

Moving Toward a Balance between Parking and TOD in Station Design

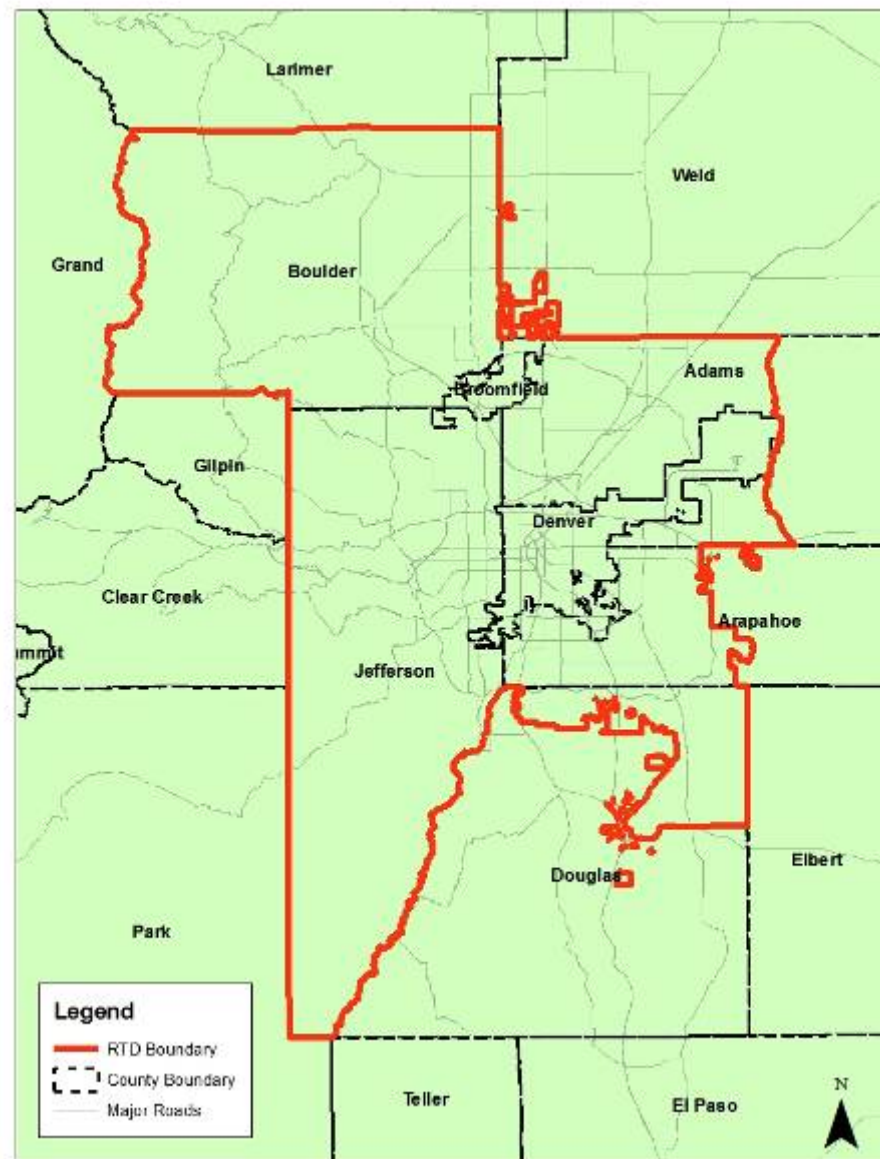
Rail~Volution 2009

Boston

Overview - RTD



- Established in 1969
- 2,337 square mile district
- Serves over 40 municipalities
- Main Revenue Source: 1% Sales Tax
 - 0.6% General Ops
 - 0.4% FasTracks
- Over 100 million boardings annually



Overview - Existing Rail & BRT

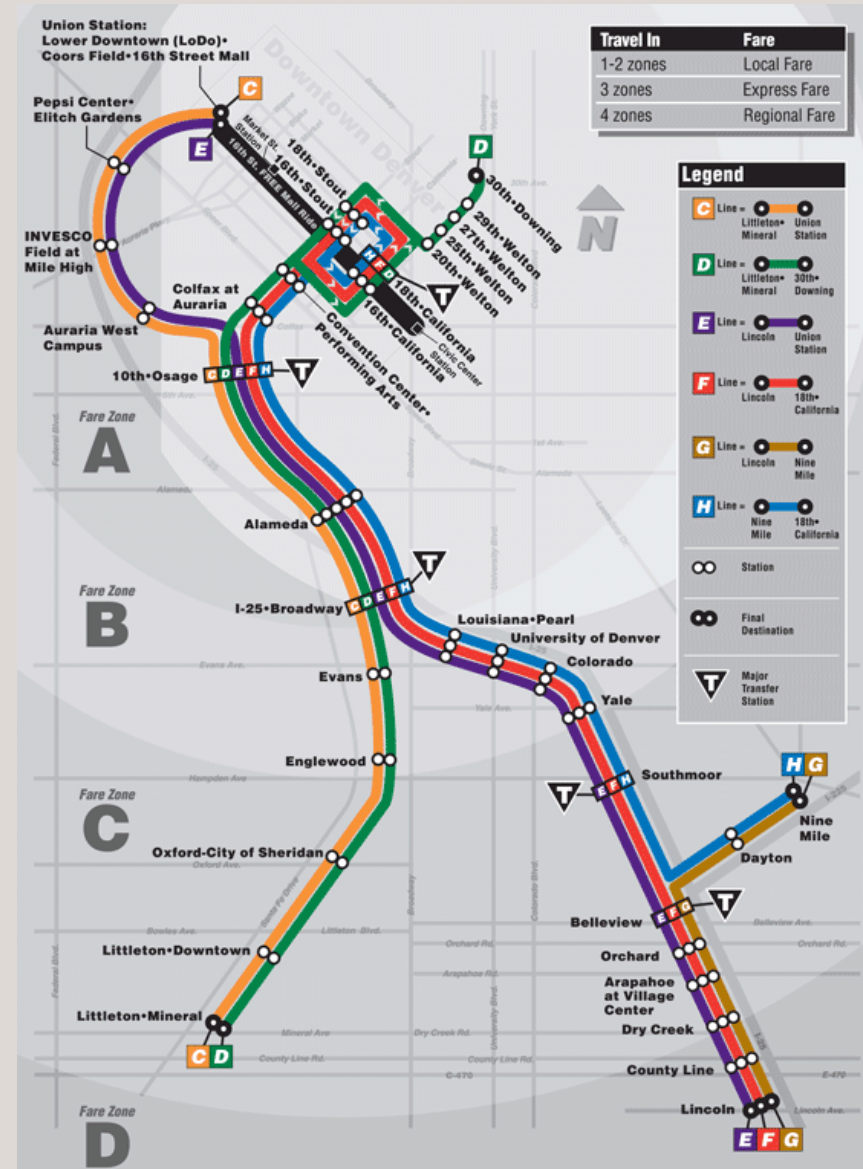


LIGHT RAIL

- 35 miles of rail service
- 34 stations
- 65,000+ daily riders
- First line built in 1994
- Extensions built in 2000, 2002 and 2006

BRT

- Trips from Denver to Boulder
- Travel in dedicated HOV lanes for 10 of the 27 miles
- All but one stops have slip ramps



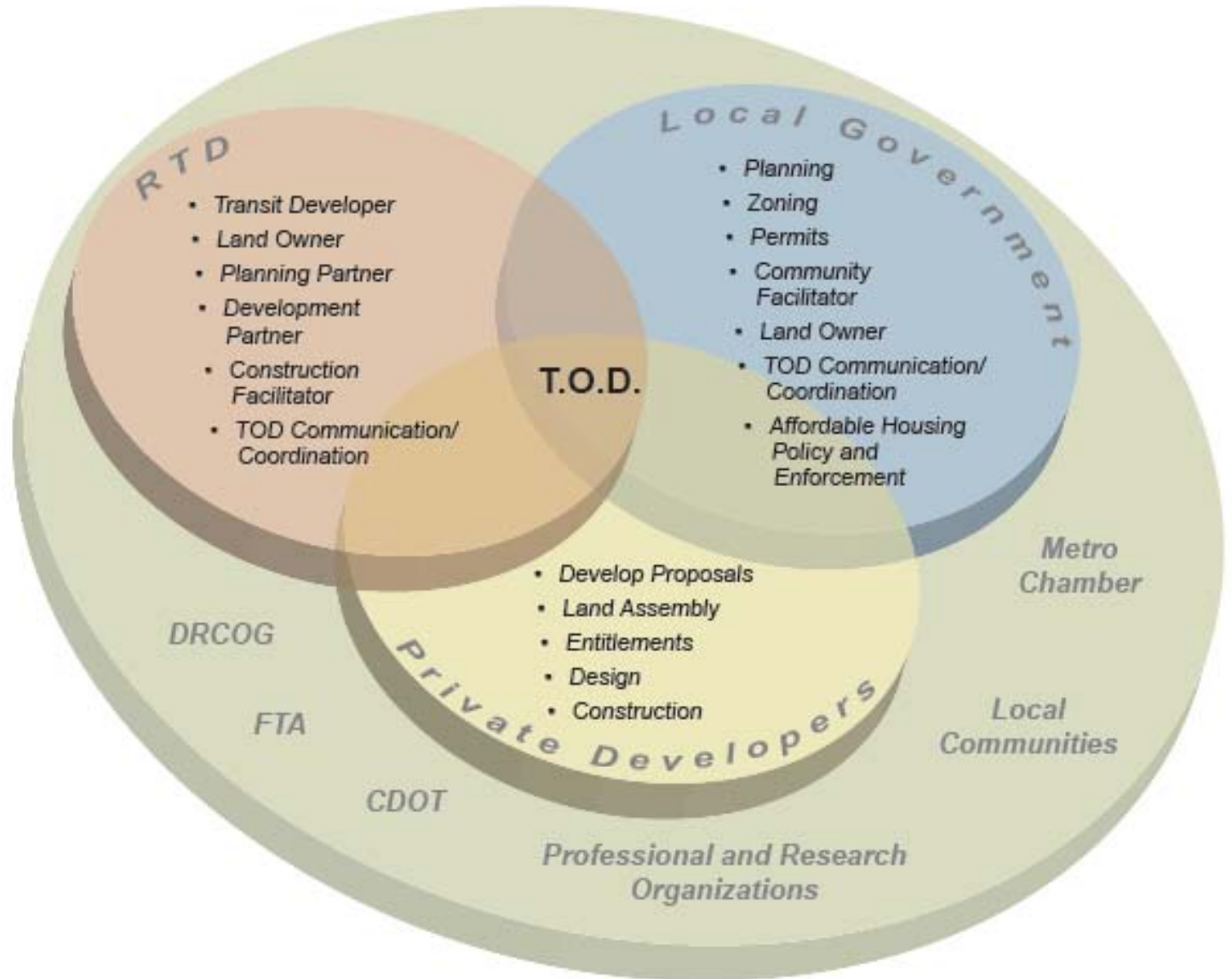
Overview - FasTracks Plan



- \$6.9 billion program
- 121 miles of new rail service
- 19 miles of BRT
- 59 additional stations
- 21,000 additional parking spaces
- Development of Denver Union Station

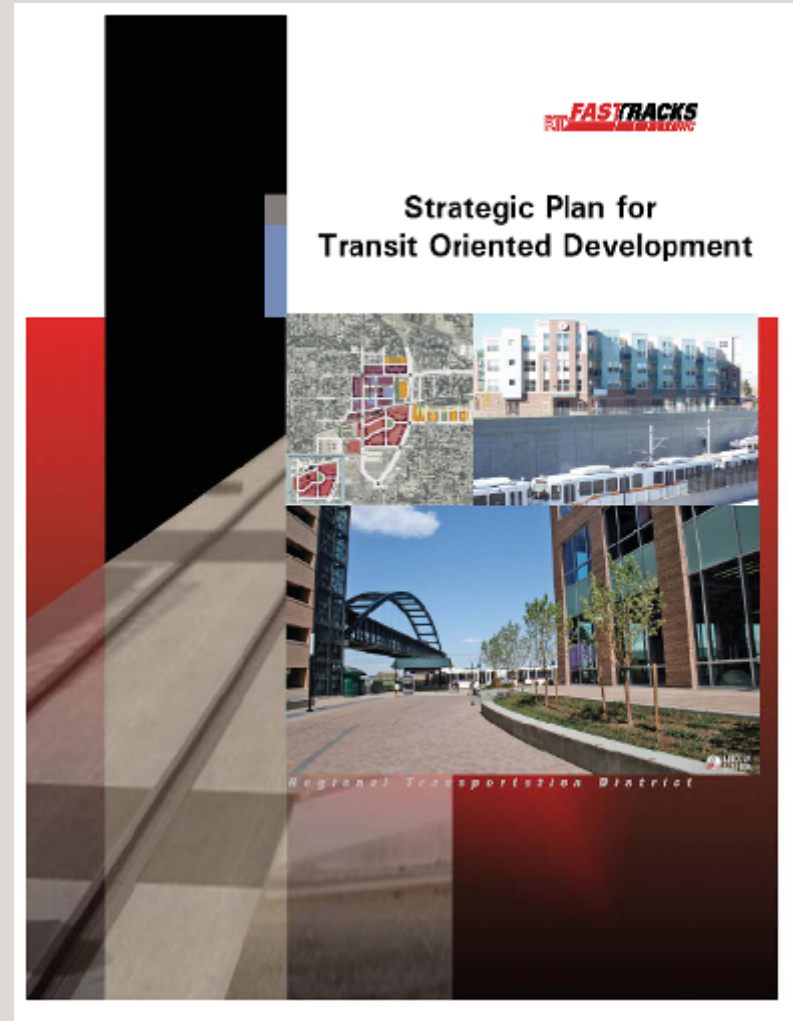


RTD's Role in TOD

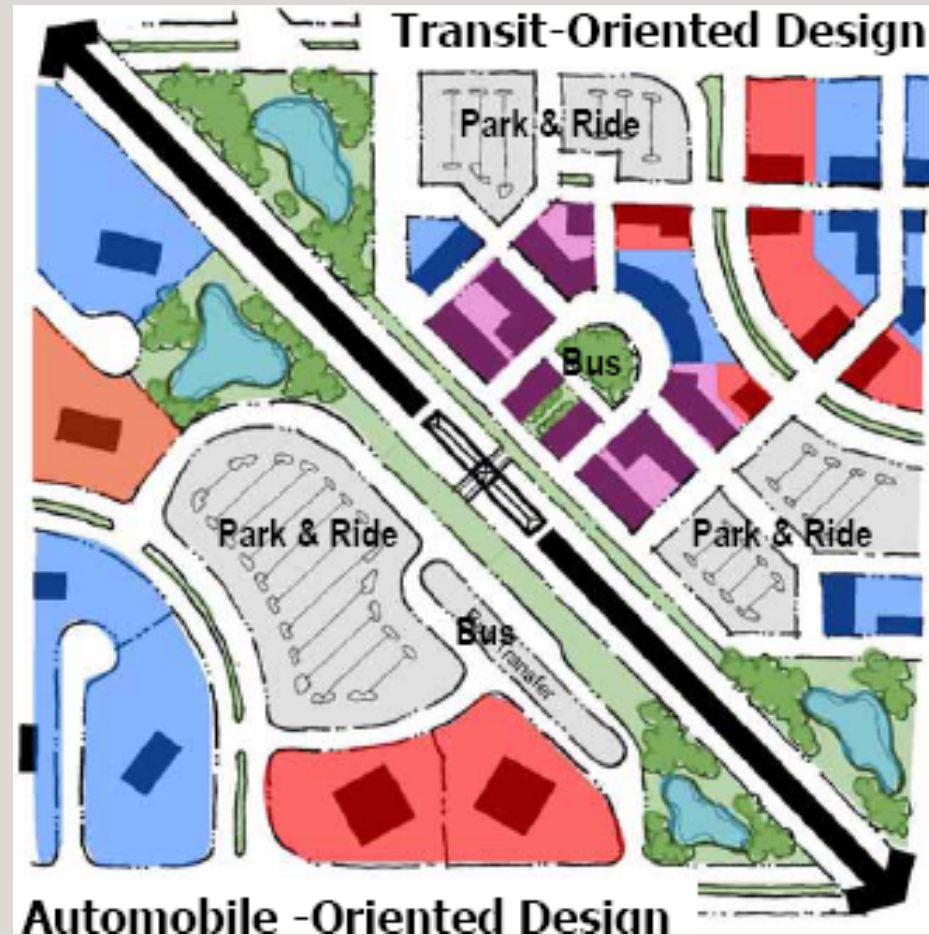


RTD's TOD Goals

- Promote partnerships between multiple cities and agencies
- Encourage sustainable development that supports the transit system
- Ensure access for all modes of transportation (bus, bike, train, car, walking)
- Protect and enhance RTD's transit assets



Role of Parking in Station Design



Balancing Parking and TOD

Clear need to provide a link between TOD policy and station design

- Need to provide standards and guidelines for designers to follow
- Need to focus on pedestrian environment
- Need to focus on creating clear guidelines for dealing with bus to rail and auto to rail transfers



Transit Access Guidelines

- Brings TOD context to design criteria
- Uses latest research from around the country as well as observed data
- Provides standards and guidelines for station access which provide more flexibility for multi-modal access
- Developed using a multi-disciplinary committee from across RTD

RTD TRANSIT ACCESS GUIDELINES



Regional Transportation District
January 2009

Prepared by the
RTD Transit Access Committee

Transit Access Guidelines

FASTRACKS
Rapid Transit

Research and data used

- pedestrian walk speeds
- hard and soft factors influencing walking behavior
- measured walk distances between parking and platforms at existing stations

Information used to provide technical context for link between TOD policy and design criteria

Distance & Mode Share

2005 WMATA Development-Related Ridership Survey

Distance from station	Metrorail Mode Share		Auto Mode Share	
	Office	Residential	Office	Residential
At station	35%	54%	48%	29%
¼ mile	23%	43%	66%	41%
½ mile	10%	31%	83%	54%

- 35% of office trips right at the station entrance
- Office mode share drops about 1% every 100 ft
- ½ mile residential share 200% higher than office

pb place making

Transit Access Guidelines

Pedestrian Standards and Guidelines

- guidelines provided to enhance the pedestrian experience
- identifies responsibility related for RTD and non-RTD (developers or local jurisdictions)
- addresses safety issues related to traffic and train conflicts

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Transit Access Guidelines

Key standards for modal transfers:

– Rail to Bus transfers:

TABLE 3-2 Rail→Bus Transfer Distance Standards

Transfer Time ↓	Maximum Walk Path Distance	Maximum Arc Distance	Weekday Bus Trips
Desirable < 2 minutes	400 feet	240 feet	> 75%
Average = 3 ½ minutes	700 feet	420 feet	> 85%
Maximum < 5 minutes	1,000 feet	600 feet	100%

Note: It is evident that some existing stations may not comply with these standards, and that they can not require a retrofit of existing stations. However, these standards do imply that a number of existing stations do not provide the convenient transfers expected by our riders. Indeed, this has been the source of many customer complaints and is not an indication of acceptability by either our customers or RTD. RTD will endeavor to improve these connections as may be physically and economically feasible.

– Auto to Rail transfers:

TABLE 3-4 park-n-Ride Siting Standards

Share of Capacity	Maximum Walk Path Distance	Maximum Arc Distance
50%	1,000 feet	600 feet
75%	1,500 feet	900 feet
100%	2,500 feet	1,500 feet

Use of Transit Access Guidelines

- Approved in January 2009 and provided to design teams with other rail and bus design criteria
- Application/performance limited up till this point
- Have seen more flexibility in discussions with engineers on placement of parking and bus transfer facilities
- Have encouraged pro-TOD stakeholders outside RTD to use these guidelines in discussions with RTD on station design

Conclusions

- RTD is dominated by parking in its current system
- Transit Access Guidelines and TOD policy are having an influence on the design process
- Fully expect RTD to evolve as system grows and TOD becomes more prevalent



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