High-Speed Rail in the USA
Connecting Georgia
To the Region
HSR: A World Ahead

- World Class Transportation Standard
  - 7,000 miles of dedicated HSR in service today
  - 35,000 miles planned by in 2025
  - Spain: 4,500 miles by 2015
  - Japan: 100 million trips/year
  - Europe: 50 million trips per year
Global High-Speed Rail Expansion

km

What is High-Speed Rail? - Global Definition

Evolution of the maximum speed on rail

World speed records

- France 331 km/h
- France 435 km/h
- Germany 409 km/h
- Japan 581 km/h

Maximum commercial speed
Why So Successful?

Keys to Success

- Federal funding
- Dense population centers
- Air/rail & integrated transit at stations for seamless connections
- Federal policy to preserve scarce airport capacity for long-distance trips
- Success feeds success
Why HSR?

A Fraction of the Emissions . . .

A Fraction of the Energy . . . .

[Diagram showing CO2 emissions for different modes of transport: Plane, Private Car, Bus, Classic Train, HST with values: Plane 51.1 g, Private Car 29.9 g, Bus 18.3 g, Classic Train 17.6 g, HST 12.1 g. Source: SNCF, "Petroleum equivalent gramme" per passenger-kilometre.]
Tying The Community Together

- TGV has changed the psychological distance between places. For the French, mobility has created a feeling of belonging to a common or interconnected city.
  
  -- Alain L’Hostis, geographer, Universite Paris-Est

- Dual Land Use Impacts
  
  - Greater density & mixed-use development at station areas
  - Increased “commuting” from mid-point cities
America’s Current Passenger Rail System

- Amtrak operates the nation’s intercity passenger rail system

- In 2008, Amtrak:
  - Operated 220 daily trains on 33 routes
  - Carried 28 million passengers (78,000/day)
  - Served 550 stations

- Operations
  - Amtrak owns most of the WAS-BOS Northeast Corridor
  - Long distance trains operate on tracks owned by the freight railroads

- Southeast Service
  - NC-supported Carolinian & Piedmont
  - WAS-ATL-NOL Crescent
  - Florida Service
What is High Speed Rail? – FRA Definition

Definition
- **Emerging**: 90mph - 110mph
- **Regional**: 125 mph - 150 mph
- **Express**: 150 mph - 200 mph

Technologies
- Steel Wheel Steel Rail
- Maglev

Organizations
- **National**: U.S. Department of Transportation – Federal Railroad Administration
- **State**: Department of Transportation
- **Alabama**: ADECA
USA High-Speed Rail Corridors

[Map of USA High-Speed Rail Corridors showing various regions and cities such as Pacific Northwest, California, Chicago Hub Network, Gulf Coast, Florida, Southern New England, and Northeast Corridor (NEC).]

Note: The California HSR Corridor was developed by the California High-Speed Rail Authority.
Passenger Rail Improvement & Investment Act
America Recovery & Reinvestment Act

- PRIIA reauthorized Federal funding for passenger rail
  - Section 301: improve passenger rail corridors
  - Section 302: provide congestion relief
  - Section 501: improvements on the NEC & designated HSR corridors

- ARRA includes-
  - $1.3 billion for Amtrak
  - $8.0 billion for PRIIA programs

- Additional $1 billion in annual appropriations to be requested for five years

- $120 million in 50/50 planning & project funding appropriated in FY08 & FY09
FRA’s Four Funding Tracks

❖ **Track 1: Ready-to-Go infrastructure/equipment projects**
  - Ready to advance to Final Design (FD)/Construction:
  - Ready to advance to PE/NEPA
  - Independent Utility – provides benefits even if additional work not advanced

❖ **Track 2: HSR Pipeline Projects**
  - Already completed Tier 1 environmental & planning
    - *CA; WA/OR; IL; WI; FL; NC/VA*
  - FRA to reserve funding through LOI; funding distributed upon reaching milestones

❖ **Track 3: Studies & Rail Plans requiring 50% local match**

❖ **Track 4: Projects (similar to Track 1) with 50% local match**

❖ Applications due August and October with 2d round in 2010
ARRA: A great Start, But More Funding Required
- Acela: $2.8 billion in mid-90s on existing HSR line
- California: $34 billion for Anaheim/LA-SF leg
- Southeast: $2.2 billion for Charlotte-Richmond

Can ARRA Make A Difference? Yes!
- It’s about trip time, not top speed
  - Portland-Seattle: from 3:30 to 2:20
  - Charlotte-Raleigh: from 3:20 to 2:30
  - St. Louis – Chicago: from 5:30 to 3:30

Opportunities For True 150-200 mph HSR
- California: revenue service within 10 years
- Florida: Tampa-Orlando leg feasible if the state can mobilize long-term political & financial support
- Texas: strong market, but lacks institutional governance or consensus
US: Some False Starts

- **Projects**
  - **California:**
    - 1980: American High-Speed Rail Corporation (LA-San Diego)
  - **Florida:**
    - 1996: FOX
    - 2004: Fluor/Bombardier
  - **Texas:** 1991 Texas TGV

- **Why the Failures?**
  - Lack of a Federal funding partner
  - Lack of local consensus
  - Opposition from competitors
US: Some Successes Too!

- **Projects**
  - Metroliner
  - Acela
  - Cascades
  - Keystone

- **Why the Success?**
  - Federal & State funding partners
  - Strong market demand
  - Positive environmental impacts
  - Lack of opposition from competitors
  - Existing rights-of-way
Competitive Trip Time Shifts Modal Preference

Rail market share (in %)

- Paris - Bruxelles (Thalys)
- Paris - Lyon (TGV South-East)
- Madrid - Séville (AVE)
- Paris - Londres (Eurostar)
- Paris - Bordeaux (TGV Atlantique)
- Stockholm - Göteborg
- Paris - Marseille/Montpellier (as from June 2001)
- Tokyo - Hiroshima
- Paris - Toulouse / Toulon
- Paris - Nice

TGV journey times (in hours)
Lessons Learned
It’s About Trip Time, Not Top Speed

- Upgrade slowest areas of the rail line
  - Upgrade one mile of 30 mph track to 60 mph save 60 seconds
  - Upgrading one mile of 90 mph track to 150 mph saves 16 seconds of trip time

- Focus on the rail line as an integrated system
  - Optimize curves, interlockings, at-grade crossings & signals

- Maximize trip time benefits from equipment: tilt; acceleration

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<th>Speed (mph)</th>
<th>Seconds To Travel One Mile</th>
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<tr>
<td>150</td>
<td>24</td>
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Lessons Learned
State Rail “Brand” Helps

- State ownership of passenger rail creates long-term support
  - Establishes unique state-wide identity
    - North Carolina Piedmont
    - Washington & Oregon Cascades
  - Differentiates State service from rest of Amtrak
  - Institutionalizes rail program, budget and staff

- New Trains Create Excitement
  - X-2000 & ICE demos generated ground-swell of support for Acela
  - Flexliner corridor tour
  - Talgo – gave Cascades a unique identity
Lessons Learned
Freight Railroad Partnership Is ESSENTIAL

- It’s their railroad
- State must support economic development generated by freight rail traffic
- Partnering from the beginning will support success
  - Joint capacity analysis can allay concerns, identify needs
  - Incremental upgrades benefit passenger & freight
    - At-grade crossings
    - Signal system upgrades
    - Passing sidings
  - Excess freight ROW can facilitate dedicated tracks where appropriate
## Lessons Learned - Political Support

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<th>Speed Range</th>
<th>Support Levels</th>
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<td>90 MPH – 110 MPH</td>
<td>City/County, Governor, US Senators, US Congressmen</td>
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<td>220 MPH</td>
<td>City/County, State, US Congress, US Senate, US President</td>
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<td>State</td>
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<td>Inter-State – Mega-Regional</td>
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Atlanta As The Regional Hub

Northeast: Southeast Corridor to Charlotte, Washington & NY
Northwest: Chattanooga & Nashville
Southwest: Gulf Coast Corridor to Birmingham & New Orleans
Southeast: Savannah, Jacksonville & Miami
Key Steps: State Rail Plan

- **State Rail Plan**
  - Provides Freight/Passenger Rail vision
  - Living Document
  - Alignments
  - Project Management
  - Capital investment plan
  - Financial Plan
  - Stakeholder agreements

- **Feasibility Study**
  - Ridership
  - Validate Alignment, Identify Improvements
  - Capital and Operating Costs
2009 State Rail Plan (SRP) for Georgia

Erik Steavens
Intermodal Division Director
2009 Georgia State Rail Plan

- Document to satisfy FRA’s requirements
- Plan allows GDOT to apply for stimulus funding
- Plan to comply with all federal planning guidelines
  - Passenger Rail Investment & Improvement Act (PRIIA) of 2008 sections 303, 307, & 501
  - Title 49 Part 266 CFR – Description & Assessment of the state’s rail system
Need For General Rail Investment

- Growth in the last two decades at an unparallel rate
- Focus on mobility of people and goods
- Growing port activities
- Burgeoning freight rail activity
- Investments in airports and highway system unable to relieve congestion
- Untapped capacity in existing railroads
Need for Passenger Rail Investment

- Forecast growth in Vehicles and Vehicles Miles of Travel (VMT) exceed the pace of highway construction
- 2030 Forecasts for Population and Employment to double from existing levels
- Provides mode choice for SOV commuters to help ease peak period congestion
- Shared use of 12 active freight rail lines to provide needed mobility
High Speed Rail Corridors
Charlotte - Greenville - Atlanta - Macon - Jacksonville
Savannah - Jacksonville
Atlanta - Birmingham
Freight Railroads
Freight Rail
GEORGIA RAILROAD SYSTEM

CSX / NS Mileage:
- CSX: 1,626
- NS: 1,930

Other Mileage (23): 1,483
Total: 5,039

GDOT Mileage: 540
Freight tonnage moves through Georgia from many locations:

Mobile, Alabama
New Orleans, Louisiana
Tampa, Florida
Jacksonville, Florida
Savannah, Georgia
Brunswick, Georgia