



Hidden Beach Armor Removal and Restoration Preliminary Design Report

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Introduction and Purpose

The purpose of this preliminary design report is to outline the existing site conditions, site constraints, feasibility of armor removal, and details of the proposed armor removal and beach restoration actions specific to this coastal property. The subject of this memo is the shore along the northern extent of South Hidden Beach Drive. This site is located on the east shore of Whidbey Island in the North Bluff area just north of Greenbank (Figure 1).

This work is for a project sponsored by the Northwest Straits Foundation and the Island County Marine Resources Committee with funding from the Washington Departments of Fish and Wildlife through the Habitat Strategic Initiative and the U.S. Environmental Protection Agency. The goal of this project is to promote alternative strategies for coastal properties that provide both the use and enjoyment of the property while promoting and maintaining the ecological properties of coastal ecosystems.

Jim Johannessen of Coastal Geologic Services Inc. (CGS) visited the site on June 29, 2018 and March 9, 2019 to investigate initial feasibility of removing the derelict bulkhead/shore armor along South Hidden Beach Drive. A shorter site visit was also carried out by Johannessen along with Lisa Kaufman of the Northwest Straits Foundation and Adam Tullis of CGS on May 10, 2018. Wei Chen, PhD and PE, visited the site on August 11, 2018 and January 20, 2019.

A site visit memo was prepared following the initial visit, which concluded that full armor removal was feasible for the site along with minor armor modification on the south end (Johannessen, 2018). Subsequently, the Northwest Straits Foundation requested that CGS complete site mapping and prepare preliminary design drawings and a design report, contained herein.

Site Mapping

Mapping of current site conditions was conducted on August 11, 2018 by Wei Chen, PhD, PE and Lauren Øde of CGS. Site mapping and modeling extended for the full 770-FT length of the derelict shore armor, plus an additional approximately 20 FT north and south of the shore armor for context (Sheet 2). Details of the site are presented in the *Site Conditions* section below.

Mapping activities included hand measurements, drawings, and descriptions of debris and site features, as well as aerial photography and GPS data collection to be used in developing a Structure from Motion (SfM) photogrammetric model. Aerial photography for SfM was collected using a DJI Phantom 4 Pro small unmanned aircraft system (sUAS; drone) equipped with a 1" CMOS 20 megapixel camera sensor with mechanical shutter. Images were referenced to visual targets, which functioned as ground control points (GCPs) for the model. GCP positions were collected using a pair of Emlid Reach RS GNSS GPS units, which provided real time kinematic (RTK) corrections during data collection. GCP positions were then corrected against Continuously-operating Reference Station (CORS) data for the Coupeville (COUP) station using post-processed kinematic (PPK) correction methods.

Aerial photos and GCPs were imported into Agisoft Photoscan Pro v 1.4.3 where they were used to generate a 3D topographic model for the area of interest. These models were then exported to AutoCAD Civil 3D 2018, where they were used to generate a 1 FT contour interval map. Analysis of debris volumes for removal was conducted based on field observation, and using digital surface modeling in Aquaveo SMS.

An orthophoto and 3D PDF were also generated for the site in Agisoft Photoscan.

Site Conditions

Overview

The specific study area is the approximately 770 FT-long derelict shore armor reach located waterward of the low-elevation portion of South Hidden Beach Drive. This reach extends from the northernmost end of the line of residential houses on South Hidden Beach Drive to the north end of a beach access route that runs north from the parking lot (Figure 2). An approximately 60 FT-long return wall of the bulkhead (shore armor) runs landward and perpendicular to the shore at the northernmost extent of the armor.

CGS staff visited the site to document existing conditions, develop recommendations, map site topography, and quantify debris volumes on: May 10, 2018; June 29, 2018; November 8, 2018; January 20, 2019; and March 9, 2019.

Site conditions will be briefly described from north to south. A narrow single-lane driveway extends from the north end of the parking lot to the far north of the shore armor. This driveway turns to the beach immediately north of the armor, where it is signed as a Whidbey Telecom access.

Geology and Slope Stability

Geologic information for the project area was obtained from the Geologic Map of the Camano 7.5-minute Quadrangle, Island County, WA (Polenz et al., 2009), published by the Washington State Department of Natural Resources. According to surficial geologic mapping, the bluff landward of the low elevation study area consisted of Vashon advance outwash sand, consisting of “mostly lacustrine sand with layers of silt” that “locally grades upward into gravel.” This unit was deposited in front of the advancing glacier during the Vashon glaciation, and is described as typically forming angle-of-repose slopes along coastal bluffs and drainages. To the west and upslope of the project site, geologic mapping indicates the presence of Vashon glacial till, which is characterized by an unweathered, unsorted mix of clay, silt, sand, gravel, and boulder-size material (diamicton). A sequence of sand and silt deposits were observed in the upper bluff landward and slightly north of the Hidden Beach parking lot.

According to the Island County Critical Areas Map, the slope in the vicinity of the project site is classified as both a steep slope (in excess of 40%) and an unstable slope. An area classified as an unstable, recent slide was mapped approximately 650 FT north of the project site. Colluvium (slide debris) covered much of the lower bluffs where observed across the project area. Evidence of past landslides was present in subtle topographic features, revealing old scarps and hummocky terrain in places. This was true both landward of the parking lot and lower Hidden Beach Road, and waterward of northern Hidden Beach Road where it angled down the bluff.

Red alder (*Alnus rubra*) trees dominated the canopy of bluffs throughout this project area. Many of these trees were leaning or exhibited a “pistol grip” or “J butt” growth form that is indicative of soil creep (slow downslope movement of surficial soils). There was an absence of Douglas-fir (*Pseudotsuga menziesii*) and other large conifer or madrone (*Arbutus menziesii*) trees, indicating a lack of bank stability across the bluff at the site. Salmonberry (*Rubus spectabilis*) was observed extensively as an undergrowth species at the site, which is indicative of moist slopes with moderate or greater seepage.

Hidden Beach Road was assessed on foot along its entirety where it traverses the bluff from the north to the beach. The outboard (down slope) edge of Hidden Beach Drive has begun to show signs of slope instability, as evidenced by a set of arcuate cracks in the existing pavement section (some of which have been sealed) that encompasses an approximately 85 FT-long section of the northbound lane of the roadway (Evangelisti, 2014). This area appeared to be between elevations 45 and 85 FT (Photo Page 3).

On the waterward side of the road, four areas of pavement had cracked, and some amount of settling of the waterward portion of the outer travel lane was observed (Photo Page 3). These were noted as incipient areas of instability, likely resulting from a classic cut-and-fill road section with the outer portion of the road being comprised of fill soil. Two soil borings were completed by Landau and Associates for Island County through the existing Hidden Beach Drive where it runs down the bank towards the beach area (Evangelisti, 2014). The results of the lower elevation, deeper boring were reported as follows:

In Boring B-1, we observed approximately 5 inches of asphalt overlying hard, moist, gray, sandy silt with interbedded seams of fine to medium sand to about 2 FT below ground surface (BGS). The silt was underlain by medium dense, grayish brown, fine to medium sand with silt from 2 to 6.5 FT BGS, very dense, moist to wet, grayish brown, gravelly sand from 6.5 to 17.5 FT BGS, hard, moist, brown silt from 17.5 to 21 FT BGS, and very dense, moist, grayish brown, gravelly, fine to coarse sand from 21 FT BGS to the full depth explored (Evangelisti, 2014).

A spiralnail reinforcement project was completed at the site of the road instability in 2016, as per Island County Public Works, which was described as the following in the Landau Associates report (Evangelisti, 2014):

Spiralnails are a proprietary soil reinforcement system produced and designed by Hilfiker Retaining Walls and could be installed on the eastern edge of Hidden Beach Drive with welded wire mats placed on the surface of the slope. [...] The existing pavement section could likely be left in place unless it is desired to remove and replace the asphalt section showing cracking from previous slope movement. Some of the vegetation on the slope would need to be removed and the repair would need to be designed to accommodate the re-establishment of vegetation.

The Hidden Beach area was mapped as a historical feeder bluff (Coastal Geologic Services, 2016; MacLennan et al., 2013). The term “feeder bluff” refers to the bluff’s function as a sediment source for the beach and beaches in the associated drift cell. However, the presence of shore armor (mapped along almost the entire length of South Hidden Beach Drive) disrupts this process by sequestering sediment and generally preventing bluff erosion and mass wasting. This process has historically benefited the beach and drift cell through direct sediment contribution.

The entire low elevation area that comprises the main study area was mapped as artificial fill. This fill likely came from the excavation that was carried out in order to route Hidden Beach Road down the slope from the north, though no documentation of this was recovered. Beach deposits derived from coastal bluffs were mapped alongshore, consisting of sand and cobbles with some silt, pebbles, and clay (Polenz et al., 2009). This is also discussed below.

Coastal Processes and Beach

The site is within net shore-drift cell ISWH019 (Coastal Geologic Services, 2016; MacLennan et al., 2013). This long drift cell (6.5 miles long) originates in south-central Holmes Harbor in an area of drift

divergence and extends northward until it terminates at Snakelum Point east of Penn Cove. Drift is generally northward (Figure 1). Northward net shore-drift is driven by prevailing (most common) and predominant (most frequently occurring) wind from the south and southeast. The beach has a maximum fetch (over water distance over which wind waves form) of 10.8 miles from the north, 3.15 miles from the southeast, and 9.9 miles from the east-southeast. The site is not directly exposed to waves from the south or west.

The beach waterward of the shore armor (discussed below) was composed of pebble and cobble in the lower intertidal. A broad sand flat extended farther waterward near the mean lower low water (MLLW) elevation for up to a 900 FT width cross-shore. The mid- to upper beach was composed of pebble and cobble along with boulders from the failed shore armor.

The upper beach and backshore landward of the north half of the failed shore armor contained pockets of fine gravel and sand with potential (suitably-sized) surf smelt spawning habitat. Other upper beach areas were dominated by cobble and boulder. The Whidbey Telecom access drive to the north and the parking lot appear to be built atop sandy fill over the old upper beach and backshore.

The beach area landward of the failed southern half of the shore armor was dominated by large boulders and cobble, with various other sediment sizes mixed in. No suitable potential surf smelt spawning substrate was observed in this area.

Shore Armor—North Half

The entire reach of the primary study area contained an old bulkhead (shore armor) structure (Johannessen and Chase, 2005), which was measured at 790 to 800 FT in length.

The north half of the study area is defined as the northern 350 FT extending south to the beginning of the parking lot. The remaining armor structures in the north half of the subject area in 2018 were comprised of 51 untreated, vertical wood piles that extended generally 7 – 8 FT above grade (two were broken off around 0.5 – 2 FT), and large boulders. The piles extend across shore at the northern extent between 55 and 60 FT (Photo Page 1). An additional 11 untreated wood piles (two broken off at heights of approximately 0.5 and 3.5 FT) were present at the northernmost boundary of the shore armor running landward from and perpendicular to the main line of the former shore armor (Table 1).

Table 1. Summary of debris and quantity volume estimates by region and type

Debris Type	Count	Volume, North Region (CY)	Volume, South Region (CY)	Total Volume (CY)
3+ man rock		120	290	410
1 – 2 man rock		85	230	315
Concrete pieces		60	40	100
Concrete bags		-	82	82
Large metal pieces	2 – 3 pieces	-	-	1.2
Wood piles (treated)	26 pieces	-	25	25
Wood piles (untreated)	86 pieces	60	23	83
Railroad ties (treated)	~ 920 LF		34	34
Wood lagging (treated)	~ 800 LF	15	-	15
Wood piles (treated) - far south*	122 pieces	-	-	118
Total debris		340	724	1,183

* Wood piles (treated) - far south are located waterward of the concrete wall belonging to the neighboring properties, and may be removed by this project.

The piles were located 5 FT on center, with a relatively small number of piles missing from the north half of the study area. The piles were located at tidal elevation approximately 2 – 3 FT vertically below mean high water (MHW), just slightly above mean tide level, such that the piles were located well over the upper intertidal beach. No lagging (horizontal timbers) was observed connecting the piles except for several pieces of treated 4-inch dimensional wood near beach level. An additional approximately one board of lagging is likely present below beach grade in several areas across the site, and this assumption was used to estimate quantities.

A band of large boulders ranging from approximately 2 – 5 FT in size were generally present just landward of the piles, with scattered boulders further landward. These boulders appeared to be primarily glacial erratics, as they were mostly rounded to sub-angular and inconsistent in lithology (Photo Page 1). Approximately 120 CY of 3-man or greater rock debris, 85 CY of 2 – 3-man rock, and 60 CY of broken concrete debris was present in the north half of the project area, for a total of approximately 265 CY of rock and concrete debris in the north section (Table 1).

Shore Armor—South Half

The southern half of the reach extends from waterward of the parking lot to the beginning of the residential area to the south, which is an approximately 450 FT long reach. This reach contained fewer vertical piles, as many appear to have been lost to storm damage. A line of 26 creosote-treated wood piles (11 of which were broken off at heights ranging from less than 0.5 FT to 3 FT above the ground) extended south towards the bulkhead in line with the untreated wood piles in the north half of the project area. These piles extended from generally 6 – 7 FT above grade, with very few pieces of treated wood lagging near beach level remaining. The piles were generally present 2 – 4 FT below MHW. A secondary line of 24 broken, untreated wood piles was present approximately 10 FT landward of the more-intact wood pile line.

Considerably larger volumes of boulder were present in this reach as compared to the northern half (Photo Page 2). Large boulders, typically ranging from 3 – 5 FT in width, were present in a dense configuration extending approximately 20 FT waterward of the row of piles. These boulders also appeared to be rounded to sub-angular glacial erratics of inconsistent lithology. Smaller boulders were present farther waterward, which had likely migrated from the landward armor or fill. Additionally, approximately 40 CY of broken concrete debris was present in this reach (Table 1).

Extensive boulders were also present landward of the piles, which appeared to be the remains of mostly eroded-away fill (Photo Page 2). Boulders of the shore armor extended to below mean tide level, thereby covering a substantial portion of the intertidal beach. Across the southern reach, approximately 290 CY of 3+ man-rock and 230 CY of 2 – 3-man rock was present in the armor structure and intertidal (Table 1).

At the far south end of the reach, a concrete bag revetment was present in various states of failure. The concrete bags extended along the bank for 180 FT, ultimately abutting the residential area further south and the large bulkhead there. The concrete bags were two bags thick and covered approximately 6 – 7 FT as measured along the slope (Photo Page 2). The middle and southern end of the concrete bag revetment had largely failed and toppled on the beach. The concrete revetment had been overtopped in all areas by waves. The volume of concrete bags present at the site was estimated at approximately 82 CY based on hand measurements (Table 1).

Other Development Features

Hidden Beach Drive runs from the upper elevations of east Whidbey Island southward to the parking lot area near beach level. The road coming down the slope was located approximately 50 – 130 FT landward of the existing bank and approximately 80 – 150 FT landward of the failed shore armor. This part of the roadway is landward of the northern approximately 340 FT of the shore armor. Near the farthest northern extent of the shore armor, cracks and evidence of minor settling were visible in the parking lot asphalt. This was at the upper portion of the ramp towards the beach. This road appears to have seen very little maintenance over the years, and the asphalt is relatively old.

A parking lot was located approximately 20 – 30 FT landward of the existing bank and 50 – 60 FT landward of the failed shore armor.

One drainage culvert was observed landward of the shore armor. It was located under the northern portion of the parking lot and was comprised of a 12-inch-diameter corrugated aluminum pipe. This culvert drained the road ditch running immediately west of the road.

A concrete pad was located in the fill area just south of the parking lot and landward of the erosional scarp on the uppermost beach. The pad measured approximately 24 by 24 FT (22.6 CY).

South of the primary study area was the row of houses, which appeared to have been constructed primarily on fill placed over the beach. This fill area was protected by an approximately 9-FT-high vertical concrete wall. This wall appeared to have been a replacement, as a discontinuous row of 122 creosote-treated wood piles (31 of which had been partially broken) was present several feet waterward of the concrete wall (Photo Page 2). These wood piles are also potential candidates for removal, and are listed separately at the end of Table 1.

Historical Shore Change

The beach and shore armor is shown between 1993 and 2016 in oblique angle shoreline photos provided by WA Dept. of Ecology (Figure 3). The shore in the study area has been highly modified since 1951. A 1951 aerial photo and the 1888 T-sheet both show that the location of the old, pre-development high water line was at or very near the toe of the bluff (Figure 4). The 1888 MHW was approximately 50 – 100 FT landward of the north half of the pile wall, and approximately 100 – 140 FT landward of the south half of the pile wall.

Comparison of the 1951 and 1968 aerial photos shows that the majority of this area appears to have been filled during this period, with mostly bare soils visible and what appears to be the linear bulkhead (800 FT long) in place by 1968 (Figure 4). South Hidden Beach Road descending the bluff was installed prior to 1968. Extensive clearcutting of the upland forest also occurred shortly before 1968. Some tree cutting may have occurred on the bluff, and several large bluff landslide areas were visible in the 1968 photo.

Houses just south of the study area were not present in either the 1968 or 1972 aerial photos (Figure 4). A loop road and some immature vegetation was present landward of the armor in 1972. The shore armor appeared to have already failed in the southern half and a little farther north by 1990 (image not included), with erosion of fill waterward of the north half of the bulkhead progressing by 1993 (Figure 3b).

By 2009 the full length of the shore armor had failed to the point where extensive erosion (of fill) had progressed (Figure 4). By 2006 (Figure 3a), the erosion line (OHWM) had moved to very near the

Whidbey Telecom access road in the north half of the armor. Much of the shore armor was missing by 2018, as detailed below.

Ownership

The majority of the subject bulkhead and shore area appears to be within Washington State tidelands/WA State Aquatic Lands, which had been leased to Island County (Figures 4 and 5). The landward 60 FT of this reach contains South Hidden Beach Rd (CR-2725), and the area waterward of the road which contains the old bulkhead was apparently leased for a public park (Figure 5).

The parcel along the toe of the adjacent bluff located immediately adjacent to the low elevation proposed project area is owned by the Beachcombers Community Club homeowner's association (Figure 2). A narrow parcel mostly on the bluff face that is immediately north of the proposed project area is partially served by the access road parallel to the project area, and is owned by Whidbey Telecom. Parcels to the south are privately-owned (Figure 2).

Solenne Walker-Westcott, Aquatic Land Manager for North Kitsap and West Island Counties at Washington State Department of Natural Resources (DNR), reported to Chris Robertson and Dennis Clark of DNR, in an email dated 5/14/18:

Encumbrances (see 3 attached maps)

1. An easement for Whidbey Telecom (#51-072908) exists north of the restoration site coordinates provided (see green dot with blue squares for your site coordinates on Encumbrance map).

From the survey, the cable appears to come into the Beachcombers site several hundred feet north of the restoration site coordinates near the red "inactive" dot (see Survey and Aquatic Plate note 4). Depending on how far north the Hidden Beach restoration site extends, a more precise fiber optic cable location and information will likely be needed.

2. As Dennis pointed out, there is an active sand shrimp harvest license at this location (#23-094083 (Morgan Enterprises on Encumbrance map).

The stewardship report linked below is a "combined site" report that applies to this harvest site. The harvest area appears to encompass the entire area of state-owned tidelands here. Further information on the sand shrimp license may be obtained from Bryan Larson, as needed.

Maps listed in the email communication are included as attachments at the end of this report.

Conclusions and Recommendations

This memo documents geology, coastal processes, ownership and site conditions at the low elevation land and beach along South Hidden Beach Drive. The entire low elevation area had been filled prior to 1968 in conjunction with the creation of South Hidden Beach Drive. All of this land is State-owned Aquatic Land that is leased to Island County for the road (60 FT wide) and for public use/public park.

The old pile wall and rock toe protection, along with other areas of boulder, were failed with virtually all of the former horizontal lagging (timbers) missing and most of the piles in the southern half missing. The backfill that was once behind these failed armor structures was largely dispersed, but large areas of rock and debris remained, covering the intertidal and backshore areas. All of this shore

armor was located low on the beach, with most of it between mid tide to MHW, with large areas covering the upper intertidal and backshore from MHW up to the current erosion line. The remaining piles in the southern half appeared to be creosote-treated. The remaining armor material was no longer functioning as a revetment or other coherent shore projection structure (see Photo pages, Figures 3 and 4), but was reducing farther landward erosion.

Removal of the derelict shore armor along the State tidelands (leased to Island County) is feasible. It should be noted that, although the majority of the fill placed in this reach appears to have been eroded, the large volumes of boulders and other debris still act to reduce wave attack on remaining fill in the backshore area such as the areas surrounding the parking lot. Therefore, removing all of the rock and debris without implementing other shore protection measures would cause erosion of the remaining backshore fill and could potentially threaten the slope and Hidden Beach Road traversing the bank from the north, as well as the area around the parking lot. Appropriate mitigation measures for minimizing the impacts of this projected erosion are included in the proposed project, as described below.

Armor Removal and Restoration Project Description

Project Summary

The primary purpose of the project is to achieve nearshore restoration through beach armor removal and telecom access road removal; narrowing of the existing parking lot; beach regrading, repair, and nourishment; beach berm setback and reinforcement; and backshore/berm vegetation enhancement. Necessary replacement shore protection measures are considered in critical areas that would be threatened by erosion over a longer planning horizon. Where this is considered, design specifications call for maximum armor setback and substantially-reduced armor footprints.

The existing armor on the lower beach and near the existing bank includes creosote-treated and untreated wood piles, wood lagging, angular boulders, concrete bags, and other concrete and metal debris. They are currently directly burying valuable nearshore habitat and impeding processes of littoral sediment transport and sediment contribution from the associated historical feeder bluff. The proposed armor removal will uncover 23,000 square feet (SF) of beach area, including 17,000 SF above current MHHW and 6,000 SF below MHHW (9.07 FT NAVD88). In addition, approximately 13,000 SF of new beach area will be restored through removal of the telecom access road, downsizing the existing parking lot, regrading the existing bank, and setting back the new beach berm.

Approximately 1,064 cubic yards (CY) of shore armor and debris will be removed from the beach. Approximately 400 CY of sand and gravel fill is proposed to be introduced to aid in regrading and filling the voids left by shore armor removal in the lower beach and beach nourishment above MHHW. An estimated 250 CY of nourishment mix will be applied above current MHHW, and approximately 150 CY of nourishment mix will be applied below current MHHW. Additionally a total of 15,500 SF (0.36 acres) of native planting area will be introduced on the backshore to enhance stabilization and improve post-restoration habitat complexity.

Benefits conferred by this project action include:

- ◆ Enhanced nearshore habitat
- ◆ Aesthetic benefits

- ◆ Improved and safer public beach and water access (at DNR-owned, Island County-leased land)
- ◆ Exchange of terrestrial and aquatic nutrients (insects, invertebrates, organic material, etc.) from restored cross-shore connectivity
- ◆ Removal of toxic, creosote-treated wood from the nearshore environment

Design specifications are discussed briefly in this section, and design drawings sufficient for permitting are provided in Sheets 1 – 7 (attached). Detailed technical design specifications will be developed for project implementation separately.

Proposed Project Plan

The proposed beach restoration project consists of following components and actions. More details are presented in subsequent sections and associated design drawing sheets.

Beach and Backshore Cleanup

- ◆ Remove and stockpile large armor rocks and several concrete pieces for reuse where new shore protection (retaining wall or revetment) is required
- ◆ Remove medium armor rock for reuse where possible (revetment)
- ◆ Stockpile large untreated wood and logs for reuse
- ◆ Remove untreated wood piles and stockpile with large wood for reuse
- ◆ Remove and dispose of creosoted piles, wood lagging, and railroad ties
- ◆ Remove and dispose of failed concrete bag revetment, except for the southernmost 10 FT-long section
- ◆ Remove and dispose of concrete rubble, metal pieces and other beach debris

Beach Regrading and Nourishment

- ◆ After beach cleanup, cut down into existing bank, fill and build a new backshore berm; regrade locally to form more natural beach profile
- ◆ Repair beach voids and depressions in patches with approved nourishment material (gravel-sand mix) after rock removal
- ◆ Beach enhancement with nourishment sediment from MHHW landward up to elevation 12 FT where needed

Shore Protection/Slope Stabilization

- ◆ Repair existing revetment at the southernmost 10 FT section next to the existing concrete seawall at far south end
- ◆ Install a half-buried retaining wall (bulkhead) at far south end using salvaged rock and concrete. The wall will tie into to the existing revetment and extend landward to the new beach berm
- ◆ Downsize the existing parking lot by removing the waterward edge and install a half-buried retaining wall (bulkhead) along the new edge for flood protection
- ◆ Install a half-buried retaining wall (bulkhead) at the toe of the slope waterward of the Hidden Beach Drive hillside using salvaged rock

Backshore Planting and Landscaping

- ◆ Provide ADA backshore beach access using salvaged concrete pads
- ◆ Define/stripe parking spaces
- ◆ Install native beach vegetation along the new backshore berm
- ◆ Install marine riparian vegetation (native shrub and trees) in a greenbelt landward of the new beach berm

Beach Cleanup and Restoration

Beach and Backshore Cleanup

Shore armor removal will take place along the entire approximately 350 FT length of the north section and 450 FT length of the south section (as defined previously in this report). Creosote-treated wood piles, metal debris, wood lagging, and railroad timber ties will be mechanically removed from the beach and backshore and hauled off site. Larger pieces of concrete rubble (approximately 100 CY) from the beach and the large concrete pad (approximately 10 CY) present in the backshore south of the existing parking lot will all be removed with minor reuse to provide backshore access. Unused concrete debris will be hauled off site.

Large (3-man and larger) and medium-sized (1 or 2-man) rock (with sides greater than 1 FT in length), estimated at a total volume of 725 CY, will be removed from the beach and sorted and stockpiled for possible reuse. It is anticipated that approximately 350 CY (approximately 48%) of appropriately-sized angular rock would be reused in this project for the three new proposed retaining walls (bulkheads), revetment repair as necessary, and as backshore protection measures in critical areas. The remaining rock would be hauled off site. Further details on shore protection are presented in the next section.

Large woody debris present at the site will be removed and stockpiled to allow for retrieval of underlying armor rock. Untreated wood piles will be likewise removed and stockpiled with the drift logs, and will later be placed along the new beach berm for increased habitat complexity.

Whidbey Telecom Access Drive

Whidbey Telecom single lane access drive runs north from the parking lot near the toe of the coastal bluff. Historical aerial photos revealed that the driveway had been significantly eroded several times in the past as a result of storm impact (Figure 2a). Additional investigation of future erosion projections and ownership/easements was conducted for this area over the winter of 2018-2019. It was concluded that the access drive would be further undermined with full armor removal on the beach unless the road was upgraded to a higher crest elevation and its waterward bank was fully armored.

CGS enquired about and discussed the high erosion potential of the existing access driveway with DNR (the landowner) and the Northwest Straits Foundation (the project sponsor). CGS was directed by DNR in an email on 2/26/19 from Chris Robertson, Restoration Manager for the Aquatic Restoration Program, Washington State DNR, that there was not a need to preserve this Whidbey Telecom access and that it should be removed and revegetated. This direction included allowance for removing the road fill prism and creating a planting plan for this area. Full abandonment of the access driveway will provide extra setback space that is required for natural beach recovery.

Beach Regrading and Nourishment

In addition to the recovery of buried beachface by removing shore armor and debris, the beach restoration involves regrading beach profiles by cutting down the existing shore bank, converting the existing Whidbey Telecom Access Road (a primitive gravel road) back to beach, downsizing the existing parting lot, and implementing selective beach nourishment with native beach gravel and sand mix. This will achieve the formation of a more natural beach slope and a higher beach berm at a farther setback position than is currently present. Vegetation will be installed on top and landward of the beach berm to enhance bank and berm stability.

The existing 12-car parking lot will be trimmed back by 10 FT and downsized to a 9-car parking lot, and will include one designated ADA parking spot next to the beach access ramp near the northwest corner of the parking lot. A short ADA-accessible backshore beach access will be constructed with salvaged concrete pieces placed atop compacted small rock.

For beach nourishment, 270 CY of rounded gravel with sizes of 1.5-4" will be imported and mixed with approximately 130 CY of native sand from the site, yielding a beach nourishment sediment that is approximately 30% native sand and 70% imported beach gravel. Beach nourishment will be implemented for the upper beach above MHHW up to an elevation of 12 FT, and for filling depressions left on the lower beach surface after rock removal.

Native backshore vegetation will consist of native shrub and tree species, and native dunegrass (*Leymus mollis*). A mature 7,300 SF of marine riparian shrub and tree greenbelt landward of the new berm and 8,300 SF of dunegrass coverage waterward of the greenbelt will cover the rockery retaining walls, not only aiding in the stabilization of the new beach backshore but also enhancing post-restoration habitat complexity and aesthetics.

Shore Protection/Slope Stabilization

Full removal of shore armor will result in lowering of beach elevations and the will necessitate other actions near the newly exposed bank area. The only existing functional features landward of the shore armor within the project area are the access drive (installed by Whidbey Telecom) at north, the Hidden Beach Drive hillside, the paved parking lot near the middle of the project area, and the revetment at the south boundary adjacent to the concrete seawall. The feasibility of this project is contingent upon the possibility of preserving or abandoning these features. Most parts of the southern project section consist of a backshore waterward of approximately 40-75 FT of unused land, which allows for the natural retreat of the shoreline and full recovery of a stable beach profile.

Hidden Beach Drive on the Bank

Issues of slope stability and recent mitigation measures at the road on the hillside bank were outlined in the *Geology and Slope Stability* section earlier in this report. The roadway on the bank running down-slope towards the beach area already has slope stability problems. Full armor and debris removal would cause significant beach lowering in the upper intertidal and backshore area here. Installation of a new retaining wall (bulkhead) comprised of reused rock material becomes necessary in this critical area to maintain slope stability and protect the only community access road.

A 315 FT long rockery retaining wall is proposed for slope stabilization at the toe of the bank slope below Hidden Beach Drive. The wall would require approximately 180 CY of salvaged angular rock

from the site. This wall will be approximately 55-65 FT landward of the existing row of piles on the beach.

Parking Lot

The waterward edge of the parking lot would likely be threatened with erosion over the medium term with full armor removal. This would not be effectively preventable using other soft shore protection measures. However, the parking lot was fairly large in the cross-shore direction, and the proposed downsizing of the parking lot width by 10 - 12 FT to a total width of 20 FT as detailed in the restoration design sheets would allow for installation of a rockery retaining wall for bank protection and a greenbelt on the new beach berm in front of the parking lot.

The proposed retaining wall is similar to the retaining wall below the Hidden Beach Drive road, with a total length of 120 FT. This would incorporate approximately 80 CY of salvaged rock.

Lower Hidden Beach Road

The road along the low elevation shore south of the parking lot is the most landward improvement at the project site. The road here is far enough landward to not be threatened by erosion, even with full removal.

South-End Revetment

The existing revetment adjacent to the concrete seawall at the south end of the project area was constructed from concrete bags. Concrete bags were partially covered with rock at the lower part of the revetment, which was likely placed later as the original concrete bag slope was failing and deteriorating. Poured concrete was also likely used to repair the top of the concrete bag revetment. Full removal of this revetment could compromise the integrity of the adjacent, existing concrete seawall. As such, a 10 FT-long section of the existing revetment adjacent to the seawall will be maintained and repaired by installing large toe rocks and placing additional armor rocks on failed parts of the slope. The remaining revetment beyond the 10 FT reach will be removed and replaced with a rockery retaining wall tied into the existing revetment and extending 50 FT landward to the south end of the new beach berm. This retaining wall will ensure the existing seawall and the neighboring properties to the south are not negatively impacted by this beach restoration project.

Material Quantity and Cost Estimate

A summary of material quantities and cost estimates for the proposed project are summarized and will be delivered in a separate document. Material quantities are broken into tonnage (long ton) for cost estimate based on the estimated volumes presented in Table 1.

Limitations of This Report

This report was prepared for the specific conditions present at the subject property to meet the needs of specific individuals. No one other than the landowner and their agents should apply this report for any purposes other than that originally contemplated without first conferring with the geologist that prepared this report. The findings and recommendations presented in this report were reached based on a brief field visit. The report does not reflect detailed examination of sub-surface conditions present at the site, or drainage system designs, which are not known to exist. It is based

on examination of surface features, bank exposures, soil characteristics, gross vegetation characteristics, and beach processes. In addition, conditions may change at the site due to human influences, floods, groundwater regime changes, or other factors. This report may not be all that is required to carry out recommended actions. More detailed design specifications may be needed for proper implementation of a habitat enhancement project.

References

- Coastal Geologic Services, 2016. Beach Strategies for Puget Sound Recent Work Update.
- Evangelisti, C., 2014. Repair Alternatives Evaluation: Hidden Beach Drive Slide Repair, Island County, Washington. Landau Associates.
- Johannessen, J., 2018. Hidden Beach Potential Bulkhead Removal - Initial Site Visit. Coastal Geologic Services, Inc.
- Johannessen, J.W., Chase, M.A., 2005. Feeder Bluff and Accretion Shoreform Mapping in Island County, WA. (Prepared for Island County Marine Resources Committee, Coupeville, WA). Coastal Geologic Services, Inc.
- MacLennan, A.J., Johannessen, J.W., Williams, S.A., Gerstel, W., Waggoner, J.F., Bailey, A., 2013. Feeder Bluff Mapping of Puget Sound. Prepared by Coastal Geologic Services, for the Washington Department of Ecology and the Washington Department of Fish and Wildlife. Bellingham, WA. 118p.
- Polenz, M., Schasse, H.W., Kalk, M.L., Petersen, B.B., 2009. Geologic Map of the Camano 7.5-minute Quadrangle, Island County, Washington: Washington Division of Geology and Earth Resources Geologic Map GM-68, 1 sheet, scale 1:24,000.

ATTACHMENTS:

Figure 1. Location and net shore-drift map

Figure 2. Parcel boundaries, ID numbers, and ownership map

Figure 3a-3b. Oblique aerial photos 1993-2016

Figure 4. Historical vertical aerial photos of proposed armor removal area at Hidden Beach 1951-2009

Figure 5. Exhibit: Island County lease (2002)

Photo Page 1. Ground photos of north half of bulkhead taken June 29, 2018

Photo Page 2. Ground photos of south half of bulkhead taken June 29, 2018

Photo Page 3. Ground photos of Hidden Beach Road, taken March 9, 2019

Hidden Beach Encumbrances (from DNR)

Survey 51-072908 (from DNR)

Aquatic Plate ts15_022 (from DNR)

Design Sheets 1-7

This project has been funded wholly or in part by the United States Environmental Protection Agency (EPA) under assistance agreement PC-011J22301 through the Washington Department of Fish and Wildlife (WDFW). The contents of this document do not necessarily reflect the views and policies of the EPA or WDFW, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

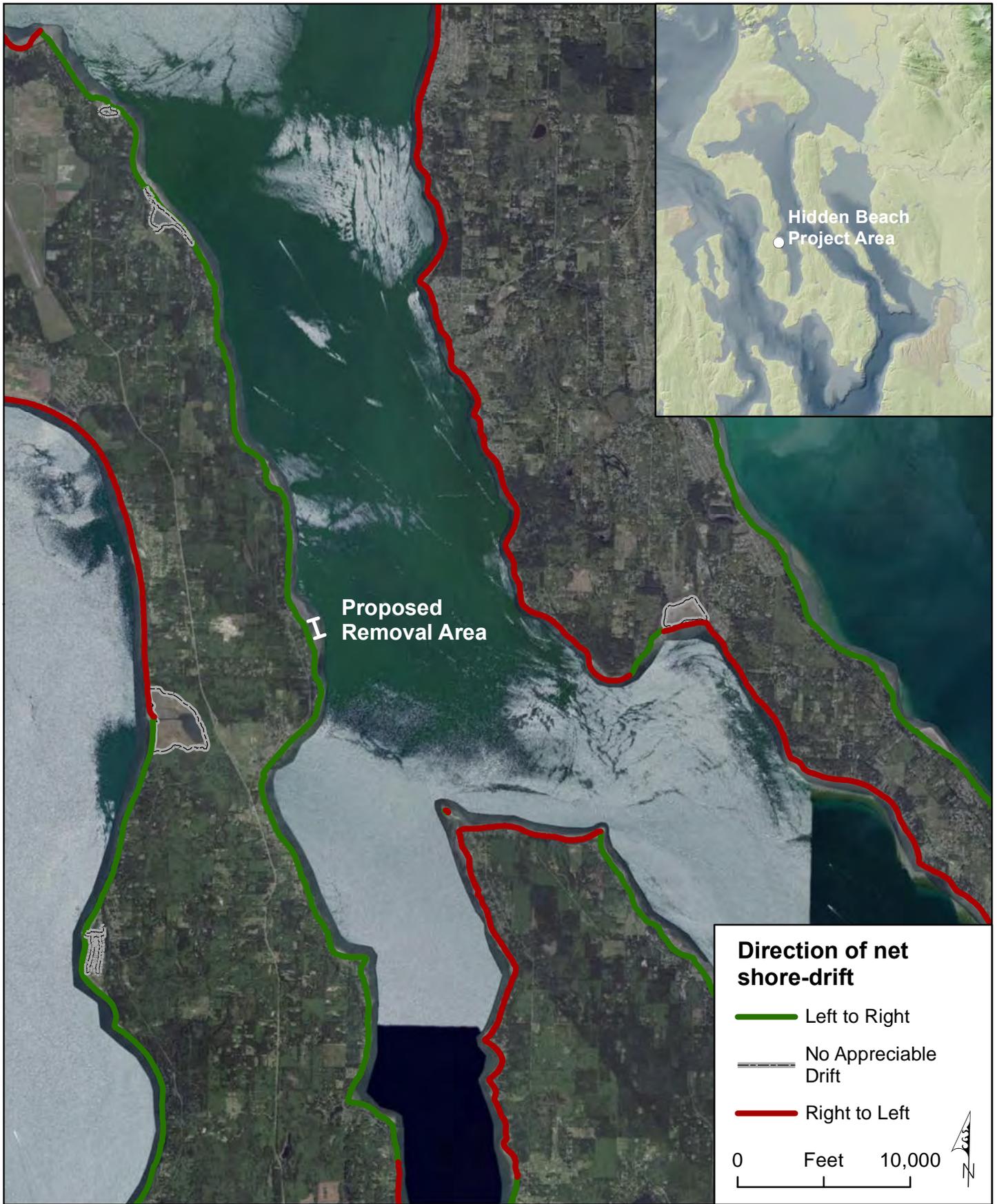


Figure 1. Proposed armor removal area at Hidden Beach, Whidbey Island, WA.

Direction of net shore-drift shown. Basemap imagery courtesy Esri.

Hidden Beach Armor Removal - Northwest Straits Foundation



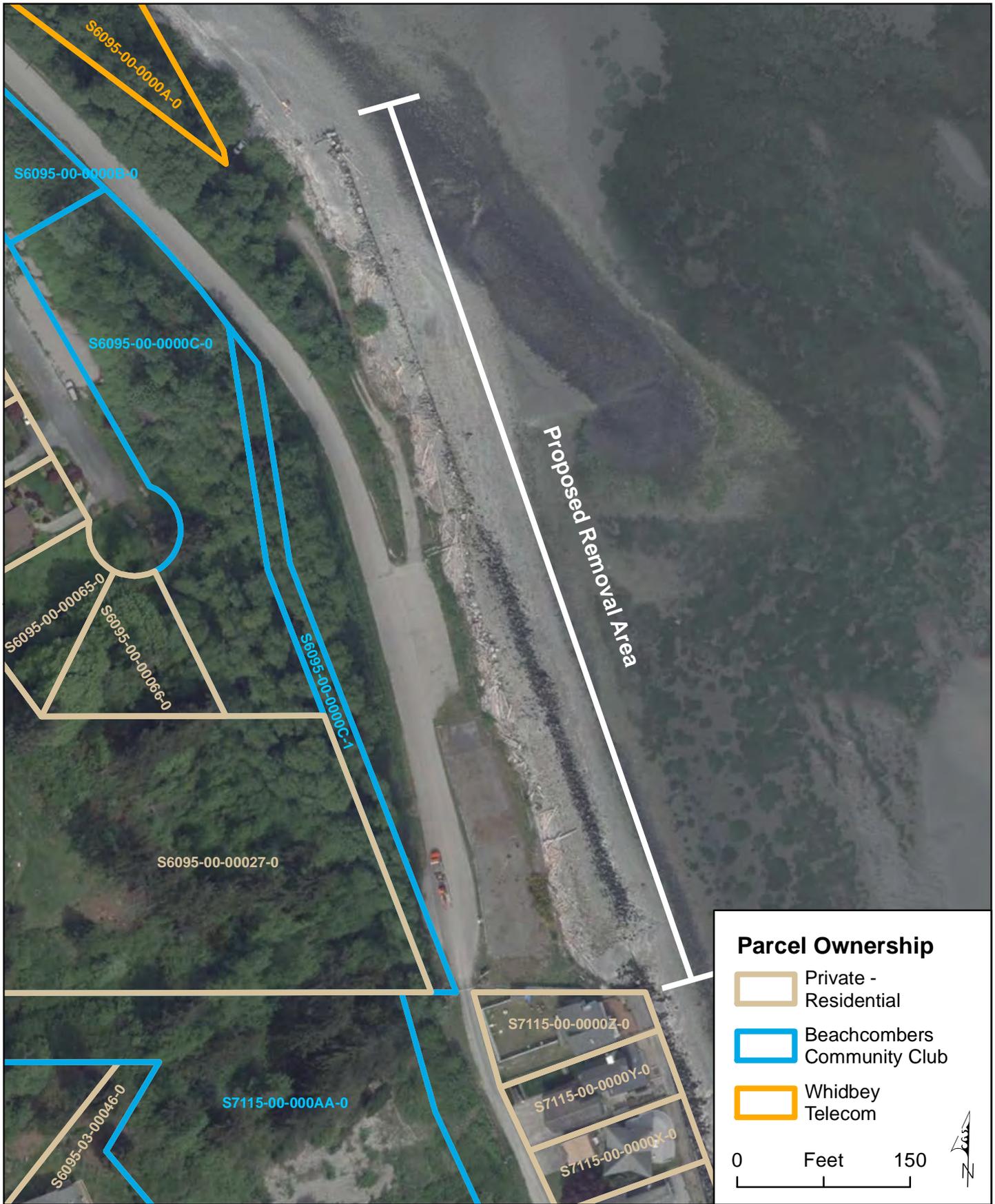


Figure 2. Parcel boundaries, ID numbers, and ownership for properties adjacent to proposed armor removal project area. Basemap imagery courtesy Esri.
 Hidden Beach Armor Removal - Northwest Straits Foundation



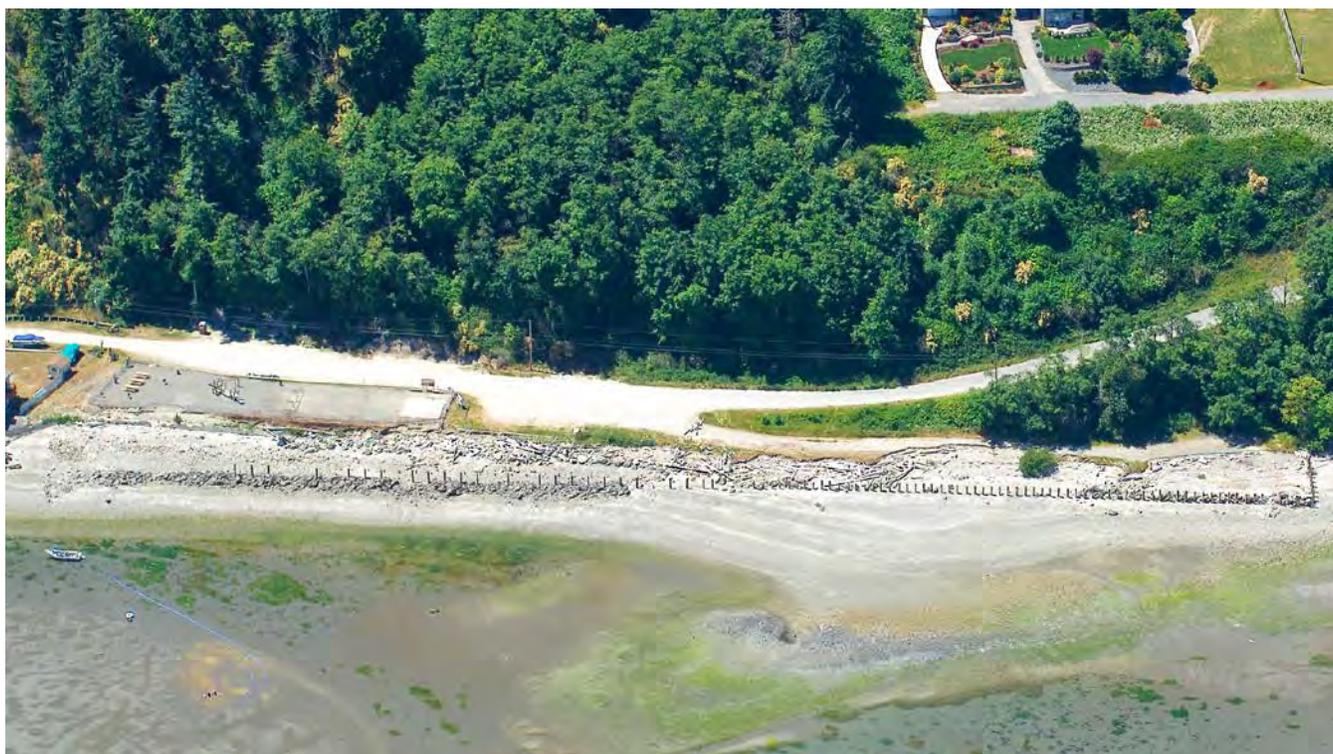
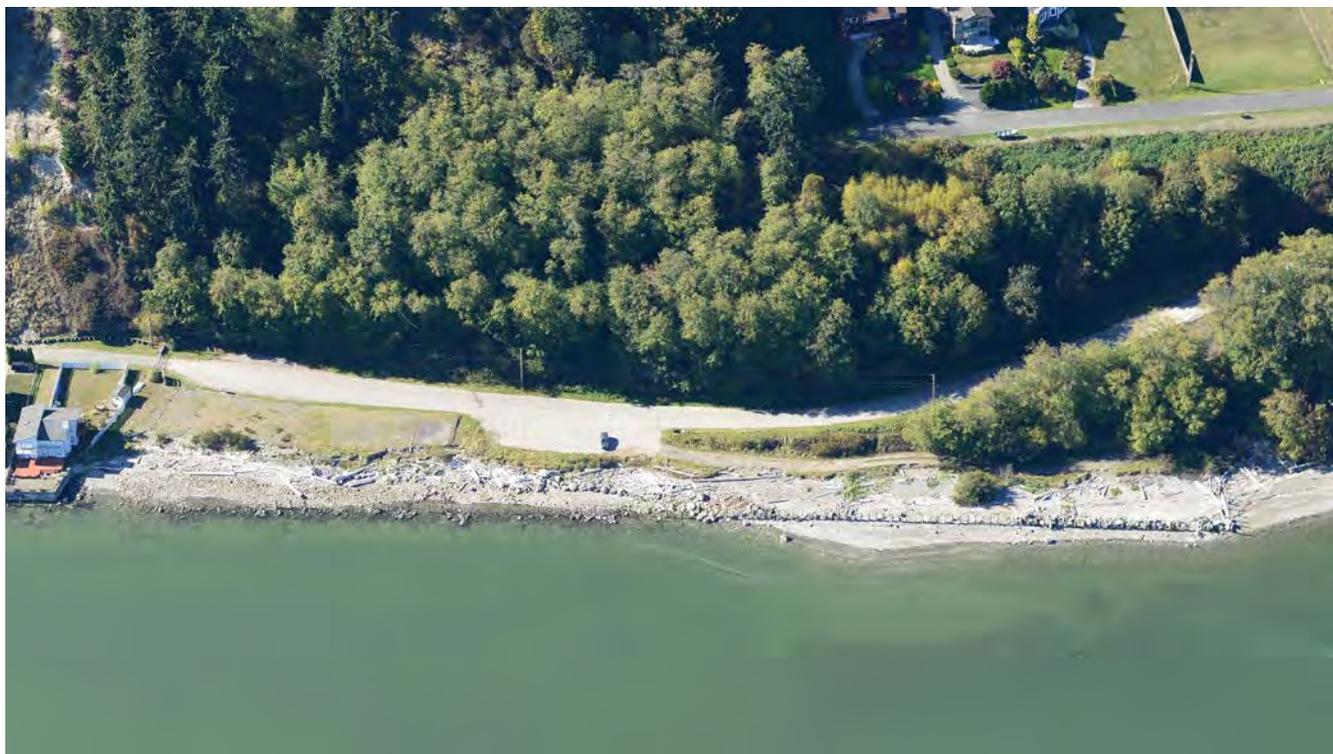


Figure 3a. Oblique aerial photographs of proposed armor removal site at Hidden Beach, 2016 (top), 2006 (bottom). Images courtesy WDOE.



Figure 3b. Composite oblique aerial photographs of proposed armor removal site at Hidden Beach, 2001 (top), 1993 (bottom). Side-by-side images made to overlap to show entire area of interest. Images courtesy WDOE.

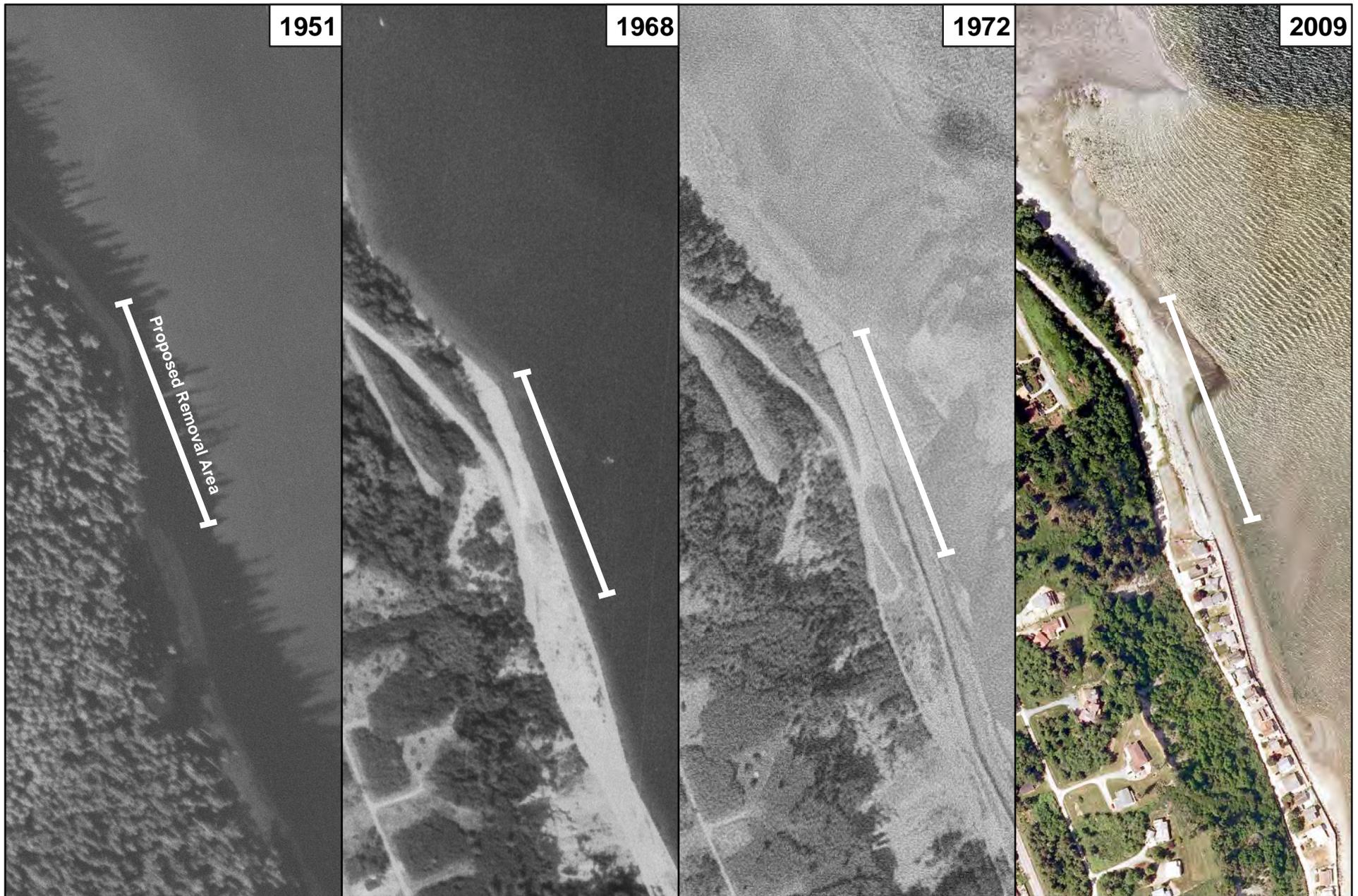
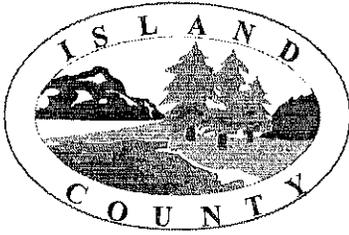


Figure 4. Historical vertical aerial photos of proposed armor removal area at Hidden Beach.

Imagery courtesy USGS 1951, 1968, 1972; Aerials Express 2009.

Hidden Beach Armor Removal - Northwest Straits Foundation





*ISLAND COUNTY PUBLIC WORKS
ROADS DIVISION*

*P.O. BOX 5000, COUPEVILLE, WA 98239
(360) 679-7331*

*William E. Oakes, P.E., Director/County Engineer
Gwenn Maxfield, Asst. Director
Randall C. Brackett, P.E., Asst. County Engineer*

MEMORANDUM

August 17, 2006

TO: File

FROM: Pete Seybert, PE

RE: Property Ownership Along the Shoreline East of The Beachcombers (Div. #1)

On Monday August 14th, 2006, I received a call late in the afternoon from Ms. Nancy Zaretzke regarding The Beachcombers plat. Nancy indicated there were several individuals who indicated to her that they lived in The Beachcombers plat and that the shoreline property was private. She was not allowed to use the area for recreational purposes. Nancy told me that she had visited the location previously and not had any difficulties. She also indicated that there were 'Private Property, No Trespassing' signs along with a yellow SEPA sign indicating a proposal to perform shoreline development.

I checked with Matt Kukuk, Shoreline Planner, in the Planning/Community Development Department. Matt indicated that The Beachcombers Community Club had applied for a permit to perform shoreline stabilization/repair work in that area.

I indicated that the land was possibly publicly owned (State Tidelands) and that I would do research our records and get back to him. The following is the results of my research regarding the above property lying directly east of The Beachcombers (Div. #1) plat:

1. Plat of The Beachcombers, now known as Division #1, Recorded July 11, 1960 in Volume 6, Page 72 of Plats Records of Island County Auditors File Number (AFN) 130289. This shows that the plat lots, tracts, and roads extend east to the meander line.
2. Quit Claim Deed (QCD) from Whidbey Shores, Inc. to Joseph H. Lewis and Ora A. Lewis, recorded September 7, 1962 (AFN #147146), QCD from Joseph H. Lewis and Ora A. Lewis to Beachcombers Community Club, recorded September 7, 1962 (AFN #147210), along with an Affidavit and Real Estate Sales Tax Receipt (No. 14090), indicating sale of the land described in the above QCD from Joseph H. Lewis and Ora A. Lewis to Beachcombers Community Club. The

property legal descriptions in the above documents describe a strip of land approximately 20-feet in width along the eastern edge of Tract C in the plat of The Beachcombers, as reported in Volume 6, Page 72 of Plats, Records of Island County.

"The object of the above conveyance," as described in the Affidavit and Real Estate Sales Tax Receipt, "is to create a community beach for purchasers of lots in the Beachcomber additions as mentioned in the said deed. Sales tax will be paid covering any consideration for this particular transaction on the sale of lots in said subdivision for this deed." A county parcel was established recognizing the above deed: S6095-00-0000C-1.

3. Easement from the State of Washington Department of Natural Resources (DNR) was granted to Island County for "Right of Way for County Road over and to use for Public Park and Recreational Purposes, certain Second Class Tidelands in Island County", recorded under AFN #164180 on August 4, 1964. A county parcel was established recognizing this easement: R23133-178-2400.

Given the above information it is understood by the Departments of Island County Public Works and the Assessors Office that the parcel deeded to the Beachcombers Community Club, associated with item number 2 above, identified as C-1 on the Assessor's quarter section maps was located erroneously east of the Hidden Beach Road, in the same location as the DNR easement to Island County, rather than where it is described west of the existing Hidden Beach Road and west of the meander line (ordinary high tide line).

Based on the above, any work performed on the Second Class Tidelands other than that by Island County for County Road use and for Public Park and Recreational Purposes consistent with the Easement granted by DNR, will require DNR approval.

Attachments: Plat of The Beachcombers, AFN 130289

QCD from Whidbey Shores, Inc. to Joseph H. Lewis and Ora A. Lewis, AFN #147146

QCD from Joseph H. Lewis and Ora A. Lewis to Beachcombers Community Club, AFN #147210

Affidavit and Real Estate Sales Tax Receipt (No. 14090)

Department of Natural Resources Easement to Island County, AFN # 164180

Cc: The Beachcombers Plat file
The Beachcombers Tract C file
Island County Assessors Office
Island County Planning Department
Island County General Services Administration, Parks and Recreation Department
Section File
Day file

147146
QUIT CLAIM DEED

147146

BUCKET SOUND
TITLES INSURANCE COMPANY

RECORDED
VOL. 122 - Leeds
PAGE 1/2 REQUEST OF
Wright, Beach, Beresford & Anderson
SEP 7 9 45 AM 1962

J. W. LUDSY, AUDITOR
L. A. RIVERA, CLERK

Indexed By: LD
Compared By: _____

Mailed to
Wright, Beach, Beresford
& Anderson Corp.
700 Olympic West, Life Bldg.
920 Second Ave. - Seattle 4
Send This Statement to _____

Quit Claim Deed
(CORPORATE FORM)

Form 101-C-Rev.
EXCISE TAX EXEMPT
ISLAND COUNTY TREASURER

THE GRANTOR, WHIDBEY SHORES, INC.,

By Harry O. Lange

for and in consideration of ONE DOLLAR (\$100) and other valuable consideration,
conveys and quit claims to JOSEPH H. LEWIS and ORA A. LEWIS, his wife,

the following described real estate, situated in the County of Island,
State of Washington: That portion of Tract "C" in the Plat of the Beachcombers,
as recorded in Volume 6 of Plats, page 72, records of Island County, Washington,
and Government Lot 3 in Section 33, Township 31 North, Range 2 East, W.M.,
Island County, Washington, described as follows: Beginning at the SW corner
of said Section 33; thence N 00°38'56" E along the westerly limits of said
Section 33 1,318.92' to the SW corner of the NW 1/4 of the SW 1/4 of said
Section 33; thence N 88°53'47" E along the southerly limit of said NW 1/4 of
the SW 1/4 and said Government Lot 3 2,253.08' to the True Point of Beginning;
thence N 22°09'52" W 393.69'; thence N 10°09'04" W 316.62' to the southwesterly
right of way line of Seashore Lane in said plat; thence S 54°02'25" E along
said right of way line 28.85'; thence N 10°09'04" W along the easterly boundary
of said plat 70.85'; thence easterly to the ordinary high tide line; thence
southeasterly along the ordinary high tide line to the southerly limits of
said Government Lot 3; thence S 88°53'47" W along the southerly limits of
Government Lot 3 to the True Point of Beginning;

The object of this deed is to release the interest of Grantor in and to
the above described property by virtue of that certain contract of sale entered
into between the Grantees and Grantor under date of March 25, 1960, including
the above and other properties and for the additional purpose of making avail-
able to Beachcombers Community Club community beach promised in sales of lots.
IN WITNESS WHEREOF, said corporation has caused this instrument to be executed by its proper officers
and its corporate seal to be hereunto affixed this _____ day of _____, 19 62.



STATE OF WASHINGTON,
County of ISLAND

WHIDBEY SHORES, INC.

By Harry O. Lange President

By William B. Ruysh Secretary

On this 29th day of June, 19 62 before me, the undersigned,
a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared

J. W. Templeman and _____
President and Secretary, respectively, of

WHIDBEY SHORES, INC.,
the Corporation who executed the foregoing instrument, and acknowledged the said instrument to be the free and
sole act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that
they were authorized to execute the said instrument and that the seal affixed is the corporate seal of said
corporation.

I spread my hand and official seal hereto affixed the day and year first above written.

Notary Public in and for the State of Washington
residing at Seattle.

XERO COPY

XERO COPY

XERO COPY

147210

FILED FOR RECORD AT SEASIDE, WASH.
Sept. 11, 1962, at request of
Elliot, Lee, Carney, & Thomas, Attys
L. W. LIBBEY, AUDITOR
ISLAND COUNTY, WASH.

QUITCLAIM DEED

The Grantors, JOSEPH H. LEWIS and ORA A. LEWIS, his wife, for value received, convey and quitclaim to BEACHCOMBERS COMMUNITY CLUB, INC., the Grantee, the following described real estate, situated in Island County, State of Washington, together with all after acquired title of Grantors therein:

That portion of Tract "C" in the Plat of the Beachcombers, as recorded in Volume 6 of Plats, page 72, records of Island County, Washington, and Government Lot 3 in Section 33, Township 31 North, Range 2 East, W. M., Island County, Washington, described as follows:

Beginning at the SW corner of said Section 33; thence N 00°38'56" E along the westerly limits of said Section 33 1,318.92' to the SW corner of the NW 1/4 of the SW 1/4 of said Section 33; thence N 88°53'47" E along the southerly limit of said NW 1/4 of the SW 1/4 and said Government Lot 3 2,253.08' to the True Point of Beginning; thence N 22°09'52" W 393.69'; thence N 10°09'04" W 316.62' to the southwesterly right of way line of Seashore Lane in said plat; thence S 54°02'25" E along said right of way line 28.85'; thence N 10°09'04" W along the easterly boundary of said plat 70.85'; thence easterly to the ordinary high tide line; thence southeasterly along the ordinary high tide line to the southerly limits of said Government Lot 3; thence S 88°53'47" W along the southerly limits of Government Lot 3 to the True Point of Beginning;

This conveyance is made to the Grantee on the condition, which the Grantee hereby accepts, that the said property will be held and used for the use and benefit of the members of the Grantee, and that membership in the Grantee shall be extended on reasonable terms and conditions to all purchasers of lots in the following tracts: The Beachcombers and Beachcomber Numbers 2, 3, 4 and 5; and in addition thereto the purchasers of any lots in plats hereafter filed, including any property described in a real estate contract dated March 25, 1960, between Joseph H. Lewis and Ora A. Lewis, his wife, as sellers, and Whidbey Shores, Inc., a corporation, as purchaser, all of which said tracts and property are situated in Island County, Washington.

DATED This 4th day of July, 1962.

EXCISE TAX EXEMPT
ISLAND COUNTY TREASURER

Robert E. Zylstra

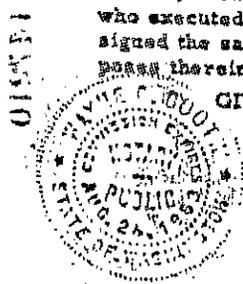
Joseph H. Lewis
Ora A. Lewis

STATE OF WASHINGTON)
COUNTY OF KING) ss.

On this day personally appeared before me JOSEPH H. LEWIS and ORA A. LEWIS, his wife, to me known to be the individuals described in and who executed the within and foregoing instrument, and acknowledged that they signed the same as their free and voluntary act and deed, for the uses and purposes therein mentioned.

GIVEN under my hand and official seal this 5th day of Sept, 1962.

Sharon G. Brock
NOTARY PUBLIC in and for the State of
Washington, residing at Seattle



AFFIDAVIT and REAL ESTATE SALES TAX RECEIPT

14090

No.

1. reg.
H. B.
CF

PURSUANT TO COUNTY COMMISSIONER'S RESOLUTION
COUPEVILLE, ISLAND COUNTY, WASHINGTON

STATE OF WASHINGTON,
COUNTY OF ISLAND

This Becomes Your Receipt When Stamped Paid by
County Treasurer. Payment Must Be Made by Cash or
Certified Check.

ISLAND COUNTY TREASURER

ELVIN P. CARNEY, Agent for Buyer, being first duly sworn on

oath deposes and says:
That the following information, relative to the sale of real estate is true and correct.

Seller's Name Joseph H. & Ora A. Lewis
Address 3403. Cascadia S., Seattle, Wash.
Buyer's Name Beachcombers Community Club, Inc. Seattle, Wash.
Address c/o Whidisle Corp., 555 Dexter Horton Bldg., Wash.
Date of Instrument Sept. 4, 1962 Date of Delivery to Purchaser Sept. 7, 1962
Nature of Instrument Quit Claim Deed
Full Sale Price, Including Any Mortgage or Indebtedness Assumed \$150* None Secured
Legal Description of Property Conveyed That portion of Tract "C" in Plat
of Beachcombers as recorded in Vol. 6 of Plats, p. 72, records of Island County,
Wash., & Government Lot 3 in Sec. 33, Twp. 31 N., R. 2 E. W. M., described as follows:
Beg. at SW corner of said sec. 33, thence N 00° 38' 56" E along the westerly limits o-
said sec. 33 1.318.92' to SW corner of NW 1/4 of SW 1/4 of said sec. 33, thence N
88° 53' 47" E along the southerly limit of said NW 1/4 of SW 1/4 & said Government
Lot 3 2.253.08' to tr. pt. of beg., thence N 22° 09' 52" W 393.69'; thence N 10° 09'
04" W 316.62' to the southwestly right of way line of Seashore Lane in said
Plat; thence S 54° 02' 25" E along said right of way line 28.85'; thence N 10° 09'
04" W along easterly boundary of said plat 70.85'; thence easterly to ordinary
high tide line; thence southeasterly along ordinary high tide line to southerly
(cont'd on back)

SELLING PRICE	SALES TAX
TAX	
PENALTY	
TOTAL	

EXCISE TAX EXEMPT
ISLAND COUNTY TREASURER

BY *PEJ*

12/27/1

Signature

SUBSCRIBED AND SWORN to before me this

10th day of September, 1962

Notary Public in and for the State of Washington, residing at Seattle

Limits of said Government Lot 3; thence S 88° 53' 47" W along the southerly
Limits of Government Lot 3 to Tr. Pt. of Beg.

The object of above conveyance is to create a community beach for
purchasers of lots in the Beachcomber Additions as mentioned in said
deed. Sales tax will be paid covering any consideration for this
particular transaction on the sale of lots in said subdivision and
accordingly there is no actual consideration for this deed.

DUPLICATE

R23133

164189

64 b18

178-240

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES
BERT L. COLE, Commissioner of Public Lands

RECORDED
VOL 134 - Leads
PAGE 492
COUNTY COMMISSIONERS
AUG 4 4 99 PM 1964

In re: Application No. 2725 by Island
County for an Easement for County Road
over and use of, for Park Purposes,
certain Second Class Tidelands in
Island County

BY ORDER
M. M. O'Brien

ORDER

Indexed By
Compared By

It appearing to the Commissioner of Public Lands that Application
No. 2725 has been filed in this office by the Board of County Commissioners
of Island County for an easement for right of way for county road over and
to use for public park and recreational purposes, the following described
second class tidelands in Island County:

The tidelands of the second class, owned by the State of
Washington, situate in front of, adjacent to, or abutting upon
the South 690.14 feet of Government Lot 3, Section 33, Township
31 North, Range 2 East, W.M., with a frontage of 11.00 lines
more or less.

729.76

and
It further appearing that there is no merchantable timber on the
above described area; that no good reason exists why an easement for right
of way for county road over and the use for public park and recreational
purpose of the above described tidelands of the second class should not
be granted; and the Commissioner being fully advised, it is therefore

ORDERED and DETERMINED that the plat showing the survey of the
required right of way and public park and recreational area as filed with
said application be and the same is hereby approved and that an easement
for right of way for county road over and the use for public park and
recreational purposes of the above described tidelands of the second class
be and the same is hereby granted to Island County.

Done this 17th day of July, A. D., 1964.

EXAMINED AND APPROVED
AUG 3 1964

S. F. Andrew
Jr. App. No. 2725



STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

By Burdette
BERT L. COLE
Commissioner of Public Lands

EXCISE TAX EXEMPT
ISLAND COUNTY TREASURER

BY Harry B. Lang

vol 134 page 492

In Comp
3/19/87
KB

Key 574324



Photo Page 1. Ground photographs of the north half of shore armor at Hidden Beach, taken June 29, 2018.



Photo Page 2. Ground photographs of the south half of shore armor at Hidden Beach, taken June 29, 2018.



Lowest (southernmost) road crack area



Lowest (southernmost) road crack area



Second road crack area, north of lowest road crack area



Third road crack area, facing downhill (south)

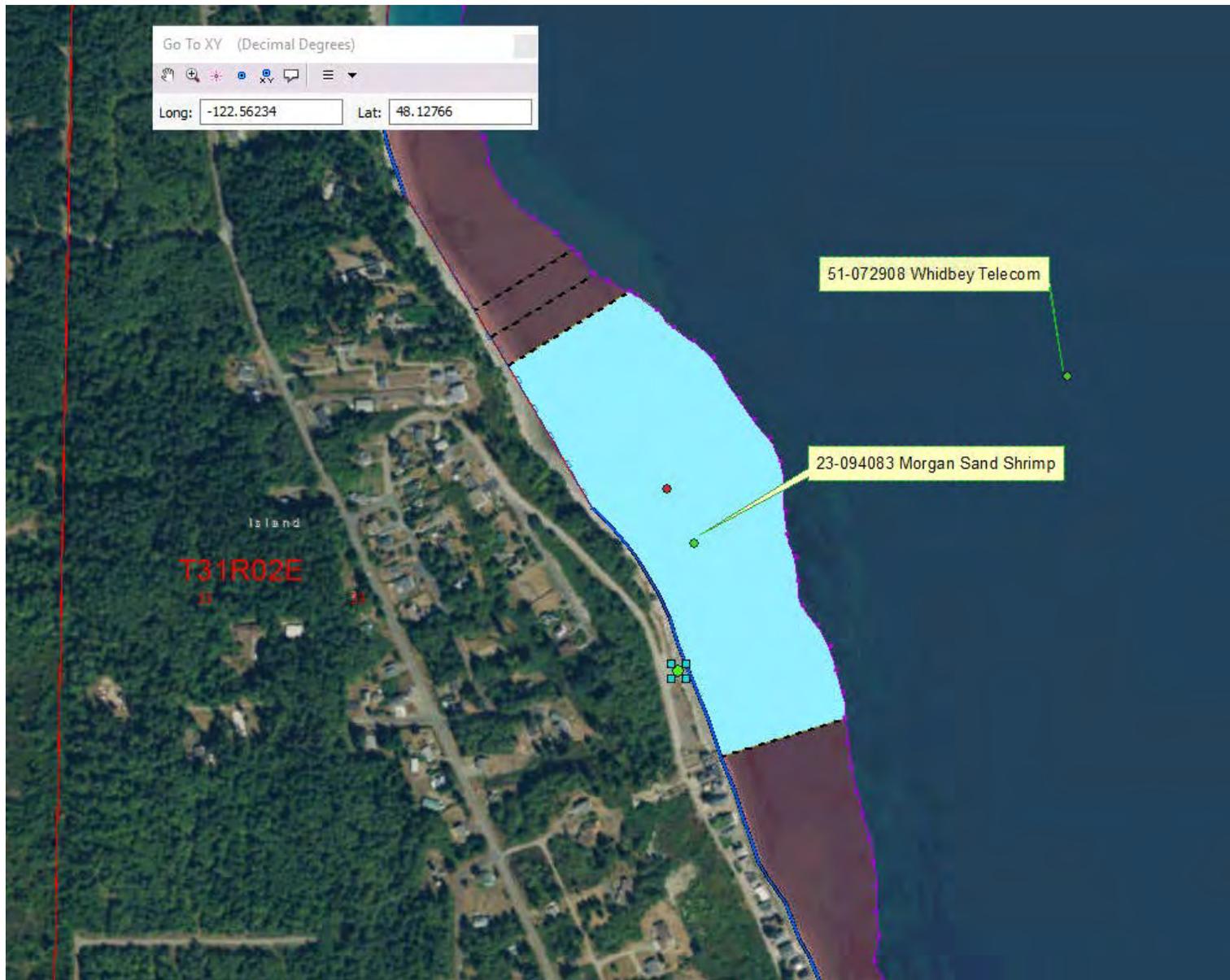


Fourth road crack area, facing uphill (north)

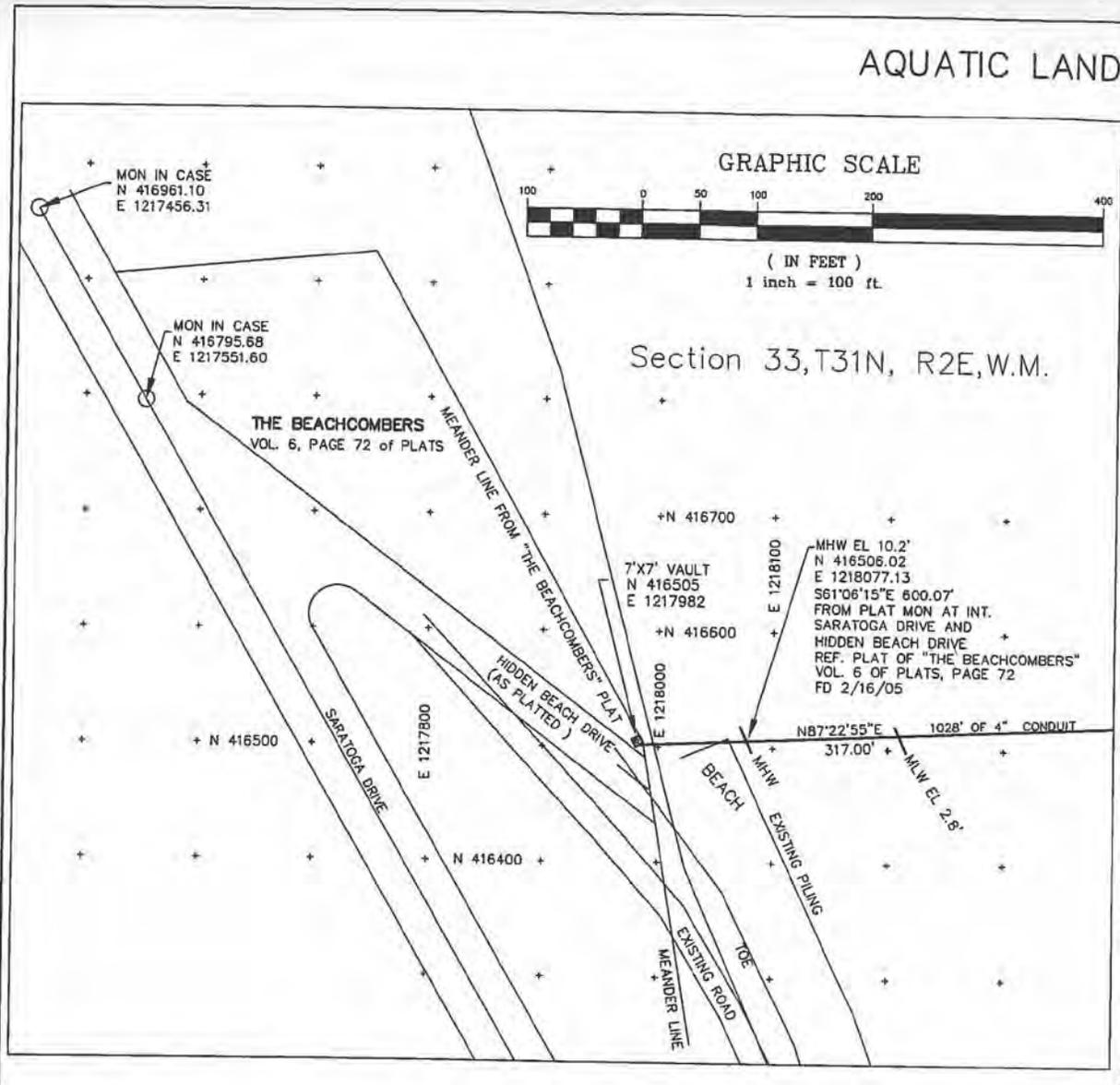


Apparent drilling and fill locations, facing downhill (south)

Photo Page 3. Ground photographs of Hidden Beach Road showing road shoulder instability and other features, taken March 9, 2019.



Hidden Beach Encumbrances (From DNR)



Survey 51-072908 (From DNR)

