

# **RTD Transit Oriented Development Design Criteria**



**December, 2012**

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## Definitions

**Activated Edge:** The first floor of a building structure that is activated by its land use, its proximity to a street or transit plaza, architectural materials and fenestration.

**Mixed Income Housing:** The development of housing options that increase residential opportunities for multiple income levels in a given area.

**Defensible Space:** The pedestrian environment where building layout and site plan influence and contribute to user's sense of comfort and safety. This includes transparency on the edges of public spaces and on streets with supportive uses and design in the buildings. Pathways and sidewalks should provide for ample movement.

**Guidelines:** Design guidelines provide further considerations to promote the goals defined by the intent statements. Guidelines use the term "should" to denote that they are considered relevant to achieving the stated intent, and will be pertinent to the review process but will not be required for approval.

**Immediate Station Area:** The land within a 600 foot walk distance of a transit facility.

**Intent:** Intent statements are provided to define goals which the standards and guidelines have been created to achieve. In circumstances where the appropriateness or applicability of a standard or guideline is in question or under negotiation, the intent statement will provide additional direction.

**Mixed-Use Development:** Development projects that integrate multiple land uses into a single structure. Typical landuses found within a mixed-use development include: residential / commercial and office / commercial buildings. The mixing of multiple land use types in one development allows for the activation of urban areas, increases housing options for diverse income levels, reduces auto-dependence and creates activity at the street level.

**Multi-modal Transportation:** A transportation system that offers users diverse transport options that are effectively integrated, in order to provide a high degree of accessibility for cars, pedestrians, bikes and mass-transit.

**Public Realm:** The portion of the built environment that is accessible to the public. The public realm typically includes:

- The street including sidewalks and on-street parking.
- Open space including plazas, parks and squares.
- Transit facilities including: bike paths, transit hubs and pedestrian ways.

**Project Area:** Subject property and transit elements as well as proposed TOD developments as appropriate.

**Secondary Station Area:** The land between 600' and 1/2 mile walk distance from a transit facility.

**Standards:** Design standards are objective criteria that provide specific direction based on the stated intent. Standards are used to denote issues that are considered critical to achieving the stated intent. Standards use the term “shall” to indicate that compliance is required unless it can be demonstrated that an acceptable alternative meets one or more of the following conditions:

- The alternative better achieves the stated intent.
- The intent which the standard was created to address will not be achieved by application of the standard in this particular circumstance.
- The application of other standards and guidelines to achieve stated intents will be improved by not applying this standard.
- Unique site factors make the standard impractical or cost prohibitive.

**Street Grid:** The configuration of streets, typically in an urban environment, where blocks have perimeters small enough to be walkable, and are connected in a grid to allow multiple access points and maximum mobility for all modes.

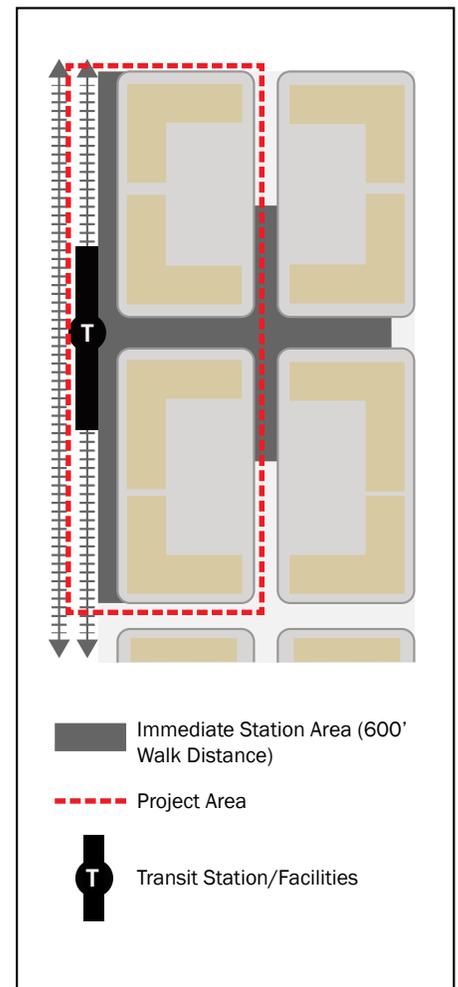
**Streetscape:** The built elements of a street including: building fronts, street furniture, sidewalks, signs, landscaping, lighting and motor vehicle parking. Together these elements help to define the character of a street.

**Transit Facilities:** Any infrastructure that addresses the specific needs of mass transit. Examples include: train tracks, bus stations, ticket kiosks, station platforms, relief stations and information monumentation.

**Transit Oriented Development:** A mixed-use community within walking distance of a transit stop that mixes residential, retail, employment, open space, and public uses in a way that makes it convenient to travel on foot, bicycle or by public transportation and reduces reliance on the car.

**Transit Plaza:** An open public space typically adjacent to a transit platform that provides pedestrian circulation, urban design elements, transit centric uses and public art

**Walkability:** The development of a built environment that encourages people to live, work and recreate within a pedestrian scaled context. The creation of pedestrian scaled street grids, investment in attractive streetscape elements and a mix of land uses help to facilitate a walkable urban environment.



## RTD TOD Design Criteria

**Purpose:** To coordinate design and planning criteria required for transit oriented development at RTD transit stations. Evaluation of a TOD concept plan is based on ability to meet the intent of each criterion. The TOD design criteria should be addressed in transit facilities as well as in the primary and secondary station areas. The criteria, submittal requirements and process are a requirement of all RTD joint development (solicited and unsolicited) and Pilot Projects within its system.

**Methodology:** The methodology for evaluating a TOD Plan submittal against the RTD TOD Design Criteria falls into two categories: 1) a baseline of criteria that are indispensable development components and 2) criteria that can be addressed through a range of acceptable design solutions. Baseline TOD components in the immediate station area include public spaces, building orientation, mix of uses, density, pedestrian friendly, connectivity, access, reduced parking, mixed income housing, and jurisdictional support. Criteria that can be met through a range of design solutions, or guidelines, include high quality pedestrian streetscape, wayfinding, focal points, and defensible design.

**Audience:** Developers engaged in the TOD Pilot Program or other joint development RTD projects. RTD internal staff for purposes of review, Senior Management, and General Manager. Local jurisdictions including their respective public works and planning departments.

**Relationship to Jurisdictional Planning & Zoning:** RTD will work the local jurisdiction on any conflicts between RTD criteria and local jurisdiction planning and zoning. The intent of the RTD criteria is to specifically focus on urban design and development pertaining to the success of TOD at the station and within the station area. RTD's TOD Urban Design Criteria should serve as a complement to any approved station area planning, zoning and rules and regulations of the local jurisdiction.

# Principle 1: Organize & Orient the TOD Site Based on the Transit Station Configuration

## Intent

Good TOD celebrates the station and leverages transit access for increased development and ridership. How development integrates a transit station into it can be an indicator of success for creating a successful TOD. The public realm, streets, sidewalks, plazas and open space may organize the immediate station area in a way to identify the station as a defined center, establish a network to connect all modes of transportation to the station that is intuitive and enjoyable, and allows the building forms to respond and reflect the hierarchy of the site.

## Standards

- The station must have an 'address'; it shall front onto an active public realm, either a street or active plaza space.
- Integrate the station with the surrounding development by providing continuous multimodal access and pedestrian-scaled sequence of spaces.
- In places where there are buildings adjoining the station plaza, buildings shall front onto the plaza by providing entrances, translucent windows and sitting areas serving the space outside the building.
- Building placement and building massing shall allow direct pedestrian movement between transit, mixed land uses and surrounding areas. Stations shall not front onto the backside of a block or building.
- Lighting at building entrances facing the station plaza shall be designed to match the luminance levels of the plaza.

## Guidelines

- The land uses adjacent to the station should provide an optimal mix and make the best use of the transit resource.
- All blocks should be active on all four sides. Block sizes should be walkable, with block faces not exceeding 400 feet on block face.
- Provide landscape-enhanced view corridors into the station from appropriate approaches.
- Buildings should be well-lit and oriented to streets, open spaces and the station to provide needed surveillance. The provision of a secure and pleasant pedestrian environment encourages walking.



## Principle 2: Design for Compact and Mixed-Use Development



### Intent

Successful TOD is characterized by transit-supporting densities in the immediate station area, which are typically greater densities than the surrounding area. Higher densities create active street environments through ground floor retail, increased ridership, and help to activate public spaces. Ideally, land uses are integrated vertically to maximize the density and create a more dynamic public realm – residents, visitors and/ or transit users coexist and use the same streets and buildings. This begins to create an 18-hour place, rather than a 9-5 work place, or night and weekend residential neighborhood.

### Standards

- The immediate uses around a station in the immediate station area shall be of the highest densities of the station area, or shall be able to demonstrate intensification of density over time.
- TOD's located at high activity nodes such as main streets, town centers, and educational and medical facilities shall be designed to provide convenient on-site transit facilities, including plaza or other signature civic space, shelters, benches and bike racks. All applicable RTD Transit Access Guidelines and Bus and Rail Design Criteria shall be adhered to and can be found at: <http://www3.rtd-denver.com/Reports.shtml>, click Design Criteria.
- Ground floors that front public space and roadway shall focus activated edges at corners and high pedestrian traffic areas.

### Guidelines

- Activate public spaces by providing defensible spaces along the street edge and plaza space by providing outdoor sitting areas, appropriate landscape and urban furniture. Small scale projects can also capitalize on transit availability. Transit stops can be combined with shops and services like daycare, convenience stores, or restaurants to create community activity nodes.
- Combine transit stop with activated mixed uses where possible.



## Principle 3: Create a High Quality Pedestrian-Oriented Environment

### Intent

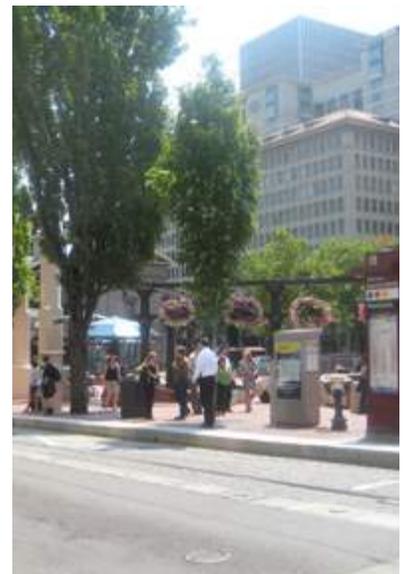
The pedestrian environment should be engaging and feel safe and comfortable. This increases walkability to and from the station, and signals that pedestrians are a priority in the immediate and secondary station areas. A variety of streetscape elements, building massing and character can aid in achieving quality pedestrian environment. A quality pedestrian environment can activate ground floor use activity as well.

### Standards

- Furnish the station, station plaza and approaches to the station with appropriate streetscape components such as benches, paving materials, lighting, signs and utilities to provide an adequate pedestrian scale, safety and aesthetics.
- The pedestrian system shall provide for a continuous high quality, barrier free walking surface and be directly linked to transit stations.
- Provide for increased surveillance and security of the pedestrian environment through active building edges and building orientation toward the street. Sidewalks on streets can enhance the personal safety of pedestrians by including them - not isolating them from street activities.
- Provide visual connection from the station to the larger context of the station area through the street grid network by avoiding blank walls and encouraging building access and windows at the street level.
- Buffer pedestrian routes from fast moving vehicles and large surface parking lots with pedestrian amenity zones and on-street parking.
- Provide bicycle access and parking appropriately for both transit and development within the immediate station area.
- Structured parking on the ground floor shall be wrapped with activated uses or screened in a way that engages the public realm.
- The pedestrian realm shall be designed to respond to the ADA Standards for Accessible Design.

### Transit Facility Standards

- Transit plazas must be continuous with the pedestrian realm, and shall have direct access from at least two sides in the urban fabric.
- Provide outdoor sitting areas, appropriate landscape and urban furniture to create a greater sense of personal security for those walking or waiting for transit service or otherwise using the space.
- All applicable RTD Transit Access Guidelines and Bus and Rail Design Criteria shall be adhered to and can be found at: <http://www3.rtd-denver.com/Reports.shtml>, click on Design Criteria.





- Provide ample facilities for bicycles to safely access the station area. Preferred facilities are bicycle lanes separated from vehicular lanes, although sharrows are allowable in areas with limited right-of-way. Bicycle facilities shall meet AASHTO standards and local jurisdiction standards; should there be a conflict, AASHTO standards will prevail. Signage should be installed to indicate bicycle routes and movements.
- Provide areas for bicycle parking and storage at the station.

#### Guidelines

- Design a way-finding system that facilitates the approach to train platforms and serves as an orientation guide for the station area.
- Where appropriate, focal points at the station, or at key nodes within the station area, should be used to guide transit users to the station. Examples of focal points may include public art, special streetscape treatments such as lighting, banners and pedestrian amenities.
- Building amenities such as storefront windows, awnings, architectural features, lighting, seating, and landscaping should be provided to create a comfortable pedestrian environment along and between buildings.



## Principle 4: Utilize the Street Grid to Connect and Provide Access

### Intent

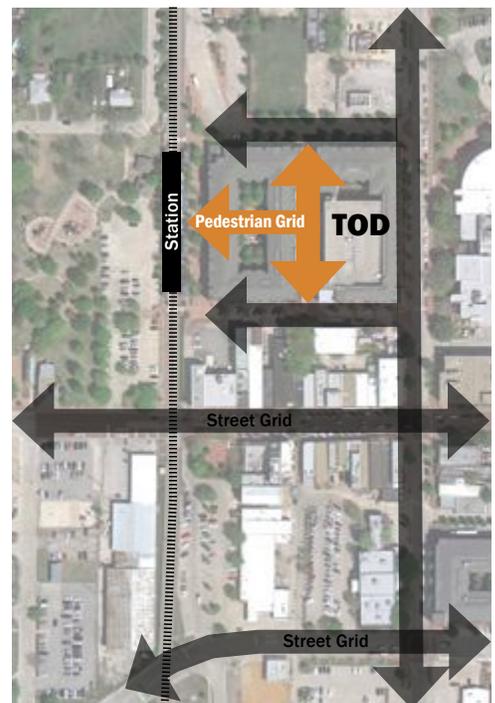
Streets provide access for multiple modes and allow for direct connections between the station and surrounding uses in the immediate and secondary station areas. An interconnected pattern, ideally a grid, provides the most efficient and direct form of access and helps shape the built form. The pattern best serves TOD if the blocks are at a pedestrian scale, meaning their lengths and widths respond to the pedestrian experience at the street level. As part of the street pattern, a hierarchy identifies streets that better serve different mixes of land use and modes.

### Standards

- The street pattern should be based on a grid/interconnected system that simplifies access for all modes.

### Guidelines

- All applicable Transit Access Guidelines shall be adhered to and can be found at: <http://www3.rtd-denver.com/Reports.shtml>, click on Design Criteria.
- All blocks should be active on all four sides. Block sizes should be walkable, with perimeters not exceeding 400 feet on block face.
- Demonstrate connectivity to the larger station area for pedestrians, buses, vehicles and bicycles.
- Pedestrian access should be incorporated into the street grid. In some cases mid-block pedestrian ways should be incorporated to facilitate pedestrian circulation.



## Principle 5: Strategically Manage Parking



### Intent

TOD functions best when parking has been optimized and managed, and non-vehicular modes take a larger share of trips than is typical in the immediate and secondary station areas. Replacing RTD commuter parking and developing higher densities of TOD plays a large role in changing the function of a station without reducing ridership levels. Outside of the immediate station area, off-street parking should be lower than typical development standards.

### RTD Commuter Parking Standards

- ADA parking requirements shall be followed per RTD Transit Access Committee and federal regulations. <http://www3.rtd-denver.com/Reports.shtml>, click on Design Criteria.
- Address RTD commuter parking needs as a comprehensive parking solution within the system. Parking reductions can be considered where high density development is allowed (and feasible), alternative modes are prevalent, and transit parking is available at alternative stations within the same corridor.
- Investigate shared parking for RTD commuter and non-commuter parking users.
- RTD commuter parking may be addressed in a limited number of small parking fields (not to exceed 4) distributed throughout the site, and within the guidelines set by RTD for distance from the station platform, and maintenance operations.



### Non-commuter Parking Guidelines

- Structured parking on the ground floor shall be wrapped with activated uses or appropriately screened in a way that engages the public realm.
- No new surface parking field is allowed between the front of a building and the street.
- Parking access shall not conflict with pedestrian flow or transit (bus) circulation.
- In high-density areas structured parking is encouraged or below-grade where feasible.
- Utilize shared parking between complementary uses, such as office and movie theaters.
- Where appropriate, a Travel Demand Management Plan should be developed to address parking reductions.



### On Street Parking Guidelines

- Based on its proximity to transit, parking for development should be less than surrounding, traditional development. For example, Arlington, Virginia has set context- specific requirements for parking that include: 1.08 spaces per unit and 1 space per 1,000 SF of commercial, as compared to 1.5 to 2.0 spaces per unit and 3 to 5 spaces per 1,000 SF for traditional development.
- Parking and parking access should not face onto the plaza or platform space.
- On street parking should be allowed where feasible. On-street parking in the station area needs to be managed in coordination with the jurisdiction to limit daytime usage in order to discourage transit riders from parking all day.



## Principle 6: Support Jurisdictional Policies for Mixed Income Housing



### Intent

Affordable or mixed income housing will be defined by local governments with jurisdiction over any proposed development. This may include rental or for-sale housing that is deed-restricted to maintain long-term affordability for a range of households. Affordability will be based on percentages of the Denver Metro Area Median Income as defined by the US Department of Housing and Urban Development and adjusted annually. Opportunities for mixed-use income can occur in the immediate and secondary station areas.

### Standards

- Follow local governments established policy, regulations, and enforcement related to affordable and/or workforce housing issues.
- Where appropriate demonstrate a diverse range of housing options, including affordable units. Based on the context of the site, these may be distributed throughout the station area or directly adjacent to the station.



### Guidelines

- Mixed income housing goals could vary from goals established on other parcels based on the nature of the specific property. For example, larger parcels that may accommodate several phases of development, goals might seek to achieve mixed housing types serving a variety of income levels. For smaller parcels, a goal might seek to achieve a stand-alone affordable housing outcome.



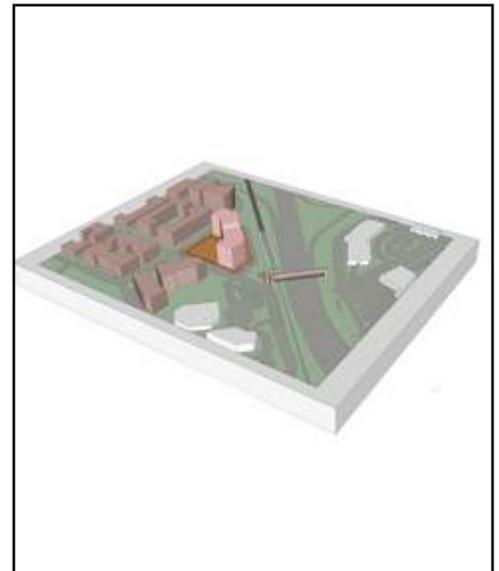
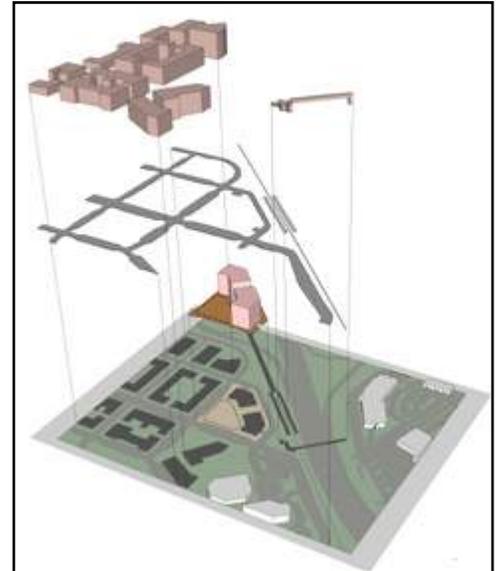
## Principle 7: Demonstrate Successful TOD at all Development Phases

### Intent

Whether in urban infill or new greenfield development, phasing of development within the immediate station area will be dependent on a host of issues including the market, infrastructure needs, and zoning. Each phase of a larger build out must be able to function as a completed place for its users (residents and/or employees) and must maintain or improve the functionality of the transit facilities at the station.

### Standards

- Outline phasing for the development parcels and how the public realm (streets, open spaces) responds to each phase.
- Outline phasing for the immediate station and station area that demonstrate seamless connectivity for multiple modes (pedestrian, bus, bicycle, vehicle), RTD commuter parking, as appropriate, buildings and public spaces.
- Development shall ensure initial phases create good places.
- Where development does not include completion of the transit road network, consideration shall be given to provision of interim transit operation. Temporary bus turnaround facilities or short sections of roadway appropriate for transit use are common techniques to provide short-term transit linkage.
- At existing operating stations, transit operations must have primacy in the development of construction phasing.

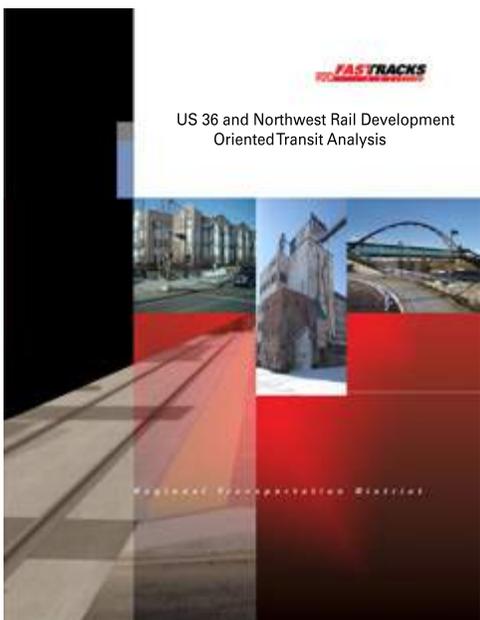


## Principle 8: Exhibit Jurisdictional Support and Partnerships



### Intent

TOD will only be successful with the support and partnering of the jurisdiction within which the station sits. There are multiple ways in which jurisdictions support TOD including adopted ordinances and plans, zoning, standards and guidelines, and development incentives such as TIF and special district creation. These transit supportive policies are most successful when demonstrated political leadership, and partnerships with appropriate non-profits, school districts, other governmental agencies, and philanthropic partners.



### Standards

- Demonstrate jurisdictional and community wide support through adopted ordinances, plans, development incentives, and established relationships with other potential partners and stakeholders. For example, RTD worked closely with the city and developer to create a place at Stapleton Central Park Avenue Station.

Public Vision



Alternative Plans

Public Input



Refined Plans

Public Review



Final Plans

Public Confirmation

