

# Commuter Rail System Study

Transit Committee  
March 11, 2010





## Study Purpose

**Study Requested by MAG Regional Council in 2008**

**Commuter Rail Study Funding in 2004 RTP**

**Study Feasibility of Commuter Rail Service in MAG Region**

**Ridership Forecasting and Cost Effectiveness**

**Capital and Operating Cost Estimates**

**Vehicle Technology Recommendation**

**Implementation Requirements**

# Peer Regions ~ Commuter Rail Systems



## WHAT IS COMMUTER RAIL?

Peak Period, Peak Direction Service. Traditionally carries less daily riders than light rail, but for longer distances. Similar market and characteristics with Bus Rapid Transit / Express.

Can share ROW and track with freight railroads and can operate concurrently (does not require exclusive right-of-way) .

Typically longer station spacing (every 3-7 miles on average) than light rail (1-2 miles) with emphasis on park-and-rides and traditional city CBDs.

Locomotive technology (diesel or clean/green hybrid Genset).

Passenger coaches (push-pull). Engines and cars meets federally mandated structural requirements for rolling stock crash resistance Larger, heavier profile than light rail vehicles.

Higher max.speed (79mph), slower acceleration and deceleration than light rail. Average speed approx 44mph.

Lower capital cost per mile (\$10-\$20M) due to existing right of way use / reuse. Light rail (\$40-\$70M).



**SOUNDER-Seattle**



**CALTRAIN-San Francisco**



**ALAMONT COMMUTER EXPRESS – San Jose**



**METROLINK – Los Angeles**



**COASTER – San Diego**



**FRONT RUNNER – Salt Lake City-Ogden**



**RAIL RUNNER – Albuquerque-Santa Fe**



**TRINITY RAILWAY EXPRESS – Dallas-Ft. Worth**



**NORTHSTAR – Minneapolis- Big Lake**



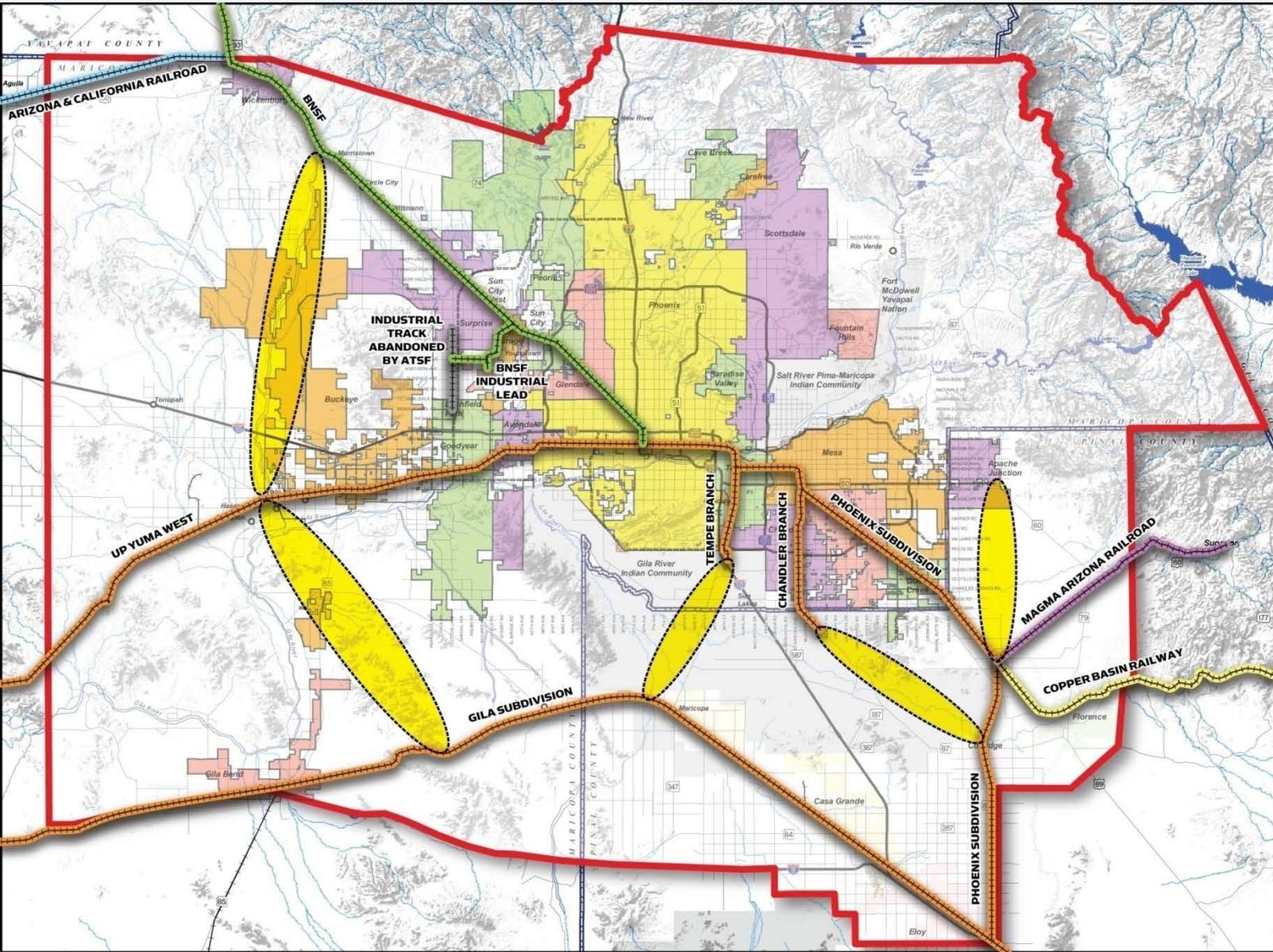
# Commuter Rail Systems



- "Heritage" Systems (Pre-1985)
- "New" Systems (Since 1985)
- Open by 2010
- In design or planning

**ON THE MOVE****Comparisons to Other Commuter Rail Systems**

<b>System</b>	<b>Start Year</b>	<b>Length (in route miles)</b>	<b>Trains Per Day (Weekday)</b>	<b>Daily Ridership (Weekday)</b>
<b>Altamont Commuter Express (ACE) (San Jose-Stockton, CA)</b>	<b>1998</b>	<b>86</b>	<b>6-8</b>	<b>3,700</b>
<b>Coaster (San Diego-Oceanside, CA)</b>	<b>1995</b>	<b>41</b>	<b>22</b>	<b>6,000</b>
<b>Front Runner (Salt Lake City-Ogden, UT)</b>	<b>2008</b>	<b>44</b>	<b>70</b>	<b>4,800</b>
<b>Metrolink, San Bernardino Line (Los Angeles-San Bernardino, CA)</b>	<b>1992</b>	<b>56</b>	<b>39</b>	<b>11,950</b>
<b>Metrolink, Ventura County Line (Los Angeles-Oxnard/Montalvo, CA)</b>	<b>1992</b>	<b>71</b>	<b>22</b>	<b>4,000</b>
<b>Music City Star (Nashville-Lebanon, TN)</b>	<b>2006</b>	<b>32</b>	<b>11</b>	<b>1,000</b>
<b>New Mexico Rail Runner Express (Santa Fe-Albuquerque-Belen, NM)</b>	<b>2006</b>	<b>93</b>	<b>24</b>	<b>4,500</b>
<b>Sounder, North Line (Seattle-Everett, WA.)</b>	<b>2003</b>	<b>35</b>	<b>8</b>	<b>1,500</b>
<b>Sounder, South Line (Seattle-Tacoma, WA.)</b>	<b>2000</b>	<b>47</b>	<b>18</b>	<b>11,000</b>
<b>Trinity Railway Express (TRE) (Dallas-Ft. Worth, TX)</b>	<b>1996</b>	<b>34</b>	<b>49</b>	<b>9,800</b>



## MAG COMMUTER RAIL STRATEGIC PLAN

### EXISTING RAILROADS & POSSIBLE EXTENSIONS

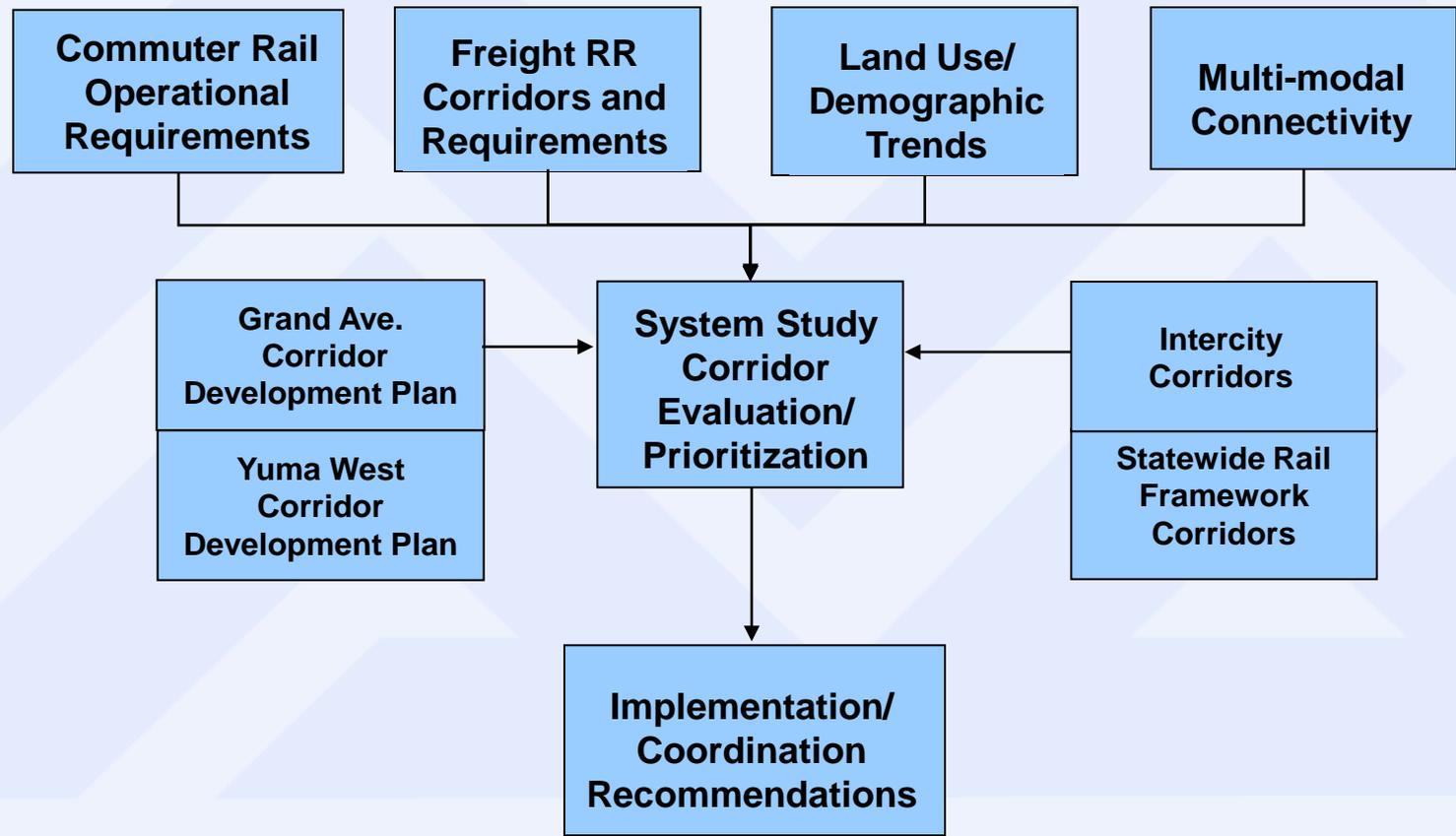
**Legend**

- BNSF
- UP Mainline
- Magma Arizona Railroad
- Copper Basin Railway
- Arizona & California Railroad (AZRC) (since 1991)
- Industrial track abandoned by ATSF (early 1990s)
- Possible rail extension areas
- Commuter Rail Study Area

Source: URS Date: Jan. 2008

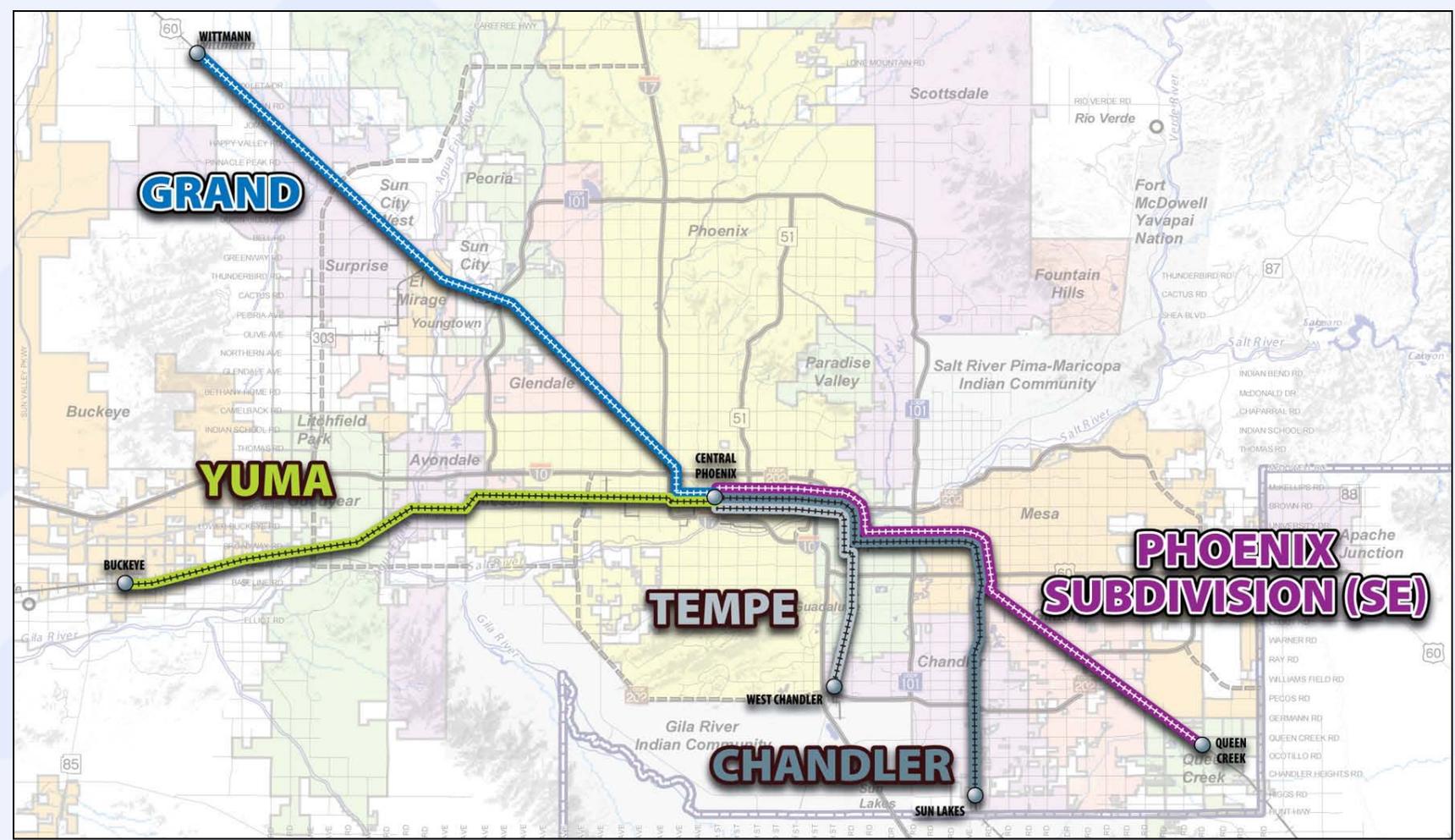


# Commuter Rail System Study Key Elements





# System Study Corridors (existing railroad corridors)



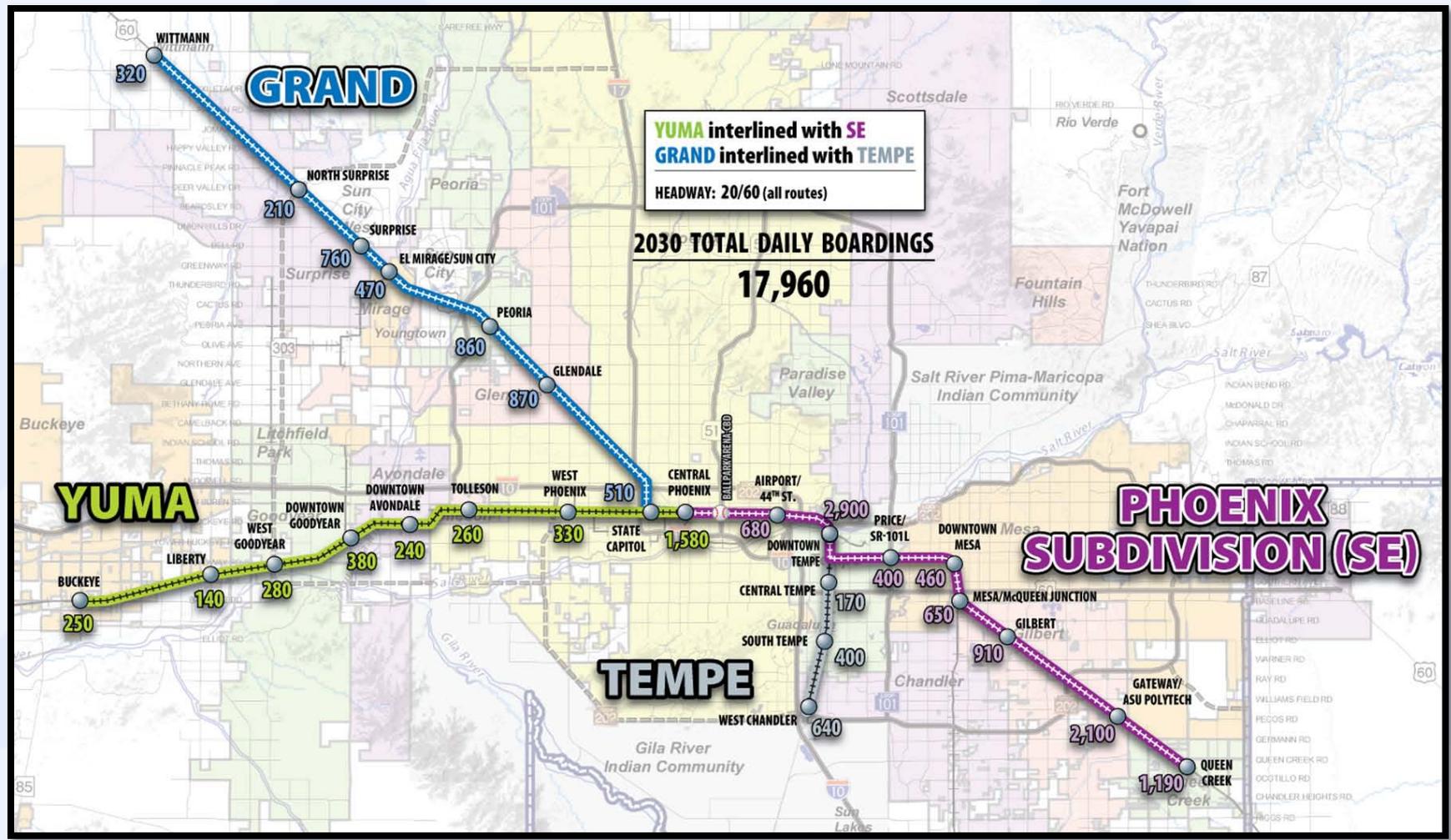


## Grand Avenue, Yuma West Commuter Rail Corridor Development Plans and System Study

- Action Step identified in MAG Commuter Rail **Strategic Plan** in 2008
  
- **Grand Avenue** Study process launched in November 2008
- Study area is downtown Phoenix to Wickenburg (BNSF corridor)
- Focus on developing a phased implementation plan
- Evaluation of passenger rail, freight rail, and roadway traffic
  
- **Yuma West** Project added to MAG work program in January 2009
- Study area is downtown Phoenix Buckeye (with technical analysis to Sky Harbor and Tempe)
- Focus on developing a phased implementation plan
- Evaluation of passenger rail, freight rail, and roadway traffic
  
- **System Study** Project added to MAG work program in January 2009
- Evaluate existing freight corridors and possible extensions
- Prioritize implementation of commuter rail service through evaluation of:
  - Ridership Potential
  - Operating Strategies
  - Capital and Operating Costs
  - Railroad Owner-Partnership MOU



# Most Productive Regional Commuter Rail System

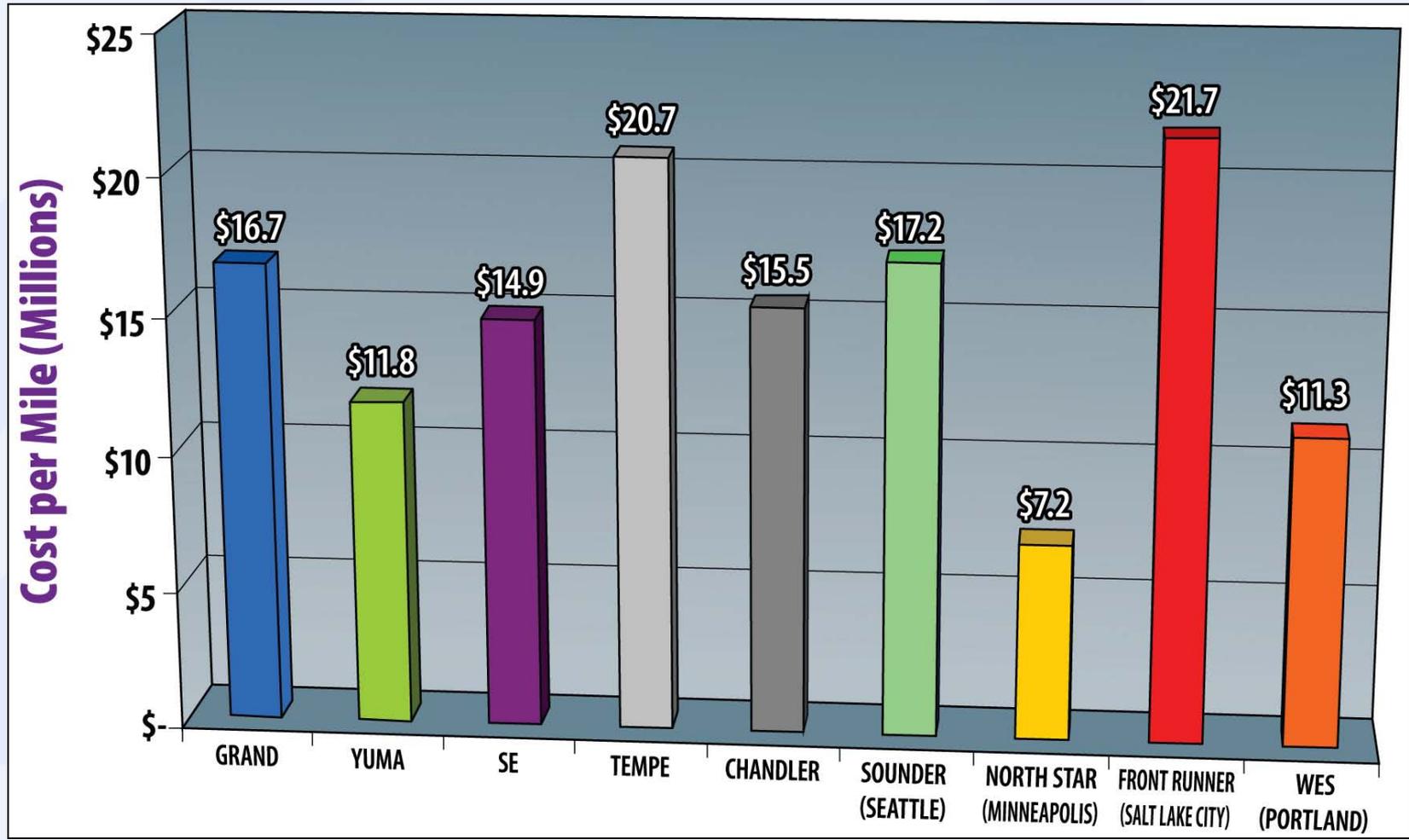




# Stand Alone Corridors

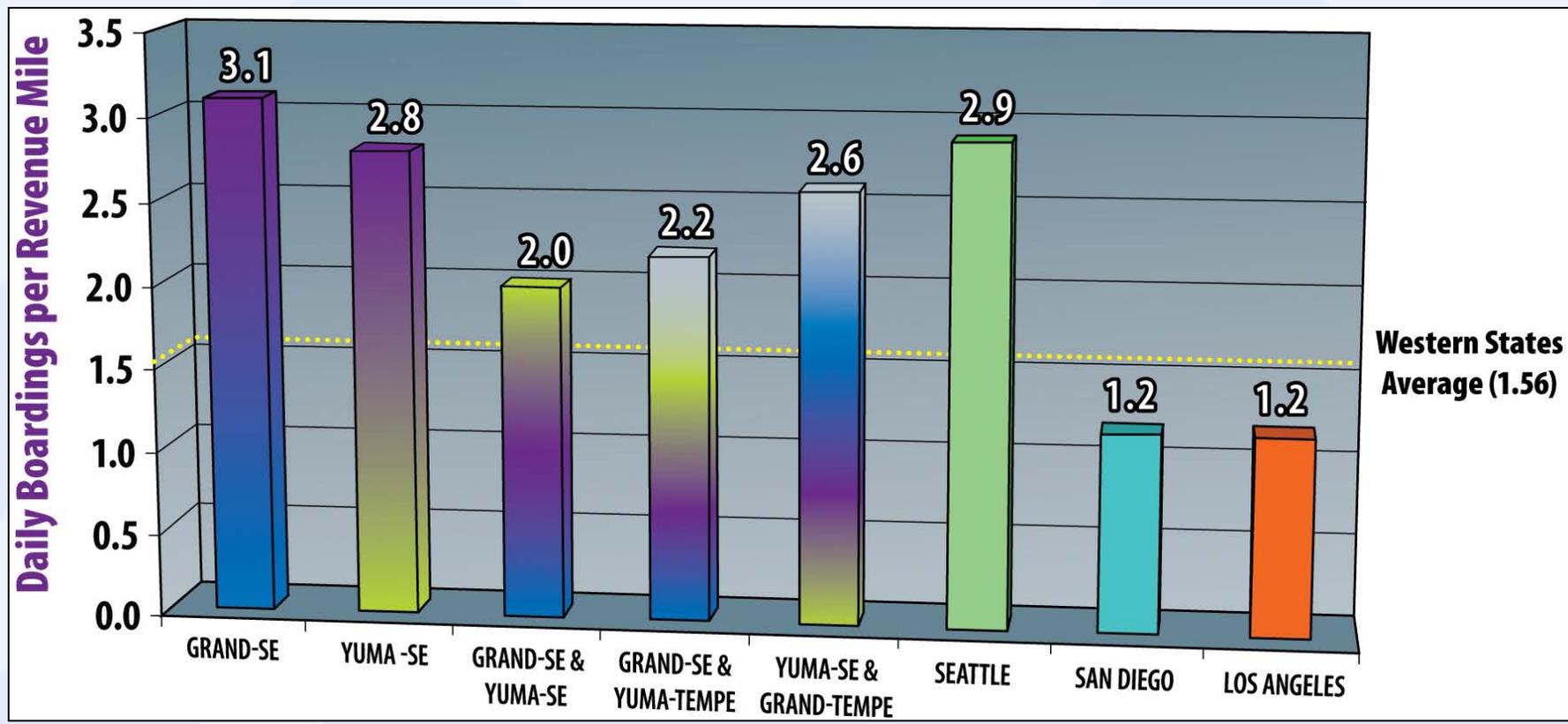
## Capital Cost per Mile

(including peer cities)





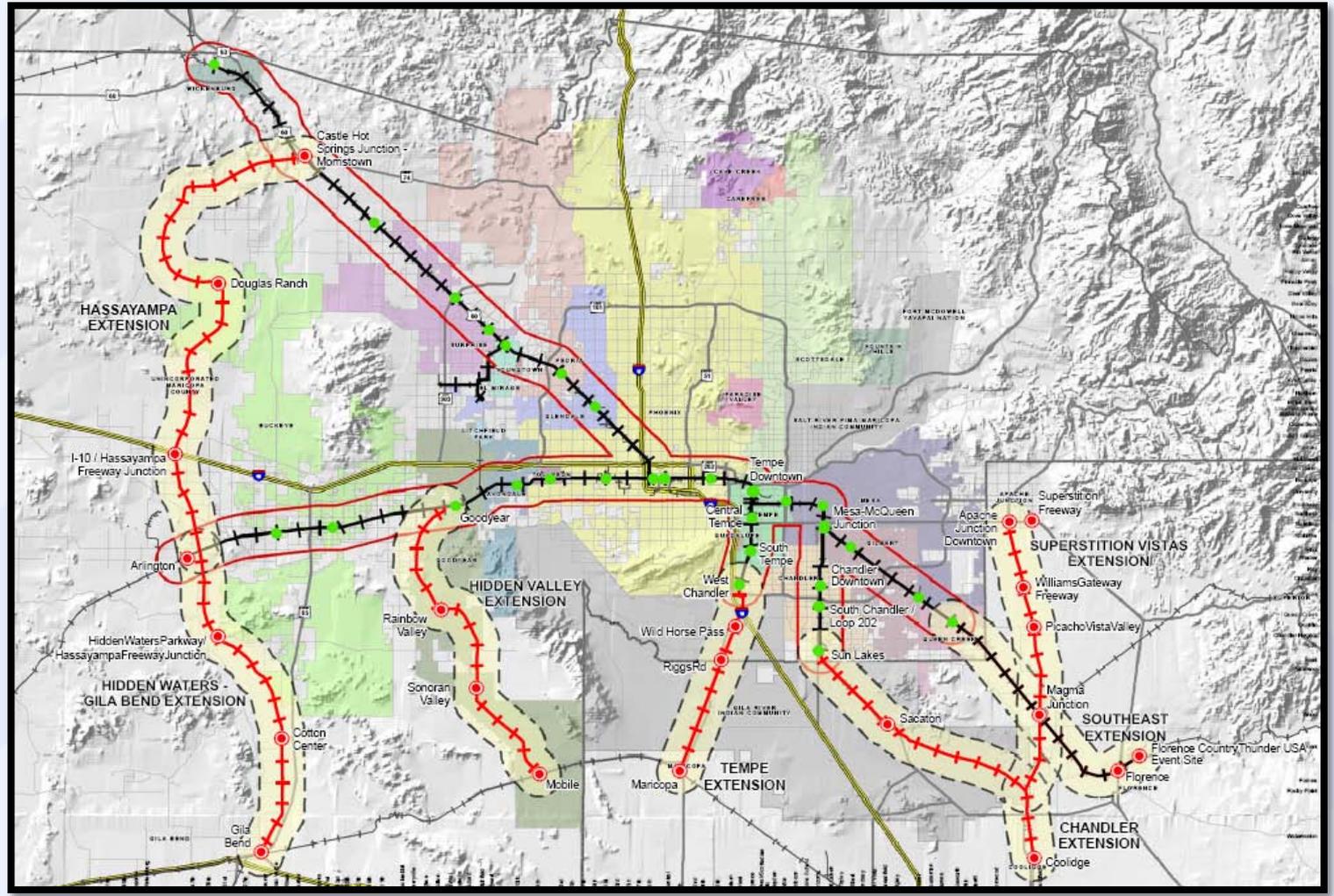
# 2030 Daily Boardings per Revenue Mile – Interlined Corridors (including peer cities)





# Potential Corridor Extensions

(existing railroad lines, historic railroad corridors and new rights of way)





# Near Term and Long Term Implementation Steps

## Five Year Plan between 2010 and 2015

- Passage of enabling legislation relative to liability and indemnification
- Coordination with Railroads
  - Develop partnerships to investigate options for MOU
  - Advance the design and operating costs
- MAG will coordinate with ADOT on the upcoming Phoenix-Tucson Alternatives Analysis, which will help guide future planning activities in the southeast valley
- Initiate collaborative local planning efforts
- Identify funding commitments
- Initiate the process for federal funding
- Develop and implement governance plan
- Preserve future options

## Longer Horizon, 2015+

- Formalize partnership with railroad
- Obtain committed funding sources
  - Federal, Local
- Design, construct, and operate initial commuter rail system
- Further planning to develop a seamless transportation system and meet regional sustainable goals

# Commuter Rail System Study

*Questions?*



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