



A Proven High Speed Rail System From Japan to Texas



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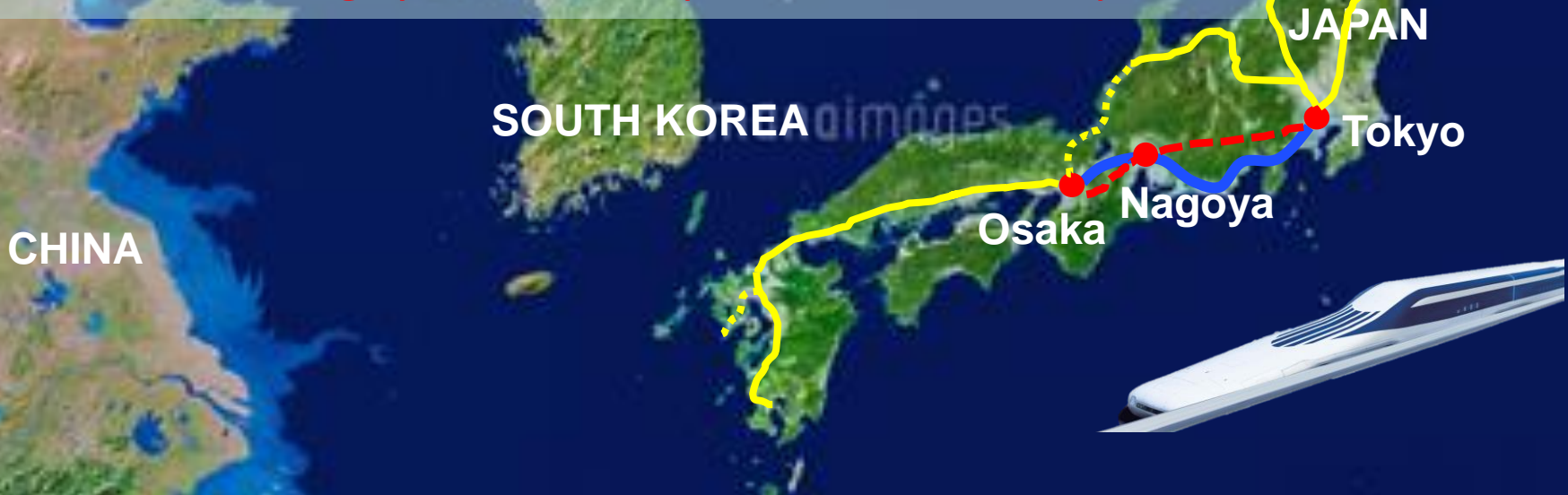
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Annual Meeting

Japan's HSR Mega Capital Projects

- Shinkansen “New Trunk Lines”
- Tokyo-Nagoya-Osaka started operations in 1964
- Busiest and most profitable HSR in the world
- Undergoing \$8 billion infrastructure rehabilitation
- SCMaglev tracks under construction, \$60 billion
- Phase 1: Tokyo-Nagoya, due to complete in 2027
- Phase 2: Nagoya-Osaka requires another 10 years



Key Features of Japan's Shinkansen

- Safety: ZERO fatal accident since 1964
- Reliability: 0.2 Minutes Average Delay
- Mass Capacity: A 16-Car EMU Set/1,343 Seats
- Fast Speed and Comfort: 177 MPH
- Environmental Friendliness: Low CO2 Footprints



Crash Avoidance Principles

#1 Dedicated High Speed Passenger Rail Service

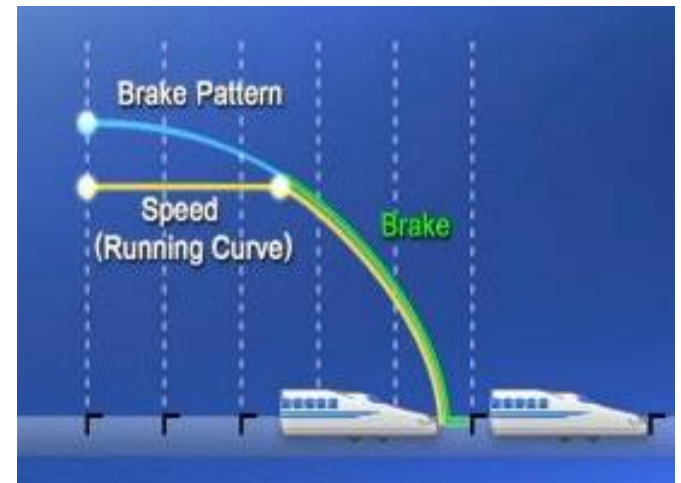
#2 Automatic Train Control (ATC) System

#3 Total System Approach
Hardware-Software-Human



Shinkansen:
Standard Gauge

Conventional Rail:
Narrow Gauge



Central Japan Railway (JR-Central)

- Established in 1987 after the failure of JNR
- One of privatized regional passenger companies
- Vertical Integration – ownership & operations
- 100% publicly traded/NO government subsidy
- Concentration in core competence: High-Speed
- SYNERGY-oriented business diversification



Vertical Integration

Operations

Region 1

Labor

Trains

Control

Marketing

Region 2

Labor

Trains

Control

Marketing

Region 3

Labor

Trains

Control

Marketing

Infrastructure

Region 1

Buildings

Tracks

Power Lines

Signals

Region 2

Buildings

Tracks

Power Lines

Signals

Region3

Buildings

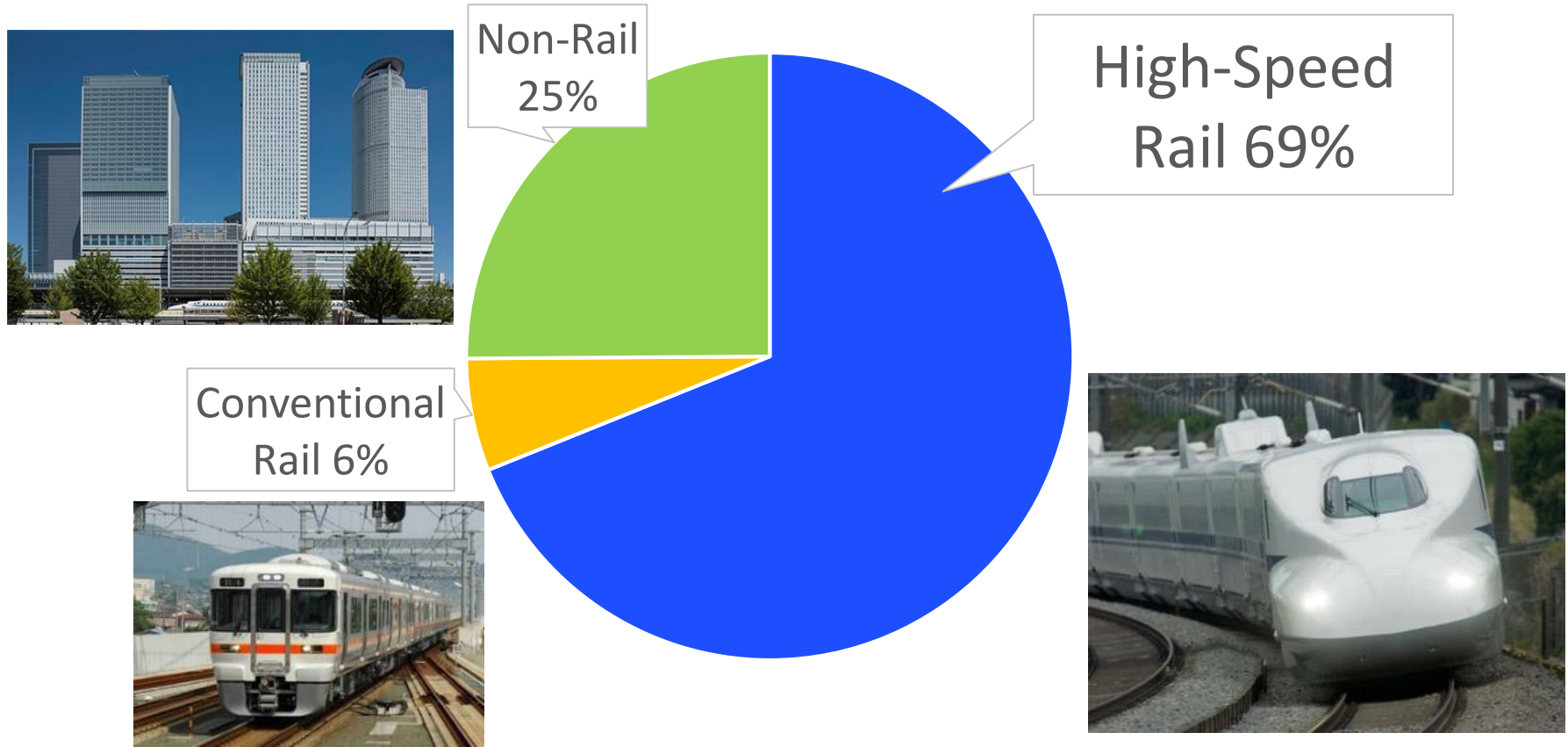
Tracks

Power Lines

Signals

Business Portfolio

Consolidated Operating Revenues (2016)



JR Central's International Commitment

- Taiwan High Speed Rail (Started in 2006)
Consulting system improvements
- **Texas High Speed Rail Project:** N700-I Bullet
Technical support for Texas Central
Launched engineering subsidiary in Dallas



Future Implication to the US Market

- Learn from the past: long-term perspectives
- Synergy of rail and affiliated businesses
- Business and public service can co-exist
- Develop good management & staff relations
- Think global and act local!

Hoping the Japanese experiences would greatly contribute to the Texas High Speed Rail project...



TEXAS
CENTRAL



ACCELERATING THE TEXAS ECONOMY AT HIGH SPEED

**TRAINS WILL TRAVEL
AT SPEEDS NEARLY**

200

**MILES
PER HOUR**

**WILL
SERVE**

3

**STATIONS
DALLAS, BRAZOS VALLEY
AND HOUSTON**

**TRAINS WILL
LEAVE EVERY**

30

**MINUTES
DURING PEAK HOURS**

**NORTH TEXAS TO HOUSTON
IN LESS THAN 90 MINUTES**







INDUSTRY CREATION

CREATE

10,000 JOBS

DURING EACH YEAR OF CONSTRUCTION

WITH AS MANY AS 1000 FULL-TIME ONCE OPERATIONAL.

Project Magnitude : Construction on a Huge Scale

CONCRETE

The Railroad will require nearly 10 million cubic yards of concrete, three times the amount used to build the Hoover Dam.



STATIONS AND FACILITIES

The Railroad will include:

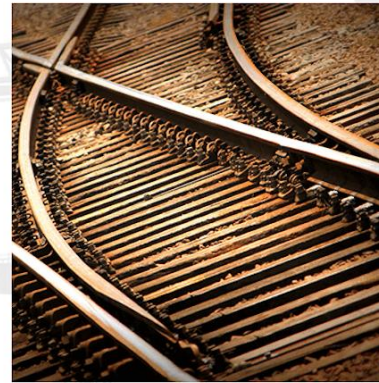
- 3 stations
- large and small maintenance facilities along the route



RAIL

The Railroad will use nearly

- 1,100 miles of rail
- 215 turnouts
- More than 1.4 million concrete railroad ties.



JOBS

The project will require approximately 10,000 workers every day during design, project management, and construction. As many as 1000 permanent jobs will be created once operational.





RELIABLE/CONVENIENT
COMFORTABLE
PRODUCTIVE

HIGH SPEED TRAIN SAVES TIME

More than
90%



local residents will save at least one-hour by taking the train, compared to travel by air or automobile

Bullet train is 70-minutes faster than traveling by car* and 50-minutes faster than traveling by plane*

**from city center to city center*



Texans going between the Reliant Stadium in Houston and AT&T Stadium in North Texas will save 68-minutes compared to traveling by air and 113-minutes compared to traveling by car



Texans going between Houston's Energy Corridor and Downtown Dallas will save 94-minutes compared to traveling by air and 114-minutes when compared to car travel



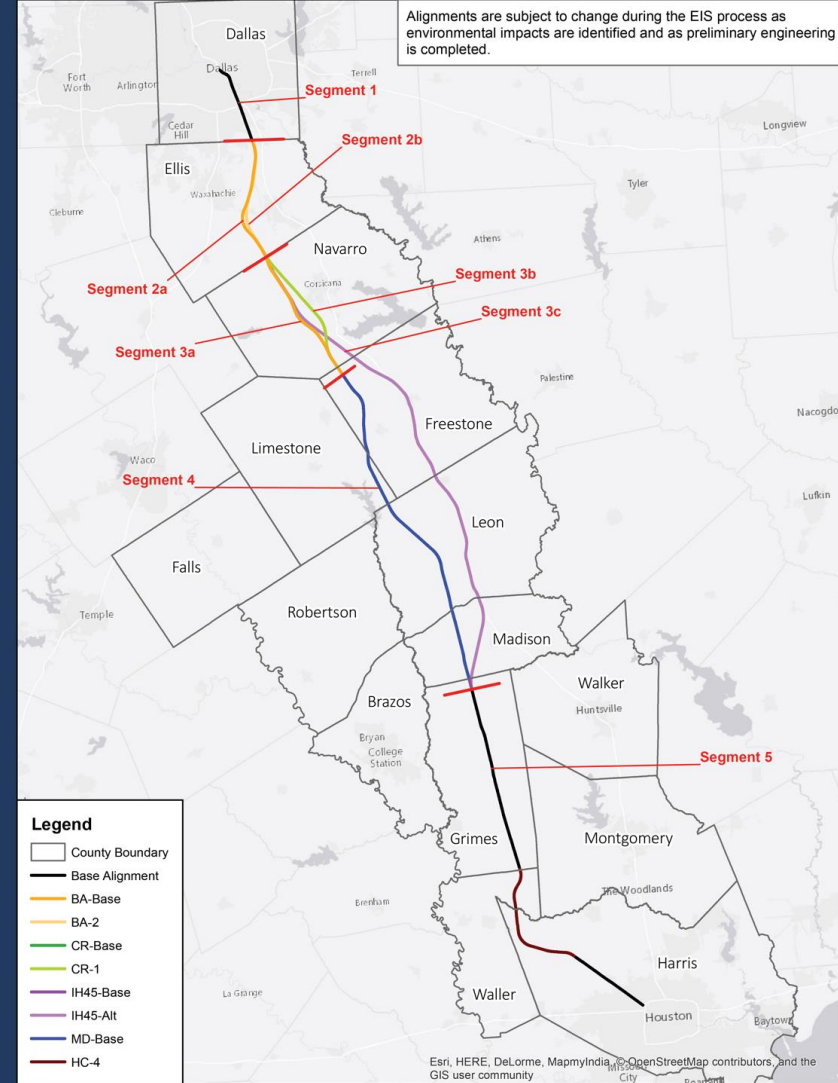
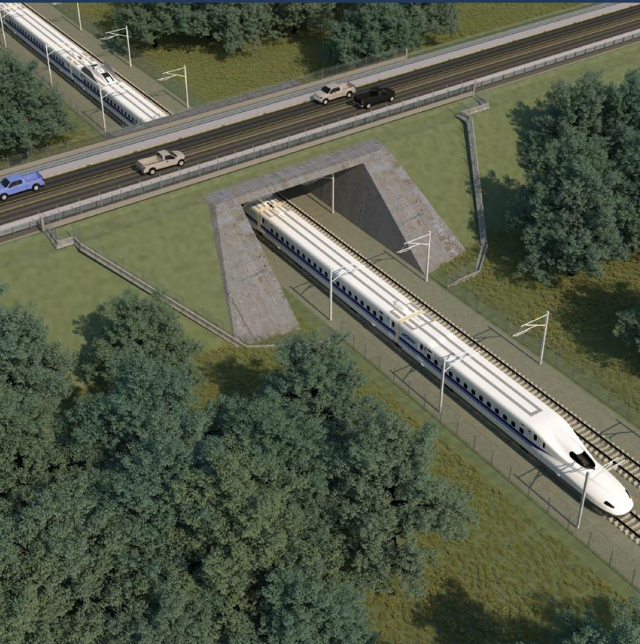
REGULATORY MILESTONES

**ENVIRONMENTAL
IMPACT STATEMENT**

**OPERATING AND
SAFETY RULES**

**ROUTE
SELECTION**

ROUTE MAP



Our Vision for the Station Area



ACT NOW:
BE AN ADVOCATE
FOR TEXAS HIGH SPEED RAIL
TEXT **TRAIN** to 52886



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