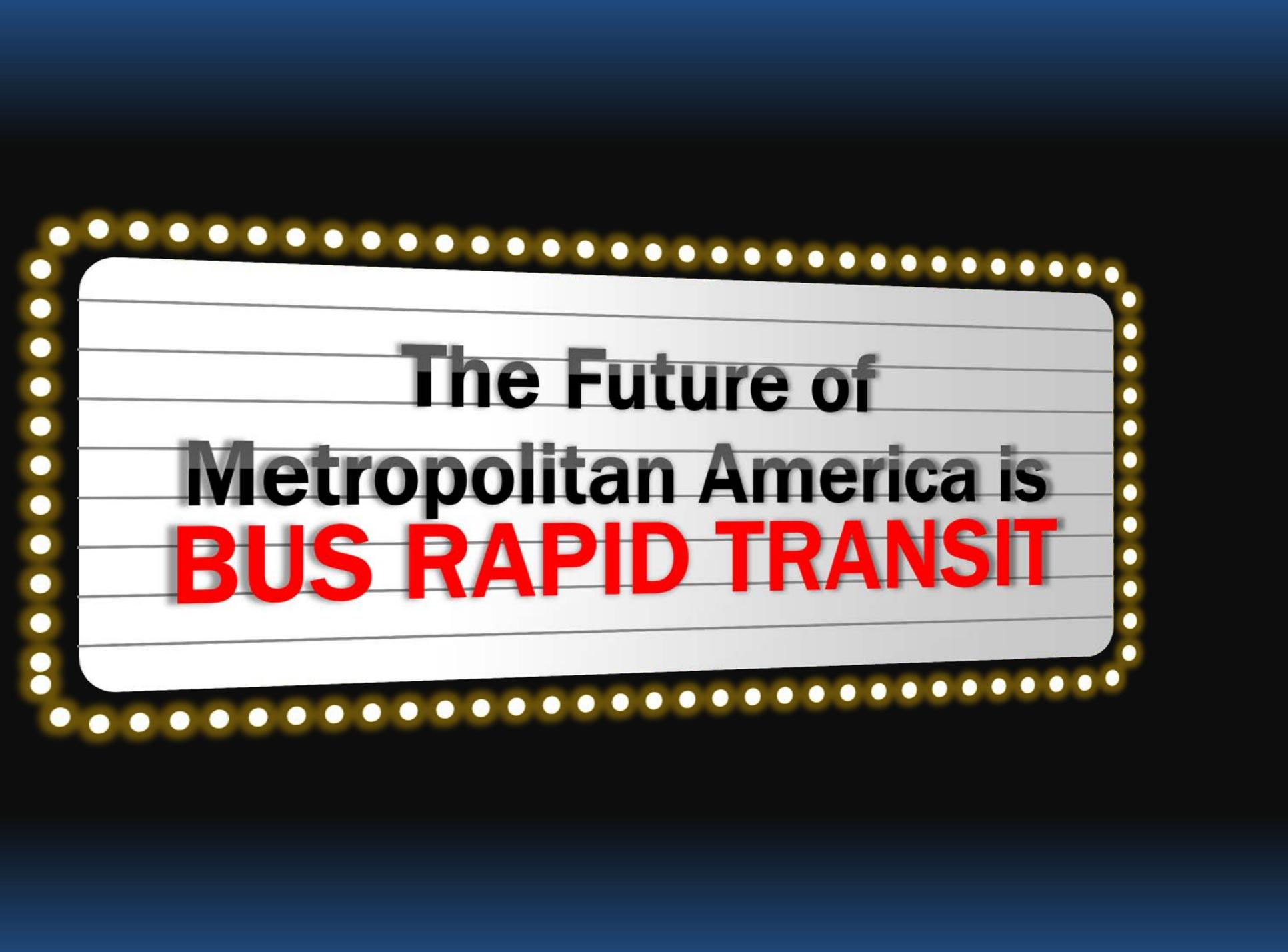


# **Bus Rapid Transit**

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**The Future of  
Metropolitan America is  
BUS RAPID TRANSIT**

# Current bus rapid transit lines studied or examined in Nelson report



Bus rapid transit systems in these cities are studied or examined in the Nelson BRT report. Note, only five cities have systems that are rated on the industry-accepted scale of BRT service: Cleveland, OH; Eugene, OR; Pittsburgh, PA; Las Vegas, NV; and Los Angeles, CA.



# WHAT IS BRT?

## LIGHT RAIL ON TIRES

Bus Rapid Transit (BRT) is one of the technologies that could be used to implement Rapid Transit Service in key, heavily traveled corridors. BRT is essentially light rail on rubber tires - offering almost identical services features and characteristics as light rail, but with a significantly lower cost. BRT is intended to move large numbers of people quickly and efficiently to their destinations.

### FAST AND RELIABLE SERVICE

Dedicated lanes and signal priority

Could run as frequently as every 5 minutes

Stops every 1/2 mile to 1 mile (*less frequently than local bus*)

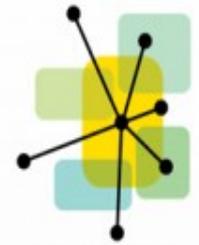
Real time travel information

### CONVENIENT

Level boarding

Off-board fare collection

Multiple doors for quick boarding



INDY CONNECT

### MODERN

Vehicles are often longer articulated and specially designed

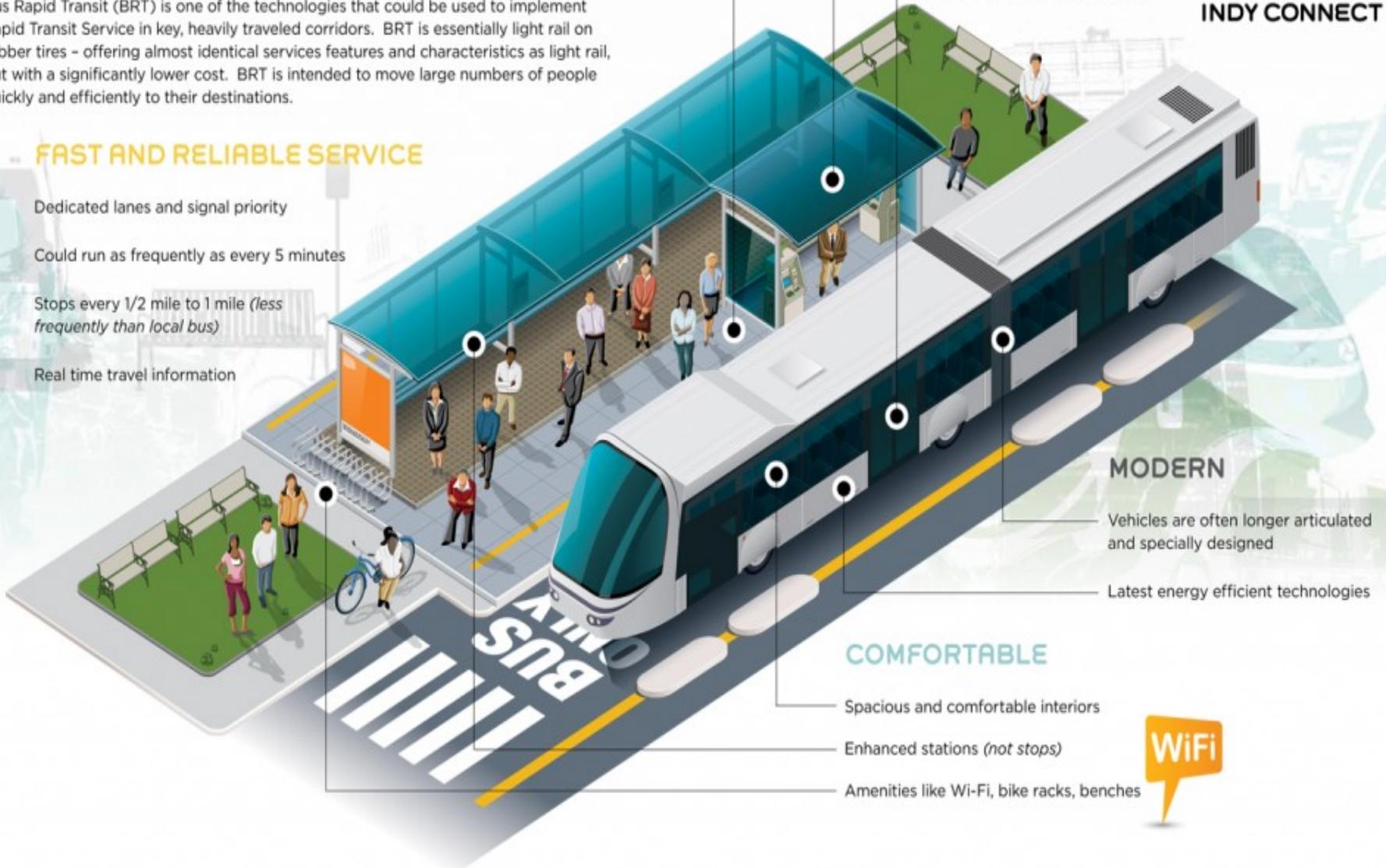
Latest energy efficient technologies

### COMFORTABLE

Spacious and comfortable interiors

Enhanced stations (*not stops*)

Amenities like Wi-Fi, bike racks, benches



**Running Ways**

Running ways—lanes in which BRT vehicles operate—are improved to help decrease travel time, increase predictability, and increase a sense of permanence. Examples of improvements include: vehicles using dedicated lanes or guideways; semi-dedicated lanes (including high occupancy vehicle (HOV) or high occupancy toll (HOT) lanes).

**Stations**

Stations or shelters provide additional rider amenities and differentiate BRT from standard bus service. Amenities can include, among other things, weather-proofing, safety improvements, public art and landscaping.

**Vehicles**

Stylized vehicles run on alternative fuels or hybrid technology for a cleaner and quieter trip. BRT vehicles are also often designed to carry more riders and improve boarding with multiple boarding doors or low floors.



Source: United States Government Accountability Office (2012)

**Improved Service**

BRT systems provide service for riders that is faster, more reliable, and more frequent than standard bus service.

**Fare Collection**

Pre-paid or electronic passes can increase the convenience and speed of fare collection decreasing boarding times and providing travel time savings.

**Branding**

Distinguishes BRT from standard bus service by marketing the BRT as a separate service, or unique branding of stations or vehicles.

**Intelligent Transportation Systems (ITS)**

Improves service reliability by providing priority for BRT vehicles at intersections or extending a green light.

# BRT Gaining Office Share

OFFICE Development Metric	BRT Metros
<b>2000-2007</b>	
New Office Square Feet	39.0 million square feet
Within less than 1/2 mile of BRT	4.5 million square feet
Share	<b>11%</b>
<b>2007-2015</b>	
New Office Square Feet	13.7 million square feet
Within less than 1/2 mile of BRT	2.1 million square feet
Share	<b>15%</b>
Change in Share of New Office Development	<b>33%</b>

# BRT Gaining Multifamily Share

MULTIFAMILY Development Metric	BRT Metros
<b>2000-2007</b>	
New MF Square Feet	25.3 million square feet
Within less than 1/2 mile of BRT	0.5 million square feet
Share	<b>2%</b>
<b>2007-2015</b>	
New MF Square Feet	6.7 million square feet
Within less than 1/2 mile of BRT	0.3 million square feet
Share	<b>5%</b>
Change in Share of New Multifamily Units	<b>139%</b>

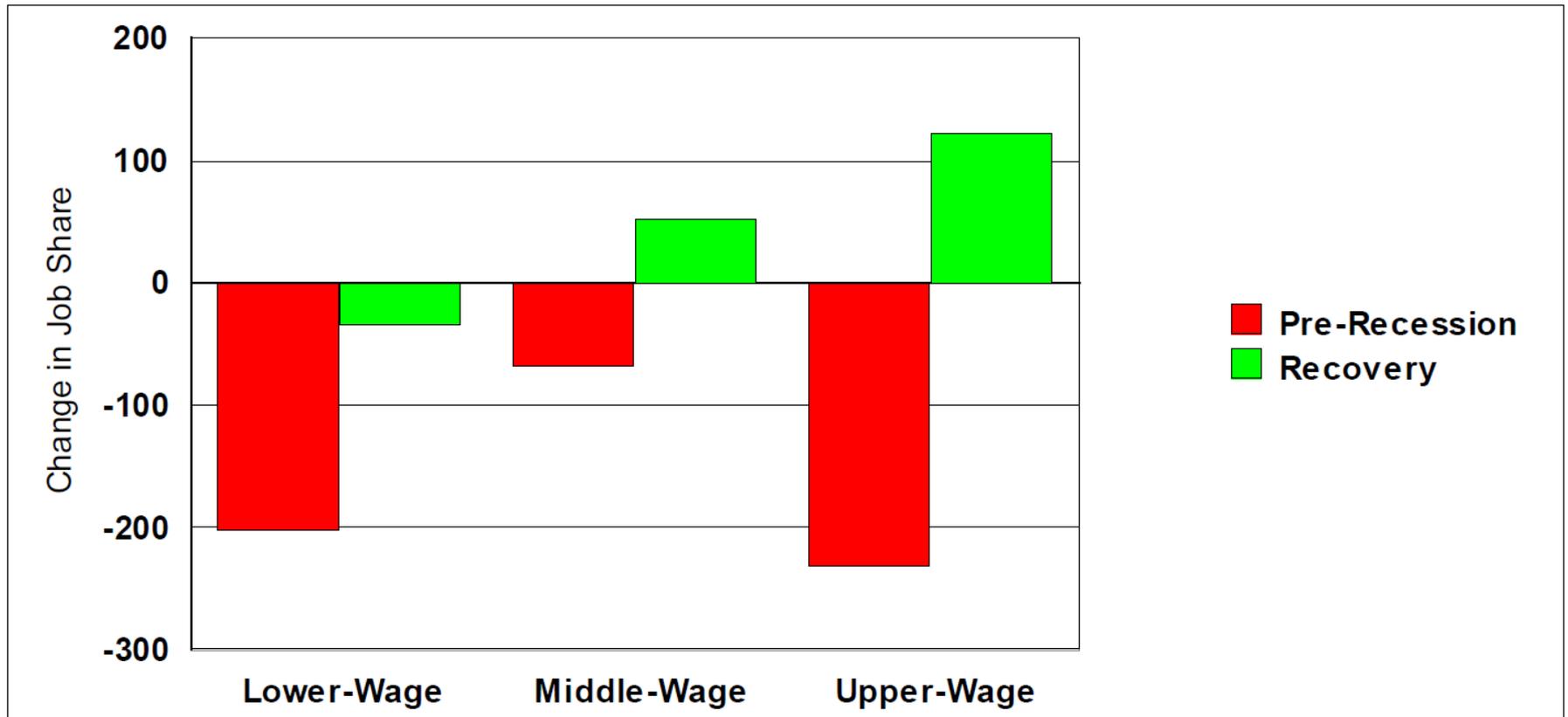
# From Pre-Recession Job Hemorrhaging to Post-Recession Turn-Around

BRT Summary	BRT Corridor 2002-2007	BRT Corridor 2007-2011
<i>Average Job Change in BRT Corridors</i>	<b>-455</b>	<b>22</b>

# BRT and Office Rent Premium Per Square Foot

System	Downtown	Outside Downtown
Cleveland	\$2.44	<i>na</i>
Eugene-Springfield	\$1.93	<i>na</i>
Kansas City	\$2.67	<i>na</i>
Las Vegas	+	\$4.85
Pittsburgh	+	\$2.30

# BRT and Job Attractiveness by Economic Sector Wage Level



# Manufacturing Surprise

- Within 0.25 mile there is a positive association between BRT service and manufacturing employment.
- Manufacturing is most diverse economic sector:
  - From automobiles, ocean liners, space ships
  - To mirco-breweries, garment assembly, art production
- BRT is associated with urban manufacturing growth in highly tactile, sensory, and visually-oriented manufacturing enterprises

# Quality Levels in the US

## 13 BRT lines evaluated

- **Gold** → None
- **Silver** → Cleveland
- **Bronze** → Eugene,  
Los Angeles, Pittsburgh
- **Basic** → Las Vegas,  
Pittsburgh (2 lines)
- **Unrated** → All others



*Source:* Cleveland Healthline rated Silver.  
"HealthLine at Public Square" by Center for  
Neighborhood Technology.

# Quality Matters

- Objective international assessment protocols classify less than a third of US BRT systems as providing “true” BRT services based on design, permanence of investment and technology.
- BRT is more than a “line on the pavement”.
- Market responds best to BRT systems with:
  - **Dedicated lanes**
  - **Stations with off-board/electronic fare collection**
  - **Platforms level with the bus floor allowing “walk-on” comfort**
  - **Priority at intersections**
  - **Specially-designed vehicles to enhance capacity, ride quality and branding**

# **BRT is a Key Part of the Future**

- By 2050, 100 million Americans will want to have walkable accessibility to fixed-route transit.
- Less than 20 million have access now.
- To meet future demand, all new residential development will need to be accessible to fixed-route transit such as BRT.
- BRT is less costly than rail and more easily expanded in existing highway corridors.

# Eugene, OR

- 3 years after opening, **42 percent of new jobs were within ¼ mile of BRT stations**
- Administrative and health-care jobs most attracted to BRT locations
- Result of locating stations in high-demand areas and adopting land-use policies to encourage new development near BRT

Source: Nelson, Arthur C., et al. "Bus Rapid Transit and Economic Development", University of Utah 2011



# **Sponsors → *THANK YOU!***

- **National Institute for Transportation & Communities**
- **Transportation for America**
- **Washington Metropolitan Area Transit Authority**
- **Utah Transit Authority**
- **Portland Metro Council**
- **TriMet (Metropolitan Portland)**
- **Lane County Transit**
- **Washoe MPO**
- **City of Provo, Utah**
- **Regional Transportation Commission of Southern Nevada**