



# **FasTracks: *Quality of Life Study***

**Transportation Systems Performance Measurement Conference  
May 19, 2011**

# Overview



## Quality of Life Study

- Background/Purpose
- Study Scope
- Reporting
- Example Measures

# RTD



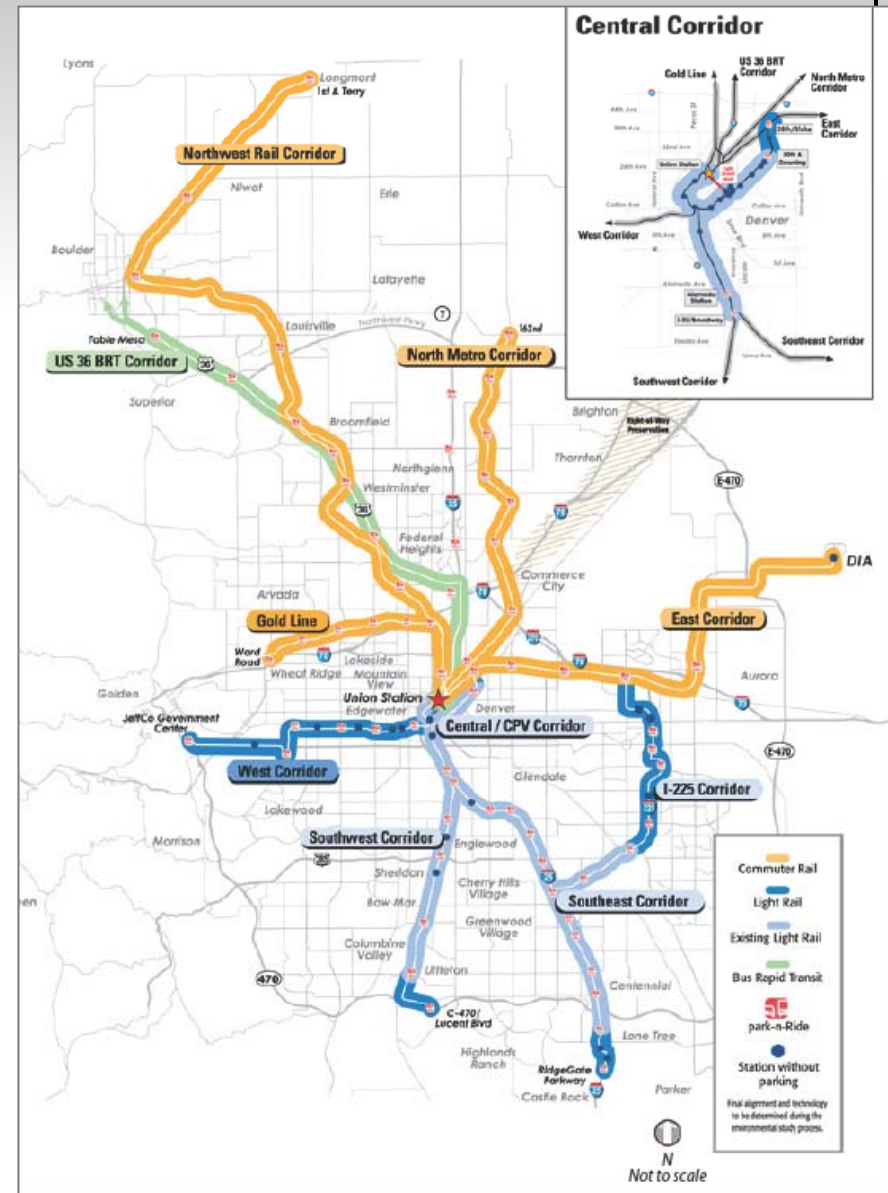
- Regional authority operating transit in eight counties
  - Funded by sales & use tax
  - 15-member Board of Directors
  - 2,300 sq. mile service area
- Family of services to meet diverse needs of the region
  - 35 miles of light rail
  - 150 fixed bus routes



# FasTracks Program



- In 2004, Denver region voters passed a 0.4% tax increase to fund regional transit expansion
- FasTracks Program:
  - 122 miles of new commuter and light rail
  - 18 miles of bus rapid transit (BRT)
  - 21,000 new parking spaces at rail and bus stations
  - Enhanced bus service to facilitate bus/rail transfers across the 8-county district



# Study Background



- In the *2004 FasTracks Plan*, the RTD Board adopted three core goals for FasTracks:
  - Balance transit needs with future regional growth
  - Increase transit mode share during peak travel times
  - Provide improved transportation choices and options
- The Plan also outlined anticipated benefits to the region

***How do we know the FasTracks Program is achieving these goals and providing benefits?***



# QoL Study: What Is It?



- Quality of Life (QoL) Study is a multiyear FasTracks monitoring program with the primary goal to:
  - Objectively track and measure how the region changes as FasTracks is planned, constructed and opened for service
- The Study also serves to fulfill the Before and After Study data requirements for corridors receiving Federal New Starts funding



# Summary of Study Measures



FasTracks Goals	Objective	QUALITY OF LIFE STUDY		
		Indicator	Measure	
Establish a Proactive Plan that Balances Transit Needs with Future Regional Growth	1. Meet Future Transportation Needs	Population Growth	Population Urban Land Consumption Urban Residential Density Corridor Population Density	
		Job Growth & Employment	Annual Change in Employment <b>Direct Job Creation</b> Indirect Job Creation Unemployment Rate Station Area Employment	
		Housing Growth	Housing Starts	
	2. Provide Opportunities for Development Near Transit	Economic Activity	RTD Sales Tax Revenue <b>Taxable Retail Sales</b> <b>New Development</b>	
		Property Value	Apartment Rent Housing Affordability Index Commercial Lease Rates Property Values	
		Sustainable Design	<b>Sustainable Project Features &amp; Actions</b>	
	3. Environmental Sustainability	Air Quality	Vehicular Emissions Number of Air Quality Exceedences	
		Energy Consumption	Transportation Energy Consumption per Capita Excess Fuel Consumed Due to Congestion Fuel Saved Due to New Transit Trips	
		Peak Transit Mode Share	Mode Share	
	Increase Transit Mode Share at Peak Times	4. Transit Usage	Ridership	Transit Boardings <b>Annual Transit Boardings per Capita</b> Passenger Demographics New Transit Riders
			Accidents	Safety Benefit
		5. Travel Safety & Security	Crime	<b>Crime Rate on RTD Property</b> Security Resource Inventory
Passenger Perception			Safety Perception	
6. Customer Satisfaction		Passenger Satisfaction	<b>Overall Service Rating</b>	



\* High Level measures are shown in **bold**.

# Summary of Study Measures



FasTracks Goals	QUALITY OF LIFE STUDY		
	Objective	Measure	
Improve Transportation Choices & Options	7. System Mobility	Vehicle Miles Traveled	Vehicle Ownership Transit VMT Impact
		Travel Times	<b>Peak Period Auto &amp; Transit Travel Times</b> <b>Peak Period Auto &amp; Transit Travel Time Variability</b>
		Traffic Volumes	Peak Period Freeway Volumes Peak Period Arterial Volumes on Parallel Streets
		Congestion	Extent of Congestion Duration of Congestion
		User Cost Savings	Motorist Congestion Cost Savings Transit Riders Cost Savings
		Transit Access	Access & Egress Mode Population within Walking Distance Employment within Walking Distance
	8. Travel Choices & Accessibility	Auto Access	<b>park-n-Ride Capacity &amp; Utilization</b> park-n-Ride License Plate Survey
		Bike Access	Bicycle Parking Inventory Bike-on-Bus Usage Station Bicycle Access
		Pedestrian Access	Station Pedestrian Access
		Destination Access	<b>Percent of Regional Destinations served by High-Frequency Transit</b>
		Household Access	Population Served by High-Frequency Transit
		Job Access	Employment Served by High-Frequency Transit
		Land Use	Transit Supportive Density Changes
		Transit Service	Miles of Rapid Transit Facilities Revenue Hours of ADA Service Transit Revenue Hours



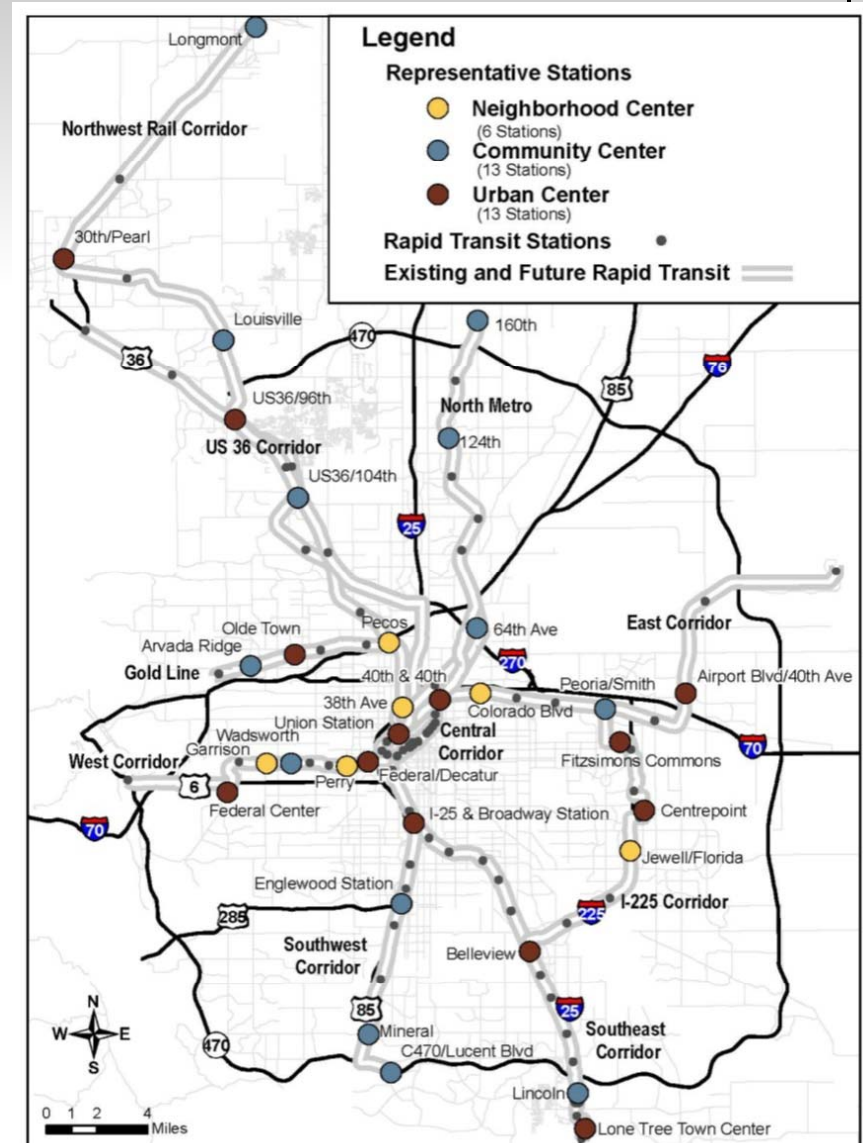
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# Study Scope



- Study measures the effects of the FasTracks Program at three geographic levels:
  - Region
  - Rapid transit corridors
  - Rapid transit station areas
- Only “representative stations” used for station area data collection



# Reporting



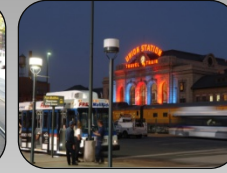
- Detailed Reports
  - 2006: First report established a baseline of data for full set of 70+ measures
  - Detailed reports issued every 3 to 5 years
- High Level Measures reports
  - Issued annually between detailed reports
  - Provides updates on a subset of 11 measures



## Quality of Life Study Baseline Report - 2006



February 2008



# Example Measures

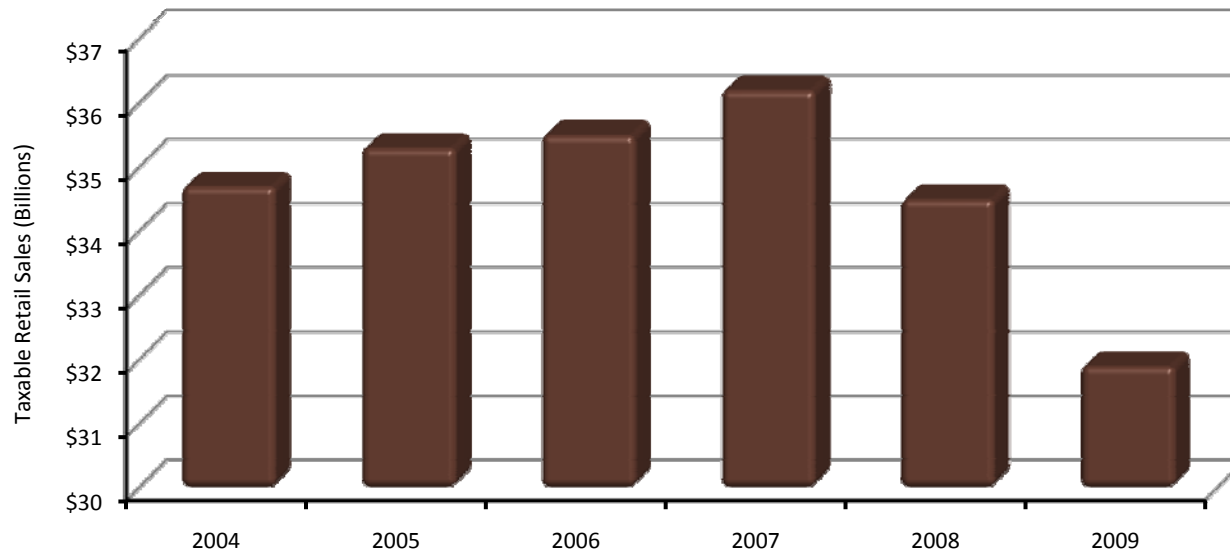
# Provide Opportunities for Development Near Transit



## *Economic Activity*

### Taxable Retail Sales Within the District

- Critical measure of the economic strength of the Denver region
- General increase between 2004 & 2007
- Significant decrease associated with economic recession has continued into 2009



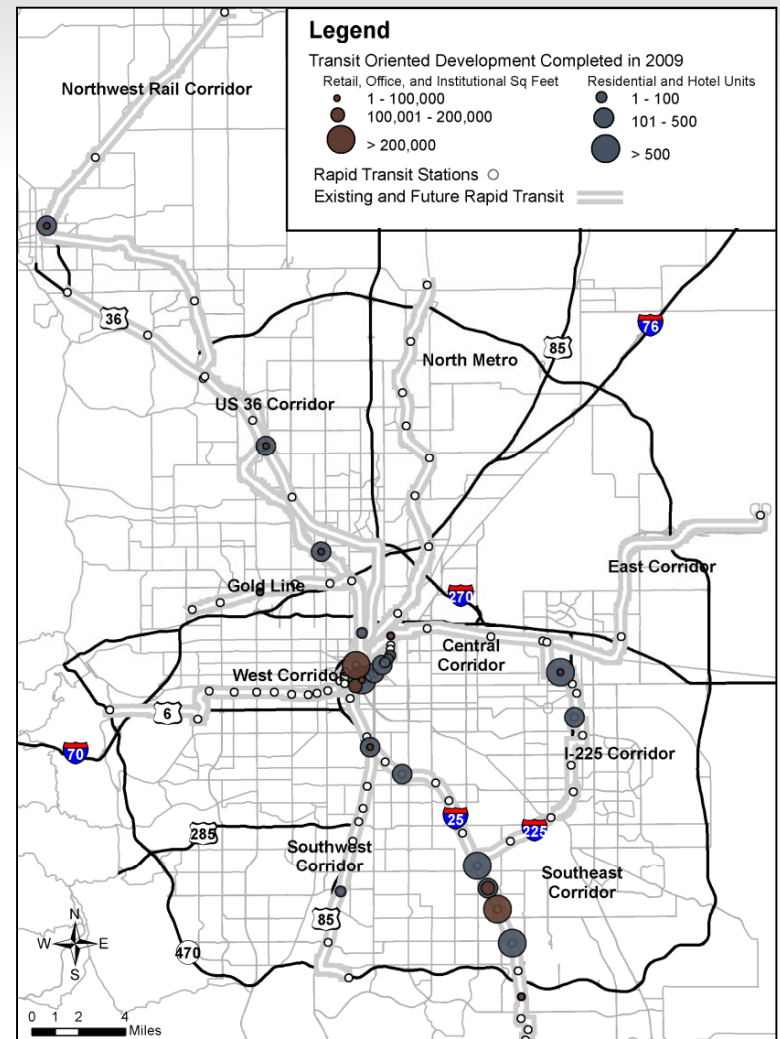
# Provide Opportunities for Development Near Transit



## Economic Activity

## Completed Development Near Rapid Transit Stations

- New development within ½ mile of existing and future rapid transit stations
- Completed development is a lagging indicator as projects were started several years earlier
- Majority of development completed in 2009 occurred downtown and along the Southeast Corridor



# Provide Opportunities for Development Near Transit

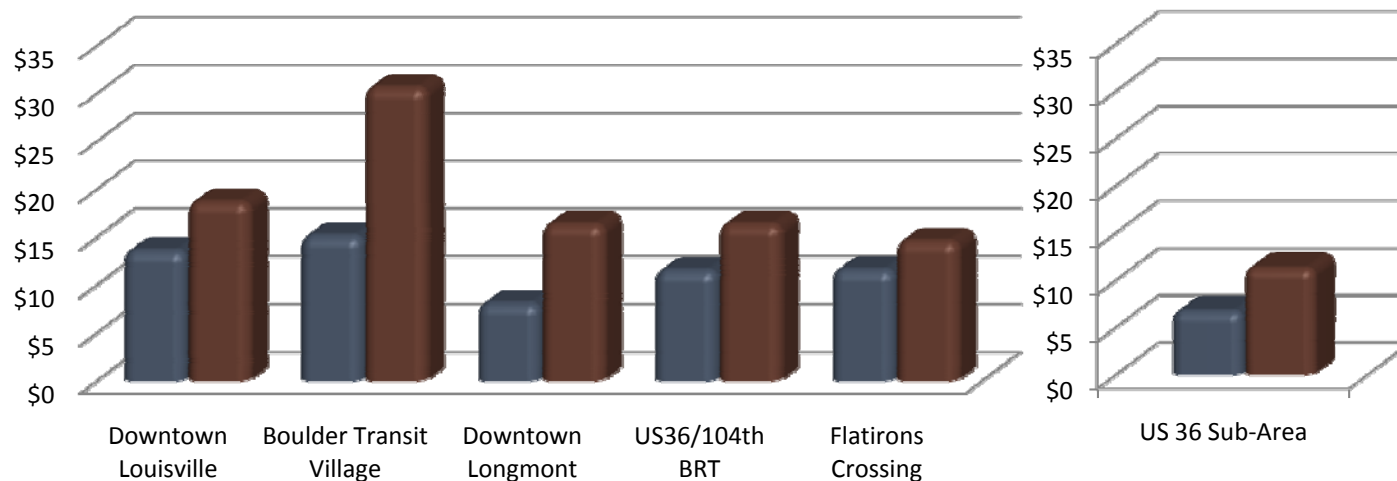


## Property Value

### Property Values

- The total property value for ½ mile station areas as a price per square foot
- US 36/Northwest Rail Corridor shows higher property values at stations as compared to the surrounding area

US 36 BRT/Northwest Rail Property Values



■ 2006 ■ 2008

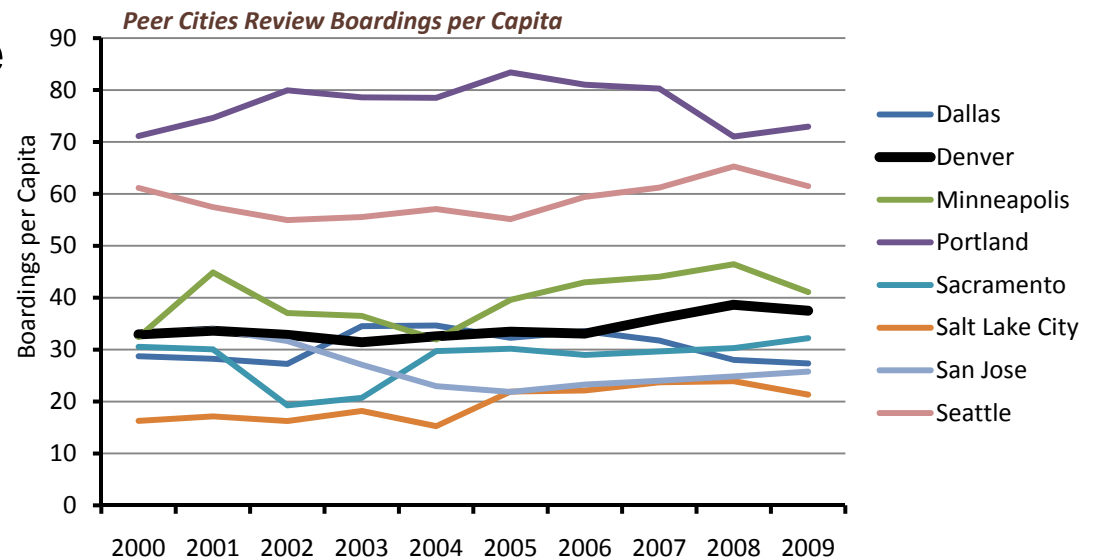
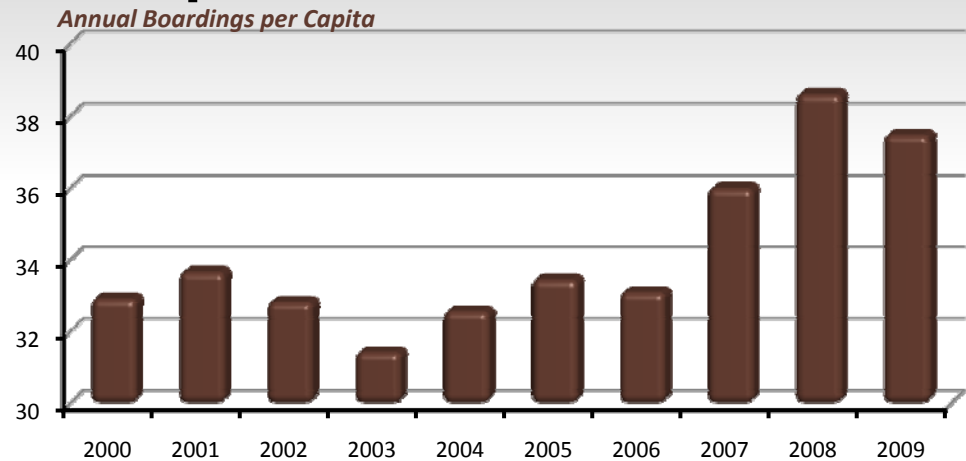
# Transit Usage



## Ridership

### Annual Transit Boardings per Capita

- 29% increase in transit ridership between 2000 & 2009
- Significant increase in transit boardings between 2006 & 2007 with the opening of the Southeast Corridor light rail
- Boardings dropped between 2008 and 2009



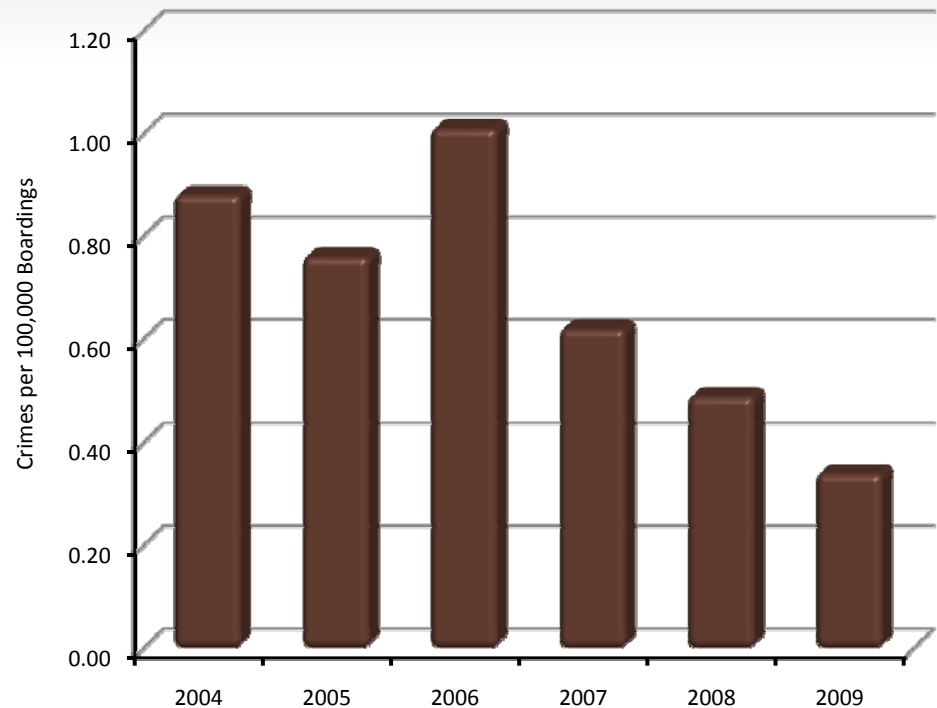
# Travel Safety & Security



## Crime

### Crime Rate on RTD Property

- Downward trend observed between 2004 & 2009
- Decrease of approximately 30% between 2008 & 2009
- Light rail crime rate decreased by 46% and bus crime rate decreased by 19% between 2008 & 2009





# System Mobility



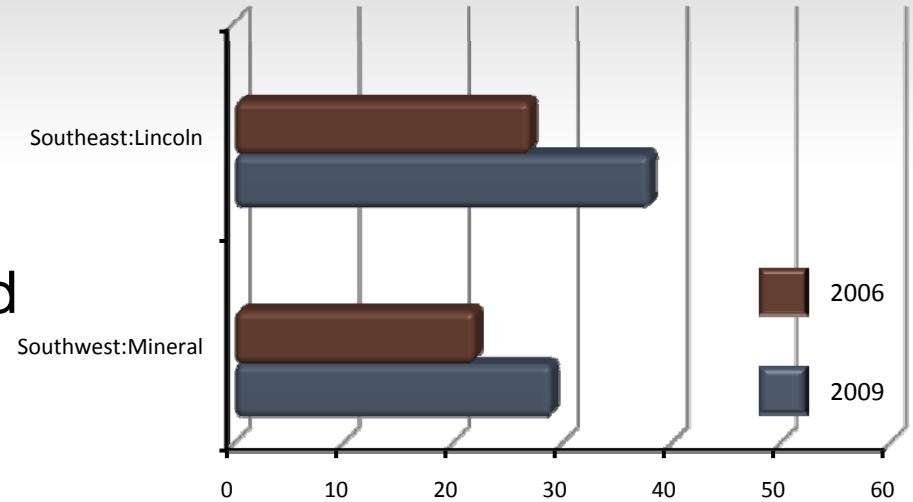
## Corridor Travel Times

- Travel time to reach downtown Denver during the AM peak period
- Automobile travel time increased on both corridors
- Transit travel time decreased on both corridors
- Southeast Corridor light rail improved transit travel in the southern I-25 corridor by reducing travel time by 15 minutes

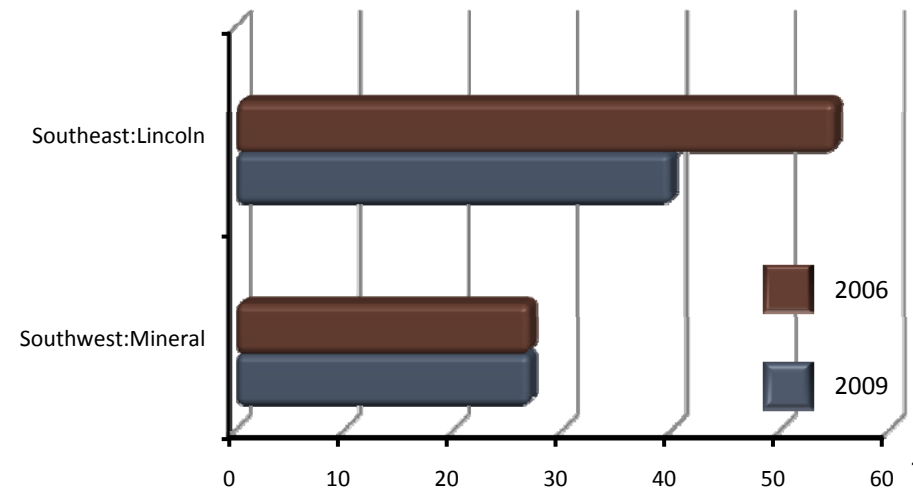


## Travel Times

AM Peak Automobile Travel Times to Downtown Denver



AM Peak Transit Travel Times to Downtown Denver



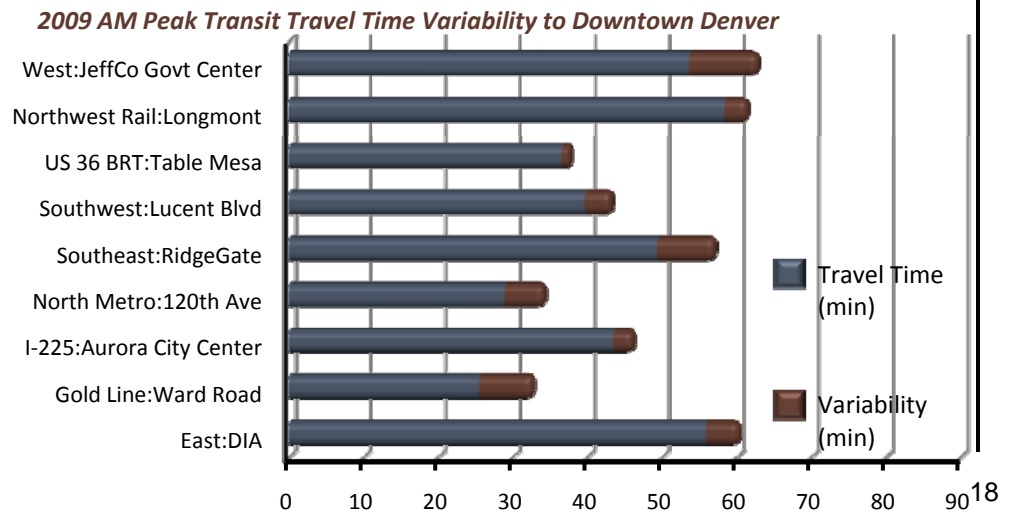
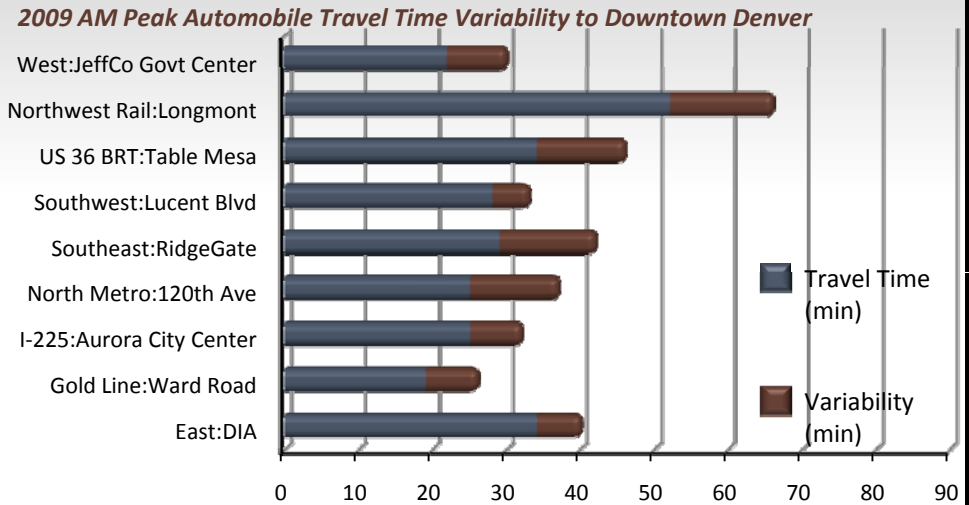
# System Mobility



## Travel Time Variability

- Additional time required to arrive on time at downtown destination during AM peak period
- Refinement to travel time variability method shows an overall increase in automobile travel time variability

## Travel Time Variability



# Travel Choices & Accessibility



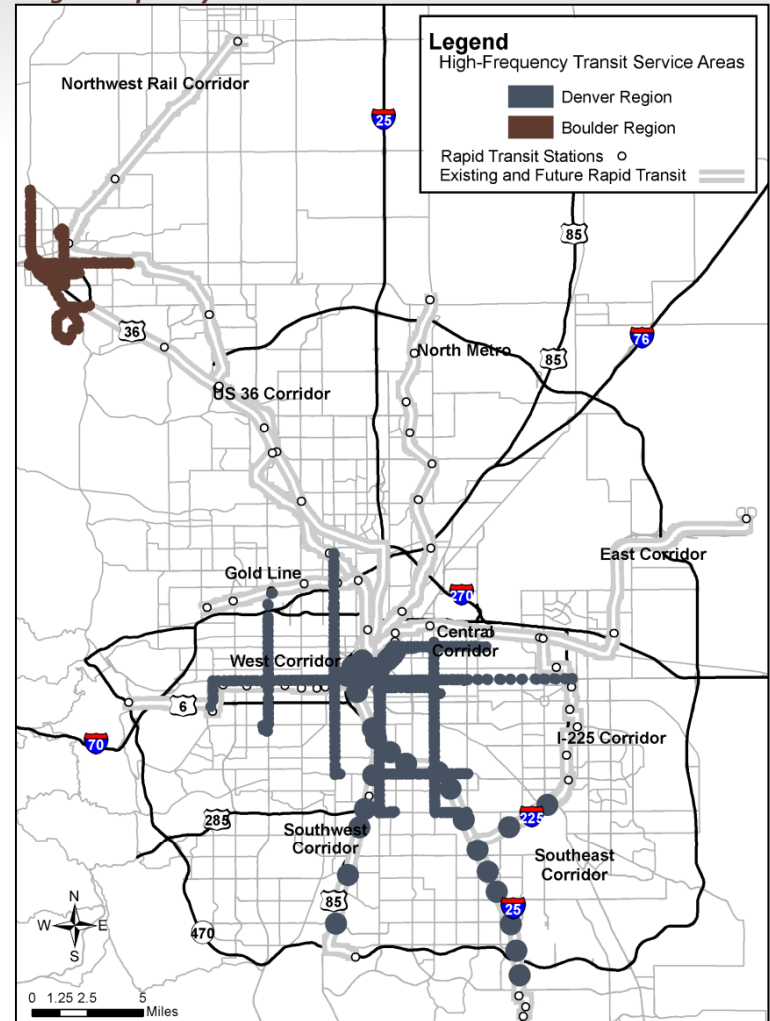
## Destination Access

### Regional Destinations Served by High-Frequency

#### Transit

- High-frequency transit service area
  - ½ mile radius of rail stations
  - ¼ mile radius of bus stops with 15-minute or better peak & off-peak headways
- 30% of Denver's regional destinations are served by high-frequency transit
  - 25% prior to opening of Southeast Corridor light rail

#### High-Frequency Service Area



# Travel Choices & Accessibility



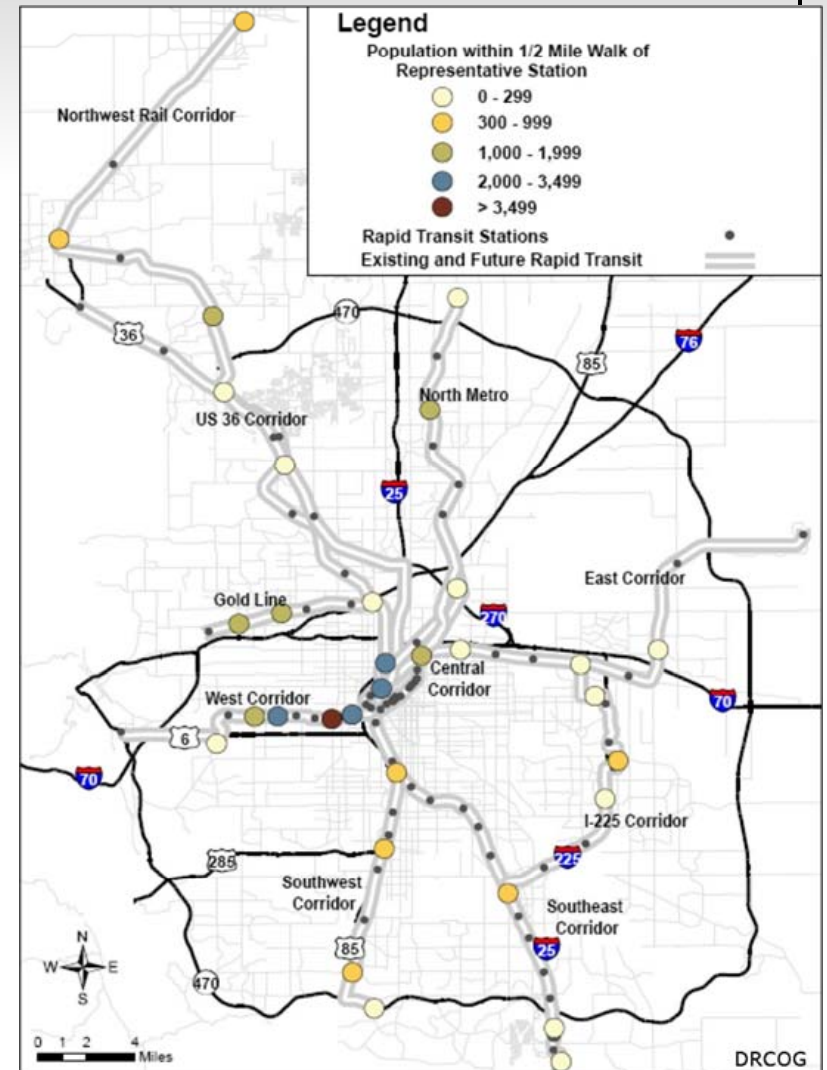
## Transit Access

### Population within Walking Distance of Representative Stations

- Half mile walkshed used versus half mile radius
- Walkable streets include all roadways except limited access freeways



½ mile walkshed at Bellevue Station



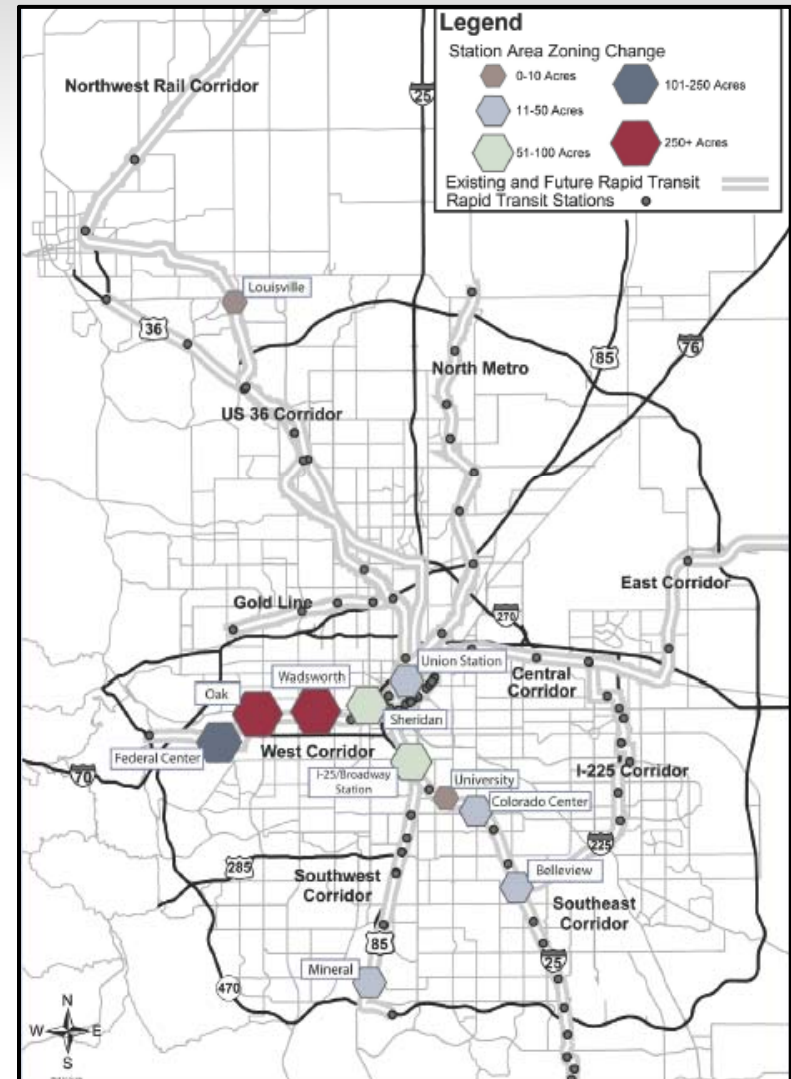
# Travel Choices & Accessibility



## Land Use

### Transit-Supportive Zoning Changes

- Zoning changes around existing and future rapid transit station areas that increase densities & encourage mixed use development
- 10 stations had zoning changes in 2006 & 2007
- Louisville station zoning changed in 2008
- No transit-supportive zoning changes in 2009



# Challenges & Opportunities

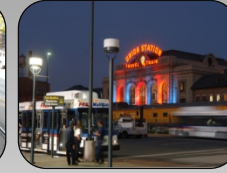


## Long Term Performance Monitoring Program

- Transferring academic research to an agency
  - Quantity of data
  - Presenting results to non-technical audience
- New data sources and methodologies
  - Clear about program goals
  - Decide when to change or remain consistent
  - Housing + Transportation Costs
- Objectivity
  - Correlation not causation
  - Partnerships



# Questions



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