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# **Amtrak's Rolling Stock Perspective: Development of High-Speed Rail and Intercity Passenger Rail**

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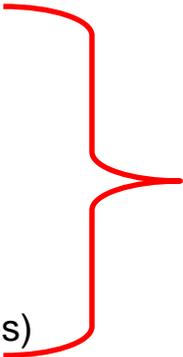
Amtrak

February 10, 2010

# Background

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- Amtrak is the national intercity passenger rail provider
  - Congressionally chartered corporation (majority of stock owned by DOT) began operation in 1971 to relieve freights of common carrier obligation to provide passenger service
  - Operates a 21,100 mile system, actively serving 517 stations in the US and Canada
  - Carried 27.2 million passengers in FY 2009 (second only to FY 08)
- Services fall into three categories:
  - Northeast Corridor (largely, but not entirely, Amtrak-owned infrastructure)
  - Long distance routes (over 750 miles)
  - Short distance routes (under 750 miles)
- 70% of our train-miles run on railroads other than Amtrak:
  - BNSF Railway (6.69 million train-miles)
  - Union Pacific Railroad (6.09 million train-miles)
  - CSX Transportation (5.85 million train-miles)
  - Norfolk Southern Railway (2.36 million train-miles)
  - Canadian National Railway (1.45 million train-miles)
  - Metro-North Commuter Railroad (1.34 million train-miles)



**Top six partners,  
in terms of annual  
train mileage**

**Amtrak pays host companies for incremental costs and incentives – about \$110 million in FY 2009**

# The Year in Review

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- Ridership and revenue for 2009 were surprisingly strong
  - Not as amazing as 2008 – but still the second-highest total (27.2 million) in our history
- We undertook a major capital investment program and worked with state partners to initiate the first investment programs as part of the High Speed Rail and Intercity Passenger Grant program
- Service developments are ongoing
  - Extended *Northeast Regional* service to Lynchburg, VA
  - Extended a second *Cascades* train to Vancouver
  - Added 3 new stations (Leavenworth and Stanwood, WA, and New Buffalo, MI)

# New Initiatives

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- Fleet needs
  - Fleet plan in preparation; will address replacement and major growth needs; will be announced in February, 2010
  - Have issued RFPs to procure 130 single-level cars (Heritage fleet replacements), 20 single-level cab cars, and 20 electric locomotives
- Safe - 2 - Safer – industry-leading new risk-reduction program designed to improve safety through the promotion of a more collaborative working environment
- Positive Train Control (PTC) implementation – Amtrak has committed to an aggressive schedule to install PTC on Amtrak-owned lines by 2012 – 3 years ahead of the Federal deadline
- Northeast Corridor Environmental Impact Statement (EIS) – working with the FRA to prepare a programmatic EIS for main stem and key feeders of the NEC
- Financial and strategic planning
  - Adopted a number of Key Performance Indicators to track operational, financial and customer service effectiveness
  - Produced strategic guidance and a five year financial plan
  - Final agreement on PRIIA-mandated metrics and standards

# Passenger Rail Investment and Improvement Act—A New Era

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- Clear vision for Amtrak and intercity passenger rail within the national transportation scheme
- Establishes a new partnership between Federal government (DOT and Amtrak), states, and host railroads:
  - States plan rail service
  - US DOT integrates this state planning into a national system
  - Federal government provides capital funding
  - Amtrak operates national network, helps design and operate new corridor services
- PRIIA grant programs to develop high speed and intercity passenger rail have been funded at about \$10.6 billion
  - \$8 billion in stimulus funding
  - \$2.5 billion in FY 10 appropriation
  - \$90 million is available from FY 09 appropriation
  - About \$1.9 million in FY 08 appropriation funding is still available

# ARRA – High-Speed Rail and Intercity Rail Investment

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- American Recovery and Reinvestment Act (ARRA)
  - Funds the PRIIA vision and grant programs – no state match required for ARRA funding
  - Funding flexibility acknowledges different stages of development
  - Grants require enduring state leadership and commitment - operating and capital funding
  - Grant competition demands results – public benefits
- Amtrak has many roles
  - Grant recipient/partner
    - Can lead or partner with states for funding
    - Can help bridge projects across multiple states
  - Service planner
  - Liaison between other partners
  - Service provider (an umbrella term that covers a lot of responsibilities)

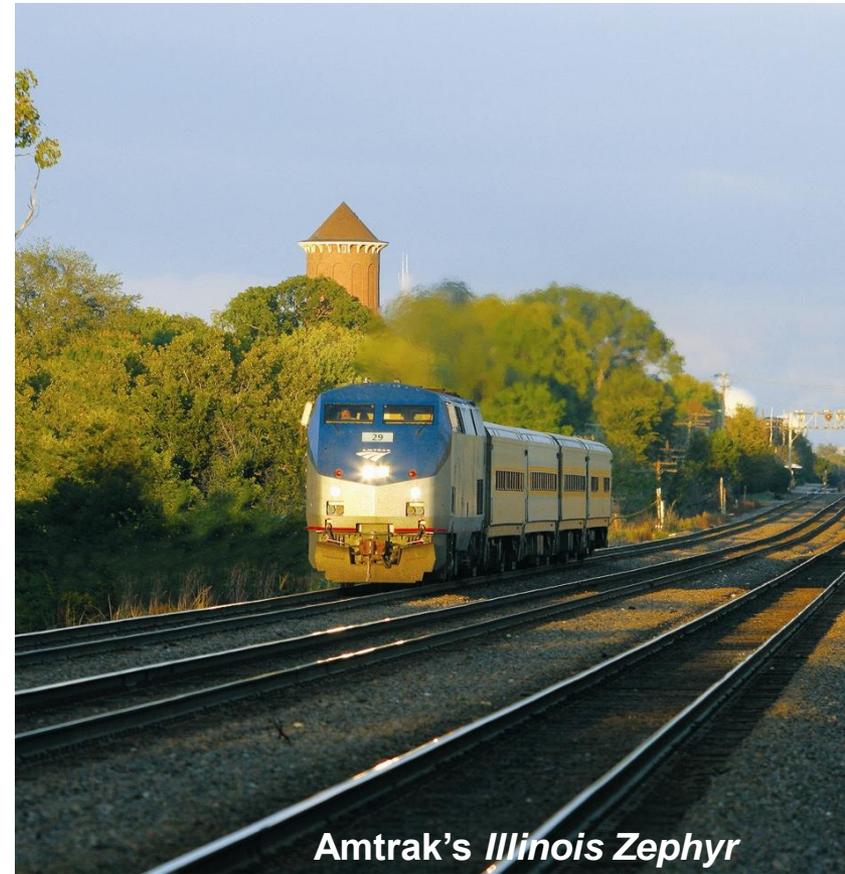
# High Speed and Intercity Passenger Rail Grant Program

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- Amtrak partnered with more than 30 states to support the first round of grant requests
- Total of more than 100 projects
- Vast majority of projects involve improvements to Amtrak-operated services

# Evolving into New Roles – State and Federal Partners

- States will be lead partners
  - Create rail plans
  - Function as federal grant recipient
  - Provide operating and capital funding for short distance Amtrak services
    - Provide 20% capital match (stimulus funds excepted)
    - Under PRIIA, Amtrak must treat short distance routes uniformly
    - States who do not fund their routes today must begin to do so by October 16, 2013
- FRA leads national policy
  - National rail plan
  - Safety and performance standards
  - Administers grant program
  - Facilitates among partners – states, Amtrak, freights



*Amtrak's Illinois Zephyr*

# Evolving into our New Roles - Amtrak

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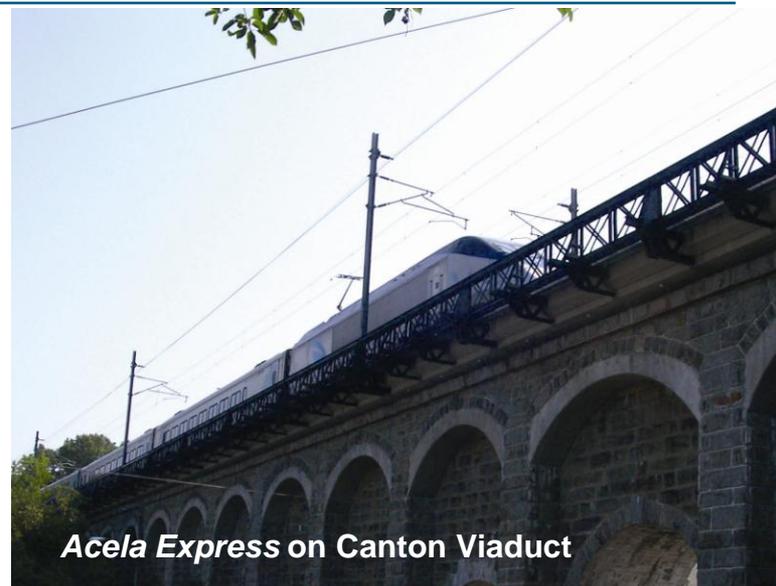
- Amtrak facilitates intercity rail operations and development
  - Operator of the national network
    - Only company in America with global view of rail network
    - Longstanding relationships with all major Class I railroads
    - Only high speed intercity provider in North America
    - Only company that operates passenger trains over every major U.S. railroad
    - **All** track approved for 110+ mph service in North America maintained by Amtrak
  - Planning services for states
    - Familiar with stringent Federal regulatory requirements
    - Understand operating, engineering needs of HSR in America
    - Can serve as liaison, coordinating node for multi-state partnerships
  - Service provider for 15 state-supported corridor services
  - Trusted by hosts to operate safely
  - Workforce possesses unparalleled qualifications and expertise
  - Tactical planner of intercity passenger services
- Amtrak is focusing on supporting state development efforts and emerging high speed corridors

# Successful Collaborations – a Glance at Some Results

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- Pennsylvania – Keystone Corridor (104 miles)
  - Partnership between Amtrak and Commonwealth of Pennsylvania to raise train speeds and improve Philadelphia-Harrisburg service
  - Restored electrified service and conferred additional benefits
    - Top speeds of 110 mph
    - Trip time cut to 95 minutes
    - Increase from 11 to 14 daily Amtrak trains in each direction
  - Initial partnership invested \$145M (split between Amtrak and state)
- Michigan Line (Amtrak-owned segment 96 miles)
  - Part of the Chicago-Detroit/Pontiac line (304 miles)
  - Six daily trains
  - New positive train control system (joint Amtrak/FRA/state project) allows 95 mph service on Amtrak-owned lines, will soon allow 105 mph operation

# The Northeast Corridor: Incremental Development on a Shared-use Route



*Acela Express on Canton Viaduct*

- Amtrak took over NEC in 1976
- At the time, physical condition and service quality were poor and getting worse
- Two major improvement programs followed
  - NECIP (1977- early 1980s)
  - NHRIP (1994-2000)
- Today's service is a legacy of these (and preceding) rounds of investment

	<i>Pre-1976</i>	<i>Today</i>
<i>Signaling and control</i>	<i>About a fifth of the NEC signaled for bidirectional movement</i>	<i>Most signaling bidirectional, Automatic Train Stop universal, ACSES (PTC) in service</i>
<i>Interlockings</i>	<i>104 of 124 mechanically operated</i>	<i>No mechanical interlockings remain</i>
<i>Grade crossings</i>	<i>49 grade crossings</i>	<i>11 grade crossings (6 smart crossings)</i>
<i>Electrified segments</i>	<i>DC to New Haven</i>	<i>Whole Corridor</i>
<i>Maximum speed</i>	<i>About 110 mph*</i>	<i>150 mph</i>
<i>Total daily passenger trains (All carriers)</i>	<i>1,199</i>	<i>1,999</i>

\*Accounts vary

# Realizing a Dedicated High Speed Route

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- Amtrak is seeking to operate any major dedicated HSR project, if funding and support are available
- We have the experience needed for an HSR project
  - Electrified services
  - Operations
  - Maintenance
  - Planning and engineering
- Would envision ourselves working with other partners
  - Amtrak's principal interest is operational
  - We bring planning skills, experience, and support networks such as reservation systems
  - Our workforce is a tremendous asset – largest collection of talented, skilled railroad workers with high speed experience in North America, existing collective bargaining agreements, and strong partnership with labor organizations
  - Interconnectivity is important – will need to integrate new and existing services
- Some proposed high speed routes include Desert Xpress, California and Florida HSR projects
  - Must be integrated with national system
  - Amtrak's access rights apply nationwide – not just to existing system and routes

# The Way Ahead

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- Amtrak supports the Administration's commitment to a program of incremental development, while advancing the next generation of high speed services, where possible
- Amtrak's role is vital – we are the national railroad, and an instrument of Federal policy to deliver passenger service across the country
  - Longstanding relationships with host railroads
  - Planning capabilities in great demand
  - Unparalleled experience with planning and operating of passenger service under American conditions
    - Regulatory requirements
  - “Software” for service – experience, people, skill sets, existing systems
- America's 21<sup>st</sup> intercity passenger rail system will be built on partnerships
- Collaboration between states, US DOT, Amtrak, hosts, suppliers, and others key to success

# Amtrak Fleet Plan

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- Intercity Passenger Rail in United States has unprecedented opportunity that must be addressed
- Amtrak, as the nation's passenger railroad, will play a vital role
  - Amtrak's fleet is and will be at the heart of its ability to deliver competitive service, impacting all aspects of Amtrak services
  - History of underinvestment has constrained Amtrak's ability to deliver modern and reliable services our customers deserve
  - Average age of equipment in the existing Amtrak Fleet is approaching 25 years
  - Essential need to develop a strategy for recapitalization of the fleet to sustain and grow the business
    - Develop a strategy that rebuilds and stabilizes supplier base

# Context of Amtrak Fleet Plan

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- Fleet Plan is based upon a thorough understanding of intercity passenger rail in the US
  - Conservative
  - Flexible
  - Scalable
- Addresses major business lines
  - Northeast Corridor
  - Long Distance
  - State supported/corridor services
- The Amtrak fleet plan is a living document

# Fleet Plan—Equipment Life Policy

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- Amtrak defined equipment life policy
  - Careful analysis of needs throughout the organization was performed
    - Marketing/Customer focus
    - Mechanical
    - Financial considerations
  - Commercial life goals for each fleet type developed for fleet recapitalization
- Commercial life goals:
  - Electric Locomotives - 25 years
  - Diesel Locomotives - 20 years
  - Single Level Coach - 30 years
  - Bi-Level Coach - 30 years
  - Tier I Trainset - 25 years
  - Tier II Trainset - 20 years
- Actual life of equipment will depend on tactical requirements

# Current Fleet Composition and Characteristics

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- Acela—20 train sets (including 120cars): (1999-2000); 1.2 million miles
- Amfleet I—412: (1974-1977); 3.8 million miles
- Amfleet II—122: (1980-1981); 5.1 million miles
- Superliner I—249: (1979-1981); 5.5 million miles
- Superliner II—184: (1994-1996); 2.9 million miles
- Horizon—97: (1989-1990); 2.4 million miles
- Viewliner—50: (1995-1996); 2.5 million miles
- Surfliner—41: (2000-2002); 1.1 million miles
- Talgo: 2 trainsets (including 29 cars): (1999); 1.7 million miles
- Heritage—92: (1948-1956); unknown mileage
- Metroliner—17: (1967); unknown mileage

# Demand Modeling for Amtrak Business Lines

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- Demand forecasting performed on major Amtrak business lines
  - Northeast Corridor
    - Master Plan
    - Acela
  - Long Distance
    - No additional services
  - State/Other Corridors
    - Existing services and probabilities of future growth
    - To be modified in future based upon PRIIA and ARRA implementation

# Amtrak Fleet Acquisition Plan

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- Provides for a smoothed acquisition of high volume vehicle types
- Grouped acquisition of lower volume vehicle types
- Steady state procurement
  - Approximately 65 single level cars per year
  - Approximately 35 bi-level cars per year
  - 70 electric locomotives under present procurement
  - Begin acquisition of 265 diesel locomotives at rate of 25 per year
  - Replace switcher fleet at rate of 10 per year
- Actual batch sizes and composition will be determined as necessary
- Coordination with PRIIA Section 305
  - Baseline that is scalable to accommodate state needs

## **Acquisition Plan through 2025 (14 years)**

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- 780 single level cars
- 420 bi-level cars
- 70 electric locomotives
- 264 diesel locomotives
- 25 high speed trainsets

# Funding Options Under Consideration

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- Direct Federal appropriations
  - Amtrak
  - Another entity defined through PRIIA Section 305
- Federal loan programs, if approved by the Secretary of US DOT, with a variety of potential financial support
  - State partners
  - PRIIA funding
  - Ridership/revenue increases
  - Lease income
  - Annual appropriations
- Commercial financing

# Section 305 Next Generation Equipment Committee

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- Purpose:
  - To design, develop specifications for, and procure standardized next generation corridor equipment
- Functions:
  - Determine number of different types of equipment required
  - Establish a pool of equipment for use on routes funded by participating states
  - Subject to agreement, utilize Amtrak-provided services to design, maintain and remanufacture equipment
- Cooperative Agreements
  - Amtrak and participating states may enter into agreements for funding, procurement, remanufacture, ownership and management
  - May apply to current or new equipment
  - May establish a corporation to perform these functions
- Participants
  - Amtrak, States, FRA, host railroads, equipment manufacturers, other operators as appropriate

# Section 305 Executive Committee

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- Initial Meeting of Executive Committee held January 13-14
- Executive Committee Membership
  - Amtrak
  - Federal Railroad Administration
  - States (CA, GA, IA, LA, MD, MO, NC, NY, WA, WI)
- Officers
  - Bill Bronte, California - Chair
  - Mario Bergeron, Amtrak - Vice-Chair
  - DJ Stadtler, Amtrak - Treasurer
  - Rod Massman, Missouri - Secretary
- Subcommittees
  - Financial
  - Technical
  - Administrative

## Section 305 Deliverables

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- First Year Deliverables
  - Complete single-Level Specifications for corridor services
  - Complete bi-Level specifications
  - Diesel locomotive specifications
  - Develop ownership and organizational structures
  - Determine appropriate procurement strategies
  - Fleet management strategy
  - Be prepared for initial procurements
- Rolling stock procurements using federal funds will be subject to “Buy America” requirements

# Overall Amtrak Fleet Strategy

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- Replace existing fleet including secular growth
- Support a domestic supplier market with regular procurements
- Augment fleet size as existing network grows
- Support state-supported growth through collaborative fleet acquisitions consistent with Section 305 specifications
- Support new high speed rail corridor growth through operating support and fleet acquisition as determined by the opportunities