

Talkeetna Fiber Optic Communications Upgrade

Project Scope

The Alaska Railroad (ARRC) plans to upgrade Talkeetna operational communications by replacing aging cable between the Talkeetna Depot and the Talkeetna Section House. The depot currently receives data and voice services through old style copper cables and ethernet extenders. The project will replace twisted pair copper cable with a more reliable and higher capacity fiber backhaul connection between ARRC's passenger depot and a communications room in the section house about 1.25 miles away.

Constructed within the ARRC right-of-way (ROW), the project addresses the severe latency caused by older copper combined with the long cable distance. Work will involve excavating a trench about four feet deep in which to bury a 24-strand single mode fiber optic cable, housed inside a protective high-density polyethylene (HDPE) conduit. Cable will connect the Talkeetna Depot's networked equipment with the telecommunications equipment in the section house.

Benefits

The communication system upgrade will:

- increase telecommunications bandwidth about 2,000 percent.
- meet infrastructure requirements to support the upgrade to the Travel Studio reservations and ticketing system.
- ensure railroad depot staff can provide faster, more reliable customer service to train passengers and depot visitors.
- decrease trouble tickets and repair call-outs to ARRC communications technicians.
- accommodate future positive train control (PTC) enhancements.

Status

- Conceptual design began during first quarter 2021. Environmental review and documentation (a categorical exclusion) was completed in spring 2021.



Project Area Map

- Williams Communications Inc. of Alaska was awarded the project engineering work, to be completed by mid-summer 2021.
- Project construction, to include permitting, will be bid mid-summer and a contractor selected late summer 2021.
- Permitting expected to be complete by late spring 2022.
- Construction and installation is scheduled to be complete by mid-summer 2022.

Cost and Funding

The project budget is \$232,680, to cover engineering, environmental review, permitting, design and construction. Funds come from Federal Transit Administration (FTA) 5307 formula grant money from 2019 (\$74,911) and 2020 (\$157,769). FTA grants require a 20% cash match from the Alaska Railroad, which is included in the amounts above.



A spool of fiber optic cable like the cable used in this project.



Talkeetna Passenger Depot

Left: The Talkeetna Depot is situated along the track. The fiber optic cable will connect to the depot via a protective box on an exterior wall.

Communications Link

Right: Section houses are the railroad's maintenance of way (MOW) operational hubs along the main line. These facilities house people and equipment that support track, bridge and communications infrastructure. The telecommunications room in the Talkeetna Section House provides the networked link to the railroad's depot, the hub of railroad ticket sales and guest services.

