3.12  HISTORIC AND ARCHAEOLOGICAL PRESERVATION

Legislation at the state and federal levels requires that governmental agencies assess the impacts of proposed projects on historic and archaeological resources before undertaking a project. The federal legislation that protects historic and archaeological resources includes Section 106 of the National Historic Preservation Act of 1966 (NHPA as amended). Section 106 of the NHPA requires that federal agencies or other agencies that use federal funds consider the effects of their actions on historic properties. An historic property is defined as any prehistoric or historic site, district, structure, building, object or archaeological resource included on or eligible for inclusion on the National Register of Historic Places (NRHP).

The Section 106 process includes steps to: 1) identify and evaluate historic properties, 2) assess the impacts of an undertaking on the historic properties, and 3) consult with appropriate agencies for measures to avoid, minimize, or mitigate any adverse effects. The process for complying with the state legislation is similar. This section addresses the requirements of Section 106 of the NHPA and the Colorado statutes protecting historic resources.

Four main criteria are used to determine if a property is eligible for inclusion on the NRHP:

- Criterion A: The property is associated with events that have made a significant contribution to the broad pattern of our history.
- Criterion B: The property is associated with the lives of persons significant in our past.
- Criterion C: The property embodies the distinctive characteristics of a type, period, or method of construction; or represents the work of a master; or possesses high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction.
- Criterion D: The property has yielded or may be likely to yield information important in history or prehistory.

3.12.1  Existing Historic and Archaeological Resources

Historic and archaeological resources were evaluated for the properties within the defined area of potential effect (APE) where transportation improvements are planned to occur. Consultation with the SHPO regarding definition of this APE took place in meetings on November 4, 2005, February 24, 2006, July 17, 2006, and during a field trip to the study area on August 1, 2006. The SHPO provided comments on the APE for this project in a letter dated May 10, 2007. The APE is shown in Figure 3-7.

3.12.1.1  NRHP Eligible Properties in the Area of Potential Effect

A total of 28 properties were surveyed for this project within the APE. Some previous historic survey work had been conducted in this area, requiring re-evaluation. The 28 surveyed properties include 9 residential properties, 13 commercial properties, two sewer segments, two railroads, one set of Tramway tracks and one industrial property. During scoping, it was determined that because of the urban nature of the study area and disturbance over the years, the presence of archaeological resources would be unlikely and that a survey would not be required.
Figure 3-7. Eligible Historic Properties in APE

<table>
<thead>
<tr>
<th>Number</th>
<th>Address</th>
<th>Name / Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Slightly East of Santa Fe Dr.</td>
<td>AT&amp;SF Railroad</td>
</tr>
<tr>
<td>2</td>
<td>Slightly East of Santa Fe Dr.</td>
<td>D&amp;RG Railroad</td>
</tr>
<tr>
<td>3</td>
<td>890 S. Santa Fe Dr.</td>
<td>Gates Warehouse/Furniture Store</td>
</tr>
<tr>
<td>4</td>
<td>On Broadway throughout study area</td>
<td>Denver Tramway</td>
</tr>
<tr>
<td>5</td>
<td>999 - 1001 S. Broadway</td>
<td>Gates Rubber Company Historic District</td>
</tr>
<tr>
<td>6</td>
<td>1170 - 1184 S. Broadway</td>
<td>Bidinger Building</td>
</tr>
<tr>
<td>7</td>
<td>1190 S. Broadway</td>
<td>Denver Discount Tire Center</td>
</tr>
<tr>
<td>8</td>
<td>1193 - 1197 S. Lincoln St.</td>
<td>Duplex</td>
</tr>
<tr>
<td>9</td>
<td>Under S. Broadway from Mississippi Ave South</td>
<td>Broadway Brick Sewer</td>
</tr>
<tr>
<td>10</td>
<td>Under Mississippi Ave from S. Broadway East</td>
<td>Mississippi Clay Sewer</td>
</tr>
</tbody>
</table>

LEGEND
- Area of Potential Effect (APE)
- Gates Historic District
- Denver Tramway
Eleven of the 28 properties evaluated are eligible for inclusion on the NRHP. The former Gates property is an eligible historic district which includes numerous elements, two of which, Unit 41 and the Ford Building, although not identified as resources separate from the district, are discussed in this evaluation since they are located immediately adjacent to the project corridor. In consultation with SHPO, FHWA and CDOT determined that the Denver Tramway Trolley Lines (5DV.9217.3) along South Broadway is an eligible historical archaeological resource. The other seventeen properties surveyed are not eligible for inclusion on the NRHP or the State Register of Historic Properties (SRHP). Many of these properties have had significant alterations over time. Others have no known historical associations or architectural significance. The eligible properties are listed in Table 3-15. Figure 3-7 shows the location of these historic properties.

Table 3-15. Eligible Properties in the APE listed from North to South

<table>
<thead>
<tr>
<th>ID Number</th>
<th>Name/ Description</th>
<th>Address</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>5DV.4783.4</td>
<td>AT and SF Railroad</td>
<td>Slightly east of Santa Fe Drive</td>
<td>Officially Eligible—Segment supports eligibility</td>
</tr>
<tr>
<td>5DV.4784.5</td>
<td>D&amp;RG Railroad</td>
<td>Slightly east of Santa Fe Drive</td>
<td>Officially Eligible—Segment supports eligibility</td>
</tr>
<tr>
<td>5DV.9952</td>
<td>Furniture Stores—Clearance Center</td>
<td>900 South Santa Fe Drive</td>
<td>NRHP Eligible District—Property supports eligibility</td>
</tr>
<tr>
<td>5DV.9217.3</td>
<td>Denver Tramway Trolley Lines</td>
<td>Under South Broadway throughout study area</td>
<td>Eligible for NRHP under Criterion A and D</td>
</tr>
<tr>
<td>5DV.48</td>
<td>Gates Rubber Company Historic District</td>
<td>999-1001 South Broadway</td>
<td>NRHP Eligible District</td>
</tr>
<tr>
<td>5DV.9953.1</td>
<td>Broadway Brick Sewer</td>
<td>Under South Broadway from Mississippi Avenue southward</td>
<td>Entire Resource Eligible—however, segment lacks integrity and does not support eligibility</td>
</tr>
<tr>
<td>5DV.9954.1</td>
<td>Mississippi Clay Sewer</td>
<td>Under Mississippi Avenue from South Broadway east</td>
<td>Entire Resource Eligible—however, segment lacks integrity and does not support eligibility</td>
</tr>
<tr>
<td>5DV.9947</td>
<td>Bidinger Building</td>
<td>1170—1184 South Broadway</td>
<td>Eligible for NRHP under Criterion C</td>
</tr>
<tr>
<td>5DV.9948</td>
<td>Denver Discount Tire Center</td>
<td>1190 South Broadway</td>
<td>Eligible for NRHP under Criterion C</td>
</tr>
<tr>
<td>5DV.9950</td>
<td>Duplex—L-Shaped</td>
<td>1183—1187 South Lincoln Street</td>
<td>Eligible for NRHP under Criterion C</td>
</tr>
<tr>
<td>5DV.9951</td>
<td>Duplex</td>
<td>1193—1195 South Lincoln Street</td>
<td>Eligible for NRHP under Criterion C</td>
</tr>
</tbody>
</table>
The following briefly describes the eligible properties in the APE. They are listed from north to south.

5DV.4783.4, AT&SF Railroad—The Atchison, Topeka and Santa Fe Railroad has been determined officially eligible for inclusion on the NRHP (see Photo E). The segment evaluated for this project retains integrity in design, setting and feel and supports the eligibility of the railroad.

5DV.4784.5, D&RG Railroad—The Denver and Rio Grande Railroad has been determined officially eligible for inclusion on the NRHP (see Photo F). The segment evaluated for this project retains integrity in design, setting and feel and supports the eligibility of the railroad.

5DV.9952, Furniture Stores—Clearance Center/Gates Warehouse—900 South Santa Fe Drive. This building was originally built as a raw materials and finished goods warehouse for the Gates Rubber Company (see Photo G). It is within the boundaries of the Gates Rubber Company Historic District and is significant for its association with the Gates Rubber Company. It is a contributing element to the Gates Rubber Company Historic District but has its own site number because it was under separate ownership from the Gates property at the time of the survey. At the time of writing this EA, the buildings have been torn down as part of the former Gates property redevelopment.

5DV.9217.3, Denver Tramway Trolley Lines—The entire Denver Tramway system has been determined officially eligible for inclusion on the NRHP (see Photo H). The Denver Tramway played an important role in the early transit of Denver. It facilitated the settlement and development of many of Denver’s neighborhoods allowing residents an effective way to travel between work and home and to recreational opportunities. For this reason, the overall trolley system was evaluated as eligible for inclusion on the NRHP. The South Broadway line was the first electrified trolley car line to operate in Denver. It continued in operation from December 1889 to June 1950. In 1950, the tracks were covered under asphalt to convert South Broadway to automobile and
bus traffic and have been buried under the road since that time except small segments that have been removed for intersection improvements. This segment of the South Broadway line supports the eligibility of this linear resource.

5DV.48, Gates Rubber Company Historic District, 999-1001 South Broadway—This district was officially listed as eligible for inclusion on the NRHP on September 21, 1993 (see Photo I). A boundary for the district was delineated around the major plant buildings occupying 63 acres both east and west of South Broadway. It is significant for its role in the early industrial development of Denver. It was one of Denver’s largest employers and in the early 1920s was known as the largest manufacturer of automobile fan belts in the world. The district includes the Ford Building and Unit 41. Unit 41 was built by Gates in 1948 for use by their Research and Engineering Department. The Ford Building was a former Ford Motor Company Auto Assembly Plant before it was purchased by Gates.

5DV.9953.1, Broadway Brick Sewer, Under South Broadway from Mississippi Avenue south for approximately 300 feet—The Broadway Brick Sewer is a 57-inch-diameter brick and clay storm sewer line (see Photo J). The first 30 feet from the intersection was made of two concentric rows of brick in 1922. The remaining 270 feet are built of vitrified clay tiles constructed at an unknown date but believed to be around the same time as the brick section. These modifications have compromised the integrity of this sewer segment. Approximately 14 miles of brick sewer remain in the Denver storm system. In letters dated Oct. 4, 2007 and Nov. 19, 2007 SHPO correspondence with CDOT indicated the segment does not retain enough integrity to support the overall eligibility of the entire linear resource. CDOT determined in a letter dated Nov. 1, 2007 that pending additional research, the entire sewer system is potentially eligible. Letters are included in Appendix C.

5DV.9954.1, Mississippi Clay Sewer, Under Mississippi Avenue from South Broadway west for approximately 100 feet—The Mississippi Clay sewer is a 78-inch-diameter storm sewer line made of vitrified clay and was constructed in approximately 1922 (see Photo K). Many of the early sewer lines in Denver were constructed of vitrified clay or brick and only about 30 to 40 miles of the vitrified clay storm sewer line remain in service today out of a total of about 230 miles of sewers in the Denver system. In letters dated Oct 4, 2007 and Nov. 19, 2007 SHPO correspondence with CDOT indicated this sewer segment lacks integrity and does not support the overall eligibility of the entire linear resource. This sewer segment connects to sewers build of rock, concrete, and other materials, which have compromised its historic
integrity. CDOT determined in a letter dated Nov. 1, 2007 that pending additional research, the entire sewer system is potentially eligible. However, the Historic Resources Survey Report for the project (Aug. 27, 2007) indicated there are no other adjacent segments of vitrified clay sewer that would make this area have the potential to be a NRHP district.

**5DV.9947, Bidinger Building, 1170-1184 South Broadway**—This property is significant as a relatively intact two-story structure used for both residential and commercial uses (see Photo L). It is the only two-story commercial structure south of I-25 within the APE for this project. It is also important as the location of several early woman-owned businesses.

**5DV.9948, Denver Discount Tire Center, 1190 South Broadway**—This building is significant under criterion C as a good intact example of Streamline Modern design (see Photo M). Its distinctive characteristics include glass-block detailing and the curved southwest corner of the building.

**5DV.9950, Brick L-Shaped Duplex, 1183-1187 South Lincoln Street**—Built in 1929, this duplex is significant under criterion C. It exhibits simple, utilitarian, clean lines representative of the time when it was built (see Photo N). It is one of only three remaining residential structures in the 1100 block of South Lincoln Street.

**5DV.9951, Brick Duplex, 1193-1195 South Lincoln Street**—Built in 1925, this duplex is significant under criterion C as a good example of the original residential buildings in the study area. It exhibits symmetrical lines and is decorated with stepped shutters (see Photo O). It is one of only three remaining residential structures in the 1100 block of South Lincoln Street.

### 3.12.2 Effects to Historic and Archaeological Properties

#### 3.12.2.1 No-Action Alternative

There would be no impacts to any of the historic properties in the APE as a result of transportation improvements with the No-Action Alternative. Some buildings of the former Gates property have been torn down at the time of the writing of this EA. However, the redevelopment of the former Gates property is underway.
and is being processed under a separate Section 106 coordination effort by Seldon Morales under contract to private development.

3.12.2.2 Preferred Alternative

The Preferred Alternative would directly impact one of the identified historic properties. The Denver Tramway Trolley tracks, 5DV.9217.3, would be directly impacted by this project. These tracks are buried within the pavement on South Broadway between Kentucky and Arizona Avenues and would be removed as part of this project. A total of approximately 2,000 linear feet of track would be removed. This would be an adverse effect. A Memorandum of Agreement (MOA) has been entered into by FHWA, SHPO, and CDOT in order to allow projects affecting the trolley lines on South Broadway to be implemented with mitigation stipulations that interpret the significance of the trolley tracks for the public and record the resource with archival documentation. See Appendix B for MOA. In their current condition, the trolley tracks have minimal value for preservation in place and a greater net benefit would be realized by preparing suitable mitigation, including interpretive media and other programs designed for public education and interpretation.

The Broadway Brick Sewer (5DV9953.1) and the Mississippi Clay Sewer (5DV9954.1) segments would both be impacted as a result of inlet relocations and connecting drain pipes to improve drainage in this section of South Broadway. With the reconstruction of South Broadway and Mississippi Avenue, stormwater inlet structures and piping would have to be relocated. The inlets along Mississippi Avenue and the inlets south of Tennessee Avenue on South Broadway drain into the larger Mississippi Avenue outfall that was constructed as part of the T-REX project. The impacts will be limited to small sections of the sewers where inlets are constructed or where new piping may need to be constructed to intersect the existing sewer alignment. The SHPO and consulting parties were consulted on the effects to the two sewer resources and the minor nature of the work supports the determination of no adverse effect to these resources. Consultation letters are included in Appendix D.

None of the historic structures in the Gates Rubber Company Historic District, 5DV.48, would be directly affected by this project. Two of the buildings on the Gates site are adjacent to South Broadway. These buildings are the Ford building at the southeast corner of South Broadway and Kentucky Avenue and the other is the building known as Unit 41 which is located on the west side of South Broadway just south of Tennessee Avenue. These buildings in particular would be subjected to indirect effects of increased noise, dust and vibration during construction. Building 41; however, is expected to be demolished by redevelopment in the near future.

Indirect effects from noise and vibration were considered for this project. Noise assessments conducted for the project showed that there would be no exceedance of the NAC (see Section 3.7). There would, however, be temporary construction related impacts from noise, vibration and dust. Noise and vibration would be generated by diesel-powered equipment such as dump trucks and bulldozers, back-up alarms on certain equipment and compressors.

The Bidinger Building (5DV.9947) and Denver Discount Tire Center (5DV.9948) would also be temporarily affected by noise and dust during construction; however, these buildings are currently owned by Lionstone and would be demolished as part of their redevelopment plans, as well as the residences (5DV.9950 and 5DV9951). The railroads (5DV.4783.4 and 5DV4784.5),
furniture stores (5DV9952), and residences (5DV.9950 and 5DV.9951) would not be directly or indirectly affected by the project. They are outside the area for direct or indirect impacts. Furthermore, at the time of the writing of this EA, the furniture stores have been demolished as part of the area redevelopment construction. In consultation with SHPO it was determined that the project would result in "no adverse effect" with regard to the Bidinger Building and Denver Discount Tire Center, and "no historic properties affected" with regard to the railroads, furniture stores, and residences.

**Summary of Coordination**

Invitations to participate in the Section 106 process were initially sent to the following groups: Colorado Preservation Inc., Historic Denver, the National Trust for Historic Preservation, the West Washington Park Neighborhood Association, Platt Park Peoples Association, and the Denver Landmark Preservation Commission. Letters were sent to each to obtain their interest in participating as a consulting party for the Section 106 process. Of these groups, only the Denver Landmark Preservation Commission responded in writing to participate as consulting party on the project (see letter dated June 28, 2007 in Appendix D). The Platt Park People’s Association has also agreed to participate as a consulting party. Consultation with the SHPO and the consulting parties on eligibility determinations is complete. Copies of all correspondence received are included in Appendix D.

**3.12.3 Historic and Archaeological Properties Mitigation**

Mitigation for impacts to the Denver Tramway Trolley Tracks will adhere to the requirements and stipulations set forth in a MOA between FHWA and SHPO signed on November 26, 2007 (see Appendix C). These measures include interpretive mitigation that describes the relationship of the trolley tracks to the street, businesses, and nearby neighborhoods. The content, design, and materials of proposed mitigation is to be determined but will include a corridor-wide interpretation of the importance of the trolley track to South Broadway. The SHPO, Denver Landmark Preservation Board, and Platt Park People’s Association will be provided with an opportunity to comment on drafts of the proposed interpretive mitigation options. Other mitigation includes archival documentation of the track remnants prior to removal.

Construction noise and dust impact, while temporary, will be mitigated by requiring the contractor to use well-maintained equipment (particularly mufflers) and dust control measures to the extent feasible.

In the event that previously unrecorded archaeological material is found during construction, activities in the immediate area would be halted, and the CDOT archaeologist would be contacted to assess the find.

**3.12.4 Native American Consultation**

Section 106 of the National Historic Preservation Act (as amended) and the Advisory Council on Historic Preservation regulations (36 CFR 800.2[c][2][i][ii]) mandate that federal agencies coordinate with interested Native American tribes in the planning process for federal undertakings. Consultation with Native American tribes recognizes the government-to-government relationship between the United States government and sovereign tribal groups. In
that context, federal agencies must acknowledge that historic properties of religious and cultural significance to one or more tribes may be located on ancestral, aboriginal, or ceded lands beyond modern reservation boundaries.

Consulting tribes are offered the opportunity to identify concerns about cultural resources and comment on how the project might affect them. If it is found that the project will impact properties that are eligible for inclusion on the National Register of Historic Places and are of religious or cultural significance to one or more consulting tribes, their role in the consultation process also will include participation in resolving how best to avoid, minimize, or mitigate those impacts. By describing the proposed undertaking and the nature of any known cultural sites, and consulting with the interested Native American community, FHWA and CDOT strive to effectively protect areas important to American Indian people.

In September 2007, FHWA contacted twelve federally recognized tribes with an established interest in the City and County of Denver, Colorado, and invited them to participate as consulting parties:

- Apache Tribe of Oklahoma
- Cheyenne and Arapaho Tribes of Oklahoma  
  (two tribes administered by a unified tribal government)
- Cheyenne River Sioux Tribe (South Dakota)
- Comanche Nation of Oklahoma
- Crow-of-way Creek Sioux Tribe (South Dakota)
- Kiowa Tribe of Oklahoma
- Northern Arapaho Tribe (Wyoming)
- Northern Cheyenne Tribe (Montana)
- Oglala Sioux Tribe (South Dakota)
- Pawnee Nation of Oklahoma
- Rosebud Sioux Tribe (South Dakota)
- Standing Rock Sioux Tribe (North Dakota)

The Pawnee Nation and Northern Cheyenne Tribe responded in writing to the solicitation, each declining the invitation to consult. None of the remaining tribes elected to reply. As a result of these actions, no Native American tribes are considered consulting parties for the undertaking, and FHWA has fulfilled its legal obligations for tribal consultation under federal law. Documents specific to the consultation process are included in Appendix D.

3.13 Hazardous and Solid Wastes

Hazardous and solid wastes (or other hazardous substances) may be encountered during the construction of a transportation project. Therefore, it is important to identify properties that may contain contamination prior to right-of-way acquisition and construction. Hazardous waste is defined as any waste product that is considered flammable, corrosive, reactive or toxic or is specifically listed as a hazardous waste by EPA regulations. Hazardous waste can be found in various forms and can originate from a variety of sources. Examples of potential sites that may contain hazardous material include landfills, service stations, industrial areas, railroad corridors and mine sites. When developing a transportation project, it is important to be aware of known hazardous waste sites so they can be avoided or their impacts minimized.
The standard process for assessing the potential for encountering hazardous material prior to right-of-way acquisition and construction is a two-phase approach. Phase One involves the completion of a Modified Environmental Site Assessment (MESA) which is an assessment of existing potential or suspect contamination (recognized environmental conditions) that may impose an environmental liability to, or restrict the use of, the subject property. The second phase is a Site Investigation that typically includes a subsurface investigation and analytical testing of soil and/or groundwater to further assess the type and extent of contamination that may be present. The need for conducting a Site Investigation is based on the outcome of the Phase I MESA.

A MESA was completed May 26, 2006 to evaluate the potential for encountering soil and/or groundwater contamination within the South Broadway study area. The MESA is based on information obtained from a review of environmental regulatory records, historical Sanborn Fire Insurance maps and an on-site inspection.

### 3.13.1 Existing Hazardous and Solid Waste Conditions

Land use within the study area has historically been a mixture of residential, commercial, industrial and transportation. In May 2006, a Phase I MESA was completed for an approximate one-mile radius from the centerline of the study area. Figure 3-8 shows the approximate MESA study area.

Review of the environmental regulatory records database revealed a total of 148 sites with potential environmental contamination within the South Broadway study area. An additional 98 sites with potential environmental issues were identified but could not be located by Environmental Data Resources (EDR) (“Orphan Sites”). Review of the Sanborn Fire Insurance Maps revealed a total of 34 sites with a potential for environmental contamination within the South Broadway study area. All of the listed sites, Orphan Sites and Sanborn sites are listed in the appendix sections of the Phase I MESA.

After evaluating the degree of potential hazard presented by each of the database sites and Sanborn sites to the study area, the list of sites of concern was reduced to the three sites considered recognized environmental conditions that have potential to impact the project shown in Figure 3-8. The project would acquire commercial and residential buildings that may contain asbestos containing materials.

Asbestos surveys and possibly asbestos abatement will be required prior to demolition of any buildings in accordance with Colorado Air Regulation 8, Part B.

The term recognized environmental conditions means the presence or likely presence of hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater or surface water of the property. The term is not intended to include de minimis conditions that generally do not present a material risk or harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.
Figure 3-8. Potential Hazardous and Solid Waste Sites
Most of the database sites and Sanborn sites were eliminated as sites of concern because they were within the search radius of the EDR report but were not close enough to any of the design alternatives to be considered an environmental concern to the project. Other listed sites were eliminated because they were not considered recognized environmental conditions likely to impact the project.

3.13.2 Hazardous and Solid Waste Impacts

3.13.2.1 No-Action Alternative
The No-Action Alternative would include the construction of the Preferred Alternative for the VHEIS. This alternative includes a northbound off-ramp to northbound Lincoln Street adjacent to I-25 and west of residential properties on Lincoln Street south of Ohio Avenue. Construction of this ramp would require footings or caissons to be installed to a depth where they may encounter groundwater contaminated with TCE. The groundwater has migrated from a source area southwest of the intersection of South Broadway and Kentucky Avenue and has spread to the north and northeast beneath Lincoln Street.

Due to the industrial history of this area, construction also may encounter other contaminants such as petroleum hydrocarbons, industrial chemicals and buried solid wastes.

Construction of the ramp would also impact existing groundwater monitoring wells and remediation wells currently located in the footprint of the ramp.

3.13.2.2 Preferred Alternative
The southbound South Broadway to southbound I-25 structure that is a part of the Preferred Alternative would require that foundations be installed in the South Broadway/Kentucky Avenue TCE soil contamination and groundwater plume area located northeast of South Broadway and Kentucky Avenue. This alternative would also encroach on a surface area southwest of the intersection of South Broadway and Kentucky Avenue where a portion of a soil and groundwater TCE remediation system is currently located. Other industrial chemicals may also be encountered in the soil and groundwater in this area.

In addition, the Preferred Alternative requires the acquisition and grading of areas previously used for industrial purposes. Because of the wide use of materials containing asbestos in older industrial facilities, these areas may contain asbestos fibers in the surface soil. Petroleum hydrocarbons and other industrial chemicals may also be present in the area.

3.13.3 Hazardous and Solid Waste Mitigation
The potential risks associated with hazardous waste on construction projects are carefully considered. For instance, Section 250 “Environmental Health and Safety Management” of the Standard Specifications for Road and Bridge Construction (CDOT, 2005) provides for the protection of the environment, persons and property from contaminants and includes special requirements for addressing hazardous material, if encountered.

Encountering hazardous and solid wastes in soils and groundwater on this project is considered likely. Therefore, a Site Investigation of any new right-of-way will be conducted prior to right-of-way acquisition. The Site Investigation will include review of the most current data on the
presence of TCE in soil and groundwater. The site investigation also will include analysis of soil and groundwater for the possible presence of other industrial chemicals that may have been used historically in this area. Analysis will be performed for petroleum hydrocarbons, volatile and semi-volatile organic compounds, and other chemicals. Prior to construction, the most current data will be reviewed concerning the South Broadway/Kentucky Avenue area TCE groundwater plume.

Soil and groundwater samples will be collected prior to construction at the locations of subsurface foundation structures, utilities or other significant subsurface activity that are part of the Preferred Alternative. Asbestos surveys and possibly asbestos abatement will be required prior to demolition of any buildings in the study area.

3.14 CONSTRUCTION

The contractor would determine construction methods during or after development of the final design and construction plans. In general, roadway construction could involve the following types of action: demolition and removal of existing structures, excavation and grading, utility adjustments, storm sewers, and pavement. The earliest that any construction activities could begin on the proposed project would be the summer of 2009.

3.14.1 Construction Impacts

3.14.1.1 No-Action Alternative

The No-Action Alternative would have no construction-related impacts in the study area at the time of this proposed action. However, because the No-Action Alternative includes construction of the Preferred Alternative under Phase IV of the VHEIS impacts related to that project including noise, air quality, water quality, traffic impacts, and visual impacts can be expected to occur during implementation of that project.

3.14.1.2 Preferred Alternative

There would be several impacts associated with the construction of the Preferred Alternative, which would occur at two separate periods of time. There would first be a construction period associated with the Interim Phase and include the widening of South Broadway to an eight lane cross-section with the two outer lanes utilized as parking, as well as all other features associated with the Preferred Alternative. There would be a second, minor period of construction associated with the Ultimate Phase in which the outer two lanes of South Broadway would be converted from parking lanes to driving lanes, restriping, and removal of curb bulb-outs. Interim and Ultimate construction-related impacts include:

- **Noise and Vibration**—The operation of various types of machinery, such as heavy earth-moving equipment, paving equipment, power tools, pile drivers, and trucks would create an undesirable noise condition. Impacts from vibration are also likely during the construction period.

  During construction of the Preferred Alternative, noise would be generated by diesel-powered earth moving equipment such as dump trucks and bulldozers, back-up alarms on certain equipment, and compressors. Construction noise at receptor locations are usually
dependent on the loudest one or two pieces of equipment operating at the moment. Noise levels from diesel-powered equipment range from 80 dB(A) to 95 dB(A) at a distance of 50 feet.

Construction vibration operations, truck loading, hauling, and routing that do not require road closures, will be scheduled during daytime hours and managed to minimize noise and vibration levels to surrounding neighborhoods. However, activities requiring road closures may need to occur at night.

- **Air Quality**—Exhaust emissions and fugitive dust would increase during construction as a result of the operation of heavy equipment, lower traffic speed (start/stop driving), and earth excavation activities associated with construction.
- **Water Quality**—If spills of fuel, oil, grease, or other chemicals occur during construction activities, they would pollute soils and/or groundwater. Construction activities would have an impact on stormwater due to activities such as grading and excavation, truck movement, and other activities.

Stormwater runoff carrying pollutants from impervious surfaces have the potential to affect water quality.

- **Hazardous and Solid Waste**—There is a high likelihood that contaminated soil and/or groundwater would be encountered during construction.
- **Visual**—Stockpiles of earth materials, stacks of construction materials, and parked equipment would cause a temporary visual impact to the residents near the locations of construction activities.
- **Access**—During construction, mobility conditions due to congestion and cut-through traffic would deteriorate in the study area until the project is complete.
- **Erosion and Sediment Control**—Construction excavation and earth moving activities may track mud onto local streets.

### 3.14.2 Construction Mitigation

Construction impacts will be mitigated by the contractor through implementation of control measures during construction.

#### Mitigation for Construction Noise and Vibration

- Section 36-6(b)(7) of the Denver code, from the Department of Environmental Health, states that the maximum permissible sound pressure levels specified in the code do not apply to sounds emitted from construction equipment operated between the hours of 7:00 a.m. and 9:00 p.m.; however, operation of construction equipment between the hours of 9:00 p.m. and 7:00 a.m. may not exceed the maximum sound pressure levels specified as follows:
  - 50 (A)dB at the property line of a residential premise
  - 60 (A)dB at the property line of a commercial premise
  - 75 (A)dB at the property line of an industrial premise
  - 70 (A)dB anywhere on a public premise
Construction noise impacts, while temporary, will conform to and be consistent with the Denver Municipal Code Noise Ordinance stipulations. Construction noise mitigation measures will be addressed for residential areas surrounding active construction sites during final design of the project.

Construction vibration operations, truck loading, hauling, and routing will be scheduled during daytime hours and managed to minimize noise and vibration levels to surrounding neighborhoods.

Mitigation for Air Quality Construction Impacts

The following mitigation measures address construction-related air quality impacts of the Preferred Alternative.

- The Contractor will ensure that all construction equipment is properly tuned and maintained.
- Contractor will minimize idling times.
- Consistent with CDOT's standard specification 209 Watering and Dust Palliatives, an operational water truck will apply water to control dust as needed to prevent dust impacts offsite.
- To the extent practicable, the contractor will utilize existing power sources or clean fuel generators rather than temporary power generators.

Mitigation for Water Quality Construction Impacts

In addition to conformance with the MS4 control measures, the following specific BMPs from the Erosion Control and Storm Water Quality Guide will be applied during construction to reduce construction-related and/or long-term operation impacts to water quality as appropriate:

- All disturbed areas will be revegetated with native grass and forb species. Seed, mulch and mulch tackifier will be applied in phases throughout construction.
- Where permanent seeding operations are not feasible due to seasonal constraints (e.g., summer and winter months), disturbed areas will have mulch and mulch tackifier applied to prevent erosion.
- Temporary erosion control blankets will have natural fibers.
- Erosion bales, erosion logs, silt fence or other sediment control device will be used as sediment barriers and filters at inlets where appropriate.
- Storm drain inlet protection will be used where appropriate to trap sediment before it enters the cross-drain.
- Temporary detention ponds built to mitigate for construction impacts will be used to allow sediment to settle out of runoff before it leaves the construction area. In addition permanent detention will be used as constructed.

Mitigation for Hazardous and Solid Waste Construction Impacts

- Construction contractors will be required to manage the project to reduce the likelihood of chemical spills. Cleanup of spills will be conducted in compliance with Colorado hazardous waste regulations in 6 CCR 1007-3.
Mitigation for Visual Construction Impacts

- Designing a suitable construction staging area, and requiring that the contractor store materials and equipment within that area to minimize the visual impact.

Mitigation for Historical and Archaeological Construction Impacts

- Construction noise and dust impact, while temporary, will be mitigated by requiring the contractor to use well-maintained equipment (particularly mufflers) and dust control measures to the extent feasible.

- In the event that previously unrecorded archaeological material is found during construction, activities in the immediate area would be halted, and the CDOT archaeologist would be contacted to assess the find.

Mitigation for Access during Construction Impacts

- Construction staging and traffic control plans will be developed that minimize the disruption to traffic and access.

- The CCD will provide adequate public notice and maintain coordination with area residents and with the area’s emergency service providers to keep the public apprised of the construction progress and to inform the public of closures and detours.

- Local access to intersecting roads and to residences would be maintained during construction. However, limited access and minor detours would be necessary at certain locations during this period. This would affect not only through travelers on South Broadway but also patrons of the I-25 and Broadway Station.

Mitigation for Erosion and Sediment Control

- Erosion and Sediment Control Plan and permit will include Best Management Practices to reduce mud tracking on local streets.

3.15 CUMULATIVE EFFECTS

Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7).

This section first describes the historical and present situation as it relates to particular resources of concern. Following this is a list which describes reasonably foreseeable future actions that could affect those resources. An assessment of the future situation if only those reasonably foreseeable future actions are implemented is then provided. The impacts of the Preferred Alternative on those resources are then described. Finally, a conclusion regarding what that incremental impact means to the future viability of those resources is provided.

The following agencies were consulted to determine the resources of concern in the study area: the SHPO, the USFWS, the USACE and RTD.

Resources which are being evaluated in this EA from a cumulative impact standpoint include: traffic/transportation, land use (including community cohesion and community character), air...
quality and historic resources. These resources were evaluated for a cumulative study area with approximate limits of Downing Street on the east, Alameda Avenue on the north, US 85 on the west and Evans Avenue on the south.

3.15.1 Past Conditions and Present Conditions

Data on historic and existing conditions in the study area were derived from readily available data sources including previous environmental reports: The Southeast Corridor FEIS, (December 1999), the VHEIS (November 2006), aerial photos of the study area and information from public and agency scoping reports for this project.

South Broadway was constructed in 1864 as a rough wagon road used primarily for hauling local produce to market. It evolved in the 1870s to one of the primary conduits for commercial and residential traffic from the neighborhoods of south-central Denver to downtown Denver. At the turn of the century, development of the railroads and improvements to South Broadway supported a thriving industrial area, with the Ford Motor Company and the Gates Rubber Company. The Valley Highway (now I-25) was constructed in 1958. South Broadway also was used as a trolley track route for the Denver Tramway Company System which provided transit service from 1890 to 1950, providing another means of transportation along South Broadway. Over time, South Broadway became a neighborhood commercial area, providing service to the thriving residential areas.

As development has changed from agricultural and industrial uses into residential and commercial uses, the heavy industrial uses have moved out, including Burkhardt Steel, Robinson Brick, the Ford Motor Company and, more recently, Gates Rubber Company.

Today, the study area is a vibrant mix of solid residential areas (Platt Park and Washington Park West) with some neighborhood commercial areas along South Broadway and along I-25. The I-25 and Broadway Station and park-n-Ride and some currently vacant or unoccupied buildings that are in the process of being redeveloped into a TOD area occupy the study area immediately south of I-25 and on both sides of South Broadway.

From a transportation standpoint, key infrastructure elements that have helped to form the area are I-25, the LRT lines along the southeast and southwest corridors, which converge at the I-25 and Broadway Station, the very well developed grid street network that includes South Broadway, the bus service north and south along South Broadway and the greenway system of pedestrian and bicycle trails along the South Platte River.

Traffic, parking and transportation pressures in the study area have been building as development continues to occur. The Southeast Corridor (whose name was changed to T-REX after completion of the NEPA process) and the VHEIS both noted existing traffic demand that exceeds the capacity of the transportation system to accommodate it, resulting in notable traffic congestion in the study area. This has been somewhat alleviated on the interstate highway system with completion of the T-REX highway elements, but congestion on major regional arterials such as South Broadway has continued to growth. The completion of both the southeast and southwest LRT corridors has been quite helpful to travelers, providing a reliable alternate means of transportation to and from downtown Denver, Littleton and the southeast suburbs.
The residential neighborhoods in the study area remain quite stable, although their stability has been compromised in the last ten years by growth development pressures. These pressures have resulted in an increase in cut-through traffic in residential neighborhoods and in increases in property value, which affect the ability of young families to move into these neighborhoods.

Air quality in the study area has improved significantly since the time air quality was first monitored in the 1970s. At that time, regular exceedances of the carbon monoxide standard were recorded, as many as hundreds annually. The Denver metropolitan area was famous for its "brown cloud." As emission standards have gotten stricter and stricter, Denver's air has become cleaner and cleaner. The primary air pollutant of concern at this point in time is ozone. In November 2007 Denver was designated non-attainment for ozone.

The study area is rich in historical resources. Residential, commercial and industrial historic resources in the study area abound, including the Baker Historic District, the Gates Rubber Company, the USPS Vehicle Maintenance Facility, several railroad bridges, and several West Washington Park properties. The Southeast Corridor project resulted in an adverse effect to segments of the buried trolley tracks that were found in the study area during construction.

### 3.15.2 Reasonably Foreseeable Future Projects

Table 3-16 lists the reasonably foreseeable future projects that are likely to occur in the study area. The area used for the cumulative projects list includes approximately 0.5 mile outside South Broadway study area and is generally bounded by Alameda Avenue to the north, Downing Street to the east, Iowa Avenue to the south, and Raritan Way to the west.

<table>
<thead>
<tr>
<th>Project Name and Address</th>
<th>Project Type/ Description</th>
<th>Project Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>VHEIS I-25 and Broadway</td>
<td>Interchange reconstruction and add through lanes.</td>
<td>NEPA process completed with phased ROD, interchange portion of which is not yet signed nor is it included in list of current projects identified in the 2007-2012 TIP/STIP.</td>
</tr>
<tr>
<td>Broadway, Arizona to Iowa Avenues, Project ID PF024</td>
<td>Reconstruction (moving curb out approximately 5 feet on either side of street to make room for a center median). Will provide for minimal capacity improvement.</td>
<td>On CIP list for 2007.</td>
</tr>
<tr>
<td>Redevelopment of the former Gates property on east and west sides of Broadway south of I-25; mixed-use, urban infill development</td>
<td>Traffic improvements include minimum 13.5-foot sidewalks on all internal roadways, and connected pedestrian system. Internal roadways to allow two-way traffic with connections to existing intersections at Kentucky, Tennessee, Mississippi (east of Broadway) and Arizona Avenues.</td>
<td>Approved zoning and general development plans.</td>
</tr>
<tr>
<td>Project Name and Address</td>
<td>Project Type/ Description</td>
<td>Project Status</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Redevelopment of the former Gates property on east and west sides of Broadway south of I-25; mixed-use, urban infill development (cont’d)</td>
<td>Cherokee—50 acres; Lionstone—28 acres; includes building equivalent of two lanes of Broadway and provide other Tax Increment Funding for infrastructure built to support the development (projects will be let by CCD but developers will provide part of the funding).</td>
<td>Approved zoning and general development plans.</td>
</tr>
<tr>
<td>I-25 and Broadway Station</td>
<td>Video surveillance replacement, asphalt overlay, landscaping and irrigation improvements.</td>
<td>In current (2007-2012) TDP.</td>
</tr>
<tr>
<td>Alameda Avenue: Knox Court to I-25</td>
<td>Widening (possible lane addition).</td>
<td>Possible future project (included in proposed 2030 Metro Vision Plan).</td>
</tr>
<tr>
<td>Alameda Avenue underpass between Cherokee Street and Santa Fe Drive</td>
<td>Maintenance, additional pedestrian and bicycle ways, and urban design elements.</td>
<td>Possible future project (CCD).</td>
</tr>
<tr>
<td>Mississippi Avenue/Santa Fe Drive Intersection</td>
<td>Reconstruction/improvements.</td>
<td>Possible future project (CCD).</td>
</tr>
<tr>
<td>Downtown Multimodal Access Plan</td>
<td>Integrated plan for vehicular, freight, pedestrian, bicycle and transit access into and throughout Downtown Denver.</td>
<td>Current project.</td>
</tr>
<tr>
<td>Denver Pedestrian Master Plan</td>
<td>Master plan intended to improve pedestrian conditions and increase pedestrian activity, especially with Areas of Change.</td>
<td>Current project.</td>
</tr>
<tr>
<td>Stormwater Quality Master Plan</td>
<td>Identify locations for water quality enhancements and create guidelines by which to enforce enhancement for development/redevelopment.</td>
<td>Current project.</td>
</tr>
<tr>
<td>Former RTD Bus Barn Site, Alameda Avenue and Santa Fe Drive</td>
<td>Potential redevelopment; transit oriented use indicated in Baker Neighborhood Plan.</td>
<td>Possible future project.</td>
</tr>
<tr>
<td>Rosemont Pharmaceutical, Alameda Avenue and Cherokee Street</td>
<td>New building, expansion of existing building, removal of existing parking lot.</td>
<td>Current project.</td>
</tr>
</tbody>
</table>
Table 3-16.  Reasonably Foreseeable Future Projects

<table>
<thead>
<tr>
<th>Project Name and Address</th>
<th>Project Type/ Description</th>
<th>Project Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condo and neighborhood business development—Buchtel South and Clarkson</td>
<td>Redevelopment; reconstruction of street with bike path and sidewalks.</td>
<td>Current project.</td>
</tr>
</tbody>
</table>


3.15.2.1 Effects of the Reasonably Foreseeable Future Projects and the Preferred Alternative

Table 3-17 and Table 3-18 list the known or likely effects that could occur to the resources of concern in the study area as a result of implementation of the reasonably foreseeable future projects and the Preferred Alternative, respectively.

Table 3-17.  Probable Impacts as a Result of Other Projects

<table>
<thead>
<tr>
<th>Future Action</th>
<th>Potential Impacts to Resources of Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valley Highway EIS</td>
<td>Land Use Impacts—Displacement of two businesses mostly in Areas of Change as established by the CCD in Blueprint Denver. Displacement of two residences.</td>
</tr>
<tr>
<td></td>
<td>Transportation Impacts—Transportation impacts and benefits include pedestrian and bicycle improvements; improved safety on the interstate facility; and reduced cut-through traffic.</td>
</tr>
<tr>
<td></td>
<td>Air Quality Impacts—Improved air quality due to improved traffic flow. Temporary increase in air emissions during construction.</td>
</tr>
<tr>
<td></td>
<td>Historic Properties—No impacts to historic properties.</td>
</tr>
<tr>
<td>Redevelopment of former Gates Rubber Company</td>
<td>Land Use Impacts—Substantial changes to existing land use on this property. Likely indirect effects (noise, visual, community character) to adjacent land uses.</td>
</tr>
<tr>
<td></td>
<td>Transportation Impacts—Substantial increase in traffic would result from the land use changes.</td>
</tr>
<tr>
<td></td>
<td>Air Quality Impacts—Likely localized air pollution would result from the land use changes, including increased dust during construction.</td>
</tr>
<tr>
<td></td>
<td>Historic Properties—Historic buildings currently on the Gates Rubber Company site would be removed. This would be an adverse effect as a result of the redevelopment of the Gates property.</td>
</tr>
<tr>
<td>South Broadway: Arizona to Iowa Avenues</td>
<td>Land Use Impacts—Minor right-of-way impacts</td>
</tr>
<tr>
<td></td>
<td>Transportation Impacts—Safety improvements</td>
</tr>
<tr>
<td></td>
<td>Air Quality Impacts—Dust during construction</td>
</tr>
<tr>
<td></td>
<td>Historic Properties—Removal of historic Trolley tracks</td>
</tr>
<tr>
<td>I-25 and Broadway Station Improvements</td>
<td>Land Use Impacts—Landscaping would improve visual quality</td>
</tr>
<tr>
<td></td>
<td>Transportation Impacts—No impacts</td>
</tr>
<tr>
<td></td>
<td>Air Quality Impacts—No impacts</td>
</tr>
<tr>
<td></td>
<td>Historic Properties—No impacts</td>
</tr>
</tbody>
</table>
Table 3-17. Probable Impacts as a Result of Other Projects

<table>
<thead>
<tr>
<th>Future Action</th>
<th>Potential Impacts to Resources of Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alameda from Knox Court to I-25</td>
<td>Land Use Impacts—Business relocations</td>
</tr>
<tr>
<td></td>
<td>Transportation Impacts—Congestion alleviated</td>
</tr>
<tr>
<td></td>
<td>Air Quality Impacts—Dust during construction</td>
</tr>
<tr>
<td></td>
<td>Historic Properties—No known impacts</td>
</tr>
<tr>
<td>Alameda Avenue Underpass</td>
<td>Land Use Impacts—Enhanced visual quality</td>
</tr>
<tr>
<td></td>
<td>Transportation Impacts—Improved pedestrian/bicycle transportation</td>
</tr>
<tr>
<td></td>
<td>Air Quality Impacts—Dust during construction</td>
</tr>
<tr>
<td></td>
<td>Historic Properties—No known impacts</td>
</tr>
<tr>
<td>Mississippi Avenue/Santa Fe Drive</td>
<td>Land Use Impacts—None</td>
</tr>
<tr>
<td>Intersection</td>
<td>Transportation Impacts—Improved mobility</td>
</tr>
<tr>
<td></td>
<td>Air Quality Impacts—Reduced carbon monoxide, dust during construction</td>
</tr>
<tr>
<td></td>
<td>Historic Properties—No known impacts</td>
</tr>
<tr>
<td>Various Master Plans</td>
<td>No Land Use, Transportation, Air Quality or Historic Property Impacts</td>
</tr>
<tr>
<td>Various Development Plans</td>
<td>Land Use Impacts—Effect to existing character, increased noise, visual impacts</td>
</tr>
<tr>
<td></td>
<td>Transportation Impacts—Traffic increases</td>
</tr>
<tr>
<td></td>
<td>Air Quality Impacts—Localized air pollution</td>
</tr>
<tr>
<td></td>
<td>Historic Properties—Increased pressure to redevelop</td>
</tr>
</tbody>
</table>

Table 3-18. Probable Impacts as a Result of the Preferred Alternative

<table>
<thead>
<tr>
<th>Future Action</th>
<th>Potential Impacts to Resources of Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Broadway EA</td>
<td><strong>Land Use</strong>—The Preferred Alternative would be compatible with existing and future land use and zoning. The Preferred Alternative would support city plans for TOD in the study area. The No-Action Alternative would not be fully supportive of the future lane use and transportation plans that have been identified by the CCD in <em>Blueprint Denver</em>.</td>
</tr>
<tr>
<td></td>
<td><strong>Transportation</strong>—The Preferred Alternative would improve level-of-service and thus reduce delay along the study area and at the ramp intersections to I-25. The intersections of South Broadway/Exposition Avenue, South Broadway/southbound I-25 Ramps, and South Broadway/Kentucky Avenue are forecasted to be at level-of-service F with the No-Action Alternative. This compares to the Preferred Alternative, which improves the level-of-service at those intersections to a level-of-service of E or better. Other intersections within the study area would improve similarly with the Preferred Alternative. The Preferred Alternative would provide enhancements to transit, pedestrian and bicycle modes of travel. With this reduction in delay, cut through traffic in adjacent neighborhoods would also be diminished.</td>
</tr>
<tr>
<td></td>
<td><strong>Air Quality</strong>—The Preferred Alternative would not result in any violations of the National Ambient AQ standards. Neither would the No-Action Alternative. The Preferred Alternative would, however, be more supportive of transit, pedestrian and bicycle modes of travel which over time could contribute to reduced vehicle travel and reduced emissions.</td>
</tr>
<tr>
<td></td>
<td><strong>Historic Properties</strong>—The Preferred Alternative would result in an <em>adverse effect</em> to the Denver Tramway trolley tracks, which are buried in South Broadway. The Preferred Alternative would result in a de minimis effect to the Mississippi Clay Sewer and Broadway Brick sewers due to drainage inlet connections.</td>
</tr>
</tbody>
</table>
3.15.2.2 Cumulative Effects

Traffic/Transportation—Continued development in the study area and around the edges of the study area would continue to place a strain on the transportation system with and without implementation of the Preferred Alternative. These strains are a result of the reasonably foreseeable future projects and not a result of a direct or indirect impact of the Preferred Alternative. The goals of the Preferred Alternative to promote other modes of travel, including transit, pedestrian and bicycle travel, would help to alleviate the situation that would occur with the study area development. The support of the Preferred Alternative to the planned TOD in the area would also alleviate some traffic concerns. The Preferred Alternative does not result in a significant incremental impact to the future transportation and traffic situation in the study area.

Land Use/Community Character—The reasonably foreseeable future development in the study area would affect community character. Views would be changed as larger story buildings are built, activity (traffic, noise, pedestrian) would increase, and property values would be affected. The Preferred Alternative, with its balanced approach of roadway improvements along with pedestrian and transit enhancements would help to alleviate these changes. The Preferred Alternative does not result in a significant incremental impact to the future land use and community character of the study area.

Air Quality—Air quality as a result of either the reasonably foreseeable future actions or the Preferred Alternative would continue to improve as compared to the current air quality in 2007. This is due to ongoing improvements to vehicle emission controls, including CAFÉ Standards. There may be localized increases in air pollution that occur as a result of the traffic congestion. This is not due to the Preferred Alternative but is a result of implementation of the reasonably foreseeable future projects.

Historic Properties—The historic buildings on the former Gates property would be removed as a result of the reasonably foreseeable future projects. Indirect effects of noise and visual impacts would occur to the residential historic districts and individual residential properties. The effects are largely due to the reasonably foreseeable future projects. As a part of the South Broadway project, adherence with the Memorandum of Agreement regarding the Trolley Lines would be accomplished.

3.16 Permits Required

Permits and approvals that would be required following the selection of a Preferred Alternative are summarized in Table 3-19. Additional permits would be required in concert with activities such as:

- Erosion control/grading
- Utility access, relocation, or surveying
- Construction, slope, and utility easements
- Access and authorizations
<table>
<thead>
<tr>
<th>Permit/Approval</th>
<th>Agency</th>
<th>Regulated Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Water Act Section 401 Certification</td>
<td>CDPHE, Water Quality Control Division</td>
<td>Impacts to water quality</td>
</tr>
<tr>
<td>Construction Stormwater Permit</td>
<td>CDPHE, Water Quality Control Division</td>
<td>Stormwater discharges</td>
</tr>
<tr>
<td>Construction Dewatering Permit</td>
<td>CDPHE, Water Quality Control Division</td>
<td>Potential to disturb or generate water that has been detrimentally affected by the subsurface work and detriment from past or present land uses</td>
</tr>
<tr>
<td>Discharge Permit</td>
<td>CDPHE, Water Quality Control Division</td>
<td>Discharge of groundwater to any storm sewer</td>
</tr>
<tr>
<td>Coordination and approval for handling and management plan. Notification as RCRA hazardous waste generator</td>
<td>CDPHE, Hazardous Materials and Waste Management Division</td>
<td>Generation of contaminated materials during construction. Generation of hazardous waste</td>
</tr>
<tr>
<td>Air Quality Permit</td>
<td>CDPHE, Air Pollution Division</td>
<td>Emissions from portable units, such as rock crushers, generators, asphalt plants, and cement plants, used during construction</td>
</tr>
<tr>
<td>Asbestos Abatement Permit Demolition Permit</td>
<td>CDPHE, Air Pollution Control Division</td>
<td>Asbestos abatement and building demolition</td>
</tr>
<tr>
<td>Construction Permits</td>
<td>CDPHE, Air Pollution Control Division and CDOT</td>
<td>Emissions due to construction activities</td>
</tr>
<tr>
<td>Development of Materials Handling Plan with approval by the Regional Planning and Environmental Manager</td>
<td>CDOT</td>
<td>Generation of contaminated Materials during construction</td>
</tr>
<tr>
<td>Access Permit</td>
<td>CDOT</td>
<td>Re-configuring Interchange Ramps</td>
</tr>
<tr>
<td>National Historic Preservation Act Section 106 Review</td>
<td>Colorado Historical Society Office of Historical Preservation</td>
<td>Impacts to cultural resources</td>
</tr>
<tr>
<td>Street Occupancy Permit</td>
<td>CCD</td>
<td>Occupancy of right-of-way</td>
</tr>
<tr>
<td>Construction Permit</td>
<td>CCD</td>
<td>Construction of structures</td>
</tr>
<tr>
<td>Construction Access Permits Traffic Control Plan</td>
<td>CCD</td>
<td>Traffic control during construction</td>
</tr>
<tr>
<td>Noise Variance</td>
<td>CCD</td>
<td>Noise generation during construction</td>
</tr>
<tr>
<td>Coordination and approval for handling and management plan</td>
<td>CCD</td>
<td>Generation of contaminated materials during construction</td>
</tr>
<tr>
<td>Wastewater Discharge Permit</td>
<td>CCD</td>
<td>Discharge of wastewater generated during construction activities to the treatment works (if needed)</td>
</tr>
<tr>
<td>Review and approval for design and construction</td>
<td>CCD</td>
<td>Design and construction associated with city-maintained streets, parks, and sewers</td>
</tr>
<tr>
<td>Health and Safety Plan</td>
<td>CCD</td>
<td>Generation of potentially contaminated waters and soils</td>
</tr>
</tbody>
</table>
Table 3-19. Summary of Permits and Approvals

<table>
<thead>
<tr>
<th>Permit/Approval</th>
<th>Agency</th>
<th>Regulated Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Permit</td>
<td>CCD, Wastewater Management Division</td>
<td>Discharge of groundwater to a city storm sewer</td>
</tr>
<tr>
<td>Occupancy Permit</td>
<td>CCD, Parks and Recreation Department</td>
<td>Work in dedicated parks including the South Platte River Greenway and Trail</td>
</tr>
<tr>
<td>Coordination and approval</td>
<td>CCD, City Forester</td>
<td>Tree removal</td>
</tr>
<tr>
<td>Construction Permit</td>
<td>CCD, Parks and Recreation Department</td>
<td>Modifications to roadways and utilities</td>
</tr>
<tr>
<td>Access Agreement RTD LRT</td>
<td>RTD</td>
<td>Access to and modifications to LRT right-of-way and tracks</td>
</tr>
</tbody>
</table>

3.17 SUMMARY OF DIRECT IMPACTS

Table 3-20 provides a summary of the impacts associated with the No-Action Alternative and the Preferred Alternative as evaluated in Chapter 3.0.

Table 3-20. Summary of Direct Impacts

<table>
<thead>
<tr>
<th>No-Action Alternative</th>
<th>Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmlands</td>
<td>No impact.</td>
</tr>
<tr>
<td>Floodplains</td>
<td>No impact.</td>
</tr>
<tr>
<td>Wetlands</td>
<td>No impact.</td>
</tr>
<tr>
<td>Wildlife and Fisheries</td>
<td>No impact.</td>
</tr>
<tr>
<td>Threatened and Endangered Species</td>
<td>No impact.</td>
</tr>
<tr>
<td>Paleontological Resources</td>
<td>No impact.</td>
</tr>
<tr>
<td>Parks and Recreation Facilities</td>
<td>No impact.</td>
</tr>
<tr>
<td>Land Use and Zoning</td>
<td>No impact.</td>
</tr>
<tr>
<td>• Mixed use TOD development in the area would total approximately 7 million square feet.</td>
<td>• Approximately 9.74 acres of residential, commercial, and industrial land uses would be converted to transportation use.</td>
</tr>
<tr>
<td>• Opportunities for transit oriented land uses in the area would be hindered.</td>
<td>• Some parcels would be acquired with potential relocation of some businesses and residential properties.</td>
</tr>
<tr>
<td>• Future land use and transportation identified by the CCD would not be supported.</td>
<td>• Improved access and multimodal connectivity would optimize land use opportunities for TOD. Improvements would not induce substantial additional growth since substantial growth is already expected.</td>
</tr>
</tbody>
</table>
Table 3-20. Summary of Direct Impacts

<table>
<thead>
<tr>
<th>No-Action Alternative</th>
<th>Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land Use and Zoning (cont'd)</strong></td>
<td><strong>Transportation improvements would accommodate the expected increase in traffic volumes.</strong></td>
</tr>
</tbody>
</table>

**Social**
- Planned and projected higher density development including a mix of residential, office, retail, and entertainment uses would result in acute growth in the area.
- Without improved mobility greater congestion would continue to make it difficult for all modes of transportation to access businesses, residences, and community facilities.
- The VHEIS project would result in two residential relocations, as well as construction impacts that would temporarily alter travel patterns.
- Increased congestion on South Broadway may result in increased cut-through traffic on neighborhood roads including Louisiana Avenue near McKinley-Thatcher Elementary.

**Environmental Justice**
- Traffic congestion would worsen in the study area, hindering access to housing, businesses, community facilities, and the provision of emergency services for minority and low-income populations as well as the overall community.
- The VHEIS states that relocation of business or residences would affect minority/non-minority and low-income/non-low-income owners, employees and residents in a similar manner. Therefore, there would not be a disproportionate impact on minority or low-income peoples.

**Social**
- Improvements would prevent congestion from reaching unacceptable levels as well as improve pedestrian, bicycle facilities and bus mobility increasing multimodal travel options.
- Safety and mobility improvements would allow emergency vehicles to continue to operate effectively around the corridor and decrease traffic congestion on Louisiana Avenue near McKinley- Thatcher Elementary.
- Seven residential properties would be directly impacted through right-of-way acquisition and require relocation.
- The Preferred Alternative would require the acquisition of approximately 9.74 acres of new right-of-way from 20 ownerships in the study area.
- Temporary construction detours and related out-of-direction travel would impact residents and businesses throughout the study area.
- Existing noise conditions at the only community facility in the study area, the Martin School of Early Education, already exceed NAC thresholds, and would experience a negligible increase as a result of the Preferred Alternative.

**Environmental Justice**
- Increased mobility and access to housing, business and community facilities in the surrounding area, including improved pedestrian and bicycle connections would be provided.
- Residential properties required for right-of-way would not affect minority populations.
- Two Census blocks within the study area have a greater percent minority population than that of the CCD; however, one of the Census blocks no longer contains any residences. These populations would not be disproportionately impacted because construction impacts would affect all segments of the population within the study area, and impacts would not be distributed disproportionately to minority residents.
### Table 3-20. Summary of Direct Impacts

<table>
<thead>
<tr>
<th>Environmental Justice (cont’d)</th>
<th>Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>- One Census block group within the study area was identified as having a greater percent of low-income households than the CCD, however, there are no residences located within the portion of this block group that falls within the study area so there are no disproportionately high levels of impacts to low-income households within the study area.</td>
<td>- Initially, the existing on-street parking along South Broadway south of Mississippi Avenue will be replaced by parking accommodated in the outside lanes of the Interim Preferred Alternative. However as traffic volumes increase, the interim parking lanes would be converted to travel lanes resulting in no on-street parking on South Broadway.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economic</th>
<th>- High-density, mixed-use development would occur on both the east and west side of South Broadway causing a shift in growth and commercial development patterns within the study area.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Direct economic impacts would be caused by the increased density of housing and commercial establishments and a significant increase in commercial activity.</td>
<td></td>
</tr>
<tr>
<td>- As traffic volumes grow, it would become increasingly difficult for commuter, truck, transit, local, and delivery traffic to use and traverse South Broadway possibly affecting economic vitality in the area.</td>
<td></td>
</tr>
<tr>
<td>- Two businesses would be relocated as a result of implementation of the Preferred Alternative associated with the VHEIS.</td>
<td></td>
</tr>
<tr>
<td>- Initially, the existing on-street parking along South Broadway south of Mississippi Avenue will be replaced by parking accommodated in the outside lanes of the Interim Preferred Alternative. However as traffic volumes increase, the interim parking lanes would be converted to travel lanes resulting in no on-street parking on South Broadway.</td>
<td></td>
</tr>
<tr>
<td>- The interim design would allow on-street parking until traffic volumes increase at which time the parking lane would need to be converted into a fourth travel lane in each direction as part of the ultimate design.</td>
<td></td>
</tr>
<tr>
<td>- Construction would temporarily boost the economy of the study area by providing employment of construction workers and revenue generated by the purchase of construction material from local sources. This would further provide a temporary economic boost to the region through increased wages and retail sales to firms in the project vicinity, partially offsetting any lost revenue from temporary increase in congestion and access restrictions during construction.</td>
<td></td>
</tr>
<tr>
<td>- Two businesses in the study area would be impacted through the loss of 115 parking spaces. The same two businesses relocated under the No-Action Alternative would require relocation under the Preferred Alternative. However, no additional business relocations would occur as a result of the Preferred Alternative.</td>
<td></td>
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</tbody>
</table>
Table 3-20. Summary of Direct Impacts

<table>
<thead>
<tr>
<th></th>
<th>No-Action Alternative</th>
<th>Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Right-of-Way</strong></td>
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<td></td>
</tr>
<tr>
<td>• The VHEIS identified right-of-way impacts including the need to fully acquire and relocate two residential properties and four partial residential acquisitions.</td>
<td></td>
<td>• The Preferred Alternative would require acquisition of approximately 9.74 acres of new right-of-way from 20 parcels in the study area.</td>
</tr>
<tr>
<td>• The VHEIS Preferred Alternative would also cause the acquisition and relocation of two businesses.</td>
<td></td>
<td>• Acquiring right-of-way north of I-25 would require displacing occupants of seven residential properties along South Lincoln Street, south of Ohio Avenue.</td>
</tr>
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<tr>
<td>• According to the U.S. Census, the seven residential properties are not located in low-income or minority population areas. There are no other affected neighborhoods, public facilities, non-profit organizations, or other factors that would require special relocation considerations and measures.</td>
<td></td>
<td>• South of I-25 approximately 2.3 acres of land owned by two developers involved in the redevelopment of the former Gates property would be acquired. The existing commercial buildings in this area either would soon or already have undergone demolition and redevelopment.</td>
</tr>
<tr>
<td>• Two businesses north of I-25 in the Denver Design Center complex would be partially impacted through the loss of approximately 115 surface parking spaces for right-of-way required for the new I-25 and Broadway Station street connection to Exposition Avenue.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Noise levels along Lincoln Street associated with the Preferred Alternative would be the same as those for the No-Action Alternative in that area. A slight increase in the Lincoln Street area over the No-Action condition is attributed to the new northbound I-25 loop ramp. Five homes represented as receiver M2 would be acquired due to the reconfiguration of the northbound I-25 loop ramp at Ohio Avenue. Relocated receivers are not considered in the final noise analysis.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Noise levels along Lincoln Street were generally the same.</td>
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<td></td>
</tr>
<tr>
<td>• Of the 9 impacted modeled locations representing 24 individual homes, all are at or above the 66 dB(A) threshold today.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The 2030 No-Action levels predicted by the traffic noise model for the 23 modeled locations range from 60.6 to 71.7 dB(A). No-Action noise levels increased less than 1 dB(A) over existing noise levels along Lincoln Street. No-Action noise levels along South Broadway between Kentucky Avenue and Mississippi Avenue increased an average of 2 dB(A) entirely due to increase traffic volume. Noise levels calculated along Mississippi Avenue were generally the same.</td>
<td></td>
<td>• The predicted 2030 ultimate 8-lane traffic noise levels for 23 representative locations within the study area range from 58.3 to 72.6 dB(A).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Noise levels along Lincoln Street associated with the Preferred Alternative would be the same as those for the No-Action Alternative in that area. A slight increase in the Lincoln Street area over the No-Action condition is attributed to the new northbound I-25 loop ramp. Five homes represented as receiver M2 would be acquired due to the reconfiguration of the northbound I-25 loop ramp at Ohio Avenue. Relocated receivers are not considered in the final noise analysis.</td>
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</tbody>
</table>
### Table 3-20. Summary of Direct Impacts

<table>
<thead>
<tr>
<th>Noise (cont’d)</th>
<th>Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receivers M3, R20, R22 and R23 are currently commercial receivers associated with the former Gates property. These buildings would be replaced by residential-retail development. Therefore, the receiver designations reflect the future change in NAC category.</td>
<td>Redevelopment plans for the former Gates property located along both sides of South Broadway between Kentucky Avenue and Tennessee Avenue are not yet permitted, however; noise receptors R20, R22, R23 and M3 have been located to simulate future mixed use and residential receivers for that area.</td>
</tr>
<tr>
<td></td>
<td>The realignment of South Broadway near Mississippi Avenue represented by receptor C11 would result in the potential acquisition of approximately .29 acres along the east side of South Broadway from developers working to redevelop this property. Noise levels would increase along South Broadway due to the wider Preferred Alternative roadway footprint which brings traffic closer to receivers. The removal of buildings along the east side of South Broadway in this area would result in higher noise levels for residential receivers currently located behind the buildings. The enigma for noise levels associated with the Preferred Alternative is a 3 dB(A) decrease in noise along Mississippi Avenue. This is likely due to the shielding effect of I-25 traffic noise by the elevated southbound I-25 wedge ramp near Kentucky Avenue.</td>
</tr>
</tbody>
</table>

#### Air quality

- Emissions would likely be lower than present levels in the design year as a result of EPA’s national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020.
- With the Preferred Alternative, the project level CO analyses resulted in no exceedances of the NAAQS with the highest modeled 8-hour average concentration at 5.8 ppm associated at Mississippi Avenue and South Broadway in the year 2030. This value is less than the 8-hour NAAQS of 9 ppm. Carbon monoxide concentrations within 100 feet of the intersection would be 4.3 ppm.
- The Preferred Alternative would not be likely to cause or contribute to any new localized PM$_{10}$ violations or increase the frequency or severity of any existing violations.
Table 3-20. Summary of Direct Impacts

<table>
<thead>
<tr>
<th>No-Action Alternative</th>
<th>Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air quality (cont’d)</strong></td>
<td><strong>There would be no appreciable difference in overall MSAT emissions between the two alternatives. Emissions would likely be lower than present levels in the design year as a result of EPA’s national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020.</strong></td>
</tr>
<tr>
<td><strong>Water Resources and Quality</strong></td>
<td><strong>No project improvements would occur immediately adjacent to or over the South Platte River or other water body; therefore, there is no potential for direct impacts to any water body.</strong></td>
</tr>
<tr>
<td>▪ The No-Action Alternative would result in impacts identified in the VHEIS Preferred Alternative and redevelopment of the former Gates property associated with increase in impervious surface.</td>
<td>▪ Water demand would be minimal and only needed for watering of bare soils to reduce dust and watering for landscaping. No water would be drawn from the South Platte River for these purposes because all water would be derived through municipal sources. Therefore, the project would not result in any impacts associated with drawing down the South Platte.</td>
</tr>
<tr>
<td>▪ The impacts of growth and development continuing throughout the study area would occur over the next 20 years and beyond. Because of the urban and developed nature of the study area this would increase the amount of impervious surface area or substantially alter runoff characteristics.</td>
<td>▪ The Preferred Alternative would add 3.64 acres of impervious surface.</td>
</tr>
<tr>
<td>▪ Runoff from on-going construction and from completed projects in the area would be retained and treated in the existing and future water quality basins.</td>
<td>▪ Elements in the design of the Preferred Alternative include installation of inlet filter treatment devices at the existing Mississippi Avenue outfall would also improve water quality over the No-Action Alternative.</td>
</tr>
<tr>
<td>▪ Both direct and indirect impacts to South Platte water quality would be minimal as a result of this alternative.</td>
<td></td>
</tr>
<tr>
<td><strong>Vegetation and Noxious Weeds</strong></td>
<td><strong>Because no native vegetation exists in the study area, impacts to vegetation would be minimal.</strong></td>
</tr>
<tr>
<td>▪ The No-Action Alternative would have no impact on vegetation resources.</td>
<td>▪ Loss of mature landscaped trees such as silver maple and crabapple within the right-of-way would occur.</td>
</tr>
<tr>
<td>▪ Future development planned for the area, would further disturb the soil and increase the potential for the invasion and/or spread of noxious weeds.</td>
<td>▪ As most areas are paved, the potential for further invasion and spread of noxious weeds would be minimal.</td>
</tr>
<tr>
<td></td>
<td>▪ The potential for weeds to spread is limited to newly constructed fill slopes and a small portion of the adjacent railroad tracks.</td>
</tr>
</tbody>
</table>
Table 3-20. Summary of Direct Impacts

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Visual Quality</td>
<td></td>
</tr>
<tr>
<td>▪ Elements of the No-Action Alternative common to both the No-Action and Preferred Alternatives include the preservation of the historic Ford Building, urban design amenities constructed as part of the redevelopment of the former Gates property, wider sidewalks, street trees, and other pedestrian amenities along South Broadway between I-25 and Mississippi Avenue.</td>
<td>▪ Improvements would enhance the existing visual character of the South Broadway corridor.</td>
</tr>
<tr>
<td>▪ The redevelopment projects would replace current views toward existing vacant lots with new multi-story buildings, new streets, landscaped parking lots and pedestrian plazas.</td>
<td>▪ The new I-25 on-ramp overpass built immediately south of the existing I-25 structure would not be taller that the existing I-25 structure and paint and texture would be selected to match the existing I-25 interchange structures.</td>
</tr>
<tr>
<td>▪ Impacts under the No-Action Alternative not associated with other projects in the study area include no center median added to South Broadway south of I-25, no added sidewalks beyond what is required by the redevelopment projects, and there would be no construction of off-street multi-use trails.</td>
<td>▪ The overpass height is below 117 feet high so the Washington Park view plane would be preserved.</td>
</tr>
<tr>
<td>Historic and Archaeological Resources</td>
<td></td>
</tr>
<tr>
<td>▪ Impacts to the historic properties as a result of the No-Action Alternative include the redevelopment of the former Gates property which would remove many of the buildings associated with the Gates Historic District.</td>
<td>▪ The Denver Tramway Trolley tracks, 5DV.9217.3, would be directly impacted by this project. These tracks are buried within the pavement on South Broadway between Kentucky and Arizona Avenues and would be removed as part of this project. A total of approximately 2,000 linear feet of track would be removed. This would be an adverse effect. An MOA has been entered into by FHWA, SHPO, and CDOT in order to allow projects affecting the trolley lines on South Broadway to be implemented with mitigation stipulations that interpret the significance of the trolley tracks for the public and record the resource with archival documentation.</td>
</tr>
</tbody>
</table>
Table 3-20. Summary of Direct Impacts

<table>
<thead>
<tr>
<th>No-Action Alternative</th>
<th>Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Historic and Archaeological Resources (cont’d)</strong></td>
<td>• The Broadway Brick Sewer (5DV9953.1) and the Mississippi Clay Sewer (5DV9954.1) segments will both be impacted as a result of inlet relocations and connecting drain pipes to improve drainage in this section of South Broadway. With the reconstruction of South Broadway and Mississippi Avenue, stormwater inlet structures and piping would have to be relocated. The inlets along Mississippi Avenue and the inlets south of Tennessee Avenue on South Broadway drain into the larger Mississippi Avenue outfall that was constructed as part of the T-REX project. The impacts will be limited to small sections of the sewers where inlets are constructed or where new piping may need to be constructed to intersect the existing sewer alignment. The SHPO and consulting parties were consulted on the effects to the two sewer resources and the minor nature of the work supports the determination of no adverse effect to these resources and a de minimis determination for Section 4(f).</td>
</tr>
<tr>
<td>• Two of the historic structures in the Gates Rubber Company Historic District, 5DV.48, the Ford Building and Unit 41, would be subjected to indirect effects of increased noise, dust and vibration during construction. Building 41, however, is expected to be demolished by redevelopment in the near future.</td>
<td></td>
</tr>
<tr>
<td>• The Bidinger Building (5DV.9947) and Denver Discount Tire Center (5DV.9948) would also be temporarily affected by noise and dust during construction; however, these buildings are currently owned by Lionstone and would be demolished as part of their redevelopment plans.</td>
<td></td>
</tr>
<tr>
<td><strong>Hazardous and Solid Waste</strong></td>
<td>• Construction associated with the VHEIS would require footings or caissons be installed to a depth where they would encounter groundwater contaminated with TCE and would also impact existing groundwater monitoring wells and remediation wells currently located in the footprint of the proposed ramp.</td>
</tr>
<tr>
<td>• The southbound South Broadway to southbound I-25 structure would require foundations to be installed in the South Broadway/Kentucky Avenue TCE soil contamination and groundwater plume area.</td>
<td></td>
</tr>
<tr>
<td>• This alternative would also encroach on a surface area southwest of the intersection of South Broadway and Kentucky Avenue where a portion of a soil and groundwater TCE remediation system is currently located.</td>
<td></td>
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</tbody>
</table>
### Table 3-20. Summary of Direct Impacts

<table>
<thead>
<tr>
<th>No-Action Alternative</th>
<th>Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hazardous and Solid Waste (cont’d)</strong></td>
<td>• The Preferred Alternative requires the taking and grading of areas previously used for industrial purposes. Because of the wide use of asbestos containing materials in older industrial facilities, these areas may contain asbestos fibers in the surface soil.</td>
</tr>
</tbody>
</table>

**Construction**

- The No-Action Alternative would have no construction-related impacts in the study area at the time of this proposed action.
- Because the No-Action includes construction of the Preferred Alternative Phase VI of the VHEIS, impacts related to that project including noise, air quality, water quality, traffic impacts, and visual impacts can be expected to occur during implementation of that project.

- Noise and Vibration—The operation of various types of machinery, such as heavy earth-moving equipment, paving equipment, power tools, pile drivers, and trucks would create an undesirable noise condition. Impacts from vibration are also likely during the construction period. During construction of the Preferred Alternative, noise would be generated by diesel-powered earth moving equipment such as dump trucks and bulldozers, back-up alarms on certain equipment, and compressors. Construction noise at receptor locations are usually dependent on the loudest one or two pieces of equipment operating at the moment. Noise levels from diesel-powered equipment range from 80 dB(A) to 95 dB(A) at a distance of 50 feet.
- Air Quality—Exhaust emissions and fugitive dust would increase during construction as a result of the operation of heavy equipment, lower traffic speed (start/stop driving), and earth excavation activities associated with construction.
- Water Quality—If spills of fuel, oil, grease, or other chemicals occur during construction activities, they would pollute soils and/or groundwater. Construction activities would have an impact on stormwater due to activities such as grading and excavation, truck movement, and other activities. Stormwater runoff carrying pollutants from impervious surfaces have the potential to affect water quality.
- Hazardous and Solid Waste—There is a high likelihood that contaminated soil and/or groundwater would be encountered during construction.
### Table 3-20. Summary of Direct Impacts

<table>
<thead>
<tr>
<th></th>
<th>No-Action Alternative</th>
<th>Preferred Alternative</th>
</tr>
</thead>
</table>
| **Construction (cont’d)** |  • Visual—Stockpiles of earth materials, stacks of construction materials, and parked equipment would cause a temporary visual impact to the residents near the locations of construction activities.  
  • Access—During construction, mobility conditions due to congestion and cut-through traffic would deteriorate in the study area until the project is complete.  
  • Erosion and Sediment Control—Construction excavation and earth moving activities may cause mud to be tracked onto local streets |
|                     |  • Reduces likelihood of cut-through traffic.                                           |  • Preferred Alternative would reduce broadside and approach turn accidents.            |
|                     |  • Increases driver frustration                                                        |  • Realignment of an extension of Exposition Avenue requires property acquisition that includes 115 parking spaces. |
|                     |  • Increased noise and air pollution                                                  |  • Reduced transit travel time on South Broadway.                                     |
|                     |  • Change in travel routes and behaviors                                               |  • Improved connectivity for bicyclists and pedestrians.                               |
| **Traffic**         |  • Peak hour spreading with traffic at, or above, capacity for longer periods of time  |                                                                                       |
|                     |  • Increase in driver frustration                                                      |                                                                                       |
|                     |  • Increased noise and air pollution                                                   |                                                                                       |
|                     |  • Change in travel routes and behaviors                                               |                                                                                       |
| **Safety**          |  • Reduced accident rates are expected by VHEIS redesign                               |                                                                                       |
| **Parking**         |  • No change with No-Action Alternative                                                |                                                                                       |
| **Transit**         |  • Increase in ridership forecasted                                                    |                                                                                       |
| **Bicycle and Pedestrian** |  • No change with No-Action Alternative                                                |                                                                                       |
### 3.18 SUMMARY OF MITIGATION MEASURES

Table 3-21 provides a summary of mitigation measures for the Preferred Alternative as discussed in Chapter 3.0.

<table>
<thead>
<tr>
<th>Resource</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmlands</td>
<td>▪ No mitigation measures are necessary.</td>
</tr>
<tr>
<td>Floodplains</td>
<td>▪ No mitigation measures are necessary.</td>
</tr>
<tr>
<td>Wetlands</td>
<td>▪ No mitigation measures are necessary.</td>
</tr>
<tr>
<td>Wildlife and Fisheries</td>
<td>▪ A nest survey will be conducted no more than 7 days prior to the removal of trees/shrubs if they are to be removed between April 1 and August 15 (breeding season). If an active nest is found no work will be allowed within 50' of the nest until all of the chicks have fledged.</td>
</tr>
<tr>
<td></td>
<td>▪ Trees will be replaced at a 1:1 ratio.</td>
</tr>
<tr>
<td>Threatened and Endangered Species</td>
<td>▪ No mitigation measures are necessary.</td>
</tr>
<tr>
<td>Paleontological Resources</td>
<td>▪ No preconstruction mitigation measures are necessary.</td>
</tr>
<tr>
<td></td>
<td>▪ The potential need for performing mitigation measures during construction will be addressed during the final design phase of this project.</td>
</tr>
<tr>
<td></td>
<td>▪ In the unlikely event that any paleontological resources are uncovered during construction, the CDOT Staff Paleontologist will be notified immediately to assess their scientific significance and make further recommendations.</td>
</tr>
<tr>
<td>Parks and Recreational Facilities</td>
<td>▪ No mitigation measures are necessary.</td>
</tr>
<tr>
<td>Land Use and Zoning</td>
<td>▪ No mitigation is necessary. The CCD is already conducting the necessary steps to ensure that land use policies, implementation strategies, and zoning are supportive of the proposed improvements.</td>
</tr>
<tr>
<td>Social</td>
<td>▪ Good communication with emergency service providers, residents as well as local businesses with regards to delays, access changes, detours and special construction activities will be maintained throughout the construction of the project. Effective communication will be accomplished through radio and public announcements, newspaper notices, and on-site signage.</td>
</tr>
<tr>
<td></td>
<td>▪ Acquisition of property for right-of-way will comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended.</td>
</tr>
<tr>
<td>Environmental Justice</td>
<td>▪ No mitigation is necessary. Good communication will be maintained with residents and businesses within the area regarding traffic delays, access changes, and construction activities.</td>
</tr>
</tbody>
</table>
### Table 3-21. Summary of Mitigation Measures

<table>
<thead>
<tr>
<th>Resource</th>
<th>Mitigation Measures</th>
</tr>
</thead>
</table>
| Economic     | ▪ Good communication with the community, business owners, and residents with regard to road delays, access, and special construction activities is recommended during the construction phase. This will be accomplished by radio and public announcements, newspaper notices, on-site signage, and through the CCD’s and CDOT’s Web sites. Construction activities will be staged and work hours varied to minimize the disruption to traffic and local businesses.  
▪ The CCD will mitigate the parking impacts to both the Design Center and to RTD. The CCD, the Design Center, and RTD are currently in negotiations as to how best to mitigate the parking impacts, up to and including constructing a 3-level parking structure. This EA assumes the parking structure will be built as mitigation. |
| Right-of-Way | ▪ For any person(s) who real property interests will be impacted by this project, the acquisition of those property interests will comply fully with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act). The Uniform Act is a federally mandated program that applies to all acquisitions of real property or displacements of persons resulting from Federal or federally assisted programs or projects. It was created to provide for and insure the fair and equitable treatment of all such persons. To further ensure that the provisions contained within this act are applied “uniformly,” CDOT requires Uniform Act compliance on any project for which it has oversight responsibility regardless of the funding source.  
▪ Additionally, the Fifth Amendment of the United States Constitution provides that private property may not be taken for a public use without payment of “just compensation”. All impacted owners will be provided notification of the acquiring agency’s intent to acquire an interest in their property including a written offer letter of just compensation specifically describing those property interests. A right-of-way specialist will be assigned to each property owner to assist them with this process.  
▪ In certain situations, it will also be necessary to acquire improvements that are located within a proposed acquisition parcel. In those instances where the improvements are occupied, it becomes necessary to “relocate” those individuals from the subject property (residential or business) to a replacement site. The Uniform Act provides for numerous benefits to these individuals to assist them both financially and with advisory services related to relocating their residence or business operation. Although the benefits available under the Uniform Act are far too numerous and complex to discuss in detail in this document, they are available to both owner occupants and tenants of either residential or business properties. |
<table>
<thead>
<tr>
<th>Resource</th>
<th>Mitigation Measures</th>
</tr>
</thead>
</table>
| Right-of-Way (cont’d)        | - In some situations, only personal property must be moved from the real property, and this is also covered under the relocation program. As soon as feasible, any person scheduled to be displaced shall be furnished with a general written description of the displacing agency's relocation program which provides, at a minimum, detailed information related to eligibility requirements, advisory services and assistance, payments, and the appeal process. It shall also provide notification that the displaced person(s) will not be required to move without at least 90 days advance written notice. For residential relocates, this notice cannot be provided until a written offer to acquire the subject property has been presented, and at least one comparable replacement dwelling has been made available.  
- Relocation benefits will be provided to all eligible persons regardless of race, color, religion, sex, or national origin. Benefits under the Act, to which each eligible owner or tenant may be entitled, will be determined on an individual basis and explained to them in detail by an assigned right-of-way specialist.  
  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Noise                        | - Noise mitigation was investigated for affected residences. Analysis indicates that noise mitigation is not feasible to construct for these homes. According to CDOT Noise Abatement Guidance 2002, a noise barrier that cannot reduce and maintain a noise reduction of at least 5 dBA, which cannot be attained in this case as a result of the gaps that will be required for access, is not feasible.  
  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Air Quality                  | - There are no air quality impacts expected that will require mitigation. Regional and local agency strategies that will be used to reduce criteria pollutant and mobile source toxics emissions, especially diesel particulate matter from existing diesel engines include: tailpipe retrofits, closed crankcase filtration systems, clean fuels, engine rebuild and replacement requirements, contract requirements, anti-idling ordinances and legislation, truck stop electrification programs, aggressive fleet turnover policies and more.  
  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Water Resources and Water Quality | - The use of standard erosion and sediment control BMPs in accordance with the Erosion Control and Storm Water Quality Guide, CDOT, 2002 will be included in the final design plans. All work on the project will be in conformity with Section 107.25 (Water Quality Control) and Section 208 (Erosion Control) of the CDOT Standard Specifications for Road and Bridge Construction.  
- Water quality mitigation will adhere to the MS4 Regulations. This MS4 permit identifies specific requirements intended to decrease the adverse impacts of stormwater discharged into the stormwater system. Specifically, the MS4 Permit, “clearly identifies binding provisions and essentially states that Denver must aggressively address the problems caused by urban stormwater discharges.” (City of Denver, 2006).  
- An SMP designed to reduce the discharge of pollutants will be developed, implemented, and enforced. As part of the SMP, BMPs both structural (detention basins, silt fencing, etc.) and non-structural (public education and outreach etc.) will be established.  
  |
### Table 3-21. Summary of Mitigation Measures

<table>
<thead>
<tr>
<th>Resource</th>
<th>Mitigation Measures</th>
</tr>
</thead>
</table>
| **Vegetation and Noxious Weeds**        | - No mitigation for vegetation is necessary.  
- A management plan for noxious weeds will be incorporated into the project design and implemented during construction. Specific BMPs will be required during construction to reduce the potential for introduction and spread of noxious weed species and includes:  
- During the design phase, detailed weed mapping of the study area will be conducted by a weed specialist. Mapping will be included in the construction documents along with appropriate control methods for noxious weeds.  
- Identification of all existing noxious weed infestations within the roadway right-of-way will occur during the design phase. Roadway right-of-way areas will periodically be inspected by the city or its consultants during construction and during post-construction weed monitoring for invasion of noxious weeds.  
- An Integrated Weed Management Plan will be required prior to construction.  
- Use of herbicides will include selection of appropriate herbicides and timing of herbicide spraying, and use of a backpack sprayer.  
- Certified weed-free hay and/or mulch will be used in all revegetated areas.  
- No fertilizers will be allowed on the project site.  
- Topsoil Management: Topsoil shall never be salvaged if contaminated by noxious weeds or seeds. Importing topsoil onto the project site shall not be allowed unless it is weed-free.  
- Minimize soil disturbance: The areas most vulnerable to invasive infestations are areas that have been recently cleared of vegetation.  
- Equipment Management: Equipment will stay out of weed-infested areas until they are treated. All equipment shall be cleaned of soil and vegetative plant parts prior to arriving on the project site, to avoid introducing additional invasive species.  
- Native plants: Native species of vegetation will be used for revegetation purposes.  
- Stakeholder Coordination: Weed management efforts will be coordinated with local jurisdictional agencies and adjacent landowners to the extent possible.  
- Supplemental weed control measures will be added during the design and construction planning. |
| **Visual Quality**                      | - A landscaped center median, widened sidewalks and new pedestrian and bicycle facilities will be constructed.  
- The redevelopment projects of the former Gates property will fund street trees and other urban design elements to the unified sidewalk and street improvements. Street improvements will help unify South Broadway’s image, add continuity to many blocks of the South Broadway corridor, and enhance foreground and middle ground views to and from South Broadway. No further mitigation is required for the minimal impact created by the Preferred Alternative. |
### Table 3-21. Summary of Mitigation Measures

<table>
<thead>
<tr>
<th>Resource</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visual Quality (cont’d)</strong></td>
<td>▪ In addition to the visual enhancement of this project the ‘kit of urban design parts’ recommended in the <em>Broadway Corridor Transportation and Urban Design Study</em>, will be added by private landowners as existing land uses are redeveloped. These urban design features will continue to improve upon the visual character of the study area.</td>
</tr>
<tr>
<td><strong>Historic and Archaeological Resources</strong></td>
<td>▪ Mitigation for impacts to the Denver Tramway Trolley Lines will adhere to the requirements and stipulations set for in the Memorandum of Agreement between SHPO, CDOT and FHWA dated November 26, 2007 (see Appendix C). These measures include interpretive mitigation that describes the relationship of the trolley tracks to the street, businesses, and nearby neighborhoods. The content, design, and materials of proposed mitigation is to be determined but shall include a corridor-wide interpretation of the importance of the trolley track to South Broadway. The SHPO, Denver Landmark Preservation Board, and consulting parties will be provided with an opportunity to comment on drafts of the proposed interpretive mitigation options. Other mitigation includes archival documentation of the track remnants prior to removal. Construction noise impacts, while temporary, will be mitigated by requiring the contractor to use well-maintained equipment (particularly mufflers) to the extent feasible.</td>
</tr>
</tbody>
</table>
| **Hazardous and Solid Waste**      | ▪ Section 250 “Environmental Health and Safety Management” of the Standard Specifications for Road and Bridge Construction (CDOT, 2005) provides for the protection of the environment, persons and property from contaminants and includes special requirements for addressing hazardous material, if encountered.  
▪ A Site Investigation of any new right-of-way will be conducted prior to right-of-way acquisition. The Site Investigation will include review of the most current data on the presence of TCE in soil and groundwater. The site investigation will also include analysis of soil and groundwater for the possible presence of other industrial chemicals that may have been used historically in this area. Analysis will be performed for petroleum hydrocarbons, volatile and semi-volatile organic compounds, and other chemicals. Prior to construction, the most current data will be reviewed concerning the South Broadway/Kentucky Avenue area TCE groundwater plume.  
▪ Soil and groundwater samples will be collected prior to construction at the locations of subsurface foundation structures, utilities or other significant subsurface activity that are part of the Preferred Alternative. Asbestos surveys and possibly asbestos abatement will be required prior to demolition of any buildings in the study area.  
▪ Soil and groundwater samples will be collected prior to construction at the locations of subsurface foundation structures that are part of the Preferred Alternative.  
▪ Asbestos surveys and possibly asbestos abatement will be required prior to demolition of any buildings in the study area. |
Table 3-21. Summary of Mitigation Measures

<table>
<thead>
<tr>
<th>Resource</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>Mitigation for Air Quality Construction Impacts</td>
</tr>
<tr>
<td></td>
<td>• The following mitigation measures address construction-related air quality impacts of the Preferred Alternative.</td>
</tr>
<tr>
<td></td>
<td>• The Contractor will ensure that all construction equipment is properly tuned and maintained.</td>
</tr>
<tr>
<td></td>
<td>• Contractor will minimize idling times.</td>
</tr>
<tr>
<td></td>
<td>• Consistent with CDOT’s standard specification 209 Watering and Dust Palliatives, an operational water truck will apply water to control dust as needed to prevent dust impacts offsite.</td>
</tr>
<tr>
<td></td>
<td>• To the extent practicable, the contractor will utilize existing power sources or clean fuel generators rather than temporary power generators.</td>
</tr>
<tr>
<td></td>
<td>Mitigation for Noise Construction Impacts</td>
</tr>
<tr>
<td></td>
<td>• Construction noise impacts, while temporary, will conform to and be consistent with the Denver Municipal Code Noise Ordinance stipulations.</td>
</tr>
<tr>
<td></td>
<td>• Measures will include but are not limited to temporary noise barriers, required equipment muffler systems, and other noise reducing equipment devices and methods.</td>
</tr>
<tr>
<td></td>
<td>• Construction vibration operations, truck loading, hauling, and routing that do not require road closures, will be scheduled during daytime hours and managed to minimize noise and vibration levels to surrounding neighborhoods. However, activities requiring road closures may need to occur at night.</td>
</tr>
<tr>
<td></td>
<td>Mitigation for Water Quality Construction Impacts</td>
</tr>
<tr>
<td></td>
<td>• In addition to conformance with the MS4 control measures, the following specific BMPs from the Erosion Control and Storm Water Quality Guide will be applied during construction to reduce construction-related and/or long-term operation impacts to water quality as appropriate:</td>
</tr>
<tr>
<td></td>
<td>• All disturbed areas will be revegetated with native grass and forb species. Seed, mulch and mulch tackifier will be applied in phases throughout construction.</td>
</tr>
<tr>
<td></td>
<td>• Where permanent seeding operations are not feasible due to seasonal constraints (e.g., summer and winter months), disturbed areas will have mulch and mulch tackifier applied to prevent erosion.</td>
</tr>
<tr>
<td></td>
<td>• Temporary erosion control blankets will have natural fibers.</td>
</tr>
<tr>
<td></td>
<td>• Erosion bales, erosion logs, silt fence or other sediment control device will be used as sediment barriers and filters at inlets where appropriate.</td>
</tr>
<tr>
<td></td>
<td>• Storm drain inlet protection will be used where appropriate to trap sediment before it enters the cross-drain.</td>
</tr>
<tr>
<td></td>
<td>• Temporary detention ponds built to mitigate for construction impacts will be used to allow sediment to settle out of runoff before it leaves the construction area. In addition, permanent detention will be used as constructed.</td>
</tr>
</tbody>
</table>
### Table 3-21. Summary of Mitigation Measures

<table>
<thead>
<tr>
<th>Resource</th>
<th>Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Construction (cont'd)</strong></td>
<td><strong>Mitigation for Hazardous and Solid Waste Construction Impacts</strong></td>
</tr>
<tr>
<td></td>
<td>• Construction contractors will be required to manage the project to reduce the</td>
</tr>
<tr>
<td></td>
<td>likelihood of chemical spills. Cleanup of spills will be conducted in compliance</td>
</tr>
<tr>
<td></td>
<td>with Colorado hazardous waste regulations in 6 CCR 1007-3.</td>
</tr>
<tr>
<td></td>
<td><strong>Mitigation for Visual Construction Impacts</strong></td>
</tr>
<tr>
<td></td>
<td>• Designing a suitable construction staging area, and requiring that the contractor</td>
</tr>
<tr>
<td></td>
<td>store materials and equipment within that area to minimize the visual impact.</td>
</tr>
<tr>
<td></td>
<td><strong>Mitigation for Historical and Archaeological Construction Impacts</strong></td>
</tr>
<tr>
<td></td>
<td>• Construction noise and dust impact, while temporary, will be mitigated by requiring</td>
</tr>
<tr>
<td></td>
<td>the contractor to use well-maintained equipment (particularly mufflers) and dust</td>
</tr>
<tr>
<td></td>
<td>control measures to the extent feasible.</td>
</tr>
<tr>
<td></td>
<td>• In the event that previously unrecorded archaeological material is found during</td>
</tr>
<tr>
<td></td>
<td>construction, activities in the immediate area would be halted, and the CDOT</td>
</tr>
<tr>
<td></td>
<td>archaeologist would be contacted to assess the find.</td>
</tr>
<tr>
<td></td>
<td><strong>Mitigation for Access during Construction Impacts</strong></td>
</tr>
<tr>
<td></td>
<td>• Construction staging and traffic control plans will be developed that minimize the</td>
</tr>
<tr>
<td></td>
<td>disruption to traffic and access.</td>
</tr>
<tr>
<td></td>
<td>• The CCD will provide adequate public notice and maintain coordination with area</td>
</tr>
<tr>
<td></td>
<td>residents and with the area’s emergency service providers to keep the public apprised</td>
</tr>
<tr>
<td></td>
<td>of the construction progress and to inform the public of closures and detours.</td>
</tr>
<tr>
<td></td>
<td>• Local access to intersecting roads and to residences would be maintained during</td>
</tr>
<tr>
<td></td>
<td>construction. However, limited access and minor detours would be necessary at certain</td>
</tr>
<tr>
<td></td>
<td>locations during this period. This would affect not only through travelers on South</td>
</tr>
<tr>
<td></td>
<td>Broadway but also patrons of the I-25 and Broadway Station.</td>
</tr>
<tr>
<td></td>
<td><strong>Mitigation for Erosion and Sediment Control</strong></td>
</tr>
<tr>
<td></td>
<td>• Erosion and Sediment Control Plan and permit will include Best Management</td>
</tr>
<tr>
<td></td>
<td>Practices to reduce mud tracking on local streets</td>
</tr>
<tr>
<td>Traffic</td>
<td><strong>Safety Mitigation</strong></td>
</tr>
<tr>
<td></td>
<td>• The severity and frequency of rear-end accidents will be reduced at Ohio Avenue/</td>
</tr>
<tr>
<td></td>
<td>northbound I-25 off-ramp intersection by:</td>
</tr>
<tr>
<td></td>
<td>– Queue detection loops on the ramp</td>
</tr>
<tr>
<td></td>
<td>– Adequate signing</td>
</tr>
<tr>
<td></td>
<td>– Flashing beacons</td>
</tr>
<tr>
<td></td>
<td>– Pavement markings</td>
</tr>
<tr>
<td></td>
<td>– Improved signal head visibility</td>
</tr>
<tr>
<td></td>
<td>• Ramp metering will be installed on both northbound and southbound on-ramps</td>
</tr>
<tr>
<td></td>
<td><strong>Parking Mitigation</strong></td>
</tr>
<tr>
<td></td>
<td>• Parking will be replaced on a 1:1 basis near the I-25 and Broadway Station.</td>
</tr>
<tr>
<td></td>
<td>Parking structure is proposed and under negotiation between CCD and RTD.</td>
</tr>
</tbody>
</table>
CHAPTER 4. TRAFFIC IMPACTS

4.1 INTRODUCTION

This chapter describes the existing and future projected transportation conditions within the South Broadway EA study area. The study area is the junction for several Denver metro area corridors and transit routes which include I-25, Mississippi Avenue, and the I-25 and Broadway Station for the Southwest, Southeast, and Central light-rail lines. Near the study area are other regionally significant arterials including Santa Fe Drive, Alameda Avenue, and Iowa Avenue.

As described in Chapter 1.0, the need for improving South Broadway is to accommodate right-of-way in travel demand projected for the area. Traffic right-of-way is expected due to regional increases in population and employment as well as changes to Denver’s comprehensive plan and zoning changes including the rezoning of the former Gates property to transit mixed-use (T-MU-30) and the resulting higher density development. Right-of-way in the area is expected to out-pace existing and planned roadway capacity for the area.

This chapter identifies the existing and future transportation effects identified in the study area related to the No-Action and Preferred Alternatives. Travel safety and pedestrian/bicycle amenities are also discussed, as they are important goals of the project identified in Chapter 1.0.

4.2 TRAFFIC CONDITIONS

The portion of South Broadway included in the study area is on the fringe of Denver’s downtown. Broadway is a north/south route that connects land uses south of the metro area with the core business and government activities found in downtown Denver. Historically, manufacturing and industrial land uses dominated the area. Economies have changed and so has interest in the area for new and differing uses. This interest has brought reinvestment to the area, which includes residential development, new commercial office space, and retail space. With increasing residential and business activities the area has, and will continue to, experience challenges for the traveling public as vehicular demand outpaces the capacity of the current infrastructure.

4.2.1 Traffic Volumes

4.2.1.1 Existing Traffic

Colorado Department of Transportation (CDOT) collects and manages traffic data on the interstate and state routes. For the study area, this includes traffic on I-25. The City and County of Denver (CCD) collects traffic counts on roadways under their jurisdiction. This includes the South Broadway corridor. Daily traffic counts were collected from both agencies in order to establish a baseline condition. Average daily traffic counts are included in Figure 4-1.
4.2.1.2 No-Action Alternative

Travel forecasts for the study area were estimated using the Denver Regional Council of Governments (DRCOG) regional travel demand model, called COMPASS. This tool was used to accurately reflect planned land use changes and infrastructure improvements in the study area.

To reflect the No-Action condition, the model was modified to incorporate the Valley Highway EIS (VHEIS) Preferred Alternative, which had not received a Record of Decision at the time of the model release. A description of the VHEIS Preferred Alternative is available on the VHEIS Web site: www.valleyhighway.com. The No-Action Alternative daily traffic volumes represent a 13 percent to 30 percent increase in study area volumes over existing (see Figure 4-2 and Table 4-1).

<table>
<thead>
<tr>
<th>Roadway Location</th>
<th>Existing Daily Volumes</th>
<th>2030 No-Action Alternative Daily Volumes (Percent increase over Existing Volumes)</th>
<th>2030 Preferred Alternative Daily Volumes (Percent increase over Existing Volumes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Broadway/Lincoln Street Couplet: North of I-25</td>
<td>50,900 vehicles/day</td>
<td>57,700 vehicles/day (+13%)</td>
<td>61,500 vehicles/day (+20%)</td>
</tr>
<tr>
<td>South Broadway: South of I-25</td>
<td>38,700 vehicles/day</td>
<td>44,900 vehicles/day (+16%)</td>
<td>46,900 vehicles/day (+21%)</td>
</tr>
<tr>
<td>South Broadway: South of Mississippi Avenue</td>
<td>34,500 vehicles/day</td>
<td>45,000 vehicles/day (+30%)</td>
<td>44,900 vehicles/day (+30%)</td>
</tr>
</tbody>
</table>

A concern with the increase in the 2030 traffic volumes under the No-Action Alternative is the potential for neighborhood cut-through traffic when volumes exceed capacity.

4.2.1.3 Preferred Alternative

Similar to the No-Action Alternative forecasting process, travel forecasts for the Preferred Alternative were estimated using the DRCOG COMPASS model. To reflect the Preferred Alternative condition, the model was modified to reflect recommended transportation improvements that are part of the Preferred Alternative.

The same process described to generate No-Action Alternative traffic volumes was used to project future traffic volumes for the Preferred Alternative (see Figure 4-3). The Preferred Alternative traffic volumes on South Broadway are shown to be higher than the No-Action Alternative due to the fact that more capacity on South Broadway draws traffic away from local streets, thereby reducing cut-through traffic in adjacent neighborhoods.

The Preferred Alternative leaves all freeway merge/diverge locations where they are in the No-Action Alternative except for the northbound Broadway on-ramp. This minimizes impacts to I-25 operations and retains gains achieved by the VHEIS. By moving the northbound on-ramp to
approximately its original location, freeway operations are improved in the Preferred Alternative over the No-Action Alternative as greater weave distance is provided.

Figure 4-2. 2030 No-Action Alternative Daily Traffic Volumes
Figure 4-3. 2030 Preferred Alternative Daily Traffic Volumes

[Diagram showing traffic volumes at various intersections with labels such as Alameda Ave, Mississippi Ave, and Louisiana Ave.]
4.2.1.4 Level-of-Service

Level-of-service (LOS) is a term used to describe the operating performance of an intersection or roadway. The operation is described by a letter designation from “A” to “F”, with LOS A representing essentially uninterrupted flow with minimal delays, and LOS F representing a breakdown of traffic flow with excessive congestion and delay.

This performance measure is a tool used by traffic engineers to objectively evaluate the traffic and congestion conditions on a roadway. Typically operations at LOS D or better for daily peak periods are considered to be operating acceptably, while intersections operating at LOS F are generally in need of improvement. In a built urban environment, like the South Broadway corridor, LOS E (generally meaning operating at capacity) is expected and acceptable at heavily used intersections. A graphical representation of each intersection LOS category is displayed in Figure 4-4.

Figure 4-4. Level-of-Service Graphic Representation
4.2.1.5 Existing LOS

The AM and PM peak hour LOS results for the major intersections along South Broadway under existing conditions were analyzed using traffic data collected along the corridor. The results indicate that a majority of the intersections in the study area are currently operating at acceptable (LOS E) levels of service during the peak AM and PM period (see Table 4-2 and Figure 4-5). The exception is the South Broadway intersection with the I-25 southbound on-ramp. Delay at this intersection is consistent with public comment, which noted excessive queuing and delay during the PM peak hour. The unsignalized intersections in the study area have poor levels of service during the peak hour. This is because vehicles stopped on the minor approaches have difficulty merging with traffic traveling along South Broadway.

Further detail of the traffic analysis can be found in the Broadway Traffic Technical Memorandum (Jacobs Carter and Burgess, 2007) including estimated traffic demand served, travel time, and intersection queuing.

Table 4-2. Existing AM and PM Peak Hour Level-of-Service

<table>
<thead>
<tr>
<th>No.</th>
<th>Intersection</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>South Broadway and Exposition Avenue</td>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td>2</td>
<td>Lincoln Street and Exposition Avenue</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>3</td>
<td>Lincoln Street and Walsh Place</td>
<td>C</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Walsh Place and northbound I-25 off-ramp</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Realigned Ohio Avenue and Walsh Place</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>4</td>
<td>South Broadway and Ohio Avenue</td>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>South Broadway and Ohio Avenue and southbound I-25 on-ramp</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>5</td>
<td>Lincoln Street and Ohio Avenue and northbound I-25 on-/off-ramp</td>
<td>b/f*</td>
<td>c/f*</td>
</tr>
<tr>
<td></td>
<td>South Broadway and northbound I-25 on-/off-ramps</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>6</td>
<td>South Broadway and southbound I-25 on-/off-ramps</td>
<td>B</td>
<td>E</td>
</tr>
<tr>
<td>7</td>
<td>South Broadway and Kentucky Avenue</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>South Broadway and Kentucky Avenue and southbound I-25 off-ramp</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>8</td>
<td>South Broadway and Tennessee Avenue</td>
<td>f/a*</td>
<td>f/b*</td>
</tr>
<tr>
<td>9</td>
<td>South Broadway and Mississippi Avenue</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>10</td>
<td>South Broadway and Arizona Avenue</td>
<td>f/f*</td>
<td>f/f*</td>
</tr>
</tbody>
</table>

n/a—Intersection does not exist for specified alternative

*—Unsignalized Synchro Approach LOS is designated by lower case
Figure 4-5. Existing AM and PM Level-of-Service
### No-Action Alternative

The No-Action Alternative 2030 AM and PM peak hour LOS was computed for each intersection. The results indicate that forecasted No-Action Alternative traffic demand results in substantial delays and poor LOS for many of the intersections along the South Broadway corridor. The issues of greatest concern include:

- Most intersections south of the South Broadway/Lincoln Street couplet have failing LOS F.
- Less than 50 percent of demand is met at key intersections during the peak periods. This means that over 50 percent of the desired trips cannot occur in the study area during the peak hours. These trips either have to occur during another time period, have to occur on different routes, or not occur at all.
- Congestion will likely cause traffic spillover to adjacent neighborhoods.

**Table 4-3** summarizes the results of the intersection LOS analysis for the No-Action Alternative. Further detail of the traffic analysis can be found in the *Broadway Traffic Technical Memorandum* (see Figure 4-6a and Figure 4-6b).

<table>
<thead>
<tr>
<th>INT No.</th>
<th>Intersection</th>
<th>2030 No-Action LOS AM Peak Hour</th>
<th>2030 No-Action LOS PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>South Broadway and Exposition Avenue</td>
<td>B</td>
<td>F</td>
</tr>
<tr>
<td>2</td>
<td>Lincoln Street and Exposition Avenue</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>Lincoln Street and Walsh Place</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>3</td>
<td>Walsh Place and northbound I-25 off-ramp</td>
<td>D</td>
<td>B</td>
</tr>
<tr>
<td>4</td>
<td>Realigned Ohio Avenue and Walsh Place</td>
<td>c*</td>
<td>b*</td>
</tr>
<tr>
<td></td>
<td>South Broadway and Ohio Avenue</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>South Broadway and Ohio Avenue and southbound I-25 on-ramp</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Lincoln Street and Ohio Avenue and northbound I-25 on-/off-ramp</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>5</td>
<td>South Broadway and northbound I-25 on-/off-ramps</td>
<td>D</td>
<td>C</td>
</tr>
<tr>
<td>6</td>
<td>South Broadway and southbound I-25 on-/off-ramps</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td>7</td>
<td>South Broadway and Kentucky Avenue</td>
<td>D</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td>South Broadway and Kentucky Avenue and southbound I-25 off-ramp</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>8</td>
<td>South Broadway and Tennessee Avenue</td>
<td>B</td>
<td>F</td>
</tr>
<tr>
<td>9</td>
<td>South Broadway and Mississippi Avenue</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td>10</td>
<td>South Broadway and Arizona Avenue</td>
<td>f*</td>
<td>f*</td>
</tr>
</tbody>
</table>

*—Intersection does not exist for specified alternative  
*—Unsignalized Synchro Approach LOS is designated by lowercase
Figure 4-6a. 2030 No-Action Alternative LOS (Exposition Avenue to Kentucky Avenue)
As illustrated by the No-Action Alternative LOS analysis, traffic congestion through the corridor is expected to increase beyond acceptable levels. Forecasts indicate that only a fraction of the peak hour demand will be met by the No-Action Alternative during the peak hour. This high level of congestion will likely have the following impacts:

- Peak hour spreading with traffic at, or above, capacity for longer periods of time
- Increase in driver frustration
- Increased noise and air pollution
- Change in travel routes and behaviors
4.2.1.7 Preferred Alternative

Preferred Alternative 2030 AM and PM peak hour LOS was computed for each existing study area intersection. **Table 4-4** summarizes the LOS results for the Preferred Alternative. The Preferred Alternative accommodates traffic demand better than the No-Action Alternative. In fact, the LOS results indicate that all of the study area intersections would operate at acceptable levels of service during the 2030 peak hours. The Preferred Alternative improves South Broadway congestion and operations over the No-Action Alternative and reduces the likelihood of cut through traffic in local neighborhoods (see Figure 4-7a and Figure 4-7b).

**Table 4-4. Preferred Alternative AM and PM Peak Hour LOS**

<table>
<thead>
<tr>
<th>INT No.</th>
<th>Intersection</th>
<th>2030 Preferred LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>AM Peak Hour</td>
</tr>
<tr>
<td>1</td>
<td>South Broadway and Exposition Avenue</td>
<td>A</td>
</tr>
<tr>
<td>2</td>
<td>Lincoln Street and Exposition Avenue</td>
<td>B</td>
</tr>
<tr>
<td>3</td>
<td>Lincoln Street and Walsh Place</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Walsh Place and northbound I-25 off-ramp</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Realigned Ohio Avenue and Walsh Place</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>South Broadway and Ohio Avenue</td>
<td>n/a</td>
</tr>
<tr>
<td>4</td>
<td>South Broadway and Ohio Avenue and southbound I-25</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>on-ramp</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Lincoln Street and Ohio Avenue and northbound I-25</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>on-/off-ramp</td>
<td></td>
</tr>
<tr>
<td></td>
<td>South Broadway and northbound I-25 on-/off-ramps</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>South Broadway and southbound I-25 on-/off-ramps</td>
<td>n/a**</td>
</tr>
<tr>
<td></td>
<td>South Broadway and Kentucky Avenue</td>
<td>n/a</td>
</tr>
<tr>
<td>6</td>
<td>South Broadway and Kentucky Avenue and southbound I-25</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>off-ramp</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>South Broadway and Tennessee Avenue</td>
<td>B</td>
</tr>
<tr>
<td>9</td>
<td>South Broadway and Mississippi Avenue</td>
<td>D</td>
</tr>
<tr>
<td>10</td>
<td>South Broadway and Arizona Avenue</td>
<td>A</td>
</tr>
</tbody>
</table>

n/a—Intersection does not exist for specified alternative  
*—Unsignalized Synchro Approach LOS  
**—Intersection is grade-separated

4.3 Traffic Safety Analysis

The Consensus Committee expressed concerns related to safety for alternative mode travelers such as: pedestrians, bicyclists, and transit riders primarily based on the amount of traffic that currently travels South Broadway and is projected for the future. High volume roadways make these travelers less comfortable in the corridor causing many to forgo the alternative modes. While there is not a significant pedestrian or bicycle crash history in the corridor, this perception exists.
Figure 4-7a. 2030 Preferred Alternative LOS (Exposition Avenue to Kentucky Avenue)
4.3.1 Safety

CDOT accident dated from 1992 to 2001 within the study area was analyzed to evaluate accident characteristics. More recent data was not considered because of construction related impacts associated with the T-REX project that occurred from 2001-2006. T-REX included major reconstruction of I-25 south of the I-25/South Broadway interchange potentially changing the types of accidents recorded in the vicinity of the interchange.

4.3.1.1 Existing Safety Conditions

In terms of vehicle safety, the intersection of South Broadway and the southbound I-25 on-ramp had a high accident problem before the beginning of the Broadway Viaduct and T-REX construction. For much of the time before construction, the left turn was signalized as a protected plus permitted left turn. This type of signalization provides left turning vehicles a short...
period of a protected green right-of-way followed by a standard green indication. During the standard green phase, northbound traffic is moving and the southbound left turns are permitted to make their turn as long as there is an acceptable gap in northbound traffic. With the reconstruction of the intersection (completed in 2006), the signal control was changed to allow protected only left turns (turn only allowed with a green right-of-way). This has substantially reduced the occurrence of approach turn crashes at this intersection.

While this signalization is a necessary safety improvement, it came at the cost of some efficiency at the intersection, increasing congestion on the South Broadway corridor. Improvements would need to address the congestion on the corridor without compromising the improvement in safety achieved at the interchange.

**Figure 4-8** summarizes the type of accidents occurring at the South Broadway/I-25 Interchange. The database report provided by CDOT lacked sufficient information to locate crashes by intersection. Therefore, the surface street crashes are viewed as a whole and all intersections affected by the redesigned interchange include design features to address both broadside and approach turn crashes. Specific improvements are included in the description of the Preferred Alternative.

In general, all interchange intersections are signalized and include protected only movements, as well as geometric improvements to provide positive guidance. Review of the accident type indicates that accidents classified as “Approach Turn” and “Broadside” are the most common types at 104 and 135 respectively. Depending on the interpretation of the onsite inspector, it is possible that some broadside and approach turn accidents could have been descriptors for the same type of accident.

Considering the context of the interchange, and characteristics of traffic, approach turn accidents are most likely attributed to conflicts between left-turning vehicles and vehicles traveling through on South Broadway. These conflicts most likely occur when vehicles on South Broadway are trying to turn left onto Ohio Avenue to access the northbound I-25 on-ramp or left from South Broadway at Kentucky Avenue to access southbound I-25 on-ramp.

Broadside accidents are most likely attributed to conflicts between two vehicles traveling straight through an intersection approximately 90 degrees to one another. This conflict most likely occurs when vehicles stopped at Ohio Avenue proceed across the I-25 northbound off-ramp and get broadsided by an exiting vehicle that is not required to stop. Broadsides can also occur at signalized intersections when a vehicle runs a red light.

Overall, to reduce the number of approach turn and broadside accidents, the Preferred Alternative will provide protected left turning movements at all signalized intersections and signalization will be provided where it currently is not at Ohio Avenue and Lincoln Street. In
addition, the southbound South Broadway to southbound I-25 conflict will be eliminated by providing a grade-separated ramp. This will result in a reduction of approach turn accidents.

During final design of the interchange improvements, safety considerations will be given to the intersection of Ohio Avenue/Lincoln Street/South Broadway to ensure appropriate design standards and features are incorporated that reduce the likelihood of vehicle conflicts (i.e., signing, striping, sight distances, geometric improvements, etc.).

Concern has been raised for the safety of the existing intersection of Ohio Avenue/northbound I-25 off-ramp/Lincoln Street. The design at this location does not follow traditional standards since the ramps share the south approach at Ohio Avenue. There is concern that the geometry of this intersection could be confusing and dangerous, leading to potential head-on accidents. While this is a legitimate concern, there have been no recorded head-on collisions at these ramps in the period reviewed.

4.3.1.2 No-Action Alternative
Since head on collisions tend to be severe, the No-Action Alternative completely redesigned the Lincoln Street/Ohio Avenue and northbound I-25 off-ramp intersection to improve traffic safety. The southbound I-25 on-ramp and off-ramp and the northbound I-25 on-ramp from South Broadway would be expected to have reduced accident rates as part of the VHEIS safety engineering of the I-25/South Broadway interchange.

The No-Action Alternative includes modifying the existing I-25 and Broadway ramp locations as part of its tight diamond configuration. These ramp modifications result in a short (substandard) weave section between the northbound I-25 on-ramp from South Broadway and the Santa Fe Drive off-ramp.

4.3.1.3 Preferred Alternative
The Preferred Alternative is expected to improve traffic safety over existing conditions.

The Preferred Alternative would eliminate the southbound South Broadway to southbound I-25 conflict by providing a grade-separated ramp. This is expected to result in a reduction of broadside and approach turn accidents. During the redesign of the interchange, special attention would be given to the intersection of Ohio Avenue/Lincoln Street/South Broadway to ensure appropriate design considerations are incorporated that reduce the likelihood of broadside and approach turn vehicle conflicts.

The Preferred Alternative includes several features to eliminate the possibility of accidental wrong way movements at the Lincoln Street/Ohio Avenue and northbound I-25 off-ramp as shown in Figure 4-9. These include:

1. The segment of South Lincoln Street that accesses the houses inside the ramp closed. The existing five-legged intersection is a more standard four-legged intersection in the build scenario.
2. Signal added to control the intersection and to prioritize higher demand movements.
3. Channelized right turn lane added to provide positive guidance to on-ramp traffic eastbound on Ohio Avenue. All ramp traffic would be in this lane. Overhead signage would reinforce lane assignments and further inform drivers not to turn the wrong way on the off-ramp.

4. Channelization prevents westbound Ohio Avenue access from the neighborhood street. Access to the interstate is from the arterials only. The island barrier provides opportunity for ground level signs reinforcing the turn restriction.

Kentucky Avenue would be realigned in order to remove one of the existing closely spaced intersections at Kentucky Avenue and at the southbound I-25 off-ramp. This realignment causes an intersection with unique geometry. To reduce or eliminate the potential for accidental wrong way movements, the geometry of the proposed intersection positions vehicles so that their natural path is to their appropriate receiving lanes and not toward the off-ramp (see Figure 4-10).

Islands would be constructed, where possible, and supplemented with intersection striping to provide positive guidance to drivers and prevent accidental wrong way movements. Of most concern is the northbound South Broadway left turn to Kentucky Avenue. To address this concern, the left turn bay has been moved south and additional curvature added to point vehicles stopped at the left turn stop bar toward the far side curb of the Kentucky Avenue alignment. To travel the wrong way on the off-ramp, a vehicle would have to first turn right, the wrong way on South Broadway, and then to the left again to travel the wrong way on the ramp.

The 2030 Preferred Alternative should help reduce broadside and approach turn accidents along South Broadway. Accessing the southbound I-25 ramp from southbound South Broadway would no longer be an at grade left turn. Instead, the Preferred Alternative provides access to southbound I-25 via a right turn ramp. This eliminates the conflict between high volume left turns and vehicles traveling northbound on South Broadway.
As a result of reconstructing the northbound I-25 on-ramp from South Broadway in approximately the same location as it exists today, the short weave section created by the No-Action Alternative (between northbound Broadway on-ramp and Santa Fe Drive off-ramp) is returned to a standard distance, improving freeway operations and safety.

4.3.1.4 Safety Mitigation
Regardless of the accident history for the northbound on and off-ramps, design elements are being incorporated into the Preferred Alternative that would reduce the likelihood of head-on collisions. These include:

- Removing one leg of the existing intersection by closing access to the Lincoln Street cul-de-sac.
- Providing a signal at the intersection.
- Including a median that restricts westbound vehicles on Ohio Avenue from accessing northbound I-25, as well as providing positive guidance for vehicles accessing northbound I-25 from eastbound Ohio.

Even though future signalization at the Ohio Avenue/northbound I-25 off-ramp intersection would help reduce wrong way movements and broadsides, it is possible that rear-end accidents could increase because ramp traffic would be regulated. In general, rear-end accidents are less severe than broadsides and head-on collisions. In an effort to reduce the severity and frequency of rear-end accidents at this location, the following items can be installed:

- Queue detection loops on the ramp
- Adequate signing
- Flashing beacons
- Pavement markings
- Improved signal head visibility
- In the Preferred Alternative, ramp metering would be installed on both northbound and southbound on-ramps.

4.4 Parking

4.4.1 Parking Conditions
Some on-street parking is provided adjacent to local businesses south of Mississippi Avenue. Local side streets also accommodate on-street parking.

4.4.1.1 No-Action Alternative
There would be no change to the on-street parking within the study area as part of the No-Action Alternative. The redevelopment parcels would provide on-site parking accommodations per their General Development Plan (GDP).
4.4.1.2 Preferred Alternative
As described for the interim implementation of the Preferred Alternative, the outside two lanes of the South Broadway widening will be used for on-street parking until the conditions warrant implementing the full eight lanes. At that time, this on-street parking would be converted to travel lanes in the ultimate design. Initially, the existing on-street parking along South Broadway south of Mississippi Avenue will be replaced by parking accommodated in the outside lanes of the Interim Preferred Alternative. However, in the Ultimate configuration of South Broadway on-street parking is not included.

The Preferred Alternative includes a realignment of an extension of Exposition Avenue included in the VHEIS west of South Broadway. This realignment requires acquisition of private property that currently includes parking for businesses in the area (115 surface parking spaces).

4.4.1.3 Parking Mitigation
To mitigate the parking impact, a parking structure is recommended to be located in close proximity to the Exposition Avenue extension. This parking structure will be three levels, depending on final design. Parking will be replaced at a minimum standard of one parking stall for every space taken.

4.5 TRANSIT

4.5.1 Transit Accommodations
The existing I-25 and Broadway Station is one of the busiest transit centers in the Denver metropolitan area. It serves as a transfer point for light rail passengers as well as a major hub for many of the region’s most heavily utilized bus routes. RTD plans to upgrade the existing facilities to improve circulation and provide pedestrian elements that are reflective of the fact that the I-25 and Broadway Station is a major transit center.

4.5.2 Future Transit Ridership
Transit will only increase in importance as the redevelopment of the former Gates property begins construction. This redevelopment will bring approximately seven million square feet of residential, retail space, and office space. As part of the development agreement with the CCD, the GDP for the redevelopments includes 25-30 percent of their trips by alternative modes. A large portion of the alternative mode trips will likely utilize the transit system.

4.5.2.1 No-Action Alternative
The DRCOG COMPASS model forecasts an increase in ridership of 10–15 percent at the I-25 and Broadway Station between now and 2030. Planned Transit Oriented Development (TOD) developments in the area are included as part of this right-of-way. CDOT recently completed paving work under the I-25 viaduct to formalize parking uses for the I-25 and Broadway Station. This parking has been incorporated as part of the No-Action Alternative.
4.5.2.2 Preferred Alternative
The Preferred Alternative includes a bus-only roadway connection from the extended Exposition Avenue alignment, which would improve transit operations over the No-Action Alternative. This Exposition Avenue connection to Acoma Street provides a bypass to the I-25/South Broadway interchange. By avoiding the Broadway and I-25 interchange, local bus routes similar to the “0”, which travel from Downtown Denver south on Broadway, will have reduced travel times. With the Exposition Avenue connection to Acoma Street, the “0” route can avoid the intersections of Ohio Avenue/South Broadway and Kentucky Avenue/South Broadway. It is estimated that this transit bypass connection to the I-25 and Broadway Station provides a 1.5 minutes savings for transit travelers. The Preferred Alternative will not preclude transit improvements at the I-25 and Broadway Station.

4.6 BICYCLE AND PEDESTRIAN FACILITIES

4.6.1 Bicycle Facilities

4.6.1.1 Existing Conditions
The existing bicycle and pedestrian environment in the South Broadway corridor has been evaluated 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 bicycle and pedestrian recommendations.

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 Bicycle 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 (see Figure 4-11).

The four bicycle routes near the study area are located on Iowa Avenue to the south of the study area and Logan Street on the eastern edge of the study area. These routes provide connectivity into the study area from such areas as Washington Park and the Platte Park neighborhood. The routes are usually on-street bicycle 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 bicyclists. These bicycle routes are numbered and signage is good.

4.6.1.2 No-Action Alternative
The No-Action Alternative improves bicycle access at the existing intersections of Ohio Avenue at Lincoln Street and South Broadway, removing a barrier for most bicyclists as part of the VHEIS Preferred Alternative. In addition, the redevelopment of the former Gates property includes plans to enhance the bicycle facilities within the redevelopment, however, no specific plans have been released regarding those enhancements.
4.6.1.3 Preferred Alternative

Though there is excellent connectivity between bicycle routes throughout the metropolitan area, there are opportunities to improve connectivity within the study area, including improved connections to the I-25 and Broadway Station. The Preferred Alternative improves bicycle access through the existing intersections of Ohio Avenue at Lincoln Street and South Broadway removing a barrier for most bicyclists. The Preferred Alternative provides improved bicycle access from the West Washington Park neighborhood by the signalized intersection with the northbound I-25 off-ramp and then a multi-use trail (minimum 15 foot wide path that accommodates both pedestrians and two way bicycle traffic) from this intersection along the east side of South Broadway to the signalized intersection of Kentucky Avenue/southbound I-25 off-ramp and South Broadway.

On the west side of South Broadway, multi-use trails are provided directly from the South Broadway and Ohio Avenue intersection to the station, parallel to South Broadway and continuing on the north side of Kentucky Avenue, as well as along the Acoma Street alignment to Exposition Avenue. These new bicycle connections would improve route connectivity. Specific trail location improvements are:

- From the intersection of Ohio Avenue and the northbound I-25 off-ramp on the south side of Ohio Avenue, continuing on the east side of South Broadway to the intersection of South Broadway and Kentucky Avenue/I-25 southbound off-ramps.
On the west side of South Broadway from the intersection with the new southbound I-25 on-ramp to the intersection of South Broadway and Kentucky Avenue/I-25 southbound off-ramps continuing to the transit station on the north side of Kentucky Avenue.

A direct connection between the transit station and the intersection of South Broadway and the southbound I-25 on-ramp. This connection makes use of the location where adequate clearance exists under the wedge ramp and the southbound I-25 off-ramp to allow bicycle/pedestrian crossing of the ramps.

On the east side of the new Acoma Street alignment from the transit station to the intersection of Acoma Street and Exposition Avenue.

### 4.6.2 Pedestrian Facilities

#### 4.6.2.1 Existing Conditions

In general pedestrian facilities are available within the study area to meet the current need. Sidewalks are provided in the existing South Broadway corridor; however, their widths are inconsistent and, in some locations, in disrepair. Recognizing the long range planning vision for the South Broadway corridor to create a pedestrian friendly corridor to meet multi-modal connectivity needs, as well as economic vitality, the project need is to enhance and maintain the pedestrian facilities in accordance with these goals.

#### 4.6.2.2 No-Action Alternative

The No-Action Alternative retains many of the existing pedestrian amenities in terms of providing sidewalks on both sides of all roadways (except interstate ramps). The reconfigured signalized intersections provide for pedestrian crossings.

#### 4.6.2.3 Preferred Alternative

A number of recommendations for pedestrian access and safety improvements would be provided with the Preferred Alternative. Specific pedestrian improvements are:

- Improved east-west pedestrian connections across South Broadway at new developments at Tennessee and Kentucky Avenues.
- Improved pedestrian signalization at Ohio Avenue and the northbound I-25 off-ramp.
- Minimum 13.5 feet sidewalks along all improved roadways.
CHAPTER 5. SECTION 4(f) EVALUATION

5.1 PROGRAMMATIC SECTION 4(f) EVALUATION FOR DENVER TRAMWAY TROLLEY LINES (5DV.9217.3)

The following document – Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property – covers three different projects which adversely affect one resource in a similar fashion. The figures included within the signed evaluation as well as many of the correspondence letters and the Finding of Adverse Effect pertains to the South Broadway Reconstruction Project from Arizona to Iowa Avenues. However, the evaluation and the Memorandum of Agreement between CDOT, SHPO, and the CCD found in Appendix C were prepared to cover all three South Broadway projects that impact this resource including the Exposition Avenue to Arizona Avenue project covered in this EA. Figure 5-1 shows the Section 4(f) resources found within the APE for the Exposition to Arizona project described in this EA.

(See attached signed Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property on the following pages; Signed MOA is included in Appendix C.)
COLORADO DEPARTMENT OF TRANSPORTATION
Section 4(f) Evaluation and Approval
For Transportation Projects That Have a Net Benefit to a Section 4(f) Property

PROJECTS:
2. South Broadway Reconstruction Project, Wesley to Yale avenues.

DATE: November 7, 2007

INTRODUCTION

This Section 4(f) Evaluation will cover three separate projects which adversely affect one resource in a similar fashion. Improvements in the City and County of Denver along South Broadway are scheduled to occur in three locations, between 1) Arizona and Iowa Avenues, 2) Wesley and Yale Avenues and 3) Exhibition and Arizona Avenues. Segments of the Denver Tramway Trolley Line, an eligible resource run beneath South Broadway throughout these project limits. The first two projects are Categorical Exclusions (CE) and the third is an Environmental Assessment (EA) This Section 4(f) Evaluation is based upon consultations and conclusions of the Memorandum of Agreement (MOA) and will demonstrate that there will be a net benefit to the resource as a result of the three projects. If the MOA is amended or terminated, this Section 4(f) Programmatic Evaluation would have to be revisited.

PROJECT DESCRIPTIONS

South Broadway Reconstruction Project, Arizona to Iowa avenues, STU M320-041 (SA 15632)
The project consists of improvements, including a median and turn lanes, in select locations on South Broadway between Arizona and Iowa avenues within the City and County of Denver (CCD). All of the work will take place within existing right-of-way boundaries, a 100-foot wide corridor. The four-block segment will be reconstructed in concrete pavement This involves minor widening (5 to 7 feet) on either side of the existing curbs to construct a 10-foot raised median in the center of the street, and build new curbs, gutters, and sidewalks. The project will also implement major drainage improvements, including construction of a new large storm sewer (48” to 72”) to tie into a major drainage outfall in Florida Avenue. Three existing traffic signals will be replaced and a new bike crossing installed at Iowa Avenue. Utilities will be adjusted, street lighting installed as needed, and landscaping improvements will be implemented in the raised medians. At the intersections, bus stops, and other areas, accent paving will be installed.

The Area of Potential Effects (APE) boundaries include Acoma Street on the west, Arizona Street on north, Lincoln Avenue on the east, and Iowa Avenue on the south. Within the APE, the historic survey work remained within CDOT’s existing 100-foot-right-of-way, which extends to the buildings on both sides of South Broadway and encompasses potential historic features including trolley track,
sewer lines, and curbs. In April 2007, the staff of the Colorado State Historic Preservation Officer agreed with this APE configuration. Figure 1 provides an illustration of the project’s general location.

**South Broadway Reconstruction Project, Wesley to Yale Avenues**

This project consists of widening South Broadway Blvd from East Wesley Ave to Yale Ave approximately 5 feet on either side to accommodate a 10 foot raised median with left turn lanes. The work is expected to take place within existing right-of-way. Improvements to drainage, traffic signals, lighting, and pedestrian facilities are included in this project. The storm drainage master plan (2005) includes a proposed 36-inch trunk line to be installed in place of 15 to 21 inch existing lines. The design will need to accommodate a future box culvert planned to run along Harvard Avenue to the South Platte River. Improvements to the traffic signals include upgrades to current signals and installation of a signal interconnect from Wesley to Yale. Lighting will be improved throughout the project to increase safety and reduce accidents. Pedestrian improvements include ADA compliant ramps, increasing the existing sidewalk width and curb radii.

Although this project appears in the TIP, it is still in early stages of development. Both scoping and design have not yet begun. It is certain that, in its existing condition, the trolley tracks create a crown in the cross-sectional profile at this location. It is also likely that there will be impacts to the tracks as a result of the project.

**South Broadway Environmental Assessment**

This document evaluates impacts for proposed improvements along South Broadway between Exposition and Arizona Ave. The purpose of the project is to create a corridor that provides safe and efficient mobility for all neighborhoods, existing businesses, planned development and the 1-25 and Broadway Station area. The EA recommends a preferred alternative which features include:

- Widening South Broadway to eight lane cross section
- Improvements to the 1-25/Broadway Interchange
- Extend Exposition west of South Broadway to provide access to businesses and the wedge ramp
- Relocate Kentucky access to 1-25 and Broadway Station north of LRT structure

The APE boundaries include Exposition Ave to the north, Arizona Ave to the south, Logan St to the east and Denver and Rio Grande Railroad to the west. Nine properties were found to be eligible including the Denver Tramway Trolley Line, (5DV.49217). The preferred alternative, as identified in the EA, will only adversely affect the Trolley Tracks. Indirect, temporary effects of increased noise, dust and vibration are anticipated for three of the other eligible resources. COOT has requested SHPO concurrence (their response will be in forthcoming correspondence) that these impacts will result in no adverse effect to the resources. The Section 4(f) Evaluation Chapter in EA will include this Net Benefit Programmatic Analysis. The MOA shall be incorporated into its appendix.
Figure 1
Area of Potential Effect (APE)
APPLICABILITY

The projects' documentation, circumstances, studies and consultations clearly demonstrate that all of the following criteria for using the Net Benefit nationwide programmatic Section 4(f) have been addressed:

1. The proposed transportation projects use a Section 4(f) park, recreation area, wildlife or waterfowl refuge) or historic site.
   a. Segments of the Denver Tramway company line are located along South Broadway. The resource is believed to be comprised of metal trolley tracks, switches, and associated pieces of the trolley system. The entire trolley track system is eligible to the NRHP for its contribution to the early transit system of Denver. The line along Broadway between downtown Denver and Englewood was the first electrified trolley car line to operate in Denver and the central connector for other routes throughout the city. It operated from December 1889 to June 1950.
   b. The trolley tracks have been buried beneath asphalt since the trolleys closed in 1950 and are considered an historic archaeological resource. The projects include the removal of a total of approximately 7,870 feet (2,398 meters). Sections of the rails have already been removed in some intersections of the cross streets due to past construction projects. The remaining rails need to be removed from their current depth to install a new roadway base substructure and reduce the current roadway "crown" or cross-sectional profile.

2. The proposed projects include all appropriate measures to minimize harm and subsequent mitigation necessary to preserve and enhance those features and values of the property that originally qualified the property for Section 4(f) protection.
   a. The current condition of the trolley tracks is poor and because they are covered most travelers and shoppers on this section of Broadway are unaware that they still exist. CDOT has determined, and the Colorado SHPO concurred (see attached letter dated July 26th, 2007) that as a historical archaeological resource, in-place preservation of the trolley tracks presents minimal value. A greater net benefit can be realized if project resources are directed to providing creative mitigation in the form of interpretation for the general public, consisting of an interpretive sign on the southeast corner of Florida and Broadway that describes the relationship of the trolley line to the historical development of this section of Broadway and the neighborhoods of south Denver. An additional interpretive element will be a brochure or website that explains the significance of the Broadway corridor as a connector between Denver and Englewood and the neighborhoods and commercial districts that clustered along the line.
   b. Additional mitigation for these projects includes archival documentation according to Level II standards of the Office of Archaeology and Historic Preservation.
3. For archaeological properties, the projects do not require the disturbance or removal of the archaeological resources that have been determined important for preservation in-place rather than for the information that can be obtained through data recovery. The determination of a major alteration or the importance to preserve in-place will be based on consultation consistent with 36 CFR part 800.

c. Kenton Forrest, an expert on Denver's trolley system from the Colorado Railroad Museum in Golden, provided more information on the condition of the trolley tracks on Broadway in a telephone conversation with CDOT Region 6 Senior Historian on July 18, 2007. The tracks have been covered by asphalt for fifty seven years, and have been dissolved by moisture and corrosion. The gauge of the line is lightweight and at least 70 to 80 years old, which means it is brittle and difficult to preserve, display, or use for other purposes. Because there is no visual association with the public, there is little or no awareness of the relationship the trolley system has had with the development of the City and County of Denver. Forrest based his opinion on his inspection of other uncovered sections of trolley track on Broadway. Most of the switches at the intersections have already been removed, and those that remain are too rusted and corroded to be of any use. Therefore, the trolley tracks do not warrant preservation in-place.

4. For historic properties consistent with 36 CFR part 800, there must be agreement reached amongst the SHPO, the FHWA, and the Applicant on measures to minimize harm when there is a use of Section 4(f) property. Such measures must be incorporated into the projects.

d. The SHPO agreed upon measures to minimize harm to the Section 4(f) resource in correspondence dated July 26, 2007 and in the Memorandum of Agreement between the Federal Highway Administration and the SHPO Regarding the Denver Tramway Company Trolley Line on Broadway (Date TBD).

5. The official with jurisdiction over the Section 4(f) property agree in writing with the assessment of the impacts; the proposed measures to minimize harm; and the mitigation necessary to preserve, rehabilitate and enhance those features and values of the Section 4(f) property; and that such measures will result in a net benefit to the Section 4(f) property.

e. The SHPO agreed upon mitigation to the Section 4(f) resource in correspondence dated July 26, 2007, in the Memorandum of Agreement between the Federal Highway Administration and the SHPO Regarding the Denver Tramway Company Trolley Line on Broadway (Date TBD), and in email correspondence between SHPO and CDOT Region 6 senior historian (Date TBD).

6. The Administration determines that the projects' facts match those set forth in the Applicability, Alternatives, Findings, Mitigation and Measures to Minimize Harm, Coordination, and Public Involvement sections of this programmatic evaluation.
ALTERNATIVES

1. Do Nothing

The Do Nothing Alternative are not feasible and prudent because it would not correct existing deteriorated conditions and maintenance problems with Broadway which is the purpose and need for these projects. The trolley tracks are the cause of a crown in the center of Broadway, which is four to six inches higher than the sidewalks, in addition to lack of adequate storm water drainage, has caused flooding in local businesses. Without improved cross drains and smooth street level, the businesses along this section of Broadway will continue to experience flooding. In addition, the Do Nothing alternatives would not address the poor subsurface condition of the roadway which needs to be improved with a new firm base of gravel and other materials in order to support the new surface pavement. Constructing a good base under the roadway will help to ensure that the new surface pavement remains in good condition for a long period of time.

2. Improve Broadway in a manner that addresses the projects’ purpose and need without a use of the Section 4(f) property.

It is not feasible and prudent to avoid the Section 4(f) resource because the excavation depth of approximately two feet is required to accommodate compaction, base gravel, asphalt, and/or concrete. The subsurface condition needs to be improved with a new firm base of gravel and other materials in order to support the new surface pavement remains in good condition for a long period of time. The idea of using asphalt pavement rather than concrete pavement was explored; however, both types of material would require at least two feet of excavation for proper subsurface engineering.

Another alternative involves the compaction and replacement of the subgrade around the trolley tracks. The trolley tracks are estimated to be approximately six inches below the existing surface. If excavation was limited to the area above the trolley tracks, the proper subsurface base for the pavement could not be constructed, and the road surface would degrade quickly.

If excavation was attempted around and below the trolley tracks, the tracks themselves would interfere with the rebar that must be placed in a grid pattern in the concrete to give the concrete its strength and shape. Even if the necessary rebar could be woven around the trolley tracks, the tracks would be more rigid than the concrete, likely causing longitudinal cracks in the surface pavement.

Leaving the tracks in place does not meet the intent of long-term engineering solutions for this project and is not a prudent and feasible avoidance alternative.

3. Improve Broadway on a new location that does not require use of the Section 4(f) property.

Broadway is a major urban thoroughfare within the Denver metropolitan area network with a concentration of commercial and retail businesses on both sides of the street. The existing right-of-way occupies the entire area, up to the building frontage on both sides of the street and including most of the sidewalks. It is not possible to change the alignment of the street to avoid the Section 4(f) resource or to route traffic onto another street.
It is not feasible and prudent to avoid the Section 4(1) resource by relocating Broadway, which would involve the removal of large multi-story commercial buildings, extensive business disruptions, and extraordinary cost.

MITIGATION AND MEASURES TO MINIMIZE HARM

There is a significant commitment to mitigation on these projects. The permanent impacts to the trolley tracks will be necessary to meet design standards. The SHPO, FHWA, and Advisory Council on Historic Preservation have agreed upon the following mitigation to minimize harm:

- **f.** Trolley tracks uncovered during excavation will be documented according to Level II standards of the Office of Archaeology and Historic Preservation.

- **g.** The City and County of Denver has agreed to install a historic interpretive sign that describes the history of the Denver Tramway System in this part of Broadway. The sign will be developed in consultation with CDOT, the SHPO, and the Denver Landmark Preservation Commission.

- **h.** The City and County of Denver has also agreed to prepare a corridor-wide interpretation in the form of a brochure or website to explain the significance of the entire Broadway trolley line. The interpretation will be developed in consultation with CDOT, the SHPO, and the Denver Landmark Preservation Commission.

- **i.** A Memorandum of Agreement has been executed between the FHWA and the SHPO, with CDOT and the City and County of Denver as invited signatories, for all three projects affecting the trolley line on Broadway. The MOA shall be implemented in accordance with stipulations that take into account the effect of the undertaking on historic properties in compliance with Section 106 of the National Historic Preservation Act.

COORDINATION

Agreement among the SHPO and FHWA has been reached through the Section 106 process of the NHPA concerning effects of these projects to the Section 4(f) resource. The SHPO concurred that the projects would result in an adverse effect in a concurrence letter dated July 26, 2007. The Section 106 correspondence and the resulting Memorandum of Agreement are attached to this document. There are no Federal interests on the two minor improvement projects, so there are not appropriate agencies to be contacted for their comments on the proposed actions. The Environmental Assessment project will contact the appropriate federal agencies as a part of its required coordination efforts.

PUBLIC INVOLVEMENT
CDOT has contacted the following groups and invited them to participate as consulting parties: the Denver Landmarks Preservation Board, the West Washington Park Neighborhood Association (WWPNA), the Broadway Area Revitalization District (BARD), the Colorado Railroad Museum, and Historic Denver, Inc. Both the Colorado Railroad Museum and Historic Denver, Inc. declined to participate. The remaining three parties reviewed the draft MOA and will review interpretive elements prepared as part of the projects. They agreed with the assessment of effects and mitigation and did not have any other substantive comments or questions.

**DETERMINATION**

Based upon an examination of projects’ documentation, circumstances, studies, and consultations as summarized in the foregoing, it is determined that these projects meet the criteria for use of the Section 4(f) Evaluation and Approval For Transportation Projects That Have a Net Benefit to a Section 4(f) Property and that there are no feasible and prudent alternatives to the uncovering and removal of the trolley tracks.

**SUBMITTED BY:**
Jim Paulmeno 11/26/07
Region 6 Planning and Environmental Manager
Colorado Department of Transportation

**Approved by:**
David A. Nicol, P.E. 11/26/07
Division Administrator, Colorado Division
Federal Highway Administration
November 6, 2007

Dianna Litvak
Colorado Department of Transportation
Region 6
7000 S. Holly Street
Denver, CO  80222

Re: Agency Coordination for Section 4(f) Evaluation for Three Transportation Projects on S. Broadway. (CIS #49896 and #47447)

Dear Ms. Litvak,

Thank you for your correspondence dated October 19, 2007 and received by our office on October 23, 2007 regarding the consultation of the above-mentioned project.

After review of the information, we concur that the use of creative mitigation to resolve the adverse effect under Section 106 will be a benefit to the understanding of the affected resource, the South Broadway trolley tracks. We concur with the net benefit finding under Section 4(f).

If unidentified archaeological resources are discovered during construction, work must be interrupted until the resources have been evaluated in terms of the National Register criteria, 36 CFR 60.4, in consultation with this office.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

Georgianna Contiguglia
State Historic Preservation Officer
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Mr. Don Klima  
Office of Federal Agency Programs  
Advisory Council on Historic Preservation  
1100 Pennsylvania Avenue, NW  
Washington, DC 20004

ATTN: Ms. Carol Legard, FHWA Liaison

Dear Mr. Klima:

SUBJECT: Documentation for Finding of Adverse Effect for Colorado Department of Transportation Project STU M320-041 (S.A. 15632), South Broadway Reconstruction, Arizona to Iowa Avenues, City and County of Denver

Transmitted herewith is the Documentation for Finding of Adverse Effect for the Colorado Department of Transportation (CDOT) project referenced above. The Federal Highway Administration (FHWA) and Colorado State Historic Preservation Officer (SHPO) have agreed that the proposed undertaking will have an Adverse Effect on the Denver Tramway Trolley Tracks (SDV92) 17.4, which was determined eligible for listing on the National Register of Historic Places.

FHWA is submitting this Documentation for Finding of Adverse Effect pursuant to the Advisory Council regulations, 36 CFR 800.6(a)(1). In accordance with the process set forth in the regulations, mitigation measures have been agreed upon with the SHPO and are outlined in the request for concurrence of effects (Attachment C of the Documentation).

CDOT has prepared a Draft Programmatic Agreement for this and any future trolley track segments on Broadway that will be impacted by other Federal-aid projects. FHWA is submitting the Draft Programmatic Agreement for ACHP review and comment.

If there are any questions regarding this project, please contact CDOT Region 6 Senior Historian Dianna Litvak at (303) 757-9461.

Sincerely yours,

[Signature]

David A. Nicol, P.E.  
Division Administrator

Enclosures (2):  
- Copy of Documentation of Adverse Effect for CDOT Project STU M320-041 (S.A. 15632)  
- Draft Programmatic Agreement
STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION
Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-2215

August 1, 2007

Mr. David Nicol, P.E.
Division Administrator
Federal Highway Administration
12300 West Dakota Avenue, Suite 180
Lakewood, CO 80228

SUBJECT:  Colorado Department of Transportation Project STU M320-041, South Broadway Reconstruction, Arizona to Iowa Avenues, City and County of Denver

Dear Mr. Nicol:

Pursuant to Section 800.6(a)(1) of the Advisory Council on Historic Preservation regulations, Agency officials must notify the Council of adverse effect determinations by providing Documentation of Adverse Effect, the content of which is specified in Section 800.11 of the regulations. Such notification allows the Council to determine whether it will participate in the consultation between the agency and the State Historic Preservation Officer (SHPO). If the Council does not respond within 15 calendar days, the agency can assume that the Council will not be participating in the consultation process.

The project referenced above will adversely affect the Denver Tramway Corporation Trolley Tracks (5DV9217). Enclosed are two copies of the Documentation of Adverse Effect for this historic resource, one is for your files and the other is to be submitted to the Council. A draft transmittal letter to the Advisory Council is enclosed on a CD for your convenience.

We recommend the development of a Programmatic Agreement between your office and the SHPO that sets forth procedures to follow for this and any future projects that may impact the historic tracks along this street, including archival documentation and creative mitigation options. We have enclosed a draft of this Agreement for your review and an additional copy to forward to the Advisory Council for their review.

Please send a copy of all of your correspondence with the Advisory Council to CDOT Region 6 Senior Historian Dranna Litvak for our files. If you have questions or comments on the Agreement, or require additional information, please contact Ms. Litvak at (303) 757-9241.

Very truly yours,

Brad Beckham, Manager
Environmental Programs Branch

Enclosures:  Documentation of Adverse Effect (FHWA and ACHP copies)
Draft Section 106 Programmatic Agreement (FHWA and ACHP copies)
CD with sample ACHP letter

cc: Georgianna Cortigia (Colorado SHPO)
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DOCUMENTATION FOR FINDING OF ADVERSE EFFECT

COLORADO DEPARTMENT OF TRANSPORTATION PROJECT STU M320-041
South Broadway Reconstruction Project, Arizona to Iowa avenues

COLORADO DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PROGRAM
4201 EAST ARKANSAS
DENVER, COLORADO 80222

August 2007
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DOCUMENTATION FOR FINDING OF ADVERSE EFFECT
PROJECT STU M320-04I
South Broadway Reconstruction Project, Arizona to Iowa avenues

This documentation is prepared in accordance with the Advisory Council Regulations, Section 800.11 (e), which stipulates the inclusion of the following items:

1. **A description of the undertaking, specifying the Federal involvement, and its area of potential effects, including photographs, maps, and drawings, as necessary.**

The project consists of improvements, including a median and turn lanes, in select locations on South Broadway between Arizona and Iowa avenues within the City and County of Denver (CCD). All of the work will take place within existing right-of-way boundaries, a 100-foot wide corridor. The four-block segment will be reconstructed in concrete pavement. This involves minor widening (5 to 7 feet) on either side of the existing curbs to construct a 10-foot raised median in the center of the street, and build new curbs, gutters, and sidewalks. The project will also implement major drainage improvements, including construction of a new large storm sewer (48" to 72") to tie into a major drainage outfall in Florida Avenue. Three existing traffic signals will be replaced and a new bike crossing installed at Iowa Avenue. Utilities will be adjusted, street lighting installed as needed, and landscaping improvements will be implemented in the raised medians. These improvements consist of planter beds with tiered walls and low-level plantings to retain the visual views across Broadway. In the sidewalk, trees will be planted with 35-foot spacing and 5'x 15' tree grates according to CCD standards. At the intersections, bus stops, and other areas, accent paving will be installed.

The APE boundaries include Acoma Street on the west, Arizona Street on north, Lincoln Avenue on the east, and Iowa Avenue on the south. Within the APE, the historic survey work remained within CDOT's existing 100-foot-right-of-way, which extends to the buildings on both sides of South Broadway and encompasses potential historic features including trolley track, sewer lines, and curbs. In April 2007, the staff of the Colorado State Historic Preservation Officer agreed with this APE configuration. Figure 1 provides an illustration of the project's general location.

2. **A description of the steps taken to identify historic properties.**

Gail Keeley of Hermsen Consultants conducted an intensive field survey and historic research for the APE between January and May 2007. Ms. Keeley conducted research at the Denver Public Works Department, the Denver Community and Planning Agency, the Office of Archaeology and Historic Preservation, and the Western History Collection of the Denver Public Library. The survey and research found three historic resources in the APE. Two of these, a segment of the Broadway Brick Sewer and a segment of the flagstone curb/sidewalks along Broadway were officially determined by the Colorado SHPO to be not eligible to the National Register of Historic Places (NRHP) in correspondence from the SHPO dated June 5, 2007. An additional resource, the Denver Tramway Company Line, 5DV9217.4, was determined to be officially eligible to the NRHP.
3. **A description of the affected historic properties, including information on the characteristics that qualify them for the National Register.**

The trolley system is eligible to the NRHP for its contribution to the early transit system of Denver. It is significant under National Register Criterion "a" because it made the outward spread of Denver's neighborhoods possible by providing a means for residents to travel between work and home and to recreational sites throughout the city. The line along Broadway between downtown Denver and Englewood was the first electrified trolley car line to operate in Denver and the central connector for other routes throughout the city. It operated from December 1889 to June 1950. Under Criterion "d," it is significant as a structure important to our understanding of the design, materials, and workmanship of the primary trolley line in the south part of Denver.

4. **A description of the undertaking’s effects on historic properties.**

The trolley tracks have been buried beneath asphalt since the trolleys closed in 1950. The project includes the removal of a total of approximately 2,345 feet (715 meters). Sections of the rails have already been removed in the intersections of the cross streets due to past construction projects. The remaining rails need to be removed from their current depth to install a new roadway base substructure and reduce the current roadway "crown" or cross-sectional profile.

5. **An explanation of why the criteria of adverse effect were found applicable or inapplicable, including any conditions or future actions to avoid, minimize, or mitigate adverse effects.**

In accordance with Section 800.5(a) (2)(iii) of the Advisory Council Regulations, CDOT has applied the criteria and determined the project will have an adverse effect because it will result in the removal of the tracks from their original location. Temporary impacts include construction noise, vibration, and dust within the project area.

If the project does not take place, nothing will be done to improve turning conditions, add a safer bicycle crossing at Iowa Avenue, and repair the street profile and storm water drainage system in the project area. The trolley tracks are the cause of a slight crown in the center of Broadway, which is four to six inches higher than the sidewalks on either side of the street. This difference in the street profile relative to the sidewalks, in addition to lack of adequate storm water drainage, has caused flooding in local businesses. Without improved cross drains and a smooth street level, the businesses along this section of Broadway will continue to experience flooding.

Broadway is a major urban thoroughfare within the Denver metropolitan area network with a concentration of commercial and retail businesses on both sides of the street. The existing right-of-way occupies the entire area, up to the building frontage on both sides of the street and including most of the sidewalks. It is not possible to change the alignment of the street to avoid the tracks or to route traffic onto another street. If the alignment of the street were shifted to the east or west to avoid the area where the tracks are, it would require removal of many of the businesses, a significant impact.
The current condition of the trolley tracks is poor, as they have been fragmented over the years and asphalt and moisture have badly corroded the rails. CDOT has determined, and the Colorado SHPO concurred, that as a historical archaeological resource, in-place preservation of the trolley tracks presents minimal value. More can be learned about the tracks if project resources can be directed to creative mitigation options such as public interpretation within the project area and neighborhoods. Mitigation recommended for this project includes archival documentation and the placement of an interpretive sign within the project area that interprets the historical significance of the trolley to the development of this section of Broadway and the neighborhoods of south Denver.

CDOT recommends preparing a Programmatic Agreement between the Federal Highway Administration, the SHPO, and the ACHP due to the complexities of surveying this and other segments of buried trolley tracks along Broadway. At this time, at least three separate projects will impact the trolley tracks. The Agreement will outline procedures to follow for this and future projects. We have attached a draft agreement for your review.

6. Copies or summaries of any views provided by consulting parties and the public.

The SHPO has concurred with the lead agency's determinations of effects, and their written views are attached (see Attachment C).

CDOT has contacted the following groups and invited them to participate as consulting parties: the Denver Landmarks Preservation Board, the West Washington Park Neighborhood Association (WWPNA), the Broadway Area Revitalization District (BARD), the Colorado Railroad Museum, and Historic Denver, Inc. Both the Colorado Railroad Museum and Historic Denver, Inc. declined to participate. CDOT Region 6 Senior Historian Dianna Litvak sent letters to the three remaining consulting parties and followed up with telephone conferences and email discussions to determine the level of interest of each group. While they have not yet responded formally to the request to become consulting parties, each has said they do wish to participate in the mitigation for this project as well as the development of a Programmatic Agreement. They agreed with the assessment of effects and mitigation and did not have any other substantive comments or questions.
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ATTACHMENT A

PROJECT LOCATION MAP
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Area of Potential Effect (APE)
ATTACHMENT B

INVENTORY FORM
(Photographs included)
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The Management Data Form should be completed for each cultural resource recorded during an archaeological survey. Exceptions to this are isolated finds and re-evaluations, neither of which require a Management Data Form. Please attach the appropriate component forms and use continuation pages if necessary.

1. Resource Number: 5DV 9217 4
   2. Temporary Resource Number: ______________________

3. Attachments (check as many as apply)
   __ Prehistoric Archaeological Component
   __ Historic Archaeological Component
   __ Historic Architectural Component
   __ Sketch/Instrument Map (required)
   __ Need Data
   X U.S.G.S. Map Photocopy (required)
   X Photograph(s)
   Other, specify: Linear Feature Form

4. Official determination (OAHP use only)
   ____ Determined
   ____ Determined Not Eligible
   ____ Nominated
   ____ Contributing to NR Dist.
   ____ Not Contributing to NR Dist.

I. IDENTIFICATION

5. Resource Name: Denver Tramway Trolley Line

6. Project Name/Number: South Broadway Reconstruction Project, Arizona Ave, to Iowa Ave., Denver, Colorado

7. Government Involvement: Local X State X Federal X
   Agency: City and County of Denver, CDOT, FHWA

8. Site Categories: Check as many as apply
   Prehistoric: archaeological site ___ paleontological site ___
   in existing National Register District? yes ___ no X ___ name ___
   Historic: archaeology site ___ building(s) ___ structure(s) X object(s) ___
   in existing National Register District? yes ___ no X ___ name ___

9. Owner(s)'s Name and Address: City and County of Denver, 201 W. Colfax Ave., Denver, CO 80202

10. Boundary Description and Justification: The segment of trolley tracks assessed here is the length of the tracks that traverses the study area under S. Broadway. It is a 3350 ft. (1020 m) segment along Broadway extending from slightly north of Arizona Ave. on the north to slightly south of Iowa Ave., on the south.

11. Site/Property Dimensions: 1020 m x 5 m
    Area: 5100 m² (~4047) 1.3 acres
    Area was calculated as: Length x Width X OR (length x width) X 785 rectangle/square ellipse

II. LOCATION

12. Legal Location
    PM 6th Township 4S Range 68W Section 22 W 1/2 of NW 1/4 of NE 1/4; W 1/2
        of SW 1/4 of NE 1/4; E 1/2 of NE 1/4 of NW 1/4; E 1/2 of SE 1/4 of NW 1/4;
        W 1/2 of NW 1/4 of SE 1/4; E 1/2 of NE 1/4 of SW 1/4
    If section is irregular, explain alignment method ____________________________
**Management Data Form**  
(page 2 of 4)

13. USGS Quad: Englewood, Colorado  
7.5' X 15'  
Date(s): 1965 Rev 1994  
(attach photocopy)

14. County: Denver  
15. Other Maps: 

16. UTM Reference: 
   - A 13501140 mE 4393800 mN  
   - B 13501140 mE 4392740 mN  
   - C 13501100 mE 4392740 mN  
   - D 13501100 mE 4393800 mN  

17. Address:  
Lot__ Block__ Addition__ 

18. Location/Access: On Broadway between slightly north of Arizona Ave, on the north to slightly south of Iowa Ave, on the south.

### III. NATURAL ENVIRONMENT

19. Topographic Feature(s)  
   - mountain  
   - hill  
   - tableland/mesa  
   - ridge  
   - saddle/pass  
   - alcove/rock shelter  
   - cliff  
   - slope  
   - ledge  
   - terrace/bench  
   - canyon  
   - X valley  
   - basin  
   - floodplain  
   - cutbank  
   - arroyo/gully  
   - playa  
   - talus slope  
   - alluvial fan  
   - plain  
   - dune  
   - urban  

20. Site Topographic Description (mention named landforms): The site is in the valley of the S. Platte River.

21. Site Elevation: 5270 foot = (x 9.3049) 1606 meters  
22. Aspect: W

23. Degree of Slope on Site: 0%  
24. Soil Depth: __________ cm

25. Soil Description (character and color): Sandy

26. Depositional Environment:  
   - Aeolian  
   - Colluvial  
   - Residual  
   - Alluvial  
   - Moraine  
   - None  
   - Other, specify: 

27. Nearest Water: name/nature: S. Platte River distance: 520 m 1700 ft.

28. Nearest Permanent Water: name: S. Platte River  
   distance: 520 m 1700 ft.

29. Vegetation on Site (list predominant species): none

30. Vegetation Associations/Communities Surrounding Site: none
IV. NATIONAL/STATE REGISTER ELIGIBILITY ASSESSMENT

31. Context or Theme: Transportation - Railroads

32. Applicable National Register Criteria:
   _ Does not meet any of the below National Register criteria
      _ X _ A. Associated with events that have made a significant contribution to the broad pattern of our history; or
      _ B. Associated with the lives of persons significant in our past; or
      _ C. Embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
      _ D. Has yielded, or may be likely to yield, information important in history or prehistory; or
      _ X Qualifies under exceptions A through G.

   Level of Significance: National ___ State ___ Local _ X __

33. Condition
   a. Architectural/Structural
      _ X _ Excellent
      _ Good
      _ Fair
      _ X Deteriorated
      _ Ruins
   b. Archaeological/Paleontological
      _ Excellent
      _ Undisturbed
      _ Light disturbance
      _ X Moderate disturbance
      _ Heavy disturbance
      _ Total disturbance

34. Describe condition: The rails remain imbedded under the pavement on S. Broadway through the project area. At all of the intersections, the rails have been removed.

35. Vandalism: yes ___ no _ X ___ describe: ____________________________

36. National Register Eligibility Field Assessment:

   Eligible _ X__ Not Eligible ___ Need Data ___

   Statement of Significance/N.R.H.P. Justification: The Denver Tramway played an important role in the early transit of Denver. It facilitated the settlement and development of many of Denver's neighborhoods allowing residents an effective way to travel between work and home and to recreational opportunities. For this reason, the overall trolley system is evaluated as eligible for inclusion on the NRHP. This segment of the historic trolley line remains under the pavement of S. Broadway. The S. Broadway line was the first electrified trolley car line to operate in Denver. It continued in operation from December 1889 to June 1950. This segment was part of that first electrified line and supports the eligibility of the NRHP eligible trolley system.

37. Status in an Existing National Register District:

   Contributing _ X__ Non-Contributing ___

38. National Register District Potential: yes ___ no _ X ___ discuss: There are no other identified historic structures or transportation related facilities in this project area to make it a district.
Management Data Form
(page 4 of 4)

V. MANAGEMENT AND ADMINISTRATIVE DATA

30. Threats to Resource: Water erosion ___ Wind erosion ___ Grazing ___ Neglect ___
    Vandalism ___ Recreation ___ Construction X ___ Other (specify): ____________
    comments: _____________________________________________________________

40. Existing Protection: None X ___ Marked ___ Fenced ___ Patrolled ___ Access controlled ___
    other (specify): _______________________________________________________

41. Local landmark designation: ________________________________

42. Easement:

43. Management Recommendations: No further work

VI. DOCUMENTATION

44. Previous Actions Accomplished at the site:
   a. Excavations: Test___ Partial_____ Complete_____ Date(s): ________________
   b. Stabilization: Date(s): _______________________________________________
   c. HABS/HAER Documentation: Date(s) & Numbers: _________________________
   d. Other: _____________________________________________________________

45. Known collections/reports/interviews and other references (list):

46. Primary Location of Additional Data: Western History Collection, Denver Public Library, Colorado Railroad Museum

47. State or Federal Permit Number: ___________________________ Collection Authorized: yes ___ no___
    Artifact Collection: Yes ___ No ___ Artifact Repository: ______________________
    Collection Method: Diagnostics ___ Grab Sample ___ Random Sample ___ Transect
    Other (specify): _______________________________________________________

48. Photograph Numbers: Roll 1, Frames 17, 21___ Negatives filed at: Hermsen Consultants

49. Report Title: Historic Resources Survey Report for the South Broadway Reconstruction Project, Arizona Ave to Iowa Ave, Denver, CO

50. Recorder(s): Gail Keeley Date(s): May 8, 2007

51. Recorder Affiliation: Hermsen Consultants

Phone Number: 303-797-6337

NOTE: Please attach a sketch map, a photocopy of the USGS quad. map indicating resource location, and photographs.

Colorado Historical Society - Office of Archaeology & Historic Preservation, 1300 Broadway, Denver, CO 80203
1303-866-3395
COLORADO CULTURAL RESOURCE SURVEY
Linear Component Form
(page 1 of 2)

This form should be completed for each linear resource or linear segment. Use this form in conjunction with the Management Data Form. Call OAHP staff (303-866-5216) prior to assigning a resource number.

I. RESOURCE IDENTIFICATION
1. Resource Number (include point number, if applicable): SDV 9217.4
2. Temporary Resource Number:
3. Resource Name: Denver Tramway Trolley Tracks
4. Record of: Entire resource ___ Segment ___ X

II. RESOURCE DESCRIPTION
5. Resource Type: Road ___ Railroad ___ X Ditch/Canal ___ Trail ___
   Other (specify):
6. Resource Description: The Denver Tramway Company operated an extensive trolley system throughout Denver. This segment of the trolley tracks is that portion through the study area for the South Broadway Reconstruction Project in Denver. The segment of trolley tracks through this study area is approximately 3300 ft (1020 meters) in length located under the pavement and extending from slightly north of Arizona Ave. on the north to slightly south of Iowa Ave. on the south. Two streetcar lines followed were located on S. Broadway through the project area. One was streetcar route #2 (Broadway – Colorado Ave.) which extended from Colfax Ave. on the north to Colorado Ave. on the south. The other was streetcar route #3 (Englewood) which continued south on S. Broadway until Hampden Ave.

7. Original use: Trolley tracks
   Current use: Abandoned

8. Modifications (describe): This electric streetcar line was switched over to bus service in 1950. The overhead wires were removed and the tracks were eventually covered with asphalt.

9. Extent of Resource: The Denver Tramway Company's streetcar system had about 260 miles of tracks in the city of Denver in the 1920s. The Broadway to Colorado Ave. line extended from Colfax Ave. on the north to Colorado Ave. on the south, a distance of approximately 3.9 miles (20,500 ft; 6.2 km). The Englewood line extended from Colfax Ave. on the north to Hampden Ave. on the south, a distance of 6.0 miles (31,680 ft; 9.6 km).

10. Associated Artifacts: None

11. Associated Features or Resources: None
III. RESEARCH INFORMATION

12. Architect/Engineer: Denver Tramway Company

13. Builder: Denver Tramway Company

14. Date of Construction/Date Range: 1889 for S. Broadway Line; 1890 to 1920s for entire system

15. Historical/Archival Data:
The Denver Tramway Company's trolley tracks on S. Broadway were built in 1889. The tracks were linked on the north to the line extending along Broadway south from Colfax Ave. These tracks were part of the Route #3 tracks that went south to Orchard Place (Englewood) approximately Hampden Ave. On Christmas Day, 1889, the first electric trolley cars that ever operated in Denver made their maiden runs on this new South Broadway electric line. By 1901 the trolley line down S. Broadway supported two routes. One route, Route #3, went all the way south to Orchard Place (Englewood) and the other Route 2, was a shorter route that traveled down S. Broadway ending at Colorado Avenue. Residents used both of these routes for travel to work and other activities. Many of the workers from Gates Rubber relied on the trolleys for transportation to work. The South Broadway route to Englewood was one of the routes for "Owl Cars" which provided late night service from midnight to 6:00 am. This service continued until 1950 when the trolley cars were abandoned for buses. The various trolley lines had colored lights on them to distinguish them at night. The Broadway line trolleys had a yellow light on them. Route 3 to Englewood provided service for over 60 years. The S. Broadway route was one of the last ones to stop providing trolley service, providing its last run on June 3, 1950, before the service was replaced by buses.

16. Prehistoric Cultural Affiliation:

IV. MANAGEMENT RECOMMENDATIONS

17. Eligibility of entire resource:
   - Eligible X  Not eligible  Need data ______
   - Is this an official (OAHF) determination? Yes X  No  Date June 28, 2005
   - Is this a field determination? Yes  No X

Remarks/justification: The Denver Tramway played an important role in the early transit of Denver. It facilitated the settlement and development of many of Denver's neighborhoods allowing residents an effective way to travel between work and home and to recreation opportunities. For this reason, the overall trolley system is evaluated as eligible for inclusion on the NRHP.

18. Eligibility of the segment being recorded:
   - Contributing X  Non-contributing  Not applicable X

Remarks/justification: This segment of the historic trolley line remains under the right-of-way of S. Broadway. The S. Broadway line was the first electrified trolley car line to operate in Denver. It continued in operation from December 1889 to June 1950. This segment was part of that first electrified line and supports the eligibility of the NRHP eligible trolley system.


Colorado Historical Society
Office of Archaeology and Historic Preservation
1300 Broadway, Denver, CO 80203
303-866-3395
DENVER TRAMWAY TROLLEY LINE
Site Number: 5DV.9217.4
Site Number: 5VD.9217.4

Name/Location:
Denver Tramway Trolley Lines
Denver, CO

South Broadway View to North at Louisiana Avenue

South Broadway View to South between Louisiana and Arkansas Avenues
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ATTACHMENT C

SHPO LETTER OF CONCURRENCE OF EFFECTS
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July 26, 2007

Brad Beckham
Manager, Environmental Programs Branch
Colorado Department of Transportation
Environmental Programs Branch
4201 East Arkansas Avenue
Denver, CO 80222

Re: Revised Determination of Effect, CDOT Project STU M320-041, South Broadway Reconstruction, Arizona to Iowa Avenues. (CHS #48896)

Dear Mr. Beckham,

Thank you for your correspondence dated July 19, 2007 and received by our office on July 20, 2007 regarding the review of the above-mentioned project under Section 106 of the National Historic Preservation Act (Section 106).

After review of the provided information, we concur with the finding of adverse effect under Section 106 for the proposed undertaking. We also concur that preserving the tracks in place is not warranted and that more can be learned about the trolley system in Denver through creative mitigation of the adverse effect.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

Please note that our compliance letter does not end the 30-day review period provided to other consulting parties.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

[Signature]

Georgianna Configlia
State Historic Preservation Officer

cc: Dianna Litvak/CDOT Region 6
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July 19, 2007

Ms. Georigiana Contiguglia
State Historic Preservation Officer
Colorado Historical Society
1300 Broadway
Denver, CO 80203

SUBJECT: Revised Determination of Effect, CDOT Project STU M320-041, South Broadway Reconstruction, Arizona to Iowa Avenues, City and County of Denver (CHS #49896)

Dear Ms. Contiguglia,

This letter constitutes CDOT’s request for concurrence on a revised effects determination for a historic linear feature associated with the project referenced above. Please discard the correspondence dated July 12, 2007 related to this project.

We consulted with you on eligibility and effects for this project in correspondence dated May 23, 2007 and received your concurrence in a letter dated June 5, 2007. Initially we requested a phased application of the Section 106 criteria [(36 CFR 800.5(a)(3)) for resource SDV92174, which consists of a segment of the Denver Tramway Trolley Line. We planned to wait until the 3,350-foot segment was exposed to determine whether it retained sufficient integrity to support the overall eligibility of the entire trolley system. There have not been any changes to the proposed work for this project, but the phased approach presents logistical problems. The environmental review process cannot be finalized, and the project cannot be advertised, with a pending effects determination. Additionally, once work commences on this extremely congested section of Broadway, the project manager will be unable to delay work while we consult with you regarding the effects to the trolley tracks.

Eligibility and Effects Determination for SDV92174, Denver Tramway Trolley Line

The trolley system is eligible to the National Register of Historic Places (NRHP) for its contribution to the early transit system of Denver. The trolley system made the outward spread of Denver’s neighborhoods possible by providing a means for residents to travel between work and home and to recreational sites throughout the city. This particular line along Broadway between downtown Denver and Englewood was the first electrified trolley car line to operate in Denver and the central connector for other routes throughout the city. It operated from December 1889 to June 1980.

We have found the trolley segment to be eligible under both Criterion A, for its association with historical events, and Criterion D, for its potential to yield important information. Under Criterion D, we have found the buried trolley tracks to be a structure important to our understanding of the design, materials, and workmanship of the primary trolley line in the south part of Denver.

The trolley tracks will need to be removed as part of the proposed work to re-profile the street and correct the crown that exists in this area that has created flooding problems for adjacent businesses. After applying the criteria of adverse effect to this project [(36 CFR 800.5(a)(2)(iii)], we have concluded that the...
Ms. Contiguglia  
July 19, 2007

Page 2

The removal of the tracks from their historic location will result in an adverse effect. Additionally, we believe that in-place preservation of the trolley tracks, a historic archaeological resource, in their current condition and location presents minimal value and is not warranted. More can be learned about the tracks if project resources can be directed to creative mitigation such as public interpretation within the project area and neighborhoods.

Programmatic Agreement and Mitigation for Trolley Tracks on Broadway

Due to the complexities presented by surveying this and other segments of buried trolley tracks along Broadway, we recommend the development of a Programmatic Agreement involving your office and the Federal Highway Administration that sets forth procedures to follow for this and any future projects that may impact the historic tracks along this street, including archival documentation and creative mitigation options. At this time we are developing the goals for this agreement, which will be used instead of a project-specific Memorandum of Agreement to mitigate adverse effects. The Colorado Department of Transportation will be an invited signatory and the Denver Landmarks Preservation Board will be invited to sign the Agreement as a concurring party.

Mitigation recommended for this project includes archival documentation, including large-format photographs and a historical summary that will be prepared and submitted to the Office of Archaeology and Historic Preservation. The City and County of Denver project manager has agreed to place an interpretive sign about the trolley tracks within the project vicinity. A precise location for the signage has not been selected, but the intersection of Florida and South Broadway has been chosen as one of the best alternatives. Another option is to develop an interpretive sign for both this segment and another to the north that will be removed near the Gates redevelopment. These mitigation options are designed to ham more about these trolley tracks and better understand the relationship of this line to the development of businesses and residential neighborhoods in this area.

We request your concurrence with the revised effects determination described here. Your response is necessary for the Federal Highway Administration’s compliance with Section 106 of the National Historic Preservation Act, and the Advisory Council on Historic Preservation’s regulations.

We have sent this revised information to Everett Shugert of the Denver Landmarks Preservation Board for review and comment. We will forward his response to you once we hear from him.

Thank you in advance for your prompt attention to this matter. If you require additional information, please contact CDOT Region 6 Senior Historian Diana Litvak at (303) 757-9461.

Very truly yours,

Brad Beckman, Manager
Environmental Programs Branch

Marcce Allen, FHWA Operations Engineer
Mike Vanderhoof, FHWA Environmental Program Manager
Denise Chilnique, City and County of Denver
Tim Frazier, Region 6
Kirk Wehbi, Region 6
Diana Litvak, Region 6
Jan Clarke, Carter & Burgess
July 19, 2007

Mr. Everett Shigeta
Denver Landmarks Preservation Board
201 W. Colfax Avenue
Denver, CO 80202

SUBJECT: Revised Determination of Effect, CDOT Project STU M320-041, South Broadway Reconstruction Project, Arizona to Iowa Avenues, City and County of Denver

Dear Mr. Shigeta:

This letter constitutes a request for comments on a revised effects determination for a historic linear feature associated with the project referenced above. Please discard the correspondence you received dated July 17, 2007 and replace it with this instead.

We previously requested comments for this project, in care of Planning Assistant Robert Atkinson, on May 23, 2007. Since that time, we have altered our approach and wish to provide you with another opportunity to comment on this project. We initially requested a phased application of the Section 106 of the National Historic Preservation Act criteria [36 CFR 800.5(a)(3)] for resource SDV9217.4, which is a segment of the Denver Tramway Trolley Line within the project area. We planned to wait until the 3,350-foot segment was exposed to determine whether it retained sufficient integrity to support the overall eligibility of the entire trolley system. There have been no changes to the proposed work for this project, but the phased approach presents logistical problems. The environmental review process cannot be finalized, and the project cannot be advertised, with a pending effects determination. Additionally, once work commences on this extremely congested section of Broadway, the project manager will be unable to delay work while CDOT and SHPO consult on the effects of the project to the trolley tracks.

Eligibility and Effects Determination for SDV9217.4, Denver Tramway Trolley Line

The trolley system is eligible to the National Register of Historic Places (NRHP) for its contribution to the early transit system of Denver. The trolley system made the outward spread of Denver's neighborhoods possible by providing a means for residents to travel between work and home and to recreational sites throughout the city. This particular line along Broadway between downtown Denver and Englewood was the first electrified trolley car line to operate in Denver and the central connector for other routes throughout the city. It operated from December 1889 to June 1950.

We have found the trolley segment to be eligible under both Criterion A, for its association with historical events, and Criterion D, for its potential to yield important information. Under Criterion D, we have found the buried trolley tracks to be a structure important to our understanding of the design, materials, and workmanship of the primary trolley line in the south part of Denver.

The trolley tracks will need to be removed as part of the proposed work to re-profile the street and correct the crown that exists in this area that has created flooding problems for adjacent businesses. After
applying the criteria of adverse effect to this project [36 CFR 800.5(a)(2)(iii)], we have concluded that the removal of the tracks from their historic location will result in an adverse effect. Additionally, we believe that in-place preservation of the trolley tracks, a historic archaeological resource, in their current condition and location presents minimal value and is not warranted. More can be learned about the tracks if project resources can be directed to creative mitigation such as public interpretation within the project area and neighborhoods.

Programmatic Agreement and Mitigation for Trolley Tracks on Broadway

Due to the complexities presented by surveying this and other segments of buried trolley tracks along Broadway, we recommend the development of a Programmatic Agreement that sets forth procedures and mitigation options that can be used for this and any future projects that may impact the historic trolley tracks along this street. At this time, we have begun to develop the goals for this agreement, a copy of which are included herewith. We expect to use the Programmatic Agreement instead of a project-specific Memorandum of Agreement to mitigate the adverse effects for this project. The Colorado Department of Transportation will be an invited signatory and the Denver Landmarks Preservation Board will be invited to participate as a concurrent party.

Mitigation recommended for this project includes archival documentation, including large-format photographs and a historical summary that will be prepared and submitted to the Office of Archaeology and Historic Preservation. The City and County of Denver project manager has agreed to place an interpretive sign about the trolley tracks within the project vicinity. A precise location for the signage has not been selected, but the intersection of Florida and South Broadway has been suggested as one of the best alternatives. Another option is to develop an interpretive sign for both this segment and another to the north that will be removed near the Gates redevelopment. These mitigation options are designed to learn more about the trolley tracks and develop a better understanding of the relationship of this line to the development of businesses and residential neighborhoods in the area.

As a local government authority with an interest in this project, we welcome your comments regarding our determination of effects. Should you elect to respond, we request that you do so within 30 days of receipt of this letter.

Thank you in advance for your prompt attention to this matter. If you require additional information, please contact CDOT Region 6 Senior Historian Diana Litvak at (303) 757-9461.

Very truly yours,

Brad Beckham, Manager
Environmental Programs Branch

Attachment: Summary of Goals of Programmatic Agreement:

Michele Allen, FHWA Operations Engineer
Deanna Olshegge, City and County of Denver
Tim Freiar, Region 6
Kirk Wallis, Region 6
Diana Litvak, Region 6
Tim Clarke, Canan & Hamilton
Amy Ballance, Intergovernmental Services, Office of Archaeology and Historic Preservation
5.2 **De Minimis Finding for Broadway Brick Sewer (5DV.9953.1) and Mississippi Clay Sewer (5DV.9954.1)**

5.2.1 **Introduction**

Congress amended Section 4(f) in 2005 when it enacted the SAFETEA-LU. Section 6009 of SAFETEA-LU added a new subsection to Section 4(f), which authorizes the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) to approve a project that results in a *de minimis* impact to a Section 4(f) property without the evaluation of avoidance alternatives typically required in a Section 4(f) Evaluation. Section 6009 amended Title 23 USC Section 138 states:

> “The Secretary shall not approve any program or project (other than any project for a park road or parkway under Section 204 of this title) which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance as determined by the Federal, State, or local officials having jurisdiction thereof, or any land from an historic site of national, State, or local significance as so determined by such officials unless (1) there is no feasible and prudent alternative to the use of such land, and (2) such program includes all possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge, or historic site resulting from such use. The requirement of this section shall be considered to be satisfied and an alternatives analysis not required if the Secretary determines that a transportation program or project will have a *de minimis* impact on the historic site, parks, recreation areas, and wildlife or waterfowl refuge. In making any determination, the Secretary shall consider to be a part of transportation program or project, any avoidance, minimization, mitigation, or enhancement measures that are required to be implemented as a condition of approval of the transportation program or project.”

5.3 **Basic Requirements of a De Minimis for Historic Resources**

Historic sites qualifying for Section 4(f) protection must be officially listed on or eligible for inclusion in the National Register of Historic Places (NRHP), or contribute to a historic district that is eligible for or listed on the NRHP or be a supporting segment of an NRHP listed or eligible linear resource. The NRHP eligibility is established through the Section 106 process. Section 6009 amended Title 23 USC Section 138 states:

> “With respect to historic sites, the Secretary may make a finding of *de minimis* impact only if the Secretary has determined in accordance with the consultation process required under Section 106 of the National Historic Preservation Act that the transportation program or project will have no adverse effect on the historic site or there will be no historic properties affected by the transportation program or project; the finding has received written concurrence from the State Historic Preservation Officer (SHPO); and the finding was developed in consultation with the parties consulted under the Section 106 process.”
The finding of a *de minimis* impact on a historic site may be made when:

1) The process required by Section 106 of the National Historic Preservation Act results in the determination of "no adverse effect" or "no historic properties affected" with the concurrence of the SHPO;

2) The SHPO is informed of FHWA’s or FTA’s intent to make a *de minimis* impact finding based on their written concurrence in the Section 106 determination; and

3) FHWA or FTA has considered the views of any consulting parties participating in the Section 106 consultation.

### 5.3.1 Resource Description

The Broadway Brick Sewer (5DV.9953.1) and the Mississippi Clay Sewer (5DV.9954.1) qualify for protection as 4(f) resources. These properties are shown in Figure 5-1. Following is a brief description of the resources.

**5DV.9953.1, Broadway Brick Sewer, Under South Broadway from Mississippi Avenue south for approximately 300 feet**—The Broadway Brick Sewer is a 57-inch-diameter brick and clay storm sewer line. The first 30 feet from the intersection was made of two concentric rows of brick in 1922. The remaining 270 feet was built of vitrified clay tiles constructed at an unknown date but believe to be around the same time as the brick section. These modifications have compromised the integrity of this sewer segment. Approximately 14 miles of brick sewer remain in the Denver storm system.

**5DV.9954.1, Mississippi Clay Sewer, Under Mississippi Avenue from South Broadway west for approximately 100 feet**—The Mississippi Clay sewer is a 78-inch-diameter storm sewer line made of vitrified clay and was constructed in approximately 1922. Many of the early sewer lines in Denver were constructed of vitrified clay or brick and only about 30 to 40 miles of the vitrified clay storm sewer line remain in service today out of a total of about 230 miles of sewers in the Denver system.

### 5.3.2 Eligibility Determination

**5DV.9953.1, Broadway Brick Sewer**
Because the remaining 270 feet of the Broadway Brick Sewer segment is built of vitrified clay tiles, these modifications have compromised the integrity of this sewer segment. In letters dated October 4, 2007 and November 19, 2007, SHPO correspondence with CDOT indicated the segment does not retain enough integrity to support the overall eligibility of the entire linear resource. CDOT determined in a letter dated November 1, 2007 that pending additional research, the entire sewer system is potentially eligible. SHPO, on November 19 2007, indicated that the entire sewer systems are considered eligible to the NRHP. Letters are included in Appendix D.

**5DV.9954.1, Mississippi Clay Sewer**
In letters dated October 4, 2007 and November 19, 2007, SHPO correspondence with CDOT indicated this sewer segment lacks integrity and does not support the overall eligibility of the entire linear resource. This sewer segment connects to sewers build of rock, concrete, and
other materials, which have compromised its historic integrity. CDOT determined in a letter dated November 1, 2007 that pending additional research, the entire sewer system is potentially eligible. SHPO, on November 19, 2007, indicated that the entire sewer systems are considered eligible to the NRHP. However, the Historic Resources Survey Report for the project (August 27, 2007) indicated there are no other adjacent segments of vitrified clay sewer that would make this area have the potential to be a NRHP district. Letters are included in Appendix D.

Through the consultation process between CDOT, SHPO, and other interested parties as documented in the letters following this section, the two sewer segments were determined to lack integrity but are part of larger systems that are potentially eligible to the National Register.

5.3.3 Section 4(f) Use

In the case of the two historic sewer segments involved in the South Broadway Project, impacts would result from relocating inlets and drain pipes to improve drainage in this section of South Broadway. Both segments drain into a larger outfall on Mississippi Avenue that was constructed as part of the T-REX project. The impacts would be limited to a small section of the sewers where inlets are constructed or where new piping may need to be constructed to intersect the existing sewer alignment. The minor nature of this work still supports the determination of no adverse effect to these resources. SHPO concurrence on December 26, 2007 to the determination of no adverse effect for the two sewer segments is included in Appendix D.

5.3.4 All Possible Planning to Minimize Harm

The reconstruction of South Broadway and Mississippi Avenue in the study area will require sewer upgrades. It is anticipated both sewer segments will remain in use and connected to the larger system. Maintaining the use of the existing sewer segments will be determined in final design when the functionality and capacity of the segments is evaluated whether they can convey the projected stormwater capacity and the integrity from a safety standpoint. A possible avoidance and minimization measure still under consideration is laying a sewer line parallel to the existing Broadway Brick Sewer in the event additional capacity is required beyond what is available currently in the segment. Therefore, if possible, the existing sewer segments will remain in use and the number of drainage inlet locations will be maintained, but there is the possibility that the inlets will be relocated and perhaps more inlets installed depending on the design capacity needs.

A measure to minimize harm considered is to restrict the drainage design to use only the existing inlets, without the possibility of relocating or increasing the number of inlets in order to avoid additional disturbance to the existing segments. However, this measure would reduce the potential effectiveness and integrity of the drainage system and create the potential for adverse effects to adjacent properties because of inadequate drainage capacity.

5.3.5 De Minimis Finding

Based on the information presented above and in the attached documentation, the effects of this proposed improvement on the properties noted above constitute a de minimis impact and the requirements of 23 USC 138 and 49 USC 303 have been satisfied. Section 4(f) requires that the SHPO must concur in writing in the Section 106 determination of “no adverse effect” or “no
“historic properties affected.” The request for concurrence in the Section 106 determination includes a statement informing the SHPO that the FHWA intends to make a *de minimis* finding based upon their concurrence in the Section 106 determination. The SHPO and consulting parties have reviewed the proposed determinations of effect and have been informed of FHWA’s intent to make a *de minimis* finding. The SHPO has provided their written concurrence with the effect determinations and acknowledgement of the *de minimis* finding. The SHPO concurrence letter dated December 26, 2007 is attached.

A *de minimis* finding for significant historic resources is recommended when the Section 4(f) use is minimal or trivial. The *de minimis* impact finding is based on the degree or level of impact including any avoidance, minimization and mitigation or enhancement measures that are included in the project to address the Section 4(f) use. The *de minimis* impact finding is expressly conditioned upon the implementation of any measures that were relied upon to reduce the impact to a *de minimis* level.
October 4, 2007

Brad Beckham
Manager, Environmental Programs Branch
Colorado Department of Transportation
Environmental Programs Branch
4201 East Arkansas Avenue
Denver, CO 80222

Re: Determinations of Eligibility and Effect for South Broadway Improvements from Exposition to Arizona Avenue. (CHS #47447)

Dear Mr. Beckham,

Thank you for your correspondence dated September 17, 2007 and received by our office on September 21, 2007 regarding the review of the above-mentioned project under Section 106 of the National Historic Preservation Act (Section 106).

After review of the provided information, we concur with the finding of not eligible for the National Register of Historic Places (NRHP) for the resources listed below.

- 5DV.9955
- 5DV.9943
- 5DV.9944
- 5DV.9945
- 5DV.9946
- 5DV.9949
- 5DV.9952
- 5DV.9002
- 5DV.6187
- 5DV.9003
- 5DV.6188
- 5DV.8173
- 5DV.6174
- 6DV.6186

After review of the provided information, we concur with the finding of eligible for the NRHP for the resources listed below.

- 5DV.9947
- 5DV.9948
- 5DV.9950
- 5DV.9951
- 5DV.48

After review of the provided information, we concur with the finding that the segments listed below support the overall eligibility of the entire linear resource.

- 5DV.4783.4
- 5DV.4784.5
- 5DV.9217.3
After review of the provided information, we concur with the finding that the segments listed below do not support the overall eligibility of the entire linear resource.

- 5DV 9954.1. The Linear Component Form states that the entire linear is not eligible in item 17 and then potentially eligible in item 18. We concur that this segment does not support the overall eligibility of the entire linear resource.

After review of the provided information, we do not concur with the finding of eligibility for the resources listed below.

- 5DV 9953.1. The Linear Component Form states that the SHPO made an official determination of eligibility for the entire Broadway Brick Sewer; however, the finding was made only for a segment and not for the entire linear resource. After review of the provided information, we recommend that the segment, 5DV 9953.1, does not retain enough integrity to support the overall eligibility of the entire linear resource.
- The Re-Evaluation forms for the resources listed below state that the resources were officially determined not individually eligible in 1999 and 2003; however, we are not able to confirm that finding. According to our internal database as well as COMPASS, these resources were determined field not eligible in 1999 and 2003. These resources were determined by the SHPO to not contribute to a historic district. The submitted Re-Evaluation forms do not include any information on whether or not these resources are individually eligible.
  - 5DV 6237
  - 5DV 6238
  - 5DV 6239
  - 5DV 6240

Once we complete the consultation regarding the National Register eligibility for resources 5DV 6237, 5DV 6238, 5DV 6239, and 5DV 6240, we will be able to complete the consultation for effects.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

Please note that our compliance letter does not end the 30-day review period provided to other consulting parties.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

Georgianna Contiguglia
State Historic Preservation Officer

South Broadway EA
CHS #47447
October 4, 2007
DEPARTMENT OF TRANSPORTATION

Environmental Programs Branch
4201 East Arkansas Avenue
Shumate Building
Denver, Colorado 80222
(303) 757-9259

November 1, 2007

Ms. Georgianna Contiguglia
State Historic Preservation Officer
Colorado Historical Society
1300 Broadway
Denver, CO 80203

SUBJECT: Additional Information, Determinations of Eligibility and Effects, South Broadway Environmental Assessment (CHS #47447)

Dear Ms. Contiguglia:

This letter contains additional information regarding the Determinations of Eligibility and Effects for the project referenced above. We consulted with your office in this regard via a letter dated September 17, 2007. In your response of October 4, 2007, you requested additional information about several properties.

5DV9953.1 (Broadway Brick Sewer), 5DV9954.1 (Mississippi Clay Sewer): You agreed that the segments of these two separate sewers lack integrity but did not comment on the overall eligibility of the resources. For the purposes of Section 106 and pending a full field survey of these resources, we have determined that although segments 5DV9953.1 and 5DV9954.1 lack integrity, the entire sewer systems are potentially eligible.

5DV6237, 5DV6238, 5DV6239, 5DV6240: You stated that there were no official determinations of not eligible for these four properties; however, our records indicate that these properties were evaluated as part of the Valley Highway EIS project and were determined officially not eligible as reflected in correspondence dated March 11, 2003. A copy of that letter is enclosed for your review. Please note that we did evaluate these properties for individual eligibility in the re-evaluation forms for the South Broadway project and determined that not only are they non-contributing to a district, they are also individually not eligible. We continue to support the not eligible determination for these properties.

We request your concurrence with the Determinations of Eligibility and Effects outlined herein. If you require additional information, please contact CDOT Senior Staff Historian Lisa Schoch at (303) 512-4258.

Very truly yours,

Brad Beckham, Manager
Environmental Programs Branch

Enclosure:
Correspondence (SHPO Response to CDOT, March 11, 2003)

cc: Diana Litvak/Kirk Webb, CDOT Region 6
Shawn Wilbers, Platt Park Peoples Association
Everett Shigeta, Denver Landmarks Commission
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November 19, 2007

Brad Beckham
Manager, Environmental Programs Branch
Colorado Department of Transportation
Environmental Programs Branch
4201 East Arkansas Avenue
Denver, CO 80222

Re: Determinations of Eligibility and Effect for South Broadway Improvements from Exposition to Arizona Avenue. (CHS #47447)

Dear Mr. Beckham,

Thank you for your correspondence dated November 1, 2007 and received by our office on November 6, 2007 regarding the review of the above-mentioned project under Section 106 of the National Historic Preservation Act (Section 106).

After review of the provided information, we concur that the resources listed below are not eligible for the National Register of Historic Places.

- 5DV.6237
- 5DV.6238
- 5DV.6239
- 5DV.6240

We concur that resources 5DV.9953.1 and 5DV.9954.1 lack integrity and do not support the overall eligibility of the entire sewer systems.

After review of the finding of effect under Section 106, we concur with the finding of no historic properties affected under Section 106 for the resources listed below:

- 5DV.6237
- 5DV.6238
- 5DV.6239
- 5DV.6240

In regards to resources 5DV.9953.1 and 5DV.9954.1, we are not able to concur with the finding of no historic properties affected. We recommend a finding of no adverse effect under Section 106 since the entire sewer systems are considered eligible to the National Register of Historic Places.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.
Please note that our compliance letter does not end the 30-day review period provided to other consulting parties.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

For
Georgianna Contiguglia
State Historic Preservation Officer
STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Region 6, Planning and Environmental
2000 South Holly Street
Denver, CO 80222
(303) 757-9385
(303) 757-9036 FAX

December 18, 2007

Ms. Georgianna Contiuglia
State Historic Preservation Officer
Colorado Historical Society
1300 Broadway
Denver, CO 80203

SUBJECT: Additional Information and Section 4(f) De Minimis Notification, South Broadway Environmental Assessment (CHS#47447)

Dear Ms. Contiuglia:

This letter constitutes our response to your correspondence dated November 19, 2007 regarding the determination of effect and Section 4(f) De Minimis Notification for resources 5DV.9953.1 (Broadway Brick Sewer) and 5DV.9954.1 (Mississippi Clay Sewer) for the project referenced above.

We have additional information on proposed impacts to the sewer segments, both of which were determined to lack integrity but are part of larger systems that, pending additional research, are potentially eligible to the National Register. The sewer segments will both be impacted as a result of relocating inlets and drain pipes to improve drainage in this section of South Broadway. Both of these segments drain into a larger outfall on Mississippi constructed as part of the T-REX project. The impacts will be limited to small sections of the sewers, where inlets are constructed or where new piping may need to be constructed to intersect the existing sewer alignment. The minor nature of this work still supports the determination of no adverse effect to these resources.

Notification of Section 4(f) De Minimis Determination

Based on the no adverse effect finding outlined above, FHWA may make a de minimis finding for the Section 4(f) requirements for this historic site.

This finding has also been submitted to the Denver Landmark Preservation Commission and the Platt Park People’s Association for their review. If we receive comments from them, we will forward them to you.

If you require additional information, please contact CDOT Region 6 Senior Historian Dianna Litvak at (303) 757-9461.

Very truly yours,

Jim Paulmeno
Region 6 Planning and Environmental Manager

cc: Lisa Schoch, Environmental Programs Branch
Diana Bell, Carter Burgess
File
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December 18, 2007

Mr. Everett Shigeta
Denver Landmark Preservation Board
Denver Planning Services, Dept. 205
201 W. Colfax Ave.
Denver, CO 80202

SUBJECT: Additional Information and Section 4(f) De Minimis Notification, South Broadway Environmental Assessment (CHS#47447)

Dear Mr. Shigeta:

This letter constitutes our response to SHPO’s correspondence dated November 19, 2007 regarding the determination of effect and Section 4(f) De Minimis Notification for resources 5DV.9953.1 (Broadway Brick Sewer) and 5DV.9954.1 (Mississippi Clay Sewer) for the project referenced above.

We have additional information on proposed impacts to the sewer segments, both of which were determined to lack integrity but are part of larger systems that, pending additional research, are potentially eligible to the National Register. The sewer segments will both be impacted as a result of relocating inlets and drain pipes to improve drainage in this section of South Broadway. Both of these segments drain into a larger outfall on Mississippi constructed as part of the T-REX project. The impacts will be limited to small sections of the sewers, where inlets are constructed or where new piping may need to be constructed to intersect the existing sewer alignment. The minor nature of this work still supports the determination of no adverse effect to these resources.

This letter also includes a notification of Section 4(f) de minimis finding, which is explained in more detail below.

SECTION 4(f) AND DE MINIMIS

Background
In addition to Section 106 of the NHPA, FHWA must comply with Section 4(f), which is codified at both 49 U.S.C § 303 and 23 U.S.C. § 138. Congress amended Section 4(f) when it enacted the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (Public Law 109-59, enacted August 10, 2005) ("SAFETEA-LU"). Section 6009 of SAFETEA-LU added a new subsection to Section 4(f), which authorizes FHWA to approve a project that uses Section 4(f) lands that are part of a historic property without preparation of an Avoidance Analysis, if it makes a finding that such uses would have “de minimis” impacts upon the Section 4(f) resource, with the concurrence of the SHPO.

On December 12, 2005, the Federal Highway Administration issued its “Guidance for Determining De Minimis Impacts to Section 4(f) Resources” which indicates that a finding of de minimis can be made
when the Section 106 process results in a *no adverse effect or no historic properties affected* determination, when the SHPO is informed of the FHWA’s intent to make a *de minimis* impact finding based on their written concurrence in the Section 106 determination, and when FHWA has considered the views of any Section 106 consulting parties participating in the Section 106 process. This new provision of Section 4(f) and the associated guidance are in part the basis of this letter, and of FHWA’s determination and notification of *de minimis* impacts to the Denver Landmark Preservation Commission with respect to the proposed project. At this time we are notifying the Section 106 consulting parties per section 6009(b)(2)(C).

**Notification of De Minimis Finding**

The project has been determined to have *no adverse effect* to the segments of the Broadway Brick Sewer (5DV.9953.1) and the Mississippi Clay Sewer (5DV.9954.1) as indicated above. As part of the Section 106 consultation process, the State Historic Preservation Officer (SHPO) was also afforded an opportunity to concur on eligibility and effects determinations in correspondence between September and November 2007. The SHPO was also notified of this *de minimis* finding.

As a local preservation organization with a potential interest in this historic resource, we welcome your comments regarding our determinations of effect and any questions or comments regarding the Section 4(f) *de minimis* finding. Should you elect to respond, we request that you do so within 30 days of receipt of this letter. If you have questions or require additional information, please contact CDOT Senior Staff Historian Lisa Schoch at (303) 512-4258.

Very truly yours,

[Signature]

Jim Paulmeno
Region 6 Planning and Environmental Manager

cc:  Lisa Schoch, Environmental Programs Branch
     Amy Pallante, Colorado SHPO
     Diana Bell, Carter Burgess
     File
December 18, 2007

Ms. Sharon Withers, President
Platt Park People’s Association
1592 South Pearl Street
Denver, CO 80210

SUBJECT: Additional Information and Section 4(f) De Minimis Notification, South Broadway Environmental Assessment (CHS#47447)

Dear Ms. Withers:

This letter constitutes our response to SHPO’s correspondence dated November 19, 2007 regarding the determination of effect and Section 4(f) De Minimis Notification for resources 5DV.9953.1 (Broadway Brick Sewer) and 5DV.9954.1 (Mississippi Clay Sewer) for the project referenced above.

We have additional information on proposed impacts to the sewer segments, both of which were determined to lack integrity but are part of larger systems that, pending additional research, are potentially eligible to the National Register. The sewer segments will both be impacted as a result of relocating inlets and drain pipes to improve drainage in this section of South Broadway. Both of these segments drain into a larger outfall on Mississippi constructed as part of the T-REX project. The impacts will be limited to small sections of the sewers, where inlets are constructed or where new piping may need to be constructed to intersect the existing sewer alignment. The minor nature of this work still supports the determination of no adverse effect to these resources.

This letter also includes a notification of Section 4(f) de minimis finding, which is explained in more detail below.

**SECTION 4(f) AND DE MINIMIS**

**Background**

In addition to Section 106 of the NHPA, FHWA must comply with Section 4(f), which is codified at both 49 U.S.C § 303 and 23 U.S.C. § 138. Congress amended Section 4(f) when it enacted the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (Public Law 109-59, enacted August 10, 2005) (“SAFETEA-LU”). Section 6009 of SAFETEA-LU added a new subsection to Section 4(f), which authorizes FHWA to approve a project that uses Section 4(f) lands that are part of a historic property without preparation of an Avoidance Analysis, if it makes a finding that such uses would have “de minimis” impacts upon the Section 4(f) resource, with the concurrence of the SHPO.

On December 12, 2005, the Federal Highway Administration issued its “Guidance for Determining De Minimis Impacts to Section 4(f) Resources” which indicates that a finding of de minimis can be made
Ms. Withers  
December 19, 2007
Page 2

when the Section 106 process results in a no adverse effect or no historic properties affected determination, when the SHPO is informed of the FHWA’s intent to make a de minimis impact finding based on their written concurrence in the Section 106 determination, and when FHWA has considered the views of any Section 106 consulting parties participating in the Section 106 process. This new provision of Section 4(f) and the associated guidance are in part the basis of this letter, and of FHWA’s determination and notification of de minimis impacts to the Denver Landmark Preservation Commission with respect to the proposed project. At this time we are notifying the Section 106 consulting parties per section 6009(b)(2)(C).

Notification of De Minimis Finding
The project has been determined to have no adverse effect to the segments of the Broadway Brick Sewer (5DV.9953.1) and the Mississippi Clay Sewer (5DV.9954.1) as indicated above. As part of the Section 106 consultation process, the State Historic Preservation Officer (SHPO) was also afforded an opportunity to concur on eligibility and effects determinations in correspondence between September and November 2007. The SHPO was also notified of this de minimis finding.

As a local preservation organization with a potential interest in this historic resource, we welcome your comments regarding our determinations of effect and any questions or comments regarding the Section 4(f) de minimis finding. Should you elect to respond, we request that you do so within 30 days of receipt of this letter. If you have questions or require additional information, please contact CDOT Senior Staff Historian Lisa Schoch at (303) 512-4258.

Very truly yours,

Jim Paulmeno
Region 6 Planning and Environmental Manager

cc: Lisa Schoch, Environmental Programs Branch  
Amy Pallante, Colorado SHPO  
Diana Bell, Carter Burgess  
File
December 28, 2007

Jim Paulmeno
Region 6 Planning and Environmental Manager
Senior Historian
Colorado Department of Transportation
Region 6
2000 S. Holly Street
Denver, CO 80222

Re: Additional Information and Section 4(f) De Minimis Notification, South Broadway EA
(CHS #47447)

Dear Mr. Paulmeno,

Thank you for your correspondence dated December 18, 2007 and received by our office on December 24, 2007 regarding the review of the above-mentioned project under Section 106 of the National Historic Preservation Act (Section 106).

After review of the provided information, we concur with the finding of no adverse effect under Section 106 for resources 5DV.9953.1 and 5DV.9954.1. We also acknowledge the use of the de minimis finding for the Section 4(f) requirements.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

Please note that our compliance letter does not end the 30-day review period provided to other consulting parties.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

[Signature]
Georgianna Contuglia
State Historic Preservation Officer

cc: Dianna Litvak/CDOT Region 6
CHAPTER 6. COMMENTS AND COORDINATION

6.1 INTRODUCTION

This chapter describes the integrated program of agency and public coordination and involvement activities conducted during the development of the EA. These activities were specifically conducted to be open, inclusive, and ongoing throughout the preparation of the EA.

The objectives of the agency and public involvement program include:

- Outreach to all segments of the community including those not typically involved.
- Provide opportunities for timely agency and public review and comment on project findings and conclusions.
- Educate the public and agencies about the project and EA process, thereby enabling them to make knowledgeable and thoughtful comments.
- Provide project decision-makers with well-defined and clearly stated public and agency input to project decision-making.
The activities of the agency and public involvement program included agency and public scoping, public meetings and workshops, one-on-one contacts with property owners, agency briefings and coordination meetings, postings on the CCD’s Web site, and extensive media information. Special effort was made to reach low-income and minority communities located within the South Broadway study area. A formal public hearing is to be scheduled during the EA public review period.

**Agency Coordination**
Coordination with local, state, and federal agencies occurred throughout the project to ensure compliance with agency policies and procedures, transportation planning requirements, and to ensure accurate resource identification and impact evaluation.

Early in the process coordination meetings with relevant transportation agencies including CDOT, FHWA, RTD, and the FTA were setup to be held monthly throughout the process. The focus of the meetings has been on coordination with other planning efforts, discuss and resolve project issues, and meeting agency requirements for the NEPA process. These meetings also helped ensure that duplicating or missing efforts were avoided.

**Resource Agency Meetings**
Meetings were held with agencies to get their input and to discuss project impacts and obtain suggestions for mitigation. These meetings included:

- **Resource Agency Scoping Meeting, June 13, 2005**—Agencies in attendance: State Historic Preservation Officer (SHPO), Federal Highway Administration (FHWA), U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), Regional Transportation District (RTD).

- **State Historic Preservation Officer Meetings**—Meetings were held to discuss historic properties in the study area.

- **Air Pollution Control Division**—An informal consultation was held on July 18, 2007 to establish the required analyses and achieve air quality conformity for the project.

Summaries of agency meetings are contained in Appendix D.
6.2 PUBLIC INVOLVEMENT ACTIVITIES

Public involvement was conducted throughout the development of this EA to ensure widespread public awareness of the project and to provide opportunities for timely public input to project decision-making. Participants included interested citizens, property owners, business owners and operators, and the general public. Special effort was made to encourage the participation of the low-income and minority populations within the study area (see Section 6.3).

Project Mailing List—Based on mailing lists generated for previous studies in the area, a project mailing list was developed. The mailing list was prepared in a database format with fields identified to enable targeted mailings. Throughout the project, the mailing list was updated with additions gathered through project public involvement activities and expressions of interest in the project.

Issues Tracking—The public had numerous opportunities to submit comments throughout the process. These included attending public meetings, Consensus Committee meetings or workshops where verbal or written comments could be submitted, mail-in comment forms provided through the public involvement process, or through calling or writing the project management. Public comments received during the project were acknowledged, recorded and responded to either in written or individual contacts.

Project Web site—Selected project information was posted on the CCD's Web site at www.Denvergov.org/broadwaynepa and updated regularly with information regarding alternatives development and evaluation, and definition of community interests (public meetings, workshops, Consensus Committee meetings).

Media Outreach—Extensive use of both print and electronic media for project activities provided opportunity for extensive ongoing awareness of the project (see Table 6-1). Public meetings and key public involvement activities were announced through information provided to local media, neighborhood newspapers and neighborhood group newsletters. The media information included news releases, articles, inserts, public service announcements and display ads as appropriate, developed and placed by the Project Team. Information was prepared and placed prior to and after each public meeting. The media outlets included:
Table 6-1. Media Outreach

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Television Stations (Channels 2, 4, 7, and 9)</td>
<td>Recorded meeting highlights for evening news reports (not all channels at every meeting).</td>
</tr>
<tr>
<td>Radio Stations</td>
<td>Local stations provided press release for public meetings.</td>
</tr>
<tr>
<td>La Voz Nueva</td>
<td>Spanish/English language newspaper. City-wide distribution, but focused in Hispanic speaking neighborhoods.</td>
</tr>
<tr>
<td>Herald Dispatch</td>
<td>Newspaper serving the south central portion of the CCD, including the neighborhoods included in project activities.</td>
</tr>
<tr>
<td>Downtown Denver News</td>
<td>Downtown-area newspaper. News releases providing project updates at key project milestones. Display ads, meeting notices.</td>
</tr>
<tr>
<td>Washington Park Profile</td>
<td>Community newspaper serving neighborhoods in the area of the project. Special articles about the project at key milestones and prior to and after the public meetings. Display ads, notices.</td>
</tr>
<tr>
<td>Platt Park Post, Baker Bark, WUCA Focus</td>
<td>Neighborhood organization newsletters, inserts, news releases, articles, and notices.</td>
</tr>
</tbody>
</table>

**Neighborhood Organization and Business Outreach**—The Project Team conducted 30 face-to-face interviews with recognized community leaders, including elected officials and key staff, representatives of relevant organizations or interest groups, identified opinion leaders, business owners/operators, major property owners, and developers to gather ideas on how to effectively implement the public involvement process, encourage public participation, identify issues, and to begin to build relationships with members of the community.

The Project Team scheduled and conducted more than 30 meetings/briefings about the project with neighborhood groups and business owners in the area. These were informational presentations, usually scheduled during regular meetings of the organizations to provide timely information about the progress of the project and provide opportunity for the individuals and groups to voice their specific concerns and issues. During this process, special effort was made to identify low-income and minority populations in the area in order to identify the best methods for their involvement.

**Neighborhood Organizations**
- Athmar Park Neighborhood Association
- Baker Historic Neighborhood Association
- West Washington Park Neighborhood
- West University Community Association
- Ruby Hill Neighborhood Association
- Platt Park People’s Association
- Overland Neighborhood Association
- Broadway Area Revitalization District
- Cherokee Denver Redevelopment Advisory Committee
- Platt Park Residents’ Coalition
Public Meetings—Three public meetings were held at key project milestones. The public meetings provided an opportunity for the public to learn more about the project, have their questions answered by CCD and Project Team members, and provide comments regarding the project. The public meetings included open house review of project information and “open-mic” opportunity for public comment, depending on the focus of the meeting and the type of information presented. Multiple options for the public to provide comments were provided. Summaries of the public meetings and comments received are included in Appendix E.

Community Planning Workshops—Two community planning workshops were conducted for local input to the definition of a pedestrian/bicycle plan and for initial identification of transportation improvement alternatives. Residents and businesspeople within the study area and adjacent neighborhoods were invited to participate. Summaries of the public workshops are included in Appendix E.

<table>
<thead>
<tr>
<th>Public Meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>#1:</strong> Scoping meeting to identify community transportation and related issues and concerns to be addressed by the project (5/12/05).</td>
</tr>
<tr>
<td><strong>#2:</strong> Public input and comment on the Interests Matrix, Purpose and Need, project Goals, Level I screening criteria, and the transportation improvement suggestions identified by the Consensus Committee (11/2/2005).</td>
</tr>
<tr>
<td><strong>#3:</strong> Public input and comment on the process and outcomes of the development and refinement of alternatives for the Level 3B screening. Presentation of next steps in the South Broadway NEPA Process (6/27/06).</td>
</tr>
<tr>
<td><strong>#4:</strong> Public hearing on the EA (to be scheduled during public review period).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Workshops</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>#1:</strong> Bicycle/Pedestrian—Identification of origins and destinations, current conditions, and suggestions for improvements, including improved access to the Broadway/I-25 transit station (11/29/05).</td>
</tr>
<tr>
<td><strong>#2:</strong> Alternatives Packaging—Identify packages of screened transportation improvement suggestions (8 packages) (1/9/06).</td>
</tr>
</tbody>
</table>

Consensus Committee—Each neighborhood organization within the study area and in the adjacent neighborhoods was a member of the roundtable Consensus Committee (along with the client, lead and cooperating agencies) that met at regularly-scheduled monthly meetings and briefings. The committee was the primary source of public input to project decision-making (see Table 6-2).
Table 6-2. Consensus Committee Meetings

<table>
<thead>
<tr>
<th>Date</th>
<th>Meeting #</th>
<th>Consensus Committee Meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 23, 2005</td>
<td>#1</td>
<td>Identify issues and concerns.</td>
</tr>
<tr>
<td>July 21, 2005</td>
<td>#2</td>
<td>Develop project Purpose and Need.</td>
</tr>
<tr>
<td>September 15, 2005</td>
<td>#3</td>
<td>Project goals defined. Identify transportation improvement suggestions to address travel needs.</td>
</tr>
<tr>
<td>October 20, 2005</td>
<td>#4</td>
<td>Initial traffic volumes presented. Develop Level 1 (fatal flaw) screening criteria.</td>
</tr>
<tr>
<td>November 17, 2005</td>
<td>#5</td>
<td>Present need for refinements in the DRCOG 2030 regional traffic model, define project termini and study area. Develop Level 2 screening criteria.</td>
</tr>
<tr>
<td>December 15, 2005</td>
<td>#6</td>
<td>Final Purpose and Need, project goals, and study area. Review Level 1 and Level 2 screening of transportation improvement suggestions.</td>
</tr>
<tr>
<td>January 19, 2006</td>
<td>#7</td>
<td>Refine 7 alternatives packages.</td>
</tr>
<tr>
<td>March 12, 2006</td>
<td>#8</td>
<td>Present regional and local traffic projection.</td>
</tr>
<tr>
<td>April 20, 2006</td>
<td>#9</td>
<td>Develop Level 3 screening criteria. Identify bicycle and pedestrian needs, and the No-Action Alternative.</td>
</tr>
<tr>
<td>May 18, 2006</td>
<td>#10</td>
<td>Evaluation of Level 3A screening.</td>
</tr>
<tr>
<td>June 15, 2006</td>
<td>#11</td>
<td>Repackage alternatives for Level 3B screening.</td>
</tr>
<tr>
<td>September 21, 2006</td>
<td>#13</td>
<td>Discuss impacts, coordination with Valley Highway EIS. Continue work on Preferred Alternative.</td>
</tr>
<tr>
<td>October 19, 2006</td>
<td>#14</td>
<td>Discuss elements of Preferred Alternative.</td>
</tr>
<tr>
<td>March 15, 2007</td>
<td>#16</td>
<td>Recommend a Preferred Alternative.</td>
</tr>
<tr>
<td>April 19, 2007</td>
<td>#17</td>
<td>Consensus reached in support of Preferred Alternative.</td>
</tr>
<tr>
<td>May 17, 2007</td>
<td>#18</td>
<td>Final committee debriefing.</td>
</tr>
</tbody>
</table>

6.2.1 Summary of Input Obtained

The input received through the public and agency involvement activities helped guide the project to a Preferred Alternative that received unanimous consent as an acceptable alternative to evaluate in the Environmental Assessment. Participation, dedication and hard work by members and agencies of the Consensus Committee and an open collaborative process helped arrive at the Preferred Alternative. It was important to the committee to create an environment along South Broadway that encouraged the success of the Transit Oriented Developments (TOD) by creating an inviting place for pedestrians and bicyclists that maximized the use of the area transit options.
The following list describes key provisions related to future conditions that incorporated comments received from the public at large and helped the Consensus Committee reach unanimous consent in the recommendation of the Preferred Alternative:

1. Interim Parking: The Consensus Committee expressed concern that if the full build configuration were built, that traffic would be attracted to the new capacity. This was expressed as a concern that “If we build it, they will come”. In an effort to match the capacity to the interim demand, the outside lanes would be used for parking until such time as demand necessitates that they be converted to travel lanes. The hope is that the initial parking will improve the pedestrian experience by providing a buffer from moving traffic and give any on-street business constructed as part of the redevelopment projects a better chance to establish themselves.

2. Cut through Traffic: In conjunction with the concern that the full build laneage would induce traffic growth, other committee members expressed concern that if the full capacity required was delayed, cut-through traffic patterns would develop to the detriment of the surrounding existing neighborhoods. These members wanted to make certain that when the additional lanes were needed that the outside lanes would be converted to travel lanes in a timely manner.

3. Trigger Language: The trigger language detailed in Chapter 2 captures the balance struck between these two competing hopes and fears.

4. Important other suggestions: As part of the alternatives development process there were ideas and potential projects that the committee felt could address problems in the South Broadway area that were eliminated because they did not meet the Purpose and Need of the current NEPA process. The committee felt it important to document these other suggestions so as not to lose the progress made at addressing other concerns. Figure 6-1 shows these projects. The projects are described below with the reason they were screened from this process and the intent that the committee felt these projects would address.

a. Future Parkway Connection to Cherokee Street: Eliminated because it did not meet the Purpose and Need of the Congestion on South Broadway and it is outside of the study area. This project is part of the Baker Historic Neighborhood Plan. This connection would improve the alternate mode connections between the Baker Neighborhood and the new TODs helping to further reduce the vehicle trips generated by the TODs and the transit stations.

b. Signal Removal at Center Avenue: Eliminated because it did not address the Purpose and Need. With the installation of signals at Exposition Avenue as part of the Preferred Alternative, the signals at Center Avenue are less likely to be needed and potentially could be removed in the future. It should be noted that the Denver Design Center which has an access point at Broadway and Center Avenue has requested that the signal at South Broadway and Center Avenue remain as it is important to their existing tenants and customers to access their site.
Figure 6-1. Unused Suggestions

- Future parkway connection to Cherokee Street
- Signal removal at intersection
- Signal removal at intersection
- Future NB I-25 ramp extension from wedge ramp
- If future conditions allow reconsider adding NB Broadway to SB I-25 access as a right turn ramp similar to existing configuration

LEGEND
- Proposed Roadway Improvements
- Multi-Use Trail (15')
- Pedestrian Facilities (13.5')
- Proposed Structure/Wall
c. Future Northbound I-25 Ramp Extension from Wedge Ramp: Eliminated because it did not improve congestion on South Broadway appreciably and has a high cost to minimal benefit ratio. The intent of this idea was twofold. The first was to provide a more standard access to the interstate for travelers on southbound South Broadway accessing northbound I-25. Additionally, the ramp in conjunction with the off-ramp at Santa Fe Drive could help to provide another east-west connection across the CML.

d. If Future Conditions Allow, Reconsider Adding Northbound South Broadway to Southbound I-25 Access as a Right Turn Ramp Similar to Existing Configuration: Eliminated because physically it cannot be provided with the grade-separated ramp. Similar to C above, providing a ramp for northbound South Broadway traffic to access southbound I-25 with a right-turn would provide a more standard access maneuver. Additionally, it is hoped that providing this movement as easily as possible would reduce the propensity for redevelopment traffic to use Mississippi Avenue and Buchtel Boulevard to access southbound I-25. This project could potentially become a possibility if the I-25 mainline moves north or the light rail structure is removed.

6.3 **ENVIRONMENTAL JUSTICE OUTREACH**

Early-on investigation indicated there was no identifiable Environmental Justice (EJ) population within the study area; however, there were identifiable populations in the neighborhoods surrounding the study area. These included minority and low-income populations within the neighborhoods of which portions are found within the study area and include: Baker, Overland, Platt Park and West Washington Park.

Initial interviews with community leaders indicated that the most effective means of reaching out to and communicating with all segments of the local population to encourage participation in the project would be through the neighborhood organizations and local newspapers and newsletters.

Public involvement was organized to include the participation of neighborhoods both within the study area and the adjacent neighborhoods utilizing existing registered neighborhood organizations. Information about the project and its activities was provided utilizing the neighborhood organizations’ communications networks and in information published in the local and community media.

Outreach was conducted to encourage participation focusing on the neighborhood organizations and the local and community media. The intent was to encourage and support EJ participation in all of the project activities through these common avenues, as well as providing additional awareness and support.

Specific opportunities of participation included involvement in the "mainline" project public involvement activities: the Consensus Committee, issues focused community planning workshops, and public meetings.

**Consensus Committee**—EJ awareness of Consensus Committee activities and encouragement to participate included:
• Pre-meeting distribution of agenda and meeting information sent to the neighborhood organizations for distribution to their members and placement at key neighborhood locations. Other distributions methods utilized included through councilpersons, and "blasts" to all residents. Information invited all to attend and participate at the meeting. Where requested, information was available in Spanish.

• Pre-meeting information posted on the project Web site with Spanish translation available.

• Post-meeting summary sent to neighborhood organizations for distribution to members and others with Spanish translation available.

• Project Team members available prior to and after meetings to meet with neighborhood organizations or one-on-one to discuss committee activities.

Community Workshops—EJ populations were specifically targeted for participation in these workshops through notification from their neighborhood organizations and information published in community-based newsletters and newspapers.

Public Meetings—The three public meetings provided opportunity for additional citizen input to project decision-making and EJ populations were encouraged to attend through neighborhood organizations, both within and adjacent to the study area, being utilized to "get the word out". EJ awareness and encouragement to attend included:

• Scheduled presentations with each neighborhood organization by Project Team members with "leave behind" flyers and project information in both English and Spanish, for door-to-door and email distribution to members.

• Placement of flyers in Spanish and English by Project Team members at key neighborhood locations (libraries, community centers, churches, etc.).

• Posting of meeting information on the project web site with translation available.

• Notice was given of the availability of interpreters at the meetings.

• Extensive pre- and post-meeting media information in city-wide newspapers, community newspapers and radio news programs serving the area, including Spanish language outlets, and articles and inserts in neighborhood organization newsletters.

Media Outreach—Utilization of Spanish language newspapers and radio to convey project information including opportunities for involvement provided ongoing awareness to low-income and minority populations. Media outlets also included free publications sent to members of neighborhood organizations. For a complete list of media outlets see Table 6-1.

6.4 Public Hearing

A public hearing will be held during the 30-day public and agency review period. The purpose of the hearing is to receive comments from the public on the South Broadway EA and the Preferred Alternative identified in the EA. Prior to the hearing, copies of the EA were made
available for public review at four locations and on the CCD’s Web site at http://www.denvergov.org/BroadwayNEPA/.

- Denver Public Library Central Branch, 10 West Fourteenth Avenue Parkway, Denver, CO 80204
- Denver Public Library Decker Branch, 1501 South Logan Street, Denver, CO 80210
- City and County of Denver, Wellington E. Webb Building, Municipal Office Building, Public Works Department, 201 West Colfax Avenue, Denver, CO 80202
- CDOT Region 6, Planning and Environmental Section, 2000 South Holly Street, Denver, CO 80222
- FHWA Colorado Division, 12300 West Dakota Avenue, Suite 180, Lakewood, CO 80228

Display ads in local newspapers and news releases will announce the availability of the EA for review and the date, time and location of the public hearing. Written comments can be submitted by standard mail or E-mail to:

  Michael Gill Jr., P.E.
  Department of Public Works
  Capital Projects Management
  201 West Colfax Avenue, Department 506
  Denver, Colorado 80202
  Michael.Gill@denvergov.org