

Development Plan for the Lynn Canal Fiber Link Project For Lease/Easement of Submerged State Lands

Purpose: This project is intended to provide redundant data transport for our Upper Lynn Canal customer base that rely primarily on our South East Alaska Microwave Network. This project will also be sized to provide bandwidth to other carriers, and possibly the Yukon territories in future years. This project is also in response to the State of Alaska’s identification of broadband needs for Southeast Alaska.

Nature of Activity: The project involves laying a fiber optic cable in Lynn Canal, including Chilkoot Inlet and Taiya Inlet, from Juneau to Haines and Skagway. The project will cross through three boroughs, the Juneau, Haines, and Skagway. The cable landing sites are at Lena Point, Juneau; AP&T’s power cable landing site in Lutak Inlet, Haines; and Smugglers Cove, Nahku Bay, Skagway. The cable is proposed to follow the existing cable route shown on navigational charts labeled “cable area.” There is no plan to bury the cable except at the landings, through the intertidal zone. The cable in the tidal zones would be protected with an approximately 4-inch conduit buried before the cable is pulled through. Concrete cable vaults would be located at each landing to connect to terrestrial infrastructure. The cable will be approximately 28mm (1.1-in) in diameter. Please see the attached figures.

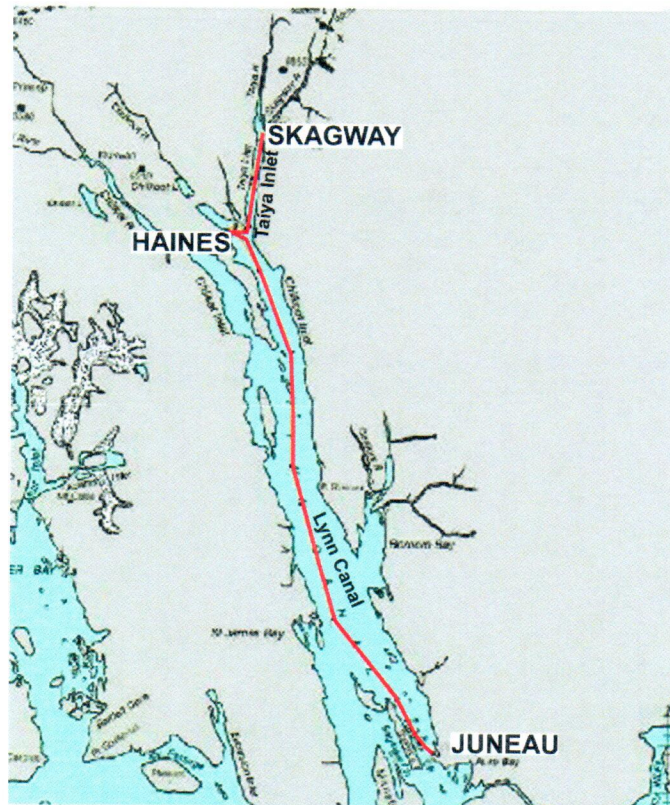


FIGURE 1 – Submarine Fiber Optic Cable General Layout

Fiber Cable Laying: The fiber optic cable will be laid on the Lynn Canal seabed using a standard cable laying ship (diagrams and photos enclosed); burial is not planned. Prior to laying the cable

a bathymetric survey will be conducted of the route to determine if there are any new geographic hazards since this route was last utilized.

Development Plan: In its planning and design for this project, AP&T wants to minimize its risk and environmental impact, and therefore chose the “Cable Area” route because it is already marked on Navigational Charts and impacts to the seabed have already occurred from previously laid cables and therefore this project should not be considered a new impact on the environment. Of the three cable landings, only the Skagway “Smugglers Cove” site does not currently have submarine cables.

Project permitting will occur with DNR, COE, the three Municipalities, and DOT. Other agencies are expect to comment through the DNR and COE permitting process public notices.¹ Discussions with the fishing organizations, i.e. United SE Alaska Gillnetters, South East Alaska Fisherman’s Alliance, Lynn Canal Gillnetters, and United Fisherman of Alaska will take place during the permitting process as well. A pre-application meeting took place on October 1 in Juneau to familiarize the resource agencies with the project (sign-in sheet is enclosed).

Initially, the submarine cable company will conduct a bathymetric survey of the cable route to identify any geographic features that may be a hazard; submarine avalanches may have changed the condition of the existing “Cable Area” route and therefore need to be identified in advance to determine if burying the cable (or strengthening the cable by adding more armoring) in that area might be necessary. Also, they will inspect each cable landing for their condition prior to beginning the laying of cable. Cable splice vaults at the cable landings will be installed prior to beginning the cable laying. The Juneau landing at Lena Point will occur on Municipal lands, the Haines landing at Lutak Inlet will occur on DOT right-of-way along the Lutak Highway, and the Skagway landing at Smugglers Cove will occur on Municipal lands. Permitting will occur with all three parties prior to installation of the cable vaults. All lands below mean high tide are State submerged lands. No wetlands occur at any of the terrestrial sections of these three landings.

Cable Vault

The submarine cable will transition to a terrestrial cable by splicing to a smaller cable (less armor) in a cable vault. At this time we plan to use at each location two 8-foot-diameter by 3-foot-tall pre-cast concrete water-main manhole type structures stacked to create a 6-foot-tall vault. This is the same type used for the Skagway to Haines submarine power cable vaults. If another vault is chosen, they will be similar in design, although they could be oblong rather than round (there are many types on the market). These vaults are capped by a concrete lid with a metal manhole access point, which would be padlocked to prevent unauthorized entry and for public safety. The vaults would be buried, leaving approximately 6-12 inches exposed on the surface and will be placed above the high-high tide line.

The vaults can be delivered by flatbed truck to each location and moved with the aid of a backhoe or D-8 excavator, or equivalent. The excavator will dig a hole for the cable vault (approximately 14 cu. yds. will be removed), place the vault, and then the excavated material will be immediately reused to help bury the cable vault, but keeping its top exposed. The terrestrial cable will be buried within the access road corridor until it reaches existing overhead infrastructure to reach its final destination. No terrestrial State lands are located at these landings, only submerged and intertidal.

¹ E-Mail communication from Jackie Timothy/ADF&G – SE Regional Supervisor; “You won’t need any permits from ADF&G. If you will need a DNR subtidal lease...I’ll pass the info to Marla Carter, who coordinates on behalf of the department when there is a lease.”

Buried Conduit

Trenching through the intertidal zone to the cable vault will occur to bury an approximately 4-inch-diameter conduit made of either concrete, steel, HDPE, or PVC for the 1.1-inch-diameter fiber optic cable. To reduce the potential for human interaction with the cable at the landings, the trenching will occur at the best low tide possible (i.e. minus tide) to extend the conduit out as far as possible. The conduit installations will occur as much as a couple months prior to laying of the cable, as would the cable vaults. An excavator will drive out onto the beach and begin trenching at the lowest tidal point at that time. The excavator will not drive into marine water at any time during this activity. The conduit would be placed in the trench working back from the lowest tidal point during the minus tide up to the cable vault so that the rising tide is following the activity. Once each section of the conduit is placed, the trench would immediately be backfilled with only excavated material prior to the incoming tides return; accomplishing this in a single tidal change. It is estimated that up to 200 feet of trenching may be needed to get through the intertidal zone; will vary for each landing, but should be equal or less than this at all locations. Trenching would be 4-6 feet deep utilizing a backhoe or D-8 or similar excavator; the excavator will not drive out into the marine water to prevent sedimentation. A buoy with a rope attached can pass through the conduit to the vault to later pull the cable through (buoy floats on the surface marking its location and providing the rope).

All beaches are rocky, with more rock than sand present. The beach at Smugglers Cove has the Skagway River to its east and the Taiya River to its west (both within a quarter mile), both glacially fed that will provide glacial flour and sediment to potentially cover the area of the conduit burial in the cove. The burial of the cable conduit at each beach will be within a narrow corridor with a short-term and onetime impact.

Cable warning signs will be posted facing the marine waters at each landing.

Environmental Protection

Mechanized equipment, i.e. excavator, will not be driven into marine waters. Any mechanized equipment to be used on the beaches to trench for the conduit will be inspected prior to construction for oil or lubricant leaks; if found the leak will either be repaired or another excavator used. No fueling of mechanized equipment will occur on site. A supply of rags, absorbent pads, and trash bags will be present at each landing location while an excavator is at work in case a leak is discovered. Any mechanized equipment on site will be inspected daily for leaks. If rags or absorbent pads are used, they will be immediately placed in a plastic trash bag and disposed of in an approved manner that same day. Mechanized equipment should only be present for 1-3 days during vault installation and perhaps one day to help pull the cable in through the buried conduit and to then place the pre-cast cement cover on the vault. It is also expected that the excavator will only be present on each beach for one tidal cycle during 1 day, ensuring this impact is of limited duration.

For sedimentation control, silt fencing may be utilized around cable vault excavation to prevent the release of silt-laden drainage into marine waters; straw would be used for disturbed soils to prevent erosion. After installation of the vault, straw and grass seed may be used to protect and stabilize soils; depending on site conditions, i.e. mostly cobble, etc. Backfill over the cable



conduits will consist of the excavated beach material, which is expected to primarily be cobble, which will minimize sedimentation. The maximum trench and fill at each beach landing is anticipated to be approximately 133 cu. yds (based on a 200' length, 3' wide trench, by <6' deep). Sedimentation is not expected to be of concern because the beaches are primarily rock cobble with some sand. Any sediment that is in the excavated material, which will be reused to bury the conduits, may be dislodged by the twice a day tidal cycle for a few days, but conditions should then be stable since no additional material is going to be used (only the original beach material). For the Smugglers Cove landing in Skagway, the Taiya River and Skagway River both contribute a significant amount of sediment to the inlet and will likely place silt over the cable landing. The Lena Point landing at Juneau and the Lutak Inlet landing at Haines both have existing cables buried through the intertidal zones.

Hazardous Substances: Hazardous substances will not be allowed on site, i.e. fuel, oil, lubricants. All maintenance activity for equipment utilized to construction the cable landing facilities will be conducted off site by the contractor. Daily inspections of the mechanized equipment will ensure that there are no leaks of fuel, oil, or lubricants to the environment. This project will not have any hazardous substances stored on site.

Maintenance / Operations: Visits to the vault for inspection will occur once or twice a year unless otherwise more frequent visits are warranted. If the cable fails or reaches its maximum life expectancy and needs replacement, the existing conduits should not need replacement, making the intertidal impacts a one-time event for this project. Cables are expected to last about 25-30 years.

Reclamation Plan: No beach materials excavated will be left unused and no material around the cable vault will be left unused and will, if appropriate, be reseeded with a grass mix as shown below in Table 1. Erosion & Sedimentation Control measures will be inspected until seed takes root, if needed, or other measures have completed their role, in which case they will be removed, i.e. silt fencing. Annual inspections of the vaults will include observations about conditions around the vault, i.e. is erosion becoming an issue.

**TABLE 1
RECOMMENDED SEED MIX**

(1) Perennial Seed: Apply seed at the specified rate:

Species	kg/ha	pounds/acre	% Mixture	Pure Live
Fawn Tall Fescue*	22	20	40	85%
Annual Ryegrass	11	10	20	85%
Alpine Bluegrass**	22	20	40	85%

* Boreal Red Fescue or Arctic red Fescue may be substituted

** May be deleted from the mixture if unavailable and approved by the CO. If the deletion is approved, the mixture will be adjusted to 60% Fescue and 40% Ryegrass

(2) Fertilizer: Apply fertilizer at the specified rate:

Type	kg/ha	pounds/acre
10-20-10 (%Nitrogen, %Phosphorus, %Potassium)	225	200
46-0-0 Nitrogen urea	115	100

Seed and fertilizer will be applied together during the normal seeding season; fertilizer may not be used. Fertilizer will not be used near creeks. A fertilizer mixture of nitrates (NO₃⁻) and ammonium (NH₄⁺) compounds (such as ammonium nitrate or urea) may also be used in place of the complete fertilizer.