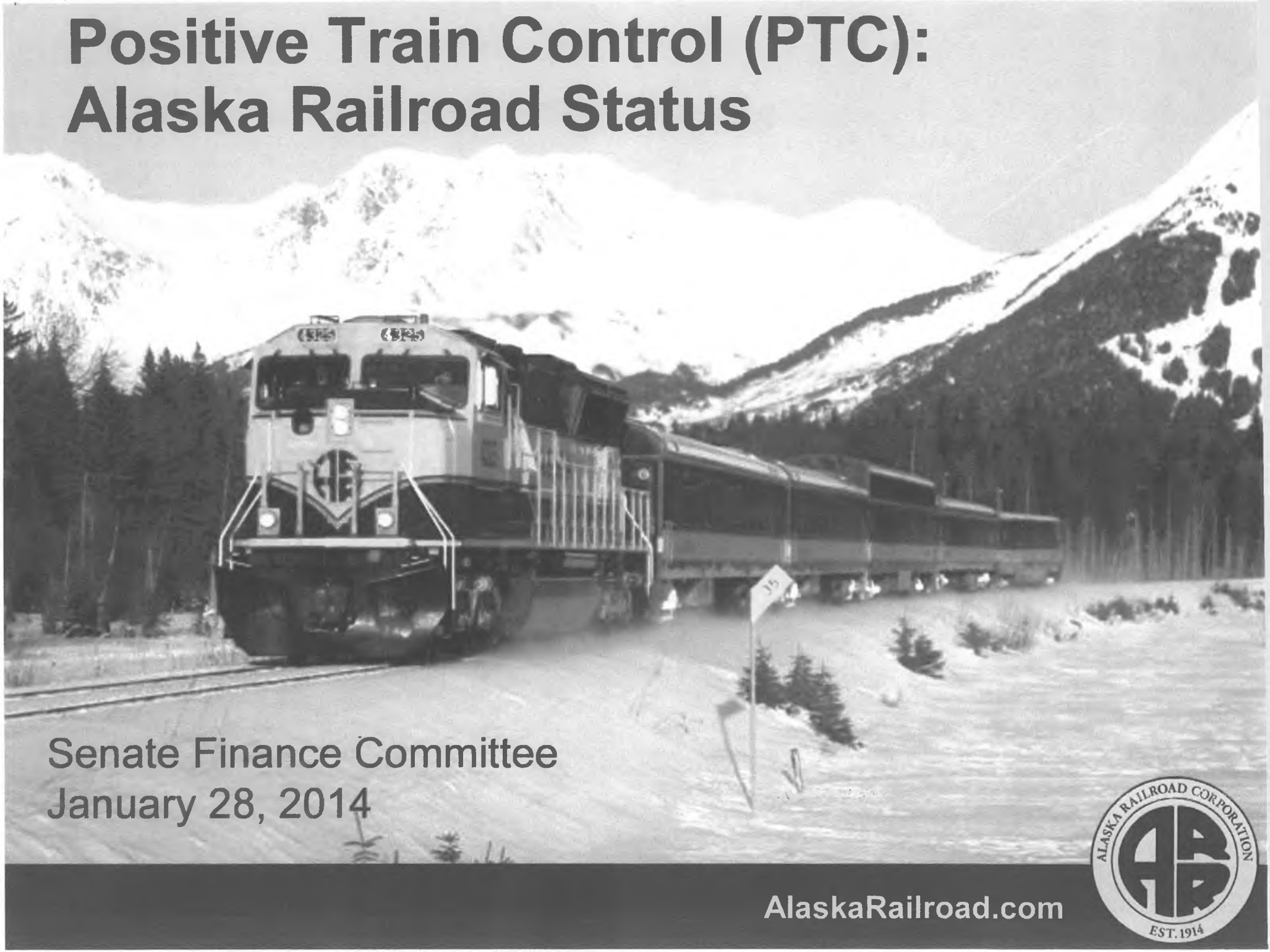
01/28/2014

PRESENTA-TION: ALASKA RAILROAD STATUS

<TARGET><BILL></BILL><SUBJECT>01-28-2014 PRESENTATION ALASKA RAILROAD STATUS</SUBJECT><COMM>SFIN28</COMM></TARGET>

Positive Train Control (PTC): Alaska Railroad Status

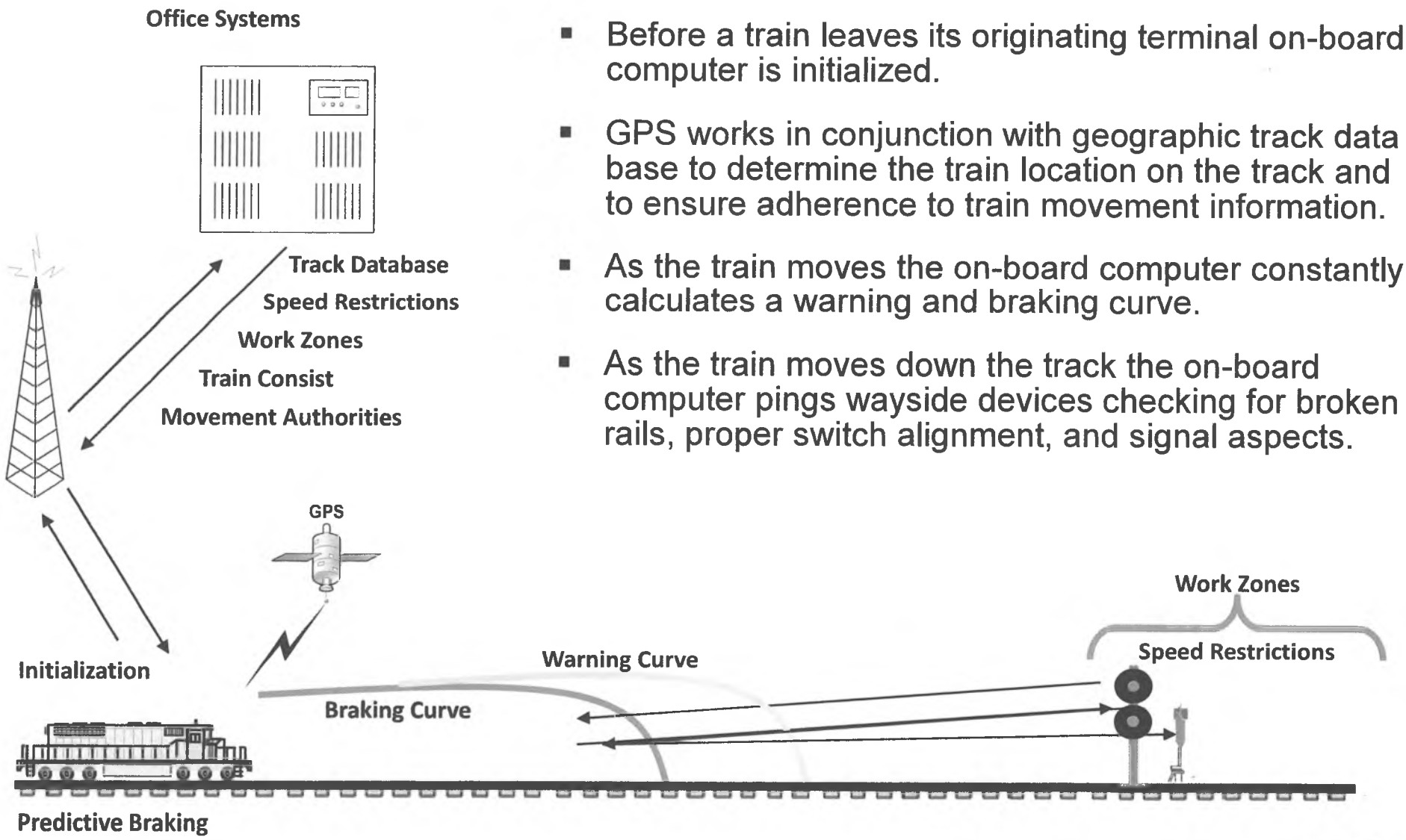


Senate Finance Committee
January 28, 2014

AlaskaRailroad.com

ALASKA RAILROAD CORPORATION
EST. 1914

How PTC Works



- 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 PTC?

Over the last four decades, the National Transportation Safety Board (NTSB) has investigated a long list of accidents in which crewmembers failed to operate their trains effectively and in accordance with operating rules.

Because of these human performance deficiencies, the NTSB has advocated for systems that would compensate for human error and prevent train collisions.

Why Mandatory PTC Regulations?

Two major railroad accidents (2005 at Graniteville, South Carolina and 2008 at Chatsworth, California) were cited as PTC preventable accidents during Congressional hearings that resulted in legislation leading to the unfunded PTC mandate.

- **Graniteville, 1/6/2005:** A *Norfolk Southern* train was diverted through a manual switch improperly lined for main track movement and collided with a parked train. 44 cars derailed including three tank cars containing chlorine gas. One tank breached releasing 60 tons of gas. Fatalities – 8; Injuries - 500+; Evacuated 5,400 people for two weeks; Cost - $190+ Million.

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:

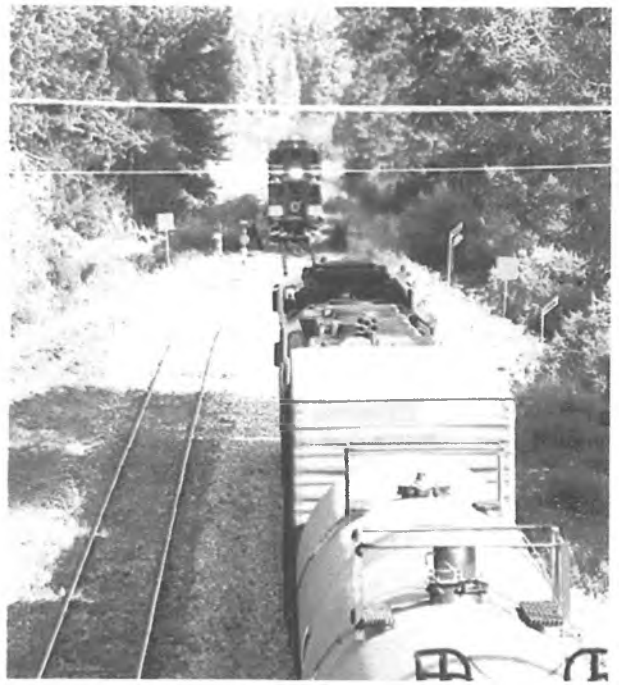
a. Mainline used for passenger/commuter rail transport
b. Mainline used by hazmat freight transport
c. Other tracks prescribed by regulation or order

Why PTC for ARRC?

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 switch in the 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.

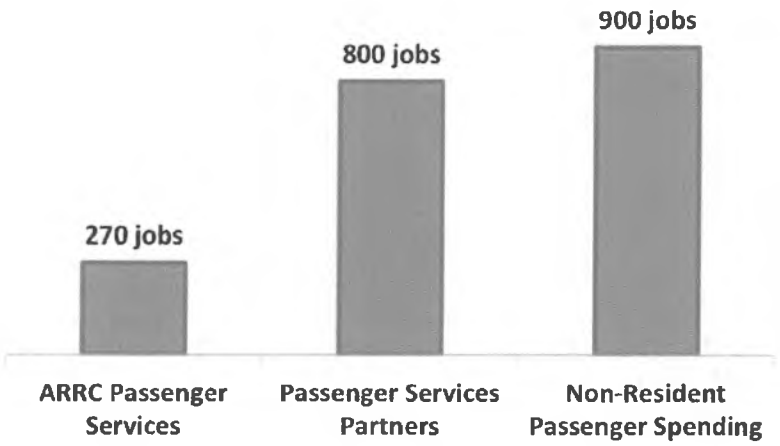
What if ARRC Does Not Comply?

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

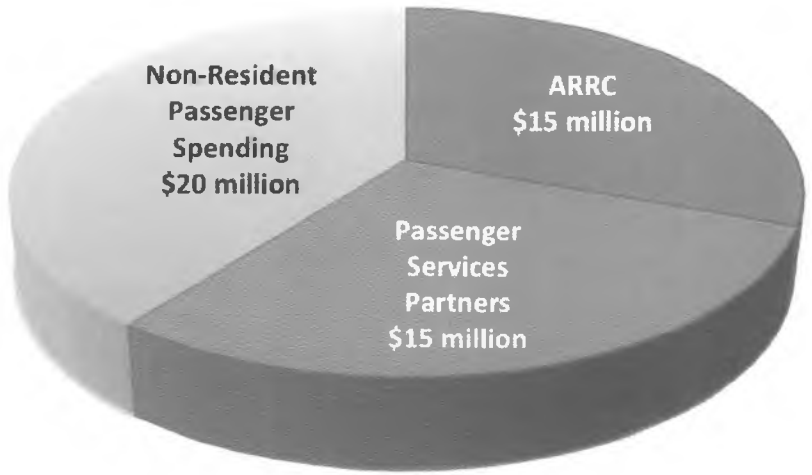
Loss of Passenger Service

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



ARRC Passenger Services-Related Employment, 2012

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



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

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.

ARRC PTC Implementation History

1997-2001: GE Harris proposes a phased PTC system – failed due to issues with GE Harris digital radio system. Implemented a Computer-Aided Dispatch system to reduce dispatcher-issued overlapping authorities (human error) and verbal errors.

2003: Limited Notice to Proceed to Quantum Engineering Inc. (QEI) for Collision Avoidance System documentation including Safety Case. QEI did not successfully deliver documentation.

2003: Contracted with US&S to deliver Computer-aided Dispatch (CAD), placed in revenue service May 2005. GE-Harris had withdrawn CAD maintenance support.

2004: Installation of Meteor Communications Inc. (MCC) Data Radio Network with integrated GPS. Implemented locomotive tracking that increased situational awareness of train movements.

ARRC PTC Implementation History

2004: Contract with Ansaldo STS US (ASTS) to deliver Safety Server and On-Board Computers. After rulemaking related to 236 Subpart I, ASTS requested a change order for rough order of magnitude (ROM) of $20 M and had not addressed the "not required" monitoring of manual switches.

2010: Termination of Contract with ASTS to provide Collision Avoidance System when ROM change order (CO) could not be reduced and radio vendor was purchased by BNSF, UP, CSX and NS.

2010: Contract with Wabtec Railway Electronics (WRE) to replace CAD and begin negotiations for Phase II including installation of back office servers and locomotive train management computers.

2012: Develop prototype design and order of wayside manual switch monitoring bungalows based on GE specifications provided by Interoperable Train Control (ITC) committee. Order MCC data radios for pilot corridor. Work on arranging RF spectrum through the PTC 220 LLC.

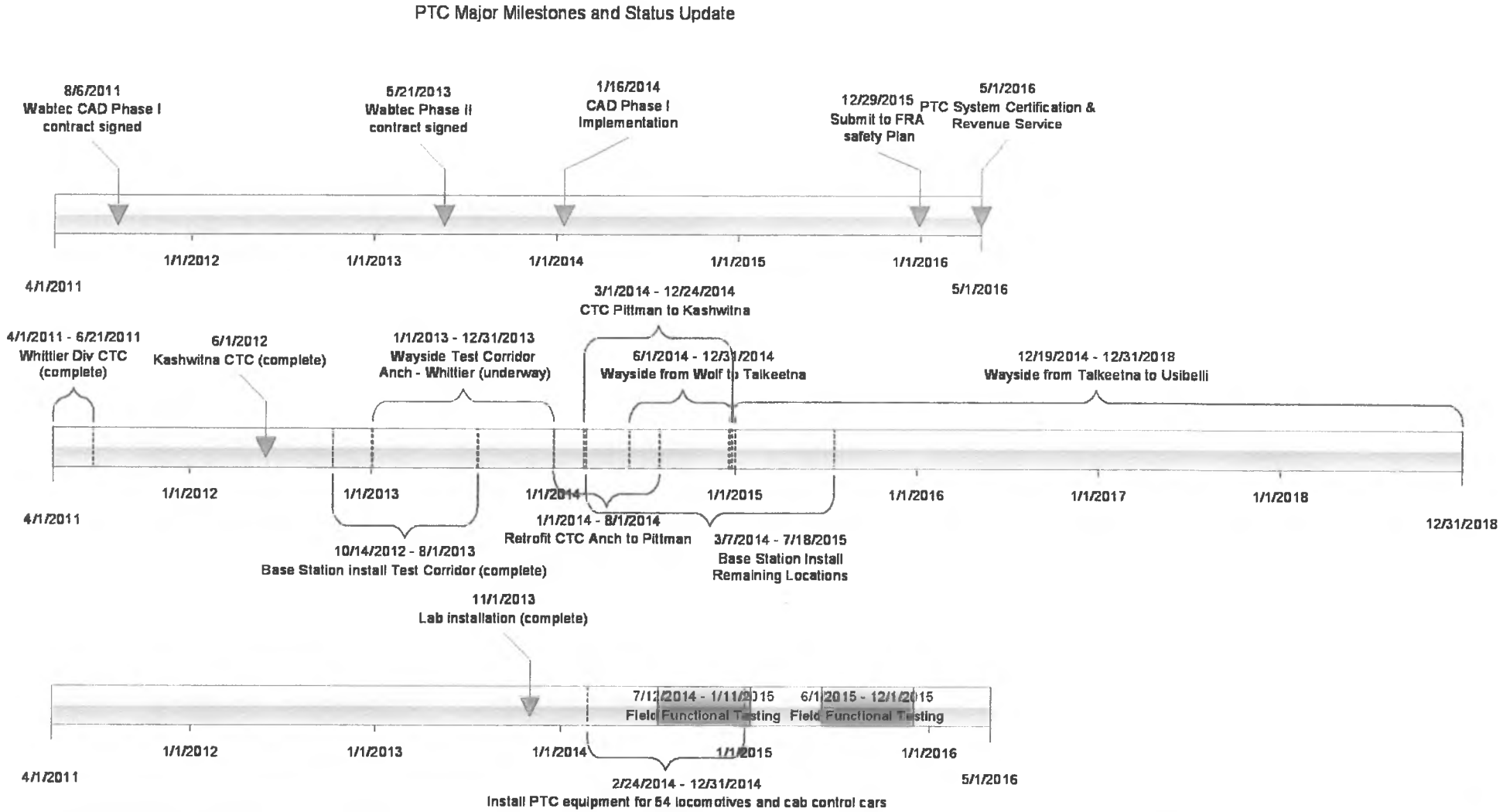
2014: WRE CAD in place and operational.

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. Installation is underway.
- Working with FRA on exemption for manual switch monitoring on low passenger density track through approval of PTC Implementation Plan.

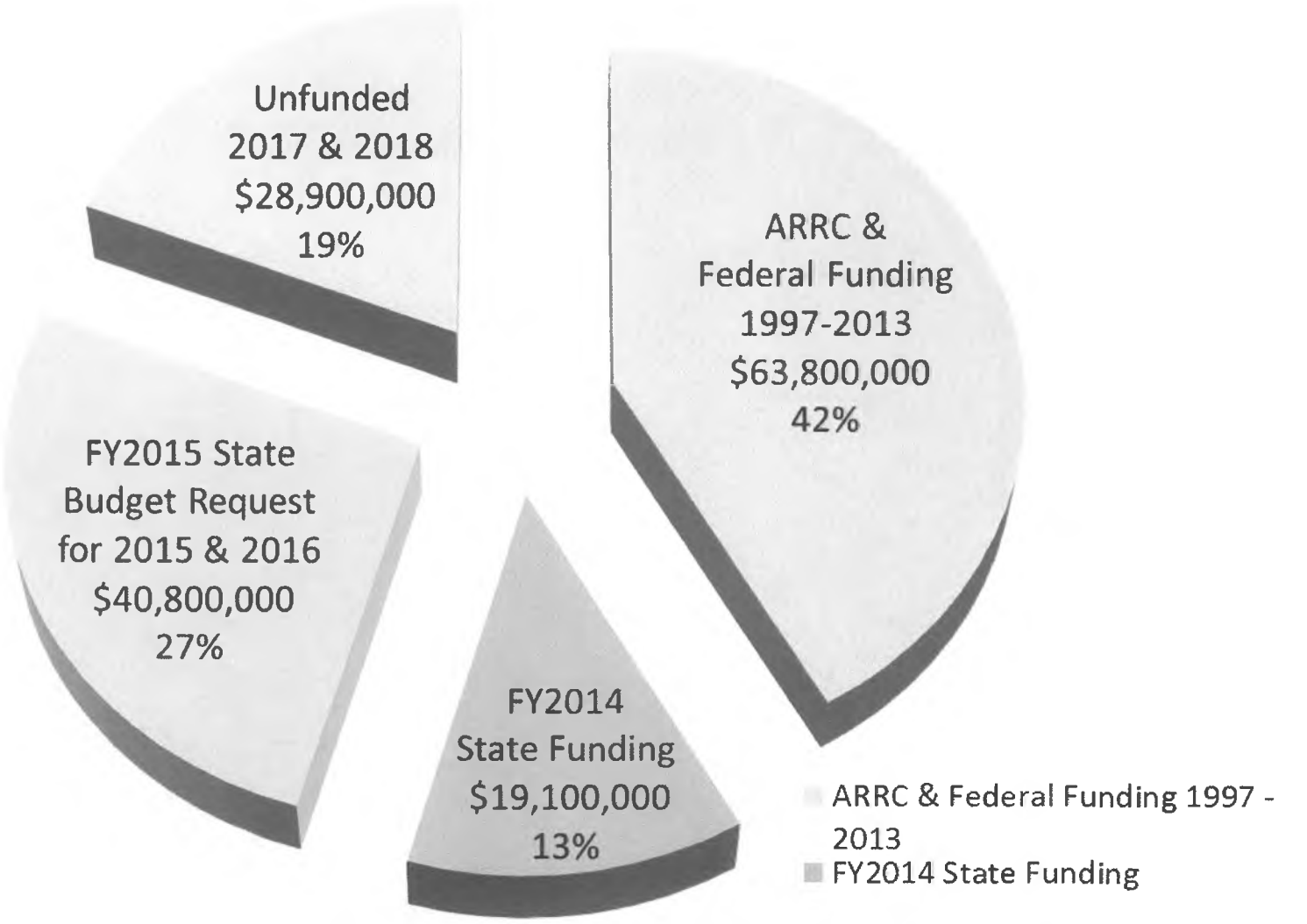
PTC Implementation Schedule



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
Total	$63,814,711	$19,100,000	$82,914,711
Funds Committed	100%	72%	
Funds Spent	94%	8%	

ARRC 2015 – 2018 PTC Unfunded Budget

	2015	2016	2017	2018	Total
Office, Comm and Locomotive Segments	**$ 10,784,110**	**$ 7,717,322**	**$ 5,756,240**	**$ 4,556,240**	**$ 28,813,912**
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**
Wayside Segment	**$ 9,414,400**	**$ 12,911,600**	**$ 10,467,000**	**$ 8,102,600**	**$ 40,895,600**
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**
Total Funds Required	**$ 20,198,510**	**$ 20,628,922**	**$ 16,223,240**	**$12,658,840**	**$ 69,709,512**

Passenger RR Funding Examples

Metrolink:

- Budget is $211 million received from state and local sources and some discretionarily re-directed federal funds from the CA DOT (high-speed rail funds for the Metrolink line on a high-speed rail corridor).
- Received $9.3 million from the state DOT bond sales for overruns due to vendor

Caltrain:

- PTC Budget is $213 million, funded with High-speed rail program funds.

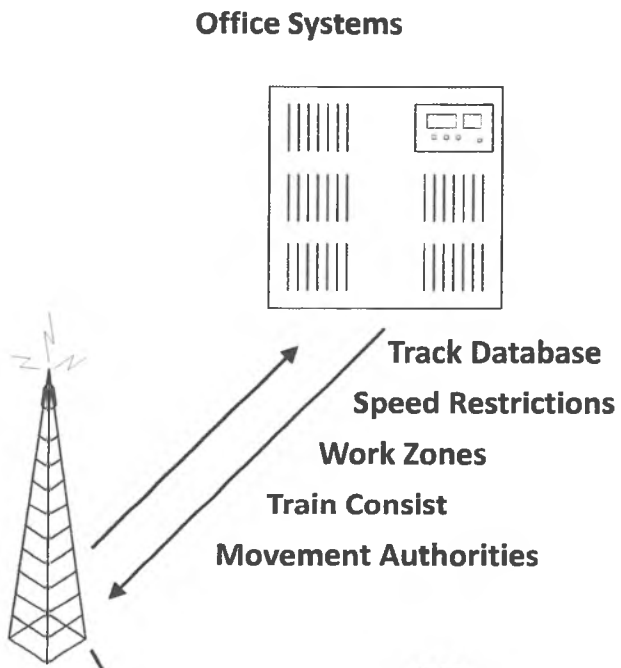
Denver RTD:

- FTA full-funding grant agreements matched 50% by state and local funds.

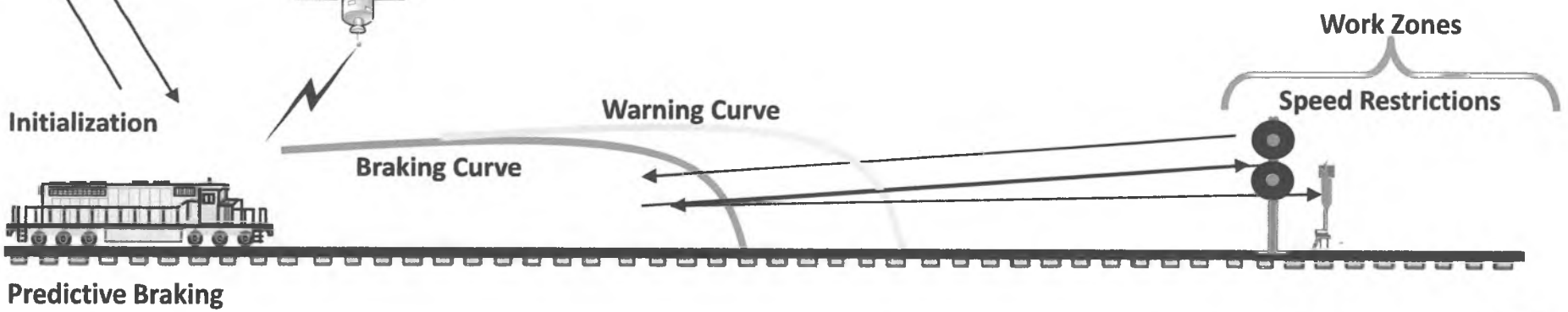
Trinity Rail Express:

- Partial funding from North Central Texas Council on Government. Rest to be identified.

Positive Train Control



- 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



SEAN PARNELL, GOVERNOR

DEPARTMENT OF LAW

OFFICE OF THE ATTORNEY GENERAL

1031 West Fourth Avenue, Suite 200
Anchorage, AK 99501
PHONE: (907) 269-5100
FAX: (907) 276-3697

February 27, 2013

William R. Hupprich, General Counsel
Alaska Railroad Corporation
327 West Ship Creek Avenue
Anchorage AK 99510-7500

Re: Rail Safety Improvement Act of 2008

Dear Bill:

You have requested our review of the federal Rail Safety Improvement Act of 2008[1] and its applicability to the operations of the Alaska Railroad Corporation ("ARRC"). We conclude that federal law requires that ARRC comply with the Act if it wishes to continue providing passenger service.

The Rail Safety Improvement Act is a comprehensive federal safety initiative for railroads that mandates the implementation of Positive Train Control ("PTC") systems by major rail carriers across the country. PTC is a system of integrated technologies that is designed to prevent train accidents such as derailments and head-on collisions by eliminating the human factor.[2] Each rail carrier must develop a plan for implementing its PTC system and submit it to the U.S. Secretary of Transportation for review and approval.[3] Prior to installing an approved PTC system on a passenger train, the Secretary must certify it as complying with 49 C.F.R. Part 236.[4] The Rail Safety Improvement Act

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1 Pub. L. No. 110-432 (codified in part at 49 U.S.C. § 20157).

2 49 U.S.C. § 20157(i)(3). "The term 'positive train control system' means a system designed to prevent train-to-train collisions, over-speed derailments, incursions into established work zone limits, and the movement of a train through a switch left in the wrong position."

3 49 U.S.C. § 20157(c).

4 49 U.S.C. § 20157(h).

requires that each rail carrier must complete installation of its approved and certified PTC system by December 31, 2015.[5]

The Secretary of Transportation is authorized to assess civil penalties of $2,500 to $25,000 per violation for 61 separate violations of PTC-related requirements.[6] These violations include failure to implement a PTC system by December 31, 2015, operation of a PTC system prior to certification, non-compliant operation of unequipped trains in areas where a PTC system is required, failure to comply with record-keeping requirements, failure to repair a faulty PTC system component, and failure to train railroad employees.[7] Higher penalty amounts are assessed for willful violations – for example, the penalty for failure to implement a PTC system by December 31, 2015 is $16,000 per violation and $25,000 per "willful violation."[8] Every day a violation continues constitutes a separate violation.[9] In situations where "a grossly negligent violation or a pattern of repeated violations has caused an imminent hazard of death or injury to individuals, or has caused death or injury," the Secretary may impose an aggravated civil penalty of up to $105,000 per day.[10]

In addition to the civil penalties, the Secretary of Transportation may also request an injunction for violations,[11] and may issue a compliance order requiring compliance with a railroad safety regulation or order.[12] The U.S. Attorney General may bring a civil action to enforce railroad safety regulations and orders.[13]

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5 49 U.S.C. § 20157(a)(1).

6 49 U.S.C. § 20157(e).

7 49 C.F.R. Part 236, App. A.

8 *Id.*

9 49 U.S.C. § 21301(a)(1).

10 49 U.S.C. § 21301(a)(2). As of June 25, 2012, the aggravated maximum penalty was raised from $100,000 to $105,000 pursuant to the Inflation Act.

11 49 U.S.C. § 20111(a).

12 49 U.S.C. § 20111(b).

13 49 U.S.C. § 20112(a).

The Rail Safety Improvement Act applies to all "Class I" rail carriers and every railroad providing regularly scheduled intercity passenger service.[14] Since ARRC provides regularly scheduled intercity passenger service, the Rail Safety Improvement Act applies to it.[15]

The Alaska Railroad Transfer Act of 1982[16] at 45 U.S.C. § 1207 contains the laws applicable to ARRC after its transfer from the federal government to the State.[17] The Act designates ARRC as "a rail carrier engaged in interstate and foreign commerce" subject to all federal statutes applicable to rail carriers operating in interstate commerce, which includes the Rail Safety Improvement Act.[18] Similarly, the State's Alaska Railroad Corporation Act,[19] which established ARRC as a public corporation of the State, authorizes ARRC to undertake all actions "necessary to carry out the powers and duties of the corporation granted or necessarily implied in . . . the laws or regulations of the federal government."[20] Thus, both the federal and state statutes contemplate ARRC's compliance with the federal law, which includes the Rail Safety Improvement Act and the PTC system requirements.

The Rail Safety Improvement Act contains no statutory waivers or exemptions that apply to ARRC's operations. However, a rail carrier may petition for a waiver from

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14 49 U.S.C. § 20157(a).

15 ARRC provides scheduled passenger service between Anchorage and Fairbanks year round with additional destinations in the summer. See http://www.alaskarailroad.com/travel/Transit/Schedules/tabid/98/Default.aspx.

16 45 U.S.C. § 1201 – 1214.

17 The federal government began building the Alaska Railroad in 1914 and operated it until January 5, 1985. The state paid $22.3 million for the railroad and its assets. ARRC continues to receive federal support – since 1996 ARRC has received $863 million in federal funding.

18 49 U.S.C. § 10501(a).

19 AS 42.40.010 – 42.40.990.

20 AS 42.40.250(30).

a safety rule, regulation, or order,[21] such as a regulation adopted pursuant to the Rail Safety Improvement Act concerning the specific requirements for a PTC system, the content of a PTC system implementation plan, records retention, training, security, and other specific requirements.[22] A waiver from a safety rule, regulation, or order may only be granted if the Secretary of Transportation determines that "the waiver is in the public interest and consistent with railroad safety."[23]

Absent a waiver of a specific safety rule, regulation, or order, new federal legislation containing an exemption, or new federal legislation granting an extension of time for compliance,[24] ARRC is required to comply with every provision of the Act and implement a PTC system by December 31, 2015. If ARRC fails to meet the Act's requirements, ARRC could face civil penalties of up to $25,000 per day, or $105,000 for egregious violations, and could be subject to enforcement action by the Secretary of Transportation and the U.S. Attorney General.

Sincerely,

MICHAEL C. GERAGHTY
ATTORNEY GENERAL

By: L. Anmei Goldsmith
L. Anmei Goldsmith
Assistant Attorney General

LAG/bap

---

21 49 C.F.R. Part 211.41, 211.43, 211.45.

22 49 C.F.R. Part 236.1001 – 236.1049.

23 49 U.S.C. § 20103(d).

24 We are aware that there are ongoing discussions within the Association of American Railroads (ARRC is a member) to pursue a Congressional extension, but we are not aware of any final decision.

DON YOUNG
CONGRESSMAN FOR ALL ALASKA
WASHINGTON OFFICE:
2314 RAYBURN BUILDING
WASHINGTON, DC 20515
202-225-5765

COMMITTEE ON
NATURAL RESOURCES

CHAIRMAN, SUBCOMMITTEE ON
INDIAN AND ALASKA NATIVE AFFAIRS

COMMITTEE ON
TRANSPORTATION & INFRASTRUCTURE

REPUBLICAN
POLICY COMMITTEE

Congress of the United States
House of Representatives
Washington, D.C. 20515

February 28, 2013

Mr. Christopher Aadnesen
President and CEO
Alaska Railroad
327 W. Ship Creek Ave.
Anchorage, AK 99501

Dear Mr. Aadnesen:

Thank you for keeping us up to speed on your progress toward implementing the federal Positive Train Control mandate. As you well know, Congress mandated PTC in the 2008 Rail Safety Improvement Act and it has been on the "10 Most Wanted Safety Recommendations" of the National Transportation Safety Board since 1990. I realize implementing this project is a tremendous challenge for our Alaska Railroad and that the entire railroad industry subjected to this mandate is struggling with the untested technology, high cost and looming deadline.

I am encouraged to hear that the Alaska Railroad is seeking state funding support for this project in order to maintain its critical passenger transportation service just as other passenger railroad's have done in the U.S. that are subject to this Safety mandate. I understand there may be a view within the Legislature that the Alaska Congressional Delegation may be able to get enacted a special exemption for the Alaska Railroad from the PTC safety requirement. I wish to clarify that enacting such an exemption is not on the Congressional horizon, especially for an NTSB Most Wanted Safety Recommendation. While there is a possibility that Congress may extend the current 2015 deadline by several years, something I strongly support, there is virtually no likelihood of a special Alaska exemption, especially given the current Congressional rules barring provisions that name specific entities or localities for specialized treatment. I hope this helps to clarify the matter and I am hopeful our state can help with this pressing matter.

Sincerely,

DON YOUNG
Congressman for all Alaska

VISIT OUR WEBSITE
HTTP://DONYOUNG.HOUSE.GOV

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907-586-7400

805 FRONTAGE ROAD
SUITE 110
KENAI, ALASKA 99611
907-283-7701

CALL TOLL-FREE
1-866-990-5979

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:

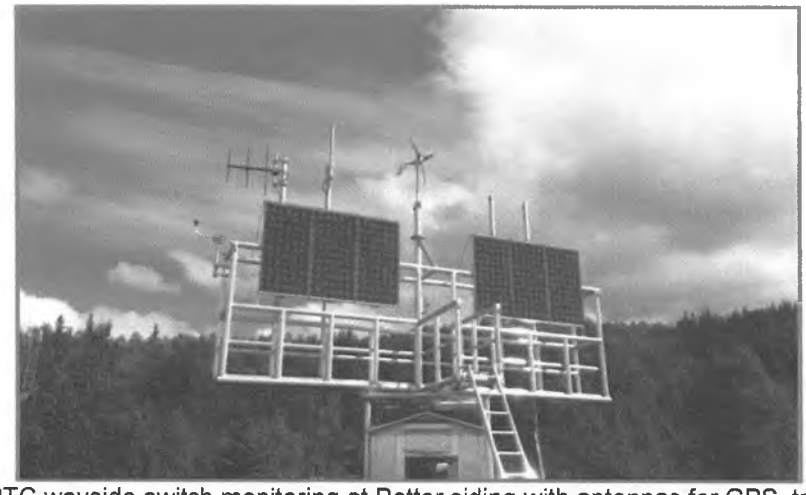
There are 5 major segments to the system:

- 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.



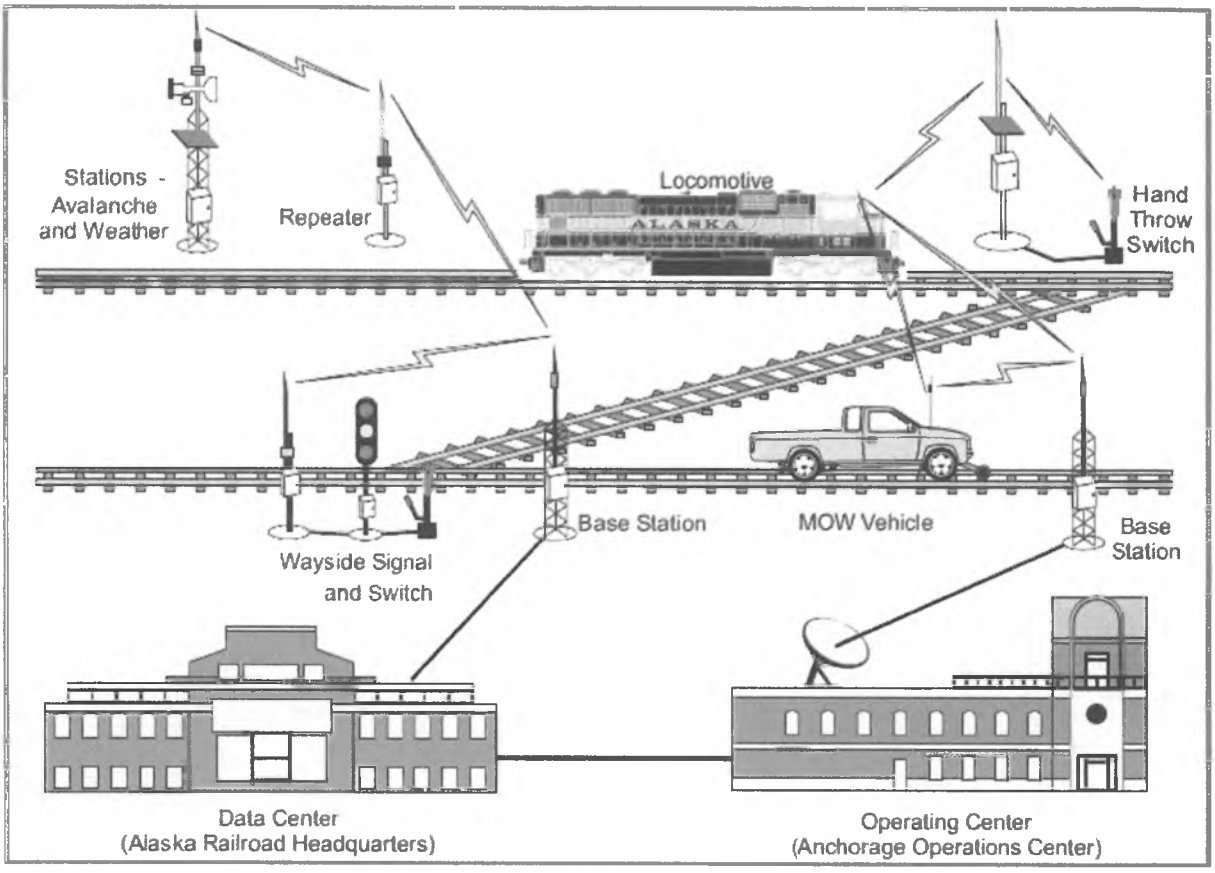
PTC wayside switch monitoring at Potter siding with antennas for GPS, train to wayside data radio, and office to field data radio. Note solar and wind power generation.

- 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

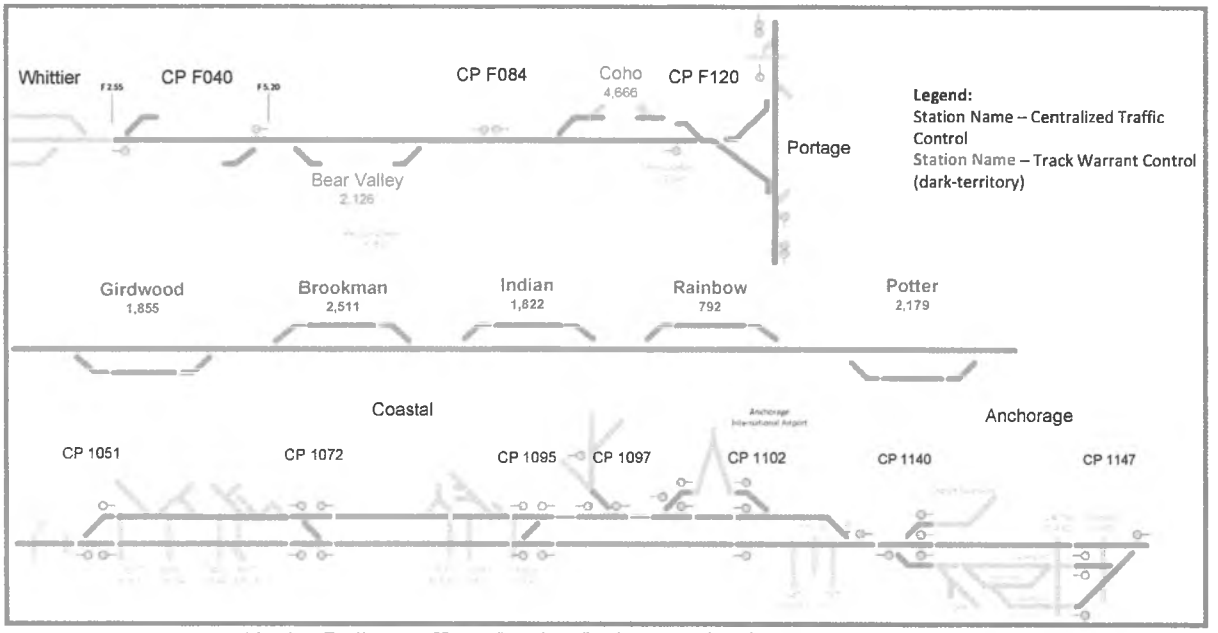
The following diagram illustrates the communication-based PTC system interacting with the various segments to allow for safe train movements and maintenance activities on the Alaska Railroad:



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.

- 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

• **Potelcom Supply Inc.**: Communications supplies	Anchorage
• **Right Systems**: Servers	Anchorage
• **Alaska Battery Mfg.:** Batteries	Anchorage
• **Marsh Creek:** Power systems and design	Anchorage
• **Airport Equipment Rentals:** Equipment rental	Anchorage
• **Alpine Air Alaska:** Transportation	Girdwood
• **American Power Systems:** Electrical	Anchorage
• **Equipment Source Inc:** Electrical	Anchorage
• **McGrady Steel and Supply:** Electrical	Anchorage
• **Yukon Equipment:** Equipment rental	Anchorage
• **AT&T Alaska:** Communications	Anchorage
• **Alpine Meadows Apts**: Lodging	Anchorage
• **Cal Worthington Ford:** Auto leasing	Anchorage
• **Suburban Propane**: Fuel	Anchorage
• **Carlile Transportation:** Trucking	Anchorage
• **Peak Signals:** Telecom upgrades	Juneau
• **New Horizons Telecom:** Telecom upgrades	Palmer
• **R&S Railworks**: Track materials	Healy
• **Chugach Electric Association:** Power	Anchorage
• **Matanuska Electric Association**: Power	Palmer
• **Alaska Industrial Hardware:** 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
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
Total	**$63,814,711**	**$19,100,000**	**$82,914,711**
Funds Committed	100%	72%	
Funds Spent	94%	8%	

2015 – 2018 PTC – Cash Flow Requirements (Unfunded)

	2015	2016	2017	2018	Total
Office, Comm and Locomotive Segments	**$ 10,784,110**	**$ 7,717,322**	**$ 5,756,240**	**$ 4,556,240**	**$ 28,813,912**
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**
Wayside Segment	**$ 9,414,400**	**$ 12,911,600**	**$ 10,467,000**	**$ 8,102,600**	**$ 40,895,600**
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**
Total Funds Required	**$ 20,198,510**	**$ 20,628,922**	**$ 16,223,240**	**$ 12,658,840**	**$ 69,709,512**

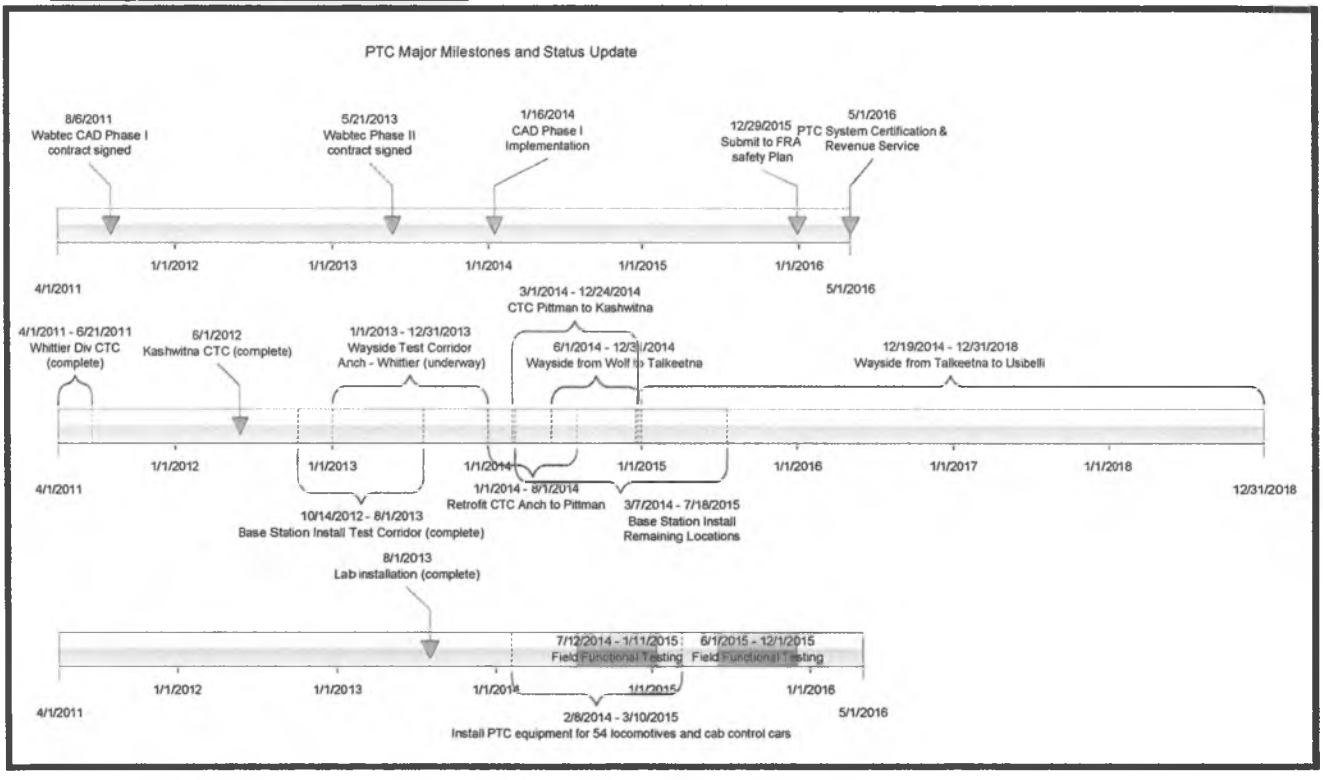
Positive Train Control

PTC Implementation Schedule

Original Estimated PTC Implementation Date: December 2018

Current Estimated PTC Implementation Date: December 2018

Project Milestones



Positive Train Control

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AGENDA

Tuesday, January 28, 2014 Senate Finance Room 532 - 9:00 AM

Presentation:
Positive Train Control
Bill O'Leary, President & CEO, Alaska Railroad Corporation
Eileen Reilly, Vice President, Advanced Train Control Systems & Technology, Alaska Railroad Corporation