COLUMBUS TO ATLANTA
HIGH SPEED RAIL FEASIBILITY STUDY

Columbus, GA
What progress has preserved.

HNTB

Presented by: HNTB Corporation
Presented to: Columbus to Atlanta Stakeholders

January 8, 2014

Today's Agenda

- Recap of September 4th Meeting
- Operating Plans
- Technical Results
  - Capital Costs
  - Ridership/Revenue
  - Operating and Maintenance Costs
  - Financial Results
- Economic Impacts
- Next Steps/Implementation

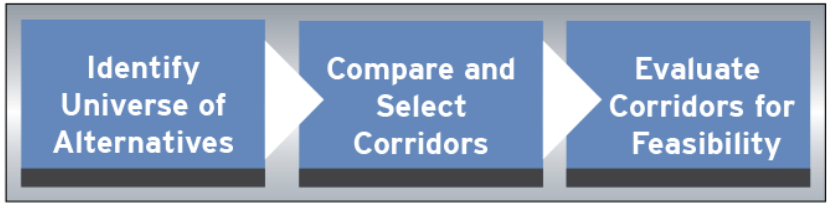
September 4th Meeting Recap

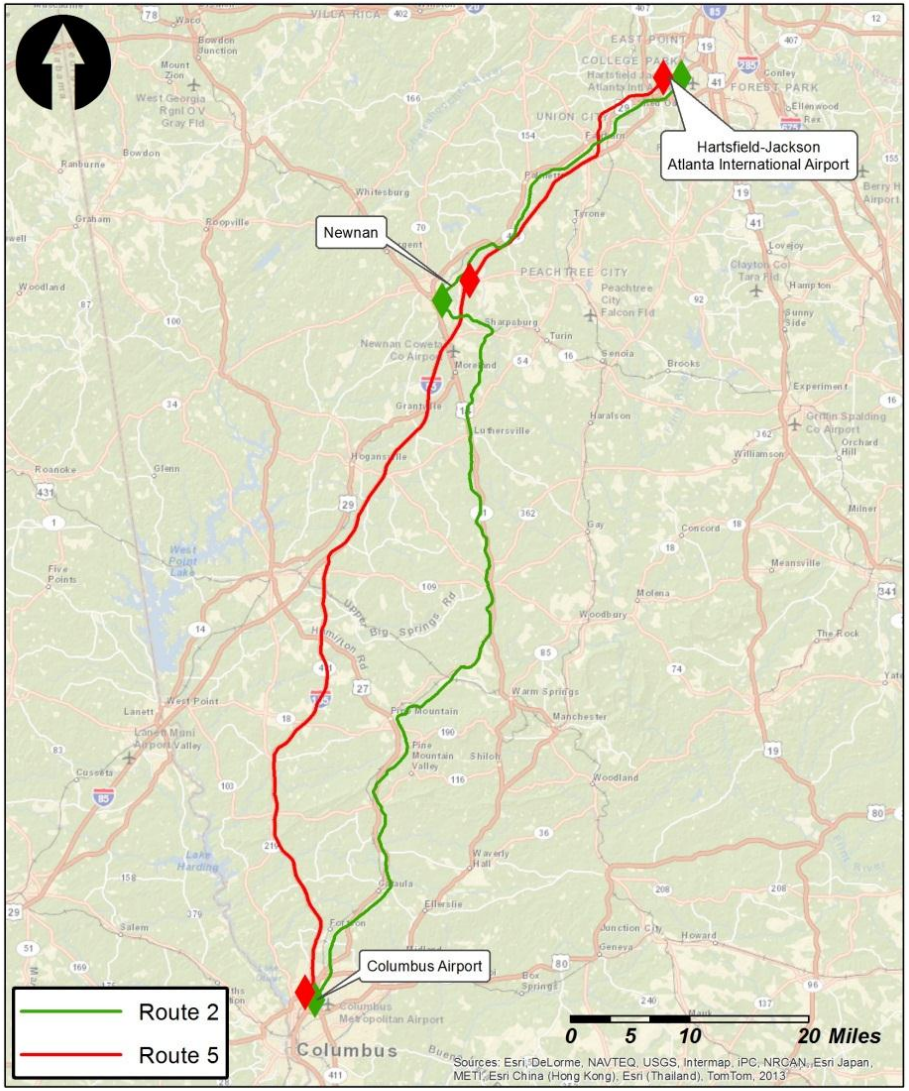
September 4th Recap

- Stakeholder Participation
- Funding and Financing Strategies
  - Historical Programs
  - Potential Future Programs
  - P3s

Scenario Development

- Evaluate the universe of route alternatives based on connectivity between Columbus and Atlanta
- Screen representative alternatives
- Refine and evaluate for feasibility





Columbus to Atlanta High-Speed Rail
Refined Route Alternatives

Operating Plans

Operating Plans

Two representative routes and three technologies:

Technology Alternatives			
	Route 2: Emerging	Route 5: Regional	Route 5: Express
Top Speed	79-110 mph	110-150 mph	150-220 mph
Fuel/Energy	Diesel	Diesel	Electric
Route	Shared/Abandoned Route	Dedicated Interstate Route	
Track	Single Track with Sidings	Double Track	
Train Delay Probability	Medium	Low	

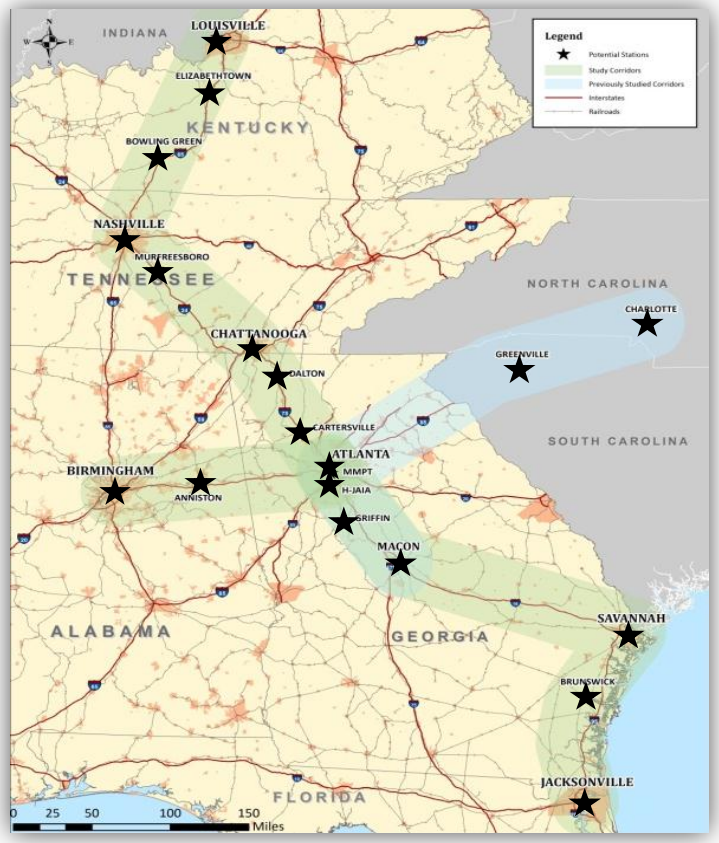
Operating Characteristics				
Technology	Rail Distance (mi)	Travel Time	Average Speed (mph)	Daily Round Trips
Emerging	101.79	1:36	55.1	4
Regional	91.05	1:26	63.2	5
Express	91.05	1:01	71.3	6

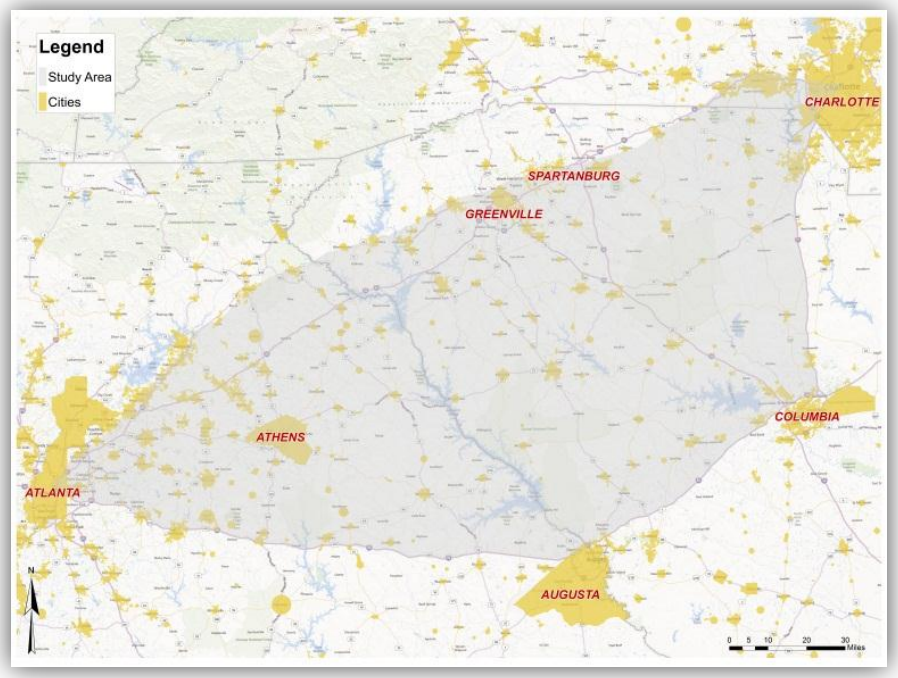
Notes: Top speeds can only be achieved in select locations due to route geometry
Travel times may decrease as curves are eased for any alternative
Average speeds are determined by Train Performance Calculator modeling

Technical Results

Recent Studies:

- Georgia Feasibility Studies
- Atlanta to Charlotte Passenger Rail Corridor Investment Plan





Estimated Capital Costs

Methodologies

- Follow FRA Standard Costing Categories:

FRA Standard Costing Categories	
10	Track Structures & Track
20	Stations, Terminals, Intermodal
30	Support Facilities
40	Sitework, Right-of-Way
50	Signals & Communication
60	Electric Traction
70	Equipment
80	Professional Services

Notes:

- *All costs include 30% contingency, unit costs based on Atlanta to Charlotte PRCIP*
- *All infrastructure improvements for shared-use corridors can be done inside the existing freight right-of-way of 100-fProposed right-of-way for dedicated-use corridors is can be done inside the existing interstate right-of-way*

Results

- Costs estimated for Emerging, Regional, Express alternatives

Columbus Airport – H-JAIA		
	Total Cost	**Cost per Mile**
Emerging	$1.3 Billion	$13.0 Million
Regional	$2.0 Billion	$22.2 Million
Express	$3.9 Billion	$42.5 Million

Notes:

- *Emerging utilizes abandoned rail corridors for much of the route, reducing grading costs.*
- *Emerging includes minimal right-of-way acquisition, dependent on ownership of abandoned section*
- *Express includes full electrification, accounting for total difference ($1.9B) between Regional and Express*
- *Cost per mile is an average for the entire route, cost per mile fluctuates depending on location of route*
- *Regional can be an phasing opportunity for Express*

Capital Costs Comparison

Cost per Mile		
Mode	**Cost**	**Source**
Interstate 185	~$7.8M	Federal Highway Administration (FHWA)[1]
Intercity Passenger Rail	$10.7-$42.5M	Columbus-Atlanta HSR Feasibility Study[2]
Street Car	$25.6M	MARTA – Atlanta Streetcar[3]
Light Rail	$132M	MARTA – Clifton Corridor[4]
Interstate (new 4-lane)	$6.4-$12.4M	GDOT[5]
Interstate (widening)	$9.5-$17.6M	GDOT[5]

Notes:

[1] http://www.fhwa.dot.gov/highwayhistory/data/page03.cfm

[2] Based on conceptual engineering and unit costs from other regional studies

[3] http://streetcar.atlantaga.gov/how-is-the-project-funded/

[4] http://www.itsmarta.com/Clifton-Corr.aspx

[5] GDOT Office of Engineering, Cost Estimating System

Ridership and Revenue Summary

Methodologies

- Ridership based on:
  - Fare structure
  - Operating plan (Train Frequencies and Travel Times)
  - Existing/future auto and air travel

HSR Fares	Emerging	Regional	Express
Boarding Fee	$5.00	$5.00	$5.00
Fare per Mile	$0.28	$0.40	$0.40
Total One-Way Fare	**$33.50**	**$41.42**	**$41.42**

** Notes: Fare structure based on Atlanta to Charlotte PRCIP*

Results:

- Annual boardings are total boardings (one way, any origin-destination pair)
- Express illustrates highest ridership and revenue estimates

Year	Annual Boardings and Total Revenue (2013$)		
	Emerging	Regional	Express
2030	775,000 **$13.8 million**	968,000 **$20.5 million**	1.1 million **$23.6 million**
2040	945,000 **$15.1 million**	1.2 million **$22.3 million**	1.4 million **$25.8 million**
2050	1.2 million **$16.7 million**	1.4 million **$24.6 million**	1.7 million **$28.4 million**

** Notes: Revenues have been discounted to 2013$ and include on-board services*

Operating Plan and Costs

Methodologies

- Operating Plan primarily based on track geometry (curves)
- O&M Costs based on **Variable** and **Fixed** cost categories:

Variable Costs
Train Crew
On-Board Services
Equipment Maintenance
Fuel or Energy
Track and Electrification Maintenance
Insurance
Call Center
Credit Card + Travel Agency Commissions
Fixed Costs
Stations
Administration and Management

** Notes: Unit costs based on Atlanta to Charlotte PRCIP unit costs*

Results

- Total annual costs
- Emerging illustrates the least expensive O&M costs

Annual O&M Costs (2013$)			
	2030	2040	2050
Emerging	$16.6 million	$17.2 million	$17.5 million
Regional	$17.8 million	$18.1 million	$18.1 million
Express	$19.5 million	$19.3 million	$18.9 million

** Notes: Costs have been discounted to 2013$*

Financial Results

Year	Annual Operating Ratio			
		2030	2040	2050
Emerging	Total Revenue	$13.8 million	$15.1 million	$16.7 million
	Total Cost	$16.6 million	$17.1 million	$17.5 million
	Operating Ratio	**0.83**	**0.88**	**0.95**
Regional	Total Revenue	$20.5 million	$22.3 million	$24.6 million
	Total Cost	$17.8 million	$18.1 million	$18.1 million
	Operating Ratio	**1.15**	**1.24**	**1.36**
Express	Total Revenue	$23.6 million	$25.8 million	$28.4 million
	Total Cost	$19.5 million	$19.3 million	$18.9 million
	Operating Ratio	**1.21**	**1.34**	**1.50**

** Notes: FRA seeks Operation Ratio > 1.0*
Revenue surplus can be used to help pay capital bonds

Economic Impacts

Potential Economic Impacts

Economic Impacts:

- **U.S. High Speed Rail Association**
  - Spurs the revitalization of cities
  - Encourages high density and mixed-use
  - Fosters economic development in cities along train routes
  - Broadens labor markets and offers a wider network of employers
- **Economic Development Research Group (U.S. Conference of Mayors)**
  - Increase business productivity through travel efficiencies
  - Expand visitor markets and generate additional spending
  - Supports the growth of technology clusters

Denver Union Station

Potential Economic Impacts

Economic Impacts:

- **Job Creation**
  - Jobs include: Direct, Indirect, and Induced
  - Typical range: 11,000 to 28,000 per $1 billion expended
- **Station Development**
  - TOD potential
  - Stanford, CT Transportation Center
- **Regional Economic Benefits**
  - Reverse Commutes
  - Portland to Brunswick Extension

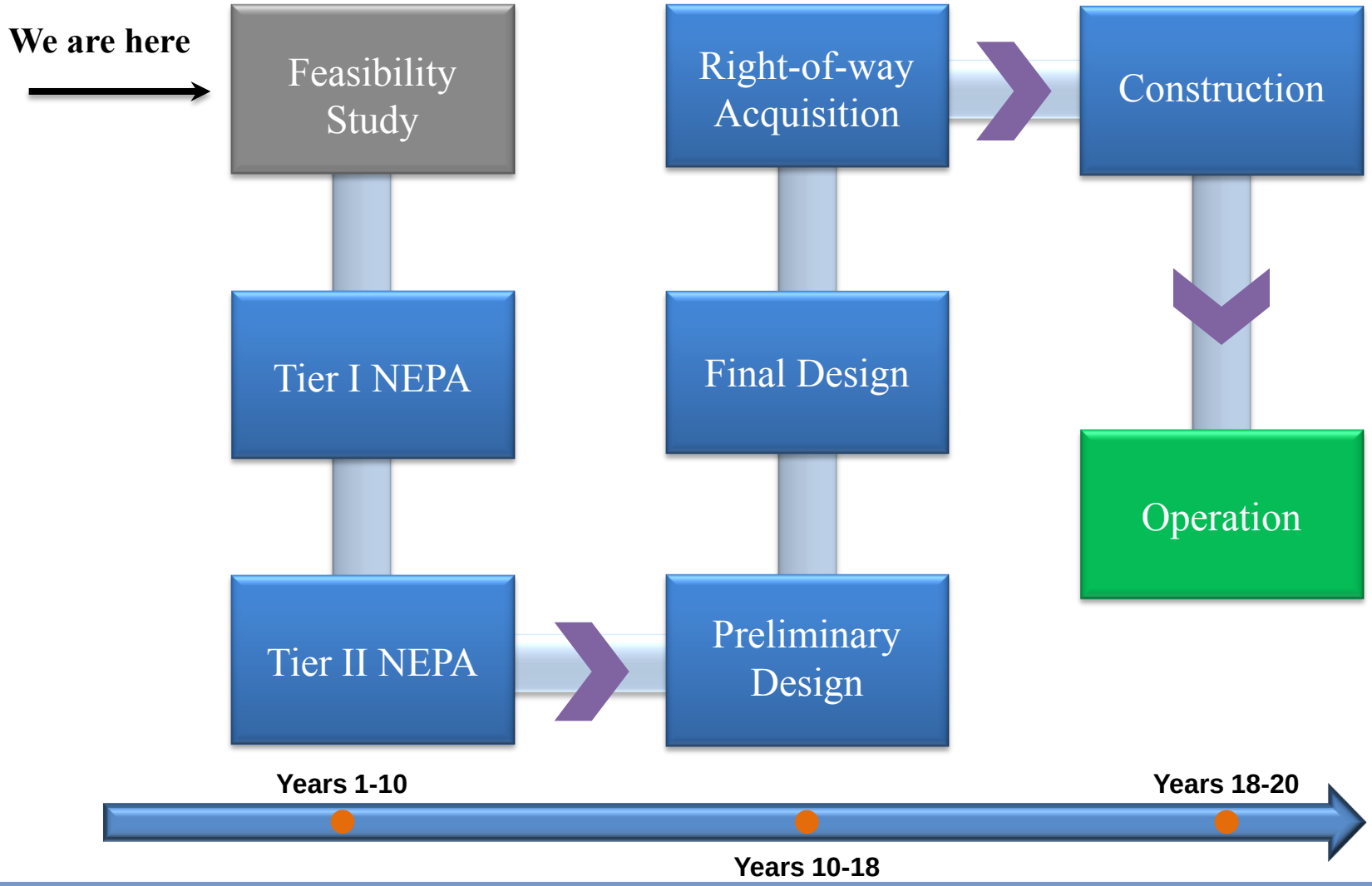
Stanford, CT Transportation Center

Newnan Depot, Newnan, GA

Maine Street Station, Brunswick, ME

Next Steps

Federal Implementation Process



Corridor Implementation Overview

Immediate Next Steps:

- Roll out results to the public
- Work with local and regional leaders
- Identify funding for NEPA process
- Continue education and outreach
- Incorporate corridor in State Rail Plan

Long-Term Steps:

- Continue building partnerships
- Identify funding/financing strategies for implementation
- Preserve corridor through documentation in official maps and statewide plans