

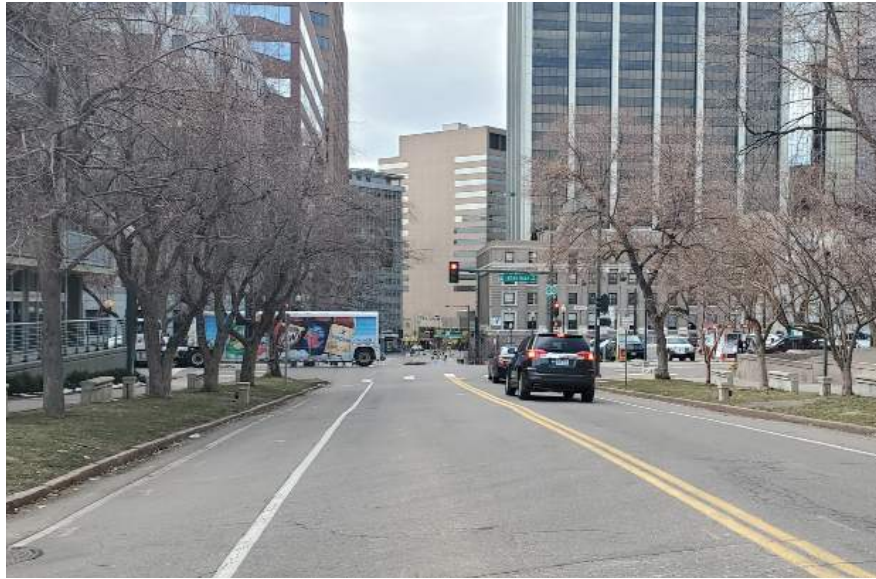
16th Avenue: A Gateway into Downtown



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Sixteenth Avenue (16th Avenue), as it enters Downtown Denver, serves as a major gateway connecting the east central neighborhoods to Upper Downtown.

Overall, 16th Avenue stretches a continuous 1.6 miles, from City Park to the 16th Street Mall. The local street serves cars, bikes, and pedestrians for the entire length, with buses only on the western-most block at Broadway. 16th Avenue is an important east-west link in Denver’s bicycle network, with an on-street bike lane and minimal vehicular traffic.

As 16th Avenue drops into Downtown, there is a need for mobility improvements to facilitate placemaking as benefits a gateway. Enhancing the right-of-way to promote active mobility along 16th Avenue better connects the gateway to the 16th Street Mall and Upper Downtown, highlights the connection to The 5280 Trail (at Sherman Street), creates a safer bicycle connection, and improves the pedestrian realm to facilitate placemaking.



The objective for this project, to create 16th Avenue as a gateway into Downtown Denver, is based on the connection into and from the adjacent neighborhoods. This project rethinks right-of-way space allocation to prioritize the experience for pedestrians and bicyclists entering, and exiting, Downtown via active transportation modes. Redesigning mobility is the first stage in creating a vibrant public place along 16th Avenue.

Top: Gateway to downtown Denver & Bottom: 16th Avenue bicyclist, east of Sherman St

Context

City

Denver's central business district is on the southeast edge of downtown, connected to Lower Downtown via the 16th Street Mall. The Mall bisects Downtown northwest to southeast from Denver Union Station to Civic Center Plaza.

Street

16th Avenue runs continuously for 1.6 miles from City Park to Downtown Denver. From City Park Esplanade, 16th Avenue connects west through the residential neighborhoods of east-central Denver before ending in Downtown's central business district.

Bike lanes run along the length of 16th Avenue and serve as a major east-west connection in Denver's bike network.

The 5280 Trail planned route travels along Sherman Street, crossing 16th Avenue.

Study Area

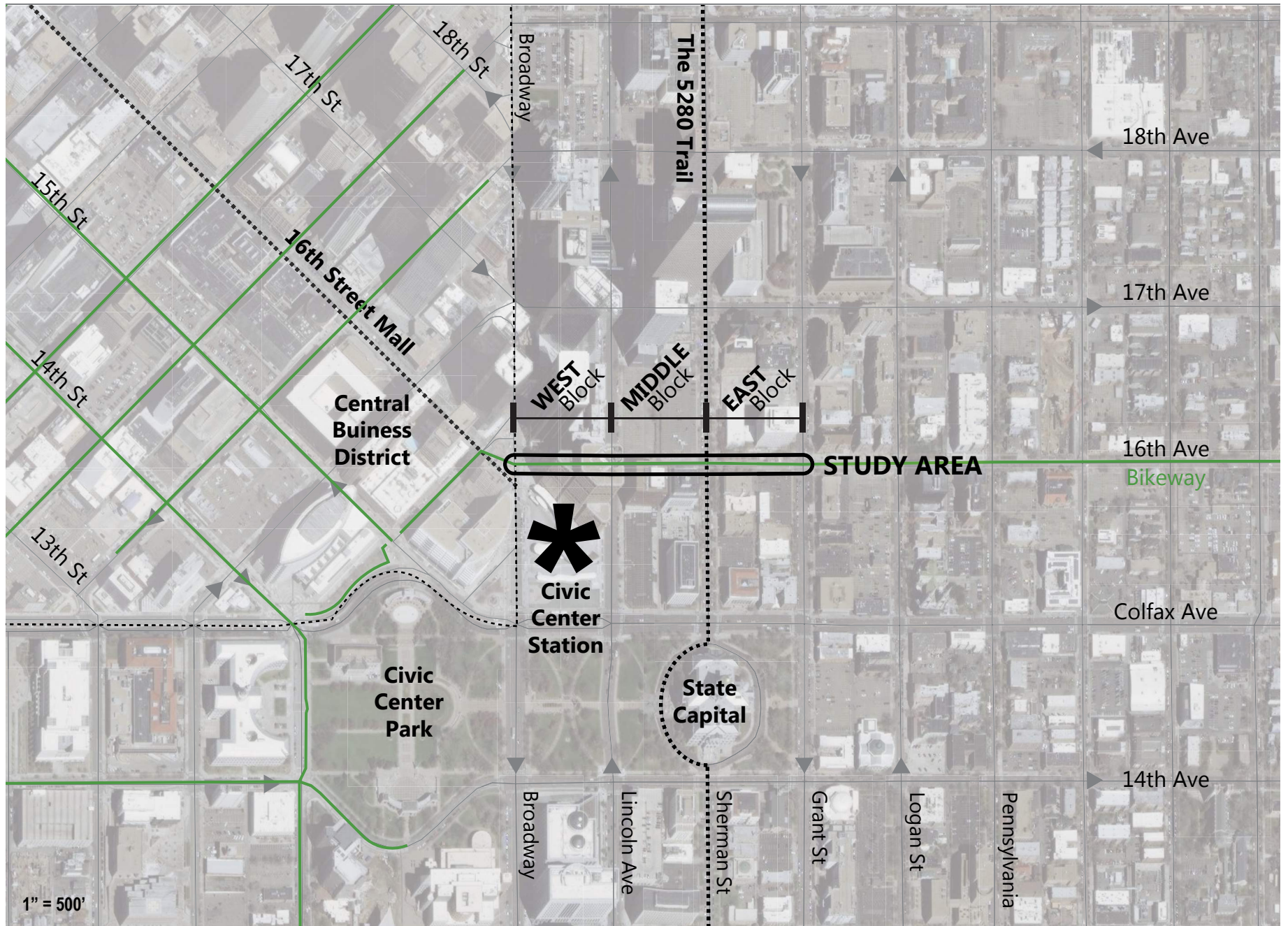
The study area for this project is three blocks from lower density urban center towards City Park into Denver's urban core. The East Block is defined by Grant Street on the east and Sherman Street on the west. The Middle Block is between Sherman Street on the east and Lincoln Avenue on the west. The West Block is defined by Lincoln Avenue on the east and Broadway on the west.

The East Block from Grant Street to Sherman Street fits the paradigm streetscape of 16th Avenue - two travel lanes bracketed by on-street bike lanes, mature trees in tree lawns, and detached sidewalks.

The Middle Block from Sherman Street to Lincoln Avenue is a transition block from high-rise urban to mid-rise urban center. The right-of-way configuration is also in transition, from the typical streetscape of the East Block and all of 16th Avenue to the unique streetscape of the West Block.

The West Block from Lincoln Avenue to Broadway has the most mobility conflicts to resolve to facilitate a vibrant public place. Inverse to the mobility conflicts to resolve, the context of the West Block is the most supportive for placemaking efforts because of Civic Center Station as a mobility hub, connection to all of Downtown along the 16th Street Mall, and adjacent civic institutions.

Access to Civic Center Station is off 16th Avenue, with regional buses turning off Lincoln Avenue, and local routes have stops adjacent to the Station on Broadway and Colfax Avenue. Modal conflicts with vehicles in the West Block are along the south side of 16th Avenue. Eighteen bus routes access Civic Center Station off 16th Avenue. Due to the one-way nature of 16th Avenue at Broadway, vehicles that enter heading east are able to continue through the block, but west-bound vehicles must enter the alley on the north, the parking garage within Civic Center Plaza, or u-turn. Mobility solutions for transit, vehicles, bike, and pedestrians are most needed in the West Block.



Planning

Existing Conditions

The experience leading into downtown, starting at Grant Street heading west into Downtown, changes from human-scaled to the heart of Denver's urban core as the street descends in elevation.

Continuous along 16th Avenue and through the study area are the one-way pair of bike lanes against each curb.

The East Block, and east of Sherman Street, 16th Avenue has mature trees and a detached eight-foot sidewalk. Concrete benches and pedestrian-scale lighting are integrated into the tree lawns, providing small gathering areas. The streetscape from Grant Street to Sherman Street is the most pleasant pedestrian experience in the study area.

The street experience in the Middle Block from Sherman Street to Lincoln Avenue has half-defined edges - the two parcels on the north-side of 16th Avenue are surface parking lots. Overall, the pedestrian experience is austere in comparison to the East Block. There are fewer trees to define the pedestrian realm, all paving is concrete, and the only other plants are in large planters along the southeast building.

In the West Block, 16th Avenue ends at car-oriented Broadway and the southern end of the 16th Street Mall as the experience opens to the urban core of Denver's skyscrapers.

The West Block experience is dominated by the vehicle traffic and hard surfaces. The sidewalk maintains the characteristics of the Middle Block - an 8-foot wide clear zone and a 12-foot wide amenity zone with tree pits, white concrete benches, and sets of two stairs.



Top: View from East Block to Downtown & Bottom: Pedestrian experience in West Block

Pedestrian Mobility

A walkable place is useful, safe, comfortable, and interesting. A walkable place is more than just a great streetscape – land use, context, mobility, and the area’s larger urban design are influential in creating a walkable place.

Planning and designing for pedestrians are the highest priorities. The Downtown Area Plan calls for all of downtown to be a pedestrian priority zone. This championing of the pedestrian, as the most important user to plan and design for, is echoed in all reviewed plans. In mobility prioritization, this project ranks pedestrians as most important based on plan review, stakeholder feedback, and client input.

Bike Mobility

Building bicycle facilities has been shown to increase the number of people biking. A low-stress cycling network is the goal to encourage more riders. Low-stress bicycle networks should be connected with minimal gaps and safe bike facilities. Networks with missing links or barriers discourage bicyclists, force detours, and inhibits biking.

In conjunction with the pedestrian connections espoused by all reviewed plans, the creation of clear and improved bike infrastructure along 16th Avenue is recommended in multiple plans. Additionally, the City has committed to improving the connections of the bicycle network across Denver, and has outlined bike facilities at different comfort levels to apply in different situations.

Mobility Hub

There is no standard definition of or elements included in a mobility hub, but all sources agree a mobility hub is a place where multiple travel modes converge. It is a “central place that links different modes of transportation.” The components of a mobility hub include both transportation and land use considerations. Re-envisioning Civic Center as a mobility hub is reiterated through many plans, although each plan has varying definitions of what a mobility hub entails. Most prominently, Blueprint Denver defines a Mobility Hub as:

Places of connectivity where different travel modes, including walking, biking, and transit, come together. Typically, mobility hubs are anchored around transit stations and are located in mixed-use areas with higher intensity development.

Placemaking

Successful public spaces are where public life happens. Places are an important contributor to a city’s identity, are economically beneficial, help the environment, and are where cultural activities take place. Many of the elements associated with a walkable place - useful, safe, comfortable, and interesting - are also associated with placemaking. Streetscapes are enlivened with mobility and placemaking elements, such as building frontage and street furniture. Streets must be comfortable for users, creating a safe space for mobility of many types to occur. Sidewalks, bike facilities, vehicle lanes, parking, and transit work together to bring people to and through a space. Places occur when people stay in a place they enjoy.

The importance of creating a sense of place is interwoven through the mobility discussion in all reviewed plans.

Concept Design

Concept Design

Redesigning mobility is the first stage in creating a vibrant public place along 16th Avenue as a gateway into Downtown. The study area concept design recommendations range from maintaining the existing configuration with bike lane upgrade modifications to a complete rethinking of the streetscape to prioritize active mobility.

East Block

Mobility along the East Block is functioning and the above-the-curb elements are the best of the study area. Design recommendations are limited to between-the-curb surface improvements and maintain the existing one-way bike facility configuration.

Recommendation: Upgrade existing bike facility to a high-comfort

bike facility by adding buffer striping and vertical barriers.

Middle Block

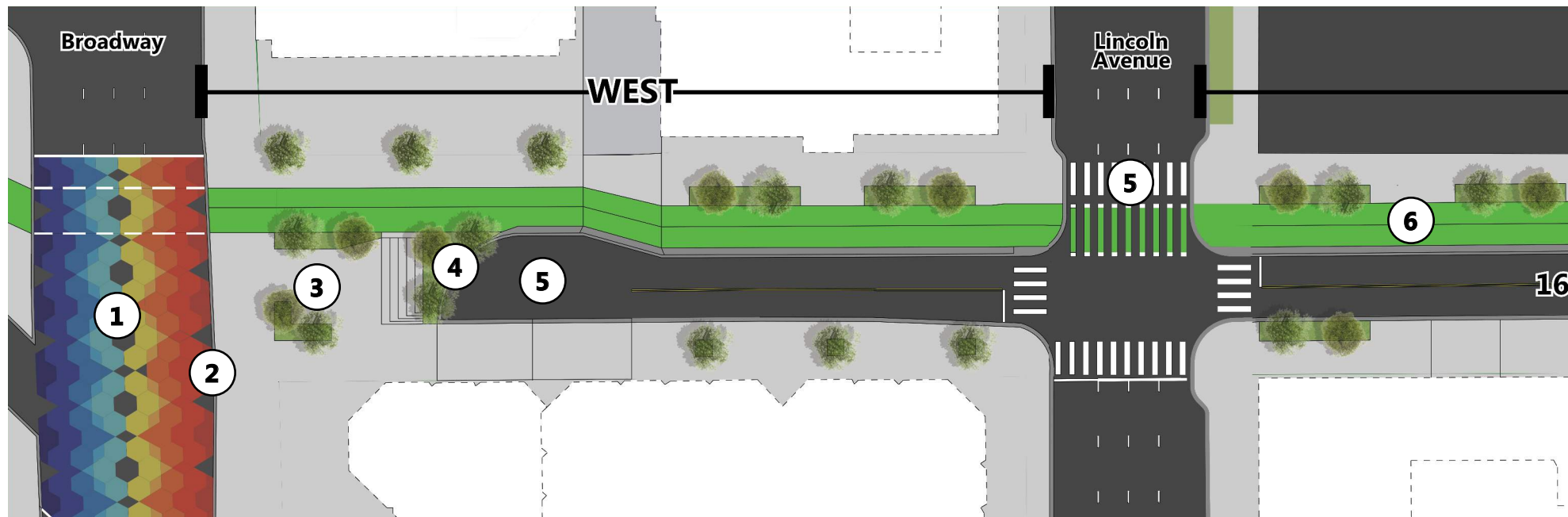
The Middle Block is bland and a complete right-of-way redesign is recommended, along with a change to the bike facility configuration.

Recommendation: A two-way bike facility along the northern curb to celebrate the connection of The 5280 Trail into Downtown.

West Block

The West Block has the most mobility conflicts to resolve in order to facilitate a vibrant public place in the central business district.

Recommendation: Removal of the existing median, close vehicle access off Broadway to reallocate space to active transportation modes, and two-way bike facility along the northern curb.



- 1 Painted Pedestrian Crossing**
To connect pedestrian spaces across Broadway and emphasize the pedestrian priority at the end of the 16th Street Mall.
- 2 Mobility Hub Curbside**
Closing access onto 16th Avenue increases the curb space available on Broadway for drop-off and pick-up.
- 3 Pedestrian Plaza**
Pedestrian plaza created by reallocated right-of-way space away from vehicles.
- 4 Planted Buffer**
Planter adjacent to street limits drop off and pick up ease on 16th Avenue, reducing vehicles blocking bus access.
- 5 Curb Bulb Outs**
To reduce pedestrian and bicycle crossing distance on Lincoln Avenue while tightening the turning radius to slow vehicles.

- 6 Two-way Cycle Track**
Two-way cycle track along northern side of right-of-way to minimize conflict with vehicle access points and connect from The 5280 Trail into Downtown.
- 7 Stormwater Planters**
Stormwater planters along 16th Avenue with trees to manage, collect, and provide infiltration.
- 8 The 5280 Trail**
The planned route along Sherman Street includes a two-way bike facility along the east side of the street. The proposed two-way cycle track connects into Downtown.
- 9 Bike Lanes**
Bike lane configuration, typical of 16th Avenue, maintained in East Block with buffering and protection updates to transition from two-way bike facility.

