

# **South Broadway NEPA Process**

## **Technical Memorandum Existing Pedestrian and Bicycle Conditions**

October, 2005

Prepared by:



**730 Seventeenth Street  
Denver, CO 80202  
720.570.3343**

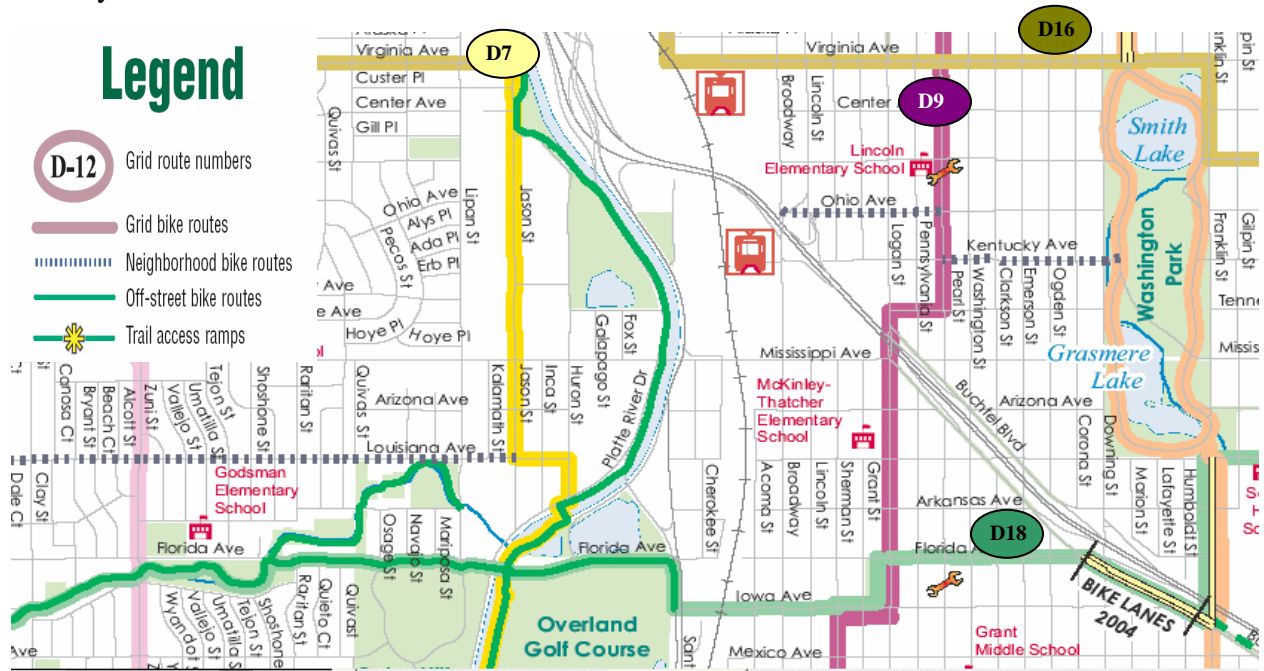
## Existing Pedestrian and Bicycle Conditions

The existing bicycle and pedestrian environment in the South Broadway Corridor has been examined as part of the alternatives development phase of the South Broadway NEPA process. The project team assessed safety, convenience and access for bicyclists and pedestrians in order to develop facilities improvement recommendations. These recommendations will be included in various alternatives in the initial screening phase of the NEPA process, including the Transportation Demand Management (TDM)/ Transportation Systems Management (TSM) Alternative.

For the purposes of this qualitative assessment, the study area includes the South Broadway corridor from Exposition to Louisiana Avenues to the north and south and from Santa Fe Drive to Logan Street to the east and west. South Broadway is a major arterial road connecting Downtown Denver and neighborhoods to the south, providing access to a variety of residential, commercial and recreational uses. The Regional Transportation District (RTD) Light Rail crosses the study area with a station at the intersection of Broadway and I-25.

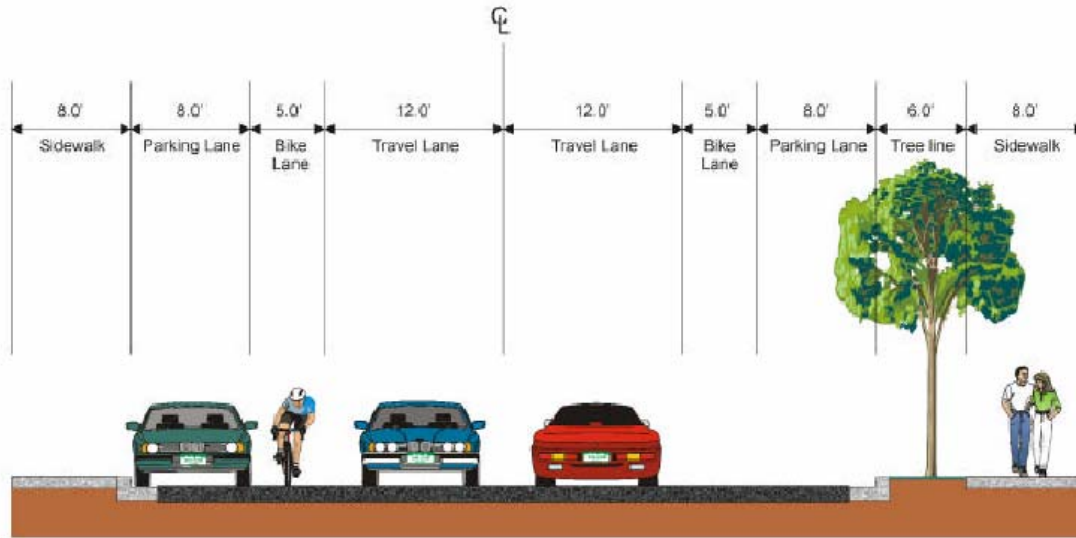
## Bicycles

Bicycling is a very popular mode of transportation in the South Broadway corridor. A number of designated bicycle routes provide connectivity and access around the study area. However, there are very few designated routes that provide bicycle circulation within the study area boundaries. According to the Denver Bike Map, there are four bicycle routes, two neighborhood bicycle routes and two off street trails which run within or adjacent to the study area. These bicycle routes provide access and connectivity to all parts of the city through its interconnecting bicycle route system.



Denver Bike Map, 2004

The 4 Grid bike routes consist of routes D-7, D-9, D-16 and D-18. These routes provide connectivity into the study area from such areas as Washington Park and the Platte Park neighborhood. The grid routes are usually on-street bike routes where lanes are not striped but signage is usually present. In some areas, a wider travel lane may exist which does allow for an increased comfort level for cyclists. A representation of a typical section of a grid bike route from the Denver Bicycle Master Plan Update is shown below:



Denver Bicycle Master Plan Update, 2001

The Platte River Trail runs approximately along the western boundary of the study area. In addition, the Sanderson Gulch Trail provides off street connectivity into the study area from the west.



Platte River Trail



Platte River Trail along Santa Fe Drive

The grid bike routes are numbered and signage is excellent. A brief description of each of the grid routes within the study area is given below, followed by brief descriptions of the neighborhood routes and the off street trails.

**D-7:** This bike route is an on-street bike route which runs north to south beginning just north of Downtown at 44<sup>th</sup> Avenue, and passes through Downtown before continuing south to the City of Englewood. This route is located about four to five blocks west of the study area, just west of Santa Fe Drive. This route has connections to the Platte River trails at both the northern and southern ends of the study area.

**D-9:** This bike route is an on-street bike route and runs north to south starting on the Platte River Trail at the northern city limit at 52<sup>nd</sup> Ave and passes through the Downtown before continuing on to the City of Englewood. This route is located on the eastern border of the study area and runs along Logan St. This route provides access to two elementary schools located in the study area at the intersection of Logan and Louisiana and at the intersection of Pearl and Exposition.

**D-16:** This bike route is an on-street route and runs east to west from the City of Aurora to the City of Lakewood. This route is located just to the north of the study area and provides connectivity from Washington Park to the Alameda Light Rail Station and also provides connections to the D-7 and D-9 grid routes as well as to the Platte River trail. A small section of this route between Broadway and Cherokee Street is not connected because it is through a shopping center and not public right of way.

**D-18:** This bike route is an on-street bike route and runs east to west from the City of Aurora to the City of Lakewood. This route is located just south of the study area and provides access to major recreational facilities including the Platte River Trail, Overland Golf Course and Washington Park. This route mainly runs along Florida and Iowa Avenues and provides connections to the D-7 and D-9 grid routes. Improvements are needed at the Iowa Avenue underpass and the sidewalk section along Santa Fe Drive between Iowa and Florida Avenues.

**Neighborhood Bike Routes:** The neighborhood bike routes include one which connects the Broadway and I-25 Light Rail station to Washington Park via Ohio and Kentucky Avenues and the other runs along Louisiana Street just west of the study area.

**Off-Street Bike Routes/Trails:** The two trails which run in the study area include the Platte River Trail and the Sanderson Gulch Trail. The Platte River Trail runs along the Platte River along its entire length within Denver. Numerous connections to other off street trails provide bicycle connectivity throughout the entire region. The Sanderson Gulch trail provides connectivity to several southwest Denver neighborhoods.

## **Bicycle Access and Connections to Transit**

Though there is excellent connectivity between bicycle routes throughout the city, there may be opportunities to improve the connectivity within the study area, including improved connections to the Broadway and I-25 Light Rail station. For instance, the Platte River Trail is located very close to the Light Rail station, yet the connection is very difficult for even the most experienced cyclists. The east-west grid bicycle route does provide some connectivity, but the intersections of Ohio Avenue at Lincoln and Broadway present a barrier for most cyclists. In addition, future pedestrian bridges over the Consolidated Main Line (CML) at Kentucky and Tennessee Avenues will likely be part of the Gates redevelopment. Future opportunities likely exist to cross the Platte River at Kentucky with the possibility to explore new access ramps to the trail at both Kentucky and the north side of Mississippi Avenue to line up with existing sidewalk facility along Mississippi. New bicycle and pedestrian access to Vanderbilt Park is also desired. An additional opportunity to improve transit station access is depicted below. The pictures show an experienced cyclist with some level of discomfort navigating the intersection of Broadway and Kentucky Avenues at the I-25/Broadway Park-n-Ride entrance and Interstate 25 on ramp.



## Bicycle Parking

There is some bicycle parking within the study area including provision for bicycle lockers and “inverted U” racks at the Broadway and I-25 Station. Some bicycle racks are also provided along South Broadway near several bus stops. More city standard “inverted U” type bike racks are needed within the study area, including at future redevelopments.



Bike Lockers at I-25 and Broadway Park-n-Ride



Bike stands at I-25 and Broadway Park-n-Ride

## Bicycle Signage

The bicycle signage was generally good on all grid bike routes. There was also some signage designating neighborhood routes and trail way finding, though additional signage could not only provide cyclists with better directional information, but could raise the awareness of the likely presence of cyclists for motorists traveling along these routes. Improved signage designating access to the transit station is recommended.



D-18 Grid Route Sign



Neighborhood Bike Route Sign



Off Street Trail Way Finding

## Pedestrians

### Sidewalks

Continuous sidewalks are present on both sides of the nearly all streets within the study area. The sidewalks are well connected and provide good access to major activity centers such as schools, transit stations, businesses and residential neighborhoods within the study area. Most of the sidewalks are at least four feet wide, and many are significantly wider.

Due to the Consolidated Main Line (CML) rail, there is broken east to west pedestrian linkage in the study area. Currently, the only pedestrian access to the other side of the CML is the pedestrian underpass along Mississippi Avenue. The Iowa Avenue underpass is located just south of the study area.



Pedestrian Underpass along Mississippi Avenue



Louisiana Avenue at the CML

### Sidewalk Conditions

The sidewalks along Broadway are fairly wide. However, because there is no buffer between the curb and the pedestrian right of way and due to the high volume of vehicular traffic, the pedestrian experience on Broadway itself is not ideal.



Attached Sidewalk along Broadway



Attached Sidewalk along West Mississippi Avenue

The sidewalk along Mississippi Avenue does have a cement wall that narrows the sidewalk, but provides a better buffer between vehicular traffic. East of Broadway, nearly all sidewalks within the study area are detached from the street with a several foot vegetative buffer. Though these sidewalks are generally narrower than those along Broadway, and though some sidewalks have minor maintenance needs, the pedestrian environment is generally very friendly.



Detached Sidewalk along Logan Street



Detached Sidewalk along Exposition Avenue

One area of significant concerns is the sidewalk along Broadway at the intersection of Broadway and I-25. There are some discontinuous sidewalks at this intersection and the existing sidewalks do not have a pedestrian safe environment, exacerbated by the ongoing bridge reconstruction in this area.



Intersection of Broadway and I-25 at Kentucky Avenue



Sidewalk at the Intersection of Broadway and I-25

## **Pedestrian Crossings and Signals**

At most intersections within the study area there exists good pedestrian crossings. Crosswalks and signals are present and functioning at many intersections within the study area. Curb ramps are well marked and are present at most of the intersection. There are no medians present on the any of the major streets in the study area.



Curb Ramps along Broadway



Curb Ramp, Crosswalk and Signal at Broadway and Louisiana

## **Pedestrian Amenities**

Within the residential neighborhoods in the study area, there is generally a very good pedestrian environment, including amenities such as shade trees, grassy buffers, painted crosswalks and signals. Areas for improvement include the far western side of the study area, particularly related to crossing the CML and Santa Fe Drive. Additional opportunities could be to improve pedestrian way finding signage throughout the area, particularly designating access to transit and other potential destinations.

## **Bicycle and Pedestrian Recommendations**

The project team has developed a number of preliminary recommendations for bicycle and pedestrian improvements in the South Broadway corridor. These improvements will be incorporated into the build alternatives developed during the NEPA process. The improvement will also be included into the Transportation Demand Management/Transportation Systems Management (TDM/TSM) alternative.

The recommendations below do not represent an exhaustive list of possibilities; additional options will be added throughout the alternatives development. A bicycle and pedestrian workshop will also be held as part of the project's public process in order to gather additional input from bicyclists and pedestrians who use the respective facilities within the study area.

### **Preliminary Bicycle Recommendations**

The preliminary bicycle recommendations are intended to improve bicycle access and safety within the study area.

1. Improved connectivity of bicycle routes to the Broadway/I-25 Light Rail station.
2. Improved access and connections to the Platte River Trail at Kentucky and Mississippi Avenues.
3. Increased bicycle capacity on the Platte River Trail, including access ramps to streets and widening older, narrower sections of the trail to ten feet.
4. Increased bicycle signage throughout the study area.
5. Construct bicycle facility between the Broadway and Alameda Light Rail Stations.
6. New bicycle crossings over the CML at Tennessee and Kentucky Avenues.
7. TDM-friendly site design standards, including bicycle and pedestrian access and amenities for new development within the study area.
8. Provide On-Street bicycle lanes within the study area.
9. New streets constructed as part of new development should be bicycle friendly

### **Preliminary Pedestrian Recommendations**

The preliminary pedestrian recommendations are intended to improve pedestrian access and safety within the study area.

1. Improved access and connections to the Platte River Trail
2. Provide a better buffer between vehicles on the South Broadway sidewalks
3. Improved east-west pedestrian connections across Broadway at new developments between Mississippi and Kentucky Avenues
4. Construct pedestrian facility between the Broadway and Alameda Light Rail Stations.
5. Improved pedestrian signalization at Ohio Avenue across both Broadway and Lincoln.
6. Improved sidewalk along Broadway underneath I-25
7. Improved pedestrian connection along Mississippi pedestrian underpass.
8. New pedestrian crossings over the CML at Tennessee and Kentucky Avenues.
9. New streets constructed as part of new development must include pedestrian facilities, preferably 13 foot wide sidewalks or sidewalks detached from curb with a tree lawn.