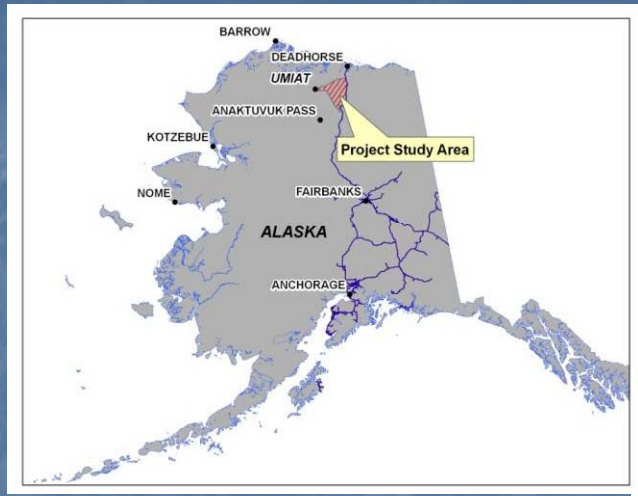
Foothills West Transportation Access

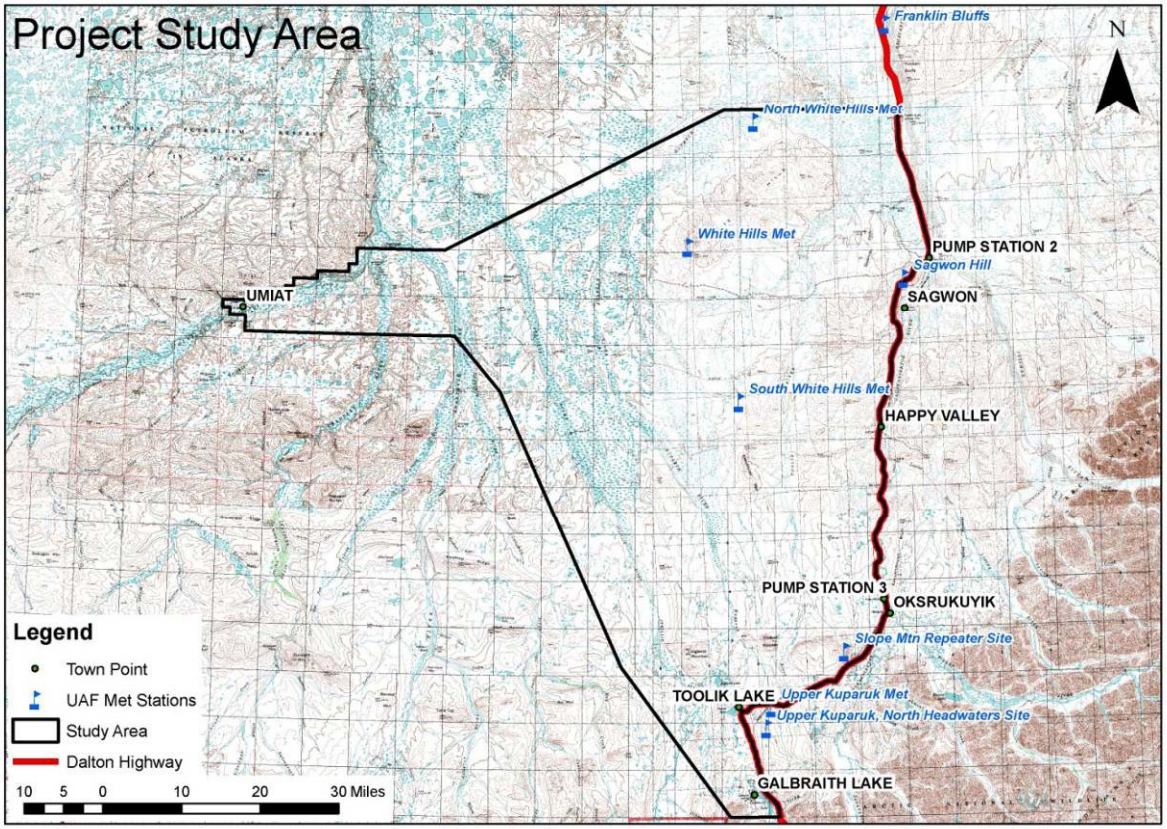
"The Road to Umiat"

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
NORTHERN REGION

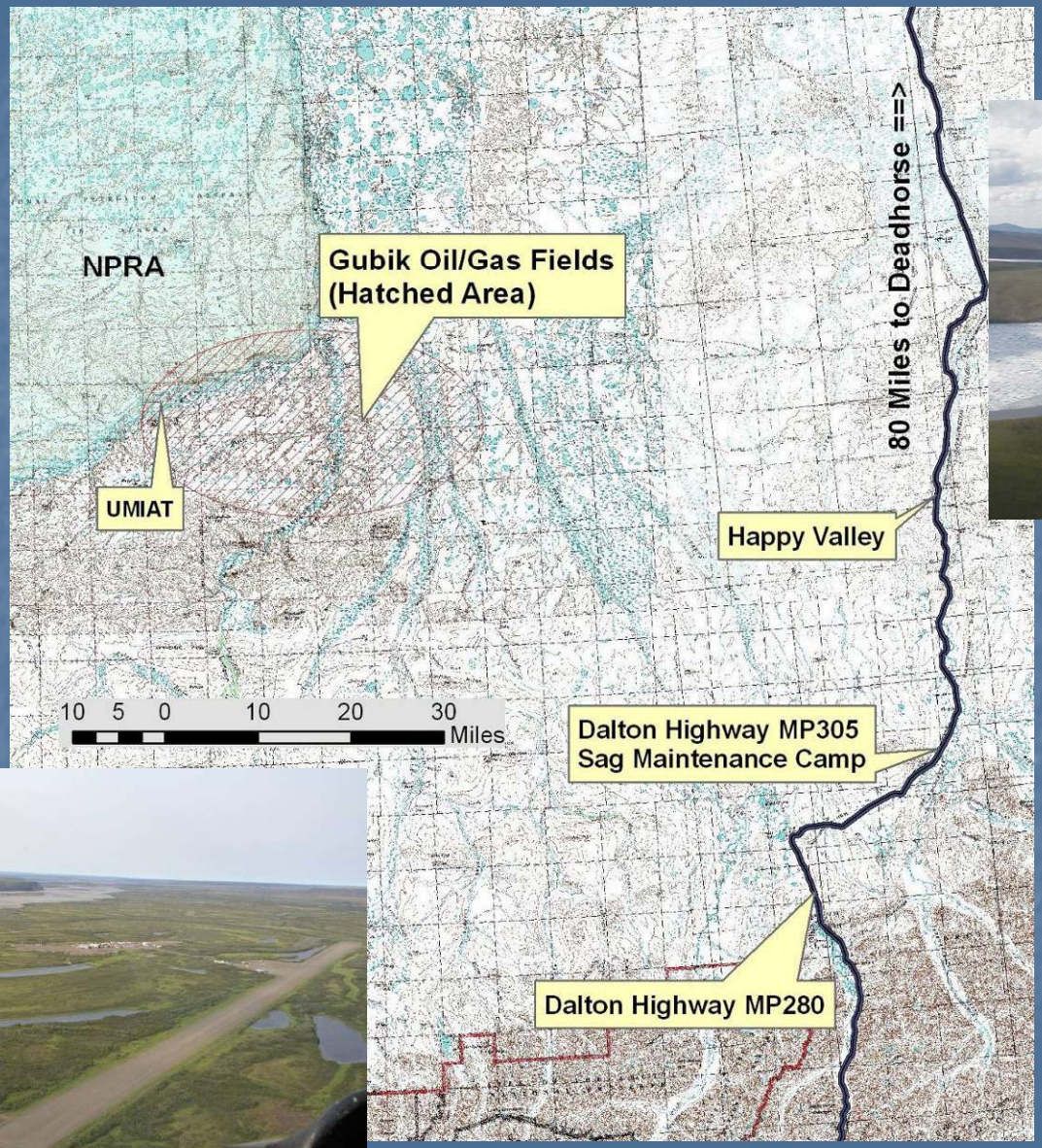
Area of Interest



- Approximately 130 Miles north of the Arctic Circle
- Begins north of the Brooks Range near MP 276 Dalton Highway (Galbraith Lake)
- Extends north of Pump Station 2 (Near MP 380)
- Destination is Gubik Oil/Gas Fields and Umiat



Project Description



Modern History of the Area

- 1900-1930: First Explorers
  - USGS Survey Teams

Circa. 1924-25 Alaska Survey photos by W.R. Smith & J.P Mertie. USGS Photo Library.

National Petroleum Reserve #4: 1923

Modern History of the Area

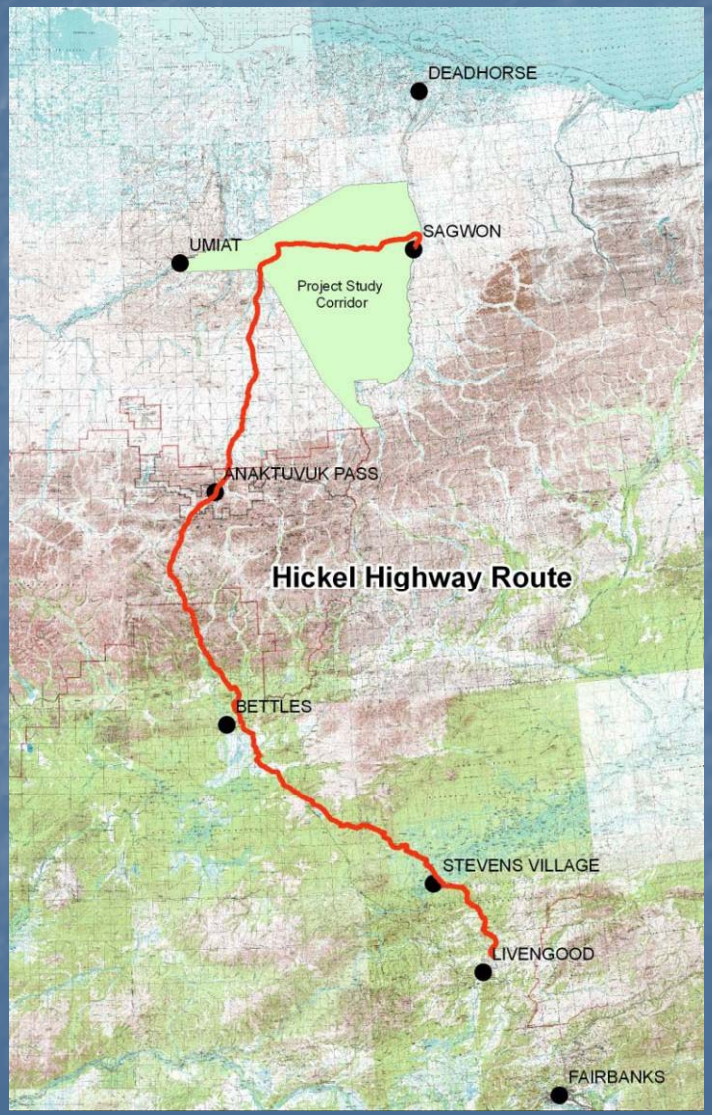
- 1940's – WWII and the search for Oil
  - 1943: US Bureau of Mines and Army Investigate
  - 1944-1945: Navy expeditions to Barrow – Constructed Camp with Airstrip at Umiat.
    - First Drilling program – 8 oil and gas discoveries
      - Umiat, Fish Creek, South Barrow, Simpson, Meade, Wolf Creek, Gubik, Square Lake.
    - First Pipeline Study

Bureau of Mines Party at Dease Inlet
(l. to r.) Capt. Henry Thomas, Pilot Sig Wien, Norman Ebbley
Simon Paneak, Henry Joesting

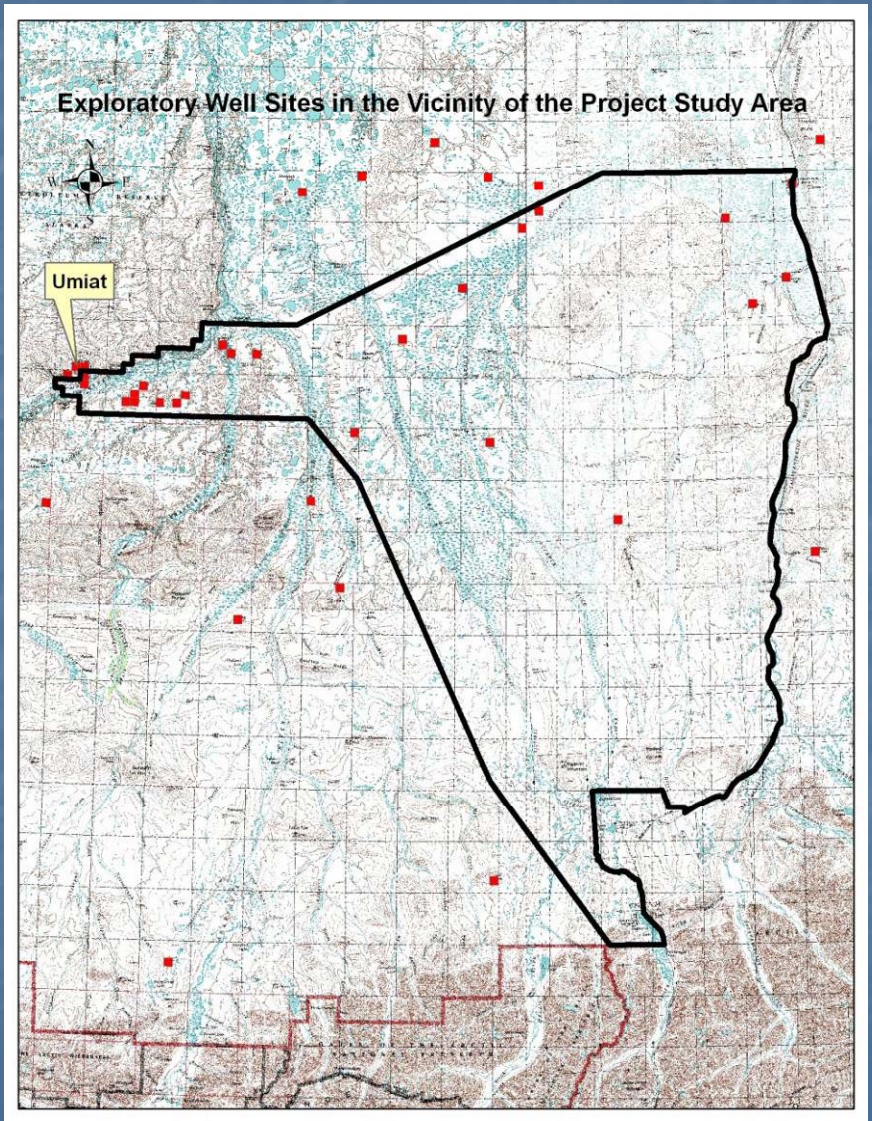
Modern History of the Area

- 1968 – Prudhoe Oil Discovery
- Hickel Highway
  - Livengood to Sagwon
  - Winter Supply Road

Photo Credit: Harold Tilleson - Jerry Luebke (left) from Glennallen and Harry "Feruck" Loev from Fairbanks (right) putting up the first and only sign on the winter ice road. The Umiat - Sagwon sign was put up at the only intersection on the road, where the trail from Umiat connected into the Hickel Highway. It was used to direct truckers to head northeast to Sagwon, and not northwest to Umiat. (http://jukebox.uaf.edu/haul_road/htm/img_tilleson_18.htm)



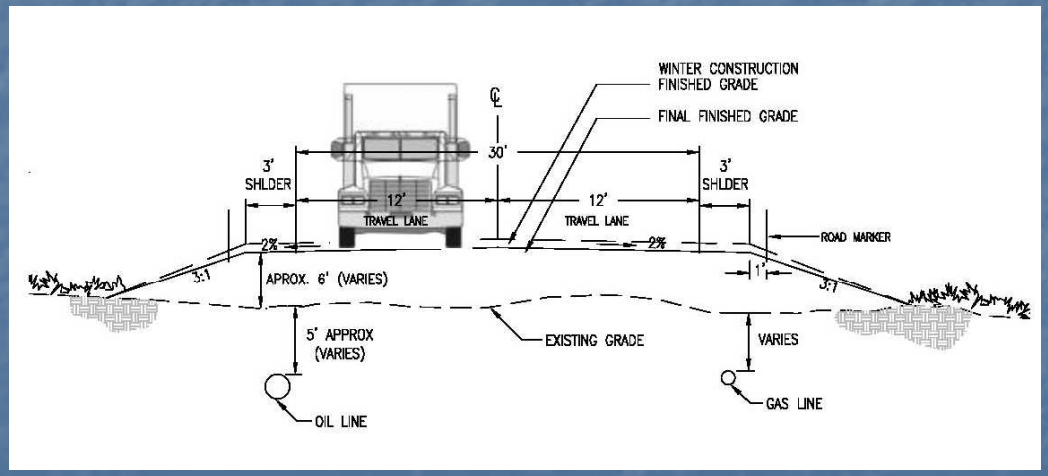
Modern History of the Area



- 1976-81 - Final Government Exploration Effort funded by the Navy.

Project Description

- Purpose of the Project: Construct an all-season road from the Dalton Highway to the Gubik Gas Fields, and potentially continuing an additional 15 miles to the state airport at Umiat and the border of NPRA.
- The project will consider both road and pipeline design criteria to develop a transportation corridor that meets the needs of transportation infrastructure, oil and gas pipelines, as well as power, communications, etc...
- To date, the project has been completely State Funded



Photographer: Steve McCutcheon, 1975? (Steve McCutcheon Trans Alaska Pipeline System Construction Collection, Alaska Digital Archives)

Project Description

- Primary Benefits: The primary benefit of the project is increased access to oil and gas resources for exploration and development on State lands.
  - Recently Anadarko, Chevron, Conoco Philips, FEX, and Renaissance have held state leases in the project study area and have performed significant exploration activities.
  - Anadarko has drilled approximately 6 gas exploration wells on ASRC lands within the project study corridor.
  - Reconnaissance has completed 3D Seismic Survey work and announced oil reserves of approximately 250 Million Barrels at Umiat.
  - ENSTAR has evaluated the project study area and expressed support for a road project to facilitate gas line construction.
  - Industry officials have stated that exploration and development activities would increase substantially in the region were road access available, as this would significant decrease their logistical costs.

Foothills West Transportation Access

Project Description

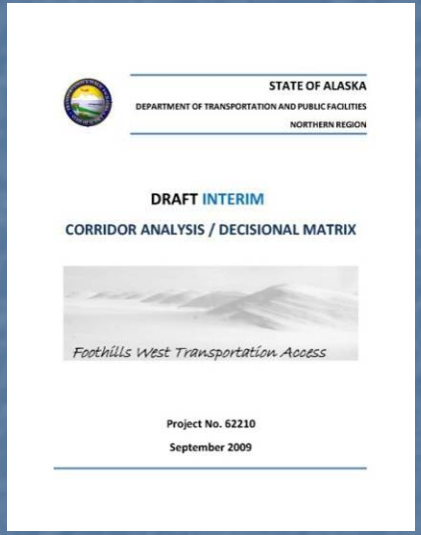
- Ancillary benefits:
  - Improved access to academic research areas
  - Enhanced access to and clean-up feasibility for contamination at Formally Used Defense Sites (FUDS) requiring clean up along the Colville River
  - increased public access to state and federal recreational lands for activities such as river rafting; hiking; hunting; fishing; wildlife viewing, and tourism (if these activities are determined compatible with an industrial use road).

Foothills West Transportation Access

Project Corridor Selection

Evaluated entire study area based on preliminary information:

- Project Purpose: Access to Oil/Gas Resources
- Construction Cost
- Engineering Considerations
- Hydrologic Impacts
- Geologic and Geotechnical Considerations
- Land Ownership
- Environmental Impacts


STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
NORTHERN REGION

DRAFT INTERIM
CORRIDOR ANALYSIS / DECISIONAL MATRIX

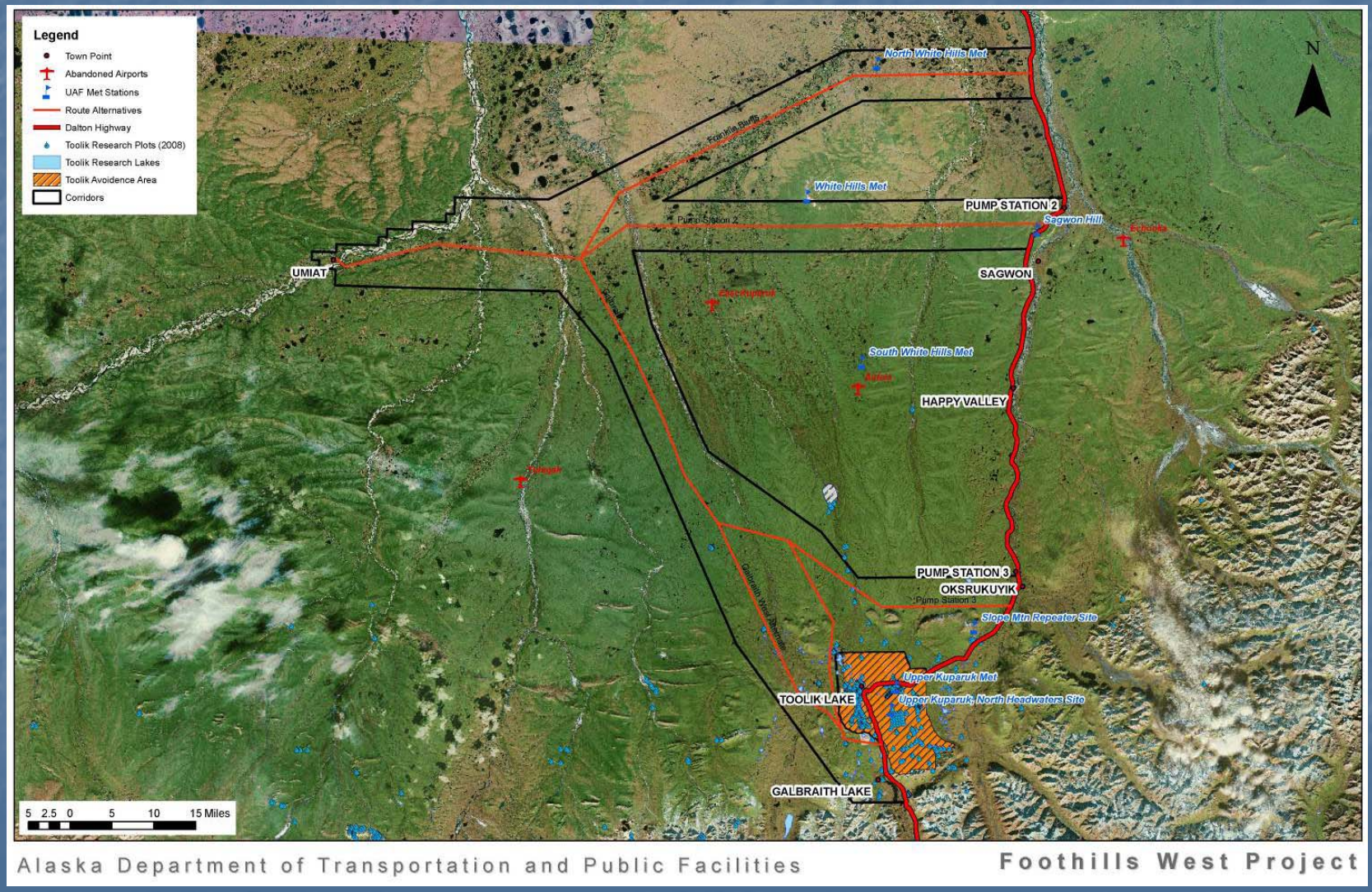
Foothills West Transportation Access

Project No. 62210
September 2009

Developed a Decisional Document that Documents the process.

Project Corridor Selection

Selected five reasonable corridors based on topography and discussions with government experts and industry

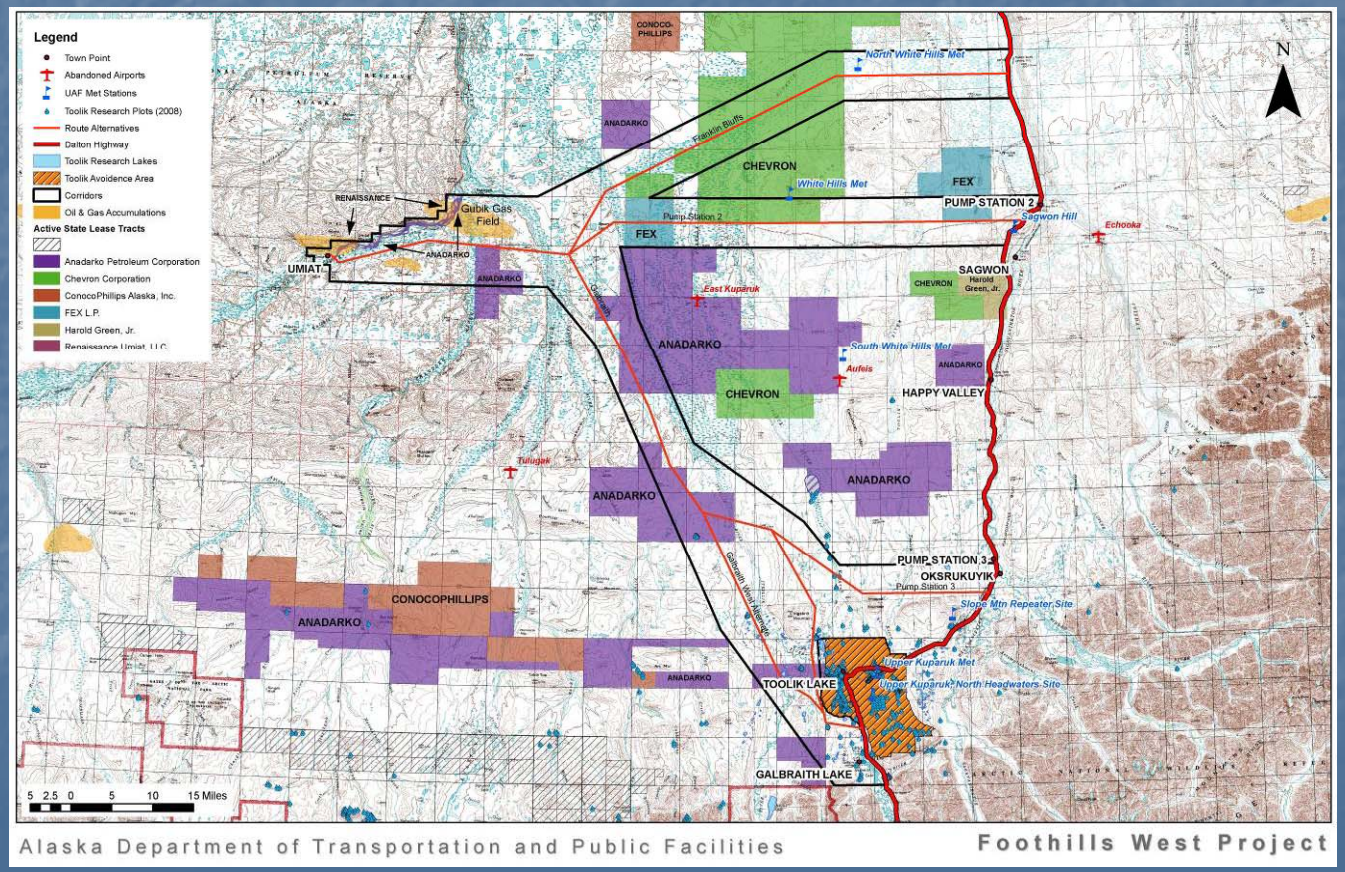


Foothills West Transportation Access

Project Corridor Selection

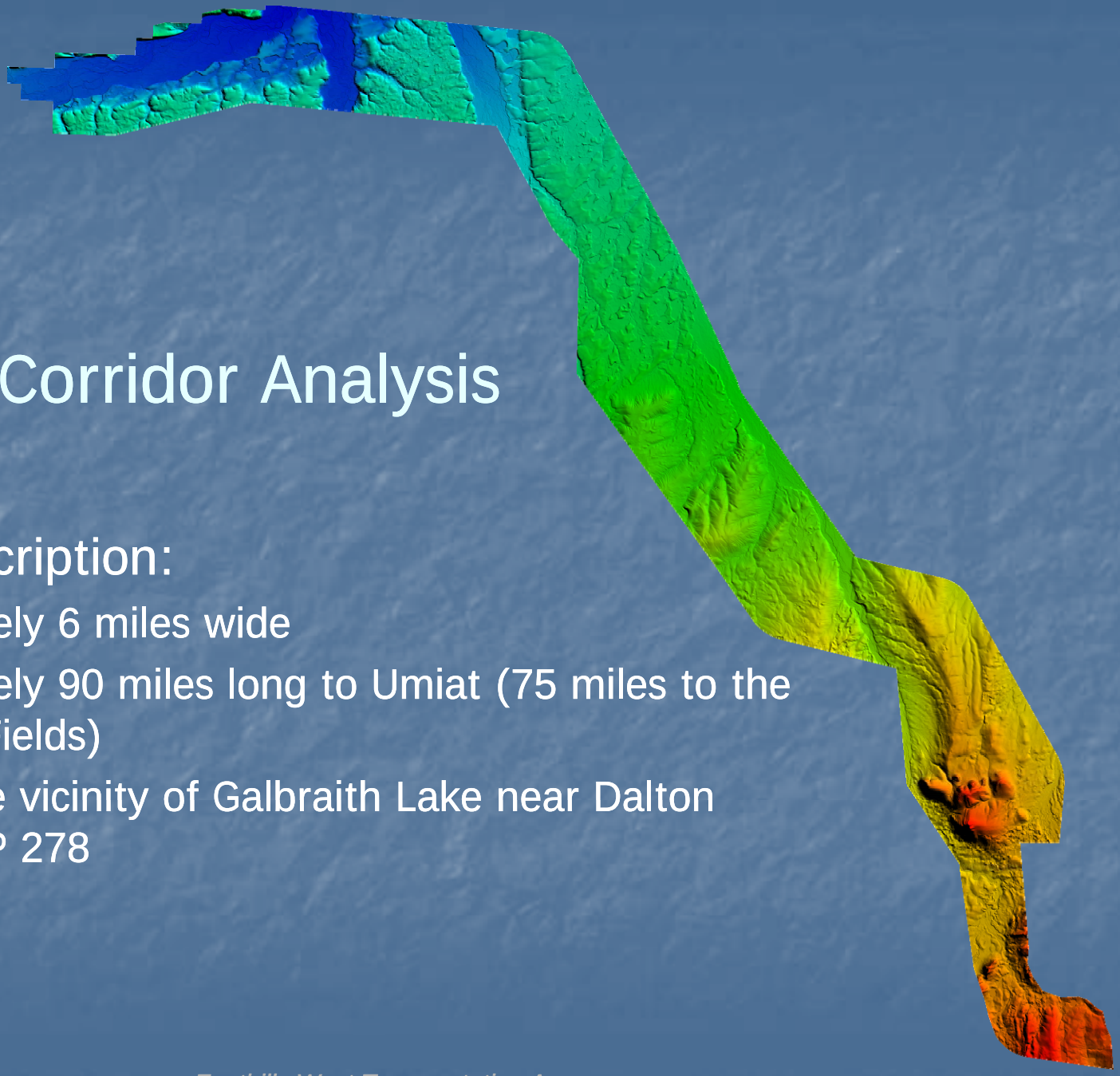
Project Purpose – What do we know about the resources?

- State Oil/Gas Lease Maps
- USGS 2005 Central North Slope Oil and Gas Assessment
- Geologic Resource Potential (DNR Oil and Gas)



25 Mile "Area of influence"

Galbraith Corridor Analysis



- Corridor Description:
  - Approximately 6 miles wide
  - Approximately 90 miles long to Umiat (75 miles to the Gubik Gas Fields)
  - Starts in the vicinity of Galbraith Lake near Dalton Highway MP 278

Galbraith Corridor Analysis

- Field Program:
  - Establish focused 2000’ wide transportation corridor(s) within the study area based on engineering and environmental considerations
  - Collect long lead time project critical data as soon as possible for use in the project
  - GIS Based

Galbraith Corridor Analysis

- Foothills West Team:
  - DOT&PF
    - Northern Region Design Group
    - Northern Region Materials Section
    - Northern Region Survey Section
    - Statewide Bridge Section
  - Contractors
    - Environmental: Three Parameters Plus, Inc.
    - Imagery/LIDAR: R&M Consultants and Kodiak Mapping

Galbraith Corridor Analysis

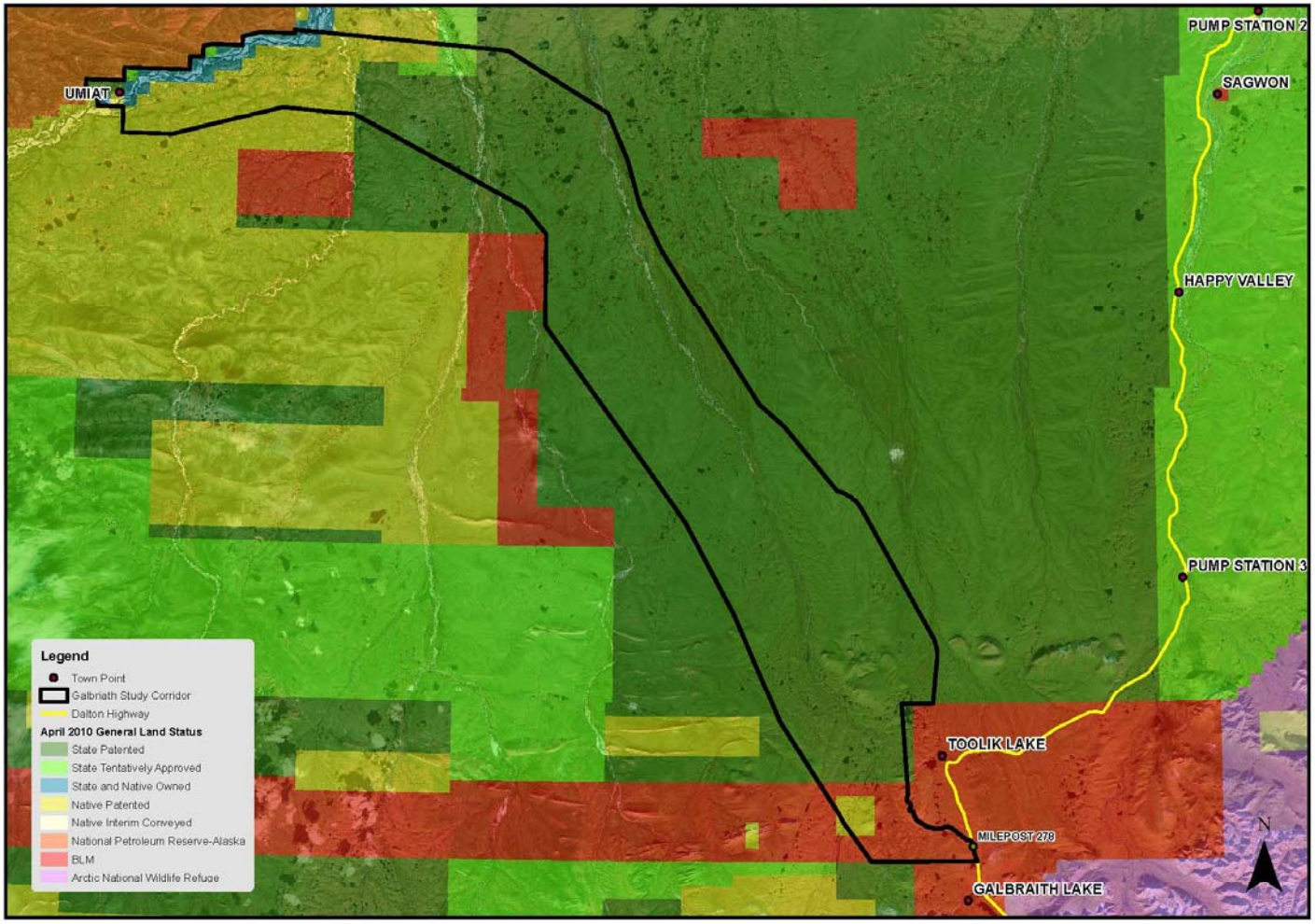
Where to Begin?

Critical considerations in developing road alignments:

- Land Ownership
- Material Site Locations
- River Crossing Sites
- Topography and Terrain Characterization
- Environmental concerns
- Public Involvement

Land Ownership

Project Corridor Selection



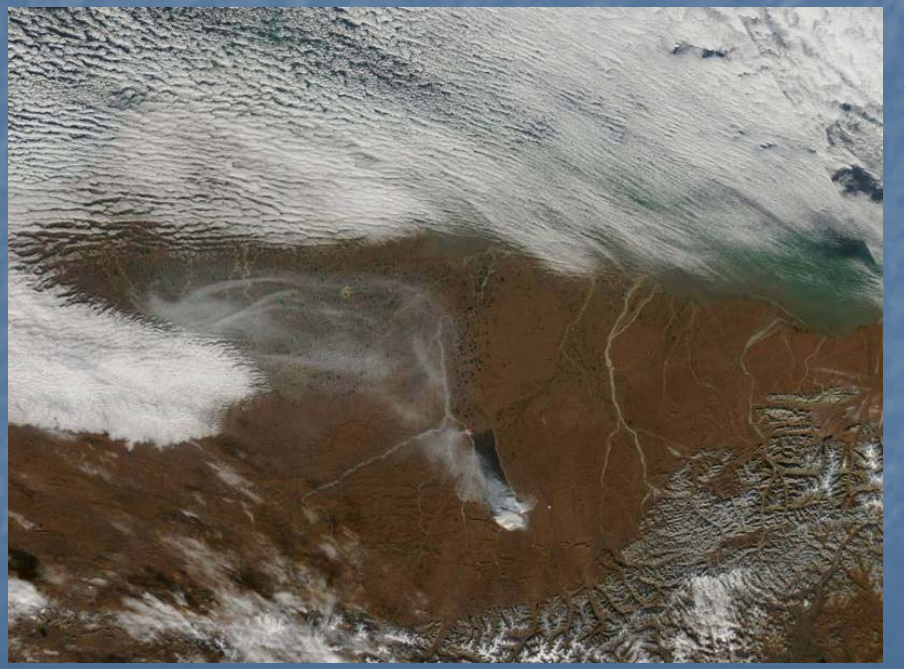
Alaska Department of Transportation and Public Facilities

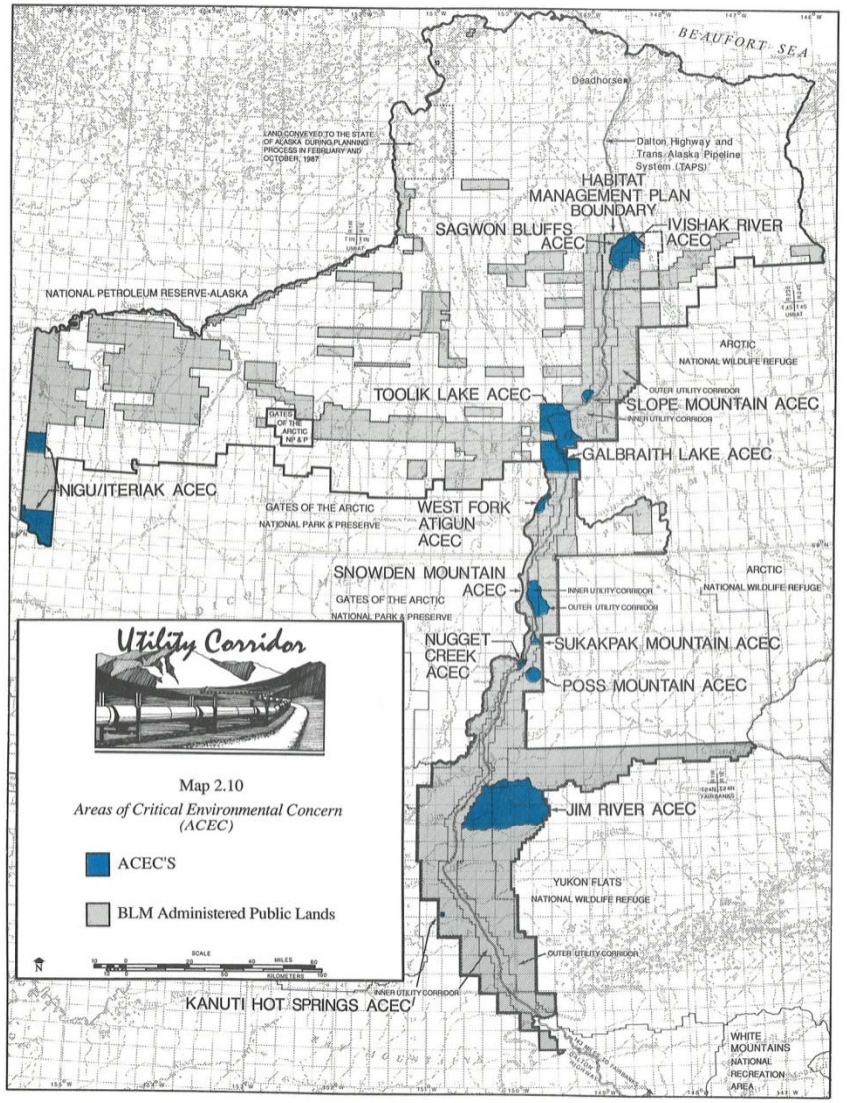
Foothills West Transportation Access

0 5 10 20 30 Miles

Galbraith Corridor Analysis

- Land Ownership
  - BLM “Utility Corridor”
  - Toolik Research areas
    - Toolik Lake Watershed
    - Anaktuvuk Fire Burn
    - Galbraith/Toolik Lake ACEC
  - NPRA ACCESS





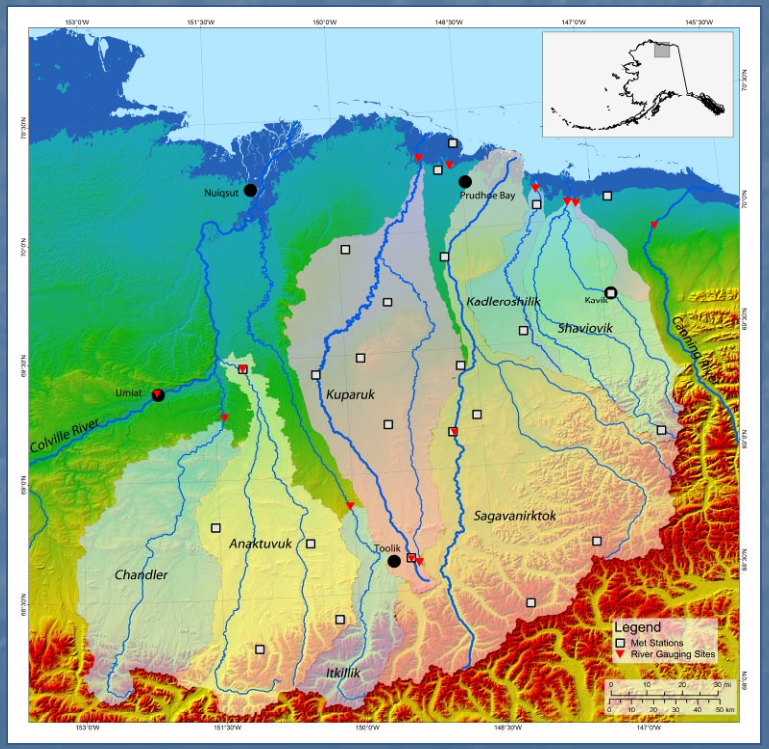
Galbraith Corridor Analysis

Material Sites

- Goal: 1 Material Site every 10 miles
- Characterize terrain features
- Drilling Program to verify quantities and Qualities – Summer and Winter Rolligon as well as Summer Helicopter work

Galbraith Corridor Analysis

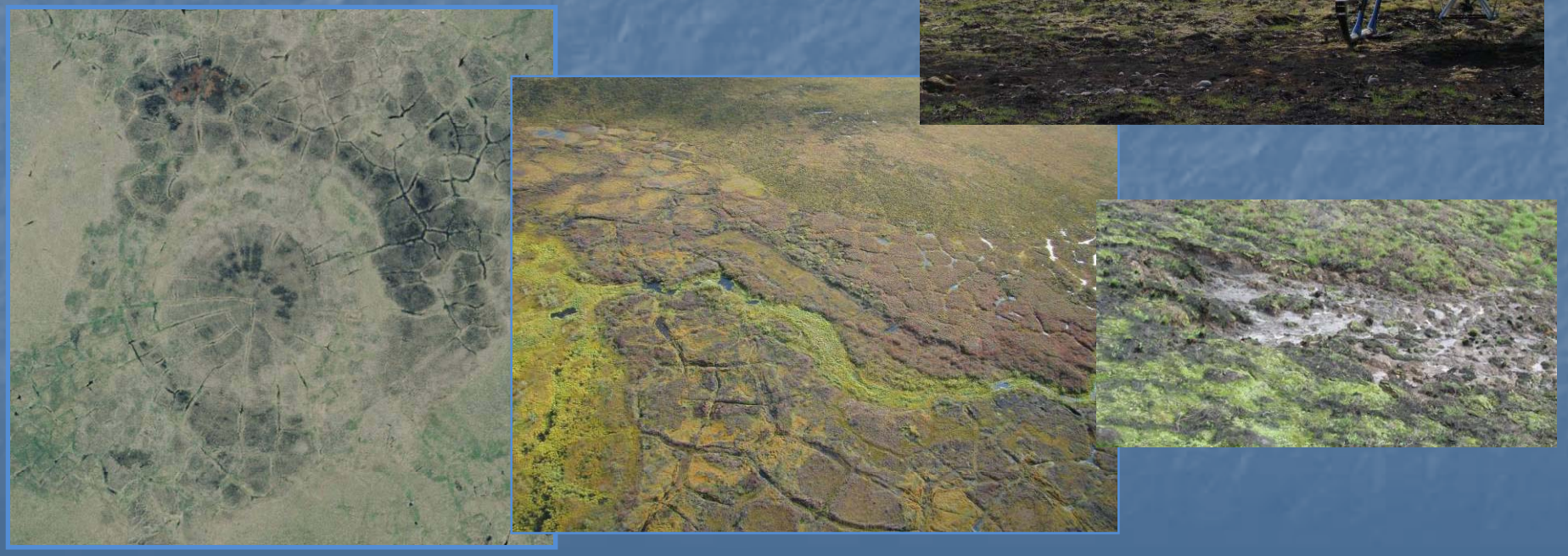
- River Crossing Sites
  - 4 Major River Crossings
    - Itkillik River, Anaktuvuk River, Chandler River, Colville River
    - Apart from the Colville River, very little Hydrology data available
  - UAF, Institute of Northern Engineering under contract to perform hydrology studies



http://www.uaf.edu/water/projects/foothills/foothills.html

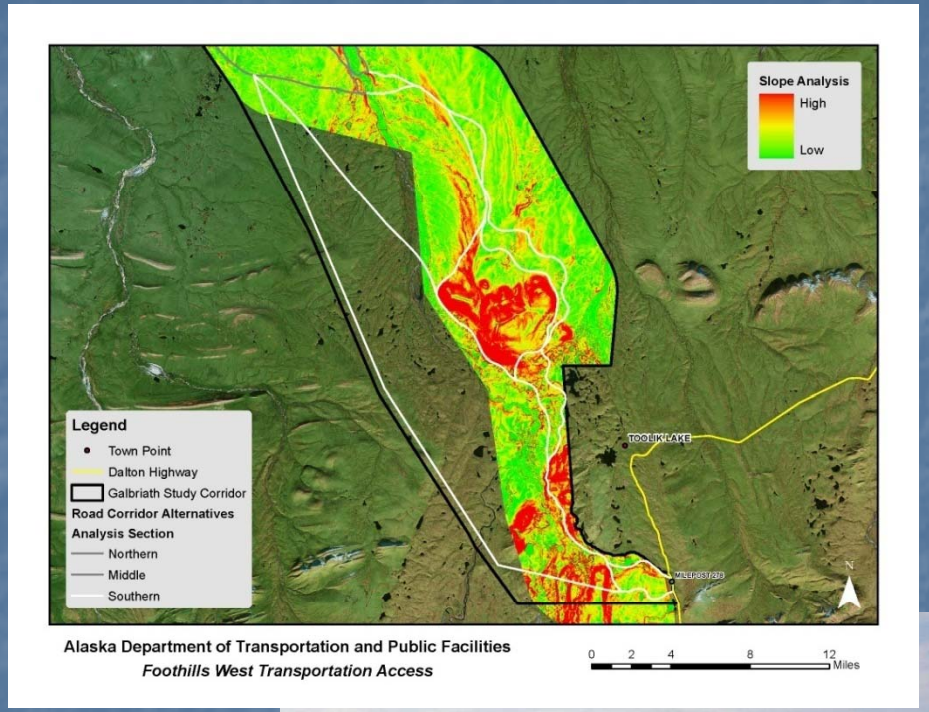
Galbraith Corridor Analysis

- Topography and Terrain Characterizations
  - Mountainous area
  - Arctic conditions (Permafrost, Aufeis)
  - Anaktuvuk 2007 Burn and Thermokarsting



Galbraith Corridor Analysis

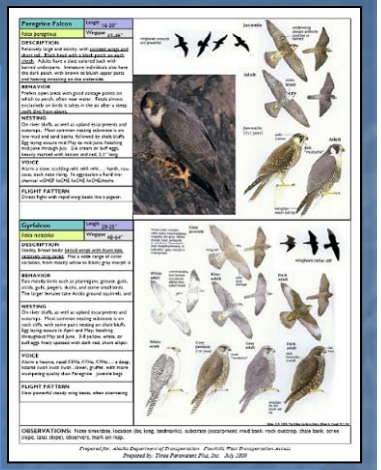
- Preliminary Engineering
  - LIDAR/Photography/Survey
  - Embankment Stability/ Maintenance
  - Snow Drifting
  - Aufeis

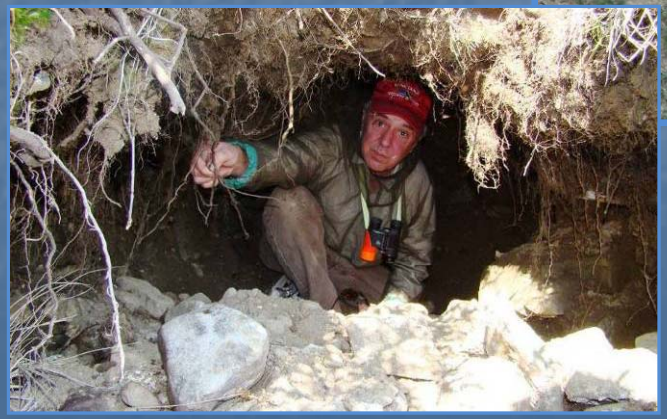


August 1958 – Gravel road near Umiat, showing severe differential subsidence caused by thawing of ice-wedge polygons in permafrost. (Figure 25, U.S. Geological Survey Professional paper 678 – Ferrians, Kachadoorian, and Greene, 1969)

Galbraith Corridor Analysis

- Environmental Concerns
  - Wetlands
  - Wildlife
  - Habitat
  - Fish
  - Cultural Resources
  - Subsistence Resources



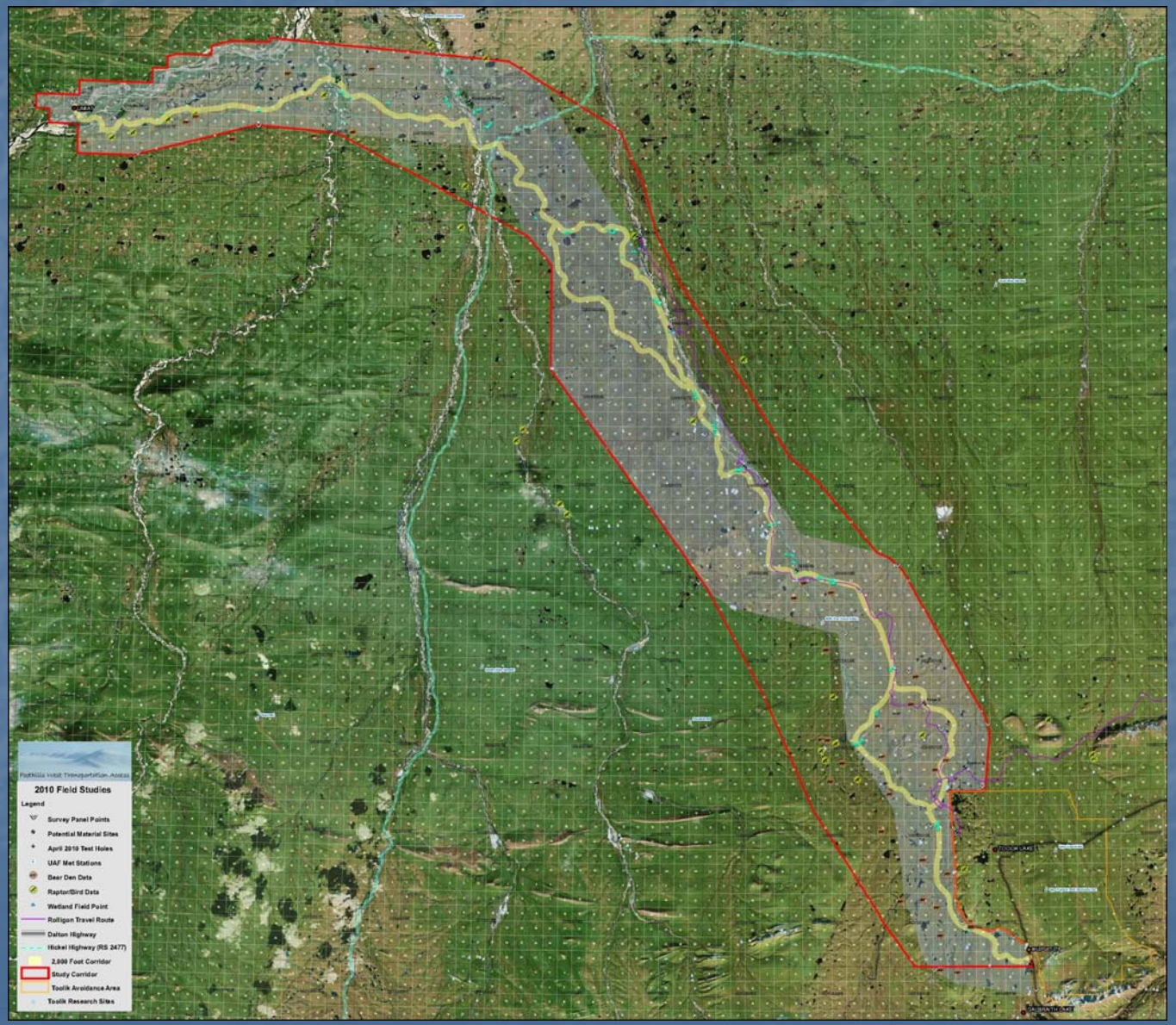


Galbraith Corridor Analysis

- Public Involvement
  - Conducted 3 rounds of informational public meetings at Anaktuvuk Pass, Nuiqsut, and Barrow.
  - Newsletters
  - Subsistence Monitors during field season efforts
  - Road Access related to subsistence resources is the issue with local communities

Foothills West Transportation Access

Galbraith Corridor Analysis
Proposed 2000’ Corridor Development



Foothills West Next Steps

Permitting Requirements

Federal Government:

- U.S. Army Corps of Engineers
  - 404 Wetlands Permit / Section 10 Rivers / Section 106 Historical
- EPA
  - Section 404 Permit Review / Storm Water / Air Quality
- USF&W
  - Section 7 TES / Bald Eagle Clearance / Migratory Birds
- BLM
  - ROW on BLM Administered Federal Lands/ Field Study Authorizations
- Coast Guard
  - Bridge Permits over Navigable Rivers

State of Alaska:

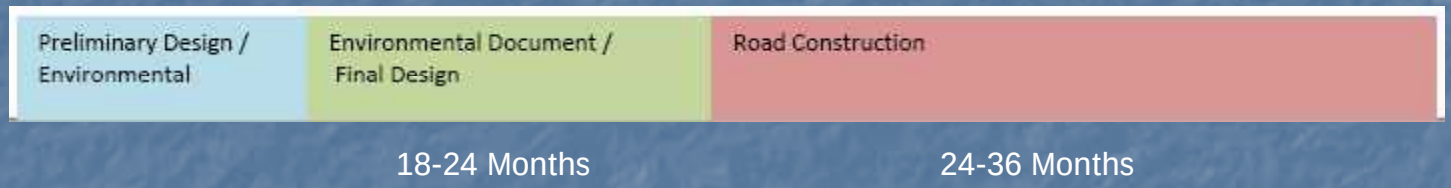
- State Of Alaska DNR
  - ROW / Water Use / Cultural Resources (Section 106) / Coastal Zone Consistency / Materials Sales/ Field Study authorizations
- State of Alaska DEC
  - SWPPP / Air Quality
- State of Alaska DF&G
  - Fish Habitat and Fish Passage

Others:

- North Slope Borough
  - Land Use Permit / Zoning / Field Study Permits
- Arctic Slope Regional Corporation
  - Field Study Permits / ROW

Project Schedule / Additional Funding Needs

- Contingent on Funding...
  - Formal Environmental Process
    - 18-24 Months to complete
    - Includes environmental work and engineering support



  - Could be ready to Construct in Winter 2012

www.foothillsroad.alaska.gov