Quintillion Subsea Project – Applicant Proposed Mitigation Statement

1. *Avoidance of impacts to waters of the U.S., including wetlands:*

Please describe how, in your project planning process, you avoided impacts to waters of the U.S., including wetlands, to the maximum extent practicable. Examples of avoidance measures include site selection, routes, design configurations, etc...

Site selection for this project has been ongoing since 2013 and extensive research has been conducted at each location including numerous site visits, public meetings, and meetings with local leadership at each cable landing location. Quintillion has taken the comments and concerns of the public into consideration when locating infrastructure on land.

Previous network designs for this project included fiber optic connections to Japan and Canada and spur lines to Shemya, Point Lay, and Kaktovik. However, these locations were excluded in 2014 for numerous reasons.

The current routes and locations have been adjusted several times in order to achieve the most practicable and least environmentally damaging route. The project team has conducted site selection surveys which identified physical, regulatory, community, and infrastructure constraints.

A major avoidance to waters of the U.S. was the decision to install the cable in the seabed, versus routing the cable overland and connecting each of the communities terrestrially. A terrestrial cable route would have had a substantially larger footprint and environmental impacts at a significantly higher project cost. Once the spur lines have been brought onshore, the cable will be tied into the existing telecommunications service provider in each community. Utilizing existing right of ways and roadbed prisms further reduces the amount of wetlands impacted. Utilizing Horizontal Directional Drilling (HDD) cable installation techniques versus the open trenching model (as further detailed in Minimization Section below) further reduces impacts to waters of the United States.

Terrestrial fiber cable installation in or near roadways varies depending on regulatory agency standards. For example, the ADOT&PF requests that underground infrastructure be placed near the existing right-of-way limit farthest from the road centerline. The installation of the cable will require a disturbance width of 15 feet. To the extent possible, the cable operator will place the cable in existing disturbed areas, including previously cleared wetland areas.

The terrestrial installation of the cable will require the setting of manholes approximately every 800 feet along the project alignment. To the extent practical, the setting of manholes in wetland areas will be avoided.

2. Minimization of unavoidable impacts to waters of the U.S., including wetlands:

Please describe how your project design incorporates measures that minimize the unavoidable impacts to waters of the U.S., including wetlands, by limiting fill discharges to the minimum amount/size necessary to achieve the project purpose.

In order to bring the fiber optic cable on shore, the project is using HDD techniques versus trenching. The use of HDD allowed for more direct marine approach routing and safeguards against beach erosion resulting from the Projects operations. Traditional trenching methods require beach access to bring the fiber optic cable to shore. Using HDD allowed the project team to mitigate against coastal erosion, site the Beach Manhole (BMH) further inland and closer to the cable landing stations (CLS), which also reduces terrestrial impacts by minimizing the length of terrestrial fiber optic conduit installation required.
Project design information, by community, on the use of HDD and routing considerations is listed below.

- In Kotzebue, the terrestrial route was significantly reduced with the use of HDD going under the Kotzebue seawall to bring the fiber optic cable to shore, directly adjacent to the CLS.
- In Wainwright the BMH location was relocated which reduced all terrestrial impacts to wetlands and reduced the distance of the marine and terrestrial routes to the CLS.
- In Barrow, the BMH was relocated above a bluff and adjacent to the exiting roadway. The original BMH location would have required the need to construct a long driveway to the site and extensive routing to the CLS. Through relocation of the Barrow BMH to above the bluff and the use of HDD, the need for a 150 x 20-foot driveway/access road was eliminated and allowed for a more direct routing to the CLS, reducing the amount of disturbance needed. This relocated BMH site was not technologically possible with traditional trenching methods.
- In Nome, only one corridor exists where utilities can come onshore. Mining claims occupy the all other coastal areas around Nome. The Nome BMH location was chosen as a result of the existing corridor and therefore results in unavoidable impacts to wetlands. The size of the BMH pad and associated access driveway has been designed to the minimum size necessary for infrastructure and maintenance. Additionally, the terrestrial routing from the BMH to the CLS in Nome cannot be located directly down Front Street, as originally planned, because the roadway is paved and contains many existing utilities. Efforts are ongoing to work on a solution to minimize the route through the city.

For each location the project team sought to locate the BMH and the CLS locations on exiting developed pads and as close to the local service provider as possible to reduce the overall impact to waters of the U.S, including wetlands. This goal was achieved for all but two (2) of the locations for this project; the Nome BMH and the Barrow BMH sites. For these 2 sites, infrastructure needs and maintenance requirements were considered and the pad sizes were designed to the minimum size necessary to accommodate the project needs.

The terrestrial installation method for the cable has a dramatic influence on the degree to which the underlying soils and vegetation are disturbed.

Uplands
In upland areas, the proposed installation method consists of:

1. Excavation, cable placement, and burial by using a excavator; and
2. Seeding of the disturbance following placement of the cable if not in road beds.

Shrub Scrub Wetlands
In and shrub scrub wetlands, the proposed installation method consists of:

1. Excavation, cable placement, and burial by using a chain trencher; and
2. No seeding of the disturbance following placement of the cable.

Emergent Wetlands
In emergent wetlands, including emergent shrub scrub wetlands, the proposed installation method consists of:

1. Excavation, cable placement, and burial by using a chain trencher; and
2. No seeding of the disturbance following placement of the cable.

To further minimize wetland disturbance, work in saturated emergent wetlands is proposed to be completed while the underlying soils are frozen.

Stream Crossings
In the case of minor drainages with only seasonal flow or small amounts of flow (i.e. less than 5 cubic feet per second at base flow), the cable will be installed by direct burial during low water periods of the season. For major stream crossings, the project proponent proposes to use subsurface boring to avoid impacting the stream channel. This will require the digging of a bore pit on either side of the stream. To the extent practical, the bore pits will be constructed in upland areas and the directional boring installed cable will span the stream and associated riparian wetlands.

3. Compensation for unavoidable impacts to waters of the U.S., including wetlands:

Please describe your proposed compensatory mitigation to offset unavoidable impacts to waters of the U.S., or, alternatively, why compensatory mitigation is not appropriate or practicable for your project. Compensatory mitigation involves actions taken to offset unavoidable adverse impacts to waters of the U.S., including wetlands, streams and other aquatic resources (aquatic sites) authorized by Corps permits. Compensatory mitigation may involve the restoration,

enhancement, establishment (creation), and/or the preservation of aquatic sites. The three mechanisms for providing compensatory mitigation are mitigation banks, in-lieu fee of mitigation, and permittee-responsible mitigation. Please see the attached definitions for additional information.

Avoidance and minimization efforts reduce wetland impacts. However, unavoidable impacts to 1.61 acres of wetlands as identified by the National Wetlands Inventory and ABR, Inc's 2015 wetland delineation will result from this project. See Attached Wetland Report (Final Report Pending as of this application). The identified wetlands are plentiful in the Northwest and Arctic regions of Alaska and therefore not unique. Additionally, the wetlands in ditches adjacent to the roadways where the fiber optic conduit is planned to be installed are not pristine or considered high value as they are subject to road noise, roadbed erosion, ATV traffic, and other disturbances. The proposed terrestrial conduit installation activities will result in the clearing of obstructing vegetation, temporary excavation of soils, placement of cable conduit, and replacement of the soil into the excavation containing the cable conduit. There are no anticipated impacts to any wetland area that result in permanent loss of wetland functional values for the terrestrial conduit installation.

An Environmental Assessment (EA) is being prepared to assist the USACE with analyzing the environmental impacts associated with this project.

During a meeting with USACE on September 8th 2015, it was discussed that compensatory mitigation may not be appropriate as this work results in minimal impacts to waters of the U.S., including wetlands.

Terrestrial construction and operations will continue to mitigate impacts to waters of the U.S. by:

- Clearly defining construction limits and workspace prior to construction.
- Minimizing surface disturbance during construction by working from the track or fill footprint to the greatest extent possible.
- Implementing best management practices during construction to minimize temporary disturbances to the area and the potential for erosion and sedimentation.
- Implement standard spill-prevention measures to minimize or prevent spills or leakages of hazardous materials during construction.
- Ensure spill clean-up equipment and supplies are available and onsite during construction (e.g. oil absorbent pads and appropriate response materials).
- Construct during winter or months when there is adequate snow cover, where possible, to reduce tundra and wetland impacts
- Monitor construction activities as necessary to ensure temporary impacts are minimized.

Additionally, Quintillion plans to implement the following to reduce potential impacts from the project to listed species and other wildlife:

- In order to mitigate potential impacts to migratory birds the first lift of fill shall be placed during the non-nesting season, 31 July – 31 May.
- Wildlife Contingency Management Plan and Associated Avoidance and Mitigation Techniques
- Incidental Harassment Authorization (IHA) under the Marine Mammal Protection Act (MMPA) and Endangered Species Act
- Use of Marine Mammal Observers (MMO) for Marine Installation and Bear Guards for Terrestrial installation activities (where applicable).

The project proposes that no mitigation be required due to minimal permanent impacts, multiple minimization techniques employed, and wealth of public good fiber optic will bring to the communities it serves.

Once installed the only permanent wetland impact will be the BMH gravel pads in Barrow and Nome and pull box vaults which result in a total of 1.61 acres of permanent wetland impact.