one primary electrical switchgear line-up. Electrical switchgear require maintenance and cleaning to ensure proper operation. Safe operation of switchgear reduces risks of arc-flash issues and improves operator safety. In the last five years, there has been very little major maintenance and testing performed at any of the powerhouses' or Town Substation's switchgear line-ups. Only general visual maintenance has been performed, except during the installation of the Unit 12 (CAT C280) project, when a modification at the Town Substation was made as part of that project. During the modification, the Contractor found that one of the substation breakers would not open/close properly. EPC onsite technicians working with EPC electrical maintenance leads in Anchorage were able to repair the breaker so that it will function properly. However, no other maintenance has been performed on this breaker or others. This project is part of the Electrical master Plan.

Development Plan & Status : This project will be funded by the Electric Proprietary Fund.

Estimated Project & Purchase Timeline

Pre Design: FY27

Engineering/Design: FY27

Purchase/Construction: FY27

Cost Assumptions	
Engineering, Design, Construction Admin	$150,000
Other Professional Services	
Construction Services	
Machinery & Equipment	$30,000
Subtotal	$180,000
Contingency (30%)	$54,000
Total Funding Request	$234,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Electric Proprietary Fund	0	0	0	0	234,000	0	0	0	0	0	0	234,000
Total	0	0	0	0	234,000	0	0	0	0	0	0	234,000

FY24-33 CMMP

Electrical Distribution Equipment Replacement

Electric

Project Description: This project funds the purchase of ongoing replacement equipment for the electrical distribution system. It includes electrical switches, section cans, transformers, and cables. Electrical equipment will also be purchased for new customers and for existing customers who need to upgrade electrical service.

Project Need: Ongoing replacement of the distribution system equipment is necessary to maintain its reliability and protect the assets of the City and ensure the safe distribution of electricity. This project will correctly capture and capitalize the expenditures made to keep the system operational as well as in expand the system where necessary.

Development Plan & Status : Funding for this project will come from the Electrical Proprietary Fund retained earnings.

Estimated Project & Purchase Timeline

Pre Design: NA

Engineering/Design: NA

Purchase/Construction: NA

FY23 Cost Assumptions	
Engineering, Design, Construction Admin	
Other Professional Services	
Construction Services	
Machinery & Equipment	$100,000
Subtotal	$100,000
Contingency (0%)	0
Total Funding Request	$100,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Electric Proprietary Fund	115,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	0	900,000
Total	115,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	0	900,000

FY24-33 CMMP

Electrical Intermediate Level Protection Installation

Electric

Project Description: This project adds protective devices at the major industrial services, including APL and Horizon and at radial taps in the 35 kV system. Vacuum circuit re-closers will be installed to properly coordinate clearing times in the event of a system disturbance. This enables the rest of the system to stay on line and only remove the faulted service or radial feeder. Each location will require one recloser with dedicated relay control. The recloser will also require provisions for communications back to the NPH via radio link or fiber optic cable when available. An updated short circuit study and new protective relay settings will be required in order to properly complete the system coordination work. Engineering and installation of reclosers at five locations are assumed for this project.

Project Need: The 35 kV system does not have any intermediate level protective devices that would minimize power disruptions to customers. The system is only protected from faults via two main 35 kV re-closers at the powerhouse, two main 35 kV town substation breakers, Alyeska Seafoods recloser, Westward Seafoods recloser, Captains Bay Road tap recloser, and four main 12 kV town substation breakers. Other than primary fusing on customer transformers, the system lacks any coordinated protection scheme. Some under frequency and under voltage load shed schemes are currently employed in the system but still are limited in their ability to isolate the system in smaller manageable pieces that would minimize disturbances to as few customers as possible. The lack of adequate coordinated protection schemes and apparatus has caused system wide outages during to a fault or disturbance event most often induced by a single large industrial customer.

Development Plan & Status : Areas where intermediate level protection apparatus should be incorporated are as follows: 1. Ballyhoo Tap 2. APL 3. Horizon 4. Submarine Crossing 5. Bridge Crossing

Estimated Project & Purchase Timeline

Pre Design: FY26

Engineering/Design: FY27

Purchase/Construction: FY28

Cost Assumptions	
Engineering, Design, Construction Admin	$50,000
Other Professional Services	$75,000
Construction Services	$100,000
Machinery & Equipment	$275,000
Subtotal	$500,000
Contingency (30%)	$150,000
Total Funding Request	$650,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Electric Proprietary Fund	0	0	0	0	650,000	0	0	0	0	0	0	650,000
Total	0	0	0	0	650,000	0	0	0	0	0	0	650,000

FY24-33 CMMP

Generator Sets Rebuild

Electric

Project Description: This project consists of inspection, major maintenance, and rebuilds of the primary generator sets in the Unalaska Powerhouse. The maintenance schedule for the generator sets at the Unalaska Powerhouse is determined by engine hours. Engine inspections are also conducted by the manufacturer's mechanics to determine if engine rebuilds are needed or if they can be prolonged according to the hourly schedule.

Project Need: These generator set rebuilds are needed to maintain our equipment and the reliability of our electrical production. Our Certificate of Fitness from the Alaska Energy Authority states that we must keep all electrical generating equipment in good running condition.

Development Plan & Status : Due to the high cost of the engine rebuilds, it has been determined that the cost will be capitalized. Costs for the Generator Sets rebuilds can fluctuate greatly according to what is determined by the maintenance inspections. Costs for these rebuilds has been determined by the worst case scenario according to the history of the engines. Money that is not used for rebuilds by the end of the fiscal year, will be returned to the proprietary fund.

Estimated Project & Purchase Timeline

Pre Design: NA

Engineering/Design: NA

Purchase/Construction: NA

Cost Assumptions	
Repair & Maintenance	$2,115,385
Other Professional Services	
Construction Services	
Machinery & Equipment	
Subtotal	$2,115,385
Contingency (30%)	$634,615
Total Funding Request	$2,750,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Electric Proprietary Fund	500,000	1,000,000	500,000	0	0	0	0	0	0	0	0	1,500,000
Total	500,000	1,000,000	500,000	0	0	0	0	0	0	0	0	1,500,000

FY24-33 CMMP

Large Transformer Maintenance and Service

Electric

Project Description: A qualified industry service company who specializes in in the maintenance of utility electrical equipment will service all power transformers at the New Power House and Town Substation. Transformers will be assessed and serviced, as required. Transformer assessment includes insulation testing, dissolved gas analysis, sweep frequency response analysis and other tests. After testing is completed, a detailed report indicating condition and test results would be provided along with recommended service maintenance intervals per the relevant industry codes. It is also understood that components on the transformers are failing due to long term exposure to the corrosive environment due to the marine atmosphere. This will necessitate a more thorough repair in order to ensure long term reliability of the power transformers.

Project Need: The City owns four power transformers at the NPH and two at the Town Substation. Three of the NPH transformers are approximately 13 years old, with the fourth only 4 years old. The transformers at the Town Substation are original from the substation construction approximately 20 years ago. While these transformers should have many more years of service, proper and timely maintenance will help prolong their lives. Testing transformers over a period of many years also allows a utility to develop a baseline for each unit, which in turn can identify a developing problem that may not otherwise be discovered until the transformer fails. Replacement of failing monitoring devices is also critical as these are often the utility's first indication of a problem. The devices can also operate to quickly deenergize a transformer should a more serious condition become present. Without operating protective devices, the utility experiences a higher risk of significant damage if a transformer fails.

Development Plan & Status : Funding for this project will come from the Electric Proprietary Fund.

Estimated Project & Purchase Timeline

Pre Design: FY24

Engineering/Design: FY24

Purchase/Construction: FY24

Cost Assumptions	
Engineering, Design, Construction Admin	
Other Professional Services	$150,000
Construction Services	
Machinery & Equipment	
Subtotal	$150,000
Contingency (30%)	$45,000
Total Funding Request	$195,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Electric Proprietary Fund	0	195,000	0	0	0	0	0	0	0	0	0	195,000
Total	0	195,000	0	0	0	0	0	0	0	0	0	195,000

FY24-33 CMMP

Makushin Geothermal Project

Electric

Project Description: This project is the City of Unalaska's estimated portion of reliability upgrades for the City electrical distribution system required to accept energy from the Makushin Geothermal Plant. It requires connecting multiple self-generating industrial customers to the current distribution system, installs more robust intermediate level protections, replaces the aging submarine cable at Illiuliuk Bay, upgrades numerous feeder connections and substations, and improvements to the current SCADA system and automated controls. Other funds will be set aside for legal and consulting fees associated with implementing the project.

Project Need: On August 31, 2020, the City entered into a Power Purchase Agreement (PPA) with OCCP. Section 11, Paragraph (c) of the PPA stipulates the City will be responsible for half of the next ten million dollars ($5,000,000) after the first two million dollar cost of reliability upgrades and distribution additions needed to supply energy from the geothermal plant to Unalaska residents and businesses, and the entirety of the interconnection costs beyond 12 million dollars, if required. This project represents a community partnership to bring renewable energy to Unalaska.

Development Plan & Status : The budget for this project was estimated from required funding commitments outlined in the Power Purchase Agreement. A more accurate budget will be determined upon completion of the Intertie Study currently in progress, and based on Study findings there may be a Phase II project to accomplish the required upgrades. Funding for this project will come from the 1% and General funds.

Estimated Project & Purchase Timeline

Pre Design: FY22

Engineering/Design: FY22

Purchase/Construction: FY23

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
1% Sales Tax	5,720,000	0	0	0	0	0	0	0	0	0	0	0
Private Contribution	150,000	1,850,000	2,850,000	0	0	0	0	0	0	0	0	4,700,000
Total	5,870,000	1,850,000	2,850,000	0	0	0	0	0	0	0	0	4,700,000

FY24-33 CMMP

Fire Station Remodel

Fire

Project Description: Remodel the existing DPS building after a new DPS building is constructed and the Police Department moves to the new facility.

Project Need: Constructed in 1987, the present structure is in need of HVAC, electrical and architectural upgrades. Due to lack of space, the garage for the fire apparatus also houses EMS supplies, turnout gear, the air compressor and gym. The cramped arrangement is unsafe and risks contamination from fumes.

Development Plan & Status : The existing structure will be extensively renovated for use by Fire / EMS. The department will relocate to another facility during the work. Architectural firm JYL produced an initial cost estimate of $8,970,000 dated February 28, 2020. Funding will come from the General Fund.

Estimated Project & Purchase Timeline

Pre Design: FY26

Engineering/Design: FY26

Purchase/Construction: FY29

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	0	0	0	0	10,383,896	0	0	0	10,383,896
Total	0	0	0	0	0	0	0	10,383,896	0	0	0	10,383,896

FY24-33 CMMP

Fire Training Center

Fire

Project Description: Establish a live fire training facility in Unalaska. The structure will provide residential type response with a burn room, interior stairs leading to multiple stories, an interior fixed ladder, roof-mounted chop-out curbs, and a parapet roof guard with chain opening. The facility offers multiple training exercises including hose advancement, fire attack, search & rescue, rappelling, laddering, confined space maneuvers, and high-angle rescue operations. Currently there are no such facilities for training public or private sector organizations in Unalaska. This facility will also include a "dirty" classroom and a "clean" classroom that will allow personnel to stay out of the elements while they are instructed on the didactic portion of the lesson.

Project Need: Firefighter certification in Alaska requires a live fire training element to ensure experience fighting fires with significant heat and smoke in limited or zero visibility environments. Uncertified volunteers or paid firefighters can respond to fires, but live fire training and certification ensures that they are prepared and don't panic in real situations. No live fire facility exists in Unalaska, so firefighters travel off-island for training and certification at a cost of approximately $30,000 per person. The training takes 10-12 weeks and volunteers must take time off from their jobs and live away from their families in order to attend. The proposed training facility can be modified for use by the police department to practice active shooter or other use-of-force situations, and also be used as a confined space rescue training facility by other City departments or private industry, and as a regional training center for other Aleutian communities.

Development Plan & Status : The proposed site is in the valley near the old chlorine building, or near the current public safety building pending action on the new proposed police station. $12,000 was previously appropriated for a temporary training structure made from shipping containers. Cost quote for facility in 2018 dollars is $350,000 plus $85,000 shipping. Other costs include running electrical and water lines to the site and building construction costs for a total of $1,513,500.

Estimated Project & Purchase Timeline

Pre Design: FY19

Engineering/Design: FY23

Purchase/Construction: FY24

Cost Assumptions	
Other Professional Services	325,000
Engineering, Design, Construction Admin	0
Construction Services	439,231
Machinery & Equipment	400,000
Subtotal	1,164,231
Contingency (30%)	349,269
Total Funding Request	1,513,500

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	12,000	0	1,501,500	0	0	0	0	0	0	0	0	1,501,500
Total	12,000	0	1,501,500	0	0	0	0	0	0	0	0	1,501,500

FY24-33 CMMP

Aquatics Center Mezzanine and Office Space Expansion

PCR

Project Description: Expand the Aquatics Center Mezzanine and Office space to reach the walls over the loft area in the lobby. The Mezzanine consists of a multi-use open area, one office, a computer server room and janitors closet. The expansion will create about 500 sqft more usable space for use as offices. A bank of windows will improve natural light and air circulation in an otherwise very stuffy and hot room.

Project Need: PCR has added a new Coordinator and Head Lifeguard positions in 2020. The Aquatics Center lacks additional office space and the coordinator currently uses an office across the street at PCR. The head lifeguard uses the main admissions office downstairs during nonoperational hours. Programming has also increased with the new coordinator. The size of our upstairs facility constricts large events such as the Pumpkin Plunge and Youth Swim League's Award Ceremony. They become standing room only with people filtering down the stairs. Also, many requests for more free weights will take up even more space in the Mezzanine.

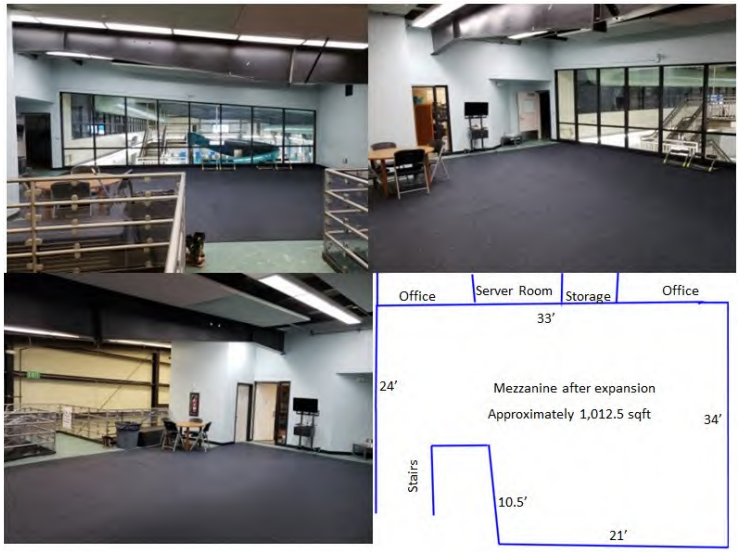
Development Plan & Status : In October 2018 the City Engineer, Information Systems and Maintenance did a walk through of the Mezzanine and Offices with the Aquatics Manager. A plan was discussed to achieve expansion. There are no physical obstacles to this expansion project.

Estimated Project & Purchase Timeline

Pre Design: FY24

Engineering/Design: FY25

Purchase/Construction: FY26



Cost Assumptions	
Engineering, Design, Construction Admin	80,000
Other Professional Services	
Construction Services	635,385
Machinery & Equipment	
Subtotal	715,385
Contingency (30%)	214,616
Total Funding Request	930,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	80,000	850,000	0	0	0	0	0	0	930,000
Total	0	0	0	80,000	850,000	0	0	0	0	0	0	930,000

FY24-33 CMMP

Burma Road Chapel Kitchen Improvement

PCR

Project Description: Renovate Burma Road Chapel's kitchen into a commercial kitchen.

Project Need: PCR hosts numerous events in Burma Road Chapel. A commercial kitchen would greatly improve the quality and quantity of PCR's programming as well as generate revenue. The space is frequently rented for patrons to host parties, and a commercial kitchen would also improve their experience in that space.

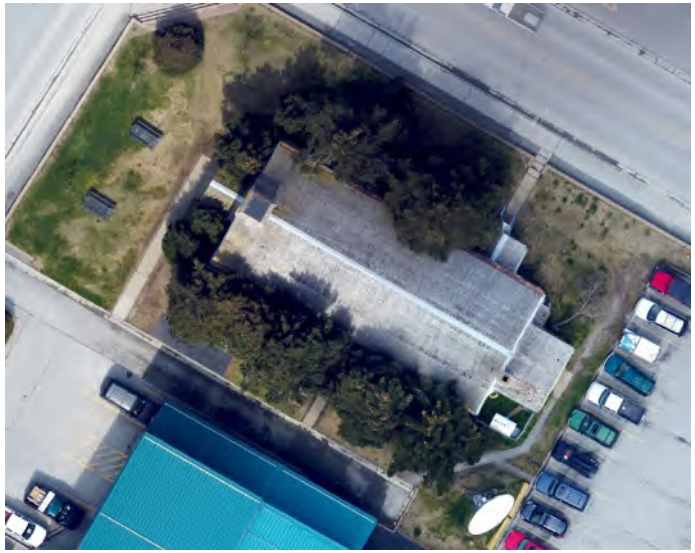
Development Plan & Status : Funding for this project will come from the General Fund.

Estimated Project & Purchase Timeline

Pre Design: FY24

Engineering/Design: FY24

Purchase/Construction: FY24



Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	150,000	0	0	0	0	0	0	0	0	150,000
Total	0	0	150,000	0	0	0	0	0	0	0	0	150,000

FY24-33 CMMP

Community Center Playground Replacement

PCR

Project Description: New playground equipment is necessary to replace the outdated playground equipment in front of the Community Center.

Project Need: The current play structures are too close to the railing that encloses the playground from the parking lot and sidewalk.

Development Plan & Status : This project will be funded by the General Fund

Estimated Project & Purchase Timeline

Pre Design: FY23

Engineering/Design: FY24

Purchase/Construction: FY25

Cost Assumptions	
Other Professional Services	
Engineering, Design, Construction Admin	50,000
Construction Services	180,769
Machinery & Equipment	
Subtotal	230,769
Contingency (30%)	69,231
Total Funding Request	300,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	300,000	0	0	0	0	0	0	0	300,000
Total	0	0	0	300,000	0	0	0	0	0	0	0	300,000

FY24-33 CMMP

Community Center Technology Upgrades

PCR

Project Description: Upgrading technology in the Community Center.

Project Need: Advances in technology offer more ways for Unalaska to be better connected via internet access. The Community Center will become a place where residents and visitors will seek to connect to these services. The meeting and exercise spaces need upgrades to meet current technology to accommodate the increasing demand. Examples include: Projectors and display monitors in the conference room and Multipurpose Room along with substantial audio/visual improvements, building-wide WIFI access and technological improvements in the Teen Room.

Development Plan & Status : This project will be funded by the General Fund.

Estimated Project & Purchase Timeline

Pre Design: FY25

Engineering/Design: FY25

Purchase/Construction: FY26

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	0	80,000	0	0	0	0	0	0	80,000
Total	0	0	0	0	80,000	0	0	0	0	0	0	80,000

FY24-33 CMMP

Community Park Replacement Playground

PCR

Project Description: Replacing the playground at Ounalashka Community Park (Kelty Field).

Project Need: Playgrounds are designed to last between 20 and 30 years. The Ounalashka Community Park playground was built in 1999 and reaches the end of its lifespan in FY28. Several structures have started to show age and the black rubber safety tiles now are easily moved out of place.

Development Plan & Status : This project will be funded by the General Fund.

Estimated Project & Purchase Timeline

Pre Design: FY27

Engineering/Design: FY27

Purchase/Construction: FY28

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	0	0	0	500,000	0	0	0	0	500,000
Total	0	0	0	0	0	0	500,000	0	0	0	0	500,000

Project Description: Replacing all the cable machines in the Cybex Room at the Community Center.

Project Need: The equipment in the Cybex Room at the Community Center is as old as the building and is starting to show it's age. In many cases, the vendor no longer carries replacement parts. When something breaks the maintenance department frequently has to fabricate parts from scratch to make the machine usable.

Development Plan & Status : This project will be funded by the General Fund.

FY24-33 CMMP

Cybex Room Replacement

PCR

Estimated Project & Purchase Timeline

Pre Design: FY24

Engineering/Design: FY24

Purchase/Construction: FY24

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	75,000	0	0	0	0	0	0	0	0	75,000
Total	0	0	75,000	0	0	0	0	0	0	0	0	75,000

FY24-33 CMMP

Dog Park

PCR

Project Description: With the new park at UCSD, Tutiakoff Park could be an ideal place for a dog park. Many community members already bring their dogs to the park for recreation, so including some obstacles for dogs to play and jump on would greatly benefit dog owners.

Project Need: There is no dog park on the island and PCR frequently receives requests from the public to build one.

Development Plan & Status : The park will be designed in FY25, with construction in FY26.

Estimated Project & Purchase Timeline

Pre Design: FY25

Engineering/Design: FY25

Purchase/Construction: FY26

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	0	200,000	0	0	0	0	0	0	200,000
Total	0	0	0	0	200,000	0	0	0	0	0	0	200,000

FY24-33 CMMP

Gymnasium Floor

PCR

Project Description: The gymnasium floor was installed when the building was built in 1996 and is lined for a full size basketball court, volleyball court and badminton court. A replacement floor would include lines for the same sports. The new floor would be made of a synthetic material so it would no longer need to be protected during special events.

Project Need: The current wooden floor recoated once a year to improve it's appearance and remove scratches. Over the past 20 years scratches have become more significant and the floor is beginning to show its age. A replacement floor will provide a better experience for patrons and greatly improve staff's ability to deliver quality programming. Special events held in the gym require PCR staff to roll out tarps to protect the wood floor. Afterward, they need to be cleaned and mopped which requires significant staff time. The planned replacement floor can be mopped and cared for much like the Multipurpose Room floor.

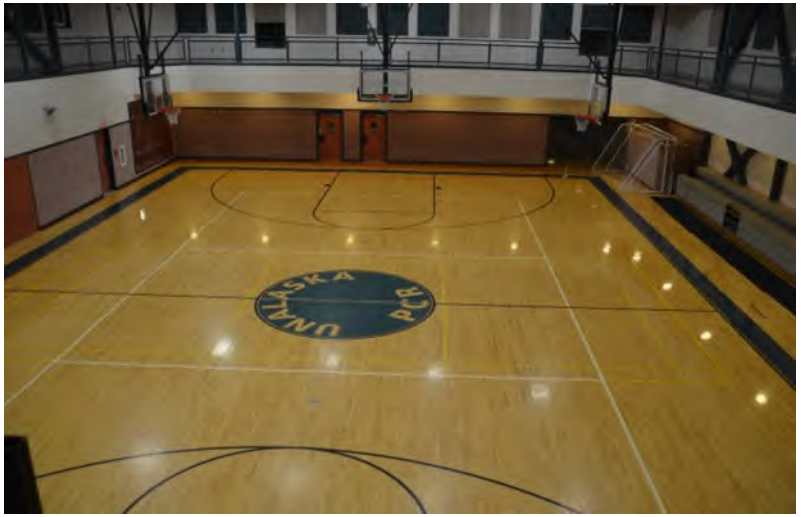
Development Plan & Status : During FY24 PCR staff will identify the flooring material that best meets the needs for the community. The estimated coast is $221,000 which means that $51,000 or 10% is planned to be spent in FY24 for design and scoping.

Estimated Project & Purchase Timeline

Pre Design: FY24

Engineering/Design: FY24

Purchase/Construction: FY25



Cost Assumptions	
Engineering, Design, Const Admin	51,000
Other Professional Services	
Construction Services	158,231
Machinery & Equipment	
Subtotal	**209,231**
Contingency (set at 30%)	62,769
TOTAL	**272,000**

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	51,000	221,000	0	0	0	0	0	0	0	272,000
Total	0	0	51,000	221,000	0	0	0	0	0	0	0	272,000

FY24-33 CMMP

Kelty Field SW Access

PCR

Project Description: Providing access to Community Park from the southwest side.

Project Need: Many children in the neighborhood adjacent to the south side of Kelty Field cross the stream to access the park. This project would create walking access to the park in the southwest side to allow these children to safely cross the stream and gain access to the park.

Development Plan & Status : This project will be funded by the General Fund.

Estimated Project & Purchase Timeline

Pre Design: FY28

Engineering/Design: FY28

Purchase/Construction: FY29

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	0	0	0	0	500,000	0	0	0	500,000
Total	0	0	0	0	0	0	0	500,000	0	0	0	500,000

FY24-33 CMMP

Kiddie Pool/Splash Pad

PCR

Project Description: Turning the area in the Aquatic Center where the slide is into a Kiddie Pool/Splash Pad.

Project Need: The waterslide is the Aquatic Center's only attraction. It is not used often because it requires extra staffing and three swimming lanes are closed when running. Patrons are limited to one at a time and lifejackets are not allowed. If a child cannot reach the bottom of the pool where the slide comes out or they cannot swim to the side they are not able to use the slide. A kiddie pool with fountains and smaller slides will run continuously during open hours and with no additional staffing. Children who are not able to swim will be able to use this facility as a safe introduction to water. It will also be useable on its own. Multiple kids can use it simultaneously, and the new improvements can fit in the same space where the slide will be removed.

Development Plan & Status : This project will be funded by the General Fund.

Estimated Project & Purchase Timeline

Pre Design: FY29

Engineering/Design: FY29

Purchase/Construction: FY30

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	0	0	0	0	0	500,000	0	0	500,000
Total	0	0	0	0	0	0	0	0	500,000	0	0	500,000

FY24-33 CMMP

Multipurpose Facility

PCR

Project Description: Ounalashka Community Park was built in 1999 and is located in Unalaska Valley. It is the department's largest park and includes a softball field, outdoor basketball/tennis court, and a paved trail with some permanent exercise stations. In addition to the athletic equipment, it also has a playground, pavilion, and a snack shack which is occasionally used during PCR events. This project would build a covered multipurpose facility where the current tennis court is or somewhere close to it.

Project Need: In 2012, the court was resurfaced with plastic tiles in the hopes that they would be an improvement over the worn out court. However, they do not offer a realistic tennis surface and the court measures two feet too short. This project will:

- Improve the quality of the park's amenities.
- Evaluate the current and future facility in an effort to best accommodate Unalaska residents for the next 20 to 30 years.
- Provide a multipurpose covered facility, that can serve as an emergency shelter for the island outside the tsunami inundation zone.

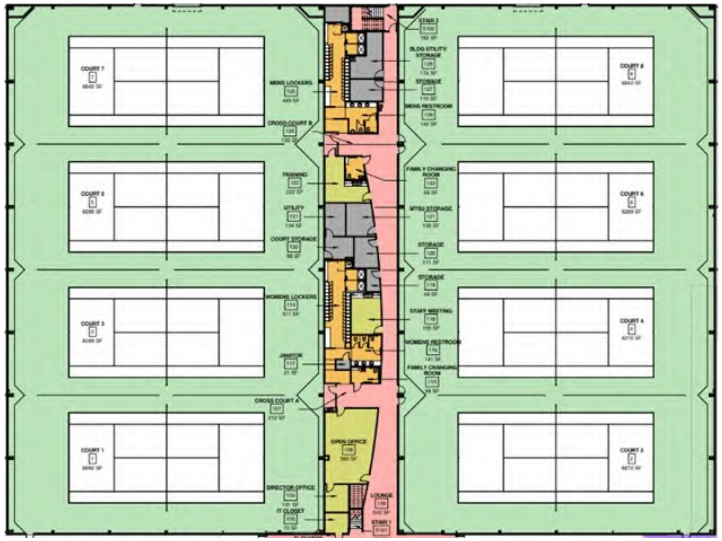
Development Plan & Status : PCR staff and the Advisory Board will gauge public interest in bringing a covered facility with two regulation tennis courts. The estimated cost is $5,629,000. $562,000 or 10% will be spent in FY26 for design and scoping. These numbers came from Lose Design. There is grant funding available for emergency related services and the City will also seek a partnership with other island organizations to pursue available resources.

Estimated Project & Purchase Timeline

Pre Design: FY25

Engineering/Design: FY26

Purchase/Construction: FY27



	Subtotal	**4,330,000**
	Contingency (set at 30%)	1,299,000
	TOTAL	**5,629,000**
	Less Other Funding Sources (Grants, etc.)	
	Total Funding Request $	**5,629,000**

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	0	562,900	5,066,100	0	0	0	0	0	5,629,000
Total	0	0	0	0	562,900	5,066,100	0	0	0	0	0	5,629,000

FY24-33 CMMP

Park Above the Westward Plant

PCR

Project Description: Creating a city park in the area above Westward Plant. This area of the community currently lacks any recreational amenities.

Project Need: Park development on west/southwest area of the city above Westward. The road system and utilities are already in place reducing the costs of construction. It is a natural place of a park serving an under-developed area of the city.

Development Plan & Status : Funding for this project would come from the General Fund.

Estimated Project & Purchase Timeline

Pre Design: FY29

Engineering/Design: FY29

Purchase/Construction: FY30

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	0	0	0	0	0	3,200,000	0	0	3,200,000
Total	0	0	0	0	0	0	0	0	3,200,000	0	0	3,200,000

FY24-33 CMMP

Pool Expansion

PCR

Project Description: Expanding the pool towards the road in order to provide space for bleachers.

Project Need: Four years ago PCR purchased a Colorado Timing System so the Aquatic Center can accommodate larger swim meets. However, the size of our Natatorium is barely able to hold two swim teams as well as spectators comfortably. This project will expand the Aquatic Center on the south side to allow for bleachers for both spectators and teams and expand on the east side to install a small warm-up cool-down, 2 lane, 15 yard, 3 foot deep pool. This will make our pool competition ready and even open up the possibilities to having Regionals.

Development Plan & Status : This project will be funded by the General Fund.

Estimated Project & Purchase Timeline

Pre Design: FY29

Engineering/Design: FY29

Purchase/Construction: FY30

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	0	0	0	0	0	2,000,000	0	0	2,000,000
Total	0	0	0	0	0	0	0	0	2,000,000	0	0	2,000,000

FY24-33 CMMP

Pump Track

PCR

Project Description: Installing a pump track next to Kelty Field.

Project Need: The current Skate Park is old and needs to be replaced. It has had many different paint jobs and rust has made certain areas dangerous. The current location of the Skate Park sits on real estate that can better serve the community, and discussions about various new facilities mention repurposing this property. If the site is designated for a new use, then the City needs to find a new location for wheeled recreation. Adding a pump track to Community Park would greatly increase what that park can offer and its use.

Development Plan & Status : This project will be funded by the General Fund.

Estimated Project & Purchase Timeline

Pre Design: FY24

Engineering/Design: FY24

Purchase/Construction: FY25

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	100,000	0	0	0	0	0	0	0	100,000
Total	0	0	0	100,000	0	0	0	0	0	0	0	100,000

FY24-33 CMMP

Rebar Restoration and Re-plastering

PCR

Project Description: Repairing and replacing the rebar that has rusted through the bottom of the pool, then replacing the plaster.

Project Need: A pool should be re-plastered every 10 years and even sooner with a salt water pool. Our pool has had the same plaster on it for over 20 years. Due to the life of our current plaster and Gunite corrosion the rebar underneath has become corroded and needs restoration.

Development Plan & Status : This project will be funded by the General Fund.

Estimated Project & Purchase Timeline

Pre Design: FY25

Engineering/Design: FY25

Purchase/Construction: FY26

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	0	250,000	0	0	0	0	0	0	250,000
Total	0	0	0	0	250,000	0	0	0	0	0	0	250,000

FY24-33 CMMP

Project Description: Repurpose the existing warming pool into a spa.

Project Need: The warming pool at the Aquatic Center currently has a jet system and filters that go through our filtration system. We could easily build a wall between the jets and the entrance of the pool to create an overfill spa. The only additions that would be required is a wall and a separate heating unit. This would provide heated hydrotherapy to our community members who need it.

Development Plan & Status : This project will be funded by the General Fund.

Spa

PCR

Estimated Project & Purchase Timeline

Pre Design: FY29

Engineering/Design: FY29

Purchase/Construction: FY30

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	0	0	0	0	0	200,000	0	0	200,000
Total	0	0	0	0	0	0	0	0	200,000	0	0	200,000

FY24-33 CMMP

Unalaska Public Transportation Study

Planning

Project Description: In 2018 the Planning Department completed a study of the city's transportation and determined there is a need for public transit. The island population of about 4,000 residents increases to 11,000 during processing seasons. The study conducted two bus operation periods to simulate a transit system, surveys were available in multiple languages and the results indicated a high probability of ridership. This project seeks funding for a second study by professional transportation planners and engineers to conduct a more thorough analysis of how a public transportation system in Unalaska, funding sources, service areas and routes and capital equipment needed for the system.

Project Need: A large percentage of island residents and workers lack reliable and affordable transportation. Unalaska's harsh weather further hampers specific populations that would use the system including the elderly, youth, and processors, and the high cost of vehicle ownership and maintenance on the island is another consideration. The 2018 Transportation Study identified several transportation grants that could fund up to 80% of the cost annually. The project should also explore partnerships with the Q-Tribe, OC, and private island corporations to leverage investment and grant opportunities. Furthermore, the project will evaluate whether the system should be operated by a Transit Authority, a one of the major investors, city, tribal department, or otherwise.

Development Plan & Status : The FY25 expenditure is $200,000 from the General Fund. Studies do not require a contingency budget. Based on the study, the expectation is to identify grants available to further lower the cost, potentially up to 80% with the correct partners taking the wheel.

Estimated Project & Purchase Timeline

Pre Design: FY25

Engineering/Design: NA

Purchase/Construction: NA

Cost Assumptions

Other Professional Services		$200,000
Engineering, Design, Construction Admin		
Construction Services		
Machinery & Equipment		
	Subtotal	$200,000
Contingency (30%)		$0
	Total Funding Request	$200,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	200,000	0	0	0	0	0	0	0	200,000
Total	0	0	0	200,000	0	0	0	0	0	0	0	200,000

FY24-33 CMMP

Police Station

Public Safety

Project Description: Construct a new, state of the art Public Safety facility on the Skate Park site between the Clinic and City Hall.

Project Need: Presently, the Department of Public Safety (DPS) structure is outdated and presents safety and operational issues. It does not support all the needs of the department. Issues include:

- Inadequate staff support, office, interview and observation space; and no locker rooms for uniform changes, post-exposure decontamination, etc.
- Building access restrictions required for Police operations constrain volunteer firefighter use.
- Detainee entrance is a narrow passage to parking area that conflicts with emergency response. The undersized booking area is potentially hazardous for staff with unruly prisoners. The remote evidence drop-off/storage raises chain of custody and security issues.
- Crowded dispatch area provides little security from the public lobby, creating a safety and confidentiality issue.
- The fire apparatus garage houses EMS supplies, turnout gear, air compressor and gym. This creates potential contamination hazards from fumes.

Development Plan & Status : Architectural firm, Jensen Yorba Lott (JYL), was retained to conduct a functional assessment of the existing DPS facility with the following goals and objectives:

- Analyze comprehensive space needs for current/future program requirements
- Identify short-comings of the existing facility to meet those requirements
- Analyze building for building codes, conditions, and expansion opportunities
- Provide schematics for building expansion or new const that meets DPS program requirements and will serve the City of Unalaska for the next 50 years
- Identify potential sites suitable for consideration for a new DPS complex

Based on Council input and budget amendment, pre-design scope increased to bring new proposed Police Station and renovation of the existing building to a high level pre-design including geotech, schematic drawings, and cost estimates. Results of pre-design will support full design and construction.

Discovery Drilling finished last boring 9-3-19 bringing total drilled length to 500'. Preliminary findings show fill on top of geotextile fabric underlain with soft lakebed material. Bedrock was found between 11.5' deep near Airport Beach Road and 49.5' deep on the opposite (north) side of the Skate Park. The Final Geotech Report for the Skate Park site was received on 12-23-19. Corey Wall with JYW (formerly JYL) presented findings to Council via teleconference during the July 14, 2020 Council meeting wherein Council requested additional sites be evaluated.

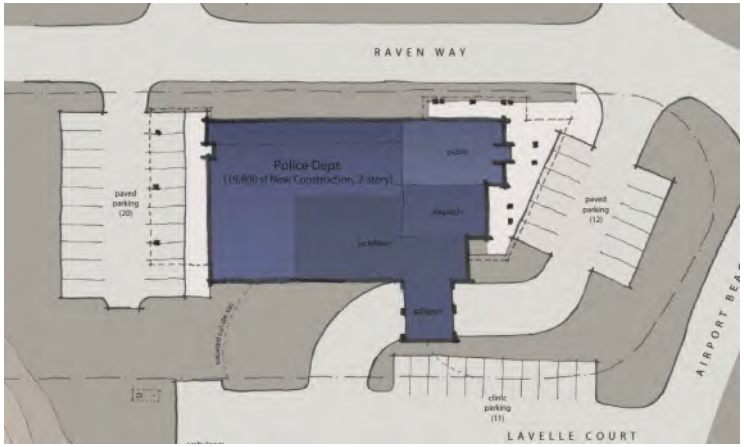
DPS Director King and DPW Director Cohenour evaluated 4 additional sites. Corey Wall reviewed findings at November 10, 2020 Council meeting and DPW Director lead discussion on 4 additional sites with input from Director King. No further direction from Council has been given.

Estimated Project & Purchase Timeline

Pre Design: FY20

Engineering/Design: FY21

Purchase/Construction: FY23



Cost Assumptions	
Other Professional Services	278,250
Engineering, Design, Construction Admin	3,000,000
Construction Services	20,309,250
Machinery & Equipment	1,502,500
Subtotal	25,090,000
Contingency (included in Architect's estimate)	
Total Funding Request	25,090,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
1% Sales Tax	0	0	0	0	0	0	22,090,000	0	0	0	0	22,090,000
General Fund	0	0	0	0	3,000,000	0	0	0	0	0	0	3,000,000
Total	0	0	0	0	3,000,000	0	22,090,000	0	0	0	0	25,090,000

FY24-33 CMMP

Burma Road Chapel Upgrades

Public Works

Project Description: In 2019 the PCR side of the Burma Road Chapel showed signs of rotten siding along the lower portions of the exterior wall. Architect Corey Wall, JYL Architects, crawled under the structure and took photos of the rim joists. Evidence of rot was observed below the building. The original scope of this project included removing shingles, roof boards, and damaged insulation, and installing framing for eave soffit ventilation/increased depth for insulation, insulation to R-30, new roof boards, re-roofing the building, and painting the new eaves and trim. Additional roof repairs will be required in the future. An imminent need is the repair of the rotten sill plate, rim joists, and exterior siding on the PCR side of the Burma Rd Chapel.

Project Need: Exterior siding, structural sill plates and rim joists all show signs of rot and need replacement. Also, the facility lacks proper insulation and ventilation, which causes snow melt on the roof that runs down to the eave, freezes and causes ice dams to separate the walls and roof. As ice dams grow larger, the water from the melting snows backs up and leaks between wood shingles into the building causing water damage. In FY08, metal flashing was installed on the eaves over the electric cable system to heat the flashing. A new roof will protect the facility for at least another 30 years.

Development Plan & Status : DPW's Facilities Maintenance budget will replace the metal flashing and heat trace on the eave as an interim solution when the present system fails. The rotten siding along the lower portions of the exterior wall and sill plate repair work began in November 2020 and will be completed by the end of FY21. The major roof repairs will be conducted in FY24.

Estimated Project & Purchase Timeline

Pre Design: FY20

Engineering/Design: FY21

Purchase/Construction: FY24

Cost Assumptions	
Engineering, Design, Const Admin	70,000
Other Professional Services	10,000
Construction Services	373,077
Machinery & Equipment	-
Subtotal	**453,077**
Contingency (set at 30%)	135,923
TOTAL	**589,000**

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	110,000	0	479,000	0	0	0	0	0	0	0	0	479,000
Total	110,000	0	479,000	0	0	0	0	0	0	0	0	479,000

FY24-33 CMMP

Captains Bay Road Paving & Safety Improvements

Public Works

Project Description: This major infrastructure improvement project constructs drainage, utilities, and pavement out Captains Bay Road, 1.4 miles long, between Airport Beach Road and the south end of the Westward Seafoods Complex. Work on the existing gravel road includes widening the road to 13-ft lanes with 2-ft shoulders, base & various areas of embankment reconstruction, new asphalt pavement, and new 6-ft paved separated multi-use path. Project includes selective replacement of storm drain pipes & inlet structures. Utilities are ineligible for the CTP Grant.

Project Need: Captains Bay Road is a primary transportation route for Westward Seafoods, North Pacific Fuel, Northland Services, Offshore Systems Inc., and several small businesses as well as residential areas. The road facilitates high traffic for heavy vehicles used by the fishing and support industries vital to the community's economy. In 2011 the City held public meetings regarding the Road Improvement Master Plan. Residents and industry representatives discussed Captains Bay Road and hazards its high road crown creates. The crown is needed for adequate drainage. There was strong support for improvements to Captains Bay Road. Captains Bay Road also presents future growth opportunities for the community as identified in the City's Comprehensive Plan.

Development Plan & Status : The "Segment A" project funding is currently based upon the most recent funding information from the State of Alaska CTP granting program. If approved under the CTP, the State DOT takes on the Project as its own project. The DOT project team has created the attached estimate. The DOT estimate for the entire Segment A project is approximately $13.16 million. In order to maximize points in the grant application the budgeted grant match is 24%, $3,161,147. This contribution can be lowered to 19% or 14% for 1 or 2 points fewer, respectively.

- Segment A Paving, FY24 $13,155,001
- Safety Improvements, FY25 $4,500,000
- Segment B Paving, FY26 $10,300,000
- Segment C Paving, FY26 $3,100,000
- Segment D Paving, FY26 $10,700,00

This project is grant dependent. Drainage and paving estimates are based on the Ballyhoo Road Drainage & Electrical Upgrades Project. As of April 10, 2020, the State did not award grant funds via the STIP / CTP. Additional grant opportunities will be sought out. A $4,000,000 Legislative request was submitted via CAPSIS in February 2021. Preliminary Estimate by HDL Engineering for total project costs = $53,700,003. On 12-06-21 we received the USACOE permit for the entire project except the portion around the intersection of Airport Beach Road (historic buildings, boats, and pre-contact site). This permit is under internal review and once signed and issued, we can proceed with any portion of the work that does not impact the non-permitted area. We will also want to request to modify the permit once it is issued to include the intersection work. HDL Engineering estimates that the permitting for the intersection area will take about one year to complete. Any work involving the small stream immediately past Westward will require an ADF&G permit but is expected to only take 3 months to obtain.

Estimated Project & Purchase Timeline

Pre Design: FY20

Engineering/Design: FY21

Purchase/Construction: FY23

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
1% Fund	0	3,161,147	0	0	0	0	0	0	0	0	0	3,161,147
Grant - STIP	0	9,993,854	0	0	0	0	0	0	0	0	0	9,993,854
Grant - Other	0	0	4,500,000	24,100,000	0	0	0	0	0	0	0	28,600,000
Total	0	13,155,001	4,500,000	24,100,000	0	0	0	0	0	0	0	41,755,001

FY24-33 CMMP

DPW Paint Booth / Body Shop

Public Works

Project Description: Construct paint booth / body shop at DPW to facilitate appropriate repairs on City vehicles.

Project Need: Presently body work is accomplished inside the mechanic shop. Employees are exposed to toxic dust particles and hazardous paint spray. A stand alone bay or building is very much needed to protect the health and well-being of employees in the shop as well as in the rest of the building. Air gets circulated throughout the building exposing all employees and visitors to toxic paint fumes.

Development Plan & Status : General fund. Construct an add-on bay to the existing Wash Bay or construct the equipment storage building and include a body shop.

Estimated Project & Purchase Timeline

Pre Design: FY23

Engineering/Design: FY24

Purchase/Construction: FY25

Cost Assumptions

Engineering, Design, Const Admin		25,000
Other Professional Services		10,000
Construction Services		750,000
Machinery & Equipment		0
	Subtotal	785,000
Contingency (set at 30%)		235,500
	TOTAL	**1,020,500**

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	25,000	995,500	0	0	0	0	0	0	0	1,020,500
Total	0	0	25,000	995,500	0	0	0	0	0	0	0	1,020,500

FY24-33 CMMP

Equipment Storage Building

Public Works

Project Description: Continuous exposure to the elements shortens the useable life of the City's rolling stock (dozers, dump trucks, graders, snow plows) and increases maintenance costs. Winter rain & slush build-up freeze on the equipment and creates excessive morning prep time clearing hubs, hydraulics, windshields, lights, and back-up horns prior to equipment use. This building will maintain an interior temperature at approximately 45F using a heated slab and keep equipment from freezing overnight and ready.

Project Need: A heated building will improve winter emergency response time and increase the capabilities of Public Works. The new storage building will extend the life of trucks, trailers, graders, snow plows, and snow blowers. The building will also decrease maintenance expense.

Development Plan & Status : Land is available on the Public Works site. A building permit and State Fire Marshall approval will need to be obtained. The project will require a new 1.5 inch water service and a new 6 inch sewer drain along with a new electrical service. Funding will come from the General Fund. The project is estimated at $200 per square feet. Building costs are then expected to be $1,545,830.

Estimated Project & Purchase Timeline

Pre Design: FY23

Engineering/Design: FY23

Purchase/Construction: FY24

Cost Assumptions	
Engineering, Design, Const Admin	195,000
Other Professional Services	34,000
Construction Services	960,000
Machinery & Equipment	100
Subtotal	**1,189,100**
Contingency (set at 30%)	356,730
TOTAL	**1,545,830**
Less Other Funding Sources (Grants, etc.)	-
Total Funding Request $	**1,545,830**

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	195,000	1,350,830	0	0	0	0	0	0	0	0	0	1,350,830
Total	195,000	1,350,830	0	0	0	0	0	0	0	0	0	1,350,830

FY24-33 CMMP

Public Trails System

Public Works

Project Description: Phase 1 Master Plan: This project formally establishes an Unalaska Public Trails System Master Plan by identifying and mapping existing network of sidewalks, trails, paths, former Jeep trails, 17B Easements, and gravel walkways. Consistent signage with community branding can also be designed with project wide plans & specifications. Phase 2 Construction: Provides consistent signage design, wayfinding, improves existing trails network, and establishes trail system maintenance protocols.

Project Need: Unalaska's existing array of walking and biking pathways are haphazard, unmarked, lack maintenance, have no amenities, and could be used better for community activity and attracting tourists.

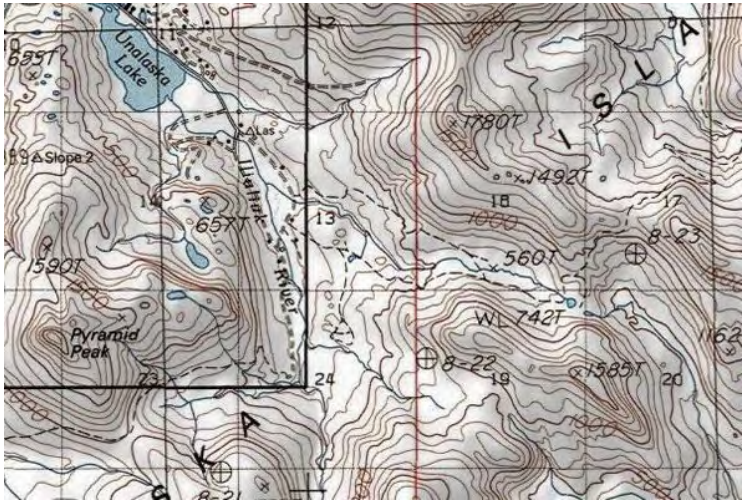
Development Plan & Status : The Planning Commission held a public meeting on September 19, 2019 in which they reviewed the City of Unalaska's existing Capital and Major Maintenance Plan projects, heard public testimony, and found that a Public Trails System is reasonable and in the public's interest. In conformance with the goals and objectives of the Comprehensive Plan, the Planning Commission recognized the need for a coordinated, well-defined trails system in Unalaska to support health, wellness, quality of life, and recreation and passed Resolution 2019-10. On November 12, 2019, the City Council was presented with the Planning Commission's Resolution 2019-10 and consented to including the Public Trails System Project on the FY21-25 CMMP for their consideration. Collaborative partnership with Ounalashka Corporation (OC) , the Qawalangin Tribe (Q-Tribe), and the Bureau of Land Management (BLM) will be key to a successful Public Trails System. Grant opportunities exist through the Alaska Safe Routes to School program; preliminary discussions with the Q-Tribe indicates potential cost sharing opportunities. Additional monies will come from the General Fund.

Estimated Project & Purchase Timeline

Pre Design: FY21

Engineering/Design: FY26

Purchase/Construction: FY26



Cost Assumptions

Engineering, Design, Const Admin		100,000
Other Professional Services		0
Construction Services		0
Machinery & Equipment		0
	Subtotal	100,000
Contingency (set at 30%)		0
	TOTAL	**100,000**

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	0	100,000	0	0	0	0	0	0	100,000
Total	0	0	0	0	100,000	0	0	0	0	0	0	100,000

FY24-33 CMMP

Underground Fuel Tank Removal / Replacement

Public Works

Project Description: Remove the UST (underground storage tank) at City Hall and replace with an approved above ground fuel oil tank.

Project Need: UST's are known to rust and begin leaking. UST's are no longer approved and this tank needs to be replaced with an above ground tank with proper leak detection.

Development Plan & Status : This project will be funded by the General Fund.

Estimated Project & Purchase Timeline

Pre Design: FY28

Engineering/Design: FY28

Purchase/Construction: FY28

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
General Fund	0	0	0	0	0	0	60,000	0	0	0	0	60,000
Total	0	0	0	0	0	0	60,000	0	0	0	0	60,000

FY24-33 CMMP

Restroom Unalaska Marine Center

Ports

Project Description: This project is the purchase and installation of a new restroom for the Unalaska Marine Center. Water and Sewer service has been stubbed in at UMC for the purpose of installation of public restrooms for dock workers and passengers. City of Unalaska Code requires connecting to City services where available. These services are available at UMC

Project Need: For many years dock workers have used portable toilets. These outhouses require service from the Wastewater Treatment Staff. This project will provide a minimum of four toilets bring the City into compliance with City Code and EPA regulations. The facilities will improve working conditions for employees and visitors.

Development Plan & Status : This project involves a preexisting design and the restroom will tie into a pre-poured foundation that connects into existing utility services. The current cost assumption is from Public Works, for approximately $700 per square foot. This would be a from-scratch creation, a worst case scenario for funding. Ports is sourcing pre-designed and built options to lower the cost.

Estimated Project & Purchase Timeline

Pre Design: FY23

Engineering/Design: FY23

Purchase/Construction: FY24

Cost Assumptions	
Engineering, Design, Construction Admin	50,000.00
Other Professional Services	25,000.00
Construction Services	332,815.00
Machinery & Equipment	
Subtotal	407,815.00
Contingency (30%)	122,345.00
Total Funding Request	530,160.00

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Ports Proprietary Fund	50,000	480,160	0	0	0	0	0	0	0	0	0	480,160
Total	50,000	480,160	0	0	0	0	0	0	0	0	0	480,160

FY24-33 CMMP

Solid Waste Gasifier

Solid Waste

Project Description: The pre-design, design, and construction of a Gasifier to incinerate garbage.

Project Need: The Landfill cells are reaching capacity. Unalaska has about five years to come up with alternatives for the City's garbage or must find a new place to build new cells. Thermal processing of solid waste is the future of Landfills. Gasification is a process that uses a feedstock, often municipal or industrial waste, for a thermo chemical conversion of waste in high heat. This is done in a low oxygen environment and causes material breakdown at the molecular level. Once the molecular breakdown occurs, the gasification process recombines them to form a syngas, a gas similar to natural gas.

Development Plan & Status : A combination of grant funds and Landfill proprietary funds will pay for this project, which will be installed within the current building footprint. The City is seeking state funding for a portion of the project, although it is currently still budgeted for the Solid Waste Proprietary Fund.

Estimated Project & Purchase Timeline

Pre Design: FY21

Engineering/Design: FY22

Purchase/Construction: FY25

Cost Assumptions

Engineering, Design, Const Admin	800,000
Other Professional Services	100,000
Construction Services	3,000,000
Machinery & Equipment	2,500,000
Subtotal	6,400,000
Contingency (set at 30%)	1,920,000
TOTAL	**8,320,000**

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Solid Waste Proprietary Fund	300,000	0	7,620,000	0	0	0	0	0	0	0	0	7,620,000
Total	300,000	0	7,620,000	0	0	0	0	0	0	0	0	7,620,000

FY24-33 CMMP

Captains Bay Road Wastewater Line Installation

Wastewater

Project Description: This project will cover 2.5 miles of wastewater line from Airport Beach Road to OSI

Project Need: This funding is required for the CTP grant. Captains Bay Road is the logical location for future commercial and residential expansion for the community of Unalaska. Captains Bay has the docking facilities and space for equipment storage to accommodate this and other industrial growth. Oil companies have expressed interest in Unalaska's deep-water port as a resupply port for their northern seas oil exploration and drilling operations. Construction of the road and utility improvements needs to begin now so Unalaska can meet the current and future needs of the community.

Development Plan & Status : Captains Bay Road currently has sewer line services from the intersection of Airport Beach Road to Westward Seafoods, a distance of one mile. This project will eventually install a new wastewater line from Westward Seafoods entirely to OSI.

The additional wastewater funds are necessary to extend the wastewater line an additional 1,200 feet from the current terminus to the end of the CTP paving project. Reagan Engineering has quoted the design at $50,000, and the construction cost estimate at $987,600 ($823/ft * 1200').

HDR Engineering performed a Cost-Benefit Analysis (CBA) of the proposed Captains Bay Road Paving and Utilities Upgrade Project. The purpose of the CBA is to justify project costs to support funding requests to upgrade, pave, illuminate, provide pedestrian walkway, and extend utilities. The range of project benefits includes reduced road maintenance costs, reduced vehicle maintenance costs, reduced vehicle emissions, improved safety, travel time savings, avoided road closures (rock slides, avalanches, accidents). The project is at 65% design and broken into 3 segments over 3 years. The CBA compares project costs against project benefits by segment and by phase to enable decisions to be made regarding the best approach going forward.

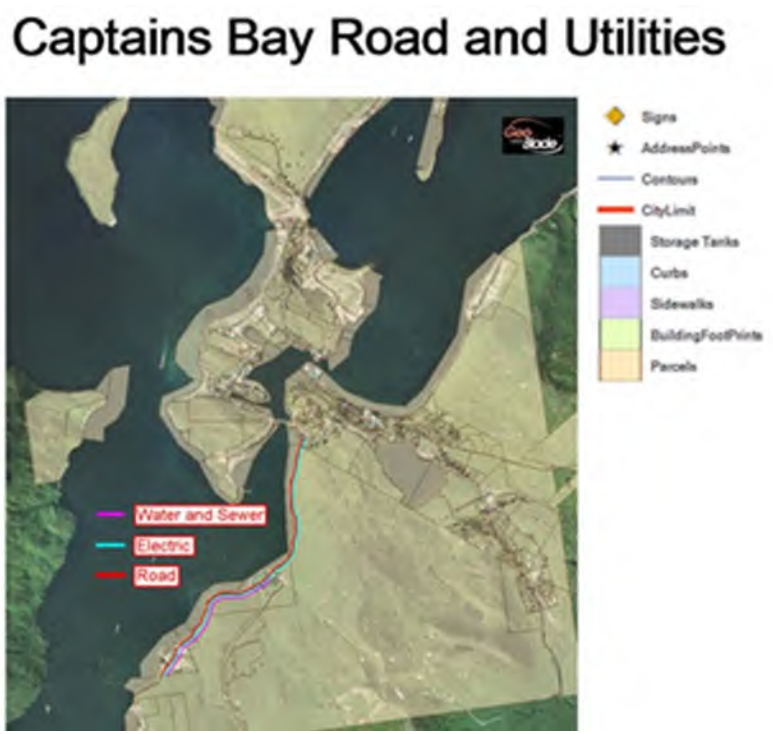
Cost Assumptions		
	Other Professional Services	
	Engineering, Design, Construction Admin	50,000
	Construction Services	11,187,600
	Machinery & Equipment	
	Subtotal	
	Contingency (15%)	
	Total Funding Request	11,237,600

Estimated Project & Purchase Timeline

Pre Design: FY26

Engineering/Design: FY27

Purchase/Construction: FY28



Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Wastewater Proprietary Fund	0	50,000	11,187,600	0	0	0		0	0	0	0	11,237,600
Total	0	50,000	11,187,600	0	0	0		0	0	0	0	11,237,600

FY24-33 CMMP

Scum Decant Tank Wet Well Improvements

Wastewater

Project Description: This project will evaluate solutions to prevent the grease from entering the scum decant tank. This CMMP item includes the costs for an engineering evaluation and implementation of the improvements.

Project Need: At times, there can be large mats of accumulated grease in the clarifier. While skimming, the water/grease mixture is directed down the clarifier drainpipe to the scum decant tank. The water/grease mixture enters the scum decant tank, and the grease re-suspends in the water, allowing the grease to flow under the baffle with the water into the tank drain to the lift station. The grease then congeals and becomes a maintenance challenge for the lift station.

Development Plan & Status : The budget for this project was estimated from the Water Master Plan. A more accurate budget will be determined during the design phase of the project. Funding for this project will come from the Wastewater Proprietary Fund.

Estimated Project & Purchase Timeline

Pre Design: FY26

Engineering/Design: FY27

Purchase/Construction: FY28

Cost Assumptions		
	Other Professional Services	
	Engineering, Design, Construction Admin	50,000
	Construction Services	60,000
	Machinery & Equipment	60,000
	Subtotal	170,000
	Contingency (15%)	25,500
	Total Funding Request	195,500

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Wastewater Proprietary Fund	0	0	0	0	50,000	145,500	0	0	0	0	0	195,500
Total	0	0	0	0	50,000	145,500	0	0	0	0	0	195,500

FY24-33 CMMP

Wastewater Clarifier Baffling Improvements

Wastewater

Project Description: This project involves the engineering to evaluate and installing potential improvements to the two WWTP clarifiers. The evaluation should include a review of the record drawings, a site tour of the plant, and an evaluation of alternatives to optimize the configuration of the clarifiers.

Project Need: After screening, the wastewater is rapidly mixed with a coagulant and polymer to improve the settling process in the clarifier. The wastewater in the first clarifier portion is clear and settles well. As the wastewater effluent passes under the clarifier baffle wall at the discharge end, the water quality degrades by becoming turbid. It is presumed that the settled sludge is carried downstream to the chlorine contact tanks, where it settles. This is very inefficient and requires the operators to clean the tank at least twice a month to prevent excessive sludge buildup. The stirred sludge also requires more chlorine for disinfection and, as a result, more sodium bisulfate for dechlorinating. Significant benefit will be realized in both labor and chemical costs if the clarifier's performance is improved.

Development Plan & Status : The budget for this project was estimated from the Wastewater Master Plan and is an estimate at this point in the process. A more accurate budget will be determined during the design phase of the project. Funding for this project will come from the Wastewater Proprietary Fund.

Estimated Project & Purchase Timeline

Pre Design: FY28

Engineering/Design: FY29

Purchase/Construction: FY30

Cost Assumptions	
Engineering, Design, Construction Admin	$50,000
Other Professional Services	
Construction Services	$100,000
Machinery & Equipment	$100,000
Subtotal	$250,000
Contingency (30%)	$75,000
Total Funding Request	$325,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Wastewater Proprietary Fund	0	0	0	0	0	0	50,000	275,000	0	0	0	325,000
Total	0	0	0	0	0	0	50,000	275,000	0	0	0	325,000

FY24-33 CMMP

Wastewater Sludge Pump Check Valve Replacement

Wastewater

Project Description: This project includes the purchase and installation of back-pressure valves to replace the existing check valves in the system.

Project Need: When the sludge flocculator starts, the discharge valve positions are opened and closed several times, and plant staff verifies that the valve position is closed upon operation. If the valves are left open, the contents of the solids storage tank can drain to the influent pump station. The WWTP staff are careful to set the valves to the appropriate position. Several options were evaluated by the City's WWTP design consultant and it was determined that replacing the sludge pump check valves with backpressure valves was the best option. This would prevent the sludge from getting past the Penn Valley sludge pumps and exiting the plant if the valve is accidently left open. Proposed for FY25 – FY26

Development Plan & Status : The budget for this project was estimated from the Wastewater Master Plan and is an estimate at this point in the process. A more accurate budget will be determined during the design phase of the project. Funding for this project will come from the Wastewater Proprietary Fund.

Estimated Project & Purchase Timeline

Pre Design: FY24

Engineering/Design: FY25

Purchase/Construction: FY26

Cost Assumptions		
	Engineering, Design, Construction Admin	$20,000
	Other Professional Services	
	Construction Services	$30,000
	Machinery & Equipment	$20,000
	Subtotal	$70,000
	Contingency (30%)	$21,000
	Total Funding Request	$91,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Wastewater Proprietary Fund	0	0	20,000	71,000	0	0	0	0	0	0	0	91,000
Total	0	0	20,000	71,000	0	0	0	0	0	0	0	91,000

FY24-33 CMMP

Biorka Drive Cast Iron Waterline Replacement

Water

Project Description: This project will replace approximately 600 linear feet of cast iron pipe segment under Biorka Drive with ductile iron. The replacement of this pipe was designed already by Regan Engineering, but the project was dropped when paving of Biorka Drive, which was the driving factor, was shelved.

Project Need: This section of water pipe was installed in the 1940's with cast iron pipe, the last section of cast iron pipe in Unalaska's water system. This line has been repaired in the past and has been is service longer than its life expectancy. Cast iron is a brittle material that is also susceptible to corrosion. Cast iron pipe often fails catastrophically when subjected to excessive pressure surge or ground movement. Pipe failure becomes more frequent with a cast iron pipe as it ages and loses wall thickness to corrosion. Emergency repairs after an unexpected catastrophic pipe failure are usually many times more expensive than proactive pipe replacement due to incidental damage, overtime, lack of in-stock repair materials, and general disruption of utility operations. Preventative replacement of pipes with high failure risks is a good practice in order to avoid the more costly emergency repair situation brought by a pipe failure.

Development Plan & Status : The budget for this project was estimated from the Water Master Plan. A more accurate budget will be determined during the design phase of the project. Funding for this project will come from the Water Proprietary Fund. Total cost for this project is estimated at $396,500.

Estimated Project & Purchase Timeline

Pre Design: FY27

Engineering/Design: FY28

Purchase/Construction: FY28

Cost Assumptions		
	Engineering, Design, Construction Admin	$30,000
	Other Professional Services	
	Construction Services	
	Machinery & Equipment	$275,000
	Subtotal	$305,000
	Contingency (30%)	$91,000
	Total Funding Request	$396,500

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Water Proprietary Fund	0	0	0	0	0	396,500	0	0	0	0	0	396,500
Total	0	0	0	0	0	396,500	0	0	0	0	0	396,500

FY24-33 CMMP

Captains Bay Road Waterline Extension

Water

Project Description: This project will construct a waterline out Captains Bay Road to the entrance of Offshore Systems, Inc. (OSI). This work will construct approximately 1 mile of waterline extension from Westward to North Pacific Fuel along Captains Bay Road.

Project Need: Captains Bay Road is the logical location for future commercial and residential expansion for the community of Unalaska. Captains Bay has the docking facilities and space for equipment storage to accommodate this and other industrial growth. Oil companies have expressed interest in Unalaska's deep-water port as a resupply port for their northern seas oil exploration and drilling operations. Construction of the road and utility improvements needs to begin now so Unalaska can meet the current and future needs of the community.

Development Plan & Status: Captains Bay Road currently has water line services from the intersection of Airport Beach Road to Westward Seafoods, a distance of one mile. This project will install a new waterline from Westward Seafoods to North Pacific Fuel to replace the old, failing wood-stave waterline. Conducting this project will remove the need for the water storage tank at in Pyramid Valley.

HDR Engineering performed a Cost-Benefit Analysis (CBA) of the proposed Captains Bay Road Paving and Utilities Upgrade Project. The purpose of the CBA is to justify project costs to support funding requests to upgrade, pave, illuminate, provide pedestrian walkway, and extend utilities. The range of project benefits includes reduced road maintenance costs, reduced vehicle maintenance costs, reduced vehicle emissions, improved safety, travel time savings, avoided road closures (rock slides, avalanches, accidents). The project is at 65% design and broken into 3 segments over 3 years. The CBA compares project costs against project benefits by segment and by phase to enable decisions to be made regarding the best approach going forward.

Estimated Project & Purchase Timeline

Pre Design: FY28

Engineering/Design: FY29

Purchase/Construction: FY30

Cost Assumptions	
Engineering, Design, Construction Admin	
Other Professional Services	
Construction Services	8,300,000
Machinery & Equipment	
Subtotal	8,300,000
Contingency (30%)	
Total Funding Request	8,300,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Water Proprietary Fund	12,246	0	4,700,000	0	0	0	0	0	0	0	0	4,700,000
External Funds	1,186,400	3,600,000	0	0	0	0	0	0	0	0	0	3,600,000
Total	1,198,446	3,600,000	4,700,000	0	0	0	0	0	0	0	0	8,300,000

FY24-33 CMMP

Icy Lake Capacity Increase & Snow Basin Diversion

Water

Project Description: This project will increase the height of the existing dam on the north side of Icy Lake and construct a new dam on the south end of Icy Lake. The 2006 Golder-letter describes the project as follows:

- The existing sheet pile dam at the north end of the lake would be raised 5 feet and the dam length increased from 67 to 98 feet.
- A new sheet pile dam, approximately 6 feet tall by 193 feet long would be built at the south end of the lake.
- Additional grading and riprap would be required for a larger spillway apron at the north dam.
- Riprap would be required for wave erosion protection of the south dam.
- Grouting at the north and south dams would be required to seal fractured bedrock.

Project Need: Additional capacity for raw water storage at Icy Lake would be beneficial to help span processing seasons that occur during the more prolonged and frequent dry weather periods. Water system operators use the lake to "bank" surplus water between processing seasons when demand is low, so that by the beginning of a processing season the utility is starting out with a full lake. During heavy processing the lake level gradually drops as demands exceed the combined capacity of Icy Creek and the wells, and operators release lake water into Icy Creek. This operational strategy has been stressed in recent years when dry weather coincides with processing seasons and the lake is drawn nearly empty. If the lake is run empty and the water system is not able to meet demands, water rationing and reducing fish processing throughput or diverting fish to processors in other communities would be required.

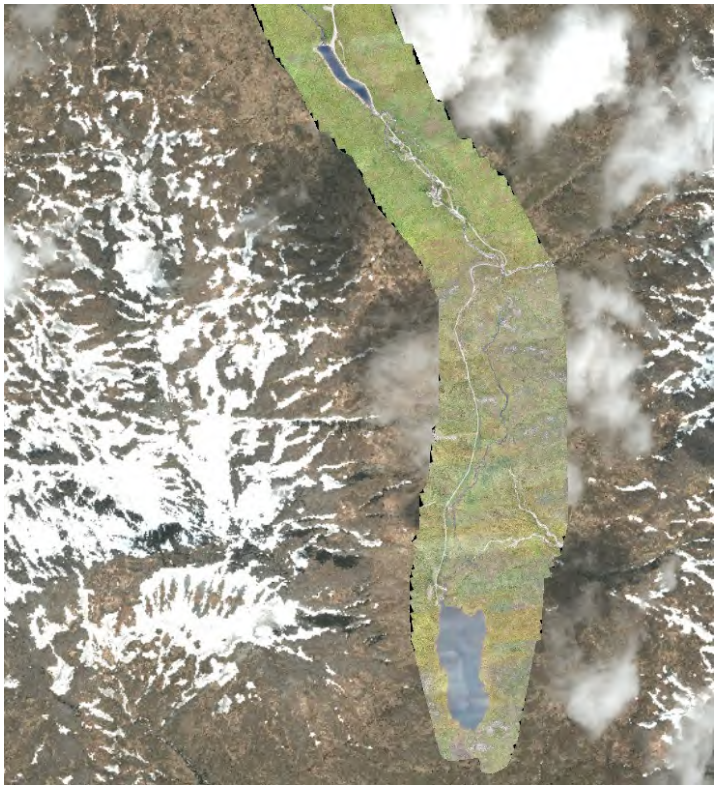
Development Plan & Status : The budget for this project was estimated from the Water Master Plan. A more accurate budget will be determined during the design phase of the project. Funding for this project will come from the Proprietary Fund and State Grants.

Estimated Project & Purchase Timeline

Pre Design: FY31

Engineering/Design: FY32

Purchase/Construction: FY32



Cost Assumptions	
Engineering, Design, Construction Admin	$150,000
Other Professional Services	$30,000
Construction Services	$2,020,000
Machinery & Equipment	
Subtotal	2,200,000
Contingency (30%)	$660,000
Total Funding Request	2,860,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Water Proprietary Fund	0	0	0	0	0	0	0	0	2,860,000	0	0	2,860,000
Total	0	0	0	0	0	0	0	0	2,860,000	0	0	2,860,000

FY24-33 CMMP

Icy Lake Hydrographic Survey

Water

Project Description: This project will survey Icy Lake reservoir consisting of a topographic survey of the shoreline and shallow areas around the lake. A water resources engineer will determine the precise stage-storage (Depth and Volume) relationship and curve and analyze the hydrographic and topographic survey results. The stage-storage curve should allow operators to quickly determine the exact volume of available water at various water surface elevations. The stage-storage relationship could also be added to the utility SCADA system so the SCADA system automatically calculates and displays the lake's volume of available water in real-time.

Project Need: Icy Lake provides impounded raw water storage for Unalaska and is used during periods of low water and/or significant demand. The Lake is impounded behind a sheet pile dam at its outlet. Water from the lake is released using a remote controlled valve at the sheet pile dam to fill the Icy Creek Reservoir. The exact volume of the lake is unknown but estimates range from between 52 MG and 61 MG, with a volume of 57 MG at the spillway elevation. Without accurate bathymetry of the lake bottom, the Utility must estimate stage-storage of the lake in order to know how much available water remains in the lake at any given water surface elevation. If the Utility's estimate of remaining water is overly conservative, the result could be premature water rationing, impacting utility customers, especially the fish processors. If the Utility overestimates the remaining water, then it could run out of water faster than expected. An accurate hydrographic survey of the lake would enable precise determinations of the available water and more effectively manage water supplies.

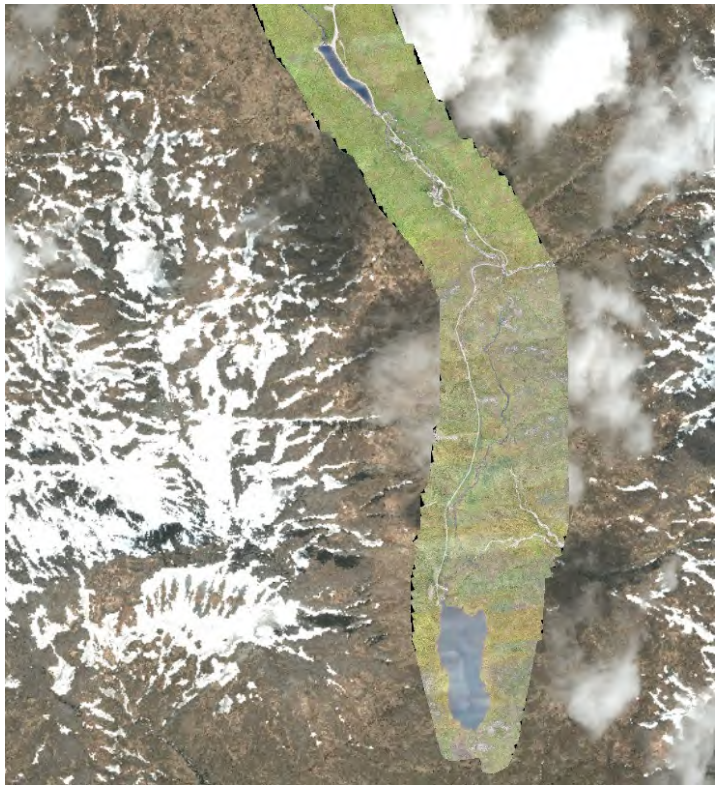
Development Plan & Status : The budget for this project was estimated from the Water Master Plan. A more accurate budget will be determined during the design phase of the project. The funding for this project will come from the Proprietary Fund.

Estimated Project & Purchase Timeline

Pre Design: FY24

Engineering/Design: FY24

Purchase/Construction: FY24



Cost Assumptions	
Engineering, Design, Construction Admin	$5,000
Other Professional Services	$41,000
Construction Services	
Machinery & Equipment	$10,000
Subtotal	$56,000
Contingency (30%)	$16,800
Total Funding Request	$72,800

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Water Proprietary Fund	0	72,800	0	0	0	0	0	0	0	0	0	72,800
Total	0	72,800	0	0	0	0	0	0	0	0	0	72,800

FY24-33 CMMP

Installation of Meter and Booster Pump at Agnes Beach PRV Station

Water

Project Description: This project would add water metering and a booster pump system at the Agnes Beach PRV station. The water metering will aid in leak detection, and utility management and understanding of where water is being used and when. The booster pump will provide water supply redundancy to Westward Seafoods, one of the largest customers in the water system, as well as redundancy to any further development along Captain's Bay Road.

Project Need: The Agnes Beach PRV station drops the pressure of water from Pressure Zone 2 (Captains Bay Road) to Pressure Zone 3 (Town) hydraulic grade. The station also allows for water to flow to the higher elevation areas of Haystack Hill with an option to allow external boosting in the event of a fire demand on Haystack Hill. The current PRV set up does not allow any method of measuring water flow through the station and severely limits the ability to reverse flow from the wells in the lower pressure Zone 3 to higher pressure Zone 2 (Westward Seafoods). A booster pump will allow for the pumping of water from the lower pressure zone to the higher pressure zone in the event of a shut-down of the Pyramid Water Treatment Plant due to, for example, high turbidity.

Development Plan & Status : The budget for this project was estimated from the Water Master Plan. A more accurate budget will be determined during the design phase of the project. Funding for the project will come from the Water proprietary Fund.

Estimated Project & Purchase Timeline

Pre Design: FY28

Engineering/Design: FY29

Purchase/Construction: FY30

Cost Assumptions	
Engineering, Design, Construction Admin	$50,000
Other Professional Services	$20,000
Construction Services	$160,000
Machinery & Equipment	$70,000
Subtotal	$300,000
Contingency (30%)	$90,000
Total Funding Request	$390,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Water Proprietary Fund	0	0	0	0	0	0	70,000	320,000	0	0	0	390,000
Total	0	0	0	0	0	0	70,000	320,000	0	0	0	390,000

FY24-33 CMMP

Pyramid Water Storage Tank

Water

Project Description: This project will construct a second 2.6 million gallon Chlorine Contact Tank (CT Tank) next to the existing CT Tank. It will provide much needed clear water storage and enable maintenance to be done on the interior of either tank regardless of process seasons or weather. The project will require the installation of approximately 200 ft. of 16" DI water main, 200 ft. of 8" DI drain line, and 100 ft. each of 1" sample line and control wiring

Project Need: Additional storage provided by this tank will help to meet many of the issues mentioned in the 2004 Water Master Plan. Even in the Water Distribution System's current configuration, this new tank will provide an additional 960,000 gallons of the additional 4 MG of finished water storage recommended in the Master Plan. When planned future development is completed on Captain's Bay Road, over 2.2 MG of water storage will be available at the maximum Pyramid Water Treatment Plant capacity of 9 MGD. The additional storage will provide a much needed buffer, allowing time to troubleshoot and repair problems in the event of an equipment failure or system malfunction. It will reduce the likelihood of water shortages and/or outages during the Pollock Processing seasons. Additional benefits include:

- Reduce service interruption, boil water notices, and risk of system contamination during maintenance.
- Allow routine maintenance to be done on the interior or exterior of either tank during any season, prolonging the life of these tanks.
- Expand and upgrade both the water treatment and distribution systems, using the full 9 MGD design capacity of the new water treatment plant will be possible.
- Improve the flow characteristics of the new Pyramid Water Treatment Plant. Plant operators will be able to allow the tanks to absorb the high and low flows, maintaining a more stabilized treatment process and allowing the new Ultra Violate treatment process to operate more efficiently.

Estimated Project & Purchase Timeline

Pre Design: FY14

Engineering/Design: FY23

Purchase/Construction: FY24

Development Plan & Status : A "Certificate to Construct" and a "Certificate to Operate" are required from ADEC, obtained through application by the designing engineer.

Engineering, Design, Const Admin	647,000
Other Professional Services	-
Construction Services	6,379,879
Machinery & Equipment	-
Subtotal	**7,026,879**
Contingency (set at 30%)	2,108,064
TOTAL	**9,134,943**
Less Other Funding Sources (Grants, etc.)	-

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Water Proprietary Fund	1,228,750	0	0	7,906,193	0	0	0	0	0	0	0	7,906,193
Total	1,228,750	0	0	7,906,193	0	0	0	0	0	0	0	7,906,193

FY24-33 CMMP

Sediment Traps Between Icy Lake and Icy Creek Reservoir

Water

Project Description: This project consists of constructing one or more sediment traps in Icy Creek upstream of the reservoir. The sediment trap system should essentially be a series of deep, wide step pools with rock check dams along the creek that decrease the flow velocity and allow rocks and sediment to settle out. The sediment traps should also create a location for rocks and sediment to accumulate that would be easier for heavy equipment to access, easier to clean out, and potentially allow the reservoir and Pyramid WTP to remain in service while the upstream sediment traps are being cleaned. Although the sediment traps will not eliminate shutdown of the Pyramid WTP due to turbidity spikes during high flow events, it could reduce the occurrence and duration of shutdowns.

Project Need: Large amounts of rock and sediment move downstream along Icy Creek during high flow events. The rocks accumulate at the inlet end of the Icy Creek Reservoir as seen in Figure 30 and heavier sediment accumulates behind the dam. The rocks and sediment reduce the capacity of the reservoir. Draining of the reservoir and removal of rocks and sediment is a challenging exercise that is required periodically and also requires a lengthy shutdown of the Pyramid WTP. Turbidity issues due to suspended fine-grained sediments during high flow events also regularly cause shutdown of the Pyramid Water Treatment Plant.

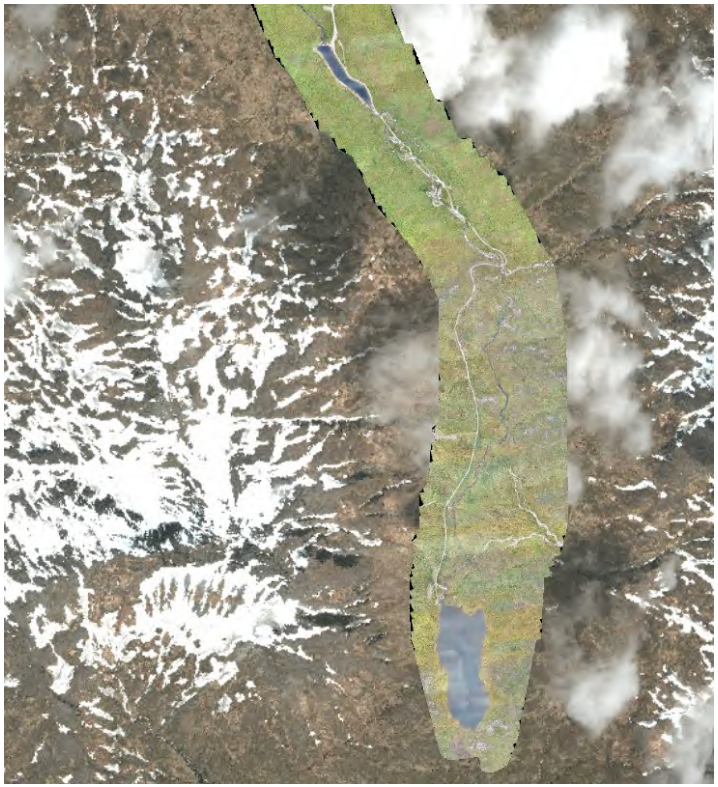
Development Plan & Status : The budget for this project was estimated from the Water Master Plan. A more accurate budget will be determined during the design phase of the project. Funding for this Project will come from the Water Proprietary Fund.

Estimated Project & Purchase Timeline

Pre Design: FY26

Engineering/Design: FY26

Purchase/Construction: FY27



Cost Assumptions	
Engineering, Design, Construction Admin	$50,000
Other Professional Services	$50,000
Construction Services	$400,000
Machinery & Equipment	
Subtotal	$500,000
Contingency (30%)	$150,000
Total Funding Request	$650,000

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Water Proprietary Fund	0	0	0	0	650,000	0	0	0	0	0	0	650,000
Total	0	0	0	0	650,000	0	0	0	0	0	0	650,000

FY24-33 CMMP

WH1 and WH2 On-site Generation of Chlorine

Water

Project Description: This project in both Well House 1 and Well House 2 will include the removal of the existing Chlorine Gas system and the installation of an on-site system which generates liquid Chlorine (Sodium Hypochlorite) using salt and electricity.

Project Need: Using stringent regulations, the EPA is doing away with Chlorine Gas as the primary method of disinfecting potable water.

Vendors for Chlorine Gas are becoming scarce as most Water Treatment Plants and other users have already changed over to an alternative. There are only two remaining Chlorine Gas vendors located on or near the west coast which will ship to Alaska. We are currently using the vendor who is located on the coast. If they cease to carry Chlorine Gas, the remaining vendor is twice the price due to the extra cost involved in shipping the Chlorine Gas to the west coast from Nevada. In June of 2021, Chlorine Gas manufacturers across the US declared a "Force Majeure" due to production issues. The price for Chlorine Gas increased in mid-August 2021.

Since both well houses are located in residential areas, using Chlorine Gas at these locations is a clear safety concern due to the possibility of a Chlorine Gas leak. This hazard continues to increase as more housing is developed and constructed. On-site generation at the well houses will eliminate this safety issue.

Also, potable water treated with Chlorine Gas is more acidic than Sodium Hypochlorite. Combined with the rise in EPA's standards, there is a very high possibility that we will be required to perform a corrosion control study and begin adding a corrosion control inhibitor to our potable water. Switching to Sodium Hypochlorite will help lower the acid index of our drinking water. This will lessen the possibility of having to perform the study or add an inhibitor.

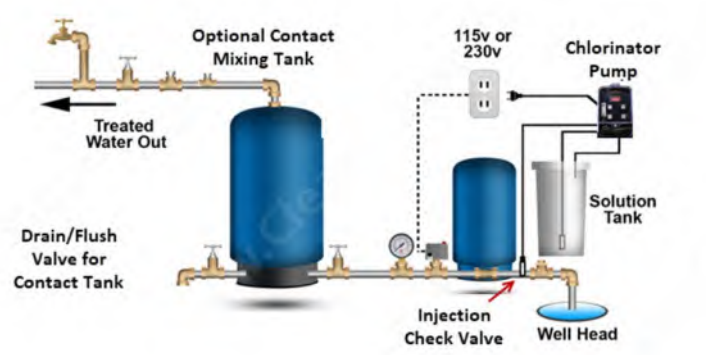
In addition, the multiple safety items associated with Chlorine Gas that we are required to own are very expensive, highly regulated and take a significant amount of time to maintain.

Estimated Project & Purchase Timeline

Pre Design: FY24

Engineering/Design: FY24

Purchase/Construction: FY24



Development Plan & Status : This project will require a consultant for design and engineering to obtain Alaska Department of Environmental Conservation approval. A contractor will be needed for construction.

Cost Assumptions	
Engineering, Design, Construction Admin	$60,000
Other Professional Services	
Construction Services	$185,000
Machinery & Equipment	$100,000
Subtotal	$345,000
Contingency (30%)	$103,500
Total Funding Request	$448,500

Source	Appropriated	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10 Yr. Total
Water Proprietary Fund	0	448,500	0	0	0	0	0	0	0	0	0	448,500
Total	0	448,500	0	0	0	0	0	0	0	0	0	448,500