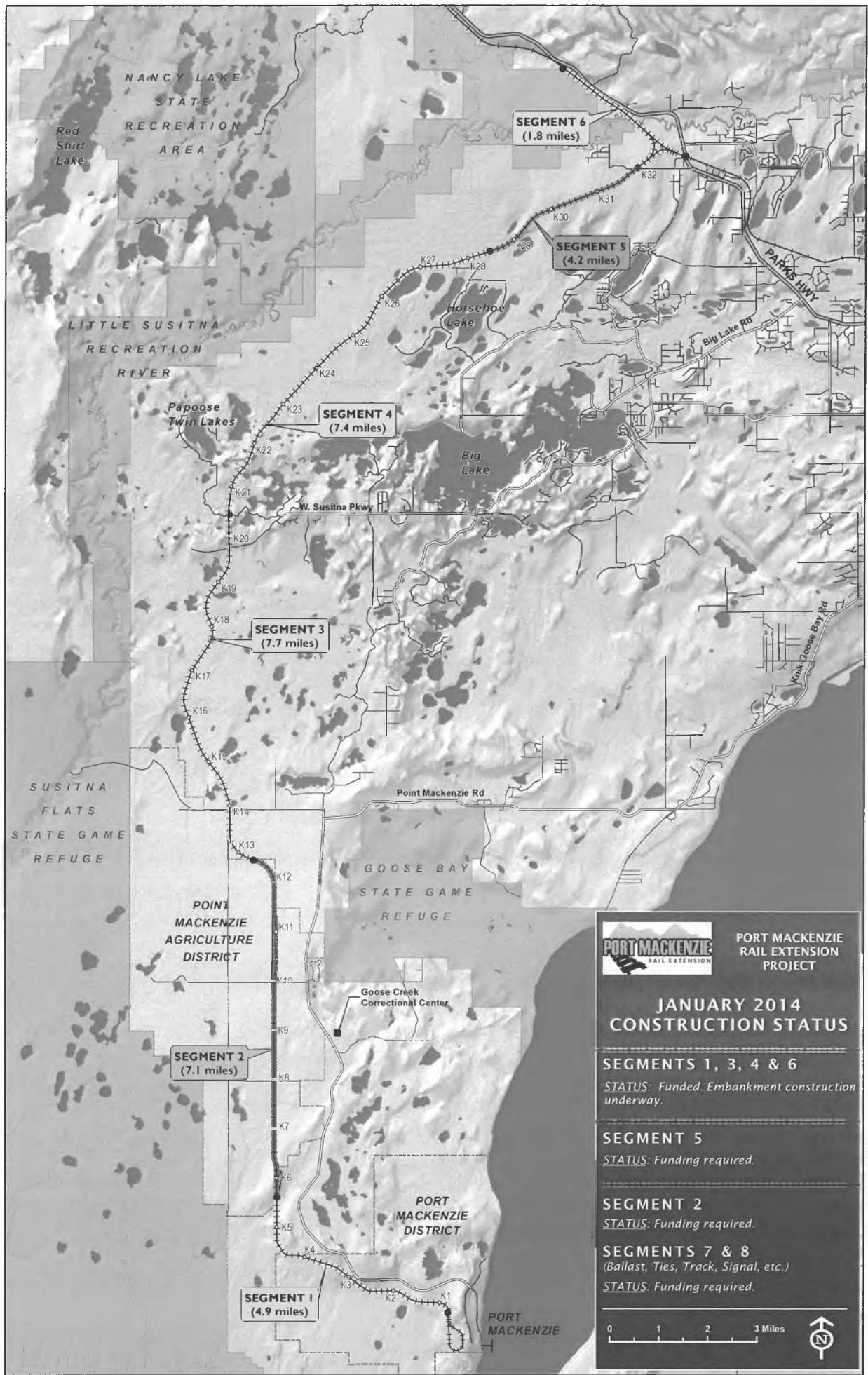


**01/28/14  
PRESENTATIONS:  
TANANA-  
POSITIVE TRAIN  
CONTROL &  
STATUS UPDATE  
ON PORT  
MACKENZIE RAIL  
EXTENSION**

<TARGET><BILL></BILL><SUBJECT>01-28-14 PRESENTATIONS  
TANANA-POSITIVE TRAIN CONTROL and STATUS UPDATE ON PORT  
MACKENZIE RAIL  
EXTENSION</SUBJECT><COMM>STRA28</COMM></TARGET>



PORT MACKENZIE  
RAIL EXTENSION  
PROJECT

**JANUARY 2014  
CONSTRUCTION STATUS**

**SEGMENTS 1, 3, 4 & 6**

*STATUS: Funded. Embankment construction underway.*

**SEGMENT 5**

*STATUS: Funding required.*

**SEGMENT 2**

*STATUS: Funding required.*

**SEGMENTS 7 & 8**

*(Ballast, Ties, Track, Signal, etc.)*

*STATUS: Funding required.*





# Port MacKenzie Rail

**FUNDED: \$171 M**



- Would reduce transportation costs for PROJECT CARGO on Alaska's biggest projects: the 800-mile natural gas pipeline to an LNG export plant and the Susitna Dam.

- Would spur small entrepreneurial businesses & reduce transportation costs on recurring project cargo delivery such as steel for northern bridges, pipe for new & old oil fields, and fracking sand for future shale oil development.

## PROJECT CARGO

- With the longest rail car loop in Alaska, the extension will offer highly-efficient offloading of BULK RESOURCES from train to ship.

## BULK RESOURCES



- The rail link shortens the distance from the Interior to tidewater, reducing transportation costs.
- Will transport copper concentrates to market from the future Ambler mining district.

## MINERAL DEVELOPMENT

**Port MacKenzie** is an open port, resulting in reduced operating economies

- 14 square miles of laydown area is available in this developing port for large projects
- A 6.9-million gallon fuel tank facility is breaking ground, providing competitive fuel prices to Alaska
- More than \$100 M in rail construction work, more than 180 jobs, summer 2013

**John Moosey, Mat-Su Borough Manager**  
745-9689  
john.moosey@matsugov.us  
www.portmackenzie.com



# Alaska Railroad Update

Presentation to  
Joint House & Senate Transportation Committee

Bill O'Leary  
President & CEO

Clark Hopp  
Vice President  
Engineering

Eileen Reilly  
Vice President  
Advanced Train Control Systems and Technology

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



# Alaska Railroad Quick Facts

## Organization (following State purchase)

- Independent corporation owned by State
- Managed by a seven-member board of directors appointed by Governor
- Mandated to be self-sustaining, responsible for financial and legal obligations

## Operating Data

- 656 Total miles of track
- 1,381 Freight cars (owned & leased)
- 45 Passenger cars
- 51 Locomotives

## Operating Statistics (Jan - Dec 2013)

- 489,620 passengers
- 5.11 million tons of freight

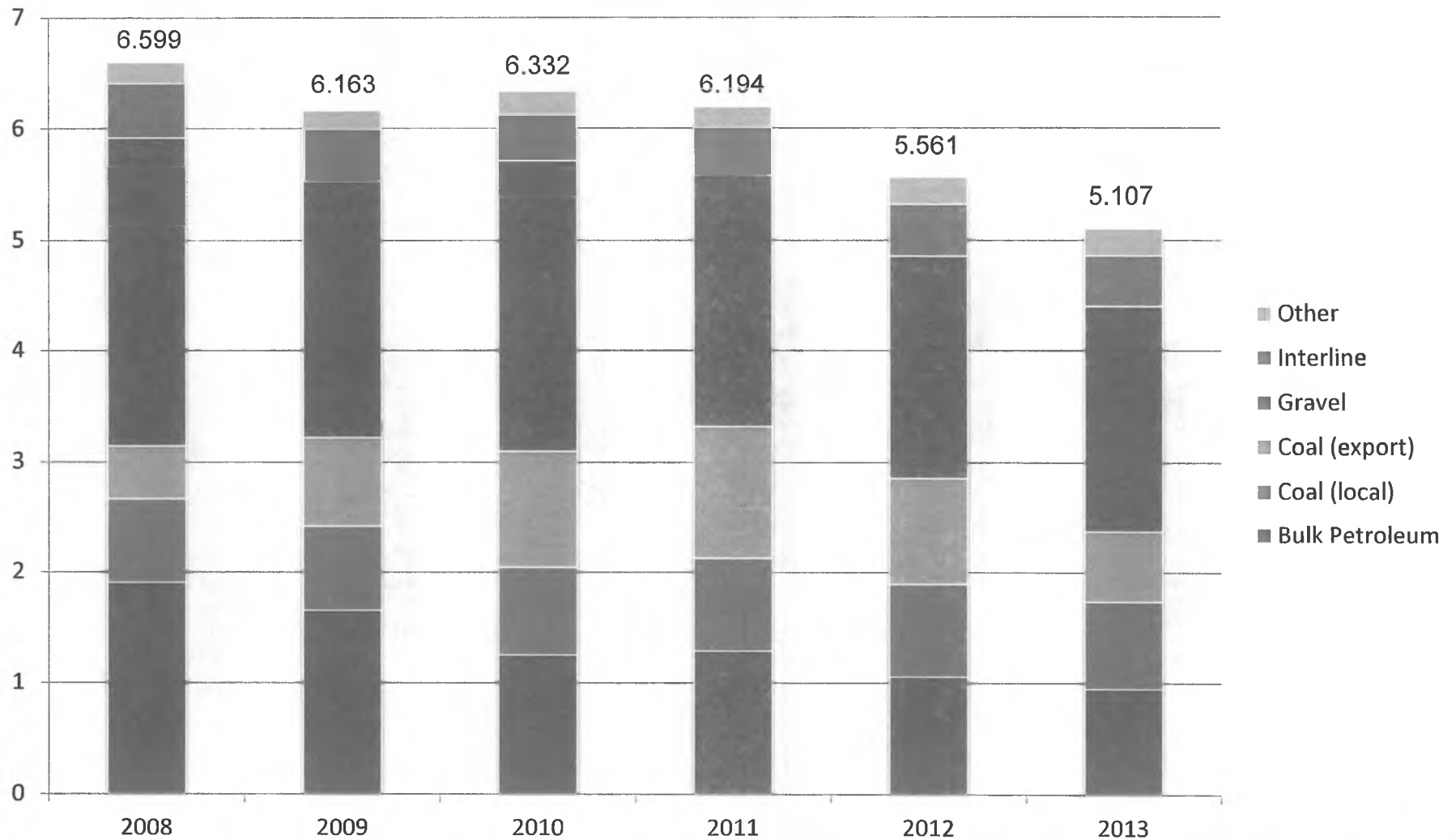
## Employees (January 2014)

- 586 year-round employees
- 429 members of 5 unions

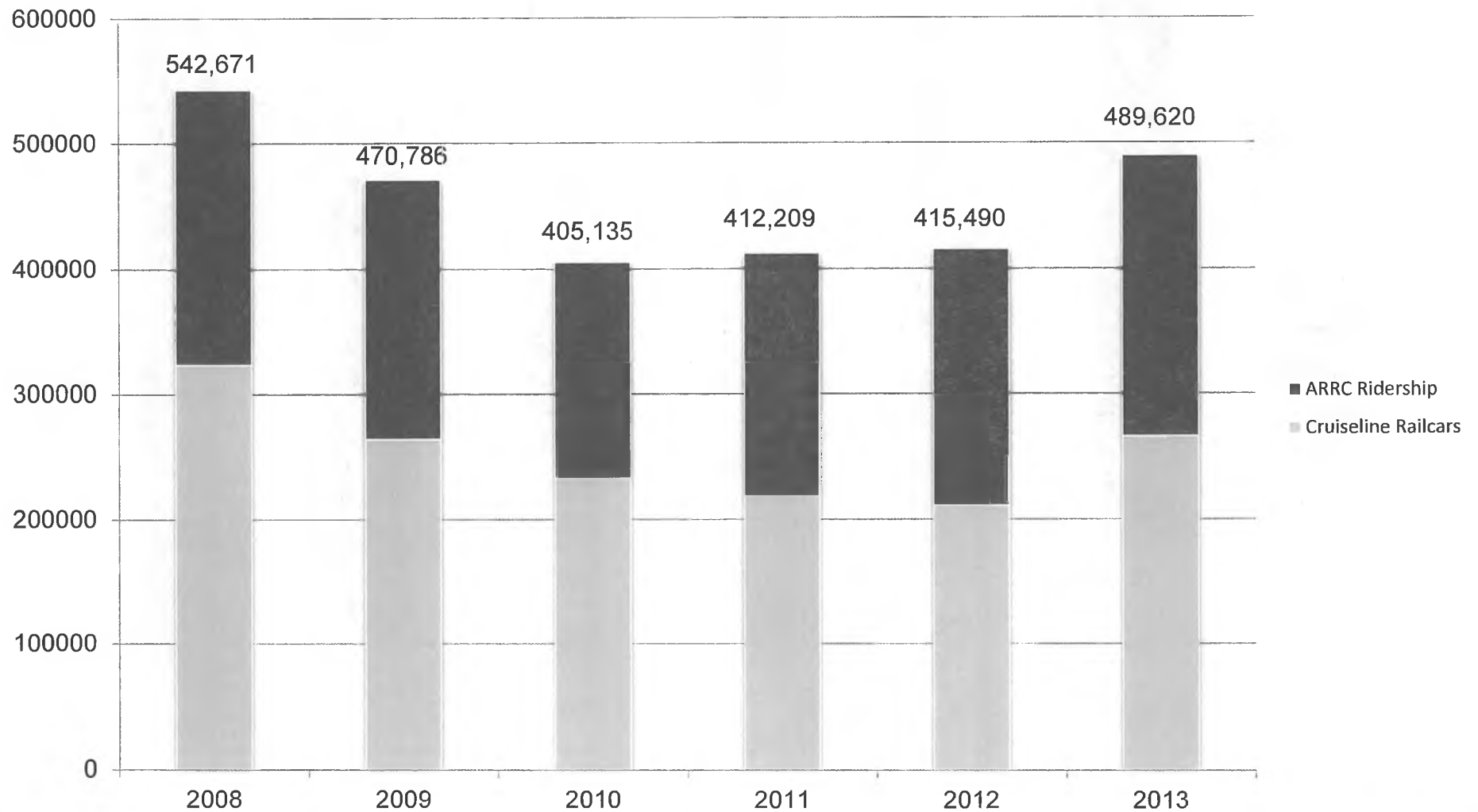


# ARRC Freight

(in million tons)



# ARRC Passenger Service



# FTA Formula Funds

- Financial Shortfall
- Provided to ARRC for our year-round regularly-scheduled passenger service.
- Significant reduction for 2013 and moving forward (MAP-21)
- Cut was only to Alaska Railroad and did not reduce federal budget.
- Part of the reason behind the cut was ill will towards Senator Stevens' legacy.
- Will be up again in 2014



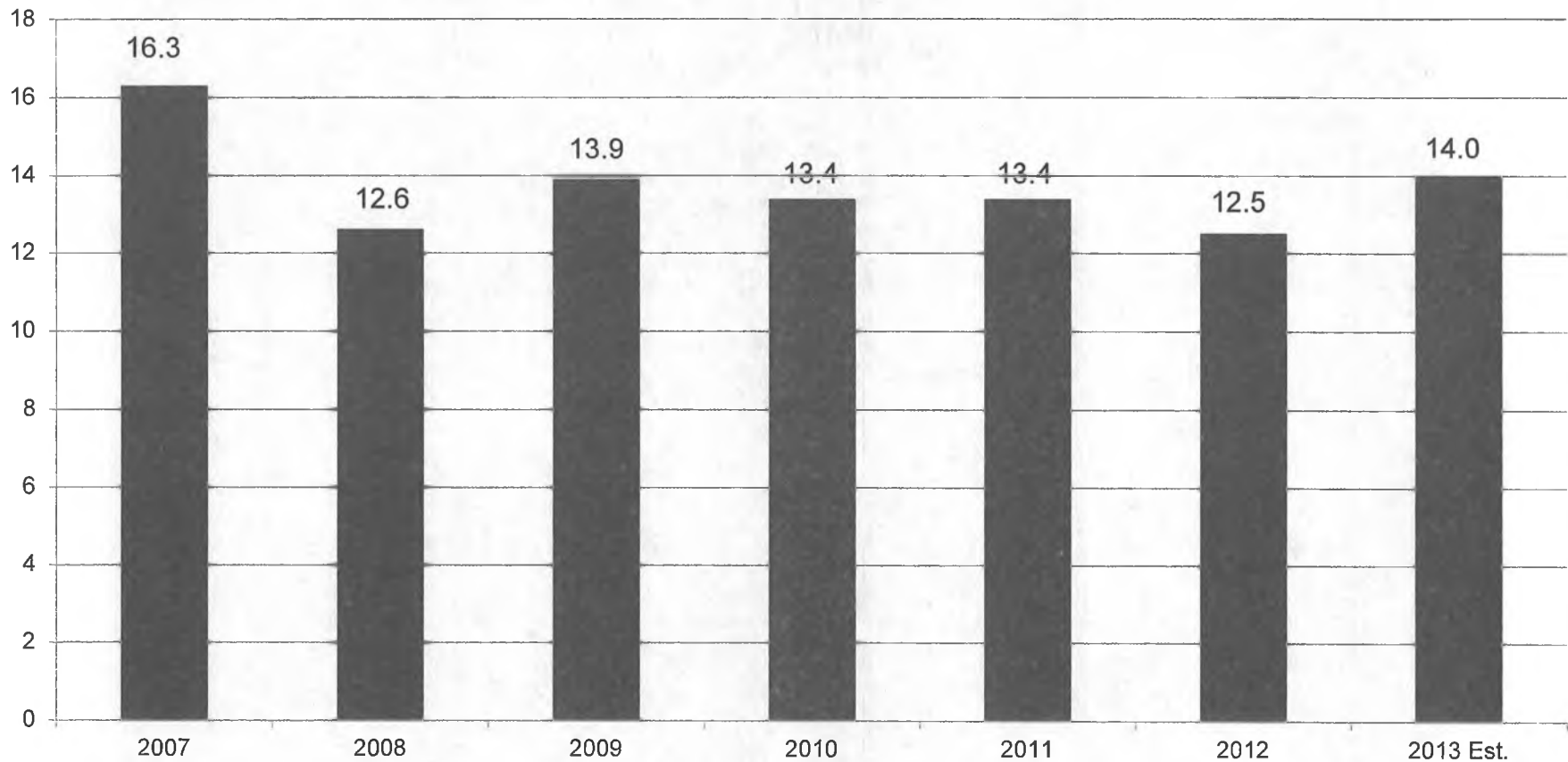
# Reducing Costs

- 54 Positions eliminated – 8% of ARRC work force
  - 25 unfilled due to Nov 2012 hiring freeze
  - 29 individuals let go
- 20 management positions – 12% of management
  - 37% of total cuts
  - 2 Vice President and 5 Director positions eliminated
- 300 positions cut since 2008
- Streamline Operations
- Ensure the Railroad doesn't look different from the outside



# ARRC Net Income

(in \$ millions)

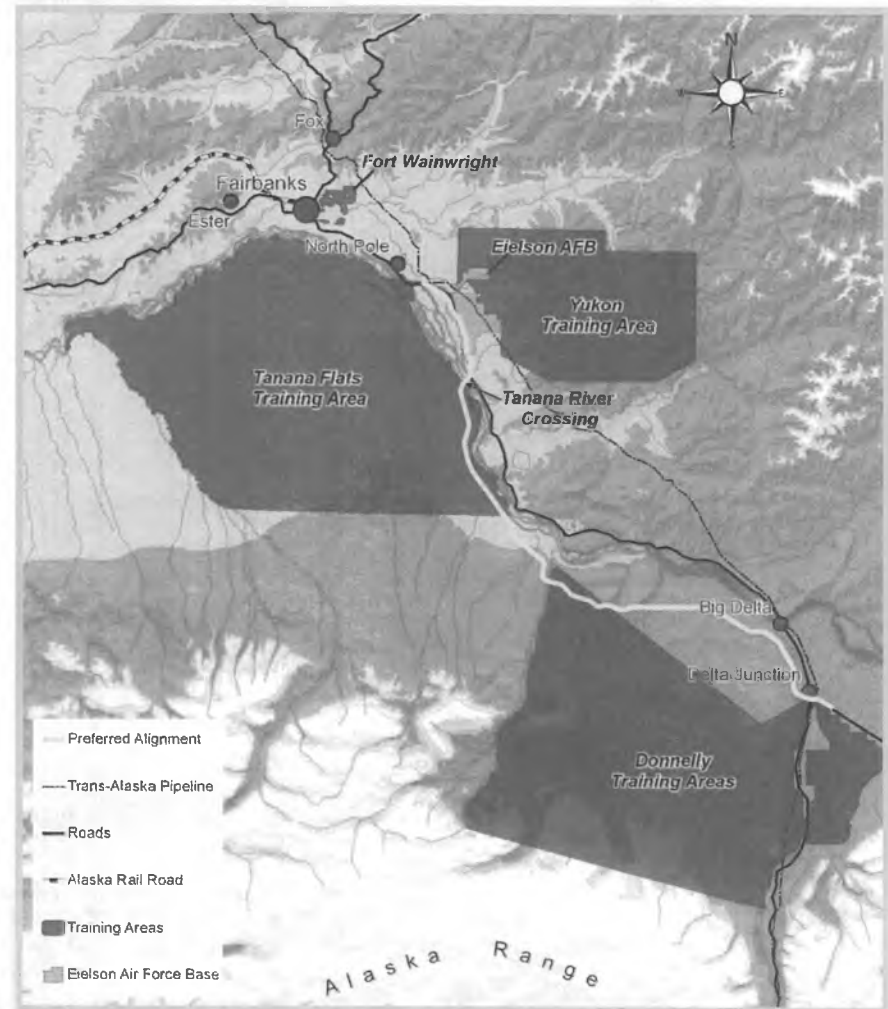


# Northern Rail Extension



# Northern Rail Extension 4 Phase Project

- 80+ miles of rail from North Pole to Delta Junction
  - Phase 1 : Bridge over Tanana River, approach road and levee near Salcha
  - Phase 2 : 13 miles of rail from Moose Creek / Eielson AFB to Tanana River Crossing
  - Phase 3 : 30 miles of rail from Tanana River Crossing to Donnelly Training Area
  - Phase 4 : 38 miles of rail from Donnelly Training Area to Delta Junction



# Northern Rail Extension Project Benefits

- Commercial freight and passenger service supporting communities
- Transportation alternative to Richardson Highway
- Connects military at JBER, Wainwright, Eielson, Clear and Delta Junction by rail to each other and to 3 Alaska ports
- Support regional tourism
- Economic and Resource Development Potential
- Future Canadian Connection?

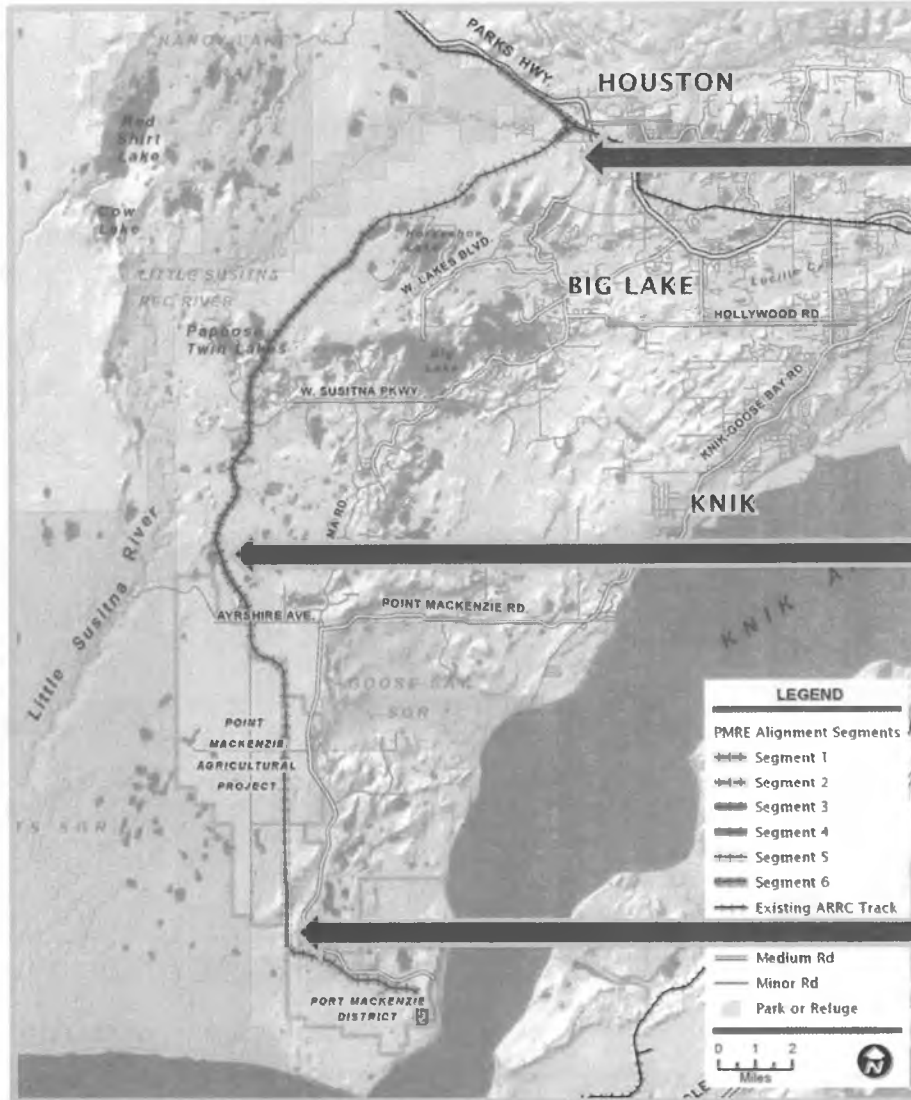


# Phase 1 – Tanana River Crossing

- Longest bridge in Alaska
  - 3300 Feet
- Levee to direct river flow
- \$188.2 million total cost
  - \$84.0 million State of Alaska
  - \$104.2 million Department of Defense
- Provide US Military with year round vehicle access to Joint Pacific Area Range Complex



# Port MacKenzie Rail Extension

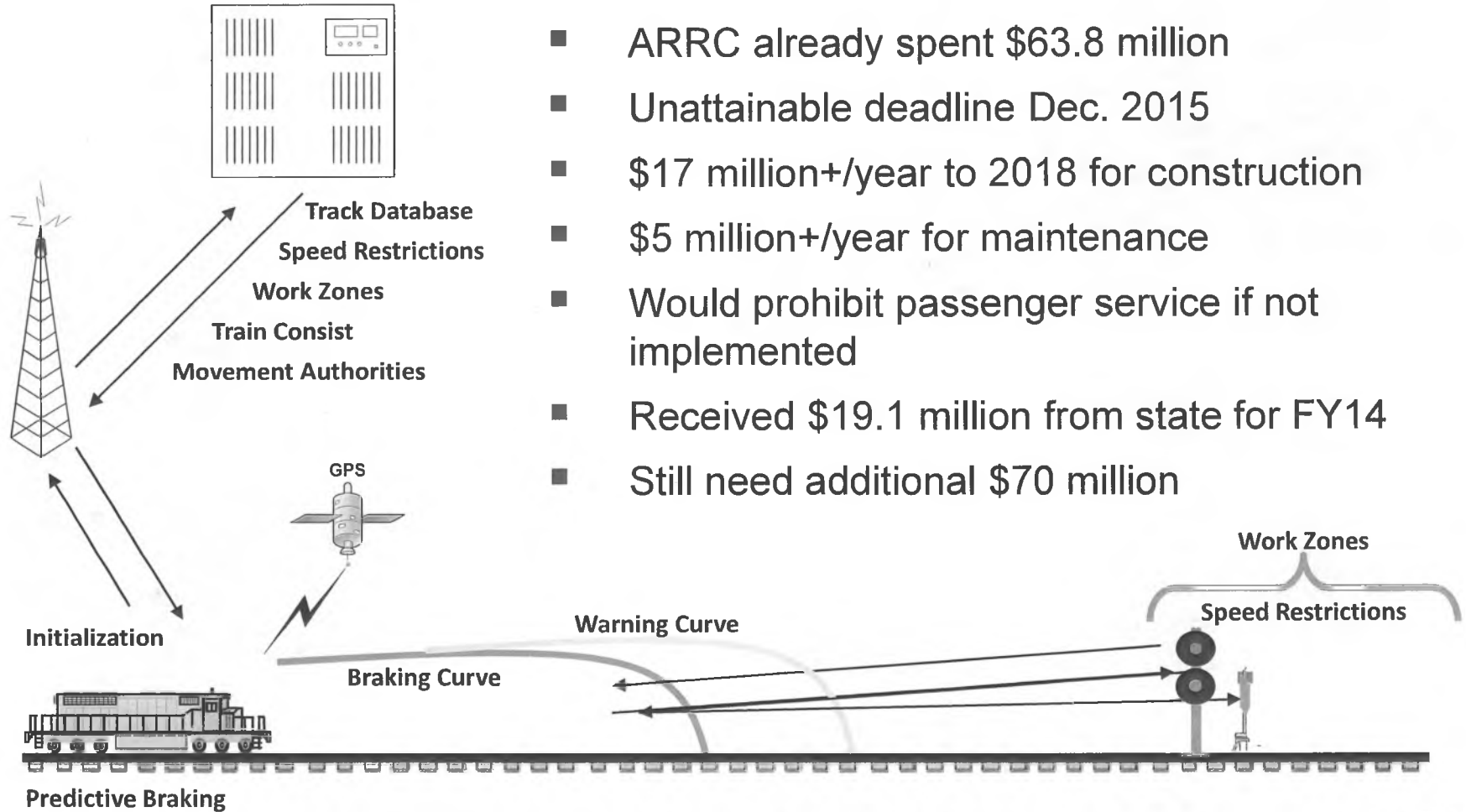


# Fairbanks/North Pole Realignment



# Positive Train Control

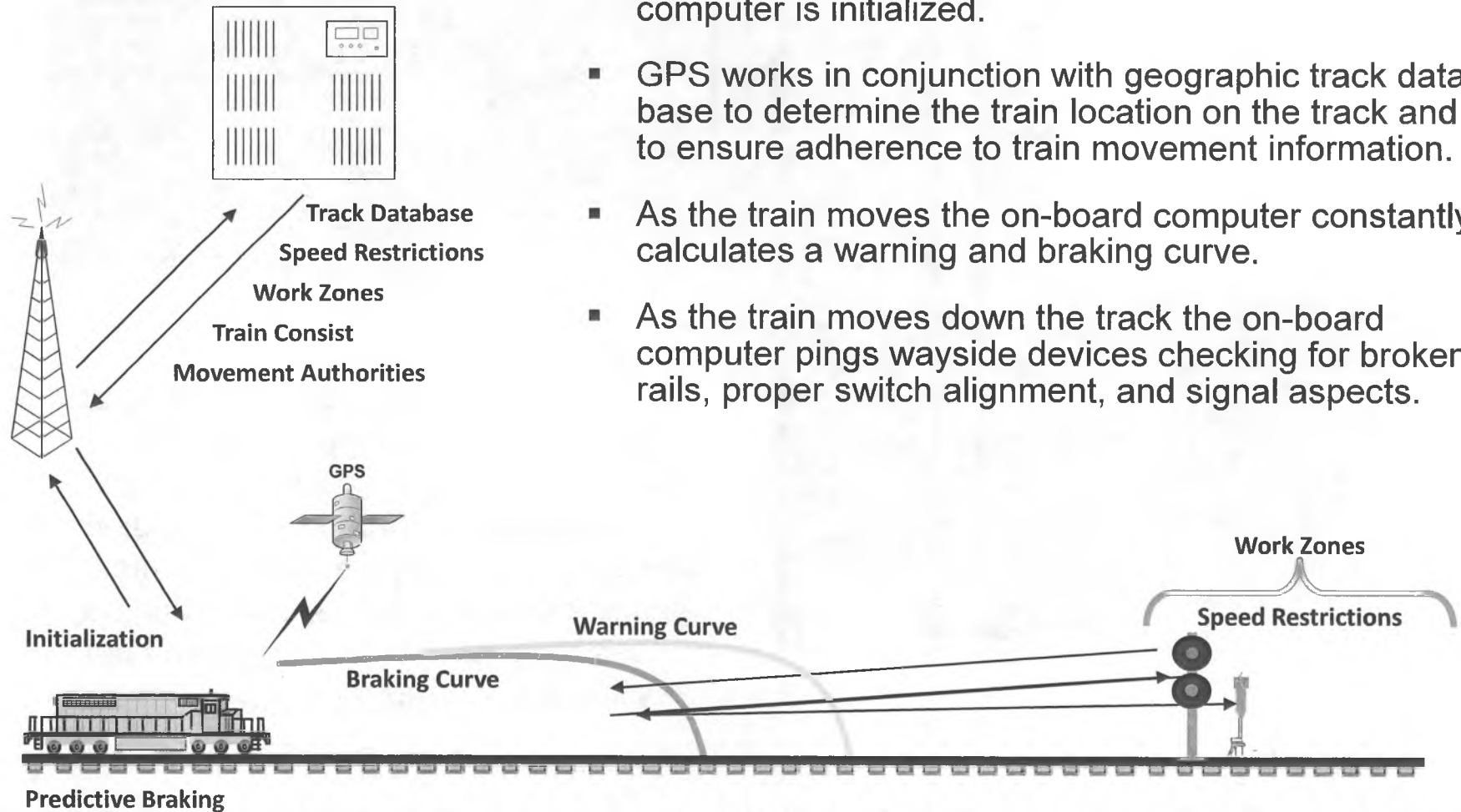
## Office Systems



- Unfunded Federal Mandate
- ARRC already spent \$63.8 million
- Unattainable deadline Dec. 2015
- \$17 million+/year to 2018 for construction
- \$5 million+/year for maintenance
- Would prohibit passenger service if not implemented
- Received \$19.1 million from state for FY14
- Still need additional \$70 million

# How PTC Works

## Office Systems



- Before a train leaves its originating terminal on-board computer is initialized.
- GPS works in conjunction with geographic track data base to determine the train location on the track and to ensure adherence to train movement information.
- As the train moves the on-board computer constantly calculates a warning and braking curve.
- As the train moves down the track the on-board computer pings wayside devices checking for broken rails, proper switch alignment, and signal aspects.

# Why Mandatory PTC Regulations?

*continued*

- **Chatsworth, 9/12/2008:** A Metrolink train passed a “red” signal while the engineer was texting, entering a single main track where a UP freight train was authorized to operate. The trains collided. Fatalities – 25; Injuries - 130+ serious; Cost - \$200 million, met the federal passenger rail liability cap.



# 2008 Rail Safety Improvement Act: Who must implement PTC?

Act mandates a PTC Implementation Plan with a December 31, 2015 implementation for:

- 1) Class I railroad carriers; and
- 2) each entity providing regularly scheduled intercity or commuter rail passenger transportation (i.e. ARRC)

And the PTC must govern operations on:

- a. Mainline used for passenger/commuter rail transport
- b. Mainline used by hazmat freight transport
- c. Other tracks prescribed by regulation or order



# Why PTC for ARRRC?

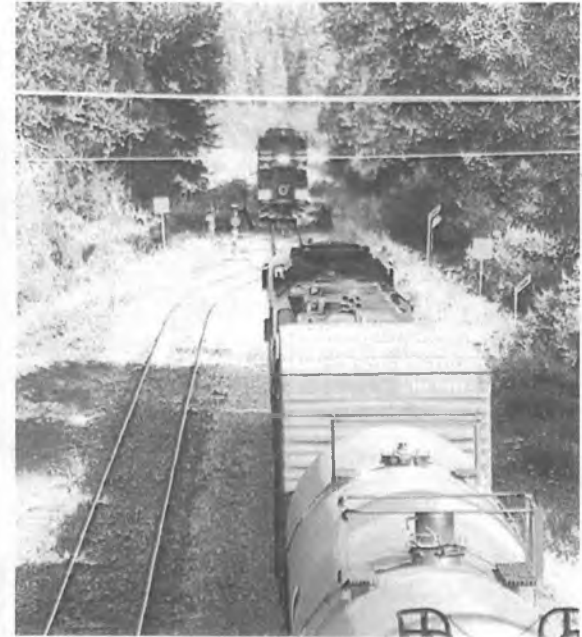


Large number of passengers per train moving through curvy, remote territory.

# 2010 PTC Regulation Requirements

2010 regulations require PTC systems to reliably and functionally prevent:

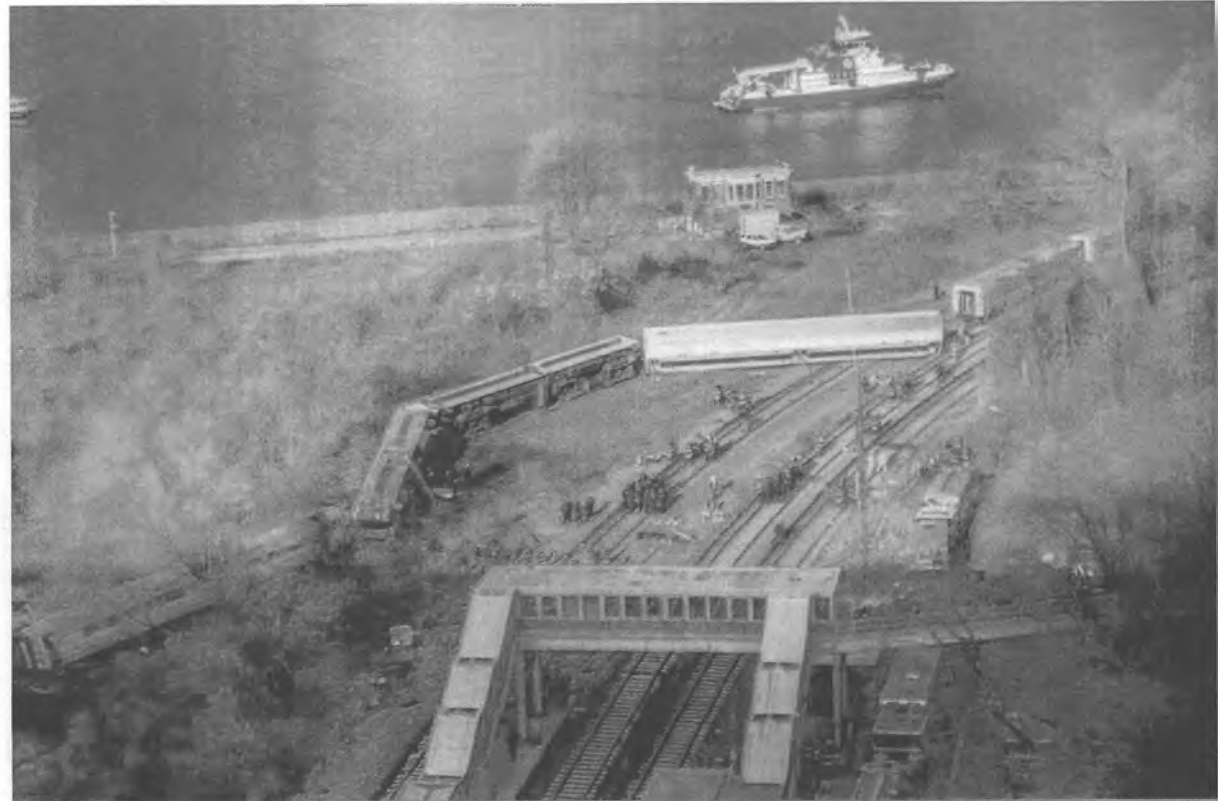
- 1) Train-to-train collisions by enforcing authority limits
- 2) Overspeed derailments
- 3) Incursions into established work zone limits
- 4) Train movement through a main line improper position.



# December 1, 2013 Accident

National  
Transportation  
Safety Board  
(NTSB) :

- Added PTC to the “Most Wanted List” in 2012 due to number of train accidents
- NTSB wants railroads to do more to implement PTC.



4 killed, 63 injured in the Bronx, NY on Metro-North Passenger train that was going 82 MPH in a 30 MPH curve. Nodding off is suspected, investigation underway.

# Items PTC Does Not Address

PTC is NOT designed to protect against derailments caused by, among other things:

- equipment failures such as broken wheels, pulled drawbars and seized journals;
- infrastructure conditions such as washouts, rock slides and some broken rails and heat kinks; and
- external factors such as grade crossing accidents or deliberate vandalism.



# What if ARRC Does Not Comply?

Federal law provides penalties for non-compliance:

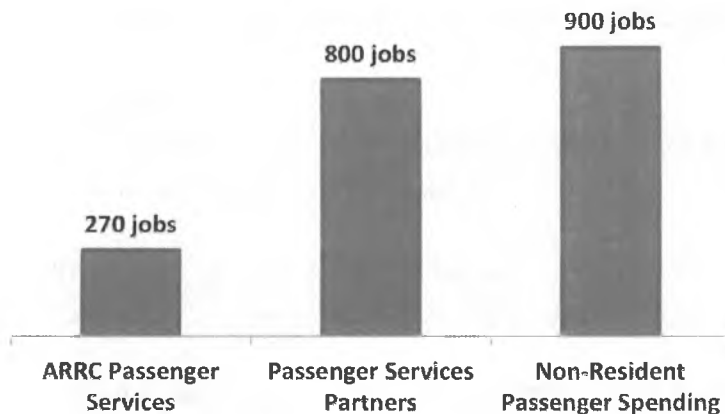
- FRA authority to fine 61 different PTC-related violations
- Maximum FRA fine is \$16,000 per day per violation and \$25,000 per day for each “willful” violation.
- FRA rail safety law compliance pertains to “persons” so both the corporation and individuals are on the hook.
- Prohibit passenger service



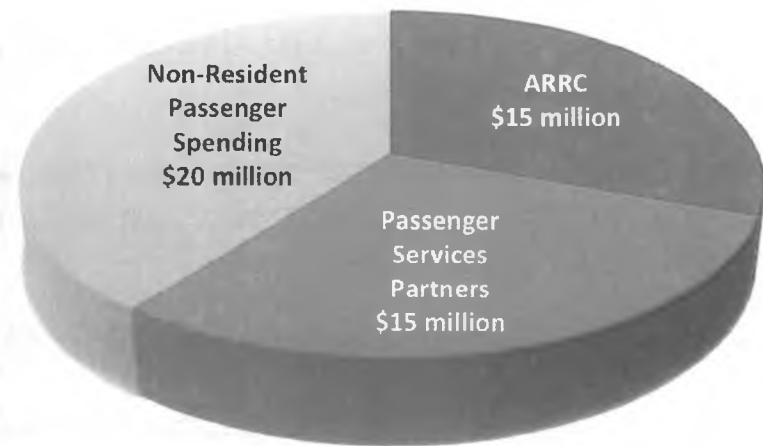
# Loss of Passenger Service

A total of just under 2,000 jobs are connected in some way to Alaska Railroad's passenger services.

Approximately \$50 million in labor income is related to Alaska Railroad's passenger services.



ARRC Passenger Services-Related Employment, 2012



ARRC Passenger Services-Related Labor Income, 2012

PREPARED BY  
**McDowell**  
GROUP

# Loss of Passenger Service

Discontinuation of Alaska Railroad's passenger services would have significant impacts not only on the Railroad, but on the Railbelt's visitor economy and infrastructure.

- Loss of all ARRC jobs and wages associated with providing passenger services.
- Loss of all ARRC passenger-related income, jobs, and wages in 275 businesses that provide goods and services to ARRC in support of its passenger operations.
- Unknown economic effects on ARRC's visitor industry partners, who would be challenged to replace the popular, scenic, high-amenity-value rail service with some other form of transportation with equal customer appeal.
- Loss of federal funding opportunities available to public transportation providers.
- Unknown, but certain redistribution of (and potential loss of) visitor spending in the region, as railroad passengers seek to replace their rail experience.
- Estimated 3,700 additional motorcoach trips along the Parks and Seward Highways and other areas served by the Railroad, with traffic congestion and highway maintenance impacts. There could also be increases in RV, van, rental vehicle, personal vehicle, and/or airplane usage as a large number of visitors will be forced to find alternative transportation methods.

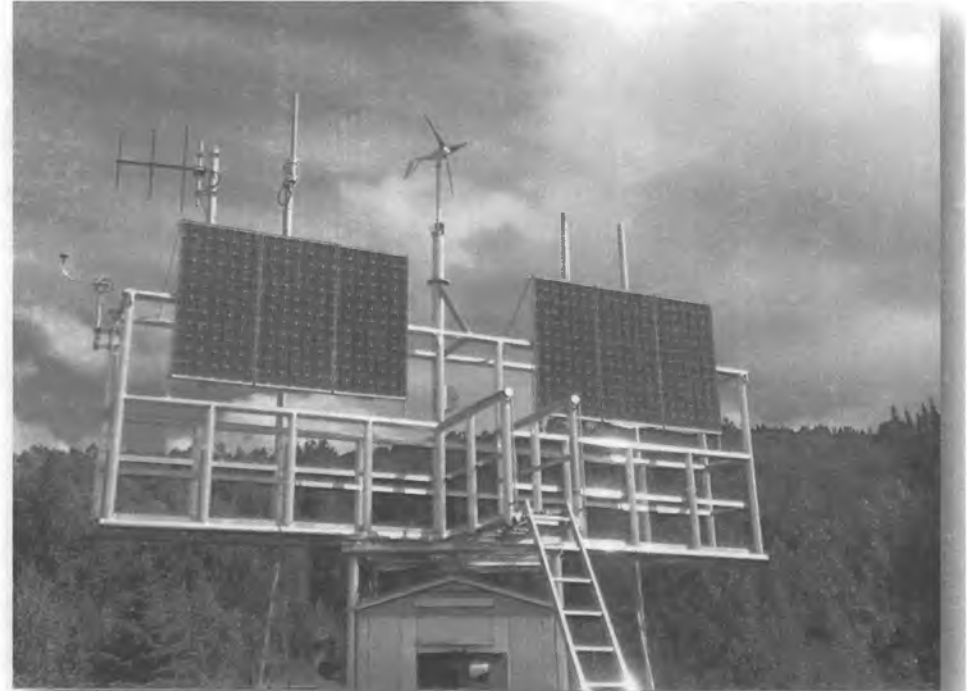
PREPARED BY  
 **McDowell**  
GROUP



# ARRC Facts

## Territory to be covered by PTC:

- 525 Miles of track
- 54 Locomotives and cab cars
- 36 Signal Control Points
- 108 Switches to be monitored
- Commercial power not available in many locations that are required to be monitored



## Large R&D Project

- Railroad supplier industry has limited capacity

# PTC Operations at ARRC

PTC is used in conjunction with a railroad's current train operation controls, providing a safety overlay to eliminate human errors. ARRC's train operations include:

- Centralized Traffic Control  
Train movement based on signal remotely called by a dispatcher.
- Track Warrant Control  
Train movement based on dispatcher providing a movement authority and transmitting verbally the limits of the authority.



# Origin of PTC at ARRC

ARRC began voluntary implementation of PTC in 1997.

- FRA no longer allows other track equipment to operate on “track car lineup”.
- Method of Operation changed from train orders to industry standard Track Warrant Control to accommodate a Computer-aided Dispatch (CAD) – implemented in 1999. CAD was implemented to eliminate human-factor errors due to issuing conflicting authorities.
- UP and BNSF test Positive Train Separation System to/from Oregon to Washington.
- VP Transportation wanted to eliminate human-factor error that caused a near-miss between a NB freight and a SB loaded coal train near Montana Creek on June 30, 1995.



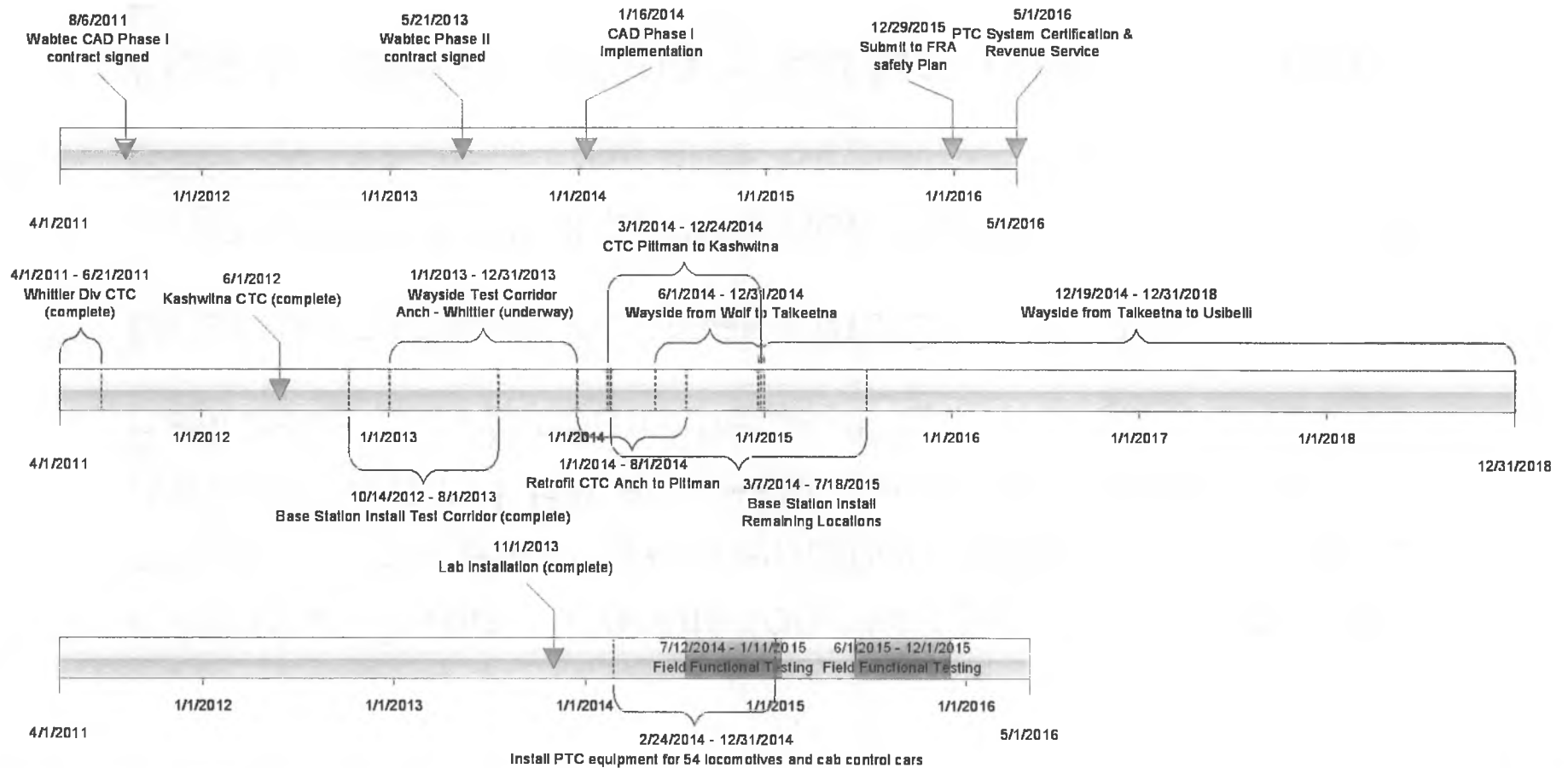
# Current PTC Implementation Status

- Replaced Ansaldo STS US (ASTS). Replacement CAD is by Wabtec Railway Electronics.
- Implementation of Data Radio System and wayside monitoring equipment for testing in the pilot corridor (Anchorage to Whittier) is underway.
- GIS data of railroad critical features is being prepared.
- Completed contract negotiations with Wabtec for locomotive equipment, additional office servers and associated software. Implementation has begun.
- Working with FRA on exemption for manual switch monitoring on low passenger density track through approval of PTC Implementation Plan.



# PTC Implementation Schedule

PTC Major Milestones and Status Update

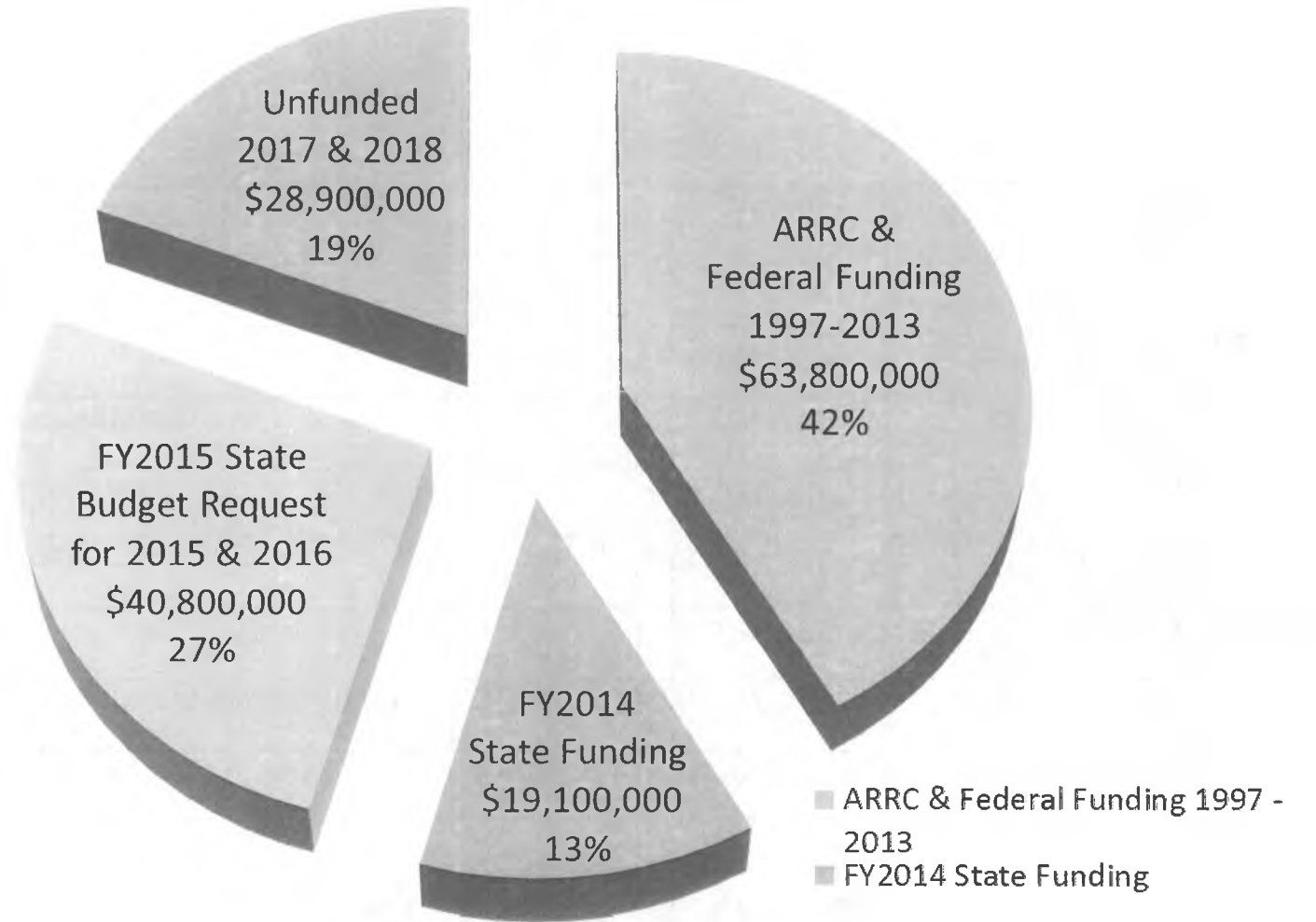


# PTC Deadline Extension Status

- A Moving Target: Regulations still being written by FRA affecting cost and implementation planning – ARRC’s participation in FRA and Association of American Railroads (AAR) committees vital
- Most railroads will not make the 2015 deadline
- Organizations all support extension of the deadline to at least 2018.
- Alaska Railroad making “good faith effort” to implement PTC



## Positive Train Control Funding 1997 - 2018



Graph does not include \$5 million to \$6 million on-going annual operational and maintenance cost of PTC that will be funded by ARRC.

# PTC Spending 1997 - 2013

through December 31, 2013	Federal Funds/ARRC	State FY14 Funds	Total
Overall PTC Integration and Management	\$26,557,997	\$4,181,500	\$30,739,497
Office Segment	\$17,591,965	\$2,253,035	\$19,845,000
Locomotive Segment	\$3,663,749	\$3,813,210	\$7,476,959
Communications Segment	\$7,803,271	\$3,815,220	\$11,618,491
Wayside Device Monitoring	\$8,197,729	\$5,037,035	\$13,234,764
<b>Total</b>	<b>\$63,814,711</b>	<b>\$19,100,000</b>	<b>\$82,914,711</b>
Funds Committed	100%	72%	
Funds Spent	94%	8%	



# ARRC 2015 – 2018 PTC Unfunded Budget

	2015	2016	2017	2018	Total
<b>Office, Comm and Locomotive Segments</b>	<b>\$ 10,784,110</b>	<b>\$ 7,717,322</b>	<b>\$ 5,756,240</b>	<b>\$ 4,556,240</b>	<b>\$ 28,813,912</b>
Overall PTC Integration and Management	\$ 4,759,697	\$ 4,267,322	\$ 3,106,240	\$ 2,906,240	\$ 15,039,499
Locomotive Segment	\$ 3,420,509	\$ 800,000	\$ 1,300,000	\$ 300,000	\$ 5,820,509
Communications Segment	\$ 1,483,904	\$ 1,300,000	\$ 300,000	\$ 300,000	\$ 3,383,904
Office Segment	\$ 1,120,000	\$ 1,350,000	\$ 1,050,000	\$ 1,050,000	\$ 4,570,000
<b>Wayside Segment</b>	<b>\$ 9,414,400</b>	<b>\$ 12,911,600</b>	<b>\$ 10,467,000</b>	<b>\$ 8,102,600</b>	<b>\$ 40,895,600</b>
Monitoring CTC Signal and Switches	\$ 2,000,000				\$ 2,000,000
Dark Territory Manual Switch Monitoring	\$ 7,414,400	\$ 12,911,600	\$ 10,467,000	\$ 8,102,600	\$ 38,895,600
<b>Total Funds Required</b>	<b>\$ 20,198,510</b>	<b>\$ 20,628,922</b>	<b>\$ 16,223,240</b>	<b>\$ 12,658,840</b>	<b>\$ 69,709,512</b>

# “Railroad Alaska”





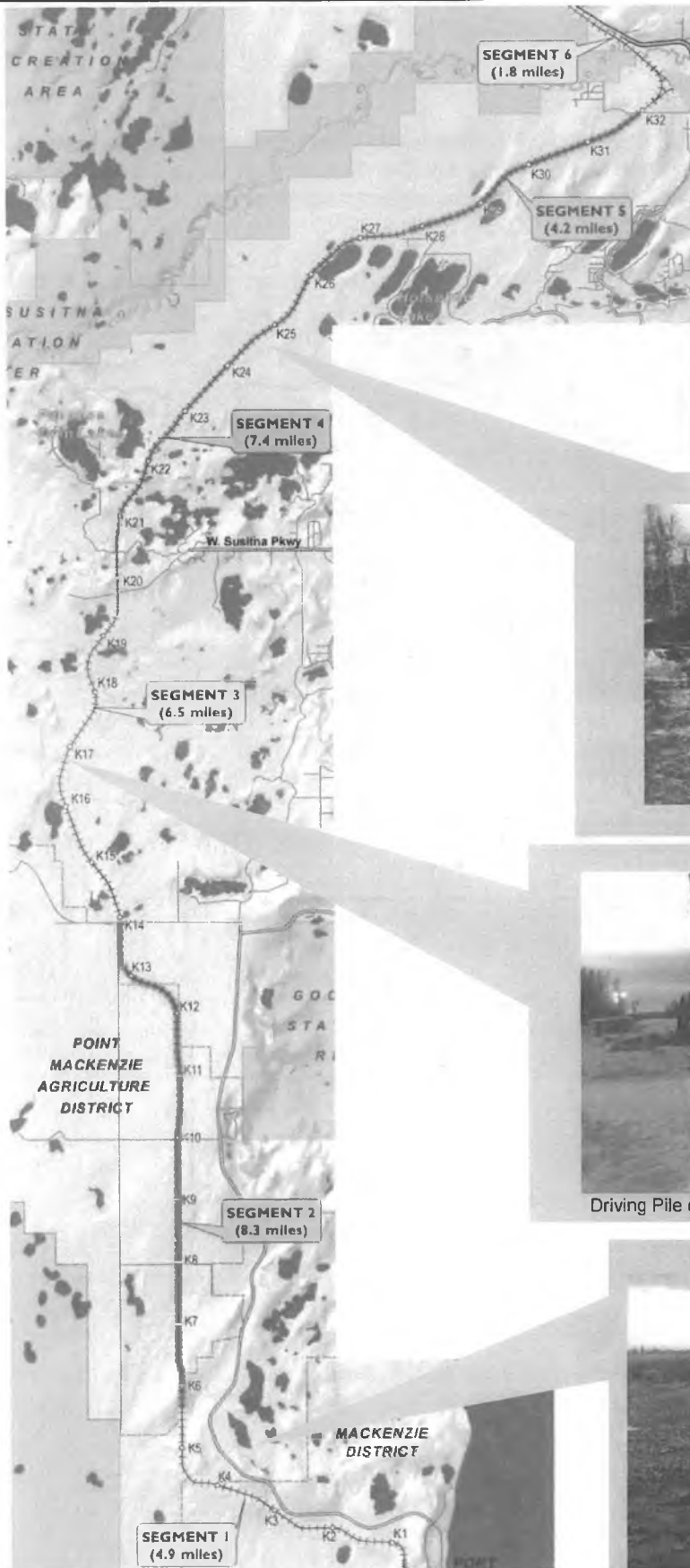
## NORTHERN RAIL EXTENSION

- Removal of the temporary in river access(Causeway) continues
- Causeway rip rap is being stockpiled on the south bank.
- Due to cold temperatures the contractor has decided to abandon further bolting after this week. Main focus will be on temporary access removal.



Setting anchor bolts

# PORT MACKENZIE RAIL EXTENSION



New Little Su Bridge Set and Being Welded Together



Segment 4 Clearing



Driving Pile on Diamond Lake Outfall Bridge



Drainage repair and improvements at BMBF pad

## **PORT MACKENZIE RAIL EXTENSION (CONT.)**

- Last August, the 9<sup>th</sup> Circuit **affirmed** the District Court's denial of the Sierra Club's request for a preliminary injunction and remanded the case back to the District Court for a decision on the merits of the Sierra Club's claims regarding the propriety of Corps of Engineers permit. The parties have completed briefing of their respective summary judgment motions and are currently waiting for the District Court judge to schedule oral argument on the motions.
- FY 2014 Capital Budget includes \$25MM to MSB for project. Funding is expected to be used for Parts of Segment 2 and for long lead items.

### **Segment 1 Summary:** (Construction)

#### **Contractor:** Bristol Construction

- Grade construction has shut down for the winter. Expected restart is February for a month and then awaiting break-up to complete all work.
- Winter Trail crossing Culvert (19'6") is complete.
- Baker Farm Bridge is completed.
- UA property access road is completed.
- BMBF is completed.
- Expected completion of all work is July 2014.

### **Segment 2 Summary:** (ROW and Design)

- ROW acquisition is underway by the MSB. 1 of 11 parcels has been acquired.
- Engineering is complete to 60% for most of segment. Acquired segment is at 90% engineering.
- Construction is not generally funded, however project may construct on available parcel with existing funding.

### **Segment 3 Summary:** (Construction)

#### **Contractor:** Quality Asphalt Paving (QAP)

- Grade construction is nearly complete throughout the project, but has shut down for the winter.
- Bridge sub-contractor has shut down work on bridges (Old Iditarod Trail, Iditarod Trail, and Diamond Lake Outfall), restart is expected in March.
- Expected completion is August 2014.

### **Segment 4 Summary:** (Construction)

#### **Contractor:** Bristol Construction

- Mental Health lands (more than half the segment) will possibly be available the second week of January 2014.
- Contractor has begun clearing on available parcels.
- Contractor has been tracking cleared areas to drive down frost to facilitate beginning haul operations in February.

### **Segment 5 Summary:** (ROW and Design)

- Intent to Bid (ITB) for Segment 5 is prepared for bid when real estate is available.
- ROW acquisition is underway by the MSB. 0 of 1 parcel are acquired.

- Engineering is complete.
- Construction can be funded if real estate becomes available.

**Segment 6 Summary:** (Construction)

**Contractor:** Granite Construction

- Remaining grade work, mostly north of the Little Susitna River is suspended for the winter.
- New Little Susitna river bridge is essentially completed. Contractor is installing trainman's walkway.
- Expected completion is June 2014.

**Segment 7 Summary:** (Construction - Signal)

**Contractor:** Midvale Electric

- Work to install signal apparatus at new Houston wye track junction and establish PTC northward between Pittman and Kashwitna (27 miles)
- Expected start-up April 2014. Expected completion in Fall of 2014.

**Segment 7 Summary:** (Construction – Houston Communications Tower)

**Contractor:** Moss Cape

- Work to install a 150 foot communications tower near the new Houston wye.
- Expected start-up May 2014. Expected completion in Summer of 2014.

**Segment 7 Summary:** (Construction – Track Component Assembly)

**Contractor:** ARRC Internal Labor Forces

- Work to assemble switches, ties and rail for installation of Houston wye track facilities.
- First anticipated track work is cut-in of new south wye switch in early February.
- Expected start-up of most trackwork is April 2014. Expected completion in Fall of 2014.

## POSITIVE TRAIN CONTROL (PTC)

- Funding:
  - The Governor's proposed FY 2015 budget includes \$15 million for PTC.
- Office Segment:
  - The Wabtec Computer Aided Dispatch (CAD) System was implemented on January 16, 2014. This system is required for PTC (Phase 1 of the Office Segment).
- Locomotive On Board Systems: :
  - The contract is in place for the installation of on board PTC equipment to begin February 24<sup>st</sup>, 2014 with the contractor – Wabtec Global Services (WGS). Three ARRC Mechanical personnel will be trained to provide quality assurance for the installation. All components are on order from multiple vendors and ARRC is tracking the delivery for this installation to ensure we can start February 24<sup>th</sup>.
- Communications:
  - The nationwide PTC effort is struggling with tower licensing from the Federal Communications System (FCC). This is affecting ARRC's ability to license two towers system-wide. Moose Pass tower has been approved for construction by FCC. FCC recently allowed ARRC to proceed with environmental work on three other locations south of Portage at Primrose, Snoring and Grandview. These three sites are needed to perform brake algorithm tests in our steep grade territory.
- Wayside:
  - Lab testing of PTC software for the wayside interface units in the Anchorage to Whittier test corridor is nearly complete. Field deployment of the software will occur in February and March.
  - Field installation of wayside equipment in the test corridor is complete, including the 220 Mhz radios. However, ARRC was recently notified by the manufacturer that the wayside messaging servers require a software fix. The test corridor will not be ready until this fix is place, but his is not expected to delay testing this Spring.
  - Midvale Electric Inc has been issued the contract for the CTC installation between Pittman to Kashwitna. Funding for the project is 30 percent PTC and the remainder is from the Port Mack project. Completion is expected in Fall 2014.
  - Fall 2013 field work for power and signal cables concluded with 3 sidings south of Talkeetna completed. 2014 work will complete the remaining two and then proceed north from Talkeetna.
- Integration and Implementation:
  - The test corridor from Anchorage to Whittier continues to be the focus of integration activities. The test corridor will prove the software/hardware in a manageable area. The beginning of field testing is scheduled for spring of 2014.

- A solicitation for surveying services is on the street, due 2/6/14. This contract will be used to update information from the 2006 PTC survey. Supplemental survey is required where ARRC has added features such as track or signals, or has relocated the track alignment.



# Positive Train Control

Meeting the Federal Mandate to Allow  
Continued Passenger Operations on the Alaska Railroad

## Quarterly Progress Report January 15, 2014



Northbound Denali Star passenger train meets the Southbound Freight at Willow. The freight is in Willow Siding, the Denali Star is on the Main Track, speed 60 mph.

**This report covers the period:  
October 1, 2013 through December 31, 2013**



# Positive Train Control

## Project Summary

There is a federal mandate to install Positive Train Control (PTC), an enhanced safety system to eliminate human factor errors for train and roadway worker operations on all railroads carrying passengers, including the Alaska Railroad (ARRC). PTC is a research and development project and is extremely expensive.

PTC was mandated by Congress in 2008, but ARRC has been working since 1996 to develop a PTC system. ARRC is facing a deadline of December 31, 2015 to complete the implementation of PTC. ARRC and most railroads in the lower 48 will not meet the 2015 deadline. However, we expect that ARRC will continue to make progress towards PTC implementation and will be allowed to continue passenger operations as long as we make a good faith effort towards implementation. Our budget and plan are based on full implementation by 2018.

The PTC System must reliably prevent the following:

- Train to train collisions.
- Overspeed derailments and incidents.
- Work zone incursions.
- Improper movements over switches and control points.



ARRC export coal train climbing to Grandview. This area requires significant communications systems to support PTC.

## The PTC System:

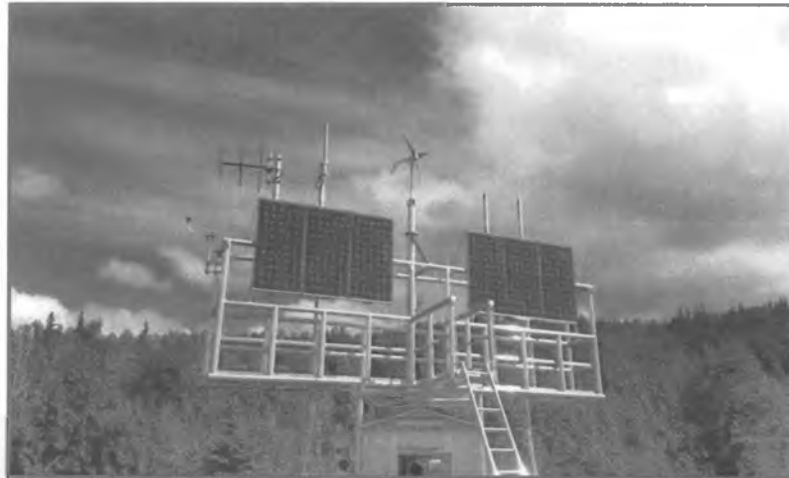
There are 5 major segments to the system:

- Office Systems: Several sophisticated computer systems authorize and monitor all railroad movements. These systems are still in development, integration and testing phases.
- Locomotive On Board Systems: Computers, data radios and global positioning system (GPS) equipment will be placed on every locomotive and interfaced with the locomotive controls. If a locomotive engineer fails to perform safely, this system will warn the engineer and then proceed to stop the train. Fifty-four ARRC locomotives and cab control cars will need this equipment.



# Positive Train Control

- Wayside Systems: Switches and signals will be monitored to ensure safe train movement. ARRC will have over 108 switches and 36 signal control points; each will need to communicate with every train or the PTC system will stop the train short of the switch or control point.



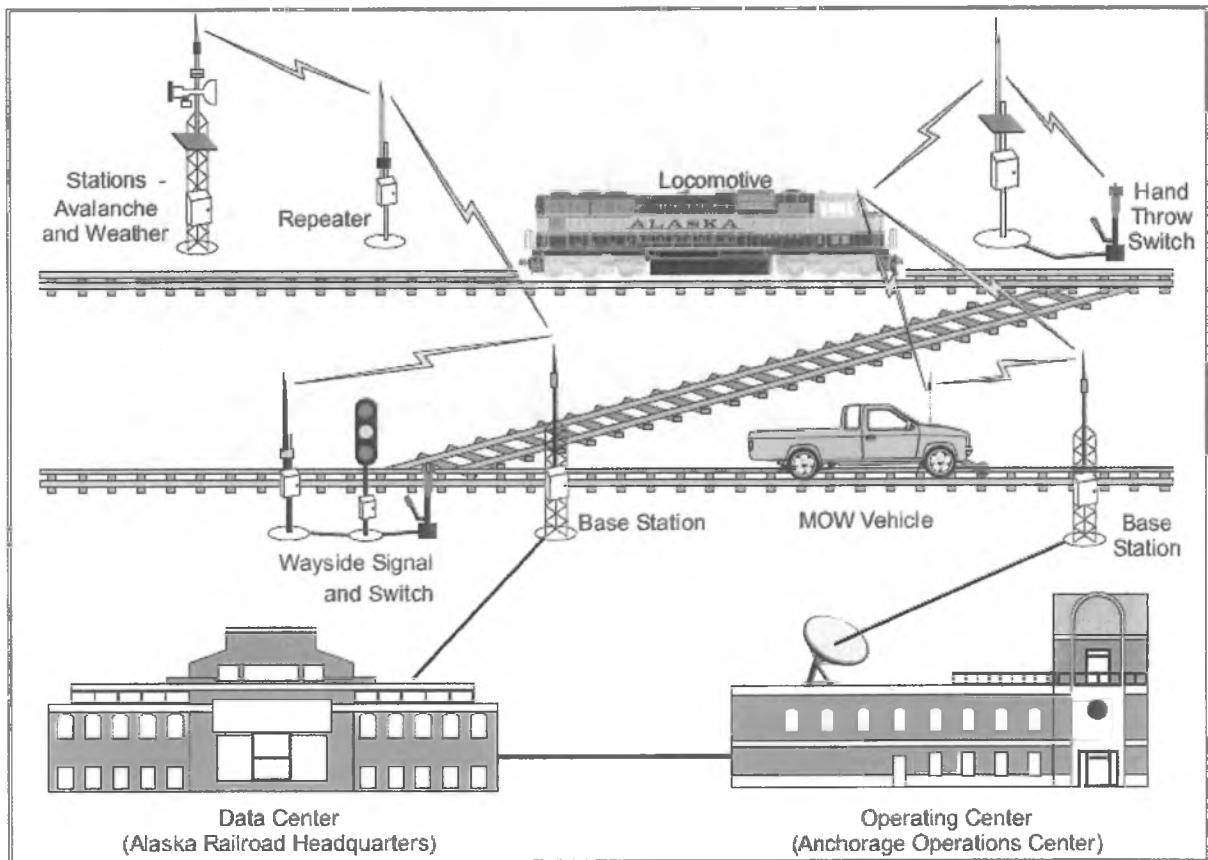
PTC wayside switch monitoring at Potter siding with antennas for GPS, train to wayside data radio, and office to field data radio. Note solar and wind power generation.

- Communications Systems: PTC requires an extensive, sophisticated communications network. A great deal of data must move over microwave and fiber backhaul networks and data radios between the Dispatch Office, the On-Board Systems, and the Wayside Systems.
- System Integration: All four segments are required to integrate in a fail-safe PTC system to eliminate human factor errors. Fail-safe means that if any human-factor failures are detected, the system will fail safely by sending a command to stop the train movements before an incident can occur. In addition to PTC operating in a fail-safe manner the system is mandated to be highly reliable.



# Positive Train Control

The following diagram illustrates the communication-based PTC system interacting with the various segments to allow for safe train movements and maintenance activities on the Alaska Railroad:

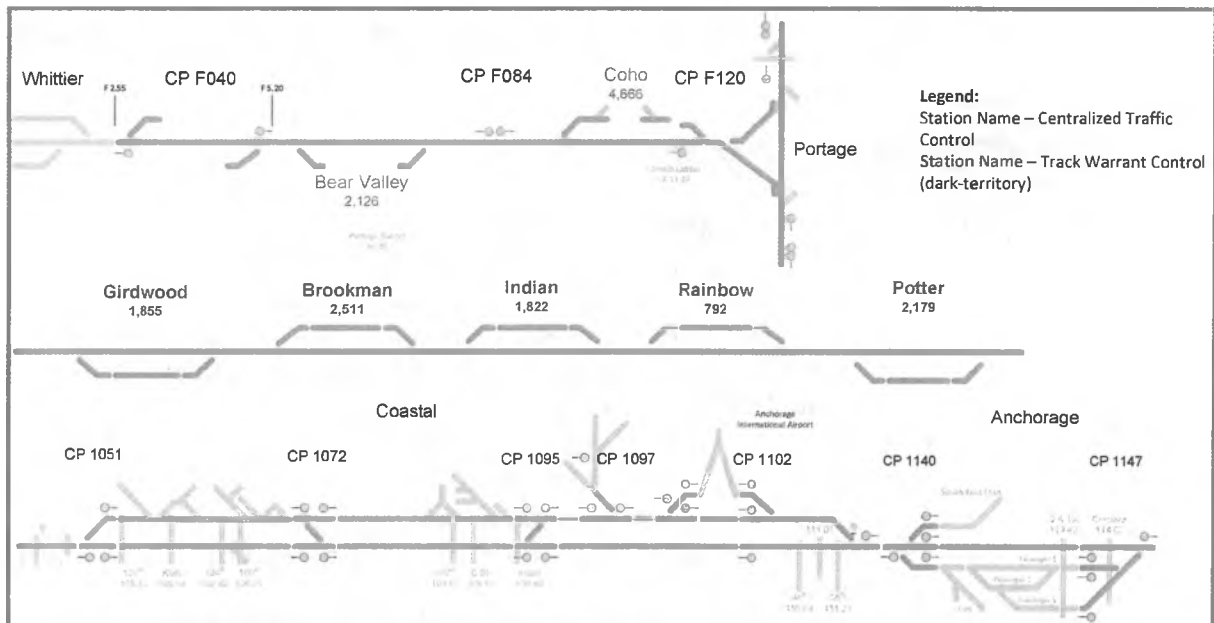


## Implementation Strategy

ARRC is implementing a PTC equipped test corridor between Anchorage and Whittier. This will enable testing of the individual PTC system segments and progress to functional testing in a manageable area prior to full deployment for all trains and railroad wayside switches and signals. The test corridor is shown in the graphic below. The corridor is expected to be ready for testing in summer 2014.



# Positive Train Control



Alaska Railroad "Test Corridor" with wayside locations indicated.

## Current Status - Quarter Ending December 31, 2013

- Wabtec was previously awarded a contract for Computer Aided Dispatch (CAD) which will be integrated as part of this contract to complete the heart of the PTC Office Segment. The Office Segment systems must be operational for the test corridor testing in 2014. Funding from the State of Alaska in FY 2014 enabled ARRC to award this contract.
- ARRC has upgraded and installed wayside and communications systems in the test corridor between Anchorage and Whittier. Ten manual switches now have all PTC required hardware in place. PTC software was tested for 80% of the locations in the test corridor.
- A contract was awarded in December to extend the ARRC wayside signal system 26 miles from Pittman to Kashwitna. This extension will be PTC compatible when completed in fall of 2014.
- ARRC forces also installed cabling, improved switch hardware, and made track modifications at several sidings between Willow and Talkeetna.
- ARRC awarded a contract to Wabtec Global Services for \$1.6 for the installation of PTC equipment and radios in all of ARRC's 54 locomotives and cab control equipment. Further, ARRC completed procurement for all essential materials for the locomotive installation and began receiving materials. Locomotive installation kits began shipping from the vendor on December 30, 2013.



# Positive Train Control

- Engineering progressed for communication sites from Portage to Seward.

## Next Quarter Outlook

Next quarter activities are planned to include:

- Complete field testing of PTC software at wayside locations in the test corridor and deploy software to all wayside locations in the test corridor to prepare for the required Federal Railroad Administration witnessed testing.
- Continue to integrate the Geographic Information Systems (GIS) data into the various PTC data bases for the test corridor.
- Begin locomotive on-board equipment installations in late February. This is expected to continue through fall 2014.
- Secure required 220 MHz radio frequency licenses.
- Continue design and procurement activities for summer 2014 wayside construction projects.
- Complete testing of the replacement Computer-Aided Dispatch system and perform the cutover on January 16, 2014.

## Alaska Work Force (this quarter)

**Alaska Railroad employees' full-time equivalents: 20**

**Alaskan companies providing services:**

### Suppliers

- |  |           |
|--|-----------|
| • <b>Potelcom Supply Inc.:</b> Communications supplies | Anchorage |
| • <b>Right Systems:</b> Servers                        | Anchorage |
| • <b>Alaska Battery Mfg.:</b> Batteries                | Anchorage |
| • <b>Marsh Creek:</b> Power systems and design         | Anchorage |
| • <b>Airport Equipment Rentals:</b> Equipment rental   | Anchorage |
| • <b>Alpine Air Alaska:</b> Transportation             | Girdwood  |
| • <b>American Power Systems:</b> Electrical            | Anchorage |
| • <b>Equipment Source Inc:</b> Electrical              | Anchorage |
| • <b>McGrady Steel and Supply:</b> Electrical          | Anchorage |
| • <b>Yukon Equipment:</b> Equipment rental             | Anchorage |
| • <b>AT&amp;T Alaska:</b> Communications               | Anchorage |
| • <b>Alpine Meadows Apts:</b> Lodging                  | Anchorage |
| • <b>Cal Worthington Ford:</b> Auto leasing            | Anchorage |
| • <b>Suburban Propane:</b> Fuel                        | Anchorage |
| • <b>Carlile Transportation:</b> Trucking              | Anchorage |
| • <b>Peak Signals:</b> Telecom upgrades                | Juneau    |
| • <b>New Horizons Telecom:</b> Telecom upgrades        | Palmer    |
| • <b>R&amp;S Railworks:</b> Track materials            | Healy     |
| • <b>Chugach Electric Association:</b> Power           | Anchorage |
| • <b>Matanuska Electric Association:</b> Power         | Palmer    |
| • <b>Alaska Industrial Hardware:</b> Tools/eq          | Anchorage |



# Positive Train Control

- **NC Machinery:** Equipment rentals Anchorage
  - **Warning Lites Of Alaska:** Traffic control Anchorage
  - **TRIJET Precision:** Metal fabrication Palmer
  - **Statewide Mechanical:** Locomotive PTC Install Anchorage
- Engineering**
- **HDR Alaska:** Engineering & construction mgmt Anchorage
  - **Shannon & Wilson:** Geotechnical services Anchorage
  - **MBA Consulting:** Electrical eng'g services Anchorage
- Professional Services**
- **JACS Consulting Services:** Programming Anchorage
  - **Resource Data Inc.:** Programming Anchorage

## Funding Summary

through December 31, 2013	Federal Funds/ARRC	State FY 14 Funds	Total
<b>Overall PTC Integration and Management</b>	\$26,557,997	\$4,181,500	\$30,739,497
<b>Office Segment</b>	\$17,591,965	\$2,253,035	\$19,845,000
<b>Locomotive Segment</b>	\$3,663,749	\$3,813,210	\$7,476,959
<b>Communications Segment</b>	\$7,803,271	\$3,815,220	\$11,618,491
<b>Wayside Device Monitoring</b>	\$8,197,729	\$5,037,035	\$13,234,764
<b>Total</b>	<b>\$63,814,711</b>	<b>\$19,100,000</b>	<b>\$82,914,711</b>
<b>Funds Committed</b>	100%	72%	
<b>Funds Spent</b>	94%	8%	

## 2015 – 2018 PTC – Cash Flow Requirements (Unfunded)

	2015	2016	2017	2018	Total
<b>Office, Comm and Locomotive Segments</b>	<b>\$ 10,784,110</b>	<b>\$ 7,717,322</b>	<b>\$ 5,756,240</b>	<b>\$ 4,556,240</b>	<b>\$28,813,912</b>
Overall PTC Integration and Management	\$ 4,759,697	\$ 4,267,322	\$ 3,106,240	\$ 2,906,240	\$15,039,499
Locomotive Segment	\$ 3,420,509	\$ 800,000	\$ 1,300,000	\$ 300,000	\$ 5,820,509
Communications Segment	\$ 1,483,904	\$ 1,300,000	\$ 300,000	\$ 300,000	\$ 3,383,904
Office Segment	\$ 1,120,000	\$ 1,350,000	\$ 1,050,000	\$ 1,050,000	\$ 4,570,000
<b>Wayside Segment</b>	<b>\$ 9,414,400</b>	<b>\$ 12,911,600</b>	<b>\$ 10,467,000</b>	<b>\$ 8,102,600</b>	<b>\$40,895,600</b>
Monitoring CTC Signal and Switches	\$ 2,000,000				\$ 2,000,000
Dark Territory Manual Switch Monitoring	\$ 7,414,400	\$ 12,911,600	\$ 10,467,000	\$ 8,102,600	\$38,895,600
<b>Total Funds Required</b>	<b>\$ 20,198,510</b>	<b>\$ 20,628,922</b>	<b>\$ 16,223,240</b>	<b>\$ 12,658,840</b>	<b>\$69,709,512</b>



# Positive Train Control

## PTC Implementation Schedule

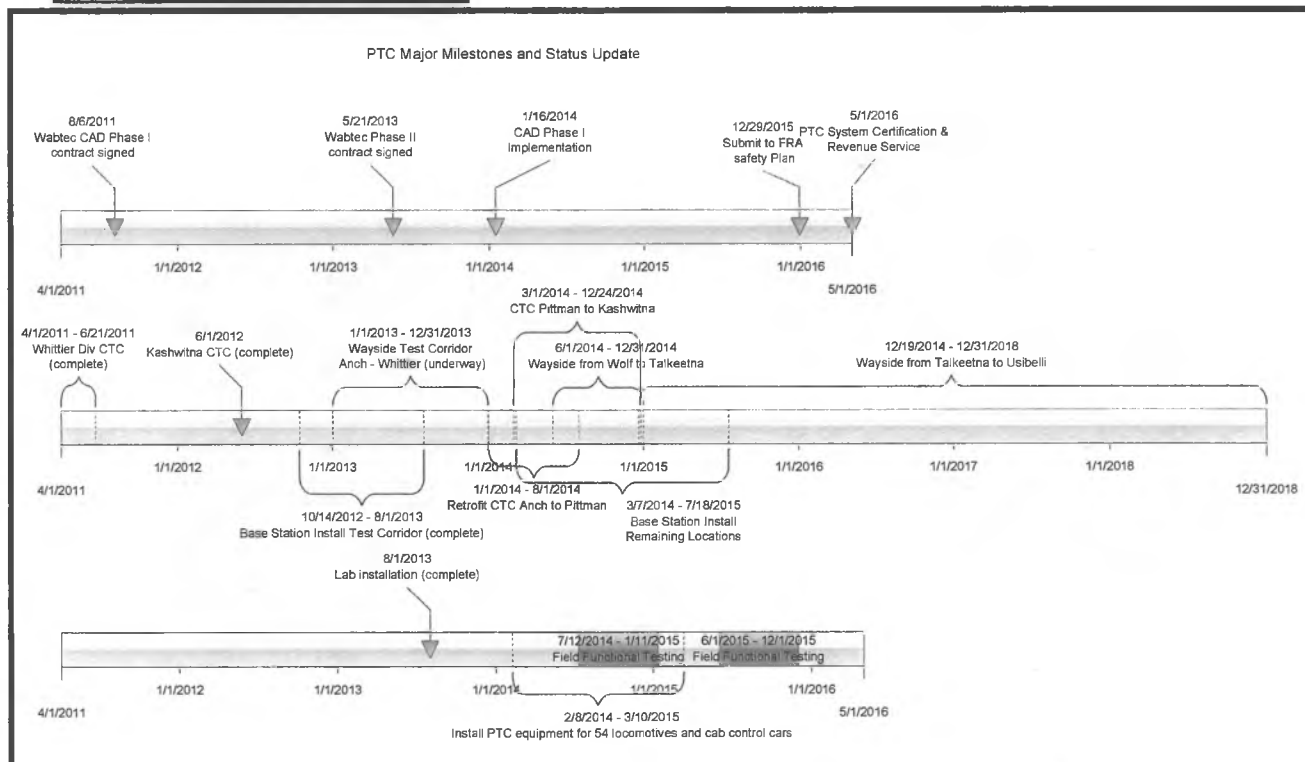
Original Estimated PTC Implementation Date:

**December 2018**

Current Estimated PTC Implementation Date:

**December 2018**

## Project Milestones





# Positive Train Control

## ARRC Project Staff

### **Executive Sponsor:**

Eileen Reilly – VP, Advanced Train Control Systems & Technology  
825 Whitney Road  
Anchorage, AK 99501  
Office (907) 265 - 2655  
Cell (907) 441 - 9109  
[reillye@akrr.com](mailto:reillye@akrr.com)

### **Integration Team:**

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Brandon Frazier – Manager, Signal Construction  
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Dave Kocher – Program Manager, Transportation Systems  
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Office – (907) 265 – 2642  
[kocherd@akrr.com](mailto:kocherd@akrr.com)

Jeff Rognes – Roadforeman of Engines, PTC  
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(907) 265-2552  
[rognesi@akrr.com](mailto:rognesi@akrr.com)



# ***Northern Rail Extension Phase 1***

## **Tanana River Bridge Quarterly Progress Report January 15, 2014**



11.06.2013 21:48

Last bridge girder erected

**This report covers the period:  
October 1, through December 31, 2013**  
[www.northernrailextension.com](http://www.northernrailextension.com)

# ***Northern Rail Extension Phase 1***

## **Project Summary**

The Northern Rail Extension (NRE) project proposes to construct and operate an approximately 80-mile-long rail extension from Fairbanks to Delta Junction. The NRE project will begin at the existing rail line located on the Eielson Branch line at the Chena Overflow Bridge just south of the community of North Pole and be extended to the community of Delta Junction, with the ability to service Fort Greely.

The project phases are as listed:

- **Phase 1: Bridge, approach road, and levee associated with the crossing of the Tanana River near Salcha. (Current Phase)**
- Phase 2: Approximately 13 miles of rail from Fairbanks to the Tanana River crossing.
- Phase 3: Approximately 30 miles of rail from the west side of the Tanana River crossing to the Tanana Flats Training Area,
- Phase 4: Approximately 38 miles of rail between the Tanana Flats Training Area and Delta Junction.

## **Current Status**

- Rip Rap deliveries to the jobsite began in April and were completed mid-October.
- All pile driving was completed in October.
- All concrete pier and abutment construction was completed in October.
- All girder erection was completed in early November.
- Completed placement of ballast pans on top of girders.
- Began bolting of girder diaphragms and ballast pans.
- Began erection of bridge guardrail.
- South bank levee and launching toe was completed in December.
- South bank embankment and two spur dikes were completed up to Boundary Slough.
- Still waiting for permits from the Bureau of Land Management to complete embankment and final spur dike beyond Boundary Slough on military lands.
- Began removal of temporary access from the Tanana.

## **Next Quarter Outlook**

First quarter 2014 activities will include:

- Completion of all diaphragm, ballast pan and guardrail bolting.
- Continued removal of temporary access from Tanana.

# Northern Rail Extension Phase 1

## Safety

**1** Incidents this Quarter

**81** Injury Free Days

**18** Total incidents to date\*

\*There have been no major incidents on the project.

## Alaska Work Force (this quarter)

**67** Total Manpower on Site

**57** Alaskan Manpower on Site

**82% Alaskans employed on-site this Quarter**

### Alaskan Companies providing services:

#### Construction

- |   |            |
|---|------------|
| • Rolling Stone Construction: Gravel    | Salcha     |
| • Better Way Construction: Hydroseeding | North Pole |
| • Brice, Inc.: Rip Rap                  | Fairbanks  |
| • Code 3 Logistics: On-Site Trucking    | North Pole |
| • Brown's Hill Quarry: Rip Rap          | North Pole |
| • JD Steel: Ironwork Rebar              | Salcha     |
| • HC Redimix: Concrete                  | North Pole |

#### Engineering

- |   |           |
|---|-----------|
| • HDR Alaska: Contract Management / Engineering | Anchorage |
| • Hanson Alaska: Bridge Engineering             | Anchorage |
| • Shannon and Wilson: Geotechnical Engineering  | Fairbanks |
| • PDC, Inc.: Survey                             | Fairbanks |
| • MAPPA: Testing Services                       | Fairbanks |

# Northern Rail Extension Phase 1

- Open House / Community Christmas party was held on December 14.

## Funding

	Spent FRA	Remaining FRA	Spent State Funds	Remaining State Funds	Total
Engineering, Design, Permitting	\$ 13,546,313	\$ -	\$ 1,434,413	\$ 2,519,274	\$ 17,500,000
Right-of-Way	\$ 635,384	\$ -	\$ 505,920	\$ -	\$ 1,054,611
Construction Administration	\$ 3,669,738	\$ -	\$ 6,577,078	\$ 1,017,800	\$ 11,264,616
ARRC Contingency	\$ -	\$ -	\$ -	\$ 3,207,461	\$ 3,736,813
Construction Contract	\$ 86,348,565	\$ -	\$ 50,018,541	\$ 18,719,513	\$ 154,643,960
<b>Total</b>	<b>\$ 104,200,000</b>	<b>\$ -</b>	<b>\$ 58,535,952</b>	<b>\$ 25,464,048</b>	<b>\$ 188,200,000</b>

## Schedule

**Original Estimated Schedule completion Date:** **August 2014**

**Current Estimated Schedule completion Date:** **August 2014**

## Project Milestones

Major Project Milestones		
	Date	Status
Final Design and Permits	July-11	Complete
Construction Contract	July-11	Complete
Office Complex & Staging Area	November-11	Complete
Utility Relocation	November-11	Complete
North Bank Levee	July-12	Complete
South Bank Spur Dikes	July-14	
Bridge Sub-Structure	March-14	Complete
Bridge Super-Structure	March-14	Complete

---

# ***Northern Rail Extension Phase 1***

## **ARRC Project Staff**

### **On-Site Project Manager**

Mark Peterburs  
Project Director  
Salcha Project Office 677-4731  
748-1767 or 378-1762 (cell numbers)  
[peterbursm@akrr.com](mailto:peterbursm@akrr.com)

### **Anchorage Staff**

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Vice President Engineering  
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[www.northernrailextension.com](http://www.northernrailextension.com)

**PORT MACKENZIE**  
RAIL EXTENSION



**POISED FOR GROWTH**

# Port Mac & working ship in ice



Only port in Alaska with large (14 sq. mile)  
staging, storage and industrial area





Barge dock staging area



# Upland lease lots



For large projects

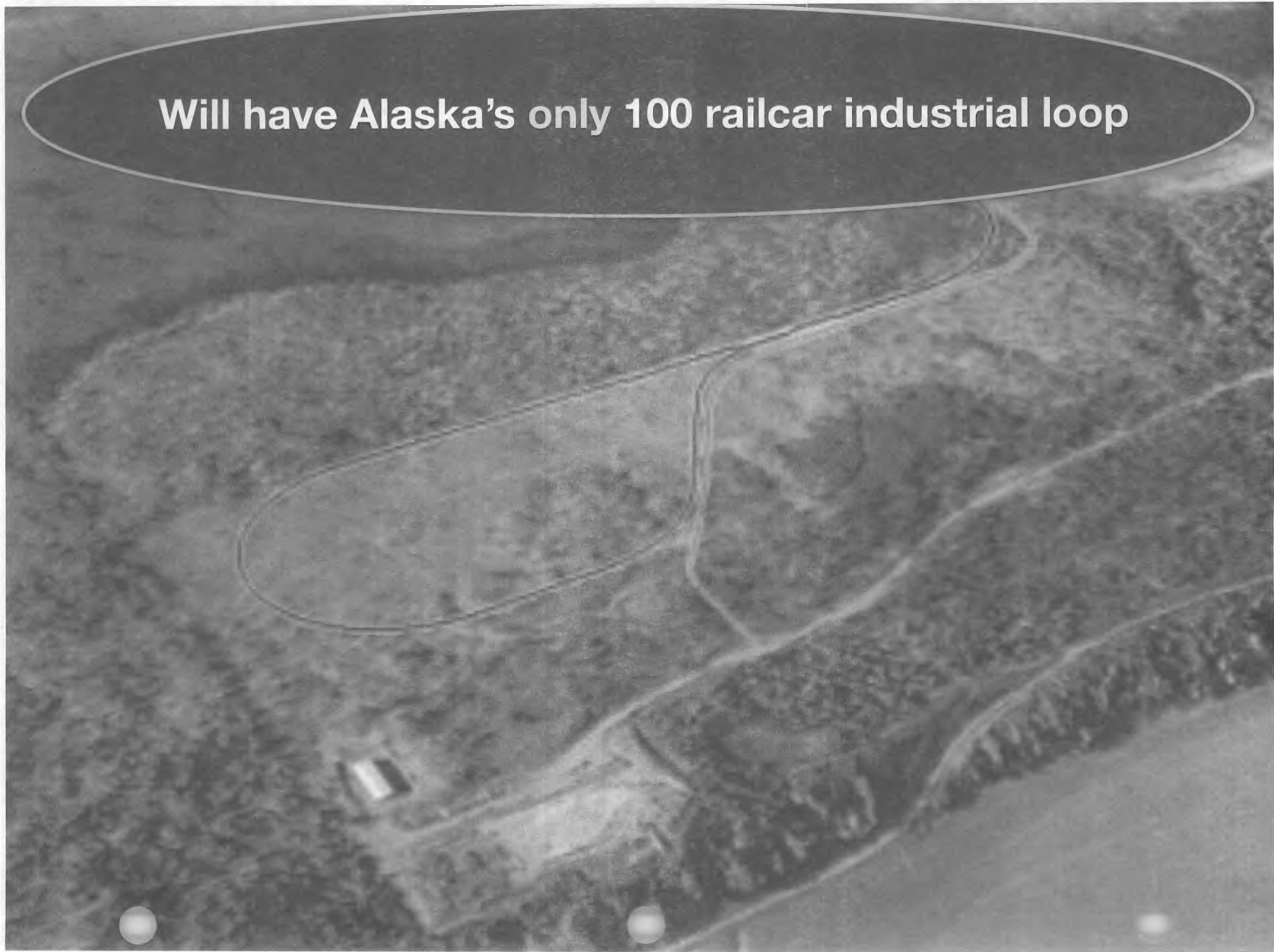
# Activity at the Port



# Bulk Resources



**Will have Alaska's only 100 railcar industrial loop**



An aerial photograph of a coastal industrial facility, likely a pulp mill, situated on a wooded peninsula. In the foreground, a large body of water contains a long pier with several floating docks and a barge. The facility on the shore includes several large buildings, one of which is a prominent white structure. The background shows a wide expanse of water with distant landmasses under a cloudy sky. The image is presented as a page from a binder, with three hole punches visible at the top.

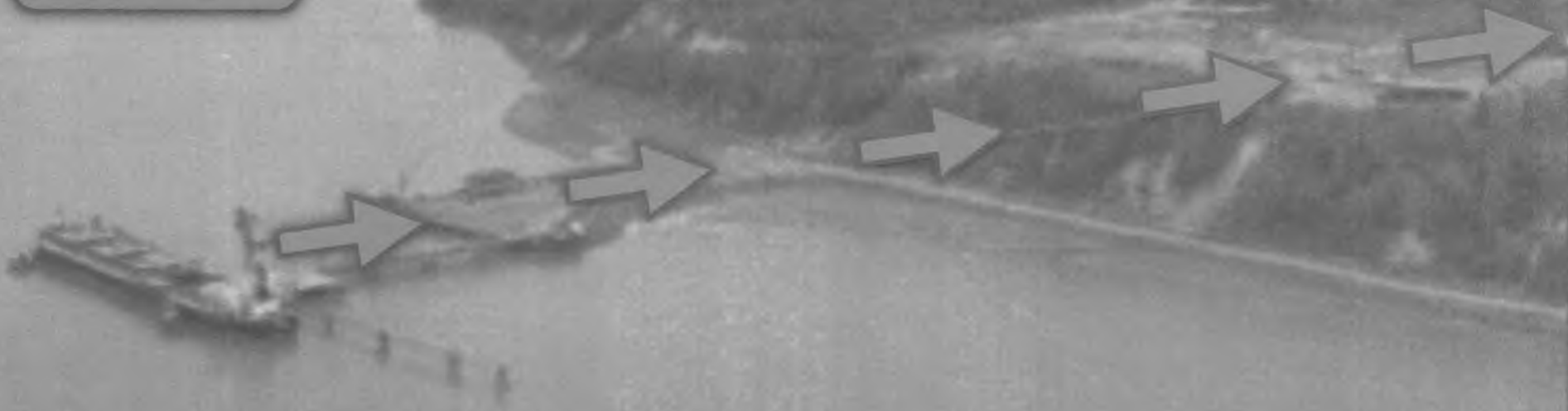
# Exports

# A project cargo Port

- would reduce transportation costs for PROJECT CARGO on Alaska's biggest projects: either natural gas pipeline and Susitna Dam
- would reduce transportation costs on recurring project cargo delivery



Imports



Imports

LIVENGOOD

FAIRBANKS

DELTA JUNCTION

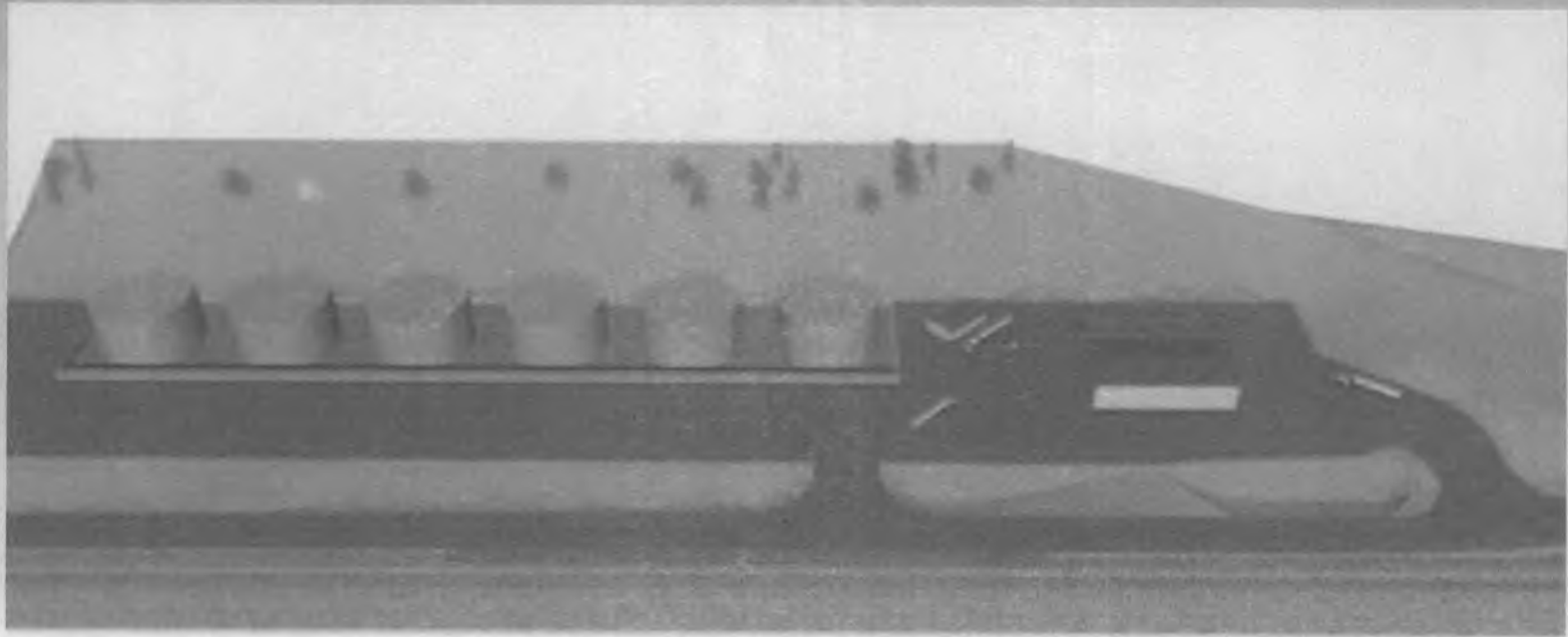
HEALY

PORT MACKENZIE



# Fuel shipments

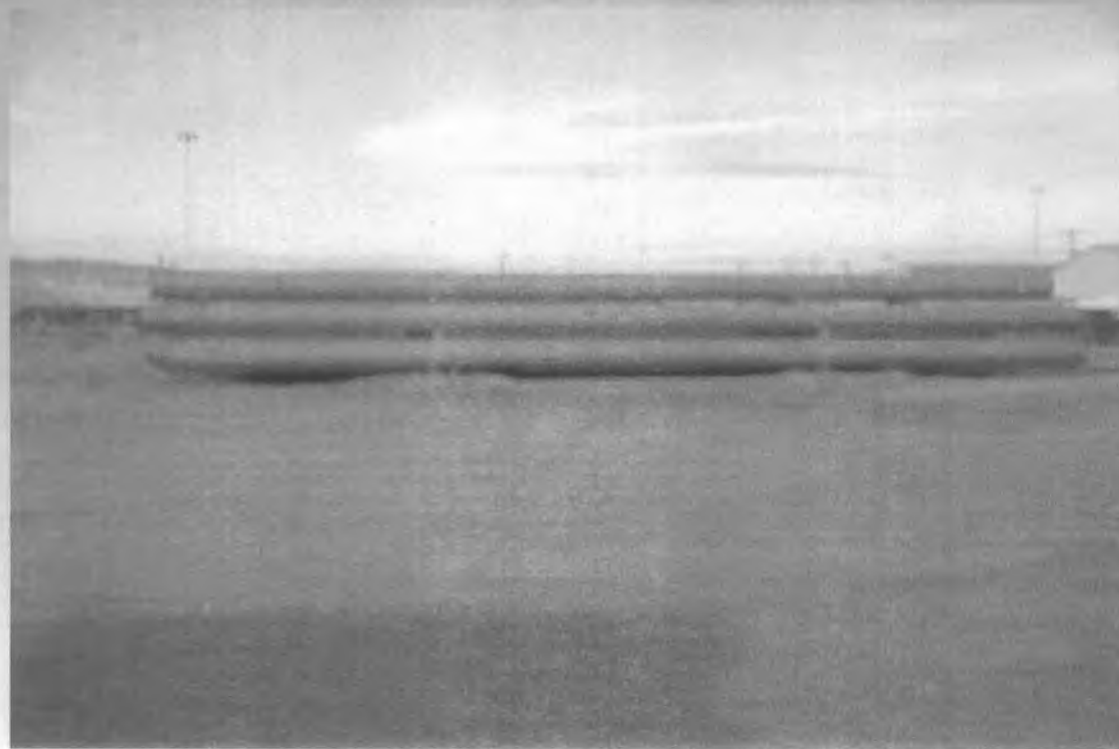
- 6.9 M gallon fuel tank farm, Central Alaska Energy
- providing low sulfur diesel fuel
- \$15 M in construction, start May 2014 (AIDEA funded)



Central Alaska Energy  
Fuel Storage Facility  
Point Mackenzie, Alaska

# project cargo

- steel for northern bridges
- pipe for old and new oil fields
- fracking sand for future shale oil development
- other petroleum-related equipment



# Project Forwarding Lessee



# Mineral Development



Ambler Mining



Examples of mines and mineral prospects along rail corridor

LIVENGOOD

Money Knob-gold

Shorty Creek - copper, molybdenum, gold

Globe Creek - limestone/cement

Fort Knox - gold

Shorty Creek extension - copper, gold -

FAIRBANKS

NENANA

lead, zinc prospects

HEALY

coal

copper

copper

MAN Prospect

◇ - nickel, platinum, copper -

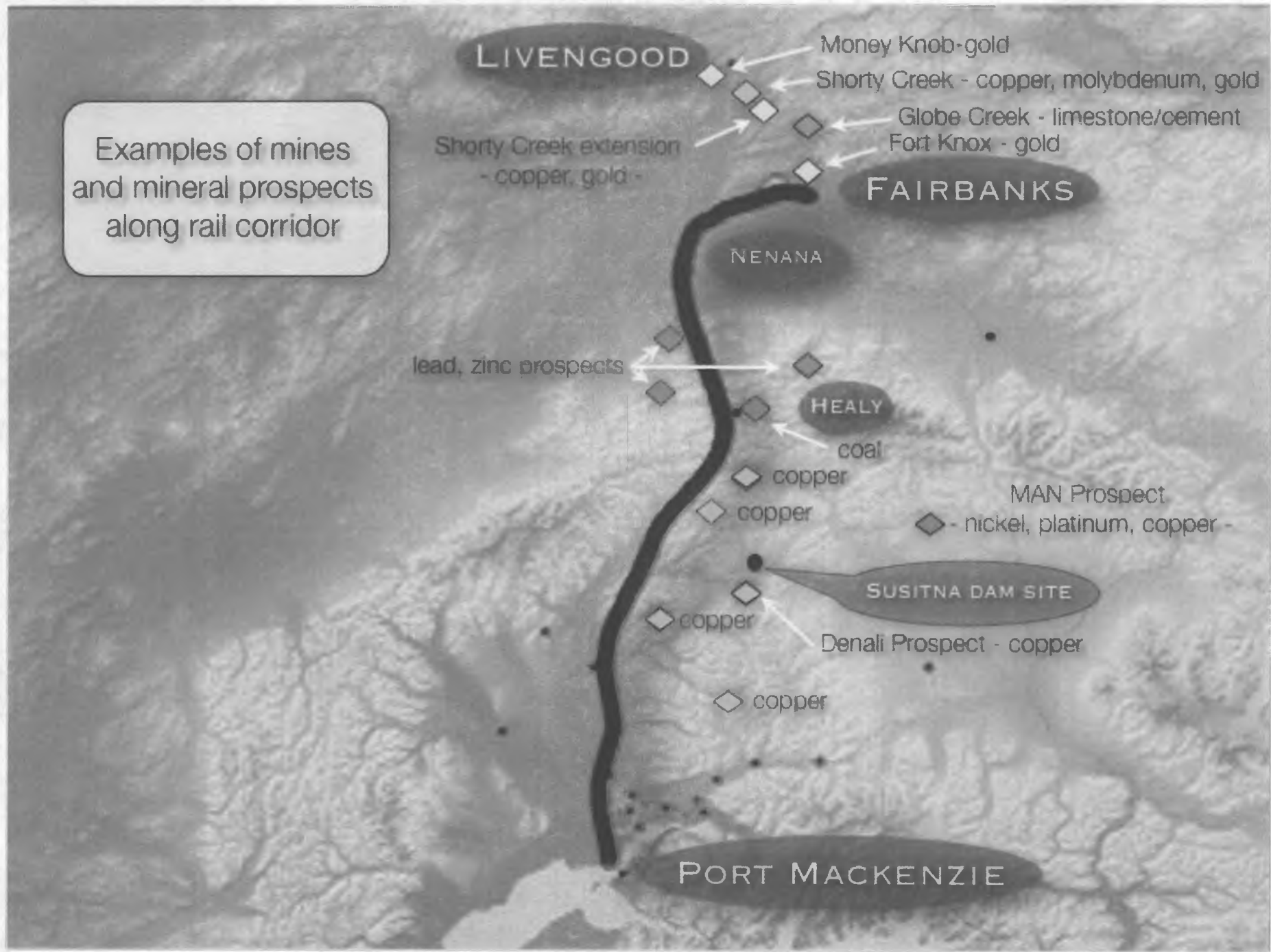
SUSITNA DAM SITE

◇ copper

Denali Prospect - copper

◇ copper

PORT MACKENZIE



Greater Wasilla Chamber of Commerce

Raven Gold Alaska Pogo Mine

Central Alaska Energy JDM Consultants

PacArctic Klondike Concrete Co.

Houston Chamber of Commerce Accelergy

Greater Fairbanks Chamber of Commerce

ALASKA GASLINE DEVELOPMENT CORP. Alutiig

Greater Palmer Chamber of Commerce

Alaska State Chamber of Commerce Koniag

Houston City Kinross-Fort Knox

Alaska Railroad Fairbanks North Star Borough

Resource Development Council NPI

International Union of Operating Engineers

AEDC

The Alaska Miners Association

# Companies & Freight on Port MacKenzie Rail

- WestPac Logistics
- Central Alaska Energy
- Sumitomo Metal Mining
- Alutiiq
- NPI
- QAP
- Usibelli
- Great Bear Petroleum

# RAIL CONSTRUCTION





**PORT MACKENZIE RAIL EXTENSION PROJECT**

**JANUARY 2014 CONSTRUCTION STATUS**

=====

**SEGMENTS 1, 3, 4 & 6**

*STATUS: Funded. Embankment construction underway.*

---

**SEGMENT 5**

*STATUS: Funding required.*

---

**SEGMENT 2**

*STATUS: Funding required.*

---

**SEGMENTS 7 & 8**  
(Ballast, Ties, Track, Signal, etc.)

*STATUS: Funding required.*

---

0 1 2 3 Miles

# Aerial of project



# JOBS



Nearly 200 jobs at peak of last season



# PORT MACKENZIE

RAIL EXTENSION

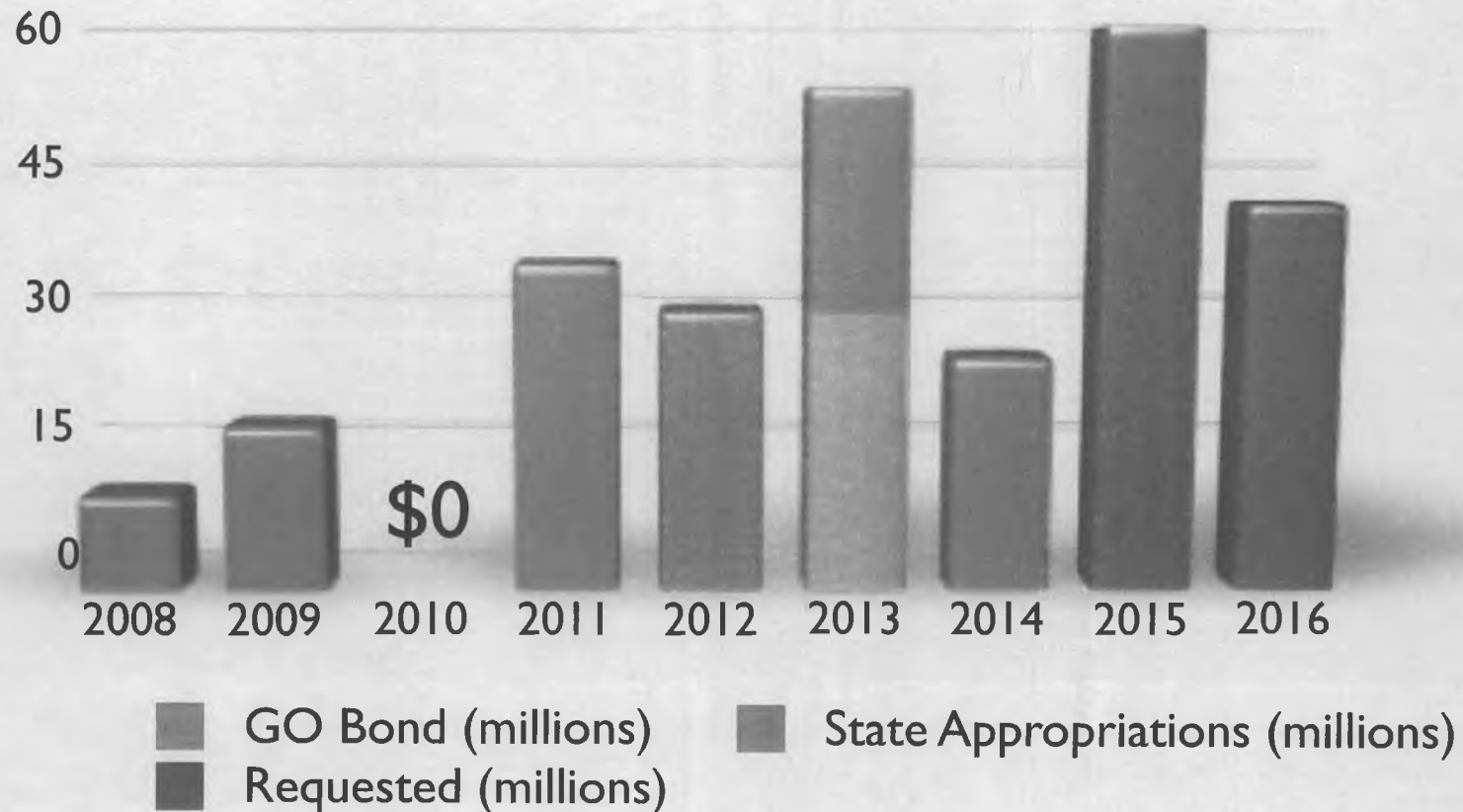


**\$171 million**

**Six separate appropriations**  
and a state wide general obligations bond sale



# Project funding over time



Total funding to date

\$171 million



Full length of the  
future rail extension



Full length of the  
future rail extension

Currently Funded



Full length of the future  
rail extension

Currently Funded

2013 \$30 Million GO Bond



Full length of the  
future rail extension

Currently Funded

2013 \$30 Million GO Bond

Remaining \$101.5  
to complete



**PORT MACKENZIE RAIL EXTENSION GROUNDBREAKING, JUNE 4, 2013**



***Thank You!***