Online Briefing

Winter 2011 - 2012

STATE OF NEW YORK
Andrew M. Cuomo
Governor

Federal Railroad Administration

New York State Dept. of Transportation
Purpose & Need

**Purpose:** The purpose of the Project is to examine and recommend ways of introducing higher passenger train speeds on the Empire Corridor and ways to improve reliability, travel times, service frequency, and passenger amenities, with the goal/objective of attracting additional passengers and being more competitive with other modes of intercity travel.

**Need:** The sustainability of our local state and national economy is dependent upon a diversity of transportation options. For High Speed Intercity Passenger Rail (HSIPR) to be competitive with other modes, the following needs must be met:

- Attract Ridership
- Reduce Infrastructure Constraints
- Accommodate Forecasted Growth
Performance Goals and Objectives:

- Improve system-wide on-time performance to 90 percent,
- Reduce travel time along all segments of the Empire Corridor,
- Increase the frequency of service (number of daily round trips) along Empire Corridor West beyond the existing four daily round trips,
- Divert a measurable number of travelers from other modes; especially automobiles,
- Empire Corridor Economic Growth.
Empire Corridor Project Overview

- 463 mile corridor
- Niagara Falls to New York City
- Shared freight/passenger alignment
Existing Empire Corridor Passenger Service

Frequency
- 4 roundtrips per day between Albany and Buffalo
- 13 roundtrips between Albany and NYC

Reliability/On-Time Performance
- 77 percent overall
- Albany to NYC – 84 percent
- West of Albany – 57 percent

Trip Time (Examples)
- Albany to Syracuse – 2:39 hours
- Albany to Buffalo Depew – 4:54 hours
- NYC to Buffalo Depew – 7:34 hours
The Federal Railroad Administration (FRA) has established three levels of High-Speed Rail service, as well as key planning guidelines.
Current Challenges

- Locations with too few tracks
- Lower speeds for freight impact passenger rail speeds on shared lines
- Current conditions limit speed in some locations
- Not enough trains between some cities
- Travel time is not comparable with air or auto travel
- Train trips take longer than scheduled
Development of Alternatives

Initial Alternatives
Does it meet purpose and need?
What does the public say?
What does the initial analysis indicate?
What do the “what if?” scenarios tell us?

Five alternatives identified for detailed study

What does the public say?
What are the results of the detailed analyses?

Recommendation
Operational / Physical Elements for Each Alternative

- **Operations / Service Improvements**
  - Maximum Authorized Speed (MAS)
  - Frequency of Service
  - Schedule Enhancements (including Express)

- **Physical Improvements**
  - Track / Bridges
  - Signals / Grade Crossings
  - Stations / Facilities

- **New Equipment (Locomotives / Coaches)**
- **Capital Costs (Programmatic Level)**
- **Operations & Maintenance (O&M) Cost Estimates**
Performance Measures for Each Alternative

- Operations Analysis
  - Trip Time
  - On-Time Performance (OTP)
- Ridership
Each step up in speed requires improvements to infrastructure & maintenance

- 79 mph: (Class 4) trains rely on visual track-side signals – current top speed along the Empire Corridor West
- 90 mph: (Class 5) Requires advanced train control system
- 110 mph: (Class 6) Requires both advanced train control system and straighter and flatter track geometry
- 125 mph: (Class 7) Requires electrified operation in addition to advanced train control system and even straighter and flatter track geometry.
- 160 mph: (Class 8) Requires electrified dynamic tilt trains, like the Amtrak Acela, that provide faster operating speeds on curves
- 220 mph: Requires still straighter and flatter track geometry, tilt-capable coaches, and higher-power (and more costly) locomotives to overcome wind resistance and maintain speeds up grades.
## 10 Initial Alternatives

<table>
<thead>
<tr>
<th>Existing Track</th>
<th>Emerging HSR</th>
<th>Regional HSR</th>
<th>Core Express HSR</th>
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<tr>
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<td>79 MPH</td>
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<td>Base Alternative (BA)</td>
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<td>New Corridor Facilities</td>
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<td>125 160 220</td>
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# Initial Alternatives’ Components

<table>
<thead>
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<th>Alternative Components</th>
<th>BA</th>
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Base Alternative (No Action)

Projects with Prior NEPA Clearance:

- Niagara Falls - New Intermodal Transportation Center
- Buffalo - Depew Station ADA Improvements
- Rochester Reliability - Third Main Track (CP 393 - CP 382)
- Syracuse Congestion Relief – Capacity Improvements (CP 291 to CP 278)
- Schenectady - Station Improvements
Base Alternative (No Action)

Projects with Prior NEPA Clearance:

- Albany - Schenectady Second Main Track (CP 161 to CP 145)
- Rensselaer Station - Capacity Improvements (CP 144 to CP 138)
- Hudson Subdivision - Signal Reliability (CP 140 to CP 75)
- Hudson Subdivision - Grade Crossing Improvements (12)
Completed in 2005 as the “blueprint” for improvements to the Hudson Line Corridor between Albany and New York,

Reflects technical leadership of NYSDOT, Metro-North, Amtrak, CSX Transportation and Canadian Pacific Railway,

Improvements organized into short, medium and long term improvements,

Improvements will support 2:20 trip time with five stops, 2:10 trip time for non-stop operations (both 10 minute trip time improvements versus today).
Major Travel Markets in Corridor

Metropolitan Planning Organizations (MPOs) IN NEW YORK STATE

1. NEW YORK METROPOLITAN TRANSPORTATION COUNCIL
2. CAPITAL DISTRICT TRANSPORTATION COUNCIL
3. HERKIMER-ONEIDA COUNTIES TRANSPORTATION STUDY
4. SYRACUSE METROPOLITAN TRANSPORTATION COUNCIL
5. GENESSEE TRANSPORTATION COUNCIL
6. GREATER BUFFALO NIAGARA REGIONAL TRANSPORTATION COUNCIL
All findings based on preliminary data.
Forecasted market results shown here are preliminary, reflect dedicated third track for significant portions of the Corridor and are based on estimates (without full network simulation) of schedule margin required to compensate for congestion impacts. This initial analysis will be used to evaluate optimal alternative configurations and will change as the alternatives are developed with accompanying network simulation results.
Currently, cities west of Albany have low boardings due to limited frequency, slow travel time and poor reliability.

Car travel dominates for distances less than 100 miles.
Additional Benefits of High Speed Rail

- Fosters sustainable land use and development patterns
  - Encourages Transit Oriented Development (TOD) by catalyzing station area development and promoting economic revitalization
  - Reduced Sprawl
- Infrastructure Efficiency
  - Reduces pressure on existing transportation infrastructure by attracting riders from other modes of travel; highway and air travel
How are Alternatives Evaluated

- Does it meet purpose and need?
- How will it operate?
- What is the ridership and market?
- What physical improvements will be needed?
- What are the impacts to the environment?
- What are the impacts to freight operations?
- What is the estimated capital cost?
- What are the estimated O&M costs?
- What do stakeholders and the public say?
Components of Each Alternative

- How fast will trains travel?
  - Maximum Authorized Speed (MAS)
  - Average Speed
- How many trains will there be?
- How long is the trip?
- How many people will ride the train?
- How much will it cost?

Note: All information presented is preliminary and under development.
Alternatives 79A, 79B & 79C would not provide a significant increase in speed or improvement of service.

Additionally, none of the 79 mph alternatives would provide significant operational or cost advantages over the 90 mph alternatives.
Cost estimates indicate that alternatives 160 and 220 are cost-prohibitive.
# Five Alternatives for Detailed Evaluation

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<tr>
<td>New Corridor Facilities</td>
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<td>160</td>
<td>220</td>
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</table>
Base Alternative
Existing alignment:
- 79 mph Maximum Authorized Speed (MAS)
- Includes previously approved projects which provide improvements to:
  - Stations
  - Capacity
  - Signal System
  - Service Reliability
Base Alternative
NEPA “No Action”

How fast will trains travel?
Max: 79 MPH
Average: 52 MPH

How much will it cost?
2015 Cost Estimate
Millions of Dollars
$320 Million

How long is the trip between NYC and Niagara Falls?
9:00

How many trains will there be?

How many people will ride the train?
1.6 Million

Preliminary results shown.
Characteristics of the Alternatives

**90A**
Within existing Right-of-Way:
- 90 mph Maximum Authorized Speed (MAS)
- Benefits from an advanced train control system
- Includes grade crossing warning system upgrades at all public crossings
- Includes express service

**90B**
Primarily within existing Right-of-Way:
- Adds a new dedicated single main track to existing alignment (15-ft track centers)
- Includes an advanced train control system for new main track
90A MPH Alternative

Alternative: 90A - What Does It Do?

How fast will trains travel?

Max: 90 MPH  
Average: 57 MPH

How long is the trip between NYC and Niagara Falls?

8:05

How many trains will there be?

How many people will ride the train?

2.3 Million

2015 Cost Estimate

$40

$30

$20

$10

$-

$1.7 Billion

Preliminary results shown.
90B MPH Alternative

**Alternative: 90B - What Does It Do?**

- **How fast will trains travel?**
  - Max: 90 MPH
  - Average: 61 MPH

- **How long is the trip between NYC and Niagara Falls?**
  - 7:36

- **How many trains will there be?**
  - 4
  - 8
  - 13
  - 17

- **How many people will ride the train?**
  - 2.6 Million

**How much will it cost?**

- 2015 Cost Estimate: $5.8 Billion

*Preliminary results shown.*
Characteristics of the Alternatives

110

Primarily within existing Right-of-Way:

- 110 mph Maximum Authorized Speed (MAS)
- Adds trains to increase frequency, including four express service trains
- Adds a new dedicated single main track with high speed sidings to existing alignment (30-ft track centers)
- Includes an advanced train control system
- Includes warning system upgrades, including four quadrant gates at all public grade crossings
Alternative: 110 - What Does It Do?

How fast will trains travel?

Max: 110 MPH

Average: 63 MPH

How long is the trip between NYC and Niagara Falls?

7:22

How many trains will there be?

How many people will ride the train?

2.8 Million

2015 Cost Estimate
Billions of Dollars

$6.2 Billion

Preliminary results shown.
Characteristics of the Alternatives: Albany West

125
New Corridor/Electrified:
- New alignment on sealed corridor
- Electrification of new track
- New train fleet
- Adds trains to increase frequency, including express service trains
- New stations
- Elimination of grade crossings
- Advanced train control system
125 MPH Alternative

Alternative: 125 - What Does It Do?

How fast will trains travel?

Max: 125 MPH
Average: 75 MPH

How long is the trip between NYC and Niagara Falls?

6:15

How many trains will there be?

4
18
13
24

How many people will ride the train?

4.3 Million

Preliminary results shown.
All findings based on preliminary data.

**Average Round Trip Trains Per Day**

**Alternatives**
- **BA**: Albany West 4, Albany South 13
- **90A**: Albany West 8, Albany South 16
- **90B**: Albany West 8, Albany South 17
- **110**: Albany West 8, Albany South 17
- **125**: Albany West 8, Albany South 19

**Number of Trains**

Note 1: Albany West train count does not include Adirondack or Ethan Allen services.

Note 2: Alternatives 90A/90B/110 include one early morning ALB westbound departure and late night eastbound arrival that do not operate from/to New York.

*All findings based on preliminary data.*
The graph shows the speeds in miles per hour for different alternatives:

- **BA**: Average speed of 40 miles per hour, with a maximum of 80 miles per hour.
- **90A**: Average speed of 60 miles per hour, with a maximum of 100 miles per hour.
- **90B**: Average speed of 60 miles per hour, with a maximum of 100 miles per hour.
- **110**: Average speed of 65 miles per hour, with a maximum of 115 miles per hour.
- **125**: Average speed of 70 miles per hour, with a maximum of 125 miles per hour.

The graph compares the average and maximum speeds for each alternative.
NYC to Niagara Falls – Hours in Travel

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BA 90A 90B</td>
<td>9:00</td>
</tr>
<tr>
<td>90A</td>
<td>8:05</td>
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<tr>
<td>90B</td>
<td>7:36</td>
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<td>110</td>
<td>7:22</td>
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<tr>
<td>125</td>
<td>6:15</td>
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Capital Cost Estimate

2015 Cost Estimate – Billions of Dollars

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Cost Estimate</th>
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<td>BA</td>
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<td>110</td>
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<td>125</td>
<td>$10.0</td>
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All findings based on preliminary data.
All findings based on preliminary data.
Environmental Considerations

Approach

- Alternatives are in focus
- Environmental focus is on identifying the resources that could be impacted by the alternatives
- Depending on the resource type and potential for direct or indirect impact, existing resources within 100 feet and up to ½ mile from centerline of the existing or proposed track have been identified
- Tier 1: level of constraint and potential for impact
- Identify potential areas for detailed study in Tier 2 analyses
Topics

- Land Use
- Social & Economic Conditions
- Environmental Justice
- Farmlands
- Parks & Recreation Areas
- Historic & Cultural Resources
- Water & Natural Resources
- Air Quality
- Noise & Vibration
- Energy & Greenhouse Gases
- Hazardous Materials
Existing Context 300 feet from centerline of tracks:

- Generally mixed urban land uses predominate in New York City (NYC), Yonkers, Poughkeepsie, Rensselaer
- Surface waters and densely urban areas adjoin the corridor in New York and Bronx Counties in NYC
- Residential and undeveloped land in northern counties of the Empire Corridor South
- Land uses outside the major metropolitan areas along Empire Corridor West are predominantly rural agricultural
- Station-area land uses vary from dense urban to mixed commercial and residential (1/2 mile context)

Current Activities: Assessing alternatives for needed land acquisition, consistency with comprehensive plans, and potential to alter land use patterns.
Community & Public Facilities

200 facilities within 1,000 feet of centerline of tracks

- 13 colleges
- 33 K-12 schools
- 6 fire stations, 3 police stations
- 15 medical facilities
- 17 post offices
- 21 public libraries
- 23 religious facilities
- 4 military
- 16 government offices
- 19 cultural sites
- 7 infrastructure sites (e.g. DPW, sewer treatment, solid waste facilities)
- 6 correctional facilities
- 3 commercial/general aviation airports
- 14 cemeteries

Current Activities: Assessing alternatives for potential direct and indirect (access changes, etc.) impact
Parks and Recreation Areas (300 feet from centerline of tracks)

- 7 federally designated sites or lands
- 25 state parks, park preserves, historic sites
- 15 State DEC Lands
- Approximately 100 county, municipal and non-profit parks

**Current Activities:** Assessing alternatives for potential direct and indirect (visual, access changes, etc.) impact.
Cultural Resources

**Known Archaeological Sites & Information Source**
(100 feet from centerline of tracks):
- New York State Museum Sites: 204
- New York State Historic Preservation Office Sites: 37

**Known Architectural Resources**
(600 feet from centerline of tracks):
- National Historic Landmarks: 3
- State/National Register of Historic Places – Listed Resources: 147
- State/National Register of Historic Places – Eligible Resources: 326

**Current Activities:** Assessing alternatives for potential direct and indirect (visual, access changes, etc.) impact.
Farmlands

Resources 300 feet from centerline of tracks:

- 3,295 acres of prime farmland excluding urbanized areas
- An additional 1,945 acres of prime farmland, if drained
- 1,420 acres of farmland of statewide importance are located in the non-urbanized portion of the study area.

Current Activities: Assessing alternatives for needed land acquisition and indirect (access changes, etc.) impact.
Air Quality Non-attainment & Maintenance Areas

Existing status

- Ozone
  - 12 counties non-attainment
  - 18 counties Former Subpart 1
- Carbon Monoxide (CO)
  - 8 counties maintenance
- Particulate Matter (PM)
  - 10 counties non-attainment

U.S. Clean Air Act

- Non-attainment areas are not meeting National Ambient Air Quality Standards (NAAQS)
- Non-attainment areas require the state to develop and implement a State Implementation Plan to achieve NAAQS
- Maintenance areas require a plan for maintaining status

Current Activities: Assessing alternatives for consistency with NAAQS.
Energy & Greenhouse Gases

Emission and Energy Consumption Sources

- Locomotives
- Reduction in on-road fuel consumption
- HVAC at fixed facilities
- Electricity for facilities and rail systems
- Fuel use for construction
- Construction materials

Current Activities: Assessing alternatives for consistency with state and federal energy policies and estimating GHG emissions for the alternatives.
- FRA/FTA General Noise and Vibration Assessment
- MNR/CSX/Amtrak trains all included in analysis
- Potential effects will be assessed by the increase in number of trains and average speeds for each segment

Current Activities: Assessing alternatives for potential noise and vibration issues.
Current Activities

- Evaluating environmental constraints and considerations
- Comparing alternatives
- Writing the Draft EIS
Project Milestones Moving Forward

- Complete Draft EIS (Ongoing)
- Distribute Draft EIS (Spring 2012)
- EPAC Briefing on Draft EIS (Winter 2012)
- Public Hearings (Spring 2012)
The following tools are available to keep informed about our progress and to provide your input:

- Project website (www.dot.ny.gov/empire-corridor)
- Project Newsletter
- Interactive table showing detailed information about alternatives
- Informational video on project

Please check the project website on a regular basis for the latest project related information.
Thank You!

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