

# ALASKA INDUSTRIAL DEVELOPMENT and EXPORT AUTHORITY

BOARD OF DIRECTORS MEETING  
December 18, 2013

## Interior Energy Project



[AlaskaRailroad.com](http://AlaskaRailroad.com)



# *Alaska Railroad Commitment*

The Alaska Railroad is committed to supporting the economic development and continued growth of the State of Alaska. Providing affordable energy to Fairbanks and the surrounding areas is of paramount importance. The Alaska Railroad stands ready to provide logistics solutions as part of the LNG supply chain.



# Presentation Agenda:

1. An overview of the capabilities of the Alaska Railroad Corporation
2. Location options
  - a. Seward
  - b. Anchorage
  - c. Birchwood
  - d. Port Mackenzie
  - e. Fairbanks
3. Equipment options for transporting LNG
  - a. Truck
  - b. ISO container
  - c. LNG railcar
4. Logistics options



# *Alaska Railroad Corporation Overview:*

- A State owned corporation since 1985 exclusively committed to Alaska.
- 650 miles of track from Seward and Whittier and Eielson AFB.
- Year round bi-directional freight service between Anchorage and Fairbanks 5 nights per week, expandable to 7 days per week as service requires.
- Year round coal service between Healy and Seward every week based on mine requirements
- Experience handling bulk commodities (Gasoline, Diesel fuel, methanol, liquid propane, etc.)
- 5.8 million tons of freight moved annually



# Locations Served within Alaska:

- Seward
  - Southern tip of the AKRR.
  - Ice free port
  - Area for laydown down yard and container offloading from barges
- Whittier
  - Roll on – roll off rail operation
  - Ice free port
  - Large current operating port
- Anchorage
  - Central point of operations and headquarters
  - Full service maintenance facility



# *Locations Served within Alaska:*

- Birchwood
  - Industrial park – former Granite gravel pit
  - Multiple rail access facility. 5 tracks from 3,600-5,000 feet each.
  - Potential LNG facility site

# Locations Served within Alaska:

- Port Mackenzie – Under construction
  - 32 miles from Houston to Port Mackenzie
  - 100 car loop track near the port
  - Easy access to Fairbanks Natural Gas facility
  - Project completion date 2016 – funding dependent



## Status

### Funding

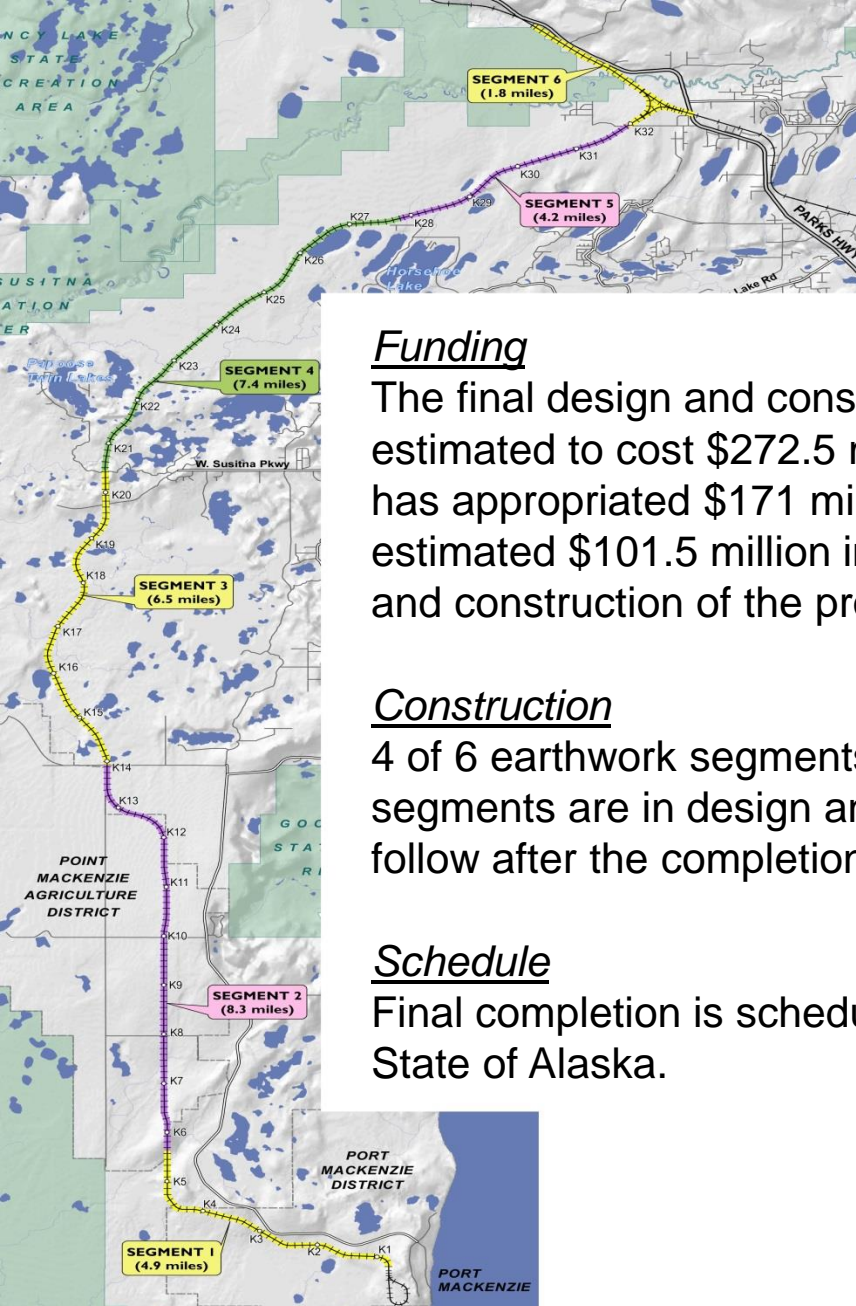
The final design and construction of a rail extension to Port MacKenzie is estimated to cost \$272.5 million (2007 dollars). To date the State of Alaska has appropriated \$171 million dollars for Design and Construction. An estimated \$101.5 million in additional funding is needed to complete design and construction of the project.

### Construction

4 of 6 earthwork segments are currently under construction, the remaining 2 segments are in design and ROW acquisition. Track construction would then follow after the completion of all 6 earthwork segments.

### Schedule

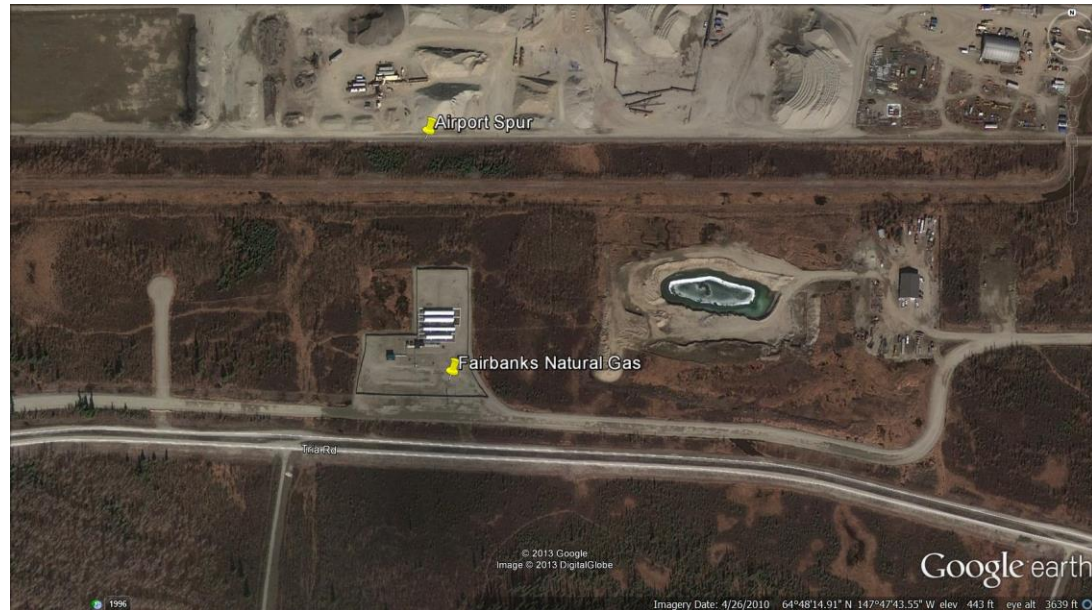
Final completion is scheduled for the end of 2016 pending full funding by the State of Alaska.





# Locations Served within Alaska:

- Fairbanks
  - Northern operations center
  - Transfer point of bulk commodities to and from Prudhoe Bay
  - Rail access near new FNG storage tank



# Logistics: 40' ISO Tanks

Transport containers for moving LNG

## ISO container

- 39,958 lbs payload
- 11,000 gallons
- Can be double stacked from Port Mackenzie
- Cost of ISO tank container is \$150,000
- 18 months manufacturing time



Rates take into account the need to acquire railcars and locomotives to support operation.

Rates are based on:

- 10 year commitment – moving a minimum of 195 40' ISO Tanks per week and a minimum of 97 ISO Tanks per train
- Shipper responsible for load ISO tanks to railcar at origin and unloading ISO tanks at destination.
- Rates does not include a switch crew to assist in loading and unloading operation.
- Rate includes use of Alaska Railroad owned or leased railcars
- Rates are subject to fuel surcharge in effect at the time of movement (24% for December 2013, fluctuates monthly)
- Rates are subject to be adjusted annually

# Logistics: 40' ISO Tanks

Origin	Destination	40' ISO Tank Rate	Rate per MCF
Port Mackenzie	Fairbanks	\$938	\$1.03
Anchorage	Fairbanks	\$987	\$1.09

Above rates based on 97 40' ISO tanks per train, two trains per week



# Logistics: LNG Tank car

Transport containers for moving LNG

## LNG railcar

- 142,500 lbs. payload
- 30,681 gallons of LNG
- Transportation Costs:



Rates are based on:

- 10 year commitment
- Shipper responsible for loading LNG railcar at origin and unloading LNG railcar at destination.
- Rates does not include a switch crew to assist in loading and unloading operation.
- Rate applies in shipper owned or leased LNG tank cars. Alaska Railroad will not pay any mileage, per diem or car hire while railcar is in our possession.
- Rates are subject to a fuel surcharge in effect at the time of movement (24% for December 2013, fluctuates monthly)
- Gross weight of railcar limited to 263,000 lbs. while operating on the Alaska Railroad system
- Rates are subject to be adjusted annually
- Rates are transportation only and does not include capital costs to acquire assets for the Alaska Railroad to perform operation

# Logistics: LNG Tank car



Origin	Destination	LNG Tank car Rate	Rate per MCF
<u>Port Mackenzie</u>	<u>Fairbanks</u>		
70 car Unit Train		\$2,684	\$1.06
50 car Unit Train		\$2,814	\$1.11
20 rail car		\$3,536	\$1.39
10 rail car		\$4,425	\$1.75

Based on weekly volume commitment

Alaska Railroad capable of hauling 263,000 lbs. gross weight per rail car, 142,500 lbs. payload per car ( 2,536 MCF per car ). 70 cars per train, or 9.97 million pounds per train, or 2.14 million gallons of LNG ( 177,520 MCF per train)

# Logistics:

Transport containers for moving LNG

LNG Truck – Trailer

- 38,560 lbs. payload
- 10,420 gallons of LNG
- Transportation Costs: N/A
- One 70 car unit train equals 206 truckloads

2015 Fairbanks projected gas need is 4 BCF

Equates to 500 round-trip truckloads



# Specific Board Questions:

Is there a model somewhere in the United States after which we could follow their LNG rail operations?

- a) 360 mile length
- b) Through mountains
- c) Possible gas line using a railroad right-of-way?

Crude by rail has replaced crude by pipeline in the Bakken oil field in the amount of 1.0 million barrels per day. Crude by rail has become the industry norm. LNG should follow that trend.

What is the cost of a railroad LNG bulk railcar and the amount of gallons of LNG that can be transported in a railcar?

ISO tank: \$150,000 each, 11,000 gallons ( 908.6 MCF )

LNG bulk railcar: \$650,000 each, 30,681 gallons per car ( 2,536 MCF )

Chart Industries has production capacity in Minneapolis, 10-12 month lead time. 8 cars per month thereafter.

# *Specific Board Questions:*

Estimated time for completion of Pt. Mackenzie spur line?

Legislative funding dependent – 2016 completion

Does the Railroad have land available for storage facility for LNG in Fairbanks?

Yes. Various options exist.



# Summary:

- ✓ Alaska Railroad has existing infrastructure.
- ✓ Extensive capacity to move bulk commodities
- ✓ Rail is a more cost effective option compared to truck
- ✓ Safe off highway transportation network
- ✓ ISO's offer effective asset utilization and resale option
- ✓ Available Alaska Railroad real estate
- ✓ Near term logistics solution

# *Additional Resources:*

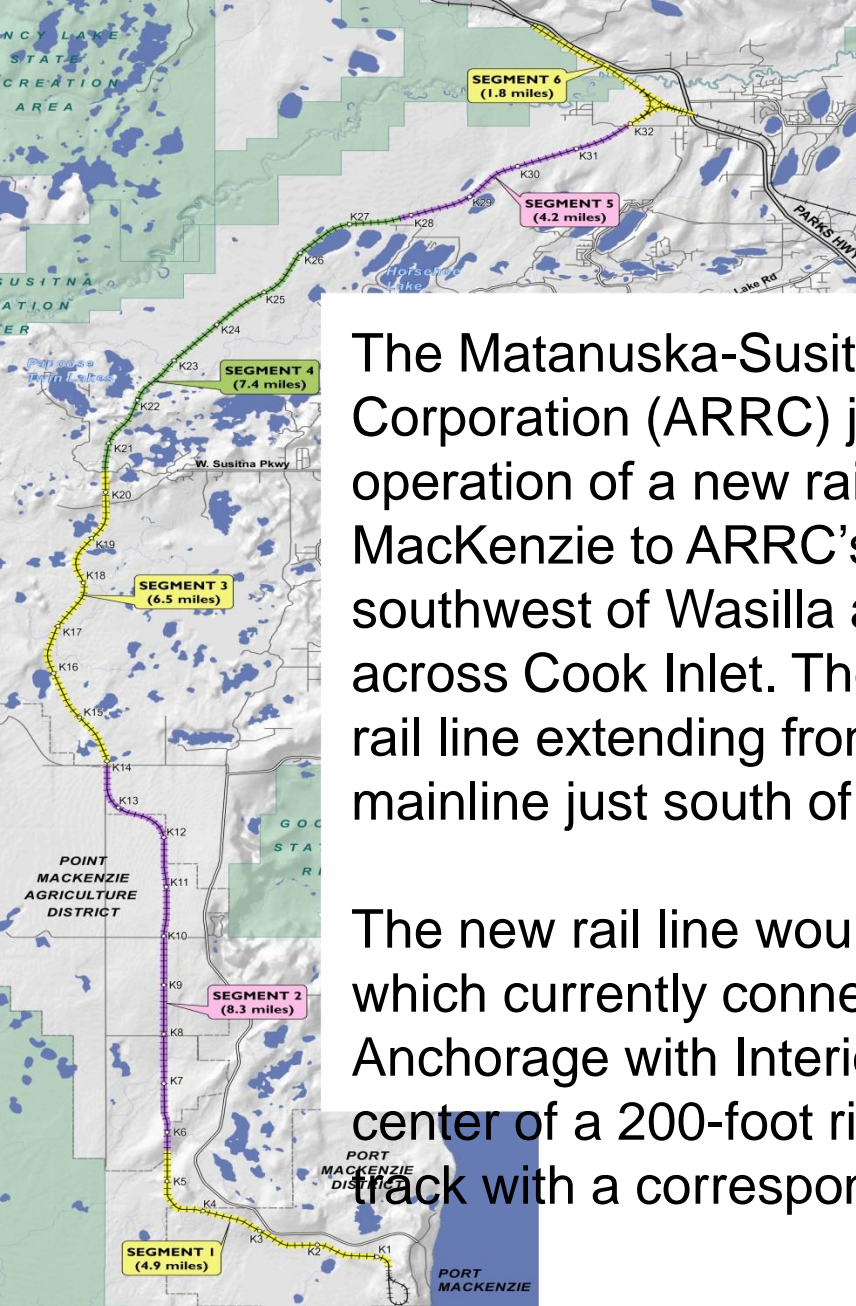
- ✓ Port MacKenzie Rail Extension
- ✓ Real estate handouts



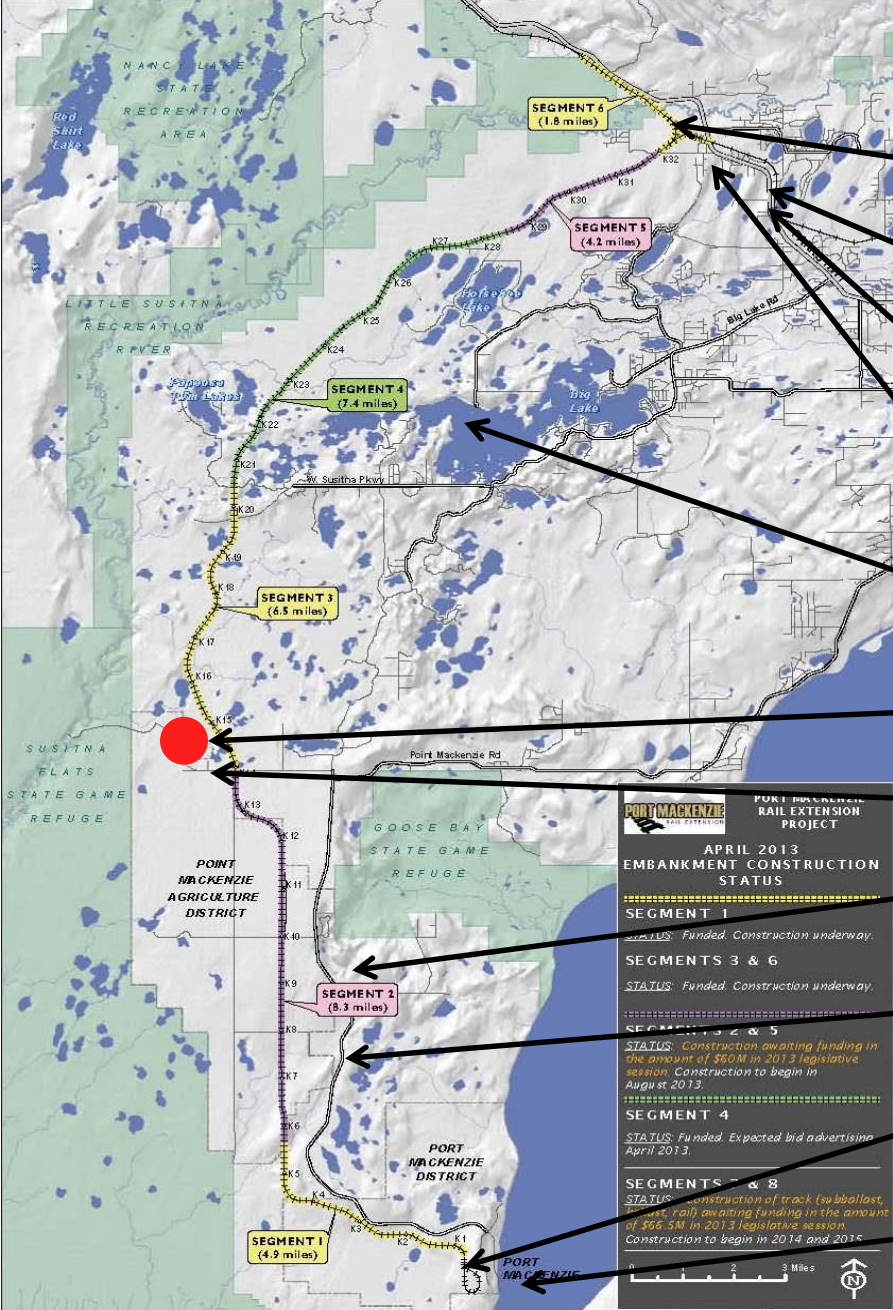
## The Project

The Matanuska-Susitna Borough (MSB) and the Alaska Railroad Corporation (ARRC) jointly are pursuing the construction and operation of a new rail line to connect the Borough's Port MacKenzie to ARRC's rail system. The port lies about 30 miles southwest of Wasilla and about 5 miles due north of Anchorage, across Cook Inlet. The selected route involves 32 miles of new rail line extending from Port MacKenzie to the Alaska Railroad's mainline just south of Houston.

The new rail line would be an extension of the ARRC system, which currently connects ports in Seward, Whittier, and Anchorage with Interior Alaska. The track will lie roughly in the center of a 200-foot right-of-way. The project proposes a single track with a corresponding maintenance road.



## Project Map



PORT MACKENZIE RAIL EXTENSION PROJECT	
APRIL 2013 EMBANKMENT CONSTRUCTION STATUS	
SEGMENT 1	STATUS: Funded. Construction underway.
SEGMENTS 3 & 6	STATUS: Funded. Construction underway.
SEGMENTS 2 & 5	STATUS: Construction awaiting funding in the amount of \$60M in 2013 legislative session. Construction to begin in August 2013.
SEGMENT 4	STATUS: Funded. Expected bid advertising April 2013.
SEGMENTS 7 & 8	STATUS: Construction of track (subballast, dust rail) awaiting funding in the amount of \$56.5M in 2013 legislative session. Construction to begin in 2014 and 2015.

Project Tie In

Parks Hwy

ARRC Mainline

Houston

Big Lake

Fairbanks Natural Gas Facility

Ayrshire Rd

Goose Creek Correctional Facility

Port Mack Rd

Rail Loop

Port MacKenzie

## Port MacKenzie

- 14 square mile Port District
- Staging, storage and industrial area
- Largest port reserve area in Alaska Deep Water Port (-60 MLLW)
- Accessible all year – no dredging required
- 485-foot trestle in place leading to a 1,200 foot dock face
- Barge dock area expanded to 15 acres in 2011
- Bulk material handling conveyor system in place



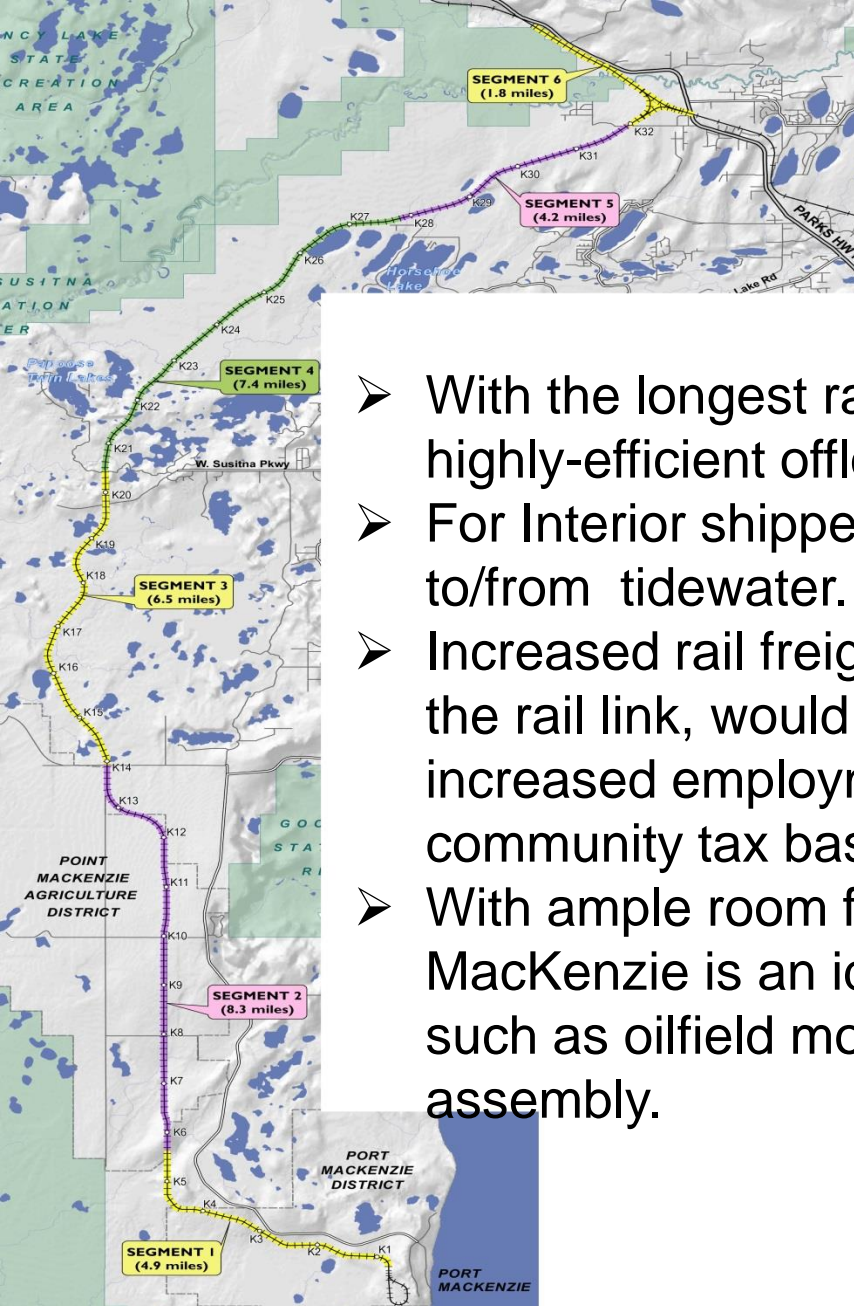
PORT MACKENZIE DISTRICT  
~9,000 Acres

Port MacKenzie



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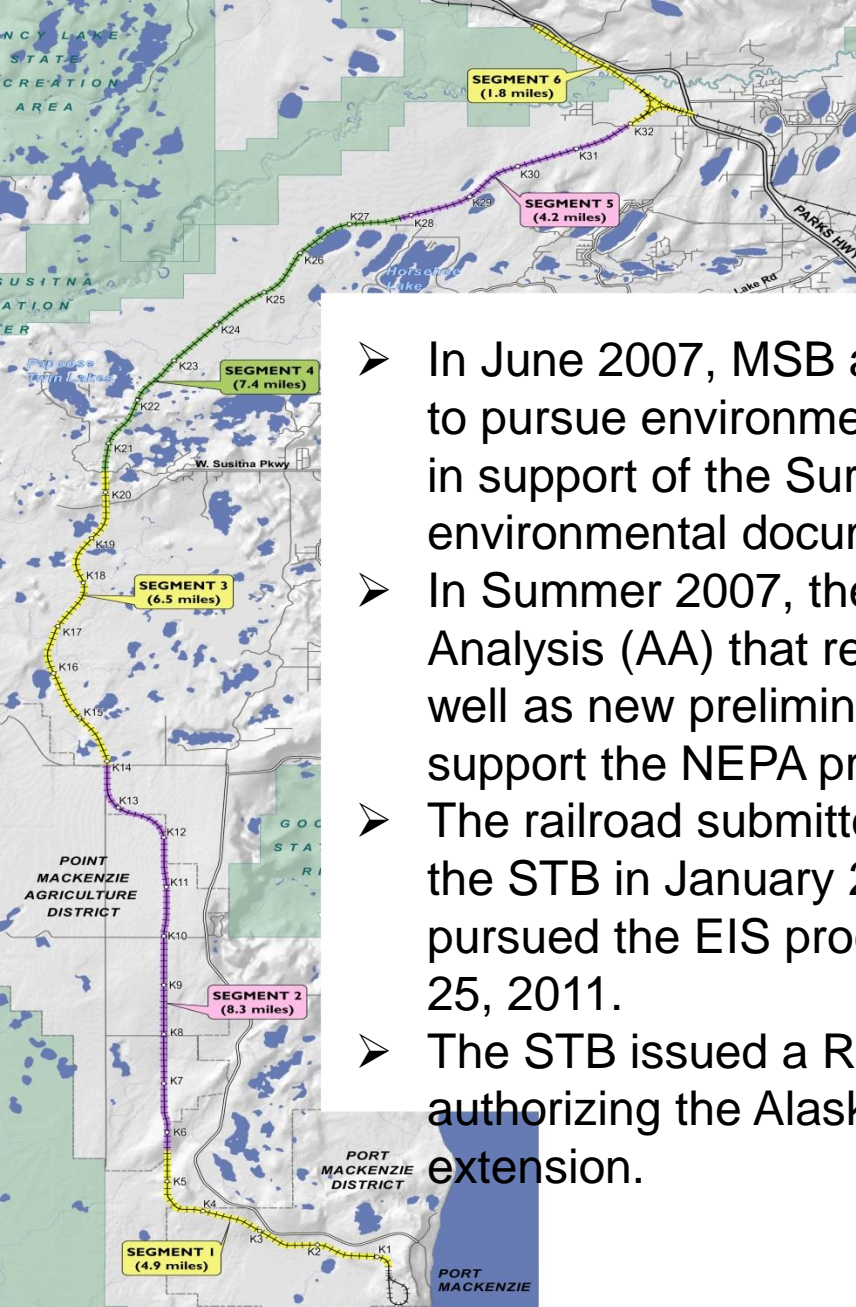
# Project Benefits



- With the longest rail car loop in Alaska, the extension offers highly-efficient offloading of bulk resources from train to ship.
- For Interior shippers, the new rail link shortens the distance to/from tidewater.
- Increased rail freight activity, and development stimulated by the rail link, would benefit rail belt communities through increased employment, contributions to the state and community tax base, and overall economic health.
- With ample room for staging and assembling, Port Mackenzie is an ideal site for large construction projects, such as oilfield modules, large material import, or pipeline assembly.

## History

- In June 2007, MSB and ARRC signed a Memorandum of Agreement to pursue environmental work, engineering and alternative analysis in support of the Surface Transportation Board (STB)-led environmental document for a Port MacKenzie rail line extension.
- In Summer 2007, the MSB and ARRC pursued an Alternatives Analysis (AA) that reviewed prior Port MacKenzie-related studies as well as new preliminary engineering and environmental field work to support the NEPA process.
- The railroad submitted the completed AA as part of an application to the STB in January 2008. From 2008 through 2010, the STB pursued the EIS process. The STB released the final EIS on March 25, 2011.
- The STB issued a Record of Decision (ROD) on December 23, 2011, authorizing the Alaska Railroad to build and operate the new rail extension.



# Participants

- 
- Matanuska-Susitna Borough (MSB) –The MSB is the project’s *Sponsor*, and has acquired \$171.0 million in state legislative appropriations, to date. The MSB co-manages the project and is responsible for public and government relations, and land use planning for the project.
  - Alaska Railroad Corporation (ARRC) – The ARRC is the project’s *Applicant*, responsible for rail-related technical expertise, and for support of the EIS effort. ARRC co-manages the project.
  - Surface Transportation Board (STB) – STB is the lead federal agency on the project with the authority to approve construction of new rail lines (including extensions) in the US.



# Cost & Funding

## Analysis

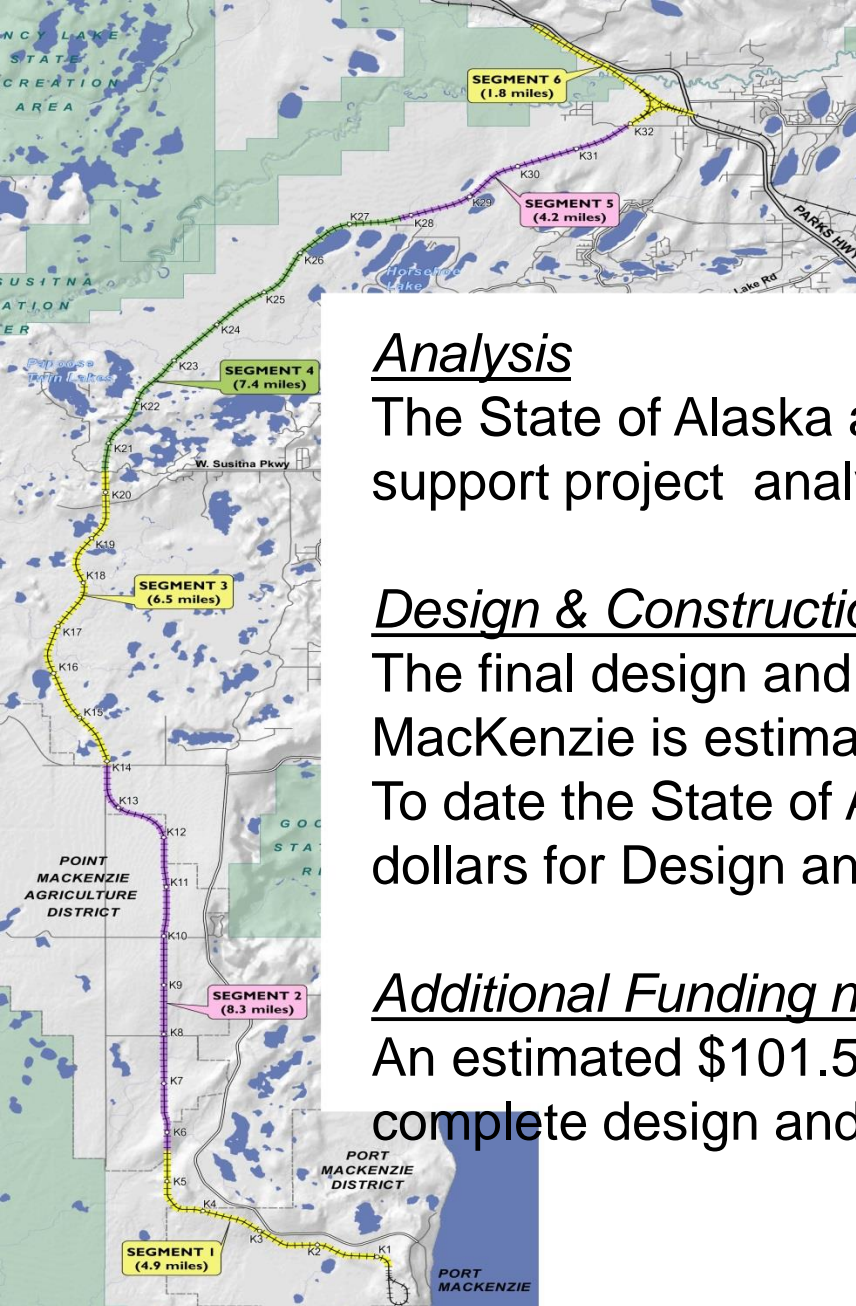
The State of Alaska appropriated \$10 million in 2008 to support project analysis and permitting.

## Design & Construction

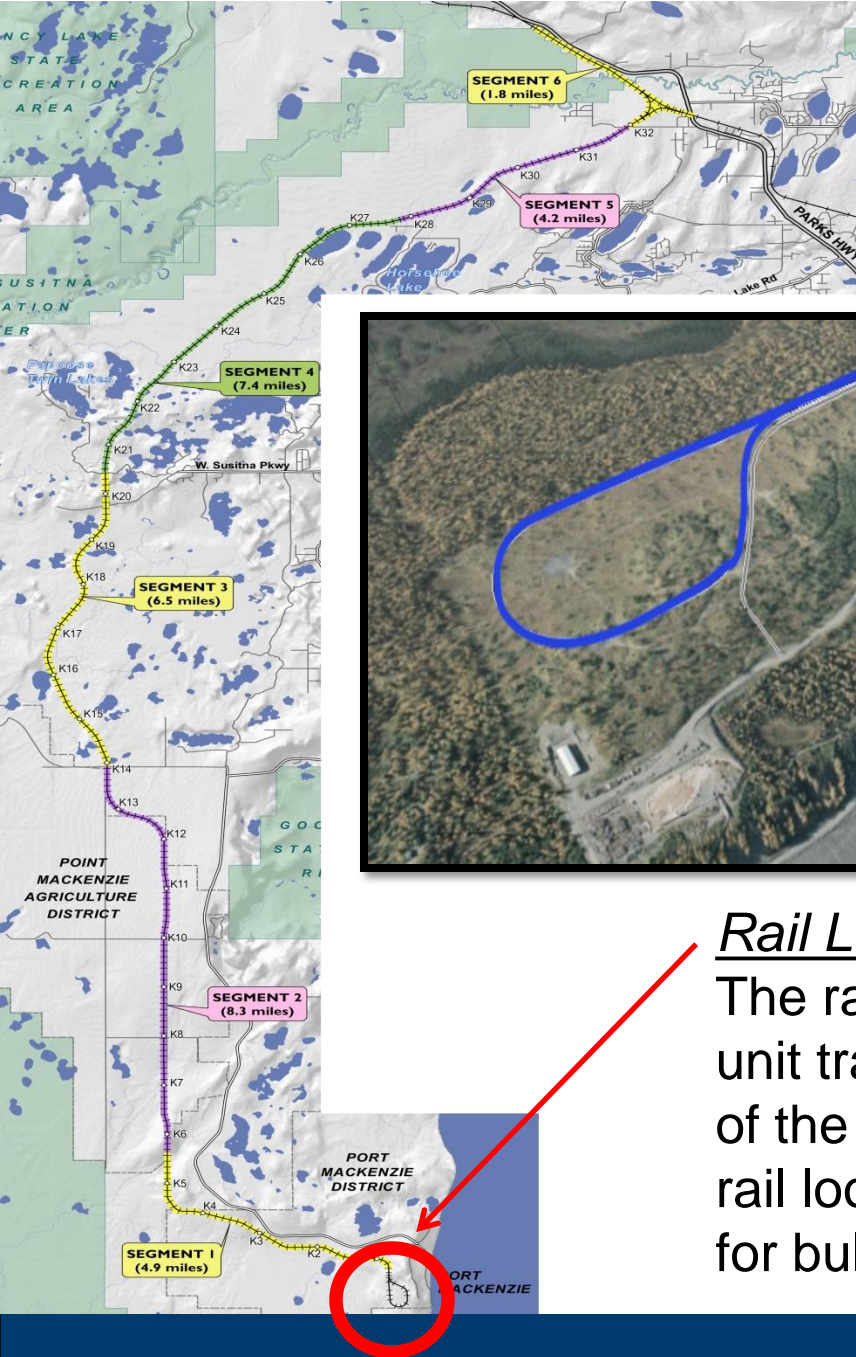
The final design and construction of a rail extension to Port MacKenzie is estimated to cost \$272.5 million (2007 dollars). To date the State of Alaska has appropriated \$161 million dollars for Design and Construction.

## Additional Funding needed

An estimated \$101.5 million in additional funding is needed to complete design and construction of the project.



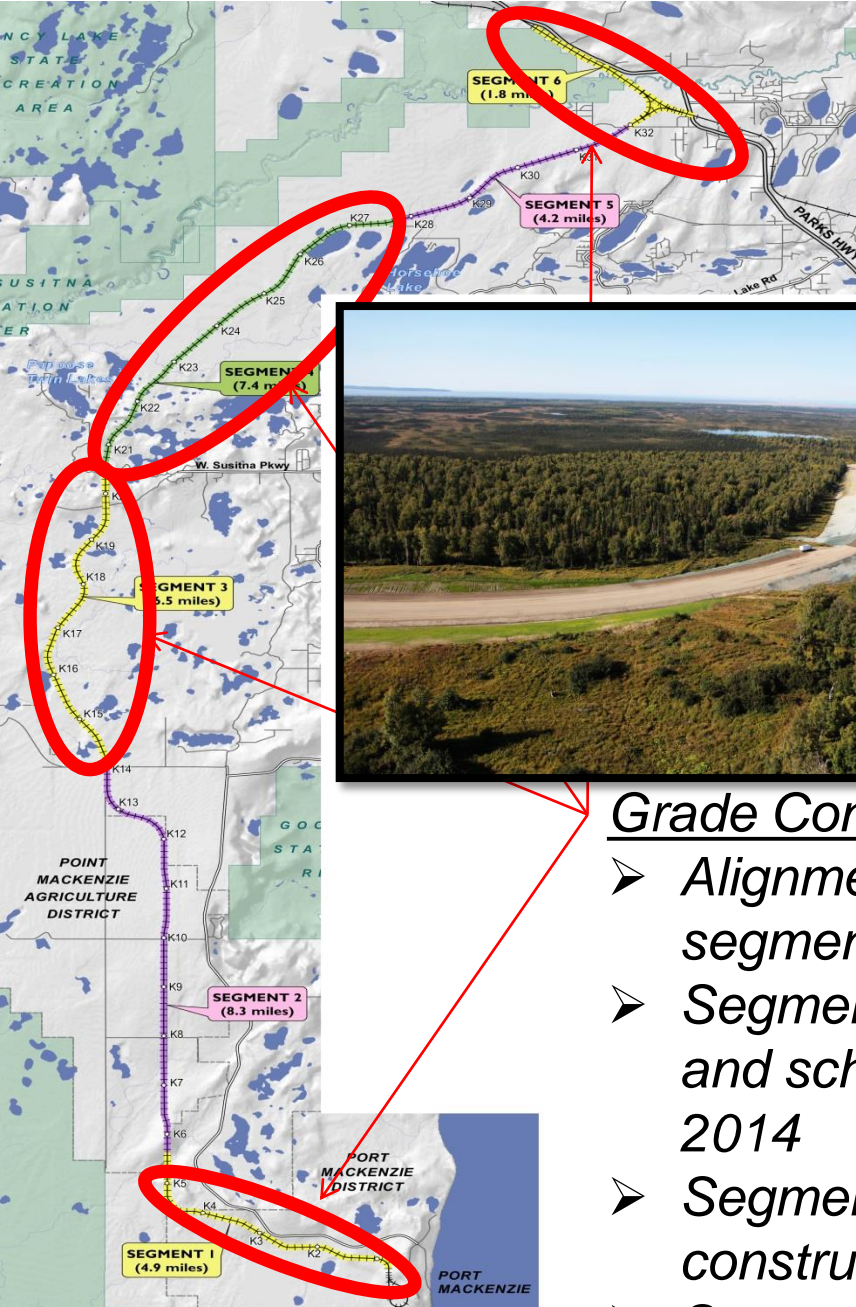
## Project Status



### Rail Loop - Grade Construction Complete

The rail loop was designed to handle 100-car unit trains hauling bulk materials. The interior of the rail loop contains approx. 80 acres reserved for bulk material handling.

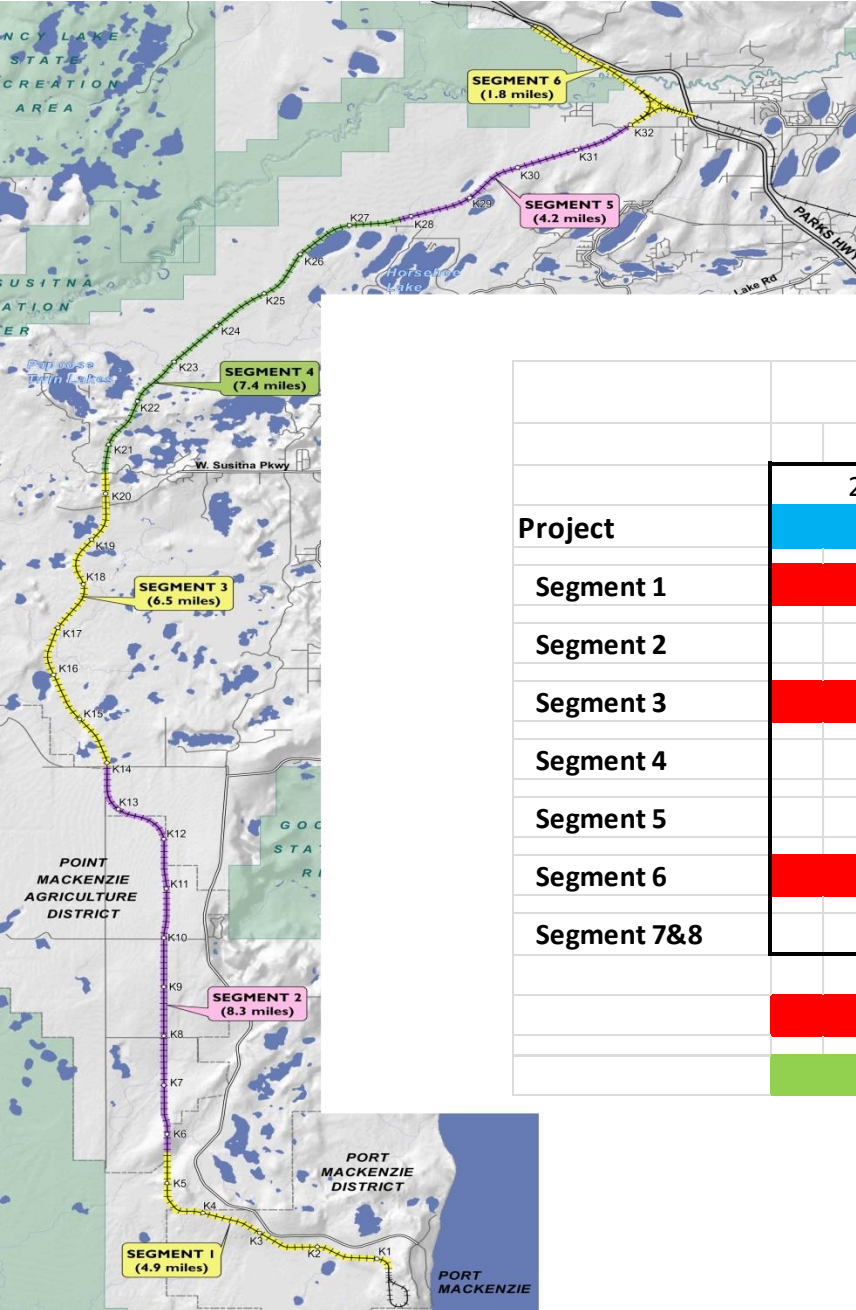
# Project Status



## Grade Construction

- Alignment split into 6 construction segments
- Segments 1,3,4 & 6 are under construction and scheduled for completion by fall of 2014
- Segment 5 is scheduled to be bid for construction in 2014.
- Segment 2 is under design and ROW acquisition with construction scheduled for 2015

## Project Schedule



	2013	2014	2015	2016
<b>Project</b>				
<b>Segment 1</b>				
<b>Segment 2</b>				
<b>Segment 3</b>				
<b>Segment 4</b>				
<b>Segment 5</b>				
<b>Segment 6</b>				
<b>Segment 7&amp;8</b>				
		Funded		
		Not Funded		

# Summary:

