

Western High Speed Rail Alliance  
Conference  
November 4, 2011

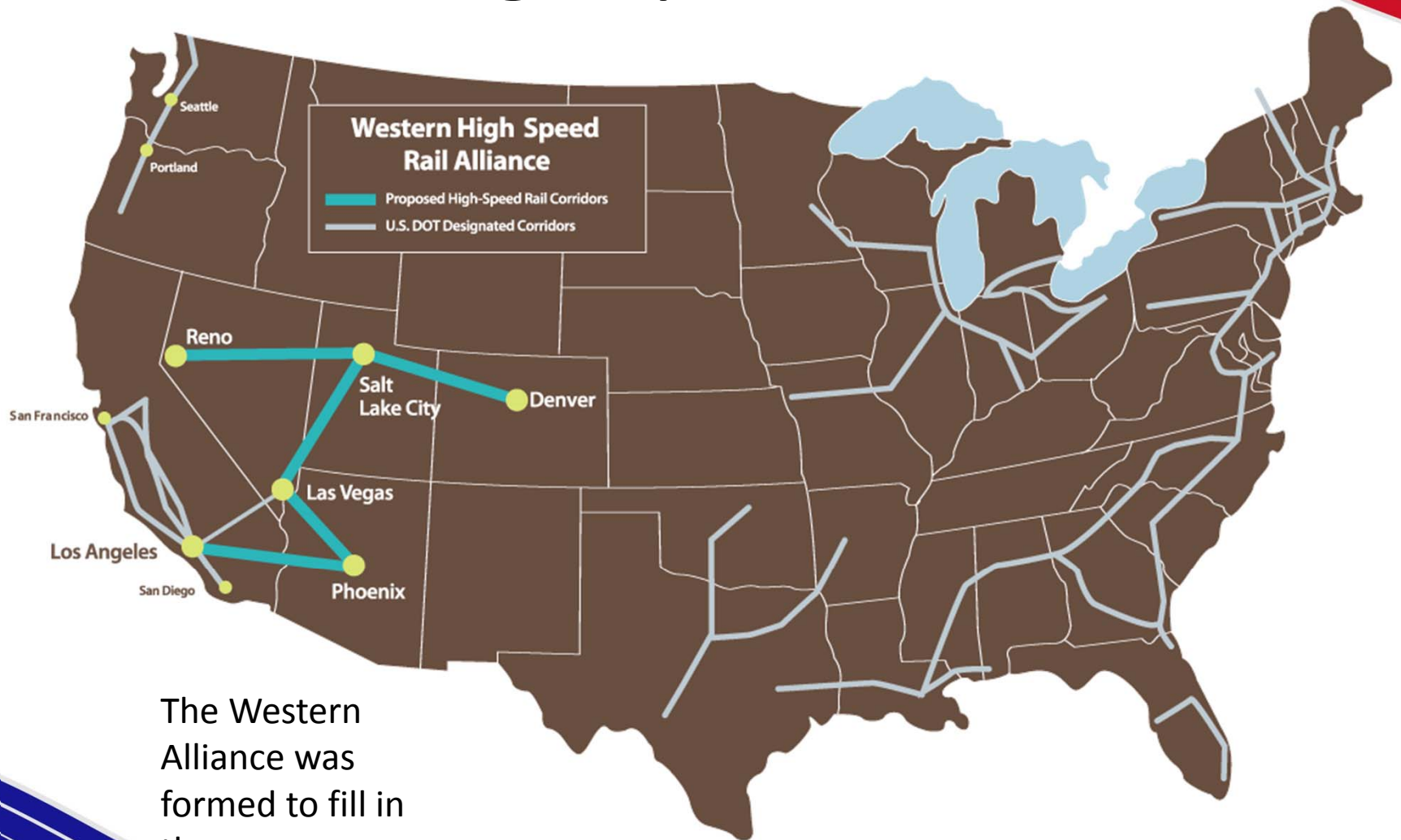
Senator Ben McAdams  
State of Utah



# VISION *for* HIGH-SPEED RAIL *in* AMERICA



# Western High Speed Rail Vision



The Western Alliance was formed to fill in the gap

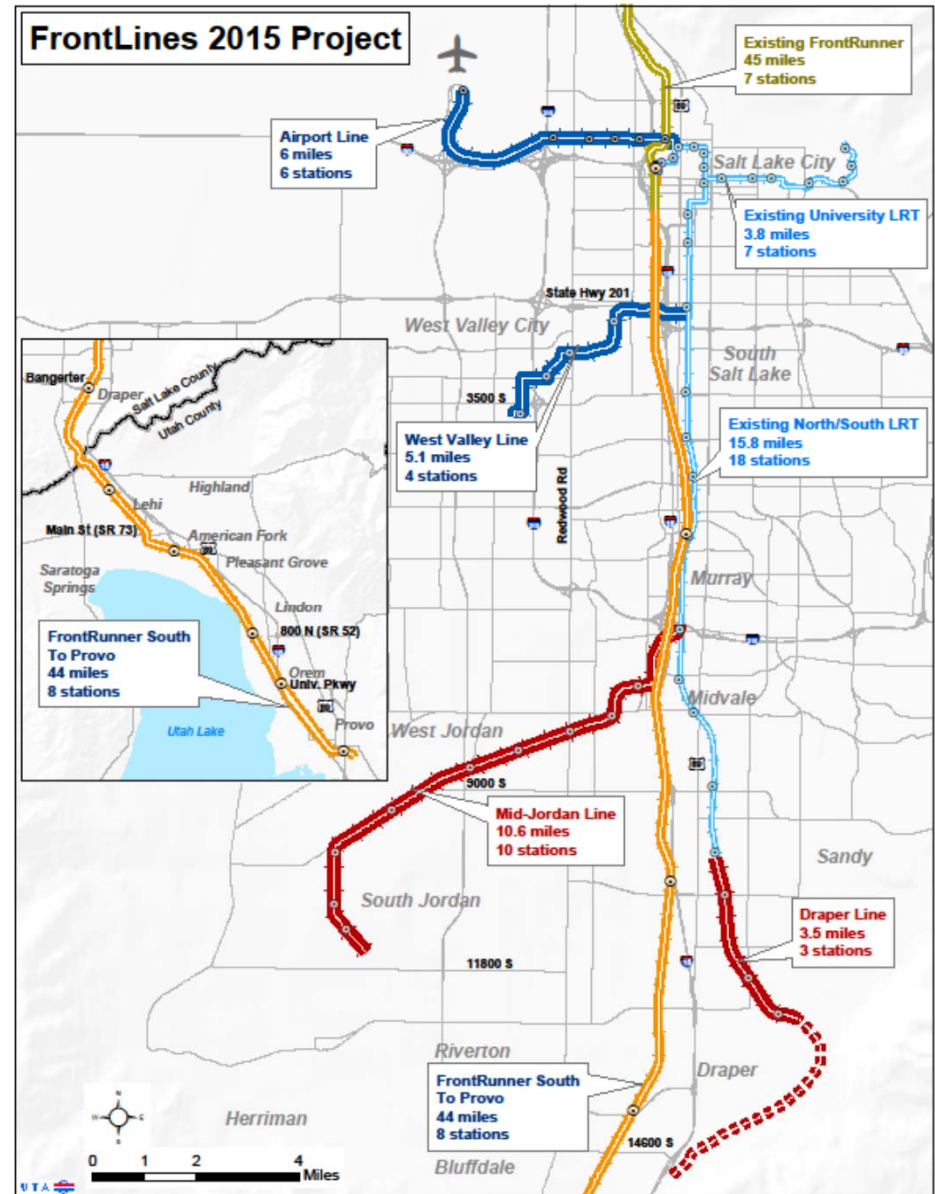


# Business Case for HSR



# FrontLines 2015

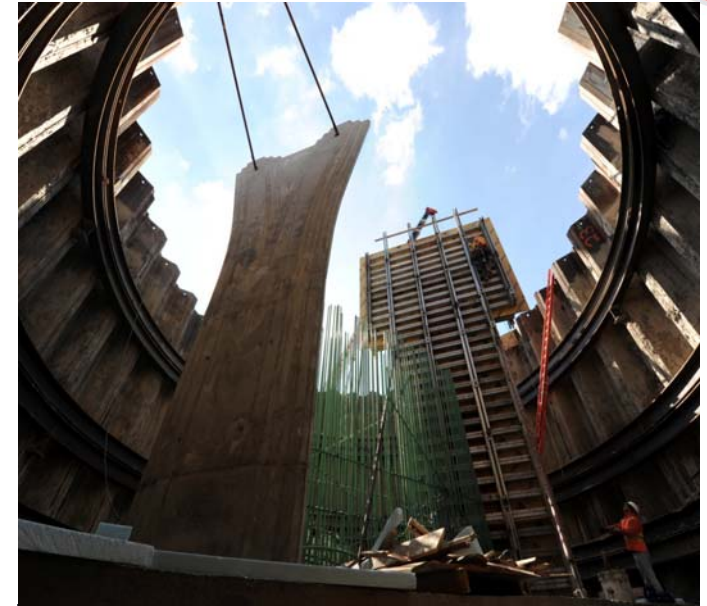
- UTA's largest project in its history
- Sixth largest rail project (U.S. and Canada)
- Building 70 miles of rail in seven years
- One project that includes five lines
  - Mid-Jordan TRAX
  - West Valley TRAX
  - FrontRunner South
  - Draper TRAX
  - Airport TRAX





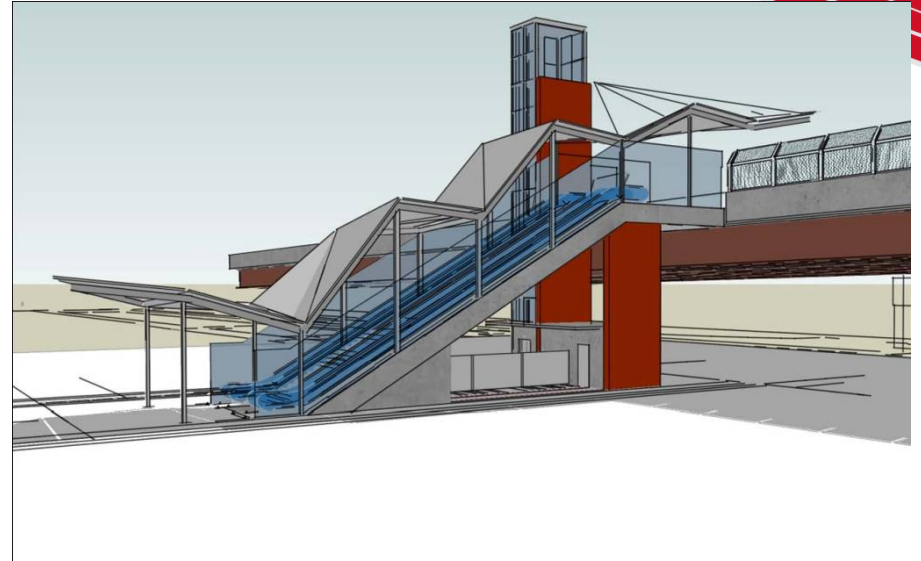
# One Project / Five Lines

- One \$2.8 Billion Project
- Expecting to Nearly Double Daily Passengers
- Beyond 80% Complete



# North Temple TRAX/FrontRunner Station

North Temple Viaduct  
Transfer to Frontrunner  
Station





# Regional Vision

## Regional Growth Principles (Developed by local elected officials):

- Efficient and adequately maintained infrastructure
- Regional mobility through transportation choices
- Integrate land-use with transportation
- Provide housing for people in all life stages and incomes
- Ensure public health & safety
- Enhance the regional economy
- Promote regional collaboration
- Strengthen sense of community
- Protect and enhance the environment

### Building The Future We Want

**Challenge and Opportunity**

Look to a bright future, growing along the scenic Wasatch-Cache National Park and along the Wasatch-Cache National Park and along the Wasatch-Cache National Park.

**Growth Principles for a Bright Future**

Efficient Infrastructure, Regional Mobility, Continuous Planning, Housing Choices, Growth Principles Come to Life, Health and Safety, Regional Economy, Regional Collaboration, Sense of Community, Environment, Envision Utah's 3% Strategy.

### The Greater Wasatch Region Vision for 2040

The Greater Wasatch area is one region, stretching from Weber County south to Utah County and from Tooele County east to the Wasatch Back. We compete economically with other regions, comprise one job and housing market, and share the same air and water. Where and how we shape tomorrow's neighborhoods, communities, and economic centers within our region will dramatically affect the quality of our lives, including how much time and money we spend getting around, the quality of the air we breathe, and the choices we have available to live, work, shop, and play.

**General Land Use Legend**

- Residential
- Commercial
- Special Districts
- Other Uses

**Wasatch CHOICES 2040**

### Wasatch CHOICE for 2040

**Highlights**

**Vision Benefits:**

- 75% more of our growth occurs in walkable communities than in currently less walkable areas.
- 45% more of our growth occurs through transit mode access than in currently less transit mode access.
- 45% more of our growth occurs in transit mode access than in currently less transit mode access.

**GreenSpace:**

GreenSpace helps us reduce carbon emissions and improve air quality. GreenSpace also helps us reduce energy consumption and improve our quality of life.

**Centers:**

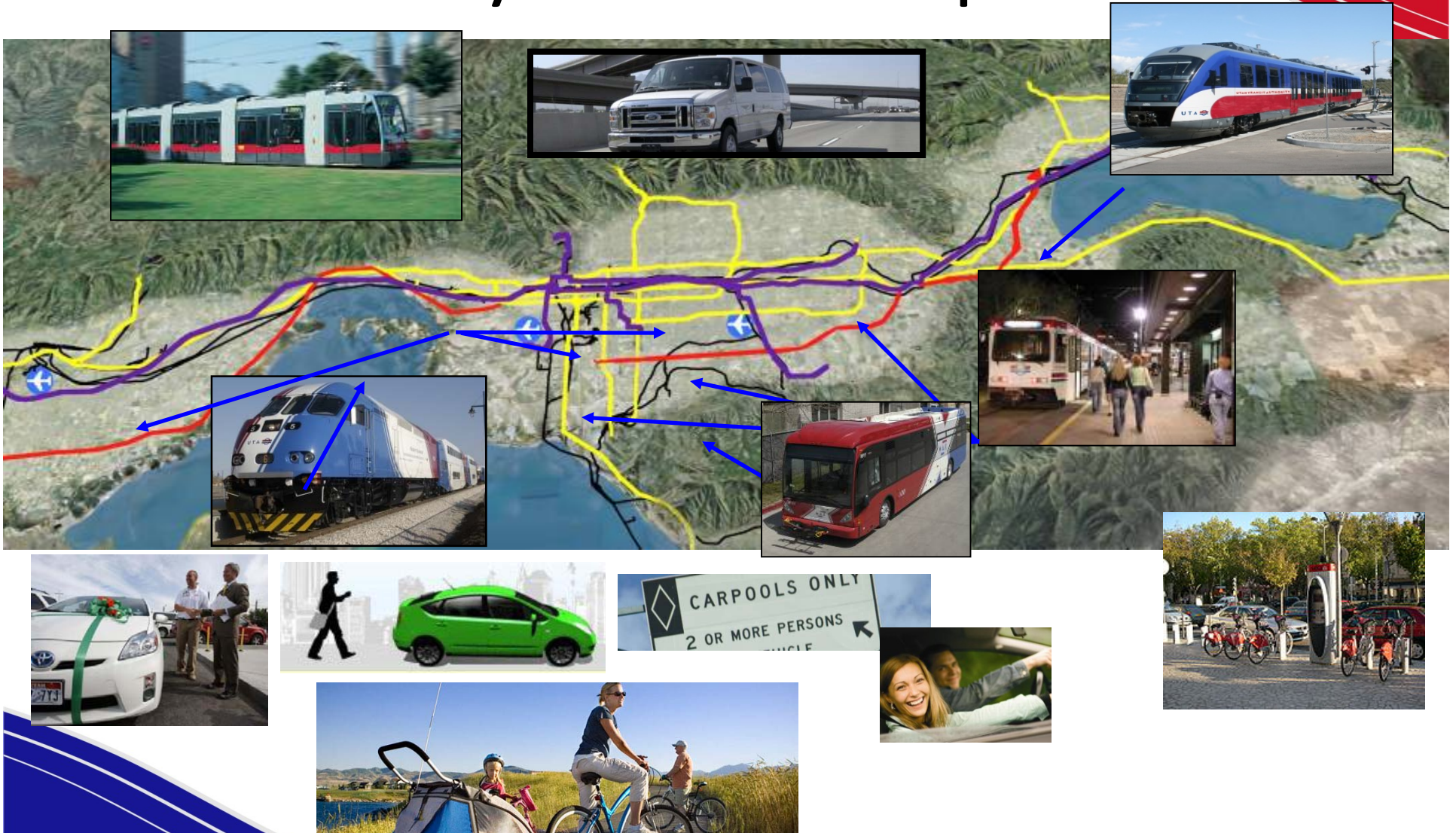
Centers are vital to our region's economic and social well-being. They provide a place for people to live, work, and play.

**Corridors:**

Corridors are the backbone of our region's transportation system. They provide a way for people to get from one place to another.



# Family of Transit Options



# UTA Network will Provide Feeder/Distribution function for HSR



90% of residents  
along the Wasatch  
Front within  
**one mile**  
of a major transit  
stop by 2030





# Utah Foundation Report Key Findings

- Non-HSR investments: Most countries have reasonable air and road networks
- Urban population 42-92% US: 82
- US has the highest per capita GDP
- Per Capita infrastructure investment in the US is low
- Cultural Conditions are weak for HSR in the US



# Non HSR Transport Network

**Key Point: Most HSR countries have well developed road and air infrastructure**

**Figure 3: Non-HSR Transportation Infrastructure**

Country	Land Area (sq km)	Airports* per 100k sq km	Airports per 100k sq km	Railways (km)	Standard Gauge (km)	Paved Road (km)	Express ways (km)
Belgium	30,278	14	46.24	3,233	3,233	119,079	1,763
China	9,569,901	195	2.04	77,834	77,084	3,583,715**	53,913
E.U.	4,324,782	456	10.54	229,450	NA	5,454,446**	NA
France	549,970	41	7.45	29,213	29,046	1,027,183**	10,950
Germany	348,672	65	18.64	41,896	41,641	644,480	12,600
Italy	294,140	39	13.26	19,729	18,317	487,700	6,700
Japan	364,485	49	13.44	26,435	3,978	961,366	7,560
Netherlands	33,893	11	32.46	2,896	2,896	136,827**	2,582
South Korea	96,920	25	25.79	3,381	3,381	80,642	3,367
Spain	498,980	30	6.01	15,288	1,392	681,224	13,872
Switzerland	39,997	7	17.50	4888	3397	71,384	1,793
Taiwan	32,260	16	49.60	1,582	345	40,843	976
Turkey	769,632	49	6.37	8,697	8,697	426,951**	1,987
U.K.	241,930	41	16.95	16,454	16,151	398,366	3,520
U.S.	9,161,966	419	4.57	226,427	226,427	4,209,835	75,040

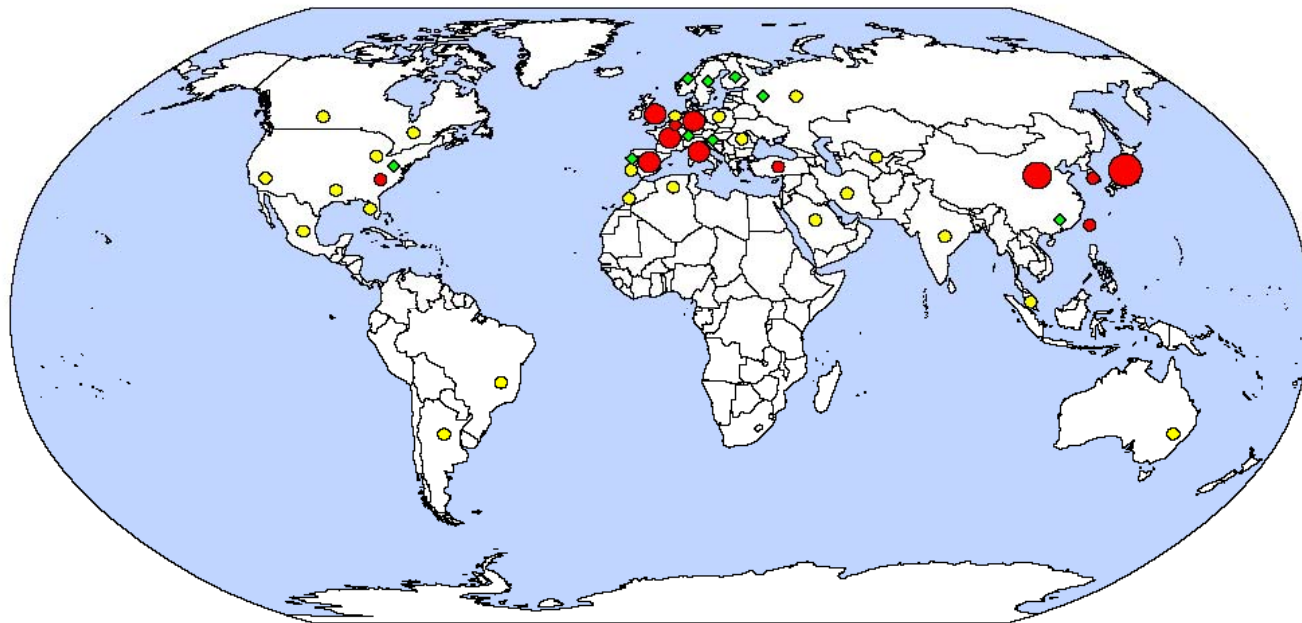
Source: CIA World Factbook.


\*Airports listed here are those with runways large enough to accommodate commercial aircraft.

\*\*Total roadways, including unpaved; paved-only totals not available for these countries.



# High speed systems around the world



  $V \geq 155$  mph in operation      $V \leq 125$  mph in operation     Planned High Speed Rail

# Urban Population Density

Key Point: Many HSR countries have lower percentage of an urban population than the US

**Figure 4: Geographic and Demographic Characteristics of Countries with HSR**

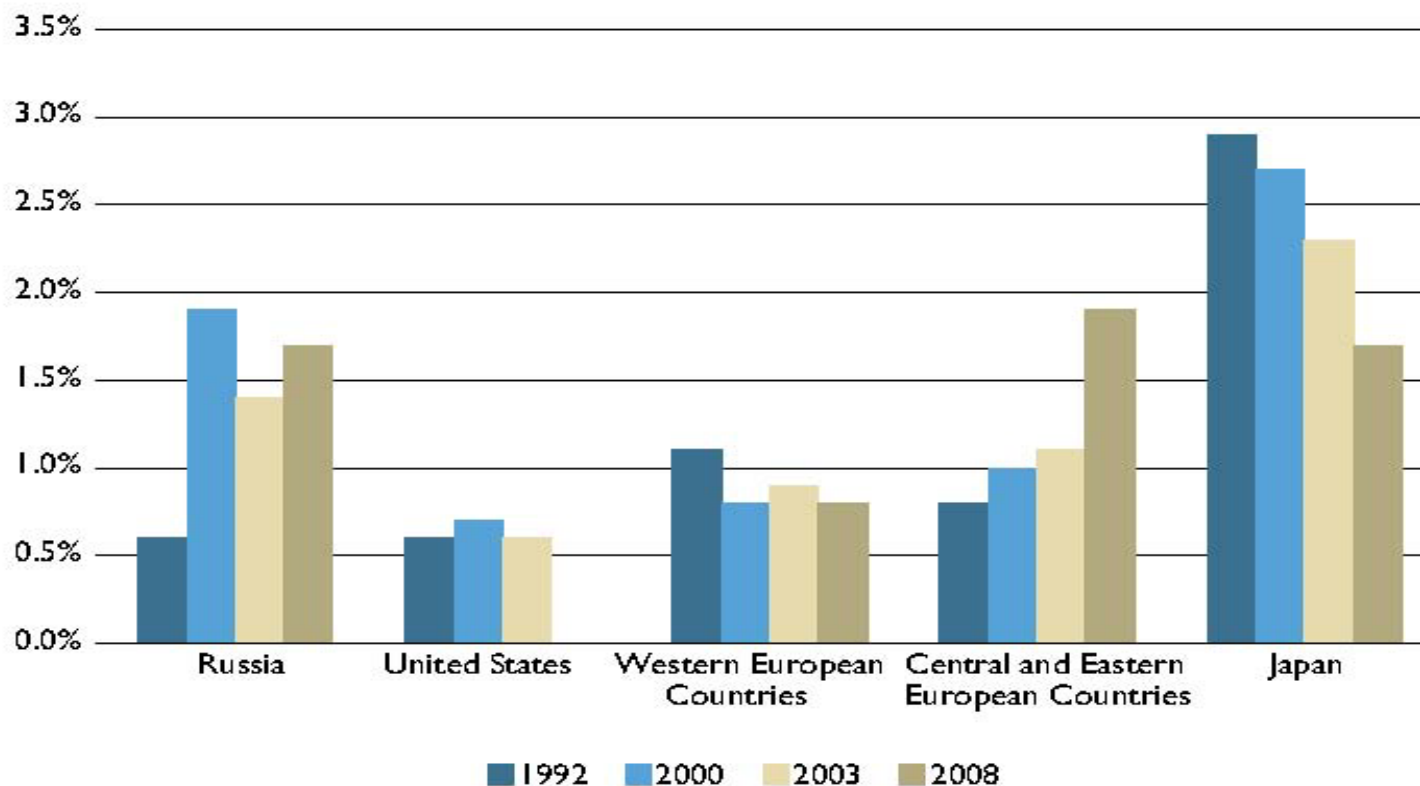
Country	Land Area (sq km)	Population	Population Density Per sq km	Urban Population
Belgium	30,278	10,414,336	343.96	97%
China	9,569,901	1,338,612,968	139.88	43%
E.U.	4,324,782	491,582,852	113.67	NA
France	549,970	62,150,775	113.01	77%
Germany	348,672	82,329,758	236.12	74%
Italy	294,140	58,126,212	197.61	68%
Japan	364,485	127,078,679	348.65	66%
Netherlands	33,893	16,715,999	493.20	82%
South Korea	96,920	48,508,972	500.51	81%
Spain	498,980	40,525,002	81.22	77%
Switzerland	39,997	7,604,467	190.13	73%
Taiwan	32,260	22,974,347	712.16	NA
Turkey	769,632	76,805,524	99.80	69%
U.K.	241,930	61,113,205	252.61	90%
U.S.	9,161,966	307,212,123	33.53	82%



# Infrastructure Investment

Key Point: The US spends less on infrastructure than other countries

**Figure 6: Investment in Inland Transport Infrastructure, OECD Nations, as a Percent of GDP**



# GDP Per Capita

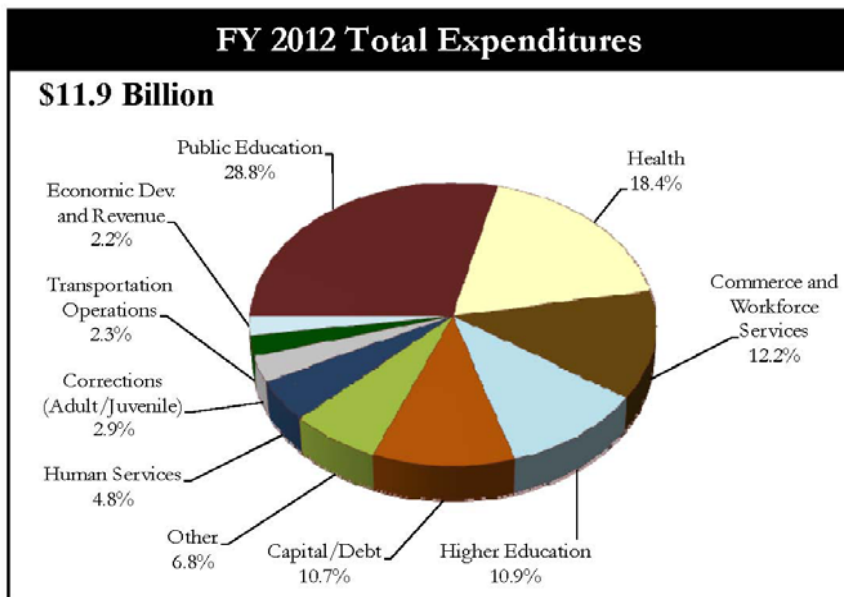
Key Point: The US has the highest GDP in the world

**Figure 5: Type of Government and Size of Economy in HSR Countries**

<b>Country</b>	<b>GDP (PPP*, Billions)</b>	<b>GDP / Capita (PPP*)</b>	<b>Gov Type / Adm</b>
Belgium	\$381	\$36,600	Fed. Parl./Const. Mon.
China	\$8,789	\$6,600	Communist State
E.U.	\$14,510	\$32,600	Intergovernmental
France	\$2,110	\$32,800	Rep.
Germany	\$2,811	\$34,100	Fed. Rep.
Italy	\$1,760	\$30,300	Rep.
Japan	\$4,137	\$32,600	Parl./Const. Mon.
Netherlands	655	\$39,200	Const. Mon.
South Korea	\$1,356	\$28,000	Rep.
Spain	\$1,368	\$33,700	Parl. Mon.
Switzerland	317	\$41,700	Fed. Rep.
Taiwan	\$718	\$29,800	Multiparty Democracy
Turkey	\$863	\$11,200	Rep. Parl.
U.K.	\$2,149	\$35,200	Const. Mon.
U.S.	\$14,260	\$46,400	Const. Fed. Rep.

# State of Utah and Federal Spending

## State of Utah



8% of the State of Utah budget is spent on transportation

## Federal Spending

3% of the Federal budget is spent on transportation and infrastructure



**TABLE A** ★ 2009 Report Card for America's Infrastructure

Aviation	<b>D</b>
Bridges	<b>C</b>
Dams	<b>D</b>
Drinking Water	<b>D-</b>
Energy	<b>D+</b>
Hazardous Waste	<b>D</b>
Inland Waterways	<b>D-</b>
Levees	<b>D-</b>
Public Parks and Recreation	<b>C-</b>
Rail	<b>C-</b>
Roads	<b>D-</b>
Schools	<b>D</b>
Solid Waste	<b>C+</b>
Transit	<b>D</b>
Wastewater	<b>D-</b>

AMERICA'S INFRASTRUCTURE G.P.A.

**D**

ESTIMATED 5 YEAR INVESTMENT NEED

**\$2.2 TRILLION**

**NOTES** Each category was evaluated on the basis of capacity, condition, funding, future need, operation and maintenance, public safety and resilience

**A** = Exceptional  
**B** = Good  
**C** = Mediocre  
**D** = Poor  
**F** = Failing

# Infrastructure Report Card

- 2009 Report Card for America's Infrastructure
- Source: [www.asce.org/reportcard](http://www.asce.org/reportcard)

# The Market is Right for HSR in the West

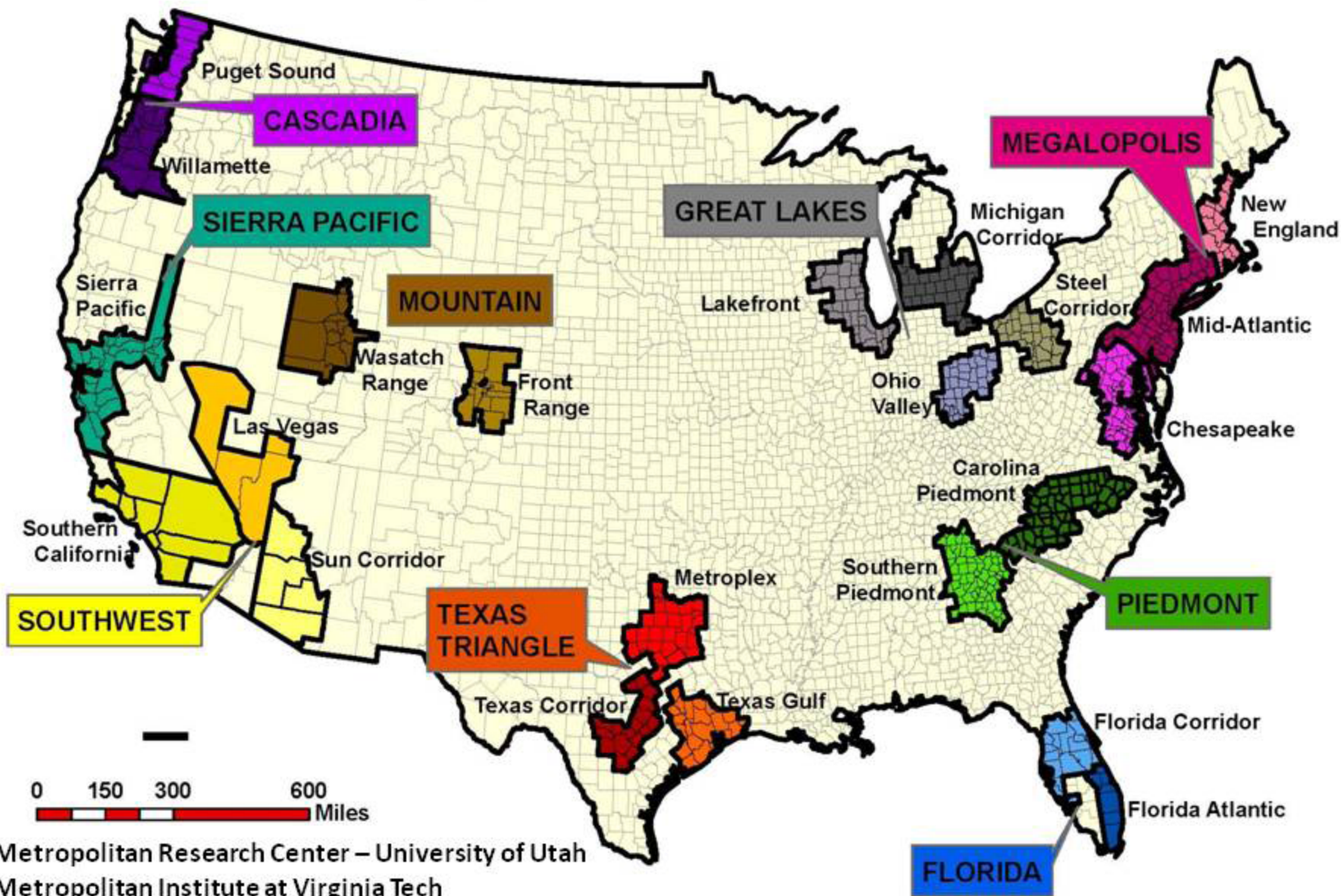
- Population growth is coming, we need to plan for it
- HSR can be a tool for economic growth
- Appropriate city pair distance
- Significant freight benefits for HSR
- Move the discussion forward. The Envision Utah process shows, with good info the public will make good decision

# Expected Population Growth

- US expected to grow to 500 million people by 2050
- From 2000-2030: Top 5 fastest growing states
  - Nevada, Arizona, Florida, Texas, and Utah.
  - 88% of the nation's growth will occur in the Southern and Western States. (U.S. Census)
- From 2005-2060
  - Current population of Utah is 2.7 million people.
  - 2060 population of Utah will be 6.84 million people or greater.
  - Utah's population will be more than double.
- From 2008-2028
  - Current population of Nevada is 2.78 million people.
  - 2028 population of Nevada will be 4.11 million people.
- New Transportation solutions will be need to support this amount of growth in a sustainable manner



# Megapolitan America 2040



Metropolitan Research Center – University of Utah  
Metropolitan Institute at Virginia Tech  
August 2009



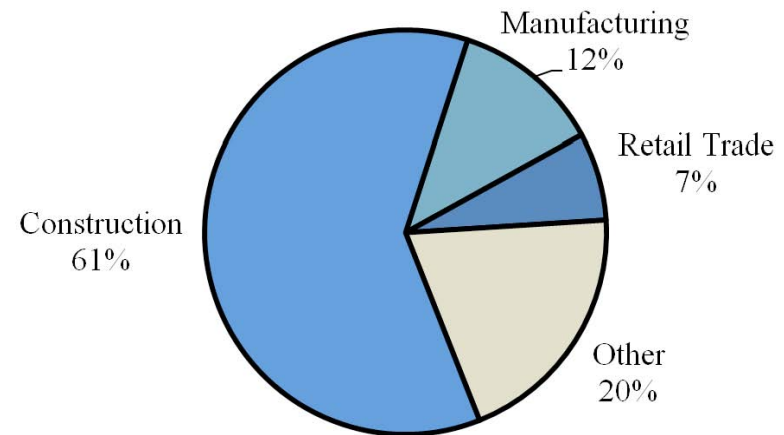
# HRS Economic Benefits

- Initial construction jobs
- Long term operating jobs
- Improved infrastructure efficiency

# Economic Analysis of Infrastructure Investment

- 84% of American's support greater investments to address infrastructure problems
- Infrastructure investments have a higher return than private capital investment
- Create middle class jobs
- Lower construction costs by building now

Figure 5: Jobs Created by Infrastructure Investment



Source: Estimates based on BEA and BLS input-output tables.

Source: US Dept of the Treasury

# City Pair Distances

- Connect City Center to City Center
- More efficient for short-to mid-distance travel or connecting travel between cities

## WHSR City Pair Distances

Departure City	Arrival City	Distance (miles)
Los Angeles	Las Vegas	265
Los Angeles	Phoenix	373
Las Vegas	Salt Lake City	424
Las Vegas	Phoenix	299
Salt Lake City	Denver	536
Salt Lake City	Reno	519





# Cultural Conditions for HSR

**Key Point: The US is low in some key cultural measures for HSR implementation**

**Figure 7: Cultural Conditions in HSR Countries  
As Measured by Hofstede Dimensions**

Country	PDI	IDV	UAI	LTO		
Belgium	65	75	94	NA	<b>PDI</b>	Power Distance Index
China	80	20	30	118	<b>IDV</b>	Individualism
France	68	71	86	NA	<b>UAI</b>	Uncertainty Avoidance Index
Germany	35	67	65	31	<b>LTO</b>	Long-Term Outlook
Italy	50	76	75	NA		
Japan	54	46	92	80		
Netherlands	38	80	53	44		
South Korea	60	18	85	75		
Spain	57	51	86	NA		
Switzerland	34	68	58	NA		
Taiwan	58	17	69	87		
Turkey	66	37	85	NA		
U.K.	35	89	35	25		
U.S.	40	91	46	29		



Thank you