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**Southeast Corridor Performance Improvement Plan**  
**Initial Submission to US Federal Railroad Administration**

Amtrak Host Railroad Group  
June 29, 2007

# Purpose

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- FRA has added the following requirement to Amtrak's FY07 Grant Agreement

## **“Section 144 Southeast Corridor On-Time Performance Improvements**

No later than July 1, 2007, the Grantee [Amtrak] shall submit to the FRA a plan of operational and other changes to improve the on-time performance of all Southeast Corridor intercity trains operating between Washington, DC and Virginia, North Carolina, South Carolina, Georgia and Florida (specifically Auto Train, Silver Service/Palmetto and Carolinian/Piedmont trains), including appropriate interim measures, milestones and expected progress toward a goal of average on-time performance in excess of 75%. The Grantee shall report monthly to FRA on progress associated with implementing this strategy, delays in implementing specific actions, causes for such delay, and necessary remedial actions. Reports to the Grantee's Board of Directors at regularly scheduled Board meetings by management covering this topic will also fulfill the Grantee's reporting obligations under this section.”

- This document is Amtrak's Southeast Corridor Performance Improvement Plan

## Summary of Deliverables

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- Plan due from Amtrak to FRA no later than July 1, 2007
- “Southeast Corridor” trains: *AutoTrain*, *Silver Service/Palmetto* and *Carolinian/Piedmont*
- Plan to include operational and other changes to improve the on-time performance (“OTP”) of all Southeast Corridor trains to an average in excess of 75%. OTP is the % of trains which arrive at their endpoint:
  - Within 30 minutes of scheduled time for Long Distance trains
    - *Auto Train*, *Silver Service/Palmetto*
  - Within 10 to 30 minutes (depending on length of trip) for non-NEC Corridor trains
    - 30 minutes on *Carolinian*; 10 minutes on *Piedmont*
- Plan to include interim measures, milestones, and expected progress
- Amtrak management report to regularly scheduled Amtrak Board meetings on progress, including delays in implementing specific actions, causes for such delay, and necessary remedial actions

# Methodology

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- Review the Southeast Corridor's operations to identify root causes of delays
    - Amtrak study, review and discuss operations with CSX, NS, North Carolina, and Virginia, including collaborating on capacity modeling
  - Recommend near-term actions to reduce delays
  - Recommend long-term actions to reduce delays and add capacity
    - Capital investment for reliability and for CSX, NS, and Amtrak growth
    - Mechanisms to secure public funding
  - Plan participation/review by
    - CSX
    - NS
    - North Carolina
    - Virginia
  - Implement
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- This Initial Plan document analyzes root causes of delay and identifies Action Items
  - The second Plan document will quantify Action Items based on modeling (Summer '07)

# Performance Improvement Plan

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- 1. Background: Chronology and Root Causes of Delay**
- 2. Near-Term: System-Level Actions (All Trains)**
  1. Heat Orders
  2. Slow Orders
  3. Track Maintenance
  4. Dispatching Delays
- 3. Near-Term: Action Items and Delay Budgets for Individual Routes**
  1. Auto Train
  2. Silver Meteor
  3. Silver Star
  4. Palmetto
  5. Carolinian
  6. Piedmont
- 4. Long-Term: Infrastructure Investments**
- 5. Measures, Milestones, Progress**

## Southeast Corridor Chronology Since Mid-2006

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- Daily: Southeast Corridor operations are discussed twice/week on Amtrak-CSX operations calls
- April, 2006: Amtrak-CSX OTP negotiations deadlocked over Amtrak rejection of CSX “Experience Based Scheduling” proposal to improve OTP by adding 2-3 hours to Southeast Corridor schedules
- July Meeting between Amtrak CEO and CSX COO broke logjam by discussing test of OTP and CSX commitment
- August Began 3-month test of whether AutoTrain could operate 80% on-time with one hour added to schedule with no deterioration of other Southeast Corridor Amtrak train performance. Amtrak added a second locomotive to Silver Service for reliability and acceleration, and Amtrak implemented consultant recommendations to speed servicing/turning equipment off late AutoTrains
- December
  - Amtrak and CSX CEOs and COOs met; agreed Southeast Corridor OTP Test was successful
  - CSX COO proposed forming I-95 Team
- January, 2007: Based on successful Test, Amtrak agreed to add one hour to AutoTrain’s public timetable effective April 2, 2007, contingent on OTP of all Southeast Corridor trains remaining at or above Test levels
- February Amtrak CEO agreed to form I95 Team; appointed Amtrak lead

## Southeast Corridor Chronology Since Mid-2006, Continued

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- March
  - Amtrak proposed new performance incentive plan to CSX
  - FRA mandated Southeast Corridor Performance Improvement Plan (“SE Corridor Plan”)
  - Amtrak-CSX met; Amtrak requested CSX participation in developing SE Corridor Plan
- April
  - CSX submitted formal application for I-95 Corridor to DOT Corridors of the Future Program
  - North Carolina, with CSX and Amtrak support, applied for FHWA grant to build 3 crossovers
- May:
  - Amtrak COO wrote CSX COO seeking CSX participation in SE Corridor Plan and heat order delay reduction
  - CSX,NC,VA,Amtrak reviewed initial Southeast Corridor route modeling
  - CSX’s I-95 Corridor selected to advance to DOT Corridors of the Future Phase 2
- June
  - Amtrak reviewed draft SE Corridor Plan with CSX, NS, NC, VA
- Summary: Late’06/early’07 OTP performance improvements must be sustained and expanded to meet 75% OTP goal

# After July 2006 Amtrak CEO-CSX COO meeting, Southeast Corridor OTP immediately improved vs prior year, but remains below 75% goal on most routes

During August 2006 – April 2007:

- All Amtrak routes' OTP improved vs same period prior year
- Amtrak routes at or near 75% OTP
  - AutoTrain = 77%\*
  - Piedmont = 73%
- Routes showing significant improvement vs same period prior year
  - Silver Meteor = 48% (up from 21%)
- Routes requiring significant work
  - Silver Star = 29%
  - Palmetto = 29%
  - Carolinian = 32%

An analysis of the root causes of delays appears on the following pages

## Endpoint Arrivals by Lateness Threshold

<u>Auto Train</u>	<u>30 Min</u>	<u>90 Min</u>	<u>3 Hr</u>
Actual: August '05 - April '06	18%	49%	79%
Actual: August '06 - April '07*	77%	89%	97%
Goal	75%	85%	95%

<u>Piedmont **</u>	<u>10 Min</u>	<u>30 Min</u>	<u>60 Min</u>
Actual: August '05 - April '06	59%	84%	95%
Actual: August '06 - April '07	73%	91%	96%
Goal	75%	90%	95%

<u>Silver Meteor</u>	<u>30 Min</u>	<u>90 Min</u>	<u>3 Hr</u>
Actual: August '05 - April '06	21%	46%	74%
Actual: August '06 - April '07	48%	73%	89%
Goal	75%	85%	95%

<u>Silver Star</u>	<u>30 Min</u>	<u>90 Min</u>	<u>3 Hr</u>
Actual: August '05 - April '06	12%	34%	63%
Actual: August '06 - April '07	29%	55%	82%
Goal	75%	85%	95%

<u>Palmetto</u>	<u>30 Min</u>	<u>90 Min</u>	<u>3 Hr</u>
Actual: August '05 - April '06	25%	59%	87%
Actual: August '06 - April '07	29%	62%	89%
Goal	75%	85%	95%

<u>Carolinian **</u>	<u>30 Min</u>	<u>90 Min</u>	<u>3 Hr</u>
Actual: August '05 - April '06	20%	65%	90%
Actual: August '06 - April '07	32%	68%	95%
Goal	75%	85%	95%

\*Auto Train performance assumes hour longer schedule for August '06-April '07.

\*\* Corridor Train

# To operate on time, delays must be managed within scheduled recovery time

- Amtrak schedules are the sum of Pure Run Time, Scheduled Dwell Time, and Recovery Time
  - Pure Run Time = Run time at timetable speeds if there is no delay
  - Scheduled Dwell Time = Time stopped at stations to accomplish work
  - Recovery Time = Extra time built into schedules to allow for variability and delay
- Recovery time allows a train to encounter delays and still arrive on time
- Example: Auto Train can be delayed 200 minutes (3 hours, 20 minutes) and still count as on time
  - 170 minutes of recovery time, plus defined as “on time” if arrives within 30 minutes of schedule
- Nearly all trains, on every route, experience at least some delay
- Objective: Manage delays so that they are within scheduled recovery time, so the train is on time from the customer’s perspective
  - Reducing delays can improve OTP, and/or allow recovery time to be reduced

**Schedule Composition of Southeast Corridor Trains**

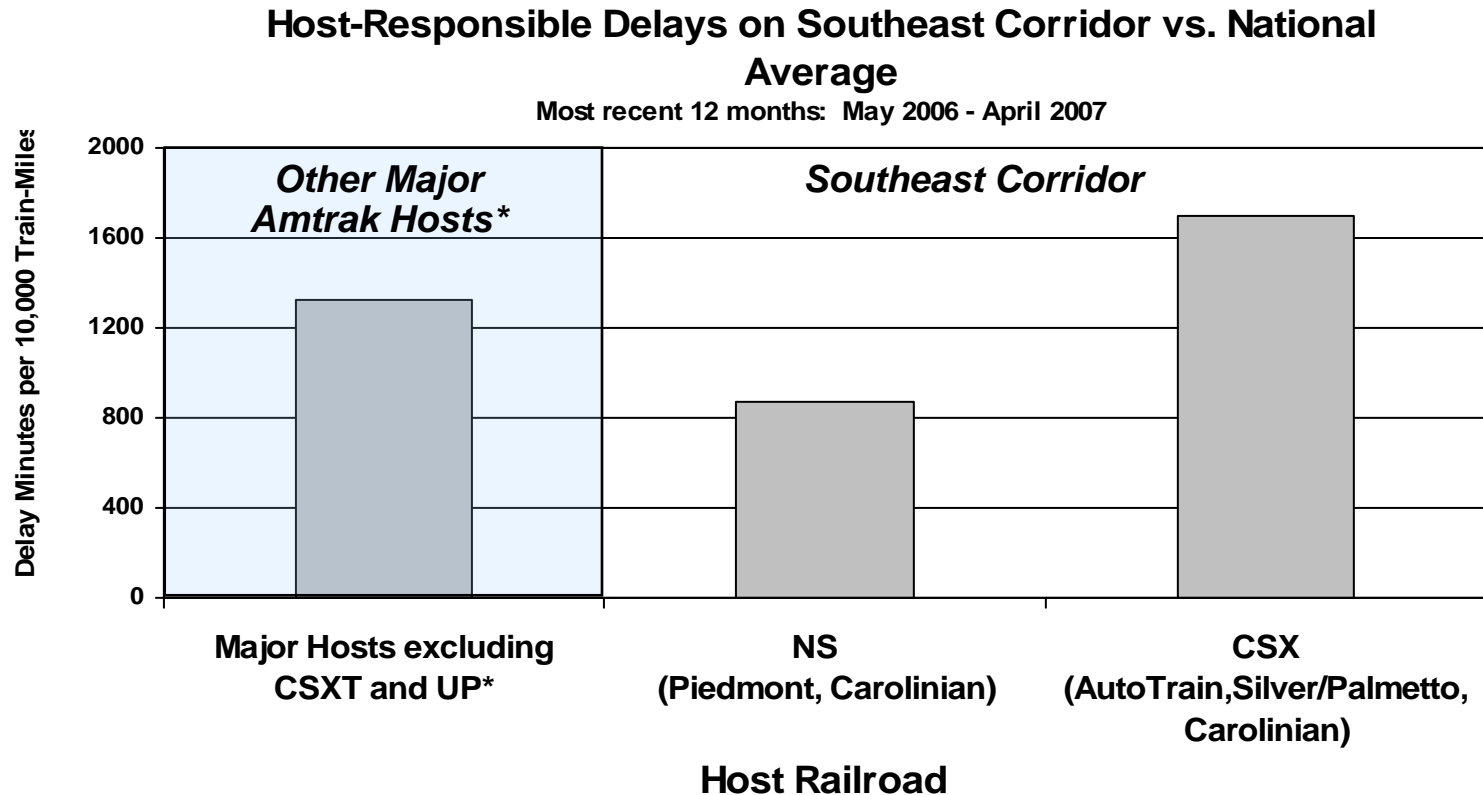
Service	Pure Run Time	Scheduled Dwell Time	Recovery Time	Total Run Time
Auto Train	865	15	170	1,050
Silver Meteor	1,290	181	177	1,648
Silver Star	1,510	190	156	1,857
Palmetto	736	91	51	878
Carolinian	636	89	65	789



Note: The Piedmont is excluded from the table above since its short run (189 minutes, 174 miles) makes its schedule composition incomparable to the longer-distance trains shown above.

# Host-responsible delay minutes/train-mile in the Southeast Corridor on CSX are 29% above average of Other Major Amtrak Hosts; delays on NS are 34% below average

Primary Host-Responsible Delays are: Train Interference and Routing, Slow Orders, Signals



\*"Other Major Amtrak Hosts" includes BNSF, CN, CP, and NS; excludes UP, which signed an agreement with Amtrak in April, 2007, to reduce slow orders by up to 80% on selected major routes; also excludes Amtrak Northeast Corridor.

## Root Causes of Delays: Page 1 of 4

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- Most Southeast Corridor delays occur while Amtrak trains are on CSX and NS
  - About 90% of delays on 84% of train-miles
- This Plan focuses primarily on this majority of delay; however, reductions in delays on Amtrak’s Northeast Corridor are also included

### Delay Minutes by Route and Responsibility

Aug 2006 – Apr 2007

#### Delay Minutes Occuring on Each Host Railroad

Route	Amtrak (NEC)	CSXT*	NS	Total
Auto Train	-	100%	-	100%
Silver Meteor	10%	90%	-	100%
Silver Star	9%	90%	2%	100%
Palmetto	9%	91%	-	100%
Carolinian **	12%	65%	23%	100%
Piedmont **	-	-	100%	100%

\*Includes FDOT, which is maintained and dispatched by CSXT

\*\* Corridor train

## Root Causes of Delays: Page 2 of 4

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- While on CSX and NS, the majority of delay minutes are due to host-railroad responsible causes

### Delay Minutes by Route and Responsibility

Aug 2006 – Apr 2007

	Delay Minute Responsibility While on CSXT and NS				Total
	Amtrak	Host-Responsible		3rd Party	
		CSXT*	NS		
<b>Auto Train</b>	9%	88%	-	3%	100%
<b>Silver Meteor</b>	14%	83%	-	3%	100%
<b>Silver Star</b>	16%	78%	2%	4%	100%
<b>Palmetto</b>	10%	87%	-	3%	100%
<b>Carolinian **</b>	16%	61%	17%	6%	100%
<b>Piedmont **</b>	20%	-	69%	11%	100%

\*Includes FDOT, which is maintained and dispatched by CSXT

\*\* Corridor Train

## Root Causes of Delays: Page 3 of 4

- The primary sources of delay are dispatching (Train Interference) and Slow Orders

### Delay Minutes by Route and Responsibility

Aug 2006 – Apr 2007

Service	Host-Responsible Delay Minutes as % of Delay Minutes While on CSXT* and NS						
	Dispatching-Related			Infrastructure-Related		Other Host-	
	Frt Train Interference	Psgr Train Interference	Routing/ Crossovers	Slow Orders	Signal Delays	Resp	Total
Auto Train	28%	11%	7%	28%	11%	3%	88%
Silver Meteor	27%	13%	4%	26%	10%	4%	83%
Silver Star	20%	13%	4%	23%	16%	4%	80%
Palmetto	29%	13%	8%	19%	12%	5%	87%
Carolinian **	21%	13%	8%	14%	17%	5%	78%
Piedmont **	30%	13%	1%	8%	15%	1%	69%
<i>SE Corr Avg</i>	25%	12%	6%	22%	13%	4%	82%

\*Includes FDOT, which is maintained and dispatched by CSXT

\*\* Corridor Train

## Root Causes of Delays: Page 4 of 4

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### Summary

- About 90% of all Southeast Corridor delay minutes occur while trains are on CSX and NS (84% of Southeast Corridor train-miles)
- While on CSX and NS, 82% of all delay minutes come from host-responsible causes
  - 43% Dispatching-related
  - 35% Infrastructure-related
  - 4% Other
- Another significant delay cause is heat orders: While heat order delays appear small if averaged over the entire year, they essentially preclude on-time arrivals on the days when they are in effect

# Southeast Corridor Improvement Plan Summary

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- The primary driver of poor Southeast Corridor OTP is delay in excess of recovery time, due to:
  - Slow orders (*Auto Train, Silver Meteor, Silver Star* routes)
  - Delays passing through major track maintenance work (all routes)
  - Heat orders (all routes)
  - Host Dispatching and Operating Delays (all routes)
- Other improvement opportunities include:
  - Amtrak train scheduling and slotting (*Palmetto*)
  - Amtrak station dwell, mechanical, and Northeast Corridor dispatching/engineering delays (all routes)
- This Plan proposes near- and long-term Action Items to address each of the above delays, with Delay Budgets to manage progress
  - Delay Budgets have been a critical tool in improving Acela Express OTP to almost 90%
  - Amtrak will seek host cooperation to jointly develop Delay Budgets for the second phase of this Plan
- Longer-term actions involve capital investments:
  - Designed to support 75% or better OTP while expanding capacity for freight and Amtrak growth
  - Enable removing time temporarily added to Amtrak schedules in the near term (*AutoTrain*)
  - Public funding can accelerate capacity investment to secure better passenger and freight performance and expansion now

## Implementing this Plan will require cooperation from many parties

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- Amtrak
- CSX
- Norfolk Southern
- State/Federal governments to fund capacity investments

➤ *Amtrak does not have the ability to achieve these goals on its own*

# Performance Improvement Plan

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## Reducing the impact of CSX heat orders is necessary so August-April OTP levels are not reduced during summer months

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- CSX heat orders cause significant delays to Amtrak trains on days when they are in effect
  - Trains operate 20mph below normal track speed, as slowly as 40mph
  - Delays are usually in the 20-40 minute range per trip
  - Delays can exceed 1 ½ hours per trip
  - First 2007 CSX heat orders were on March 23
- On-time operation is nearly impossible when heat orders are in effect
  - Between heat orders and other delays, Southeast Corridor trains are often 2 or more hours late on heat order days

### CSX Heat Order Effects by Service

Most Recent 12 Months: May 2006 – April 2007

Service	Days in Effect	Average Delay (Mins)	Max Typical Delay (Mins)
Palmetto	82	42	79
Carolinian	83	41	87
Silver Meteor	157	34	83
Silver Star	159	31	107
Auto Train	103	23	47

# Heat orders are a far larger source of delay on CSX than on other Amtrak hosts

- Heat orders are a frequent occurrence on CSX: 168 days during period May 2006 to April 2007
  - During the same 12 month period, Amtrak had 7 heat order days and FDOT had 7
- Most CSX heat order delays are driven by differences in how CSX administers heat orders, compared to typical practice in the rest of the rail industry

## Comparison of Heat Order Management – CSX vs. Typical for Rest of Rail Industry

	Rest of Industry	CSX
<b>Locations</b>	Applied at specific locations	Applied to entire subdivisions (100-200 mile segments)*
<b>Temperature thresholds</b>	95-100 degrees  Based on actual temperatures	85-90 degrees (90-95 in southern FL)  Based on forecasted temperatures
<b>When Effective</b>	As needed based on actual temperatures	1pm – 7pm **
<b>How Applied</b>	Limit maximum speed (usually limited to 50-70mph for passenger trains)	Reduce 20mph below normal speeds, which can result in passenger trains traveling as slowly as 40 mph

\* CSX policy is to apply heat orders to entire subdivisions if more than 3 locations within a subdivision are affected. In practice, CSX heat orders almost always cover entire subdivisions rather than specific locations (other criteria also apply to the decision-making process).

\*\*CSX policy is to remove heat orders if actual conditions differ from forecast or change. In practice, this is rarely done and heat orders generally remain until 7pm.

## Since the end of the study period (April 30), heat orders have driven a severe deterioration in Southeast Corridor performance

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- The week of June 5, the *Silver Meteor*, *Palmetto*, and *Carolinian* were 0% on time. The *Silver Star* was 7% on time.
- Two thirds of *Palmetto* trips arrived over three hours late
- One third of *Carolinian* trips arrived over three hours late

### ***Endpoint Arrivals by Lateness Threshold*** *Showing percentage of trains arriving within each lateness threshold* *Week of June 5, 2007*

	<b><u>30 Min</u></b>	<b><u>90 Min</u></b>	<b><u>3 Hr</u></b>
Auto Train	71%	93%	100%
Silver Meteor	0%	21%	64%
Silver Star	7%	36%	64%
Palmetto	0%	7%	29%
Carolinian	0%	14%	64%

## Plan for CSX Heat Orders

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- Each host railroad must determine what is safe from a track engineering perspective
- CSX is reviewing application of heat orders including:
  - Possible application of heat orders to specific track segments, not an entire subdivision, resulting in fewer miles operated at reduced speed
  - Track-specific application of heat orders between milepost locations
- Additional benefits can be derived from
  - CSX removing heat orders each day as soon as weather conditions no longer warrant them
  - Continuation of tie and surfacing work (“hardening” infrastructure)
- These changes could eliminate significant CSX heat order delays

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## Slow orders significantly delay Southeast Corridor trains

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### Average Slow Order Delay Minutes per Trip, by Host Railroad August 2006 – April 2007

Service	Host Railroad				Total
	CSX	FDOT	NS	Amtrak	
Silver Meteor	52	4	-	0	57
Silver Star	52	4	1	0	57
Auto Train	45	-	-	-	45
Palmetto	24	-	-	0	24
Carolinian **	13	-	3	0	16

Note: FDOT portion of route is maintained by CSX

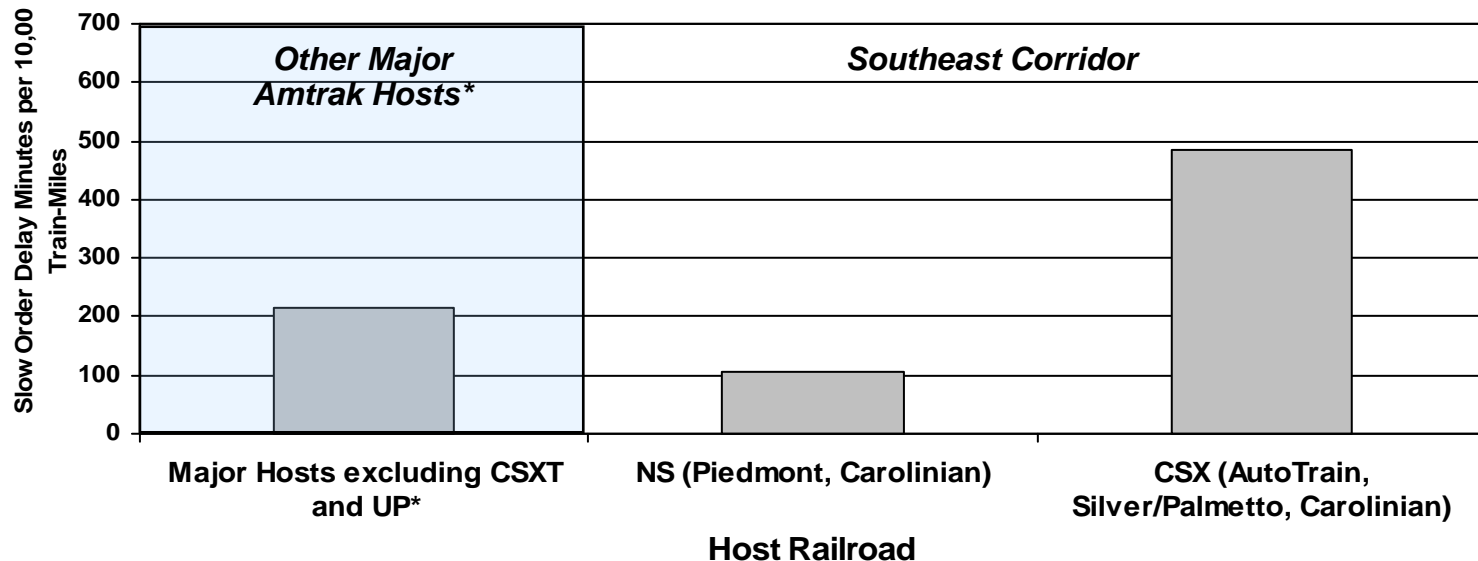
\*\* Corridor Train

# Slow order delay minutes per train-mile in the Southeast Corridor on CSX are substantially higher than on Amtrak's other major hosts

- CSX slow order minutes/train-mile are 126% above average of other major hosts\*

## Slow Orders on Southeast Corridor vs. National Average

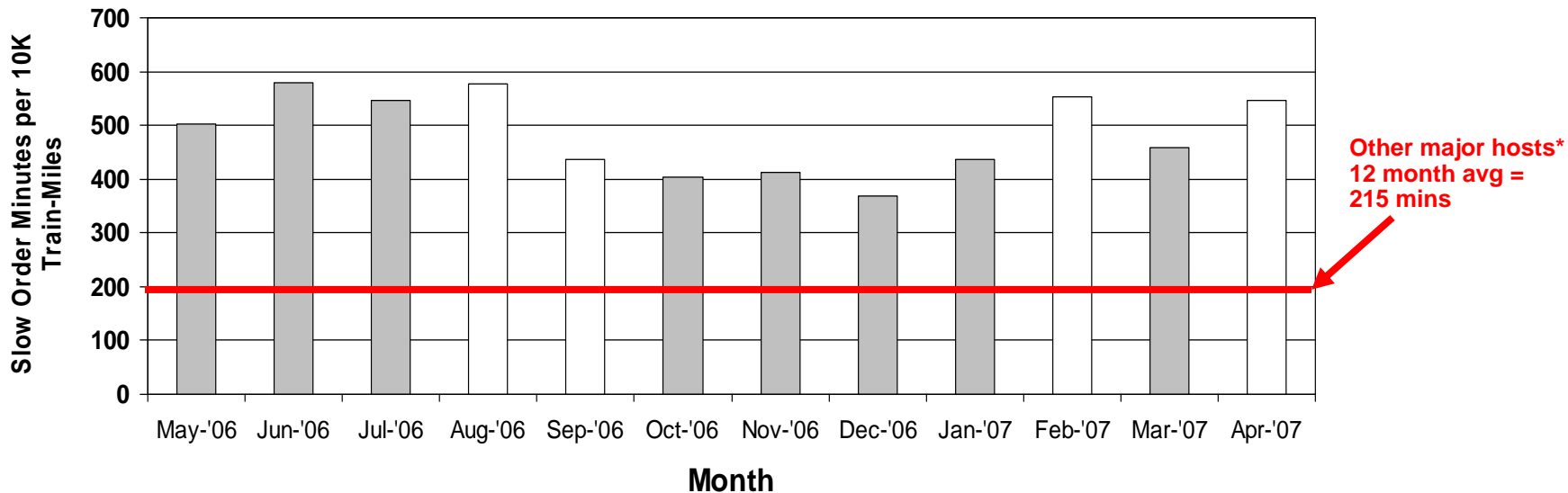
Most recent 12 months: May 2006 - April 2007



\*"Other Major Amtrak Hosts" includes BNSF, CN, CP, and NS; excludes UP, which signed an agreement with Amtrak in April, 2007, to reduce slow orders by up to 80% on selected major routes; also excludes Amtrak Northeast Corridor.

# Although CSX slow orders are higher during major trackwork, they create substantial delays throughout the year

Monthly CSX Slow Orders on Southeast Corridor  
*Major Trackwork Periods shown in white*



**\*\*Other Major Hosts\*\* includes BNSF, CN, CP, and NS; excludes UP, which signed an agreement with Amtrak in April, 2007, to reduce slow orders by up to 80% on selected major routes; also excludes Amtrak Northeast Corridor.**

## Plan for CSX Slow Orders

- CSX has made investments in Southeast Corridor rail, ties and surfacing since 2005

SUBDIVISION	2005		2006		2007	
	Rail (lf)	T&S (ea)	Rail (lf)	T&S (ea)	Rail (lf)	T&S (ea)
AUBURNDALE	9,382			82,913		62,627
CHARLESTON			101,269		66,528	17,800
JAX TERM	5,760	16,939	3,322	3,377		
LAKELAND			3,517			
MIAMI						97,987
NAHUNTA		49,632	2,184	10,125		
NORTH END	35,008	104,334	91,418	21,816	2,904	74,384
RFP	14,639	90,357	82,526	85,351	98,050	47,686
RICHMOND TERM	3,066		3,840			3,098
SANFORD	17,852	43,963	23,464		36,353	37,590
SAVANNAH			1,322		2,460	
SOUTH END	8,210		78,602		1,502	59,137
<b>Grand Total</b>	<b>93,917</b>	<b>305,225</b>	<b>391,464</b>	<b>203,582</b>	<b>207,797</b>	<b>400,309</b>

*Exhibit shows TSC Rail and Tie units installed on the Southeast Corridor between Washington and Miami for the last three years. Estimated cost for rail installed is \$26.9M and for T&S work \$68.6M for a total cost of \$95.5M. This amount only includes the work done by the major SPT teams and does not include other signal and capital spent on the corridor.*

- CSX continue, and accelerate, its multi-year program of “hardening” Southeast Corridor infrastructure to bring slow order delays per Amtrak train-mile to or below the national average

# Performance Improvement Plan

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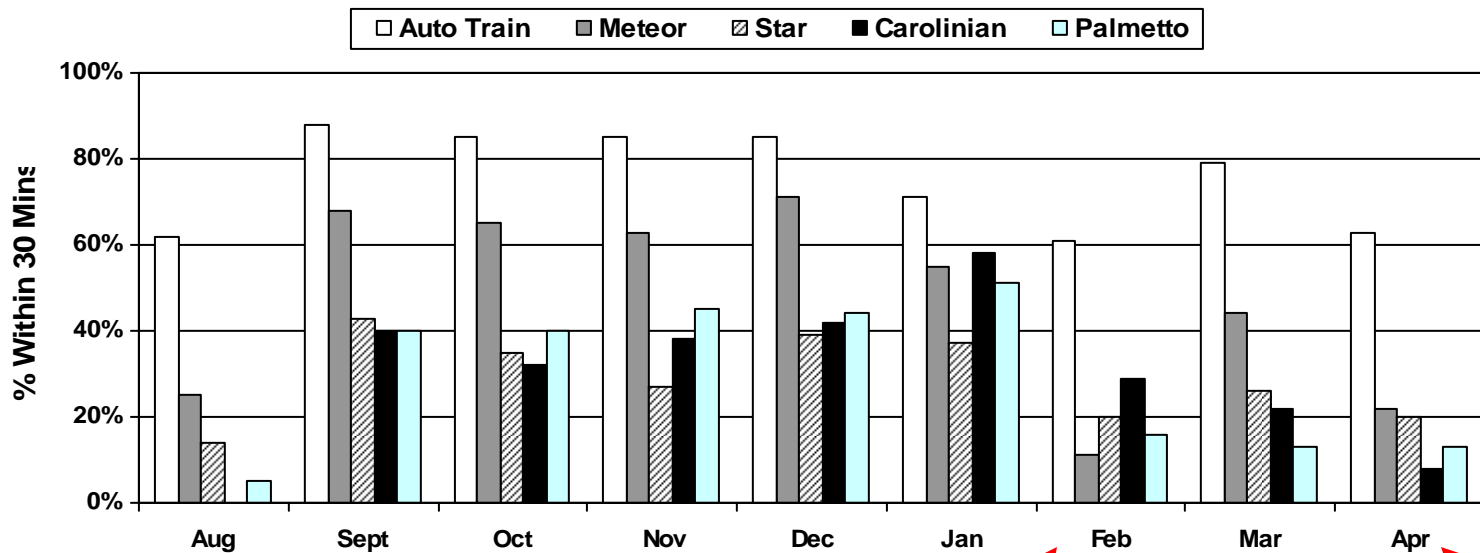
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# Performance declined sharply during CSX's Spring 2007 trackwork projects

- Delays passing through trackwork can exceed 2-3 hours
  - Combined with other non-trackwork delays, trains were up to 3-4 hours late

## Endpoint On-Time Performance

August 2006 - April 2007



Note: Piedmont not shown because it does not operate on CSX and was not affected by CSX's spring trackwork.

February:  
South End Sub

April:  
North End,  
Charleston, and  
Hamlet Subs

## Plan for CSX Trackwork

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- Maintenance is essential for reliable performance
- However, the impact of maintenance on passengers must be minimized
- In cooperation with CSX, Amtrak has previously made major adjustments for Southeast Corridor trackwork
  - Rescheduled Amtrak trains
  - Combined Amtrak trains
  - Bus-bridged around maintenance work
- Going forward
  - CSX create specific operating plans to manage delays to reasonable levels during major trackwork projects
  - CSX and Amtrak estimate unavoidable delay to Amtrak trains passing work areas, given operating plans and proactive CSX management
  - Amtrak add this temporary maintenance recovery time to public timetables and Delay Budgets
  - Temporary maintenance recovery time to be removed upon scheduled completion of trackwork

# Performance Improvement Plan

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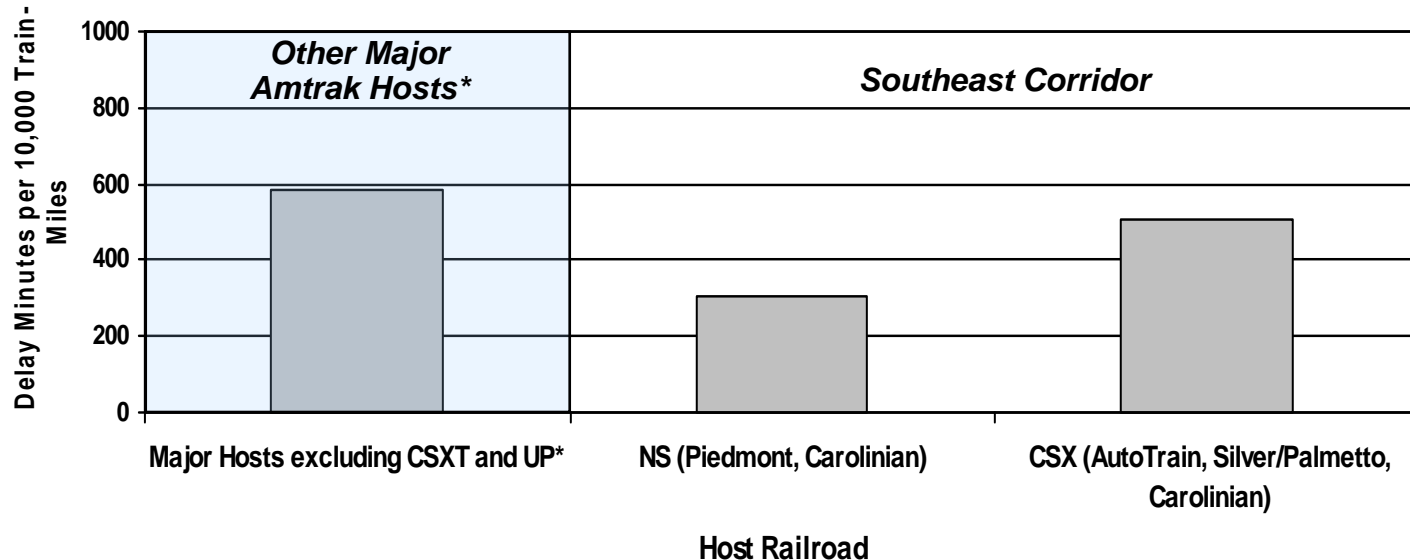
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## Freight Train Interference (FTI) delays in the Southeast Corridor on CSX are 13% below average of Other Major Amtrak Hosts; delays on NS are 48% below average

- To achieve 75% OTP, must continue to drive FTI down below national average
  - On CSX, high levels of slow orders, heat orders, and trackwork delays consume recovery time that would otherwise have been available for FTI
  - Near-term, must drive down FTI due to high levels of other delays
  - Long-term, must reduce all types of delay

### Freight Train Interference on Southeast Corridor vs. National Average

Most recent 12 months: May 2006 - April 2007



**\*\*Other Major Amtrak Hosts\*\* includes BNSF, CN, CP, and NS; excludes UP, which signed an agreement with Amtrak in April, 2007, to reduce slow orders by up to 80% on selected major routes; also excludes Amtrak Northeast Corridor.**

## Plan for Dispatching Delays

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- Near Term: CSX and NS can reduce dispatching delays in the short term through additional management focus on passenger train performance
- Long Term: Capacity investments will allow achieving and sustaining delay reductions while also providing for freight and Amtrak growth
- Amtrak has offered to consider temporarily increasing host railroad delay budgets and public schedules in the near term if the host railroad:
  - Commits to adhere to the delay budget and operate trains above an OTP standard, with enforcement/penalty provisions; and
  - Reduce their portion of the delay budget (allowing extra time to be taken out of schedules) as capital investments are made
- Amtrak and CSX have tested an early version of this concept with the AutoTrain

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## Action Items and Delay Budgets

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- For each Southeast Corridor route, this Plan contains
  - A list of Action Items needed to achieve 75% OTP
  - A Delay Budget showing the minutes of delay which must be removed to achieve 75% OTP
- Action Items and Delay Budgets are based on the root causes of delay
- Delay Budgets are marked “Example”
  - Reductions for each delay type and time period are examples; however, the Grand Total delay reduction shown is the amount necessary to achieve 75% OTP
- Amtrak will seek host participation in joint analyses to construct Delay Budgets to achieve 75% OTP. Delay reduction will occur in phases, including
  - Early actions to improve OTP with the current network;
  - Delay reductions from continued CSX infrastructure hardening;
  - Delay reductions from capital investments based on modeling;
  - Possible temporary schedule adjustments if accompanied by host commitment to improve OTP while underlying causes of delay are addressed

# Performance Improvement Plan

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1. **Background: Chronology and Root Causes of Delay**
2. **Near-Term: System-Level Actions (All Trains)**
  1. Heat Orders
  2. Slow Orders
  3. Track Maintenance
  4. Dispatching Delays
3. **Near-Term: Action Items and Delay Budgets for Individual Routes**

1. Auto Train

2. Silver Meteor

3. Silver Star

4. Palmetto

5. Carolinian

6. Piedmont

4. **Long-Term: Infrastructure Investments**

5. **Measures, Milestones, Progress**

## Amtrak recently lengthened the Auto Train schedule, with mixed results

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- Amtrak agreed to add 1 hour to the AutoTrain's public timetable if CSX met the following conditions for a three-month test period (August 7 – November 6, 2006):
  - Operate the Auto Train at 80% endpoint public on-time performance calculated as if an extra hour of recovery time were in the schedule
  - Not reduce the performance of the other Amtrak trains on the Southeast Corridor below their performance of the same period the previous year
- Amtrak contributions
  - Added second locomotive to Silver Service trains for reliability and acceleration
  - Reduced AutoTrain equipment service and turn time by 1 hour
- CSX sustained the target level of performance for 8 months, August, 2006 - March 2007
  - Exception: Periods during February 2007 trackwork projects in South Carolina
- Based on CSX's success, Amtrak added 1 hour to the public timetable effective April 2, 2007, contingent on OTP of AutoTrain and other Southeast Corridor trains remaining at or above the level of the Test period
- Also on April 2, CSX began major trackwork projects on the North End, Charleston, Hamlet, and Auburndale/Miami subdivisions. Performance declined substantially, but has partly rebounded since the North End and Charleston Sub projects ended
  - Due partly to heat orders, performance of trains other than Auto Train remains substantially below Test performance

# Action Items to Sustain Auto Train OTP at 75% while removing time added temporarily to schedule

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Action Item	Responsibility
<p><u>Heat Orders</u>: Eliminate most heat order delays through improved administration of heat orders. Failure to do so would result in approximately 9%-point OTP drop during heat order season.</p>	CSX
<p><u>Slow Orders</u>: Reduce slow order delays to approach slow order delay average of other major Amtrak host railroads</p>	CSX
<p><u>Major Trackwork</u>: Create and execute improved train scheduling and handling during major trackwork projects to enable operation within Scheduled Recovery Time plus temporary maintenance recovery time.</p>	CSX and Amtrak
<p><u>Slotting and Scheduling</u>: Remove extra hour added to schedule as delays are removed, to sustain 75% OTP</p>	CSX and Amtrak

## Auto Train Example Delay Budget: Average Delay Minutes per Trip Excluding Major Trackwork Periods\*

		Baseline*	Budget				Total Reduction Jul '09 vs.	
Responsibility	Delay Type	Aug '06-Apr '07	Phase 1	Prior Actions + Phase 2	Prior Actions + Phase 3	Final: Prior Actions + Phase 4	Mins/Trip Reduction	Pct Reduction
Amtrak - Off NEC	Transportation	6.7	6.3	5.9	5.5	5.1	1.6	24%
	Mechanical	3.2	3.0	2.8	2.6	2.4	0.8	24%
	Late Inbound Train	1.9	1.8	1.7	1.6	1.5	0.5	24%
<b>Amtrak - Off NEC Total</b>		<b>11.8</b>	<b>11.1</b>	<b>10.4</b>	<b>9.7</b>	<b>9.0</b>	<b>2.9</b>	<b>24%</b>
CSX System-Level Actions	Slow Orders	41.6	39.1	36.6	34.1	31.5	10.1	24%
	Heat Orders	1.7	1.6	1.5	1.4	1.3	0.4	24%
<b>CSX System-Level Actions Total</b>		<b>43.4</b>	<b>40.7</b>	<b>38.1</b>	<b>35.5</b>	<b>32.8</b>	<b>10.5</b>	<b>24%</b>
CSX Train Operations	Freight Train Interf.	43.7	41.1	38.4	35.8	33.1	10.6	24%
	Passenger Train Interf.	16.4	15.4	14.4	13.4	12.4	4.0	24%
	Routing/Crossovers	10.4	9.7	9.1	8.5	7.8	2.5	24%
	Commuter Train Interf.	0.6	0.5	0.5	0.5	0.4	0.1	24%
	Other	19.3	18.2	17.0	15.8	14.6	4.7	24%
<b>CSX Train Operations Total</b>		<b>90.4</b>	<b>84.9</b>	<b>79.5</b>	<b>74.0</b>	<b>68.5</b>	<b>22.0</b>	<b>24%</b>
<b>3rd Party Total</b>		<b>2.5</b>	<b>2.3</b>	<b>2.2</b>	<b>2.0</b>	<b>1.9</b>	<b>0.6</b>	<b>24%</b>
<b>Grand Total</b>		<b>148.1</b>	<b>139.1</b>	<b>130.1</b>	<b>121.1</b>	<b>112.1</b>	<b>36.0</b>	<b>24%</b>
Endpoint Public OTP		77%	75%	75%	75%	75%		

**Note: Baseline OTP of 77% assumes hour longer schedule for entire August 2006 – April 2007 Baseline period.**

**Budget assumes that the schedule will be steadily returned to its original length as delays are reduced, maintaining 75% OTP**

Note: Reductions for each delay type and time period are examples; however, the Grand Total delay reduction shown is necessary to achieve 75% OTP.

\*Assumes Amtrak and CSX work together in advance of major trackwork periods to adjust the delay budget to reflect a reasonable level of trackwork-related delay, while reflecting these adjustments in the public schedule to maintain high OTP.



# Performance Improvement Plan

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1. **Background: Chronology and Root Causes of Delay**
2. **Near-Term: System-Level Actions (All Trains)**
  1. **Heat Orders**
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  3. **Track Maintenance**
  4. **Dispatching Delays**
3. **Near-Term: Action Items and Delay Budgets for Individual Routes**
  1. **Auto Train**
  2. **Silver Meteor**
  3. **Silver Star**
  4. **Palmetto**
  5. **Carolinian**
  6. **Piedmont**
4. **Long-Term: Infrastructure Investments**
5. **Measures, Milestones, Progress**

## Action Items to Achieve 75% Silver Meteor OTP

- Slow- and heat-order reductions and trackwork planning would increase Meteor performance almost to goal
- In the interim, additional dispatching focus is required to achieve 75% OTP

Action Item	Responsibility
<u>Heat Orders</u> : Eliminate most heat order delays through improved administration of heat orders. Failure to do so would result in approximately 28%-point OTP drop during heat order season.	CSX
<u>Slow Orders</u> : Reduce slow order delays to approach slow order delay average of other major Amtrak host railroads	CSX
<u>Major Trackwork</u> : Create and execute plans to improve train scheduling and handling through major trackwork projects within scheduled recovery time plus temporary maintenance recovery time.	CSX and Amtrak
<u>Scheduling and Slotting</u> : Change schedule slots to improve equipment servicing** for on-time departures	CSX and Amtrak
<u>Dispatching and Amtrak Delays</u> : Reduce by 16%, or less if other delay reductions exceed 16%.	CSX and Amtrak

\*\*Note: Second locomotive has been added for reliability and acceleration; other systemwide equipment reliability initiatives are also underway.

## Silver Meteor Example Delay Budget: Average Delay Minutes per Trip Excluding Major Trackwork Periods\*

		Baseline*	Budget				Total Reduction Jul '09 vs.	
Responsibility	Delay Type	Aug '06-Apr '07	Phase 1	Prior Actions + Phase 2	Prior Actions + Phase 3	Final: Prior Actions + Phase 4	Mins/Trip Reduction	Pct Reduction
Amtrak - NEC	Mechanical	6.2	6.0	5.7	5.5	5.2	1.0	16%
	Train Interference	5.4	5.2	5.0	4.8	4.6	0.9	16%
	Station Dwell	2.6	2.5	2.4	2.3	2.2	0.4	16%
	Engineering	2.4	2.3	2.2	2.1	2.0	0.4	16%
	Other Transportation	0.6	0.6	0.6	0.5	0.5	0.1	16%
	Late Inbound Train	0.2	0.2	0.2	0.2	0.2	0.0	16%
<b>Amtrak - NEC Total</b>		<b>17.6</b>	<b>16.8</b>	<b>16.1</b>	<b>15.4</b>	<b>14.7</b>	<b>2.9</b>	<b>16%</b>
Amtrak - Off NEC	Station Dwell	11.6	11.2	10.7	10.2	9.7	1.9	16%
	Mechanical	7.5	7.2	6.9	6.6	6.3	1.2	16%
	Other Transportation	7.3	7.0	6.7	6.4	6.1	1.2	16%
	Late Inbound Train	1.5	1.5	1.4	1.3	1.3	0.2	16%
<b>Amtrak - Off NEC Total</b>		<b>28.0</b>	<b>26.9</b>	<b>25.7</b>	<b>24.6</b>	<b>23.4</b>	<b>4.6</b>	<b>16%</b>
CSX System-Level Actions	Slow Orders	54.8	52.6	50.3	48.1	45.9	8.9	16%
	Heat Orders	4.3	4.1	3.9	3.8	3.6	0.7	16%
<b>CSX System-Level Actions Total</b>		<b>59.1</b>	<b>56.7</b>	<b>54.3</b>	<b>51.8</b>	<b>49.4</b>	<b>9.6</b>	<b>16%</b>
CSX Train Operations	Freight Train Interf.	50.4	48.3	46.3	44.2	42.2	8.2	16%
	Passenger Train Interf.	24.3	23.3	22.3	21.3	20.4	4.0	16%
	Routing/Crossovers	7.2	6.9	6.6	6.3	6.0	1.2	16%
	Commuter Train Interf.	6.8	6.5	6.2	6.0	5.7	1.1	16%
	Other	25.8	24.8	23.7	22.7	21.6	4.2	16%
<b>CSX Train Operations Total</b>		<b>114.5</b>	<b>109.8</b>	<b>105.2</b>	<b>100.5</b>	<b>95.8</b>	<b>18.7</b>	<b>16%</b>
<b>3rd Party Total</b>		<b>3.1</b>	<b>2.9</b>	<b>2.8</b>	<b>2.7</b>	<b>2.6</b>	<b>0.5</b>	<b>16%</b>
<b>Grand Total</b>		<b>222.2</b>	<b>213.2</b>	<b>204.1</b>	<b>195.0</b>	<b>186.0</b>	<b>36.2</b>	<b>16%</b>
Endpoint Public OTP		33%	44%	54%	65%	75%		

Note: Reductions for each delay type and time period are examples; however, the Grand Total delay reduction shown is necessary to achieve 75% OTP.

\*Assumes Amtrak and CSX work together in advance of major trackwork periods to adjust the delay budget to reflect a reasonable level of trackwork-related delay, while reflecting these adjustments in the public schedule to maintain high OTP.



# Performance Improvement Plan

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1. **Background: Chronology and Root Causes of Delay**
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  1. **Heat Orders**
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  4. **Dispatching Delays**
3. **Near-Term: Action Items and Delay Budgets for Individual Routes**
  1. **Auto Train**
  2. **Silver Meteor**
  3. **Silver Star**
  4. **Palmetto**
  5. **Carolinian**
  6. **Piedmont**
4. **Long-Term: Infrastructure Investments**
5. **Measures, Milestones, Progress**

## Action Items to Achieve 75% Silver Star OTP

–CSX has emphasized eliminating seriously late Silver Stars

–Amtrak may propose Silver Star schedule slot changes due to marketing initiatives, as well as to lengthen equipment turn time to improve servicing for on-time departures

Action Item	Responsibility
<u>Heat Orders</u> : Eliminate most heat order delays through improved administration of heat orders. Failure to do so would result in approximately 15%-point OTP drop during heat order season.	CSX
<u>Slow Orders</u> : Reduce slow order delays to approach slow order delay average of other major Amtrak host railroads	CSX
<u>Major Trackwork</u> : Create and execute plans to improve train scheduling and handling through major trackwork projects within scheduled recovery time plus temporary maintenance recovery time.	CSX and Amtrak
<u>Scheduling and Slotting</u> : Change schedule slots to improve equipment servicing** for on-time departures	CSX and Amtrak
<u>Dispatching and Amtrak Delays</u> : Reduce by 29%, or less if other delay reductions exceed 29%.	CSX and Amtrak

\*\*Note: Second locomotive has been added for reliability and acceleration; other systemwide equipment reliability initiatives are also underway.

## Silver Star Example Delay Budget: Average Delay Minutes per Trip Excluding Major Trackwork Periods\*

		Baseline*	Budget				Total Reduction Jul '09 vs.	
Responsibility	Delay Type	Aug '06-Apr '07	Phase 1	Prior Actions +	Prior Actions +	Final:	Mins/Trip Reduction	Pct Reduction
				Phase 2	Phase 3	Phase 4		
Amtrak - NEC	Train Interference	6.5	6.0	5.6	5.1	4.6	1.9	29%
	Mechanical	4.6	4.3	3.9	3.6	3.3	1.3	29%
	Station Dwell	3.0	2.7	2.5	2.3	2.1	0.9	29%
	Engineering	2.7	2.5	2.3	2.1	1.9	0.8	29%
	Other Transportation	0.8	0.7	0.7	0.6	0.5	0.2	29%
	Late Inbound Train	0.0	0.0	0.0	0.0	0.0	0.0	29%
<b>Amtrak - NEC Total</b>		<b>17.5</b>	<b>16.3</b>	<b>15.0</b>	<b>13.7</b>	<b>12.5</b>	<b>5.0</b>	<b>29%</b>
Amtrak - Off NEC	Station Dwell	15.9	14.8	13.6	12.5	11.3	4.6	29%
	Other Transportation	12.6	11.7	10.8	9.9	9.0	3.6	29%
	Mechanical	9.5	8.8	8.2	7.5	6.8	2.7	29%
	Late Inbound Train	1.0	0.9	0.9	0.8	0.7	0.3	29%
<b>Amtrak - Off NEC Total</b>		<b>39.1</b>	<b>36.3</b>	<b>33.5</b>	<b>30.6</b>	<b>27.8</b>	<b>11.2</b>	<b>29%</b>
CSX System-Level Actions	Slow Orders	53.0	49.2	45.4	41.6	37.7	15.3	29%
	Heat Orders	5.5	5.1	4.7	4.3	3.9	1.6	29%
<b>CSX System-Level Actions Total</b>		<b>58.5</b>	<b>54.3</b>	<b>50.1</b>	<b>45.9</b>	<b>41.7</b>	<b>16.9</b>	<b>29%</b>
CSX Train Operations	Freight Train Interf.	49.6	46.0	42.4	38.9	35.3	14.3	29%
	Passenger Train Interf.	33.0	30.7	28.3	25.9	23.5	9.5	29%
	Routing/Crossovers	10.5	9.8	9.0	8.3	7.5	3.0	29%
	Commuter Train Interf.	3.5	3.3	3.0	2.8	2.5	1.0	29%
	Other	46.5	43.1	39.8	36.4	33.1	13.4	29%
<b>CSX Train Operations Total</b>		<b>143.1</b>	<b>132.8</b>	<b>122.5</b>	<b>112.2</b>	<b>101.9</b>	<b>41.2</b>	<b>29%</b>
<b>3rd Party Total</b>		<b>7.5</b>	<b>6.9</b>	<b>6.4</b>	<b>5.8</b>	<b>5.3</b>	<b>2.1</b>	<b>29%</b>
<b>Grand Total</b>		<b>265.7</b>	<b>246.6</b>	<b>227.5</b>	<b>208.4</b>	<b>189.2</b>	<b>76.5</b>	<b>29%</b>
<b>Endpoint Public OTP</b>		<b>32%</b>	<b>43%</b>	<b>54%</b>	<b>64%</b>	<b>75%</b>		

Note: Reductions for each delay type and time period are examples; however, the Grand Total delay reduction shown is necessary to achieve 75% OTP.

\*Assumes Amtrak and CSX work together in advance of major trackwork periods to adjust the delay budget to reflect a reasonable level of trackwork-related delay, while reflecting these adjustments in the public schedule to maintain high OTP.



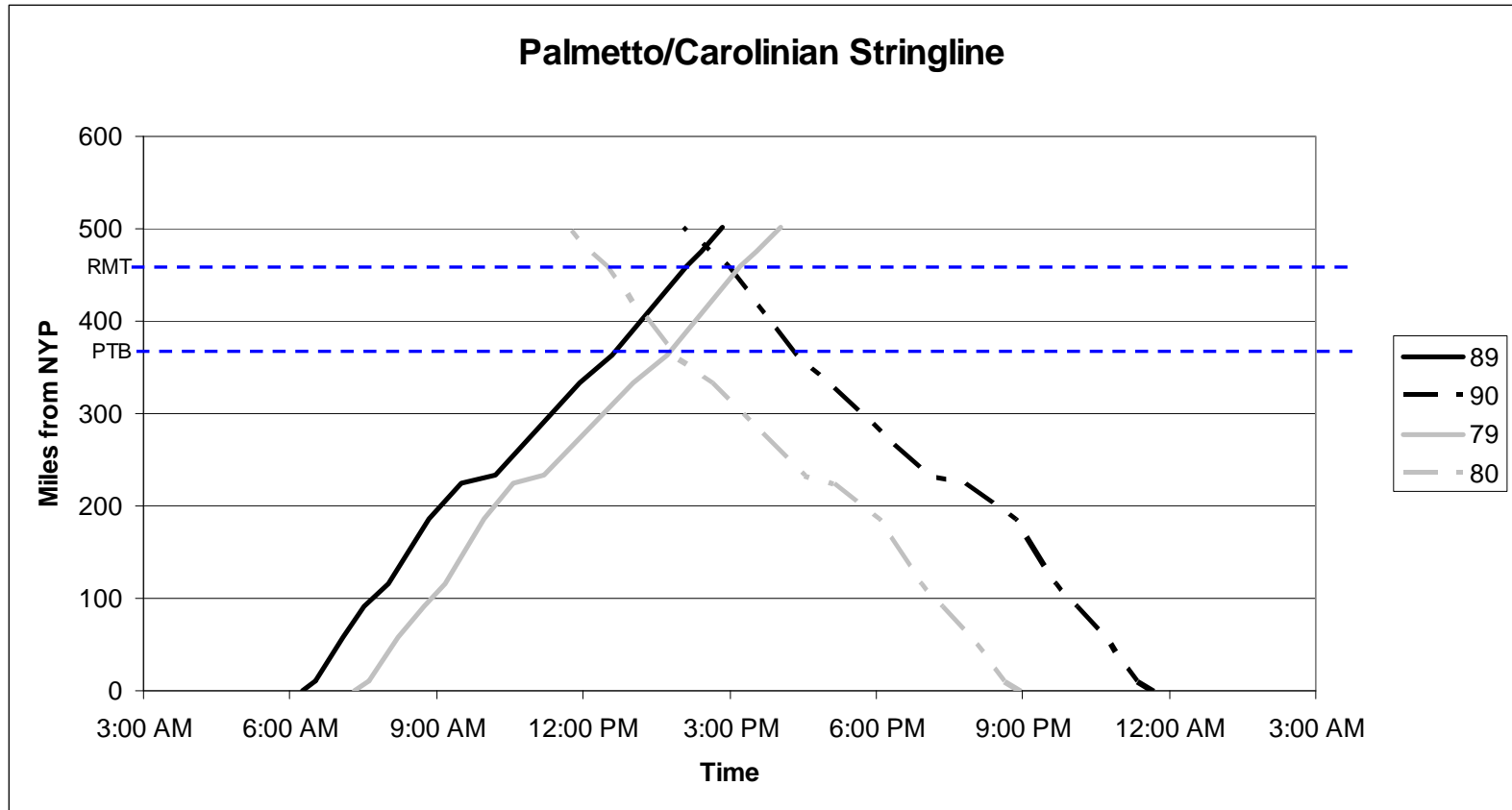
# Performance Improvement Plan

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## Potential Palmetto schedule could help CSX reduce dispatching delays

- Move meets between trains 89/90 and 79/90 off of the most congested portion of the single-track North End Subdivision
- Also potentially add 24-29 minutes to the Palmetto schedule



## Action Items to Achieve 75% Palmetto OTP

Action Item	Responsibility
<p><u>Heat Orders</u>: Eliminate most heat order delays through improved administration of heat orders. Failure to do so would result in approximately 13%-point OTP drop during heat order season.</p>	CSX
<p><u>Slow Orders</u>: Reduce slow order delays to approach slow order delay average of other major Amtrak host railroads</p>	CSX
<p><u>Major Trackwork</u>: Create and execute improved train scheduling and handling during major trackwork projects to enable operation within scheduled recovery time plus temporary maintenance recovery time.</p>	CSX and Amtrak
<p><u>Slotting and Scheduling</u>: Lengthen public schedules by 29 minutes southbound, 24 minutes northbound, and adjust meets</p>	CSX and Amtrak
<p><u>Dispatching and Amtrak Delays</u>: Reduce by 27%, or less if other delay reductions exceed 27%.</p>	CSX and Amtrak

## Palmetto Example Delay Budget: Average Delay Minutes per Trip Excluding Major Trackwork Periods\*

		Baseline*	Budget				Total Reduction Jul '09 vs.	
Responsibility	Delay Type	Aug '06-Apr '07	Phase 1	Prior Actions +	Prior Actions +	Final:	Mins/Trip Reduction	Pct Reduction
				Phase 2	Phase 3	Phase 4		
Amtrak - NEC	Mechanical	2.5	2.4	2.2	2.0	1.8	0.7	27%
	Engineering	2.0	1.9	1.7	1.6	1.5	0.5	27%
	Train Interference	1.6	1.5	1.4	1.3	1.2	0.4	27%
	Station Dwell	1.5	1.4	1.3	1.2	1.1	0.4	27%
	Other Transportation	0.3	0.2	0.2	0.2	0.2	0.1	27%
	Late Inbound Train	0.0	0.0	0.0	0.0	0.0	0.0	27%
<b>Amtrak - NEC Total</b>		<b>7.9</b>	<b>7.4</b>	<b>6.8</b>	<b>6.3</b>	<b>5.8</b>	<b>2.1</b>	<b>27%</b>
Amtrak - Off NEC	Other Transportation	5.1	4.8	4.4	4.1	3.7	1.4	27%
	Station Dwell	4.7	4.4	4.1	3.7	3.4	1.3	27%
	Mechanical	3.8	3.6	3.3	3.1	2.8	1.0	27%
	Late Inbound Train	0.0	0.0	0.0	0.0	0.0	0.0	27%
<b>Amtrak - Off NEC Total</b>		<b>13.6</b>	<b>12.7</b>	<b>11.8</b>	<b>10.9</b>	<b>10.0</b>	<b>3.7</b>	<b>27%</b>
CSX System-Level Actions	Slow Orders	22.4	20.9	19.4	17.9	16.4	6.0	27%
	Heat Orders	3.4	3.2	3.0	2.7	2.5	0.9	27%
<b>CSX System-Level Actions Total</b>		<b>25.8</b>	<b>24.1</b>	<b>22.3</b>	<b>20.6</b>	<b>18.9</b>	<b>6.9</b>	<b>27%</b>
CSX Train Operations	Freight Train Interf.	33.1	30.9	28.6	26.4	24.2	8.9	27%
	Passenger Train Interf.	16.9	15.8	14.6	13.5	12.3	4.5	27%
	Routing/Crossovers	9.2	8.6	7.9	7.3	6.7	2.5	27%
	Commuter Train Interf.	0.3	0.3	0.3	0.3	0.2	0.1	27%
	Other	19.4	18.1	16.7	15.4	14.1	5.2	27%
<b>CSX Train Operations Total</b>		<b>78.8</b>	<b>73.5</b>	<b>68.2</b>	<b>62.9</b>	<b>57.6</b>	<b>21.2</b>	<b>27%</b>
<b>3rd Party Total</b>		<b>1.2</b>	<b>1.1</b>	<b>1.1</b>	<b>1.0</b>	<b>0.9</b>	<b>0.3</b>	<b>27%</b>
<b>Grand Total</b>		<b>127.4</b>	<b>118.9</b>	<b>110.3</b>	<b>101.7</b>	<b>93.2</b>	<b>34.3</b>	<b>27%</b>
<b>Endpoint Public OTP</b>		<b>33%</b>	<b>44%</b>	<b>54%</b>	<b>65%</b>	<b>75%</b>		

Note: Reductions for each delay type and time period are examples; however, the Grand Total delay reduction shown is necessary to achieve 75% OTP.

\*Assumes Amtrak and CSX work together in advance of major trackwork periods to adjust the delay budget to reflect a reasonable level of trackwork-related delay, while reflecting these adjustments in the public schedule to maintain high OTP.



# Performance Improvement Plan

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  5. **Carolinian**
  6. **Piedmont**
4. **Long-Term: Infrastructure Investments**
5. **Measures, Milestones, Progress**

## Action Items to Achieve 75% Carolinian OTP

Action Item	Responsibility
<p><u>Heat Orders</u>: Eliminate most heat order delays through improved administration of heat orders. Failure to do so would result in approximately 14%-point OTP drop during heat order season.</p>	CSX
<p><u>Slow Orders</u>: Reduce slow order delays to approach slow order delay average of other major Amtrak host railroads</p>	CSX
<p><u>Major Trackwork</u>: Create and execute improved train scheduling and handling during major trackwork projects to enable operation within scheduled recovery time plus temporary maintenance recovery time.</p>	CSX and Amtrak
<p><u>Dispatching and Amtrak Delays</u>: Reduce by 41%, or less if other delay reductions exceed 41%.</p>	CSX, NS, Amtrak

# Carolinian Example Delay Budget: Average Minutes per Trip

## Excluding Major Trackwork Periods\*

		Baseline*	Budget				Total Reduction Jul '09 vs.	
Responsibility	Delay Type	Aug '06-Apr '07	Prior Actions +			Final:	Mins/Trip Reduction	Pct Reduction
			Phase 1	Phase 2	Phase 3	Phase 4		
Amtrak - NEC	Train Interference	3.6	3.2	2.9	2.5	2.1	1.5	41%
	Station Dwell	2.3	2.0	1.8	1.6	1.4	0.9	41%
	Mechanical	2.0	1.8	1.6	1.4	1.2	0.8	41%
	Engineering	1.6	1.5	1.3	1.1	1.0	0.7	41%
	Other Transportation	0.4	0.4	0.4	0.3	0.3	0.2	41%
	Late Inbound Train	0.0	0.0	0.0	0.0	0.0	0.0	41%
<b>Amtrak - NEC Total</b>		<b>10.0</b>	<b>8.9</b>	<b>7.9</b>	<b>6.9</b>	<b>5.9</b>	<b>4.1</b>	<b>41%</b>
Amtrak - Off NEC	Station Dwell	11.5	10.3	9.2	8.0	6.8	4.7	41%
	Other Transportation	5.2	4.7	4.2	3.6	3.1	2.1	41%
	Mechanical	3.6	3.2	2.9	2.5	2.1	1.5	41%
	Late Inbound Train	0.3	0.2	0.2	0.2	0.2	0.1	41%
<b>Amtrak - Off NEC Total</b>		<b>20.6</b>	<b>18.5</b>	<b>16.4</b>	<b>14.3</b>	<b>12.2</b>	<b>8.4</b>	<b>41%</b>
CSX System-Level Actions	Slow Orders	12.6	11.3	10.0	8.8	7.5	5.2	41%
	Heat Orders	4.3	3.8	3.4	3.0	2.5	1.7	41%
<b>CSX System-Level Actions Total</b>		<b>16.9</b>	<b>15.2</b>	<b>13.5</b>	<b>11.7</b>	<b>10.0</b>	<b>6.9</b>	<b>41%</b>
CSX Train Operations	Freight Train Interf.	16.1	14.5	12.8	11.2	9.6	6.6	41%
	Passenger Train Interf.	9.5	8.6	7.6	6.6	5.6	3.9	41%
	Routing/Crossovers	8.7	7.8	6.9	6.0	5.1	3.5	41%
	Commuter Train Interf.	0.6	0.5	0.5	0.4	0.4	0.2	41%
	Other	17.6	15.8	14.0	12.2	10.4	7.2	41%
<b>CSX Train Operations Total</b>		<b>52.5</b>	<b>47.2</b>	<b>41.8</b>	<b>36.5</b>	<b>31.1</b>	<b>21.4</b>	<b>41%</b>
NS System-Level Actions	Slow Orders	2.0	1.8	1.6	1.4	1.2	0.8	41%
	Heat Orders	0.0	0.0	0.0	0.0	0.0	0.0	41%
<b>NS System-Level Actions Total</b>		<b>2.0</b>	<b>1.8</b>	<b>1.6</b>	<b>1.4</b>	<b>1.2</b>	<b>0.8</b>	<b>41%</b>
NS Train Operations	Freight Train Interf.	5.8	5.2	4.6	4.0	3.4	2.3	41%
	Passenger Train Interf.	4.5	4.1	3.6	3.2	2.7	1.9	41%
	Routing/Crossovers	0.6	0.5	0.5	0.4	0.3	0.2	41%
	Commuter Train Interf.	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Other	4.6	4.1	3.6	3.2	2.7	1.9	41%
<b>NS Train Operations Total</b>		<b>15.4</b>	<b>13.9</b>	<b>12.3</b>	<b>10.7</b>	<b>9.1</b>	<b>6.3</b>	<b>41%</b>
<b>3rd Party Total</b>		<b>3.0</b>	<b>2.7</b>	<b>2.4</b>	<b>2.1</b>	<b>1.8</b>	<b>1.2</b>	<b>41%</b>
<b>Grand Total</b>		<b>120.5</b>	<b>108.2</b>	<b>95.9</b>	<b>83.6</b>	<b>71.3</b>	<b>49.2</b>	<b>41%</b>
<b>Endpoint Public OTP</b>		<b>33%</b>	<b>44%</b>	<b>54%</b>	<b>65%</b>	<b>75%</b>		

Note: Reductions for each delay type and time period are examples; however, the Grand Total delay reduction shown is necessary to achieve 75% OTP.

\*Assumes Amtrak and CSX work together in advance of major trackwork periods to adjust the delay budget to reflect a reasonable level of trackwork-related delay, while reflecting these adjustments in the public schedule to maintain high OTP.



# Performance Improvement Plan

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1. **Background: Chronology and Root Causes of Delay**
2. **Near-Term: System-Level Actions (All Trains)**
  1. **Heat Orders**
  2. **Slow Orders**
  3. **Track Maintenance**
  4. **Dispatching Delays**
3. **Near-Term: Action Items and Delay Budgets for Individual Routes**
  1. **Auto Train**
  2. **Silver Meteor**
  3. **Silver Star**
  4. **Palmetto**
  5. **Carolinian**
  6. **Piedmont**
4. **Long-Term: Infrastructure Investments**
5. **Measures, Milestones, Progress**

## Action Items to Achieve 90% Piedmont OTP

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- Operates on NS only
- Heat orders and slow orders are not major factors
- August, 2006 – April, 2007 OTP was 73%, nearly achieving goal
- January, 2007 – April, 2007 OTP was 77%, exceeding goal
- Continuing North Carolina investments should sustain OTP at levels above 75%:
  - North Carolina advocates 90% OTP goal

Action Item	Responsibility
<u>Dispatching and Amtrak Delays</u>	NS and Amtrak

# Performance Improvement Plan

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## Multiple studies have identified capacity constraints in the Southeast Corridor

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- Studies
  - 1999 Federal Railroad Administration Report to Congress
  - 2000 CANAC Line Capacity Study for Virginia, VRE and CSX
  - MAROPS (Mid Atlantic Rail Ops Study - VA, FRA, FHWA, state DOTs, and Ports)
- In the near term, CSX, NS and Amtrak can reduce delays with the current network
  - CSX: Heat orders
  - CSX: Slow orders (infrastructure hardening)
  - CSX: Train operations through major trackwork areas
  - Amtrak: NEC and terminal delays
  - NS, CSX: Additional management focus on passenger train performance
- However, long-term capacity investments support:
  - Sustaining performance at 75% OTP while allowing growth in freight and passenger traffic
  - Taking performance to the next level (beyond 75% OTP)
  - Allowing temporary schedule lengthening to be removed

## Amtrak, CSX, Virginia, and North Carolina are progressing Southeast Corridor capacity investment plans

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- CSX has applied to the US DOT to designate the Southeast Corridor a “Corridor of the Future”
- Southeast Corridor capacity modeling
  - Joint CSX/VA/NC modeling: Baltimore, MD to Florence, SC
  - CSX modeling: Florence, SC through S. Dyer (West Palm Beach) FL
  - Ready for scenario testing in mid-2007
  - Potential projects to model are listed on the following page
  - Based on capacity modeling results, CSX and Amtrak will jointly seek public funding
- Potential funding sources
  - CSX and NS – Capital budgets
  - States – Various rail programs
  - Amtrak – Targeted Host Railroad Investment fund
  - Amtrak-CSX Performance Incentive / Penalty program (under negotiation)
  - FHWA – NC applied for a grant in April, 2007
  - Corridors of the Future program? – Southeast Corridor has advanced to Phase 2
  - Federal-state matching program – Contained in Senate Amtrak reauthorization bill
  - New state bonding authority – Contained in Senate Amtrak reauthorization bill

## Potential Southeast Corridor Capacity Projects

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- Washington, DC-Richmond, VA
  - Commonwealth of Virginia projects already identified and underway
  - Modeling will identify and prioritize additional projects
- Richmond, VA-Rocky Mount, NC
  - Armstrong, NC (MP 116.0), build #20 universal crossovers
  - Enfield, NC (MP 101.0), build #20 universal crossovers
  - Jarratt, VA (MP 54.0), build #20 universal crossovers
  - Collier, VA (MP 26.5), restore BX Lead
  - South Weldon, NC (MP 86.4), build #20 crossover to create universal-crossover set
  - Trego, VA (MP 67.8), build #20 crossover to create universal-crossover set
  - Garysburg, NC (MP 78.5), restore Track 2 north to Pleasant Hill (MP 74.0)
  - Collier, VA (MP 26.5), build wye track
  - South Collier, VA (MP 29.0), build #20 universal crossovers
- Petersburg-Raleigh
  - Reconstruct “S Line”
- Selma, NC-Raleigh-Charlotte
  - North Carolina-funded projects already identified and underway
- Rocky Mount/Selma-Savannah-Miami
  - Modeling process will identify additional projects and allow ranking of all projects
- DOT Corridors of the Future projects

# Performance Improvement Plan

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  6. **Piedmont**
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## Measures, Milestones, and Expected Progress

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- Primary measurement tool is the Delay Budget, as shown under each individual route
  - Budgets to be based on joint CSX-Amtrak analysis completed Summer 2007
  - Specific actions
  - Specific timing
  - Accountability
- Capacity investment milestones
  - 2007: Scenario modeling
  - 2008: Project Selection, Funding, Project Design
  - 2009: Construction

## Conclusions / Next Steps

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- Develop and implement detailed plans with CSX, NS, North Carolina, Virginia
- Report on Delay Budgets and delay reduction progress during next scheduled Amtrak Board meeting September 11, 2007

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## Appendix

# Key Amtrak-CSX Executive and Related Communications, Mid-2006 to Present

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## Key Amtrak-CSX Communication

- July 20, 2006 Ingram to Hughes following up July 18 meeting
- August 7 Hughes to Ingram proposing Southeast Corridor OTP Test
- August 10 Ingram to Hughes promising CSX improvement plan (never received)
- September 20 Ingram to Kummant seeking November meeting
- December 6 Kummant/Crosbie – Ward/Ingram meeting on I-95 OTP
- December 26 Ingram to Kummant proposing I-95 Team
- January 29, 2007 Crosbie to Ingram: Agreement to add hour to AutoTrain
- February 20 Ingram to Kummant agreeing to add hour and maintain OTP
- February 21 Kummant to Ward accepting I-95 Team, nominating Amtrak lead
- May 11 Crosbie to Ingram seeking CSX participation in I-95/SE Corridor Team, heat order relief
- May 18 Phelps to Brown urging CSX SE Corridor performance focus
- May 30 Draft SE Corridor Plan from Amtrak to CSX, NS, NC, VA for comment
- June 4 Ingram to Crosbie non-responsive reply to Amtrak SE Corridor and heat order proposals

## Key Related Communication

- July 12, 2006 NARP to STB complaining about CSX performance
- July 27 CSX to STB rebutting NARP complaint
- August 17 Hughes to STB supporting NARP complaint
- March, 2007 FRA add SE Corridor Plan to Grant Agreement, echoing Amtrak-CSX I-95 efforts
- April 11 Kummant testimony to STB on freight rail network capacity