

DATA SUMMARY

Major Utilities Map

Purpose

This data summary is an initial step in the development of the proposed alternative corridors for the Parks Highway PEL Study. It is intended to confirm data for identifying the characteristics of the existing environment for Major Utilities in the project study area. The study area boundaries or Probable Limits of the Alternatives (PLA), where the proposed alternative highway corridors will be located, is shown in Figure 1. The PLA is broadly bordered by the Parks Highway to the north (+500-1000 feet), Hyer Road interchange to the east, West Hawk Lane to the west, and Palmer Slough to the south, and includes 43,827 acres.

This data summary includes data collection methods, analysis methods, mapping methods, assumptions, and a summary of the key findings for the existing characteristics of the resource.

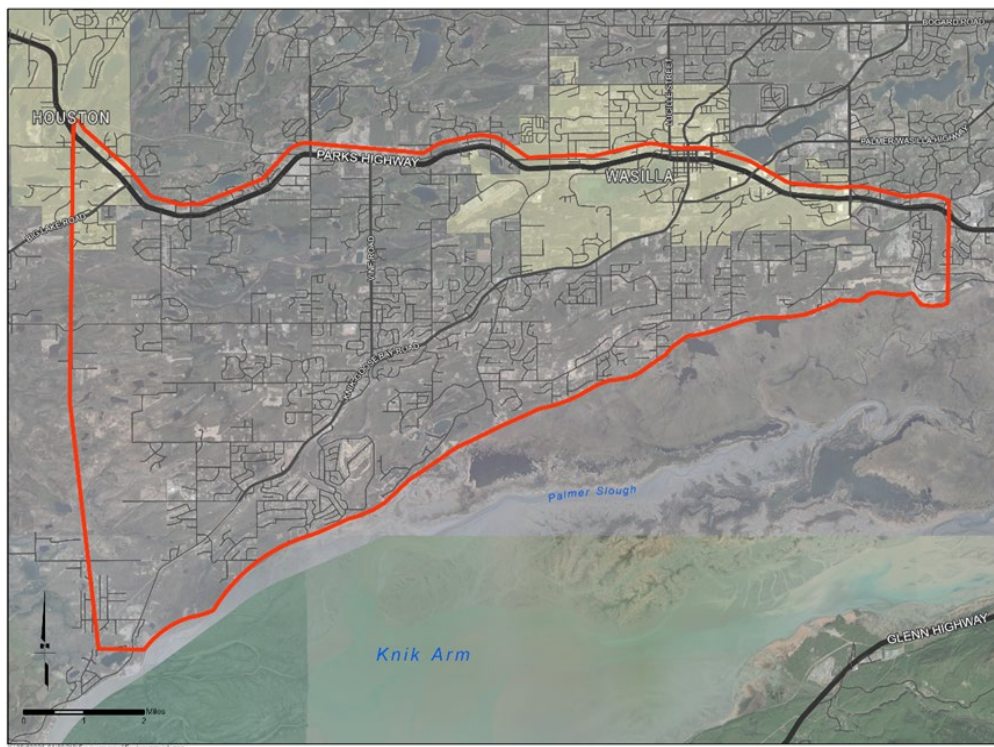


Figure 1: Probable Limits of Alternatives

Data Collection Methods

Lounsbury & Associates (Lounsbury) contacted the State of Alaska Department of Transportation & Public Facilities (DOT&PF) to identify the utility companies within the PLA. DOT&PF Utility Lead Devki Rearden provided the project team a list of utilities within the PLA and their corresponding contact information.

The following utilities were identified:

- **Telecommunications:** Alaska Communications (ACS), General Communications, Inc (GCI), Matanuska Telephone Association (MTA)
- **Natural Gas:** ENSTAR Natural Gas Company (ENSTAR)
- **Electric:** Matanuska Electric Association (MEA)
- **Sewer and Water:** City of Wasilla
- **Railroad:** Alaska Railroad Corporation (ARRC)

Communication with utility companies was held virtually through phone calls, emails, and online meetings. The utility companies identified their critical infrastructure that will be difficult and/or expensive to relocate. After the meetings were conducted, the utilities provided the location and type of critical facilities within the PLA through various methods.

- Correspondence with ACS was made through phone calls and emails from 9/28/21 to 10/5/21. ACS provided the alignment of the fiber optic line as a .kmz file. The .kmz file was converted to a .shp file and added to the Major Utilities Map via ArcMap.
- Correspondence with GCI occurred through phone calls and emails from 9/28/21 to 10/5/21. GCI provided system maps of all of their facilities in .dwg and .dxf format. The system maps were reviewed, and the critical infrastructure was manually added to the Major Utilities Map.
- Phone and email correspondence was held with MTA from 9/28/21 to 10/21/21 and an online meeting was held on 10/12/21 with MTA and Lounsbury. MTA provided system maps in .dwg format, the critical infrastructure was identified and manually added to the Major Utilities Map.
- An online meeting was held with ENSTAR, DOWL, and Lounsbury on 9/29/21 to discuss the project and ENSTAR's facilities in the area. ENSTAR provided their critical infrastructure in an ArcGIS package. The data was extracted into individual shape files and added to the Major Utilities Map.
- MEA required a written letter from DOT&PF prior to sharing proprietary information with the project team. DOT&PF Project Manager Kelly Summers, P.E. provided a letter to MEA on 9/30/21. MEA provided system maps, substation addresses, and red lined transmission lines in .pdf format and they were manually drawn on the Major Utilities Map.
- Communication with the City of Wasilla occurred through phone calls and emails between 9/29/21 and 10/6/21. The City of Wasilla provided system maps and as-built drawings in .pdf format. The critical facilities were manually drawn on the Major Utilities Map.
- An online meeting was held with ARRC, DOWL, and Lounsbury on 9/29/21 to discuss the project and its possible impacts. ARRC provided the railroad alignment as a .shp file and was added to the Major Utilities Map via ArcMap.

Mapping Methods

The Major Utilities Map was created using ArcMap version 10.3.1. NAD 1983(2011) State Plane Alaska World Imagery was used as the base map. ACS, ENSTAR, and ARRC's critical facilities were added to the map as .shp files and placed on individual layers. GCI, MEA, MTA, and the City of Wasilla's critical facilities were manually drawn on the map and assigned layers. The project boundary linework, street names, city boundaries, and title block frame were provided by DOWL and added to the map as a .shp file. The major utilities within the PLA are depicted in Figure 2 (attached) and described as follows.

- ACS Railbelt 24-count fiber optic cable parallels the Alaska Railroad tracks for the entire PLA and is located within the railroad rights-of-way (ROW).
- GCI operates coaxial and fiber optic cables throughout the PLA that serve commercial businesses, residential areas, and telecommunication towers. GCI considers fiber optic lines and telecommunication towers as critical infrastructure. The major fiber alignments are shown on the map, the secondary residential fiber alignments are not shown on the map for clarity.
- MTA owns and operates copper and fiber optic cables within the PLA that serve residential, commercial, and telecommunication towers. MTA's telecommunication towers, transport fiber optic cables, and distribution fiber optic cables are shown on the Major Utilities Map. Fiber optic drops and neighborhood distribution lines are not shown on the map for clarity.
- ENSTAR operates a 20-inch transmission natural gas pipeline that traverses through the PLA. The pipeline follows S. Knik Goose Bay Road from east to west, extends west within a utility easement to E. Fairview Loop, and continues to the east to E. Nelson Road and out of the PLA. The 20-inch pipeline has three laterals that travel north/south along Vine Road, Fern Street to Reiley Avenue, and Seward Meridian Parkway. The laterals end at regulator stations. Regulator stations serve to protect the pipeline system and ensure it operates safely by reducing the pressure as the gas flows further into the system. There are six regulator stations within the PLA, the largest is located off Reiley Avenue.
- MEA owns and operates distribution power, transmission power, and electrical substations within the PLA. The transmission power lines and electrical substations are considered critical infrastructure. An electrical substation is an assembly of equipment in an electric power system through which electrical energy is passed for transmission, distribution, interconnection, transformation, conversion, or switching. The substations are located at 600 Denali St, 2603 S. Knik Goose Bay Rd, 7420 Marigold Dr, and mile 7.5 of Knik-Goose Bay Rd. MEA's transmission lines follow Knik-Goose Bay Rd south from the 600 Denali St substation to the mile 7.5 Knik-Goose Bay Rd substation, the transmission alignments continue west within a utility easement. The transmission lines split, one continues south west and the other north west within utility easements until exiting the PLA. Another transmission line traverses from the substation at 7420 Marigold Dr south along Sylvan Rd to W. Hollywood Rd and continues east to Vine Rd and then south to Knik-Goose Bay Road.
- The City of Wasilla Public Works operates sewer and water facilities within the PLA. Critical infrastructure has been identified as a wastewater treatment plant located at 2900 Jude Drive and the Garden Terrace Water Main. The water main is a 12" DIP, CL 52 that travels south on Seward Meridian Parkway, east on Old Matanuska Road, continues on E. Fairview Loop to Abby Boulevard, and south to Fetlock Road. The Garden Terrace Water Main and service lines are buried approximately 10-15 feet of depth below finish grade. Surface features include fire hydrants, protective bollards, and water valves.

- ARRC's track alignment follows the south side of the Parks Highway from Parks/Glenn Highway interchange to W. Museum Drive. The tracks continue along the north side of the Parks highway through the PLA. The tracks are located within ARRC ROW and relocation would have significant cost implications.

Assumptions

- All of GCI's fiber optic facilities are considered critical infrastructure and can carry "trunk" levels of communication. Any disruption to the GCI fibers will cause outages for customers. Relocation of fiber optic lines is feasible with planning. Relocation of telecommunication towers would have significant cost implications.
- All of MTA's fiber infrastructure is considered critical but can be relocated with planning. The telecommunication towers should be avoided and will be expensive to relocate. MTA has several DOT&PF projects (CFHWY00599 KGB Centaur to Fairview Loop and Z60077000 Main Street Rehab) upcoming that will change MTA's footprint within the PLA.
- ENSTAR's 20-inch transmission line is very limited in its ability to be shut down. Shut down valve stations are located every 7 miles along the pipeline. Relocation of this pipeline and its components is costly.
- Relocation of MEA's transmission power lines is costly but feasible, relocation of MEA's electrical substations would have very significant cost implications.
- ARRC has a project proposed within the next twenty years to realign the railroad tracks through Wasilla. The goal is to remove several of the curves in the railroad alignment. ARRC has several proposed routes but doesn't have any prepared plans or allocated funds as of this time.

Summary of Characteristics

- GCI and MTA's fiber optic facilities spider web throughout the PLA. Relocation of fiber facilities is likely with this project.
- ENSTAR's 20-inch transmission pipeline and MEA's transmission power lines traverse through the PLA. These features will be expensive to relocate.
- The wastewater treatment plant, electrical substations, and telecommunication towers within the PLA should be avoided when developing the proposed project corridor alignment.
- Grade separation or railroad realignment will be required if the proposed corridor alignment crosses ARRC railroad tracks.