NEVADA CREEK MITIGATION BANK PROSPECTUS

Douglas Island, SE Alaska

February 2015

Prepared for:

Nevada Creek Mitigation Partners
P.O. Box 32542
Juneau, AK 99803
(206) 661-2401

Prepared by:

Ecological Land Services
1157 3rd Avenue, Suite 220
Longview, WA 98632
(360) 578-1371

TABLE OF CONTENTS

FIGURES

APPENDIX A

INTRODUCTION

By way of this Prospectus, the Nevada Creek Mitigation Partnership is proposing the establishment of a mitigation bank identified as the Nevada Creek Mitigation Bank. The Nevada Creek Mitigation Bank (Bank) is located on southeast Douglas Island in the City/Borough of Juneau within portions of Sections 16, 17, 20, and 21, Township 42 South, Range 68 East of the Copper River Meridian (Sheet 1). The Bank site is located on 410.35 acres comprised of numerous mining plats owned in fee simple by the Sponsor (Sheets 1 and 2).

The point of contact and contact information for the Bank Sponsor and Land Owner is as follows:

Point of Contact: Steve Sego

Nevada Creek Mitigation Partners
P.O. Box 32542 Phone: (206) 661-2401
Juneau, AK 99803 Email: steve@watermanmp.com

The U.S. Army Corps of Engineers (USACE) regulates activities in jurisdictional waters of the United States (U.S.) through Section 404 of the Clean Water Act (CWA) of 1972 and Sections 9 and 10 of the Rivers and Harbors Appropriation Act of 1899. Section 404 of the CWA requires authorization, by a permit issued under Section 404, for discharge of materials, such as rock, soil or sand, into the waters of the U.S. The USACE, or a state program approved by the U.S. Environmental Protection Agency (EPA), has authority to issue Section 404 program permits. Under the CWA Section 404 program permitting process unavoidable losses of aquatic resource functions and values provided by waters of the U.S. through permitted actions must be replaced through compensatory mitigation as detailed by the 33 Code of Federal Regulations (CFR) Parts 325 and 332, and 40 CFR Part 230. According to the aforementioned federal regulations compensatory mitigation for impacts to aquatic resources provided by waters of the U.S. can be met through mitigation banks, in-lieu fee (ILF) programs or permittee responsible compensatory mitigation.

The overall purpose of the proposed Nevada Creek Mitigation Bank (Bank) is to create a multi-user mitigation bank that provides compensatory mitigation for unavoidable impacts to waters of the U. S. that result from activities authorized under the CWA Section 404 program permitting process. The Bank is being proposed in accordance with 33 CFR Part 332 *Compensatory Mitigation for Losses of Aquatic Resources* dated April 10, 2008, for certification through the Interagency Review Team (IRT). The IRT is comprised of the USACE, the U.S. Environmental Protection Agency (EPA) and other appropriate regulatory agencies. Upon certification by the IRT, the proposed Bank will provide mitigation, through the restoration and preservation of aquatic resources, for projects located within the proposed Service Area with unavoidable impacts to jurisdictional waters of the U.S. authorized under Section 404.

According to 33 CFR 332.8(d)(2)(i-vii)(A-B) the prospectus for all proposed mitigation banks must include and address the elements listed below:

332.8(d)(2)(i) Bank Objectives
332.8(d)(2)(ii) Establishment and Operation
332.8(d)(2)(iii) Proposed Service Area
332.8(d)(2)(iv) Need and Technical Feasibility
332.8(d)(2)(v) Ownership and Long-term Management
332.8(d)(2)(vi) Sponsor Qualifications
332.8(d)(2)(vii)(A) Ecological Suitability
332.8(d)(2)(vii)(B) Assurance of Water Rights

As detailed within the remainder of this document, this Prospectus for the proposed Bank sponsored by Nevada Creek Mitigation Partners addresses the aforementioned elements required under federal regulations. Upon IRT approval of this Prospectus, Nevada Creek Mitigation Partners will develop the Draft Mitigation Banking Instrument (MBI) and will incorporate comments and suggestions received from the IRT, other natural resource management agencies, and the public. The purpose of this Prospectus is to provide a broad overview of the proposed Bank. There are components that are significant to a mitigation banking operation that are significant but are not present in this document because they are not required until the sponsor is developing the Draft MBI. As the proposed Bank moves thought the IRT approval process, each document (e.g. the Prospectus, Draft MBI and Final MBI) will build upon the last and provide the necessary information and specifications that further detail Bank establishment and operation.

BANK OBJECTIVES

The primary goal of the proposed Bank is to establish a multi-user mitigation bank that provides compensatory mitigation for waters of the U.S. impacted as a result of activities authorized under the CWA Section 404 program permitting process. To provide appropriate compensatory mitigation, the proposed Bank's has dual objectives as follows:

Preservation[1] of the entire 410.35 acres that comprise the Bank site and encompass the majority of Nevada Creek Watershed containing 186 acres of Forested Slope Wetlands, 74 acres of Fen Wetlands, 17 acres of Bog Wetlands, 17 acres of Gastineau Shoreland (which include Estuarine Wetlands), 116 acres of forested Upland and approximately 12,744 linear feet of the Nevada Creek mainstem and tributaries (Sheet 3), and;

Rehabilitation restoration[2] of Nevada Creek water quality, and riparian and aquatic habitat, through removal of five to six tons of high lead content mineral concentrates within an approximately 0.25 acre restoration area (Sheet 3).

[1]Definition according to 33CFR 332.2; **Preservation** means the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms.

[2]Definition according to 33CFR 332.2; **Restoration** means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, **restoration is divided into two categories: re-establishment and rehabilitation**.

The Alaska Treasure Mine was in operation within the Bank site in the early 1900s. During operation an upper adit, documented as the Hudson Adit, and a stamp mill were developed adjacent to Nevada Creek. Today, the wooden structure associated with the stamp mill is collapsed and burlap sacks full of metal concentrates, located immediately below the collapsed stamp mill, are partially buried within the southern upper elevations (top-of-bank) of the Nevada Creek channel. Due to age and exposure, the burlap sacks containing the concentrates are deteriorating. In 2013 Nevada Creek Mitigation Partners retained Nortech Environmental Engineering and Industrial Hygiene to investigate samples of concentrate material in order to characterize composition and analyze the material for any potentially hazardous components. Upon various analyses of the concentrate samples, Nortech has identified lead contained within the concentrate as a contaminant of concern (COC) at the Bank site (Nortech 2013).

Metal concentrates containing high lead levels pose a threat to Nevada Creek water quality and habitat. Lead is highly toxic to biological processes and degrades organism and ecosystem health. For the protection of aquatic life and human health the EPA has water quality criteria, published pursuant to Section 304(a) of the CWA, that at includes thresholds for lead. Aquatic organisms absorb lead through the food chain as lead within water and sediment can be readily taken up by aquatic macrophytes and algal species (National Research Council 1980). In addition, some aquatic animals may absorb lead directly from the water as soluble or particulate lead can be absorbed on external surfaces such as mucous membranes, gills, fur and skin (National Research Council 1980). If the high lead content metal concentrates located adjacent to Nevada Creek remain there is a risk that the concentrate will slowly erode into the stream, be introduced through catastrophic bank failure during a storm event and/or be transported into the stream through discharging groundwater. The Bank Sponsor is therefore proposing rehabilitation restoration through removal of five to six tons of high lead content mineral concentrates located within an approximately 0.25 acre area of Nevada Creek's riparian zone. Nortech has prepared a site specific Corrective Action Plan (CAP) according to the *Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites* (ADEC 2009). In accordance with the CAP, metal concentrates and soils surrounding concentrates will be removed (Nortech 2013). Upon completion of removal work within the approximately 0.25 acre area, degraded riparian habitat will be further rehabilitated by planting native trees and shrubs.

Removal of high lead content metal concentrates will eliminate future risk, and rehabilitate water quality and aquatic and riparian habitats. Permanent in perpetuity Bank site protection through an appropriate IRT approved legal instrument will preserve 410.35 acres containing high value aquatic resources such anadromous fish streams, Fen Wetlands, and shorelands along Gastineau Channel containing Estuarine Wetlands, within an area of SE Alaska that is experiencing urbanization. By contributing to the long-term ecological integrity of the Nevada Creek watershed through achievement of rehabilitation and preservation objectives, the Bank will provide an alternative to permittee-responsible compensatory mitigation when on-site compensation is not ecologically preferable and/or feasible.

ESTABLISHMENT & OPERATION

The proposed Bank establishment and operational structure and processes will be largely based upon USACE requirements according to 33 CFR Part 332 *Compensatory Mitigation for Losses of Aquatic Resources* dated April 10, 2008, and EPA requirements according to *Guidelines for the Specification of Disposal Sites for Dredged and Fill Material* (40 CFR Part 230, Section 404(b)(1)). The proposed Bank will be established and operated in a collaborative manner with the IRT and other potential mitigation site project partners. Upon final approval, the Bank will provide compensatory mitigation for unavoidable impacts to waters of the U.S. resulting from authorized activities located within a defined service area. Once approved, the establishment and operation of the proposed Bank will be carried out in accordance with the principal Federal, and one state, authorities listed below:

1. Clean Water Act (33 USC §§ 1251 et seq.)
2. Rivers and Harbors Act of 1899 (33 USC § 403)
3. Regulatory Programs of the Corps of Engineers, Final Rule (33 CFR Parts 320 -332)
4. U.S. Army Corps of Engineers Regulatory Guidance Letter 05-1, *Guidance on Use of Financial Assurances, and Suggested Language for Special Conditions for Department of the Army Permits Requiring Performance Bonds*, U.S. Army Corps of Engineers, February 14, 2005
5. Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army concerning the Determination of Mitigation Under the Clean Water Act, Section 404(b)(1) Guidelines (February 6, 1990)
6. Guidelines for the Specification of Disposal Sites for Dredged and Fill Material (40 CFR Part 230, Section 404(b)(1))
7. National Environmental Policy Act (42 USC §§ 4321 et seq.)
8. Council on Environmental Quality Procedures for Implementing the National Environmental Policy Act (40 CFR Parts 1500-1508)
9. Executive Order 11990 (Protection of Wetlands)
10. Executive Order 11988 (Protection of Floodplains)
11. Executive Order 13112 (Invasive Species)
12. Fish and Wildlife Coordination Act (16 USC §§ 661 et seq.)
13. Fish and Wildlife Service Mitigation Policy (46 FR 7644-7663, 1981)
14. Endangered Species Act (16 USC §§ 1531 et seq.)
15. Magnuson-Stevens Fishery Conservation and Management Act (16 USC §§ 1801 et seq.)
16. National Historic Preservation Act, as amended (16 USC § 470)
17. Alaska Department of Environmental Conservation (ADEC) 401 Water Quality Certification

Bank Establishment Overview

As the Bank Sponsor, Nevada Creek Mitigation Partners is responsible for all required Bank establishment elements according to 33 CFR Part 332.8; these elements, which include specific Bank establishment information, on are to be detailed within a Draft MBI in accordance with federal regulations. Upon review of this Prospectus the USACE and IRT will determine that Sponsor may proceed with a Draft MBI. Upon approval of the Prospectus, the Sponsor will develop a Draft MBI in accordance with and including all required elements detailed in 33 CFR Part 332.8., including permits and other authorizations as needed. In drafting the MBI, comments and suggestions received from the IRT will be incorporated as well as comments and suggestions

received from other natural resource management agencies and the public. As the proposed Bank moves thought the IRT approval process, each document (e.g. the Prospectus, Draft MBI and Final MBI) will build upon the last and provide the necessary information and specifications that further detail the Bank establishment and operation. The operational life of the Bank will then commence on the date the Final MBI takes effect pursuant to USACE and IRT approval.

Upon USACE and IRT approval of the Final MBI, the Sponsor, Nevada Creek Mitigation Partners, will conclude the Bank establishment through completion all required elements detailed in 33 CFR Part 332.8 such as restoration activities and the preservation of the Bank site in perpetuity through recording of an appropriate IRT approved legal instrument such as a conservation easement. In regard to the restoration activities, Nortech has prepared a Bank site specific Corrective Action Plan (CAP) according to the *Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites* (ADEC 2009). Restoration work involving removal of metal concentrates and the soils surrounding concentrates will be in accordance with the prepared CAP (Nortech 2013). Upon completion of removal work in conjunction with Nortech, the Sponsor will complete the restoration work such as final stabilization using erosion control techniques and plantings of native species.

Upon IRT approval that the Bank has been established in accordance to applicable regulations and procedures described within the Final MBI, in recognition thereof, the IRT will award the initial mitigation credits[3] to the Sponsor pursuant to the applicable regulations, procedures and schedules prescribed within the Final MBI. Credits are typically incrementally established and awarded to the Bank upon the Sponsor's demonstration that Bank performance standards, detailed within the approved Final MBI, have been met. The total credits generated by the Bank and a credit release/award schedule will be determined in consultation with the USACE and the IRT and documented within the final approved MBI. Once credits are awarded the Bank may sell, use, or transfer that credit, subject to the provisions of the final approved MBI.

Bank Operation Overview

The following is a general, not exhaustive, overview of the proposed Bank operation in regards to the transference of liability from customers to the Bank for compensatory mitigation requirements associated with impacts authorized under Section 404 permits. According to 33 CFR Part 332.8, specific Bank operation information is to be detailed within a Draft MBI. As the Bank Sponsor, Nevada Creek Mitigation Partners is responsible for providing detailed Bank operation information within a Draft MBI in accordance with in accordance with federal regulations. Formal commencement of Bank operations typically occurs when the Sponsor is approved to make the initial mitigation credit awarded by the IRT available to serve as compensatory mitigation pursuant to applicable regulations. Subject to the approval of the regulatory agencies with jurisdiction, Bank credits may be used by public and private proponents of activities regulated under Sections 401 and 404 of the Clean Water Act (33 U.S. Code §§ 1341, 1344), Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. Code § 403) and other applicable authorities, for authorized unavoidable impacts to waters of the U.S. or to resolve enforcement or compliance actions. In order to use the Bank as a source of compensatory mitigation, proponents/applicants seeking authorization for project activities with impacts to

[3]Definition according to 33CFR 332.2; **Credit** means a unit of measure (e.g. functional or areal measure or other suitable metric) representing the loss of aquatic functions at an impact or project site. The measure of aquatic functions is based on the resources impacted by the authorized activity.

waters of the U.S. within the service area must obtain the approval of the USACE and if required other regulatory agencies with jurisdiction over that project. To receive approval to use the Bank, the applicant must demonstrate to the satisfaction of the USACE, and if required other pertinent regulatory agencies, that the project complies with all applicable requirements pertaining to alternatives and mitigation sequencing and that purchasing credits from the Bank for compensatory mitigation would be in the best interest of the environment. Specifically, a permit applicant must generally be able to demonstrate to the satisfaction of the USACE, and if required other involved regulatory agencies, that:

1. There is no practicable alternative to adversely impacting the waters of the U.S.; and

2. All appropriate and practicable measures to minimize adverse impacts have been considered for the project.

It is solely the determination of the USACE, and if required other regulatory agency(ies), permitting the project with adverse impacts as to whether a proposed use of Bank credits is appropriate and environmentally preferable to other mitigation alternatives. Upon receiving USACE, and if required other regulatory agency(ies), permission to utilize credits from the Bank, the permittee must contact the Sponsor to ensure that credits are available. When the Sponsor ensures that credits are available, the Sponsor prepares a credit withdrawal transaction agreement letter that is emailed and/or sent standard mail informing the USACE and IRT of the pending transaction. A credit withdrawal transaction agreement letter includes the information detailed below:

1. Documentation of an authorized Section 404 permit and identifying permit number of the impacting project;
2. The number of credits proposed to be transacted, and;
3. Documentation specifying that that the Sponsor, and successors/ assigns, assumes responsibility for accomplishment and maintenance of the permittee's compensatory mitigation requirements associated with the impacting project, upon completion of the credit transaction.

Upon completion of the credit transaction, the Sponsor will also inform the permitting regulatory agencies of each completed transaction through a letter with an attached certified copy of the Bank accounting ledger. The Sponsor shall establish and maintain for inspection and reporting purposes a ledger of all credits that are USACE and IRT awarded through the achievement of specified performance standards, as well as credits that are sold, used, or transferred. The ledger must follow a template approved by the USACE and IRT. The Sponsor will record and certify each credit withdrawal transaction, and submit a copy of the recorded transaction to the USACE and IRT within 30 days from the stamped registration date each time credits are awarded, sold, used, or otherwise transferred. The Sponsor will also submit an annual ledger by a specified date of each year to be documented with the final MBI. The annual ledger must show a cumulative tabulation of all to date Bank credit transactions.

The Sponsor shall remain responsible for complying with the provisions of the MBI throughout the operational life of the Bank, regardless of the ownership status of the underlying real property, unless those responsibilities have been assigned pursuant to the provisions of the MBI

upon written approval from the USACE and IRT. Conveyance of any interest in the property will be subject to an appropriate IRT approved legal instrument such as a conservation easement with in perpetuity use prohibitions that preclude the Bank site from being used for activities incompatible with the intent of the MBI. In establishing the proposed Bank, an appropriate IRT approved legal instrument such as a conservation easement will be placed over the entire Bank site.

SERVICE AREA

A mitigation bank service area is the geographical limit of applicability, based on consideration of hydrologic and biotic criteria, wherein a bank can reasonably be expected to provide compensation for impacts to waters of the U.S. Appropriate hydrologic limits are typically determined using the USGS hydrologic classification system which delineates watersheds using hierarchical numerical units identified by HUCs. The use of USGS identified HUCs assist in framing the analysis of a bank's geographical limit of applicability in accordance with the *Compensatory Mitigation for Losses of Aquatic Resources* (2008) focus on compensatory mitigation on a watershed basis. In determining appropriate biotic or ecological limits, the EPA and other federal guidance promotes the use of documented ecoregions.

In consideration of the Bank's economic[4] and ecological viability, the proposed Bank Service Area[5] includes the areas where the U.S. Geological Service (USGS) *Ecoregions of Alaska* (Gallant *et al* 1995) Coastal Western Hemlock-Sitka Spruce Forests ecoregion occurs within the entire 6-digit HUC 190103 and the northeastern portion of six digit HUC 190102, which includes the 8-digit HUCs 19010204 and 19010206 (Sheets 4-7). The Bank site occurs within the 8-digit HUC 19010301 that falls within the 6-digit HUC 190103. The proposed Service Area also includes Transitional Zones where Coastal Western Hemlock-Sitka Spruce Forests occur within the Pacific Coastal Mountains ecoregion. These Transitional Zones are small in scale in comparison to the extensive mapping scale so it is not possible to show some smaller areas where both ecoregions occur, therefore these areas are identified as Transitional Zones.

Ecoregions are identified geographic areas of general similarity in ecosystems and the types of environmental resources that occur with them. These geographic units are intended to provide a spatial framework for ecosystem inventory, assessment and management and they delimit large areas within which local ecosystems occur more or less throughout a region in predictable patterns. The intent of the proposed Service Area's use of the ecoregion identified as "Coastal Western Hemlock-Sitka Spruce Forests" (Gallant *et al* 1995) is to offer a basis of assurance that the Bank site contains equivalent resources that will provide functionally equivalent compensation for resources occurring within the HUCs that determine the proposed Service Area's appropriate limits of hydrological applicability. However, as the HUCs that determine the

[4]According to *33 CFR 332.8(d)(6)(ii)(A),*"The service area must be appropriately sized to ensure that the aquatic resources provided will effectively compensate for adverse environmental impacts across the entire service area. For example, in urban areas, a U.S. Geological Survey 8-digit hydrologic unit code (HUC) watershed or a smaller watershed may be an appropriate service area. In rural areas, several contiguous 8-digit HUCs or a 6-digit HUC watershed may be an appropriate service area.....The economic viability of the mitigation bank may also be considered in determining the size of the service area".

[5]Due to upcoming regulatory agency clarification regarding the Alaska District Corps Special Public Notice SPN-2013-599, the proposed service area has not been developed according to this SPN. Once further regulatory agency clarification regarding SPN-2013-599 is issued, the Bank sponsor will revise the proposed Service Area as needed.

limits of the proposed Bank site's hydrological applicability have been atypically delineated[6], areas of these HUCs can widely differ in ecology particularly in regards to elevation gradients, proximity to glaciated mainland areas, and degree of estuarine wetland presence. Therefore, use of the ecoregions to define the Service Area provides a measure of guarantee that the Bank will provide appropriate in-kind biotic, as well as hydrologic, compensatory mitigation for off-site impacts to waters of the U.S. authorized under Section 404.

The Coastal Western Hemlock-Sitka Spruce Forests ecoregion, and the Transitional Zones where this ecoregion also occurs, is generally located at elevations from sea level to 500 meters/1640 feet along the irregular coastline and island interiors of southeastern Alaska. Distinctive features of this ecoregion are rugged topography from intense past glaciation, the mildest winter temperatures in Alaska from a maritime climate with cool summers and mildly cold winters, and moderate to heavy precipitation that occurs throughout the year. Widespread forests of western hemlock and Sitka spruce are indicative of this region, hence the Coastal Western Hemlock-Sitka Spruce Forests identifier. The relatively long growing season, high annual precipitation, and mild temperatures of the Coastal Western Hemlock-Sitka Spruce Forests ecoregion supports variety of wetland communities such as forested wetland and riparian communities, emergent and scrub-shrub bogs dominated by ericaceous plant species, wet graminoid herbaceous communities dominated by sedges, or a mixture of sedges and mosses or a mixture of sedges and shrubs, and herbaceous wetland communities dominated by forbs (Gallant *et al* 1995). For comparison, the Bank site also contains riparian communities and forested wetland communities (e.g. Forested Slope Wetlands), emergent and scrub-shrub bog communities dominated by ericaceous plant species (e.g. Bog Wetlands), wet graminoid herbaceous communities dominated by sedges, or mixtures of sedges and mosses, or a mixture of sedges and shrubs (e.g. Fen Wetlands) and herbaceous wetland communities dominated by forbs (e.g. Fen Wetlands). In addition, the Bank site contains shoreland which includes some amount of Estuarine Wetlands.

SE Alaska is geographically unique in that population centers are widely spaced within a rural landscape, thus the majority of projects with unavoidable impacts to aquatic resources authorized under Section 404 of the CWA are located in or near population centers. As SE Alaska population centers are concentrated along stretches of flat coastal areas the majority of theses centers have been developed within the Coastal Western Hemlock-Sitka Spruce Forest(s) ecoregion. SE Alaska is expected to grow in coming years; therefore existing industry and land uses will continue to expand. Much of this growth will take place within the Coastal Western Hemlock-Sitka Spruce Forest(s) ecoregion.

[6] The USGS hierarchical watershed delineation system that geographically divides and sub-divides watersheds into successively smaller hydrologic units is "typically" implemented when applied to closed basins or open basins with surface drainages that converge at a single outlet point, such as the drainage area of a major river or the combined drainage area of a series of rivers which converge into one outlet. Thus, delineation of "typical" drainages isolate the area drained by a river system, or a reach of a river and its tributaries in that reach, or a closed basin. However, in delineating drainages that have more than one outlet, such as the rugged coastal and island drainages of SE Alaska, the hierarchical system is atypically applied and multiple drainages/ multiple outlets are combined into single composite units.

BANK NEED & TECHNICAL FEASIBILITY

Industrial, commercial, urban and rural development, transportation and utility infrastructure upgrades and expansion, resource extraction and other human activities have and continue to alter SE Alaska aquatic resources. Aquatic resources (function and habitat) associated with rivers/streams, and freshwater and estuarine wetlands, have and continue to be impacted particularly along flat coastal areas where centers of SE Alaska population typically concentrate. SE Alaska population is expected to grow in coming years; therefore existing industry and land uses will continue to expand.

Analysis of market need within the proposed Service Area indicates that the market for mitigation credits will provide more than adequate revenues to support all aspects and obligations beyond the initial permitting and construction costs of establishing and operating the Bank. Since 2009 there have been more than 40 acres of permitted Section 404 impacts requiring off-site mitigation in the proposed Bank Service Area. Currently within the proposed Service Area, there several large proposed projects and development within population centers continuing. Demand similar in scope and pattern over the next ten years would likely consume most if not all of the mitigation credits generated by the Nevada Creek Mitigation Bank. It is important to be able to offer mitigation options in the SE Alaska region. At present, there is only one SE Alaska mitigation bank, the Natzuhini Mitigation Bank sponsored by the Sealaska Corporation, offering compensatory mitigation credits for projects located within a service area that covers all of SE Alaska. To date, this mitigation bank has only been used as sponsor-single user mitigation for unavoidable impacts to aquatic resources. Permitted impacts requiring off-site mitigation for all other users have been applied to either permittee-responsible mitigation sites or in-lieu fee programs.

As further example of current Bank need, the Record of Decision (ROD) documented within the *Final Environmental Impact Statement* (EIS) *and Record of Decision for the Greens Creek Mine Tailings Disposal Facility Expansion Project on the Admiralty Island National Monument and Juneau Ranger District, Tongass National Forest* (USDA Forest Service 2013), details the Forest Service's decision to allow up to 14.5 acres of impacts to waters of the U.S., contingent on Greens Creek obtaining authorization under a Section 404 permit, for expansion activities related to continuation of operations. The Forest Services' 2013 ROD allows for continued operations into the near future within a reduced footprint. However, the 2013 EIS documentation for the project addressed longer operational timelines that required more acreage to accommodate tailings disposal potentially impacting up to 125 acres of waters of the U.S. (approximately).

For these reasons, there is a consistent and substantial demand for off-site compensatory mitigation in the proposed Service Area that would be provided by the Nevada Creek Mitigation Bank. Recent permit activity, current demand, and projected mitigation needs as described above support the absorption rate of mitigation credits that this project will provide over the next ten years.

Technical Feasibility

Nevada Creek Mitigation Partners possesses sufficient means to complete all of the activities, including restoration, necessary to establish the Bank and is capable of providing the financial assurances required by the Final MBI. As the Bank Sponsor, Nevada Creek Mitigation Partners is responsible for providing detailed information on the technical aspects of Bank establishment and operation within a Draft MBI in accordance with 33 CFR Part 332.8.

The proposed Bank site is wholly owned by the Bank sponsor, Nevada Creek Mitigation Partners. Other than the area of the Nevada Creek's riparian zone currently impacted by historic mining concentrate and the biochemical risk the concentrate poses to the stream's water quality and habitat, the Bank site is largely ecologically intact. Within the proposed Bank site a 53.65 acre permittee-responsible mitigation site has been established (USACE Permit # POA-1988-269-M5) (Sheets 2 and 3) . This site is also wholly owned be the Bank sponsor, Nevada Creek Mitigation Partners, and is encumbered by an in-perpetuity conservation easement per the stipulations of the permit. The historic mining that took place in some areas of the Bank site did not cause wide spread disturbances as the majority of the mining activity consisted of tunnel workings. There are no existing hydrologic disturbances on or adjacent to the site. The majority of the Bank site wetlands have not been artificially altered hydrologically or ecologically and are in pristine condition. Thus, the site is hydrologically self-sustaining and does not required temporary or long-term structural management such as levees, weirs, culverts, etc. to assure restoration success. Additionally, there are no existing water appropriation permit(s) on the Nevada Creek property. Although some lower elevation areas of the site have experienced historic clear cutting these areas have naturally regenerated. Today the upland forests adjacent to the site's wetlands and riparian areas are largely intact and provide wildlife habitat in addition to buffering of streams and wetlands. Restoration of Nevada Creek water quality and riparian habitat impacted by historic mining concentrate is technically feasible (Nortech 2013) and will provide functional lift in additional to preservation of the entire site. Additionally, the proposed restoration does not required temporary or long-term structural management such as levees, weirs, culverts, etc. to assure success. The technical feasibility of preserving aquatic resources within the Bank site is considered to be excellent as the site is largely ecologically intact and hydrologically self-sustaining.

OWNERSHIP & LONG-TERM MANAGEMENT

Nevada Creek Mitigation Partners owns all 410.35 acres of the Bank site in fee simple. The Sponsor shall remain responsible for complying with the provisions of the MBI throughout the operational life of the Bank, regardless of the ownership status of the underlying real property, unless those responsibilities have been assigned pursuant to the provisions of the MBI upon written approval from the USACE and IRT. Conveyance of any interest in the property will be subject to an appropriate IRT approved legal instrument such as a conservation easement with in perpetuity use prohibitions that preclude the Bank site from being used for activities incompatible with the intent of the MBI.

In establishing the proposed Bank, Nevada Creek Mitigation Partners will place an appropriate IRT approved legal instrument, which will likely be a conservation easement, over the entire Bank site. An in-perpetuity conservation easement is a power vested in an appropriate in-perpetuity third party, such as land conservation organizations (e.g. land trusts) or government

entities, to constrain the exercise of rights otherwise held by a landowner. The conservation easement placed over the entire Bank site will be granted to an appropriate in-perpetuity third party. In granting the conservation easement to an appropriate in-perpetuity third party, a dedicated account with adequate funds (Financial Assurances in accordance with 33 CFR Part 332.8) will be established and maintained to ensure the Bank Sponsor's full scope of regulatory responsibilities in establishing and operating the proposed Bank, such as completing proposed restoration, annual monitoring and reporting, implementation of any necessary maintenance and/or adaptive management actions, **and** long-term management and third party in-perpetuity site conservation.

Upon IRT approval of this Prospectus, a detailed long-term management plan will be developed in accordance with 33 CFR Part 332.8 and with input from the USACE and the IRT, and will be included within a Draft MBI. The long-term management plan specified within the MBI will identify the long-term management and monitoring activities intended to assure protection in perpetuity and viability of the Bank site, in addition to the establishment period management and monitoring activities. The overall long-term management strategy will be the in-perpetuity protection and viability of the Bank site through long-term monitoring and reporting (this is in reference to monitoring and reporting after the establishment period performance standards are determined to be achieved) and completion of any necessary future site maintenance. The Draft MBI will outline the cost of the management activities in order to determine an appropriate in-perpetuity endowment amount. The endowment account will be managed by a qualified third party organization, and established and funded incrementally with the sale of credits.

SPONSOR QUALIFICATIONS & CONTACT INFORMATION

Nevada Creek Mitigation Partners (NCMP) is the Sponsor of the proposed Bank and Steve Sego of Waterman Mitigation Partners is the primary consultant for NCMP. While with Washington State based Habitat Bank, Steve Sego worked to establish the first private mitigation bank certified under the State's Wetland Mitigation Banking Pilot Program, the Snohomish Basin Mitigation Bank located in Snohomish County, Washington. Please see the link below for more information on this approved mitigation bank:

http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking/sites/snohomishbasin.html

Ecological Land Services (ELS) based in Longview, Washington, provides environmental consulting services to NCMP. ELS has been in business in the Pacific Northwest since 1996 and has years of experience implementing and managing projects in Washington and Oregon involving jurisdictional waters of the U.S., mitigation, and mitigation banking. ELS's mitigation banking experience includes establishing and operating the approved Long Beach Mitigation Bank located on the Long Beach Peninsula in Washington State. ELS is also working on two proposed mitigation banks currently in the IRT review process; the Habitat Bank sponsored Coweeman River Mitigation Bank in Cowlitz County, Washington, and the City of Ocean Shores sponsored Weatherwax Mitigation Bank in Ocean Shores, Washington. Please see the links below for more information on the approved Long Beach Mitigation Bank and the aforementioned proposed banks currently in the IRT review process:

Long Beach Mitigation Bank	http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking/sites/long-beach.html

Coweeman River Mitigation Bank	http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking/sites/coweeman.html
Weatherwax Mitigation Bank	http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking/sites/oceanshores.html

ELS and Steve Sego have also worked with the Washington State based Habitat Bank on the following approved banks; the Columbia River Wetland Mitigation Bank located near Vancouver, Washington, the East Fork Lewis Wetland Mitigation Bank in Amboy, Washington, and the Remy Farm Consolidated Wetland Mitigation site in Battle Ground, Washington. Please see the links below for more information on the approved aforementioned banks:

Columbia River Wetland Mitigation Bank	http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking/sites/clark_county.html
East Fork Lewis Wetland Mitigation Bank	http://www.ecy.wa.gov/programs/sea/wetlands/mitigation/banking/sites/east-fork-lewis.html
Remy Farm Consolidated Wetland Mitigation Site	http://www.mitigationbankingservices.com/about-mbs/battle-ground-project/

Steve Sego of Waterman Mitigation Partners has also supported additional mitigation projects in the State of Washington, and provides consultation and guidance to private and regulatory interests involved in wetlands permitting and mitigation banking. Together with other stakeholders, Waterman Mitigation Partners and ELS provide the Bank Sponsor with the experience, technical expertise, and knowledge to propose, establish, and successfully operate a mitigation bank in the State of Alaska.

ECOLOGICAL SUITABILITY

The proposed Bank site is generally characterized by moderately significant geologic features with elevations ranging from sea-level to approximately 1,500 feet. Upper elevation drainage slopes interspaced with ridges grade down to deeply incised tributary canyons that eventually converge into a wide valley that contains the mainstem of Nevada Creek. Wetlands and streams within the Bank site typically occur at all elevation gradients. Wetlands generally occur on drainage slopes, shallowly sloped depressions, low elevation riparian zones, and on a wide glaciomarine terrace perched approximately 200 feet above Gastineau Channel.

CURRENT SITE CONDITIONS

The historic mining that took place in areas of the Bank site did not cause wide spread disturbances as the majority of the mining activity consisted of tunnel workings. Other than the area of the Nevada Creek's riparian zone currently impacted by historic mining concentrate and the biochemical risk the concentrate poses to the stream's water quality and habitat, the Bank site is largely ecologically intact. The majority of the Bank site wetlands have not been artificially altered hydrologically or ecologically and are in pristine condition. Although some lower elevation areas of the site have experienced historic clear cutting these areas have naturally regenerated. Today the upland forests adjacent to the site's wetlands and riparian areas are largely intact and provide wildlife habitat in addition to buffering of streams and wetlands. The feasibility of preserving aquatic resources within the Bank site is considered to be excellent as the site is hydrologically self-sustaining. Restoration of Nevada Creek water quality and riparian habitat impacted by historic mining concentrate will provide functional lift in additional to preservation.

Wetlands: Vegetation, Hydrology & Soils

Delineation of the Bank site wetlands was performed by ELS in 2013 using the Routine Determination Method according to the USACE *Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region* (U.S. Army Engineer Research and Development Center 2007). A determination of jurisdictional waters of the U.S. has not been completed by the USACE.

Delineation of the Bank site generally confirmed the presence of National Wetlands Inventory (NWI) mapped palustrine/forested /needle-leaved evergreen/saturated wetlands (PFO4B) that are identified as Bog Wetlands (U.S. Fish and Wildlife Service 2014; Sheet 8). However, the NWI mapping does not capture the extent of Forested Slope Wetlands, identified as PFO4B wetlands that occur within the Bank site. The NWI mapping of palustrine/emergent/persistent/saturated wetlands (PEM1B) corresponds to the Fen Wetlands present within the upper Bank site elevations, but again the mapping does not capture the full extent of these wetlands.

Fen Wetlands (PEM1B)

A total of 74 acres of Fen Wetlands occur within the upper elevations of the Bank site (Sheet 3). Fens are peat-forming minerotrophic wetlands with hydrology driven by mineral rich groundwater and/or surface water. Fens tend to be more alkaline rather than acidic and more nutrient-rich, thus species diversity is often high within fen habitats. Fens provide important water quality and hydrologic functions, and play an important role in the global carbon cycle and regulation of the global climate. Fens are extremely sensitive to disturbance. The formation of a fen takes as many as 10,000 years.

Soils within the Bank site Fen Wetlands are saturated organic soils primarily vegetated with wet graminoid herbaceous communities dominated by forbs, or sedges, or a mixture of sedges and mosses or a mixture of sedges and shrubs. Fen Wetlands occurring with the Bank site have not been artificially altered hydrologically or ecologically and are in relatively pristine condition.

Bog Wetlands (PFO4B)

A total of 17 acres of Bog Wetlands occur within the upper elevations of the Bank site (Sheet 3). Bogs are peat forming ombrotrophic wetlands with hydrology driven by precipitation. Bogs tend to be low in nutrients and more acidic, and thus support plant and animal communities with special adaptations to low nutrient levels, waterlogged conditions, and acidic waters, including carnivorous plants. These distinctive species are important for biodiversity. Bogs provide important water quality and hydrologic functions, and play an important role in the global carbon cycle and regulation of the global climate. Bogs function as carbon sinks as peat deposits grow in depth over time. Bogs are sensitive to disturbance and require hundreds to thousands of years to form.

The Bogs Wetlands that occur within the lower elevations of the Bank site are comprised of emergent and scrub-shrub bogs dominated by ericaceous plant species. The Bank site bogs are predominately stunted woodlands comprised of saturated organic peat soils with facultative tree species such as western hemlock, Alaska yellow cedar (*Chamaecyparis nootkatensis*), and shore pine (*Pinus contorta*). Facultative ericaceous shrub species such as Alaska blueberry (*Vaccinium alaskaense*) and oval-leaved blueberry (*Vaccinium ovalifolium*) are also dominant. Bog Wetlands occurring with the Bank site have not been artificially altered hydrologically or ecologically and are in relatively pristine condition.

Forested Slope Wetlands (PFO4B)
A total of 186 acres of Forested Slope Wetlands occur within the middle to lower elevations of the Bank site (Sheet 3). Soils within the Forested Slope Wetlands are saturated mineral muck soils and that are primarily comprised of a western hemlock (*Tsuga heterophylla*) overstory with false azalea (*Menziesia ferruginea*) and devils club (*Oplopanax horridus*) dominant within the understory and skunk cabbage (*Lysichiton americanum)* dominant within the herbaceous stratum. The majority of the Bank site Forested Slope Wetlands have never been artificially altered and are in relatively pristine condition. However, Forested Slope Wetlands that were adjacent to mining adits, and within and adjacent to the historic corduroy road that connected the adits, have been hydrologically altered by the historic corduroy road development or ecologically altered by historic logging. Forested Slope Wetlands historically disturbed by the corduroy road and/or historic logging have naturally regenerated and today these areas are heavily canopied with red alder (*Alnus rubra*).

Estuarine Wetlands (E2EM1/USP)
Estuarine Intertidal Emergent Persistent (E2EM1) and Estuarine Intertidal Unconsolidated Shore Irregularly Flooded (USP) Wetland occur within the 17 acres of Gastineau Channel shorelands that occur within the Bank site (Sheets 3 and 5). The current extent of these wetlands are likely the result of materials disturbed by historic mining being deposited over the years by Nevada Creek at its confluence with Gastineau Channel. Today, the upper salt marsh zone of the Estuarine Wetlands that have formed at the Nevada Creek confluence with Gastineau Channel are heavily vegetated, with American dunegrass (*Leymus mollis*) predominant.

Streams

Information on Nevada Creek and the stream's tributaries was compiled using the *Channel Type User Guide -Tongass National Forest Southeast Alaska* (CTUG) (USFS 1992) and geographical information system (GIS) databases. Nevada Creek is identified as a small order stream that originates southeast of McDonough Peak. The mainstem of Nevada Creek generally flows east for approximately two miles until discharging into Gastineau Channel. The lower reach of the Nevada Creek mainstem is classified as a Narrow Shallow Contained Channel (MC1) according to the CTUG (USFS 1992) (Sheet 8). MC1 is classified as a moderate gradient channel contained process with narrow, shallow incisions. Stream flow is completely contained by adjacent landforms and upper channel banks. MC1 streams are consistently found in glacially scoured lowland landforms. The middle reach of the Nevada Creek mainstem is classified as a Narrow Mixed Control Channel (MM1). MM1 is classified as a moderate gradient channel type with mixed control process where sediment deposition processes is limited. MM1 channel types generally occur within the middle reaches of small drainages basins and typically contain small bedrock knickpoints and short cascades or falls. According to the CTUG, MM1 channels can be accessible to anadromous fish species, with downstream barriers accounting for most cases where access is restricted (USFS 1992).

CTUG classification of the upper reaches of Nevada Creek and two of its mapped tributaries is Deeply Incised Mountain Slope Channel (HC6)(Sheet 8). The HC6 channel type generally occurs within the higher elevation drainage areas of the Nevada Creek watershed. HC6 is classified as a channel type that is a shallowly to deeply incised, high gradient (over 6 percent) mountain slope stream. HC6 channels are most commonly found on mountain slope or hill landforms and are primarily sediment transport systems. They occur in large ravines, with a consistent side slope length greater than 10 meters. They usually initiate as first order streams

and commonly extend to ridgetops and summits. Because of high stream gradient, high flow velocity, seasonally low water and migration barriers, HC6 streams are generally not accessible to anadromous or resident fish species. These channels contain negligible spawning or rearing habitat (USFS 1992).

Fish & Essential Fish Habitat (EFH)

Information on the presence of fish within Nevada Creek and the stream's tributaries was compiled using recent Alaska Department of Fish and Game (AKF&G) documentation, geographical information system (GIS) databases and historical site investigations. The Alaska Department of Fish and Game (ADF&G) recently confirmed the actual route of the lower reach of the mainstem Nevada Creek and that the lower reach supports Dolly Varden char (*Salvelinus malma*). ADF&G has submitted a nomination for corrections to the Anadromous Waters Catalog (AWC) identifying the route, anadromous fish use extent and anadromous species composition for Nevada Creek for the next catalog update (ADF&G Nevada Creek Corrections AWC Stream 110-40-10820 dated May 5, 2014). In September of 1995 CH2MHill also conducted a reconnaissance survey of Nevada Creek as documented within a *Technical Memorandum Task 12.3 Fresh Water Aquatics Nevada Creek* report dated December 1996. During CH2MHill's fish use and spawner surveys, six fish species were directly observed. The following four fish species were caught while conducting fish use survey electroshocking; cutthroat trout (*Oncorhynchus calrki*), Dolly Varden char (*Salvelinus malma*), coho salmon (*Oncorhynchus kisutch*), and sculpin (*Cottus* sp.). The following three fish species were observed during an adult salmon spawner survey; pink salmon (*Oncorhynchus gorbuscha*) as the most abundant, chum salmon (*Oncorhynchus keta*) and coho salmon. However, according to the ADF&G Nevada Creek Corrections AWC Stream 110-40-10820 dated May 5, 2014, no documentation exists that supports the inclusion of coho salmon in this waterbody.

The reach of Nevada Creek that supports anadromous fish species falls under the definition of EFH according to the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006. The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 defines "anadromous species" as meaning species of fish which spawn in fresh or estuarine waters of the United States and which migrate to ocean waters, with the term "essential fish habitat" (EFH) meaning those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity.

Although there is a risk that lead from five to six tons of high lead content mineral concentrates currently adjacent Nevada Creek is affecting water quality, water quality within the lower reaches of Nevada Creek is high enough to support anadromous fish species. The presence of anadromous fish species indicates that stream flows within Nevada Creek are close to historic conditions with moderate peak flows after storms and stable base flows and that sufficient complex habitat features that support fish and other aquatic wildlife such as pools, gravel bars and large pieces of wood are present. The majority of the Nevada Creek riparian corridor has a dense, healthy native plant community. Areas of the streams riparian corridor that have been impacted by historic clear cutting have since naturally regenerated. Bank site wetlands further support the streams occurring within the site through hydrologic functions such as water storage, and flow and thermal regulation and carbon functions such as organic nutrient export, in addition to providing increased habitat diversity.

Upland Habitat & Wildlife

The Bank site contains forested upland habitat, and various aquatic habitats such as wetlands, streams and riparian areas. The site has remained undisturbed since historic mining activities ceased and no recent evidence of human encroachment has been observed. Upland habitat is primarily forestland comprised of western hemlock, mountain hemlock, Sitka spruce, and occurrences of Alaska yellow cedar with Alaska and oval-leaved blueberry dominant in the understory. The low elevation upland adjacent to the Gastineau Channel shorelands is primarily Sitka spruce re-growth with a closed canopy that discourages the development of a shrub sub-canopy. Targeted upland areas within the Bank sites low elevation upland, adjacent to the Gastineau Channel shorelands, may be a good candidate for gap cutting, plantings, and/or other treatment methods described by the *Forest Restoration in the Tongass: Why, How and Where* (Christensen 2012).

There are two documented bald eagle (*Haliaeetus leucocephalus*) nesting sites within the Bank site. The Queen Charlotte goshawk (*Accipiter gentilis laingi*), a U.S. Forest Service Region 10 (Alaska Region) Sensitive Species, occurs on Douglas Island. The Queen Charlotte goshawks are known as inhabitants of late seral forests and are closely associated with productive old-growth (POG). The upper elevations of the Bank site contain stands of mature forest/old growth. Sitka black-tailed deer (*Odocoileus hemionus sitkensis*) winter habitat suitability values that range from highest, high, to moderate occur within the Bank site (Southeast Alaska GIS Library 2014). Bear (*Ursus* spp.) summer habitat suitability values that range from highest, high, to moderate also occur within the Bank site (Southeast Alaska GIS Library 2014).

LAND USE

Past Land Use/Historic Properties

Gold was discovered in Nevada Creek in the late 1880s (Redman et al. 1988). By the early 1900s the Alaska Treasure Mine was established and was actively working/exploring several areas for gold occurrences (CEC 1980). The Alaska Treasure Mine comprised of three main adits located at several elevation gradients identified as the upper, middle, and shoreline (lower) adits. The Alaska Treasure Mine upper and lower shoreline adits occur within the proposed Bank site. Establishment of the Bank also presents an opportunity to preserve the cultural resources associated the areas of the Alaska Treasure Mine that occur within the site. Through the Section 106 review process, it is anticipated that the cultural resources associated with the Alaska Treasure Mine will be deemed eligible for listing on the National Register of Historic Places.

Current Land Use

The current use of the proposed Bank is light recreational. However, as the site is private property, access is restricted to the landowner and those granted access by the landowner. There are some scattered recreational residents only accessible by boat south of the Bank site, along the Gastineau Channel shoreline. The City/Borough of Juneau zoning of the Site and adjacent areas is Rural Reserve (RR).

SITE THREATS: POTENTIAL FUTURE LAND USE

Mining

A report completed in 1914, the *Report of the Alaska Treasure Mine* prepared by Fred Close, valued the site's remaining ore upwards of thirty-five million dollars. According to a more recent report prepared by the California Exploration Corporation (CEC 1980) titled the *Geology, Economic Potential and Exploration Recommendations for the Nevada Creek Property* dated November 12, 1980, exploratory mining investigation of the entirety of the Alaska Treasure Mine has been conducted several times to determine the extent of mineral deposits and the economic viability of modern mining. Documented exploration of the Nevada Creek site was conducted by the Al Ven Corporation during 1968 and 1969, and the Occidental Minerals Corporation in 1979 (CEC 1980). The CEC evaluation of the site completed in 1980 concluded that the site had a gross mining value of 2.8 billion at that time (CEC 1980).

There will continue to be interest in the future as worldwide economic demand increases for precious metals such as gold and silver, and industrially important metals such as copper and zinc. The site has a historic access road that could be restored and good access to navigable water for import of equipment and supplies, and export of mined product. A previously considered mine operation, the AJ Mine Project, not located at Nevada Creek but nearer to Juneau, contemplated the Nevada Creek site for vast deposition of mine overburden and tailings (CH2MHil 1996). Obviously, mining at this location would entail multiple potentially significant impacts to wetlands, Nevada Creek and its tributaries, and estuarine wetlands along Gastineau Channel resulting from clearing, overburden placement, mine tailings and other associated mining-related impacts.

Timber Harvest

The mature forested habitats that occur within the Bank site are at risk from clear-cut and selective timber harvest. A timber valuation conducted in 1996 by Curran Consulting, Incorporated, documented a gross log sales revenue value of $2,764,800.00 (Curran Consulting, Inc. 1996). While access remains the greatest challenge to timber harvest at the site, the evidence on the ground of past timber harvests is a reminder that economic conditions drive the feasibility of logging. The site has a mix of both large and medium- sized timber, both hardwood (red alder) and softwood (western hemlock, Sitka spruce, and Alaska yellow cedar). The site has relic access from the shoreline area that could be made passable for log hauling to the shoreline area and shipping to market by barge.

Small Lot Residential & Recreational Development

According to a market research appraisal of the Nevada Creek site performed by Horan and Company, Inc. dated June 27, 2011, it was suggested that one of the possible highest and best uses of the proposed Bank site's waterfront would include a residential or recreation subdivision with small waterfront and uphill lots. Evidence of this demand can be seen throughout the shoreline areas within proximity to Juneau, where weekend and summer homes have been developed that are only accessible by boat or airplane. Furthermore, this site has a raised upland area just inland from the shoreline that offers desirable stable and dry building site conditions. The elevated condition of the shoreline also favors water views also desirable from a home site perspective.

A residential or recreational subdivision along/near Gastineau Channel with associated homes or recreational cabins and outbuildings, docks, waterfront stairs and platforms would impact estuarine wetland functions and in stream/riparian functions within the lower reach of Nevada Creek by the increased presence of humans and pets, increased impervious surfaces and domesticated animal waste and septic systems that can produce contaminated stormwater runoff. Additionally, construction of numerous boat docks along Gastineau Channel would cause further habitat fragmentation.

BANK SITE PHYSICAL, CHEMICAL & BIOLOGICAL CHARACTERISTICS

The Bank site resources proposed for restoration and preservation contribute to the ecological sustainability of the Nevada Creek watershed and the overall Service Area. The historic mining that took place in areas of the Bank site did not cause wide spread disturbances as the majority of the mining activity consisted of tunnel workings. Other than the area of the Nevada Creek's riparian zone currently impacted by historic mining concentrate and the biochemical risk the concentrate poses to the stream's water quality and habitat, the Bank site is largely ecologically intact. The Bank site Fen and Bog Wetlands and the majority of Forested Slope Wetlands have not been artificially altered hydrologically or ecologically and are in pristine condition. Forested Slope Wetlands that were adjacent to mining adits, and within and adjacent to the historic corduroy road that connected the adits, have been historical impacted. Today, these wetlands have naturally regenerated and are heavily canopied with red alder. As a side note, the corduroy road is naturally degrading and some sections have completely rotted away. The lower elevation areas of the site that have experienced historic clear cutting have also naturally regenerated.

As SE Alaska continues to develop, impacts to the Hydrologic, Carbon, Fish, and Aquatic and Terrestrial Support functions of wetlands such as Fens, Bogs, Forested and Estuarine wetlands and anadromous streams, including impacts to associated riparian corridors, will continue through habitat modifications, particularly along lower elevation coastal areas. As presented in the following discussion, the *Wetland Ecosystem Services Protocol for Southeast Alaska* (WESPAK-SE) (Adamus 2013) indicates that the Bank site wetlands are more effective than other non-tidal wetlands in the region at providing Hydrologic, Carbon, Fish, and Aquatic and Terrestrial Support functions. Also presented in the following discussion, the Nevada Creek watershed supports anadromous fish bearing waters and relatively healthy riparian corridors. The Bank site wetlands also provide hydrologic functions that further support the Bank site streams where anadromous fish species occur such as water flow and thermal regulation and water quality functions such as sediment and toxicant retention and stabilization, and also provide increased habitat diversity.

Wetland Ecosystem Services Protocol for Southeast Alaska Functional Assessments

The standard protocol used to assess wetlands within southeast Alaska, the *Wetland Ecosystem Services Protocol for Southeast Alaska* (WESPAK-SE) (Adamus 2013) uses assessments of weighted ecological characteristics (indicators) to generate scores for a wetland's functions and values and the number of indicators that is applied to estimate a particular wetland function or value varies. The protocol combines the indicators using mathematical formulas (models) to generate the score for each wetland function or value. According to the WESPAK-SE protocol, *functions* are what a wetland potentially does, while *values* are the wetland ecosystem services valued by society. For the non-tidal wetlands that occur within the Bank site the protocol assesses 18 functions and 21 values that are most commonly ascribed to wetlands. The WESPAK-SE

condenses those into six broad functional groups identified as follows; Hydrologic, Water Quality Support, Carbon, Fish Group, Aquatic Support and Terrestrial Support. All the functional groups, except for the Carbon group, have an associated value group. There are three additional value groups, identified as Social, Wetland Condition and Wetland Risk that are independent from the functional groups. However, the values scores are not addressed in this text as it is assumed that the USACE and IRT are more interested in the functional effectiveness scores at this time. The Bank site WESPAK-SE functional effectiveness scores for the grouped functional indicators are as follows:

WESPAK-SE Functional Groups	**Bank Site Wetlands WESPAK-SE Functional Group Effectiveness Scores**	
Hydrologic Group -Surface Water Storage -Stream Flow Support -Streamwater Cooling -Streamwater Warming	**Fens**	Fens have a Hydrologic Group function effectiveness score of *8.58* which is *above* the 6.40 *regional median* score.
	Forested Slope Wetlands	Forested Slope Wetlands have a Hydrologic Group function effectiveness score of *6.80* which is above the 6.40 *regional median* score.
	Forested Peatlands	Forested Peatlands have a Hydrologic Group function effectiveness score of *5.04* which is *above* the 3.11 *regional minimum* score but *below* the 6.40 *regional median* score.
Water Quality Group* -Sediment & Toxicant Retention & Stabilization -Phosphorus Retention -Nitrate Removal & Retention	**Fens**	Fens have a Water Quality grouped function effectiveness score of *5.59* which is *above* the 3.59 *regional minimum* score but *below* the 10.00 *regional median* score.
	Forested Slope Wetlands	Forested Slope Wetlands have a Water Quality grouped function effectiveness score of *5.38* which is *above* the 3.59 *regional minimum* score but below the 10.00 *regional median* score.
	Forested Peatlands	Forested Peatlands have a Water Quality grouped function effectiveness score of *6.41* which is *above* the 3.59 *regional minimum* score but *below* the 10.00 *regional median* score.
***Note: The regional median and maximum scores for this group are at the highest numeric value that is produced by the protocol (10.00). It is assumed that a weighted average has not yet been calculated for this group's regional median and maximum.		
Carbon Group -Carbon Sequestration -Organic Nutrient Export	**Fens**	Fens have a Carbon Group function effectiveness score of *6.17* which is *above* the 5.11 *regional minimum* score but *below* the 6.83 *regional median* score.
	Forested Slope Wetlands	Forested Slope Wetlands have a Carbon Group function effectiveness score of *5.72* which is *above* the 5.11 *regional minimum* score but *below* the 6.83 *regional median* score.
	Forested Peatlands	Forested Peatlands have a Carbon Group function effectiveness score of *6.17* which is *above* the 5.11 *regional minimum* score but *below* the 6.83 *regional median* score.
Fish Group -Anadromous Fish Habitat -Resident & Other Fish Habitat	**Fens**	Fens have a Fish Group function effectiveness score of zero as streams present within the Fens are mapped as fishless Class 3 Stream Type not accessible to anadromous fish and assumed to have no resident fish.
	Forested Slope Wetlands*	Forested Slope Wetlands have a Fish Group function effectiveness score of *7.16* which is *above* the 5.24 *regional median* score.
	Forested Peatlands*	Forested Peatlands have a Fish Group function effectiveness score of *6.72* which is *above* the 5.24 *regional median* score.
***Note: The Forested Slope Wetlands and Forested Peatlands contribute to stream flow support as indicated by the WESPAK-SE but do not directly provide anadromous and resident/other fish habitat as the wetlands have no surface connection to the anadromous stream (Nevada Creek) that runs through the wetland assessment area.		
Aquatic Support Group -Aquatic Invertebrate Habitat -Amphibian Habitat -Waterbird Feeding Habitat -Waterbird Nesting Habitat	**Fens**	Fens have an Aquatic Support Group function effectiveness score of *6.80* which is *above* the 5.16 *regional median* score.
	Forested Slope Wetlands	Forested Slope Wetlands have an Aquatic Support Group function effectiveness score of *6.53* which is *above* the 5.16 *regional median* score.
	Forested Peatlands	Forested Peatlands have an Aquatic Support Group function effectiveness score of *5.57* which is *above* the 5.16 *regional median* score.

WESPAK-SE Functional Groups	Bank Site Wetlands WESPAK-SE Functional Group Effectiveness Scores	
Terrestrial Support Group* -Songbird, Raptor & Mammal Habitat -Pollinator Habitat -Native Plant Habitat	**Fens**	Fens have a Terrestrial Support Group function effectiveness score of *6.89* which is *above* the 3.61 *regional minimum* score but *below* the 7.94 *regional median* function score.
	Forested Slope Wetlands	Forested Slope Wetlands have a Terrestrial Support Group function effectiveness score of *7.13* which is *above* the 3.61 *regional minimum* score but *below* the 7.94 *regional median* score.
	Forested Peatlands	Forested Peatlands have a Terrestrial Support Group function effectiveness score of *5.58* which is *above* the 3.61 *regional minimum* score but *below* the 7.94 *regional median* score.
***Note: The regional median and maximum scores for this group are the same numeric value (7.94)		

Fens

In assessing the functional condition of the Bank site Fens according to the WESPAK-SE Manual guidance one general assessment area (AA) was used as these wetlands are hydrologically connected through ground and surface waters, have similar vegetation and habitat, and share the same contributing area (CA) (Appendix A). The WESPAK-SE scores for *individual functions* indicate that the Fens are more effective than other non-tidal wetlands in the region at providing 7 of 18 assessed functions. The Fens scored above the regional median scores for the following *individual* functions; stream flow support (Hydrologic function), nitrate removal and retention (Water Quality function), organic nutrient export (Carbon function), aquatic invertebrate habitat and amphibian habitat (Aquatic Support functions), and pollinator and native plant habitat (Terrestrial Support functions) (Appendix A). The WESPAK-SE *functional group* effectiveness scores for the Fens indicate that these Bank site wetlands are more effective than other regional non-tidal wetlands at providing the grouped indicator functions presented above and as follows;

- The Fens Hydrologic Group function effectiveness score of *8.58* is *above* the 6.40 *regional median* score.
- The Fens Aquatic Support Group function effectiveness score of *6.80* is *above* the 5.16 *regional median* score.

The Fens have a Water Quality grouped function effectiveness score of 5.59 which is *above* the 3.59 regional *minimum* score but *below* the 10.00 regional *median* score. However, the regional median and maximum scores for this group are at the highest numeric value that is produced by the protocol (10.00). Thus, it is assumed that a weighted average has not been calibrated for the regional median and maximum for this functional group. The Fens have a Carbon Group function effectiveness score of 6.17 which is *above* the 5.11 regional *minimum* score but *below* the 6.83 regional *median*. The Fens have a Fish Group function effectiveness score of zero as streams present within the Fens are mapped as fishless Class 3 Stream Types not accessible to anadromous fish and assumed to have no resident fish. The Fens have a Terrestrial Support Group function effectiveness score of 6.89 which is *above* the 3.61 regional *minimum* score but *below* the 7.94 regional *median* function score. It is not clear if the regional median and maximum scores for this functional have been calibrated as well as they are the same numeric value (7.94).

Bog Wetlands (Forested Peatlands)

In assessing the functional condition of the Bank site Bog Wetlands identified as Forested Peatlands according to the WESPAK-SE Manual guidance one general assessment area (AA)

was used as these wetlands are hydrologically connected through ground and surface waters, have similar vegetation and habitat, and share the same contributing area (CA) (Appendix A).The WESPAK-SE scores for *individual functions* indicate that the Forested Peatlands are more effective than other non-tidal wetlands in the region at providing 8 of 18 assessed functions. The Forested Peatlands scored above the regional median scores for the following *individual* 8 functions; phosphorus retention and nitrate removal and retention (Water Quality functions), carbon sequestration and organic nutrient export (Carbon functions), and aquatic invertebrate habitat and amphibian habitat (Aquatic Support functions). The Forested Peatlands also scored above the regional median scores for anadromous and resident/other fish habitat. However, the Forested Peatlands likely contribute to stream flow support but do not directly provide anadromous and resident/other fish habitat as the wetlands have no surface connection to the anadromous and resident/other fish stream that runs through the wetland assessment area (Appendix A).

The WESPAK-SE *functional group* effectiveness scores for the Forested Peatlands indicate that these Bank site wetlands are more effective than other regional non-tidal wetlands at providing the grouped indicator functions presented on Pages 18 and 19 as follows;

- Forested Peatlands have an Aquatic Support Group function effectiveness score of *5.57* which is *above* the 5.16 *regional median* score.

The Forested Peatlands have a Hydrologic Group function effectiveness score of 5.04 which is *above* the 3.11 regional *minimum* score but *below* the 6.40 regional *median* score. The Forested Peatlands have a Water Quality grouped function effectiveness score of 6.41 which is *above* the 3.59 regional *minimum* score but *below* the 10.00 regional *median* score. However, the regional median and maximum scores for this group are at the highest numeric value that is produced by the protocol (10.00). Thus, it is assumed that a weighted average has not been calibrated for the regional median and maximum for this functional group. Forested Peatlands have a Carbon Group function effectiveness score of 6.17 which is *above* the 5.11 regional *minimum* score but *below* the 6.83 regional *median* score. Forested Peatlands have a Fish Group function effectiveness score of 6.72 which is *above* the 5.24 regional *median* score. However, as previously mentioned, the Forested Peatlands likely contribute to stream flow support to some degree but do not directly provide anadromous and resident/other fish habitat as the wetlands have no surface connection to the anadromous stream (Nevada Creek) that runs through the wetland assessment area. Forested Peatlands have a Terrestrial Support Group function effectiveness score of 5.58 which is *above* the 3.61 regional *minimum* score but *below* the 7.94 regional *median* score. It is not clear if the regional median and maximum scores for this functional group has been calibrated the scores are the same numeric value (7.94).

Forested Slope Wetlands (Forested Peatlands)

In assessing the functional condition of the Bank site Forested Slope wetlands, identified as Forested Peatlands according to the WESPAK-SE Manual guidance, two general assessment areas (AAs) were used for these wetlands. Although the entirety of the Forested Slope wetlands share the same contributing area (CA), the upper to mid elevation extent and lower elevation extent of these wetlands are bisected by true Forested Peatland (muskeg/stunted bog woodland). Thus, the upper to mid elevation extent and lower elevation extent of these wetlands are not hydrologically connected. However, as the Forested Slope Wetlands have similar attributes such

as groundwater and surface water hydrology, vegetation and habitat, and share the same contributing area, one assessment covering both areas was used (Appendix A). In addition, the WESPAK-SE Indicator Wetland Types did not have a category that matched the Forested Slope Wetlands. Therefore, the closest match, Forested Peatland was use although the wetlands have mineral muck soils, not peat soils.

The WESPAK-SE scores for *individual functions* indicate that the Forested Slope Wetlands are more effective than other non-tidal wetlands in the region at providing 10 of 18 assessed functions. The Forested Slope Wetlands scored above the regional median scores for the following *individual* 10 functions; stream flow support (Hydrologic function), nitrate removal and retention (Water Quality function), organic nutrient export (Carbon function), aquatic invertebrate habitat and amphibian habitat (Aquatic Support functions), songbird, raptor, and mammal habitat, pollinator habitat, and native plant habitat (Terrestrial Support functions) (Appendix A). The Forested Slope Wetlands also scored above the regional median scores for anadromous and resident/other fish habitat. However, the Forested Slope wetlands contribute to stream flow support (as indicated by the WESPAK-SE protocol) but do not directly provide anadromous and resident/other fish habitat as the wetlands have no surface connection to the anadromous and resident/other fish stream that runs through the wetland assessment area. The WESPAK-SE *functional group* effectiveness scores for the Forested Slope wetlands indicate that these Bank site wetlands are more effective than other regional non-tidal wetlands at providing the grouped indicator functions presented on Pages 18 and 19 as follows;

- The Forested Slope wetlands have a Hydrologic Group function effectiveness score of *6.80* which is above the 6.40 *regional median* score.
- The Forested Slope wetlands have an Aquatic Support Group function effectiveness score of *6.53* which is *above* the 5.16 *regional median* score.
- The Forested Slope wetlands have a Fish Group function effectiveness score of *7.16* which is *above* the 5.24 *regional median* score. However, as previously mentioned, the Forested Slope wetlands contribute to stream flow support as indicated by the WESPAK-SE but do not directly provide anadromous and resident/other fish habitat as the wetlands have no surface connection to the anadromous stream (Nevada Creek) that runs through the wetland assessment area.

The Forested Slope wetlands have a Water Quality grouped function effectiveness score of 5.38 which is *above* the 3.59 regional *minimum* score but below the 10.00 regional *median* score. However, the regional median and maximum scores for this group are at the highest numeric value that is produced by the protocol (10.00). Thus, it is assumed that a weighted average has not been calibrated for the regional median and maximum for this functional group. Forested Slope wetlands have a Carbon Group function effectiveness score of 5.72 which is *above* the 5.11 regional *minimum* score but *below* the 6.83 regional *median* score. Forested Slope wetlands have a Terrestrial Support Group function effectiveness score of 7.13 which is *above* the 3.61 regional *minimum* score but *below* the 7.94 regional *median* score. It is not clear if the regional median and maximum scores for this functional group have been calibrated as well as they are the same numeric value (7.94).

ASSURANCE OF WATER RIGHTS

The Bank site's hydrology is primarily driven by surface and ground waters influenced by SE Alaska weather patterns that typically result in high autumn rainfall, winter snow and spring snowmelt. High surface water flows and ground water levels typically occur during high autumn rainfall and spring snow melt while low surface water flows and ground water levels typically occur in late summer and mid-winter. The Bank site wetland water regimes consist of temporarily flooded, seasonally flooded, semi-permanently flooded, intermittently exposed, permanently flooded and saturated hydroperiods. Occurrence of specific hydroperiods within the site varies according to elevation gradient. Hydroperiod fluctuations are typically associated with intermittent storm events and seasonal variations. Maximum hydroperiod depth and extent typically coincides with high autumn rainfall spring thaw and intermittent storm events. Minimum hydroperiod depth and extent typically coincides with summer drying.

There are no existing hydrologic disturbances on or adjacent to the Bank site, the site is hydrologically self-sustaining and does not required temporary or long-term structural management such as levees, weirs, culverts, etc. to assure restoration success. There is no recorded water appropriate permit on the Nevada Creek property. Under the Alaska Water Use Act, water rights are a legal right to use surface and subsurface water for the domestic/residential, commercial and industrial use of water through diversion, impounding/damming or other means of take from a water source. Water is a common property resource, meaning that a landowner does not have the automatic right to water on their property. However, if a third party were to apply for water rights from a source on the Nevada Creek property, public notice would be given and the property owner (Nevada Creek Mitigation Partners) would have the opportunity to object. Public notice is required if the appropriation exceeds 5,000 cubic feet per day, unless the appropriate effects a salmon stream, in which case notice is given for lesser appropriations Once granted, the water right is deemed appurtenant to the land, but use of water by an individual or company without a water appropriation permit does not give a legal right to the water (Personal Communication with Sponsor Legal Counsel 2015).

CONCLUSION: NEXT STEPS

Upon review of this Prospectus and public comments, if the USACE and IRT determine that Sponsor may proceed with submission of a draft mitigation banking instrument (MBI), the all the elements required of a complete draft instrument in accordance with 33 CFR Part 332 *Compensatory Mitigation for Losses of Aquatic Resources* dated April 10, 2008, will be developed for IRT review.

REFERENCES

Adamus, Paul R. Ph.D., 2012. *Wetland Ecosystem Services Protocol for Alaska–Southeast.* Adamus Resource Assessment Inc.

Alaska Department of Fish and Game (AKF&G). Fish Resource Monitor. Online document <http://extra.sf.adfg.state.ak.us/FishResourceMonitor/?mode=awc>. Website accessed in 2014.

California Exploration Corporation (CEC). 1980. *Geology, Economic Potential and Exploration Recommendations for the Nevada Creek Property.* November 12, 1980.

CH2M Hill. 1996. *AJ Mine Project Task 12.3, Fresh Water Aquatics Nevada Creek Surveys*.

Cowardin, L.M., C. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. FWS/OBS-87/31. U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services, Washington, D.C.

Curran Consulting, Incorporated. 1996. *Timber Valuation Letter*. August 5, 1996.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*, Technical Report Y- 87-1. U.S. Army Corps of Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Gallant *et al* . 1995. *Ecoregions of Alaska* . U.S. Geological Survey Professional Paper 1567, United States Government Printing Office, Washington D.C.

Horan and Company, Inc. 2011. *Market Research Appraisal of the Nevada Creek Site*. June 27, 2011.

National Research Council. 1980. *Lead in the Human Environment*. National Academy of Sciences Press, Washington D.C.

Nortech. 2013. *Corrective Action Plan-Alaska Treasure Mine.*

Redman et al. 1988. *Bureau of Mines Mineral Investigations in the Juneau Mining District, Alaska, 1984- 1988*. U.S. Department of the Interior Bureau of Mines publication. SWCA. 2012.

Southeast Alaska GIS Library. Wetlands Module. Online document <http://seakgis.alaska.edu/wetlands-module---wespak-se/> Website accessed in 2014.

U.S. Army Corps of Engineers (USACE). 2008. *Code of Federal Regulations, Title 33, Federal Compensatory Mitigation for Losses of Aquatic Resources Final Rule.* Federal Register, Volume 73, Number 70. 2008.

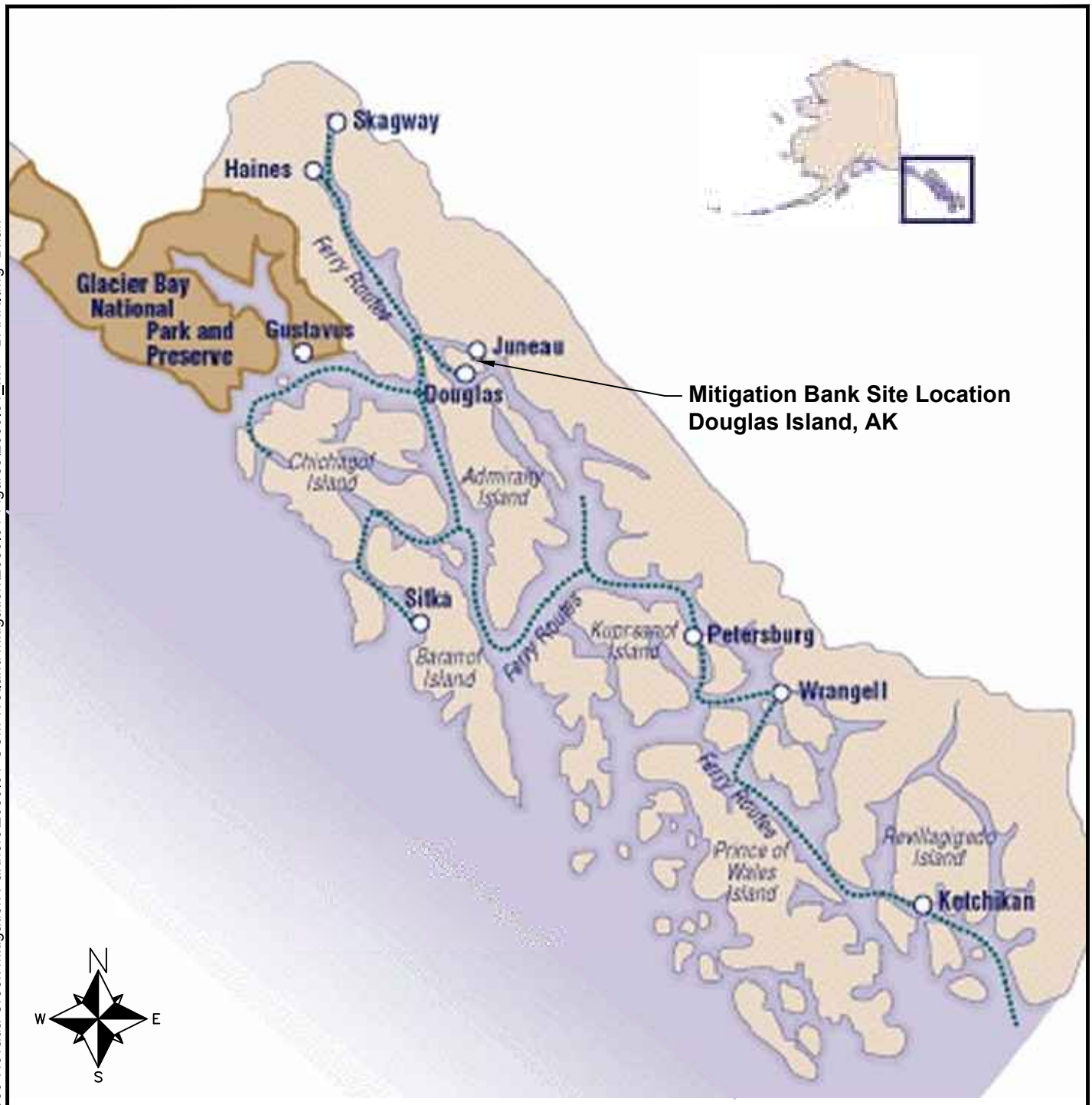
U.S. Army Corps of Engineers. 2007. *Regional Supplement to the Corps of Engineers Wetland*

Delineation Manual: Alaska Region. U.S. Army Engineer Research and Development Center 2007.

U.S. Fish & Wildlife Service (USFWS). National Wetlands Inventory. Online document <http://www.fws.gov/wetlands/Data/Mapper.html>. Website accessed in 2014.

U.S.D.A. Forest Service (USFS). 1992. *Channel Type User Guide - Tongass National Forest Southeast Alaska* (CTUG).

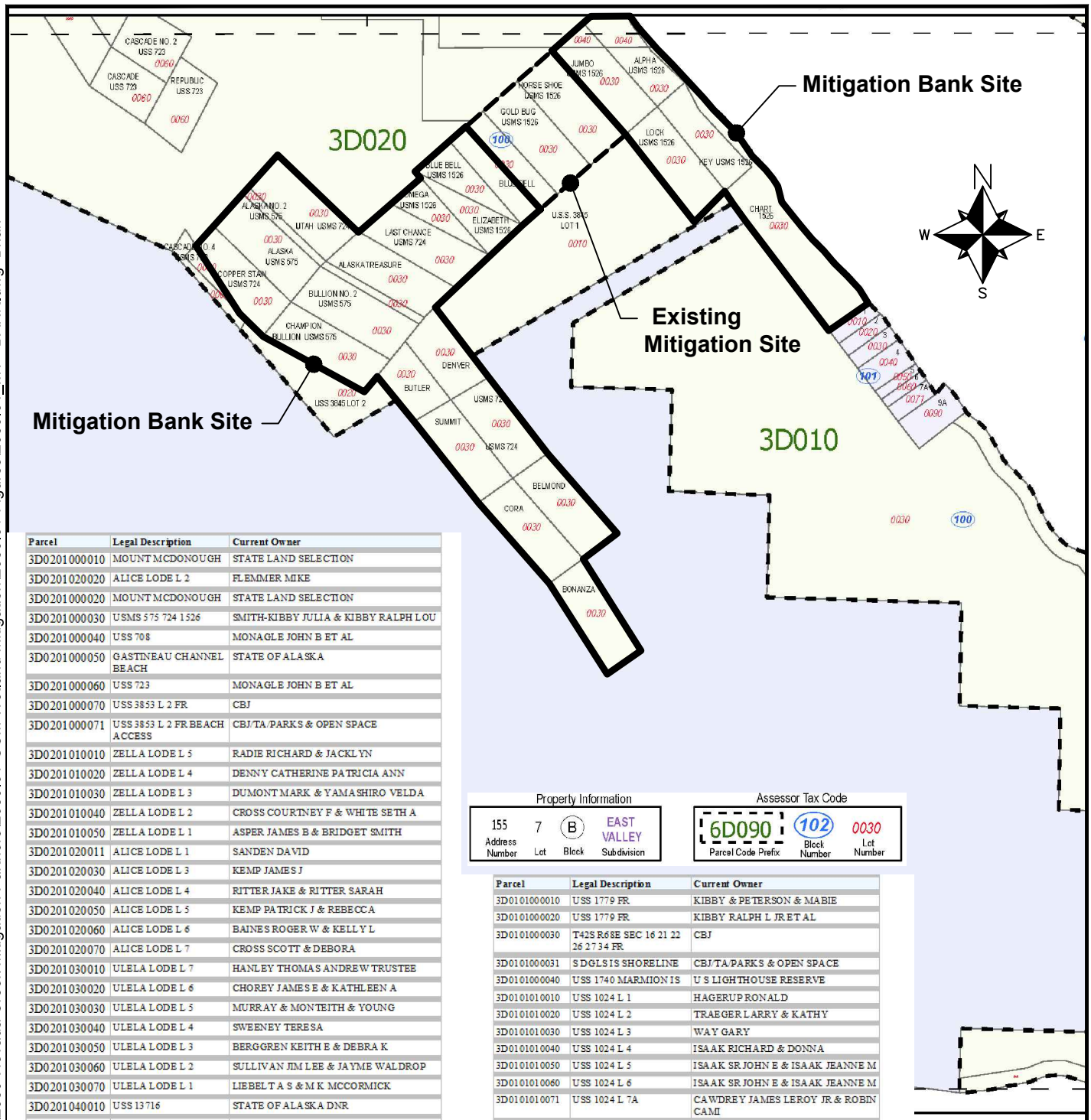
FIGURES



SITE LOCATION

CITY: Juneau **BOROUGH:** Juneau **STATE:** Alaska
WATERWAY: Nevada Creek Watershed
PROPOSED ACTIVITY: Mitigation Bank
DIRECTIONS TO SITE:
The Nevada Creek Mitigation Site is located on southern Douglas Island, and the site is accessed by boat, helicopter or float plane.

APPLICANT: Nevada Creek Mitigation Partners
FILE #: POA-2014-438 Nevada Creek
LATITUDE: 58.2279° North
LONGITUDE: -134.3026° West
SECTIONS: 16,17,20,21 **TOWNSHIP:** 42 South
RANGE: 68 East **MERIDIAN:** Copper River Meridian
SHEET 1 **OF** 8 **DATE:** 2/24/15



Parcel	Legal Description	Current Owner
3D0201000010	MOUNT MCDONOUGH	STATE LAND SELECTION
3D0201020020	ALICE LODE L 2	FLEMMER MIKE
3D0201000020	MOUNT MCDONOUGH	STATE LAND SELECTION
3D0201000030	USMS 575 724 1526	SMITH-KIBBY JULIA & KIBBY RALPH LOU
3D0201000040	USS 708	MONAGLE JOHN B ET AL
3D0201000050	GASTINEAU CHANNEL BEACH	STATE OF ALASKA
3D0201000060	USS 723	MONAGLE JOHN B ET AL
3D0201000070	USS 3853 L 2 FR	CBJ
3D0201000071	USS 3853 L 2 FR BEACH ACCESS	CBJ/TA/PARKS & OPEN SPACE
3D0201010010	ZELLA LODE L 5	RADIE RICHARD & JACKLYN
3D0201010020	ZELLA LODE L 4	DENNY CATHERINE PATRICIA ANN
3D0201010030	ZELLA LODE L 3	DUMONT MARK & YAMASHIRO VELDA
3D0201010040	ZELLA LODE L 2	CROSS COURTNEY F & WHITE SETH A
3D0201010050	ZELLA LODE L 1	ASPER JAMES B & BRIDGET SMITH
3D0201020011	ALICE LODE L 1	SANDEN DAVID
3D0201020030	ALICE LODE L 3	KEMP JAMES J
3D0201020040	ALICE LODE L 4	RITTER JAKE & RITTER SARAH
3D0201020050	ALICE LODE L 5	KEMP PATRICK J & REBECCA
3D0201020060	ALICE LODE L 6	BAINES ROGER W & KELLY L
3D0201020070	ALICE LODE L 7	CROSS SCOTT & DEBORA
3D0201030010	ULELA LODE L 7	HANLEY THOMAS ANDREW TRUSTEE
3D0201030020	ULELA LODE L 6	CHOREY JAMES E & KATHLEEN A
3D0201030030	ULELA LODE L 5	MURRAY & MONTEITH & YOUNG
3D0201030040	ULELA LODE L 4	SWEENEY TERESA
3D0201030050	ULELA LODE L 3	BERGGREN KEITH E & DEBRA K
3D0201030060	ULELA LODE L 2	SULLIVAN JIM LEE & JAYME WALDROP
3D0201030070	ULELA LODE L 1	LIEBELT A S & M K MCCORMICK
3D0201040010	USS 13716	STATE OF ALASKA DNR
5B210103D020	KODZOFF # D 2	JACOBSEN DUSTIN

Property Information

155	7	B	EAST VALLEY
Address Number	Lot	Block	Subdivision

Assessor Tax Code

6D090	102	0030
Parcel Code Prefix	Block Number	Lot Number

Parcel	Legal Description	Current Owner
3D0101000010	USS 1779 FR	KIBBY & PETERSON & MABIE
3D0101000020	USS 1779 FR	KIBBY RALPH L JR ET AL
3D0101000030	T42S R68E SEC 16 21 22 26 27 34 FR	CBJ
3D0101000031	S DGLS IS SHORELINE	CBJ/TA/PARKS & OPEN SPACE
3D0101000040	USS 1740 MARMION IS	U S LIGHTHOUSE RESERVE
3D0101010010	USS 1024 L 1	HAGERUP RONALD
3D0101010020	USS 1024 L 2	TRAEGER LARRY & KATHY
3D0101010030	USS 1024 L 3	WAY GARY
3D0101010040	USS 1024 L 4	ISAAK RICHARD & DONNA
3D0101010050	USS 1024 L 5	ISAAK SR JOHN E & ISAAK JEANNE M
3D0101010060	USS 1024 L 6	ISAAK SR JOHN E & ISAAK JEANNE M
3D0101010071	USS 1024 L 7A	CAWDREY JAMES LEROY JR & ROBIN CAMI
3D0101010090	USS 1024 L 9A	KIBBY RALPH L JR & JULIA F

0 2000 4000

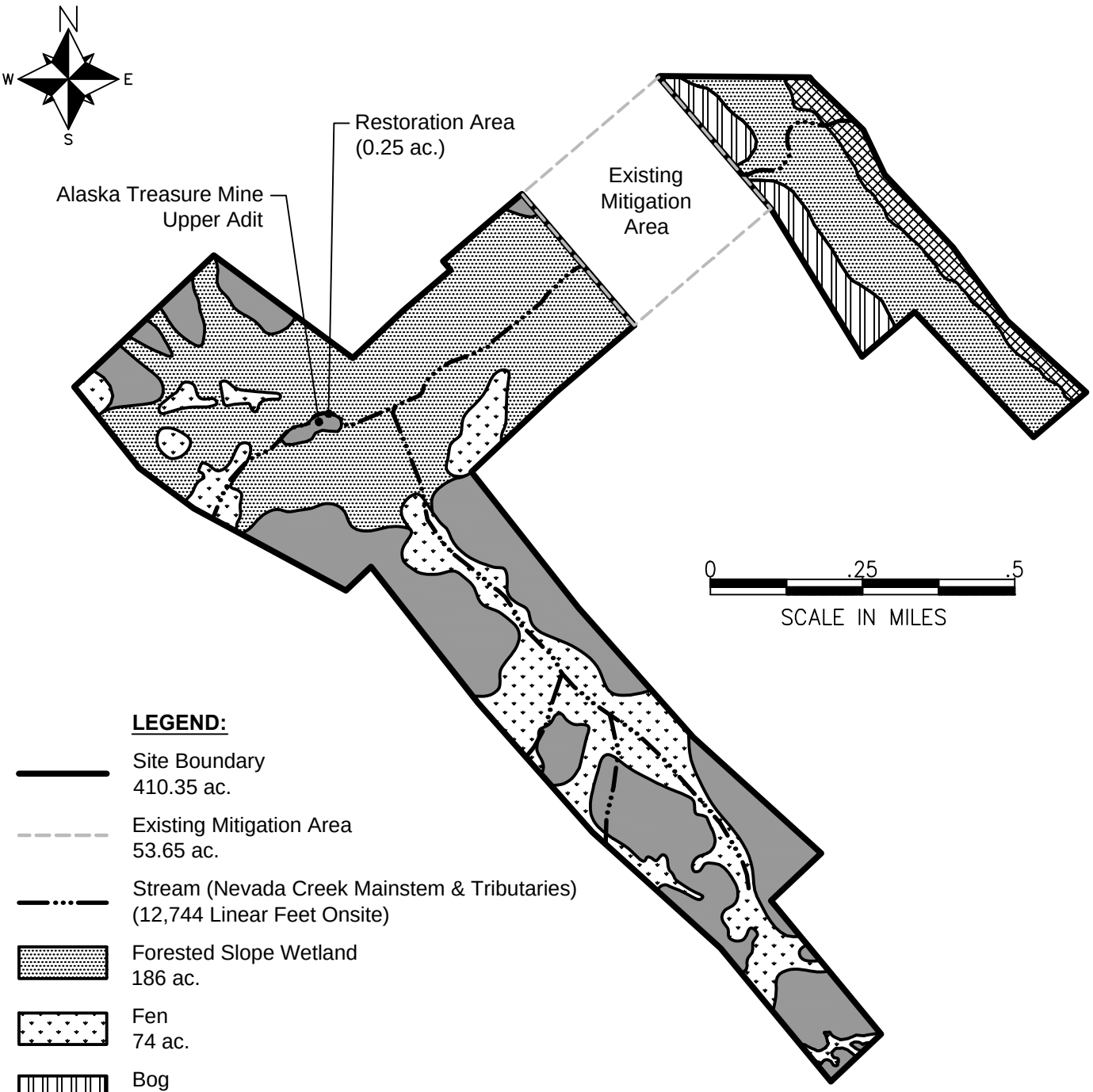
SCALE IN FEET

OWNERSHIP MAP

CITY: Juneau **BOROUGH:** Juneau **STATE:** Alaska
WATERWAY: Nevada Creek Watershed
PROPOSED ACTIVITY: Mitigation Bank
DIRECTIONS TO SITE:
The Nevada Creek Mitigation Site is located on southern Douglas Island, and the site is accessed by boat, helicopter or float plane.

APPLICANT: Nevada Creek Mitigation Partners
FILE #: POA-2014-438 Nevada Creek
LATITUDE: 58.2279° North
LONGITUDE: -134.3026° West
SECTIONS: 16,17,20,21 **TOWNSHIP:** 42 South
RANGE: 68 East **MERIDIAN:** Copper River Meridian
SHEET 2 **OF** 8 **DATE:** 2/24/15

2/24/2015 2:48 PM S:\ELS\AK\Juneau\2039-Nevada Creek Mitigation Partners\2039.01-GCM Wetland Mitigation\2039.01-Figures\2039.01_MT - BANK.dwg Brian



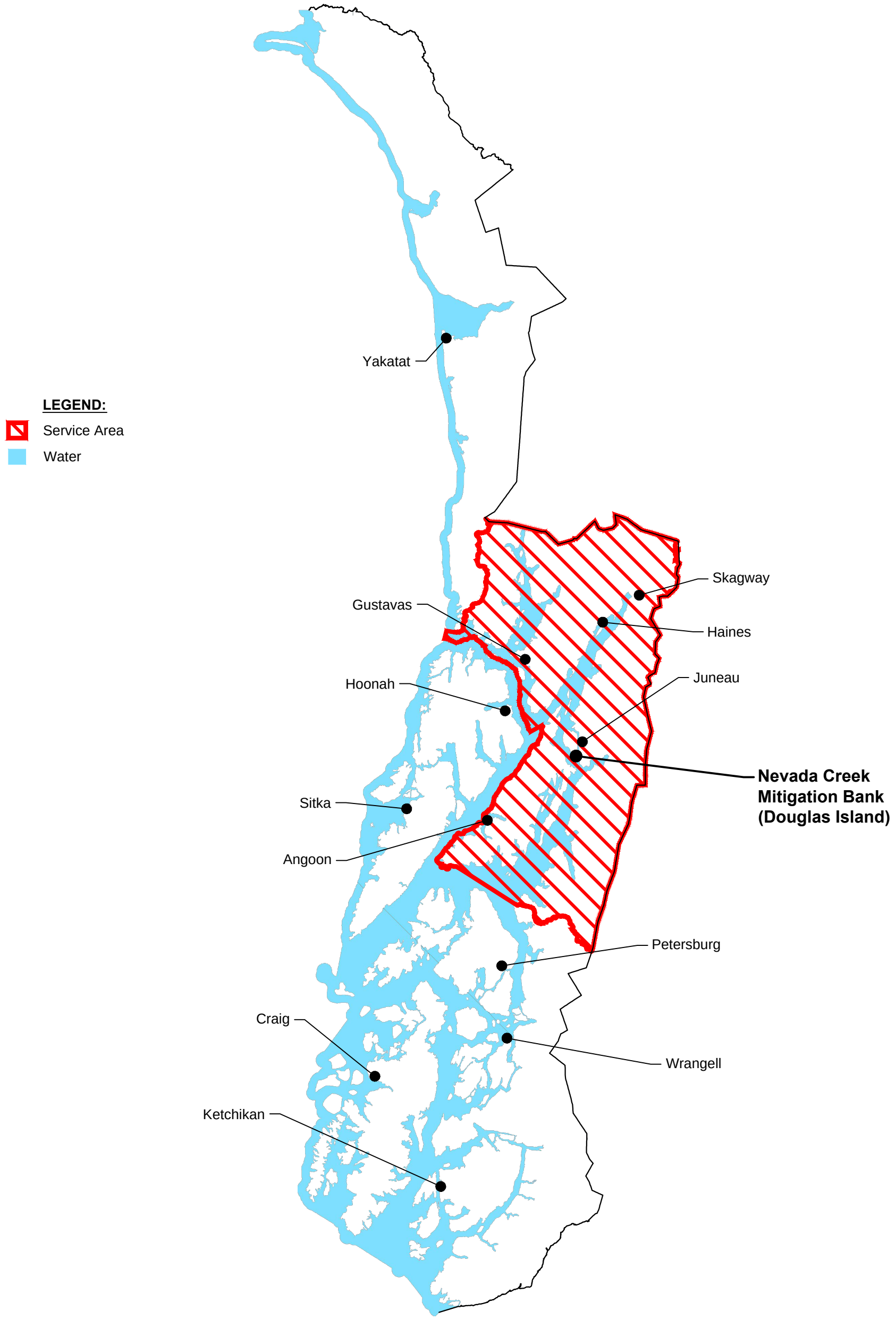
LEGEND:

- Site Boundary
  410.35 ac.
- Existing Mitigation Area
  53.65 ac.
- Stream (Nevada Creek Mainstem & Tributaries)
  (12,744 Linear Feet Onsite)
- Forested Slope Wetland
  186 ac.
- Fen
  74 ac.
- Bog
  17 ac.
- Gastineau Shoreland (Includes Estuarine Wetland)
  17 ac.
- Upland
  116 ac.

SITE MAP

CITY: Juneau **BOROUGH:** Juneau **STATE:** Alaska
WATERWAY: Nevada Creek Watershed
PROPOSED ACTIVITY: Mitigation Bank
DIRECTIONS TO SITE:
The Nevada Creek Mitigation Site is located on southern Douglas Island, and the site is accessed by boat, helicopter or float plane.

APPLICANT: Nevada Creek Mitigation Partners
FILE #: POA-2014-438 Nevada Creek
LATITUDE: 58.2279° North
LONGITUDE: -134.3026° West
SECTIONS: 16,17,20,21 **TOWNSHIP:** 42 South
RANGE: 68 East **MERIDIAN:** Copper River Meridian
SHEET 3 **OF** 8 **DATE:** 2/24/15



LEGEND:

Service Area

Water

N W E S

0 50 100

SCALE IN MILES

SERVICE AREA MAP

CITY: Juneau **BOROUGH:** Juneau **STATE:** Alaska
WATERWAY: Nevada Creek Watershed
PROPOSED ACTIVITY: Mitigation Bank
DIRECTIONS TO SITE:
The Nevada Creek Mitigation Site is located on southern Douglas Island, and the site is accessed by boat, helicopter or float plane.

APPLICANT: Nevada Creek Mitigation Partners
FILE #: POA-2014-438 Nevada Creek
LATITUDE: 58.2279° North
LONGITUDE: -134.3026° West
SECTIONS: 16,17,20,21 **TOWNSHIP:** 42 South
RANGE: 68 East **MERIDIAN:** Copper River Meridian
SHEET 4 **OF** 8 **DATE:** 2/25/15

LEGEND:

Service Area (Includes HUC8# 19010204, 19010206, 19010301, 19010302, 19010303, 19010304)

8-Digit HUC Boundaries

6-Digit HUC Boundaries:[1]

(1) 190101; Southern Southeast Alaska

(2) 190102; Central Southeast Alaska

(3) 190103; Northern Southeast Alaska

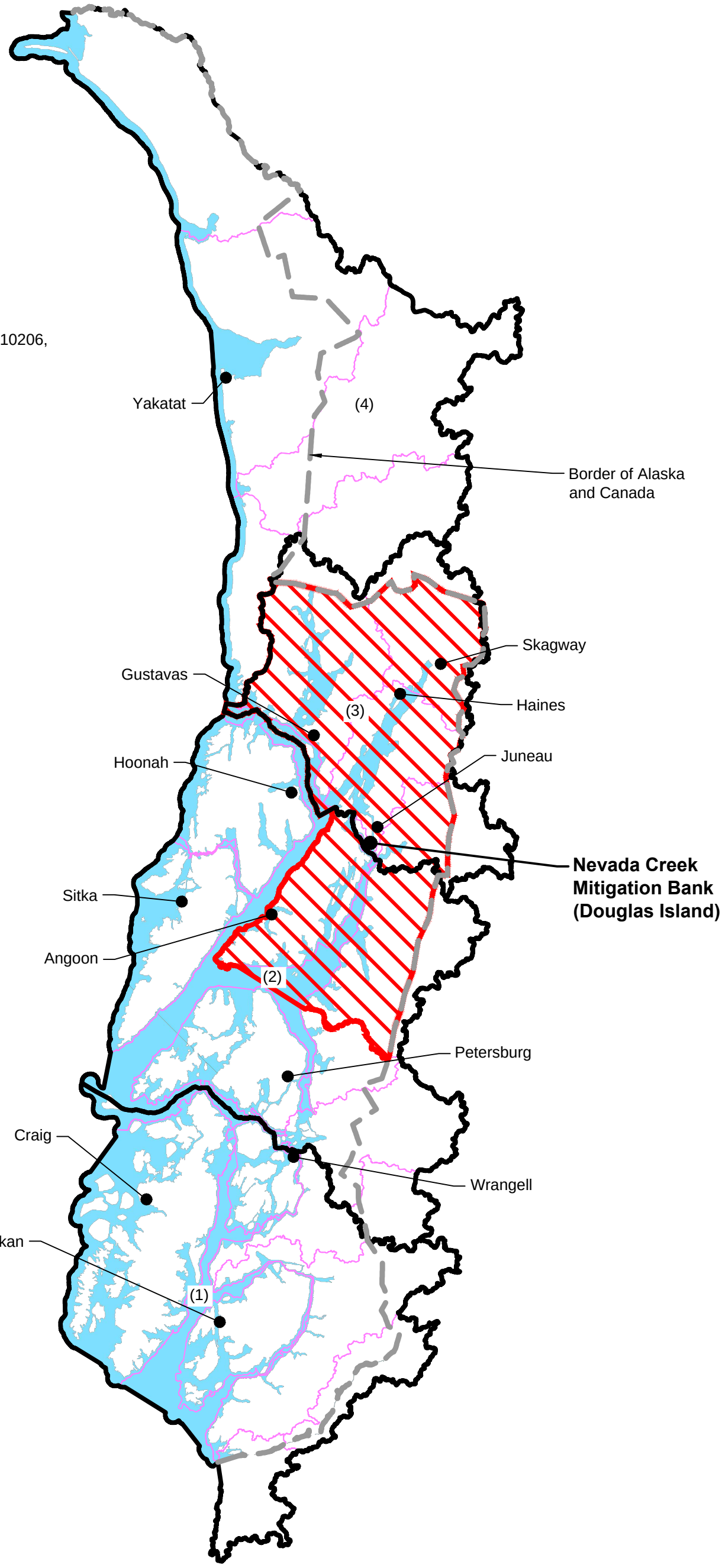
(4) 190104; Gulf of Alaska

Other:

Water

NOTE(S):

1. HUC boundaries from USGS website at: *http://viewer.nationalmap.gov/viewer/*



0 50 100

SCALE IN MILES

SERVICE AREA AND HYDROLOGIC UNIT CODE MAP

CITY: Juneau **BOROUGH:** Juneau **STATE:** Alaska
WATERWAY: Nevada Creek Watershed
PROPOSED ACTIVITY: Mitigation Bank
DIRECTIONS TO SITE:
The Nevada Creek Mitigation Site is located on southern Douglas Island, and the site is accessed by boat, helicopter or float plane.

APPLICANT: Nevada Creek Mitigation Partners
FILE #: POA-2014-438 Nevada Creek
LATITUDE: 58.2279° North
LONGITUDE: -134.3026° West
SECTIONS: 16,17,20,21 **TOWNSHIP:** 42 South
RANGE: 68 East **MERIDIAN:** Copper River Meridian
SHEET 5 **OF** 8 **DATE:** 2/25/15

LEGEND:

Service Area

Ecoregions:[1]

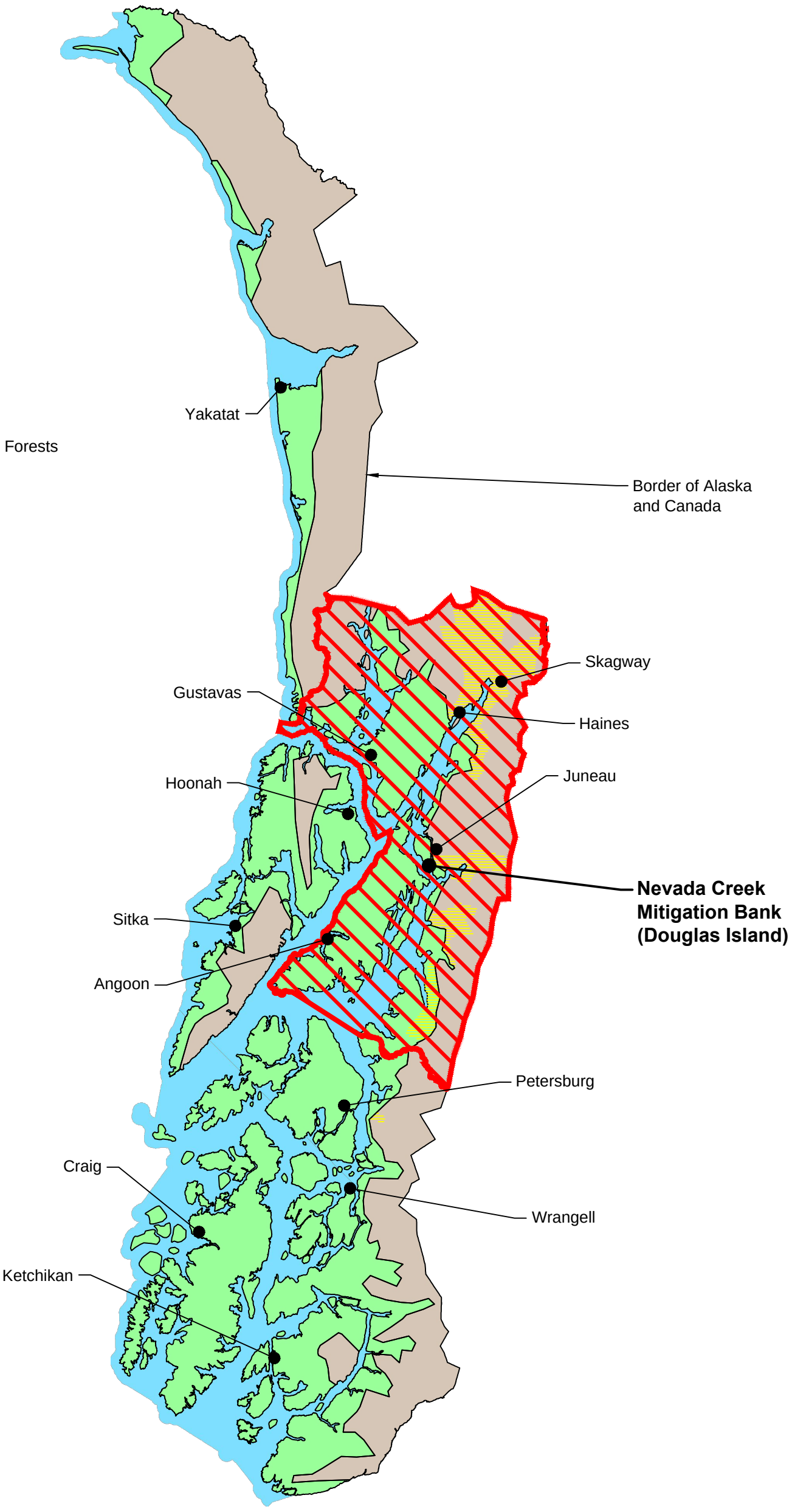
Pacific Coastal Mountains

Coastal Western Hemlock-Sitka Spruce Forests

Transitional Areas[2]

Other:

Water



NOTE(S):

1. Ecoregions from USGS Ecoregions of Alaska (Gallant *et al* 1995).
2. Where Coastal Western Hemlock - Sitka Spruce Forests occur within Pacific Coastal Mountains Ecoregion.

0 50 100

SCALE IN MILES

SERVICE AREA AND ECOREGION MAP

CITY: Juneau **BOROUGH:** Juneau **STATE:** Alaska
WATERWAY: Nevada Creek Watershed
PROPOSED ACTIVITY: Mitigation Bank
DIRECTIONS TO SITE:
The Nevada Creek Mitigation Site is located on southern Douglas Island, and the site is accessed by boat, helicopter or float plane.

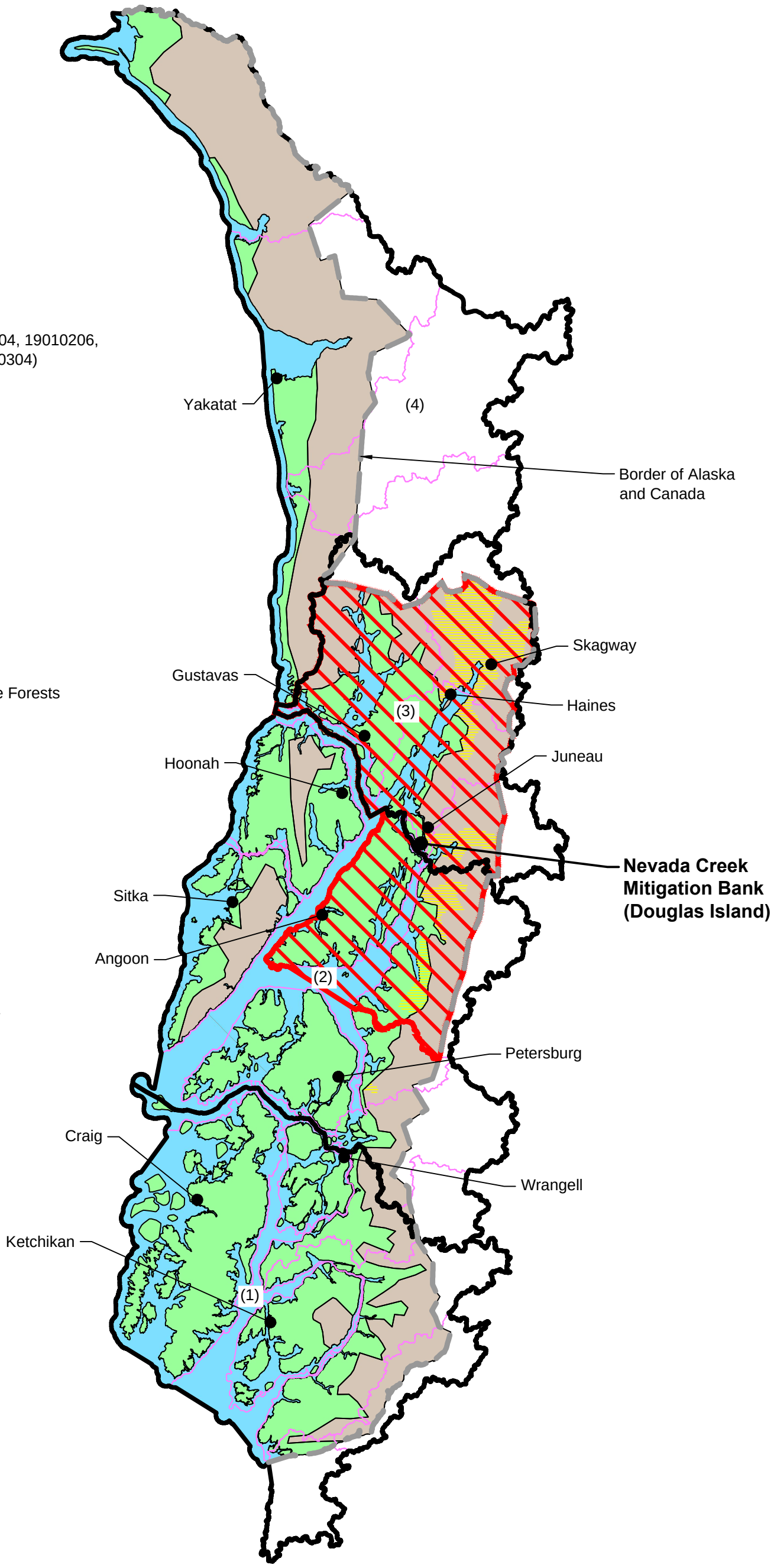
APPLICANT: Nevada Creek Mitigation Partners
FILE #: POA-2014-438 Nevada Creek
LATITUDE: 58.2279° North
LONGITUDE: -134.3026° West
SECTIONS: 16,17,20,21 **TOWNSHIP:** 42 South
RANGE: 68 East **MERIDIAN:** Copper River Meridian
SHEET 6 **OF** 8 **DATE:** 2/24/15

LEGEND:

- Service Area (Includes HUC8# 19010204, 19010206, 19010301, 19010302, 19010303, 19010304)
- 8-Digit HUC Boundaries
- Water
- 6-Digit HUC Boundaries:[1]
  - (1) 190101; Southern Southeast Alaska
  - (2) 190102; Central Southeast Alaska
  - (3) 190103; Northern Southeast Alaska
  - (4) 190104; Gulf of Alaska
- Ecoregions:[2]
  - Pacific Coastal Mountains
  - Coastal Western Hemlock-Sitka Spruce Forests
  - Transitional Areas[3]

NOTE(S):

1. HUC boundaries from USGS website at: *http://viewer.nationalmap.gov/viewer/*
2. Ecoregions from USGS Ecoregions of Alaska (Gallant *et al* 1995).
3. Where Coastal Western Hemlock - Sitka Spruce Forests occur within Pacific Coastal Mountains Ecoregion.



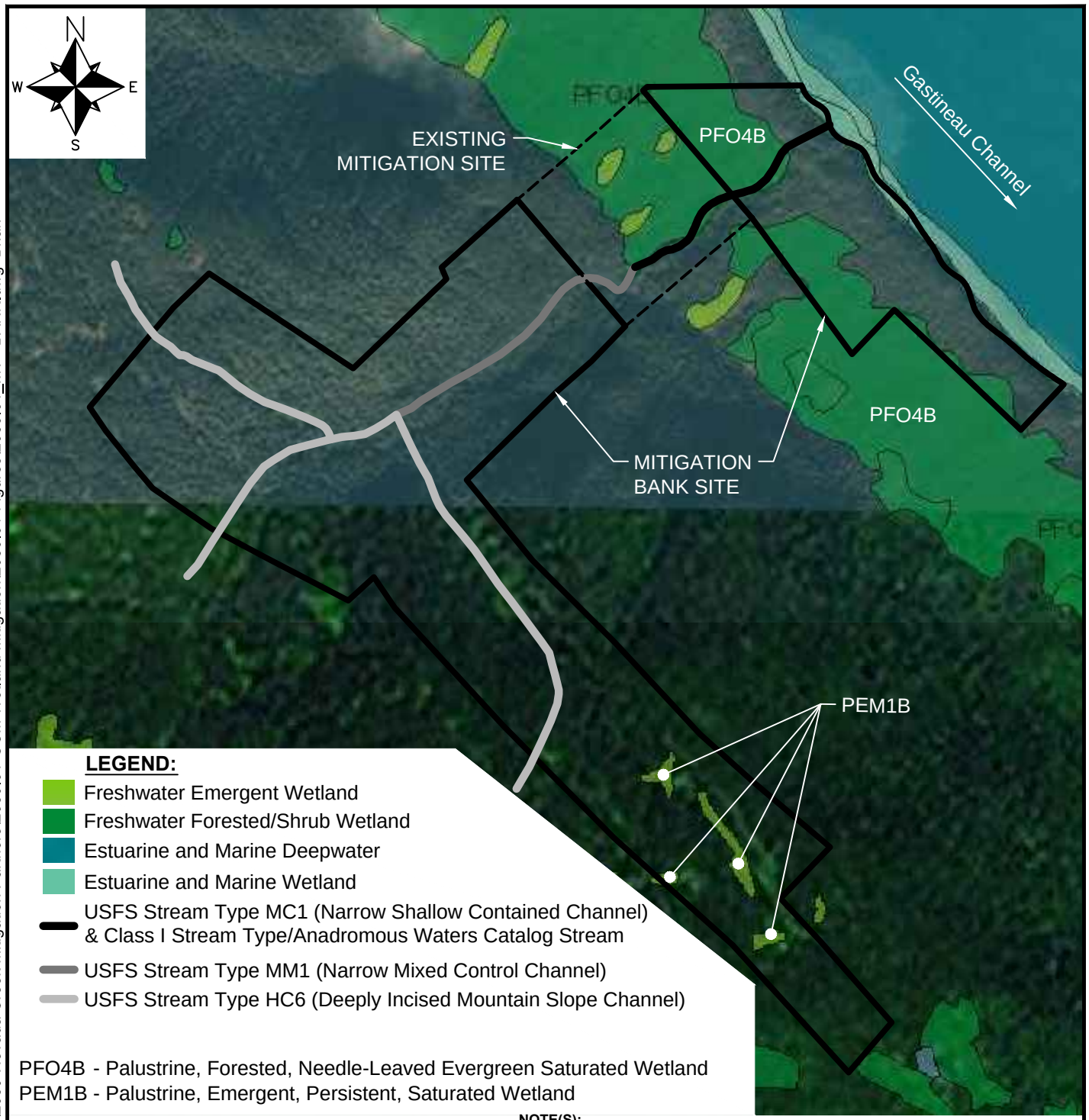
0 50 100

SCALE IN MILES

SERVIVE AREA, HYDROLOGIC UNIT CODE AND ECOREGION MAP

CITY: Juneau **BOROUGH:** Juneau **STATE:** Alaska
WATERWAY: Nevada Creek Watershed
PROPOSED ACTIVITY: Mitigation Bank
DIRECTIONS TO SITE:
The Nevada Creek Mitigation Site is located on southern Douglas Island, and the site is accessed by boat, helicopter or float plane.

APPLICANT: Nevada Creek Mitigation Partners
FILE #: POA-2014-438 Nevada Creek
LATITUDE: 58.2279° North
LONGITUDE: -134.3026° West
SECTIONS: 16,17,20,21 **TOWNSHIP:** 42 South
RANGE: 68 East **MERIDIAN:** Copper River Meridian
SHEET 7 **OF** 8 **DATE:** 2/25/15



NOTE(S):

1. Map provided on-line by US Fish & Wildlife Service at web address: *http://www.fws.gov/wetlands/data/index.html* and United States Forest Services.

NWI & USFS CLASSIFICATION/STREAM TYPE MAP

CITY: Juneau **BOROUGH:** Juneau **STATE:** Alaska
WATERWAY: Nevada Creek Watershed
PROPOSED ACTIVITY: Mitigation Bank
DIRECTIONS TO SITE:
The Nevada Creek Mitigation Site is located on southern Douglas Island, and the site is accessed by boat, helicopter or float plane.

APPLICANT: Nevada Creek Mitigation Partners
FILE #: POA-2014-438 Nevada Creek
LATITUDE: 58.2279° North
LONGITUDE: -134.3026° West
SECTIONS: 16,17,20,21 **TOWNSHIP:** 42 South
RANGE: 68 East **MERIDIAN:** Copper River Meridian
SHEET 8 **OF** 8 **DATE:** 2/24/15

2/24/2015 2:48 PM S:\ELS\AK\Juneau\2039-Nevada Creek Mitigation Partners\2039.01-GCM Wetland Mitigation\2039.01-Figures\2039.01_MT - BANK.dwg Brian