

MARTIN LUTHER KING, JR. BOULEVARD EXTENSION  
ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to:  
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and 49 USC 303

by the  
Colorado Department of Transportation

and the  
US Department of Transportation  
Federal Highway Administration

Submitted by:



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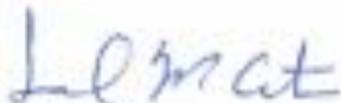


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## ACRONYMS AND ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
BLNC	Bluff Lake Nature Center
BMPs	Best Management Practices
BTPD	black-tailed prairie dogs
CCD	City and County of Denver
COA	City of Aurora
CDOT	Colorado Department of Transportation
CDOW	Colorado Division of Wildlife
CDPHE	Colorado Department of Public Health and Environment
CDPS	Colorado Discharge Permit System
CEQ	Council on Environmental Quality
CO <sub>2</sub>	carbon dioxide
DIA	Denver International Airport
DRCOG	Denver Regional Council of Governments
<i>E. coli</i>	<i>Escherichia coli</i>
EA	Environmental Assessment
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FHWA	Federal Highway Administration
Fitzsimons	Anschutz/Fitzsimons Medical Campus
GDP	South Stapleton General Development Plan
GHGs	greenhouse gases
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
MLK	Martin Luther King, Jr.
MS4	Municipal Separate Storm Sewer System
MSATs	mobile source air toxics
NANO	Northwest Aurora Neighborhood Organization
PM <sub>10</sub>	particulate matter less than 10 microns in diameter
REC	Recognized Environmental Condition
RTD	Regional Transportation District
SCRG	Sand Creek Regional Greenway
SIA	Stapleton International Airport
SNC	Stapleton Numeric Criteria
Stapleton	Stapleton Redevelopment Area
TSM	Transportation System Management
U.S.	United States
VMT	vehicle miles traveled
VOCs	volatile organic compounds

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## 1.0 OVERVIEW

The Martin Luther King, Jr. Boulevard (MLK) extension project is located in Denver, Colorado in the Stapleton Redevelopment Area (Stapleton). It proposes to provide an east-west arterial connection between Havana Street and Peoria Street to connect MLK Boulevard directly to Fitzsimons Parkway and Peoria Street. Havana Way would be renamed MLK Boulevard and widened to a four-lane arterial. The length of the MLK Boulevard extension, from Havana Street to Peoria Street, would be approximately 1.1 miles (see Figure 2-1).

Stapleton is one of the nation's largest urban mixed-use infill developments. At completion in 2035, Stapleton is forecast to house over 30,000 residents and provide employment to over 35,000 people. This Environmental Assessment (EA) has been prepared in a cooperative effort between the Federal Highway Administration (FHWA), the Colorado Department of Transportation (CDOT), the City and County of Denver (CCD), the City of Aurora (COA), and Park Creek Metropolitan District (PCMD).

### 1.1 Project Location

The project is located in the eastern portion of the Stapleton Redevelopment Area, the site of the former Stapleton International Airport (SIA). The majority of the project is located within CCD, with a small portion in the COA. To the east of Peoria Street and the project area is the Anschutz/Fitzsimons Medical Campus (Fitzsimons), another nearby redevelopment area that will employ up to 45,000 people at full build-out. To the south of 26<sup>th</sup> Avenue and the former airport is existing residential development within the COA.

### 1.2 Existing Transportation System

East MLK Boulevard extends from near downtown Denver through Stapleton to Havana Street as a four- and six-lane arterial. From Havana Street, Havana Way extends east past the Bluff Lake Nature Center (BLNC) as a two-lane arterial. Near the BLNC, Havana Way turns to the south as Moline Street and intersects with 25<sup>th</sup> Avenue (see Figure 1-1).

North of the project area, Havana Street is a two-lane arterial. At MLK Boulevard, Havana Street becomes a 1-way couplet with Lola Street. Peoria Street is a six-lane arterial, approximately one mile east of Havana Street. Although Peoria Street is six lanes, only four lanes are provided on the Sand Creek bridge, located approximately 1,000 feet north of Peoria's intersection with Fitzsimons Parkway. Both Havana Street and Peoria Street provide access to I-70 to the north. Fitzsimons Parkway is a four-lane arterial that provides access to the medical campus and I-225 at Colfax Avenue.

There is currently no regional arterial connection from the eastern terminus of MLK Boulevard at Havana Street to Peoria Street.

The four existing signalized intersections on the MLK Boulevard/29<sup>th</sup> Drive couplet and the Havana Street/Lola Street couplet provide two through lanes in each direction at each intersection. The intersection at Peoria Street and Fitzsimons Parkway is a three-leg signalized intersection.

An existing bicycle and pedestrian path extends along Havana Way from Havana Street to Moline Street. Near where Havana Way turns to connect to Moline Street the path continues to the east, parallel to Sand Creek before crossing under Peoria Street. Currently the only two bus routes in the project area are the 121L and Path E routes on Peoria Street.

Existing traffic volumes for the transportation system are provided in Table 1-1.

**Table 1-1  
Existing Traffic Volumes**

Roadway	2008/2009 Traffic Count		
	Daily	AM Peak Hour	PM Peak Hour
Havana Street - north of Havana Way	10,500	920	1,050
Havana Street (southbound) - at MLK Blvd	5,120	380	590
MLK Boulevard (westbound) - west of Havana St	3,880	390	500
Iola Street (northbound) - south of 29th Dr	2,420	290	250
29 <sup>th</sup> Drive (eastbound) - west of Havana St	4,400	330	530
Peoria Street - south of Fitzsimons Pkwy	29,000	N/A	N/A
Peoria Street - north of 33 <sup>rd</sup> Avenue	25,800	N/A	N/A
Fitzsimons Parkway - east of Peoria St	4,100	N/A	N/A

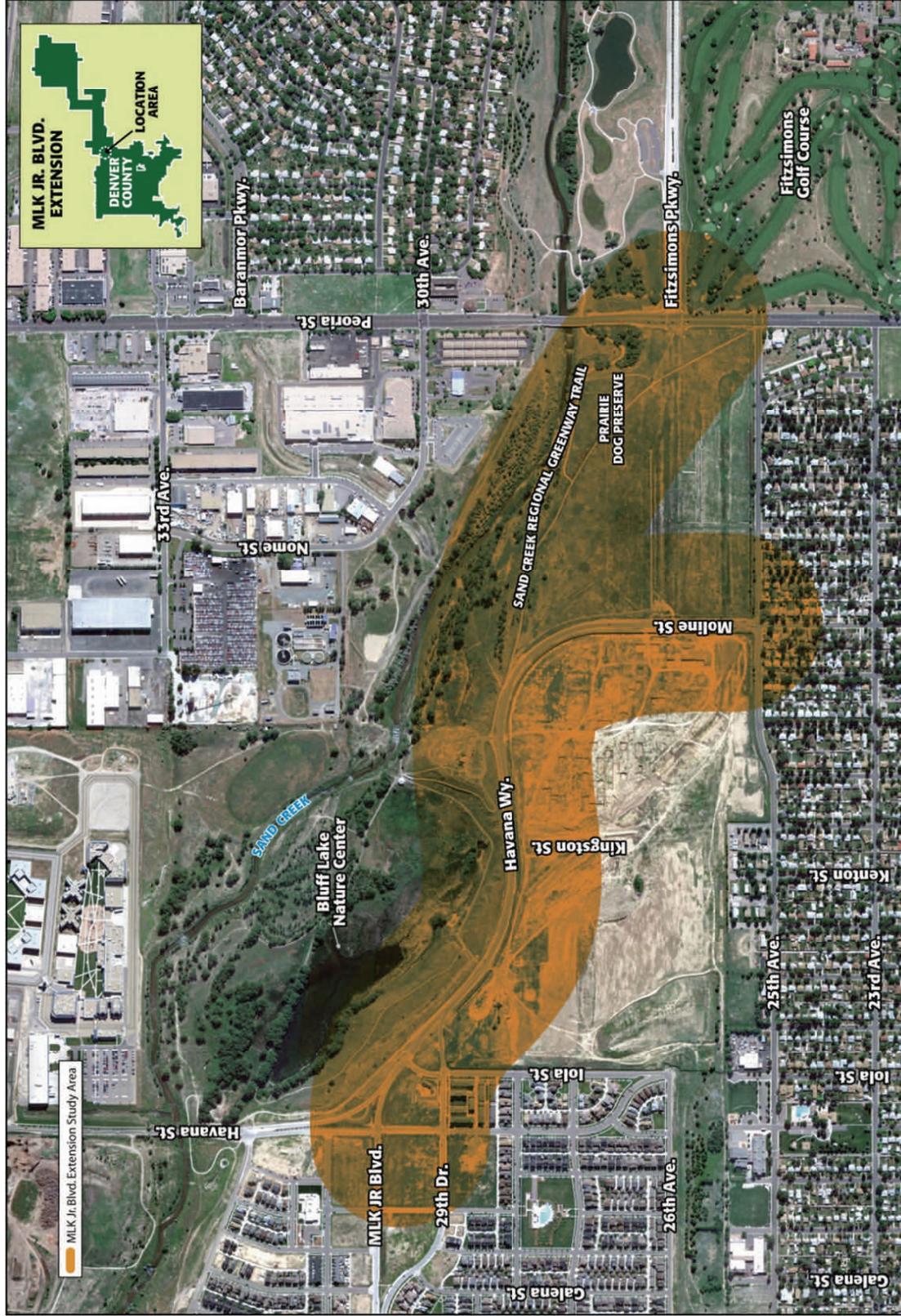
Sources: Fehr & Peers 2009; City of Aurora 2009.

N/A = Data not available.

### 1.3 Project Purpose and Need

The purpose of the project is to improve an east-west arterial connection between Havana Street and Peoria Street, a distance of approximately 1.1 miles. The project needs are to:

- Improve traffic congestion - in 2035, the intersection of Peoria Street and Fitzsimons Parkway is expected to operate at Level of Service (LOS) E in the morning peak hour and LOS F in the evening peak hour under No Build conditions.
- Reduce out-of-direction travel - a connection of existing arterial corridors would reduce the out of direction travel currently required between the Stapleton and Fitzsimons redevelopments.



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**Figure 1-1**  
Project Location and Study Area



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## 2.0 ALTERNATIVES

This section discusses the alternatives considered for this EA. Three alternatives, the No Build, Transportation System Management (TSM), and a Build Alternative were considered.

### 2.1 No Build Alternative

The No Build Alternative would not extend MLK Boulevard from Havana Street to Peoria Street or improve the connection to Moline Street. Traffic in the area—including that on 25<sup>th</sup> Avenue and the existing Havana Way—would continue to increase. Traffic congestion and delay would also increase at adjacent and nearby intersections.

### 2.2 Transportation System Management Alternative

The TSM Alternative includes measures to improve corridor operations without the extension of MLK Boulevard. Without the connection of MLK Boulevard between Havana Street and Peoria Street, traffic would use the existing Havana Way and 25<sup>th</sup> Avenue to travel between the Stapleton and Fitzsimons developments. The TSM Alternative includes measures to coordinate existing traffic signals and improve turn lanes to enhance traffic flow at intersections. These improvements would occur at three intersections: 25<sup>th</sup> Avenue and Moline Street, 25<sup>th</sup> Avenue and Peoria Street, and Peoria Street and Fitzsimons Parkway. A drawing of the TSM Alternative is shown in **Figure 2-1**. Travel demand management strategies, such as increased bus service, encouragement of carpooling, and guaranteed ride home program would also be implemented.

### 2.3 Build Alternative

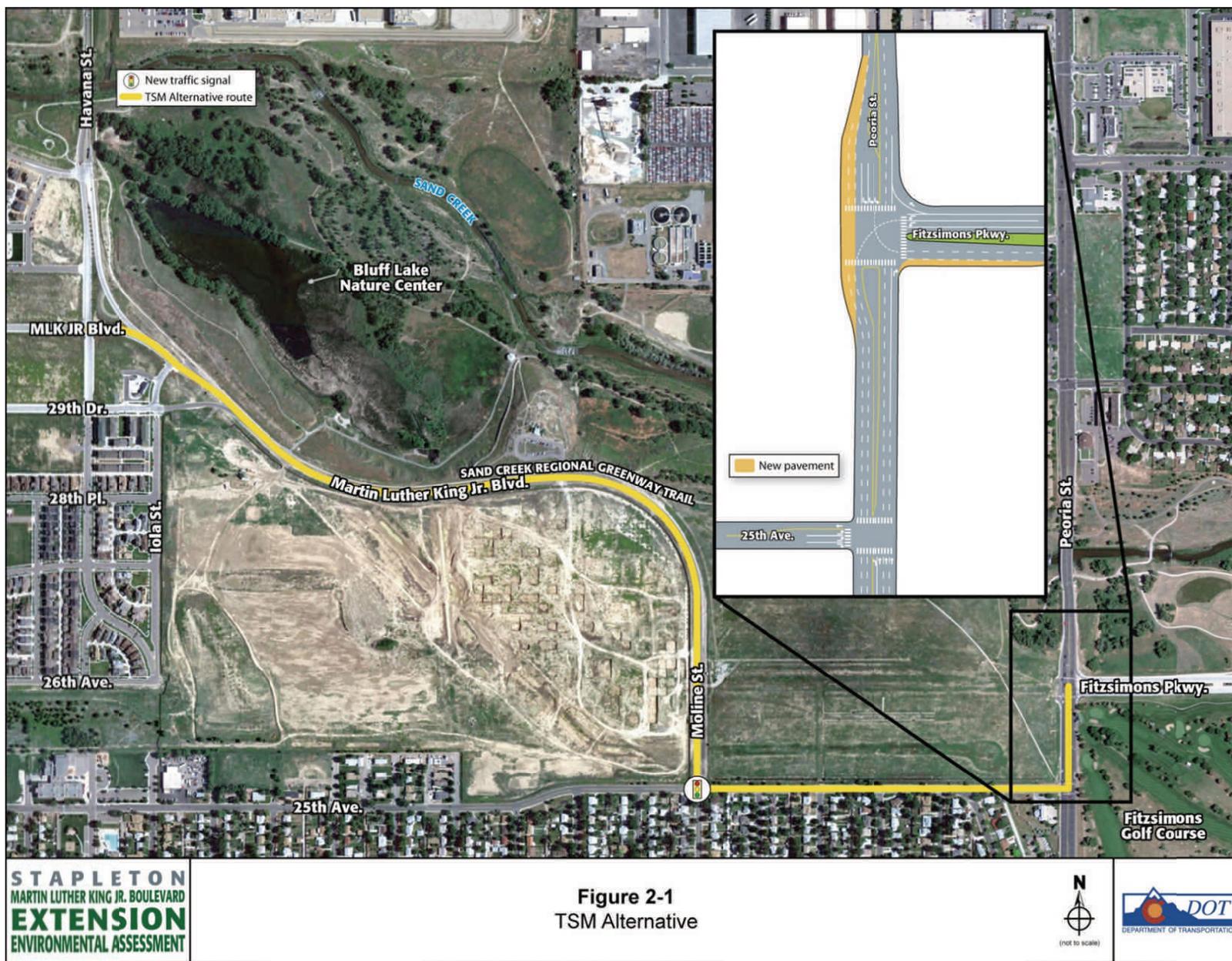
The Build Alternative would reconstruct and widen the existing Havana Way to a four-lane arterial and extend it east to the existing intersection of Peoria Street and Fitzsimons Parkway, a distance of approximately 1.1 miles. A detached 10-foot wide, multi-use path would be constructed along the length of the extension to provide pedestrian and bicycle connectivity. Landscaping would be provided in a raised median and the tree lawn between the roadway and multi-use path. The roadway would be designed to accommodate the proposed number 89 bus route, which would provide service along this section of MLK Boulevard. The connection along Moline Street to 25<sup>th</sup> Avenue would be reconstructed as a two-lane collector street. A plan view drawing of the Build Alternative and a typical section is shown in **Figure 2-2**. Final roadway cross-section shall comply with CCD and American Association of State Highway and Transportation Officials (AASHTO) engineering criteria.

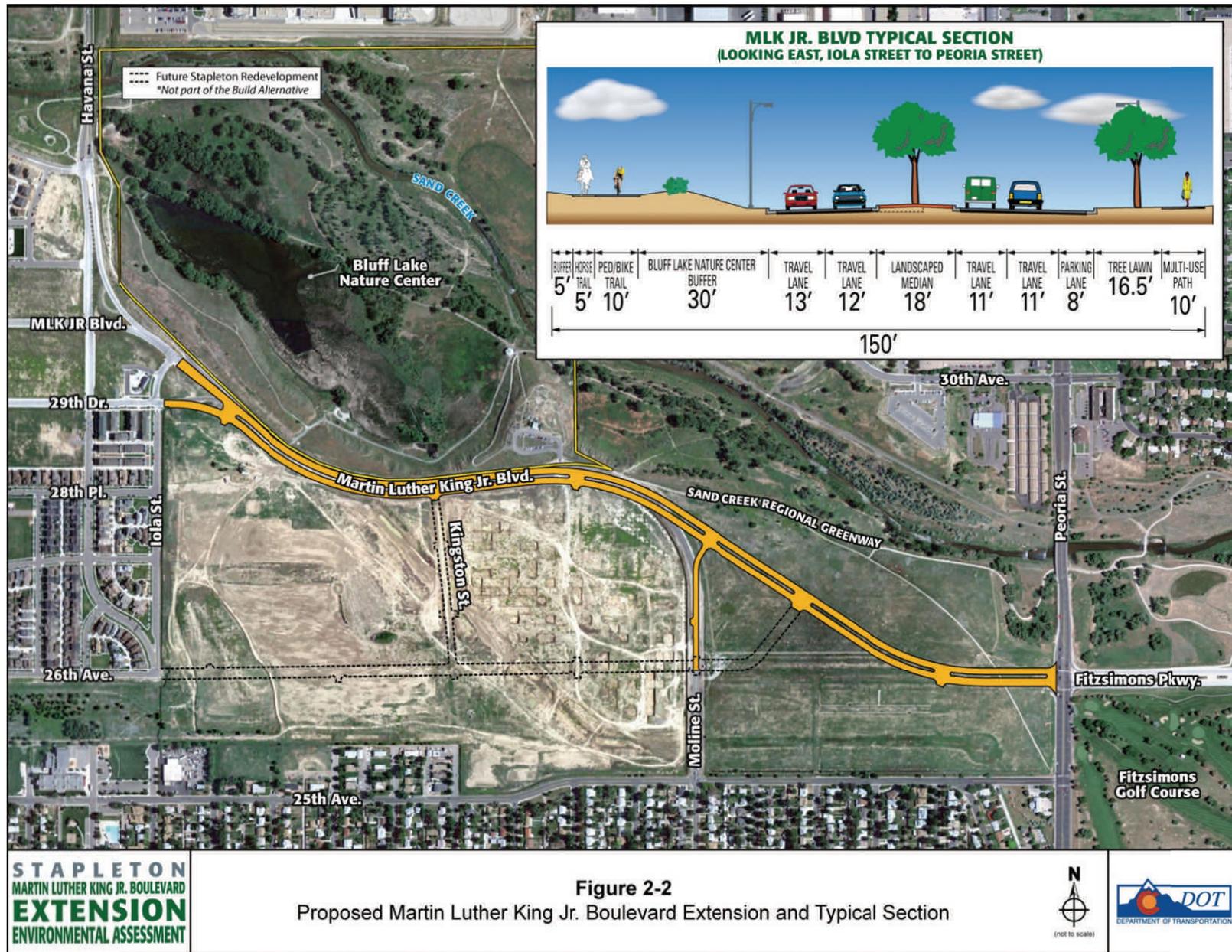
The forecast 2035 traffic volumes for the Build Alternative are provided in **Table 2-1**.

**Table 2-1**  
**Forecast 2035 Traffic Volumes for the Build Alternative**

Roadway	2035 Build Alternative		
	Daily	AM Peak Hour	PM Peak Hour
Havana Street – north of Havana Way	14,640	1,930	1,850
Havana Street (southbound) – at MLK Boulevard	8,320	910	930
MLK Boulevard (westbound) – west of Havana St	10,640	1,210	830
Iola Street (northbound) – south of 29th Dr	3,000	130	320
29 <sup>th</sup> Drive (eastbound) – west of Havana St	15,110	1,480	1,080
Peoria Street – south of Fitzsimons Pkwy	64,580	4,010	4,390
Peoria Street – south of Smith Rd	63,820	3,690	4,070
Fitzsimons Parkway – east of Peoria St	25,780	2,010	2,510
MLK Boulevard – east of Havana St	29,280	3,560	3,330
MLK Boulevard – west of Peoria St	25,240	3,320	3,330

Source: URS Corporation, 2010; DRCOG 2035 Travel Demand Model (DRCOG 2009).





Forecast intersection Levels of Service for 2035 conditions are provided in Table 2-2.

**Table 2-2  
Forecast Intersection Levels of Service (LOS) for 2035**

Intersection	2035 No Build Alternative				2035 Build Alternative			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Average Delay (seconds)	LOS	Average Delay (seconds)	LOS	Average Delay (seconds)	LOS	Average Delay (seconds)	LOS
MLK Blvd (westbound)/ Havana St (southbound)	33.5	C	28.7	C	20.1	C	17.5	B
MLK Blvd (westbound)/ Iola St (northbound)	27.4	C	22.7	C	11.7	B	10.9	B
29 <sup>th</sup> Drive (eastbound)/ Havana St (southbound)	18.9	B	18.8	B	20.4	C	23.2	C
29 <sup>th</sup> Drive (eastbound)/ Iola St (northbound)	55.2	E	45.6	D	6.7	A	11.8	B
MLK Blvd/ Peoria St/ Fitzsimons Pkwy	69.6	E	153.7	F	51.9	D	73.7	E

Source: URS Corporation, 2010.

## 2.4 Screening of Alternatives

The No Build Alternative does not meet the purpose and need of the project. Traffic between the Stapleton and Fitzsimons developments would use the existing street network, requiring out-of-direction travel and providing poor LOS at the Peoria Street and Fitzsimons Parkway intersection. However, the No Build Alternative was carried forward as a baseline for comparison with other alternatives. Unless specifically stated, it is assumed the No Build Alternative would have no adverse effect on the natural or human environment.

The TSM Alternative does not complete the east-west arterial connection between Havana Street and Peoria Street in accordance with the *Stapleton Master Plan* (CCD 1995a). Instead, vehicles would use the existing Havana Way, 25<sup>th</sup> Avenue, and Peoria Street to access the Fitzsimons campus, requiring out-of-direction travel. The increased traffic along 25<sup>th</sup> Avenue would create safety concerns for pedestrians and increase noise levels for the adjacent neighborhood, a residential area with low-income residents. The turn lanes proposed at the intersections of Peoria Street with Fitzsimons Parkway and 25<sup>th</sup> Avenue may require right-of-way from the Fitzsimons Golf Course, a Section 4(f) property. For these reasons, the TSM alternative was eliminated from further consideration.

The Build Alternative is recommended as the Preferred Alternative based on the ability to meet the purpose and need.

## 2.5 Funding Plan and Project Schedule

The estimated cost of the MLK Boulevard extension project is \$14.5 million. Table 2-3 presents the main components of the estimate.

**Table 2-3  
 Estimated Construction Cost**

Item	Cost
Construction	\$9.5M
Design/Construction Oversight/Agency Costs	\$3.3M
Contingencies	\$1.7M
<b>Total Cost</b>	<b>\$14.5M</b>

Source: Incline Associates, 2010.

This project is included in the fiscally-constrained Regional Transportation Plan, *2035 Metro Vision Regional Transportation Plan* (DRCOG Feb 2011) (RTP) as a Regional Roadway System project with 100% “locally derived” funding, and is considered regionally significant for air quality conformity purposes. It is intended that a combination of federal and local funds would be used for the project, with a minimum local contribution of 20 percent. Federal transportation “formula” funding allocated by the U.S. Department of Transportation to Colorado and distributed through the DRCOG regional planning process is not currently designated for this project in the RTP, but the project sponsor intends to seek any appropriate federal funding for the project. The amount and timing availability of funding is uncertain. Both CCD and the COA are in support of the project. CCD and the Park Creek Metropolitan District will continue to pursue federal and other funding sources to fully fund the project. **Table 2-4** shows the amount of potential funding from each entity.

**Table 2-4  
 Potential Funding Allocations with Federal Sources**

Funding Entity	Funding Program	Funding Amount
Federal	Federal	\$11.6M
Local (20 percent minimum)	CCD – Park Creek Metropolitan District	\$2.9M
<b>Total</b>		<b>\$14.5M</b>

Source: Incline Associates, 2010.

The project schedule is partially dependent on funding availability as discussed above. **Table 2-5** shows elements of the proposed project schedule and the estimated time to complete each task. Some tasks may overlap. Construction of the project would begin when funding is available.

**Table 2-5  
 Proposed Project Schedule**

Task	Duration (Months)
Environmental Assessment	6
Design	6
Right-of-Way Acquisition	3
Utility Clearance	6
Construction	9
<b>Total</b>	<b>24</b>

Source: Incline Associates, 2010.

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## 3.0 AFFECTED ENVIRONMENT, IMPACTS, AND MITIGATION

The EA process considered a number of resources that were evaluated in detail and are presented in the sections that follow. Those resources that were not present or when evaluated were determined to have minimal impacts are summarized in Section 3.7 Other Resources.

For each resource, the discussion is limited to the Build Alternative described in Chapter 2.0. The No Build Alternative does not meet the purpose and need of the project and has no effect on the existing natural environment. However, the No Build Alternative may affect some components of the existing human environment. For example, area traffic congestion would be expected to increase and network connectivity would remain poor.

### 3.1 Right-of-Way

Approximately 7.5 acres of additional right-of-way would be required to construct the Build Alternative. The proposed alignment crosses land that is currently vacant and would not require the relocation of any residences, structures, or businesses. The land is owned by the CCD Aviation Department as part of the former SIA. Additional right-of-way from non-airport land is not anticipated.

### 3.2 Wildlife

The United States Fish and Wildlife Service and the Colorado Division of Wildlife (CDOW) list 74 federally and state threatened or endangered species, as well as species of concern. Of the 74 species identified by the agencies, only 20 have the potential to occur within Denver and Adams Counties, Colorado. A list of the species and habitat descriptions are in Appendix B. Of the 20 species identified, only two species have the potential to occur within the project area; black-tailed prairie dog and burrowing owl. Both species are discussed below.

#### **Black-tailed Prairie Dog**

Black-tailed prairie dogs (BTPDs) are a CDOW species of concern (CDOW 2010, see **Appendix B**) and are considered a keystone species of the shortgrass prairie ecosystem. They provide an important food source for predators such as coyotes and raptors, and their towns and burrows provide habitat for other species (Hoogland 2006). The BTPD is the most abundant species within the project area, occupying approximately 52 acres within the study area. The majority of the BTPD live in a colony within the vacant land east of the existing Havana Way/Moline Street. A few active burrows were observed along the western end of the study area. Construction of the Build Alternative would result in the permanent loss of approximately 6 acres of the BTPD colony, not accounting for temporary workspaces. The majority of impacts would occur in the vacant land east of the existing Havana Way/Moline Street. The Build Alternative would bisect the existing colony resulting in a decrease in the size of the colony. Accurate estimates of the number of BTPD that would be affected by the project are not available. Recorded densities of BTPD in the literature, based on mark-recapture studies, range from 3 to 28 prairies dogs per acre (Hoogland 2006). Colony density doubles when juveniles appear aboveground in the spring, and a rough estimate of typical density is 10 prairie dogs per acre before emergences of juveniles and 20 adults, yearlings, and juveniles per acre after emergencies (Hoogland 2006). Based on these typical densities,

approximately 60 to 120 BTPD would be in the area affected by the Build Alternative. Prairie dogs would be removed from areas of both the permanent and temporary construction impacts. The number of affected BTPD is likely to change from year to year and is likely to be different by the time of construction. The acreage of impacted colonies and an estimated number of prairie dogs in the affected area would be identified during final design.

### **Burrowing Owl**

The burrowing owl is a state threatened species (COW 2010) and a migratory bird protected by the Migratory Bird Treaty Act (MBTA). Burrowing owls occur primarily in active BTPD colonies and are considered locally common to fairly common in eastern Colorado. Burrowing owls are present in Colorado from about mid-March to the end of September. Nesting occurs from early April to early August. Burrowing owls were not observed within the study area but could inhabit the area prior to construction. As a result, surveys prior to construction activities are proposed.

### **Raptors**

Raptors were not observed during field observations, however, there is a high probability of raptors utilizing the BLNC and Sand Creek Regional Greenway (SCRG) for nesting and/or foraging while the adjacent BTPD colony could serve as a foraging area. There are no trees within the project area for raptors to nest in. The BLNC and SCRG offer potential nesting site for raptors. If a nesting pair of raptors was present at the time of construction, the nesting pair or young could be disturbed or displaced from foraging and or nesting areas. Increased traffic and noise could also affect use of adjacent habitats during operation, although the raptor species that nest in urban areas are likely to become habituated to this. Direct loss of foraging habitat would decrease the availability of important prey species, but reduction in prey populations would be localized and unlikely to affect raptor populations.

### **Migratory Birds**

Impacts to birds from construction and operation could include direct loss of habitat, displacement during construction, and mortality from vehicle collisions. Vegetation-clearing, earth-moving, and other construction activities have the potential to destroy nests of bird species protected under the MBTA. However, the vegetation in the project area is likely to provide nesting habitat for a relatively limited number of species, because the affected habitats consist of low-growing herbaceous vegetation. To avoid impacts to nesting birds land clearing activities would be timed to avoid breeding season. The breeding season is primarily April through August but differs according to species.

## **3.3 Water Quality**

Sand Creek is a perennial stream located just north of the project area. This portion of Sand Creek has designated uses of Aquatic Life Warm Class 2, Recreation Class 1a, and Agriculture. Sand Creek is currently exceeding the chronic and acute water quality standards for dissolved selenium and is listed for selenium and *Escherichia coli* (*E. coli*) on the Colorado Department of Public Health and Environment (CDPHE) 303(d) list by the Colorado Water Quality Control Commission (CDPHE 2008). Increased vehicular traffic, as a result of the Build Alternative, would not be a new source of these pollutants in Sand Creek. However, soil in stormwater runoff, which is known to have background levels of selenium, will be collected which will improve selenium levels in Sand Creek.

The Build Alternative would increase the amount of impervious surface in the project area, primarily through pavement associated with the roadway. Increased vehicular traffic as a result of the Build Alternative would generate the majority of water pollutants; particulate matter settling out of the air would also generate pollutants. In accordance with the Municipal Separate Storm Sewer System (MS4) permits of CCD and COA, stormwater runoff from the Build Alternative has been incorporated into the development concepts for this portion of the Stapleton redevelopment. All stormwater runoff would be directed to these water quality facilities to reduce the impact on surface water quality in Sand Creek.

In addition, the project area is located above the Denver groundwater basin. Geotechnical investigations to an approximate 20-foot depth in this area in 2004 did not encounter groundwater. Remediation activities south of the proposed MLK Boulevard alignment, to depths of approximately 20 feet, are dry.

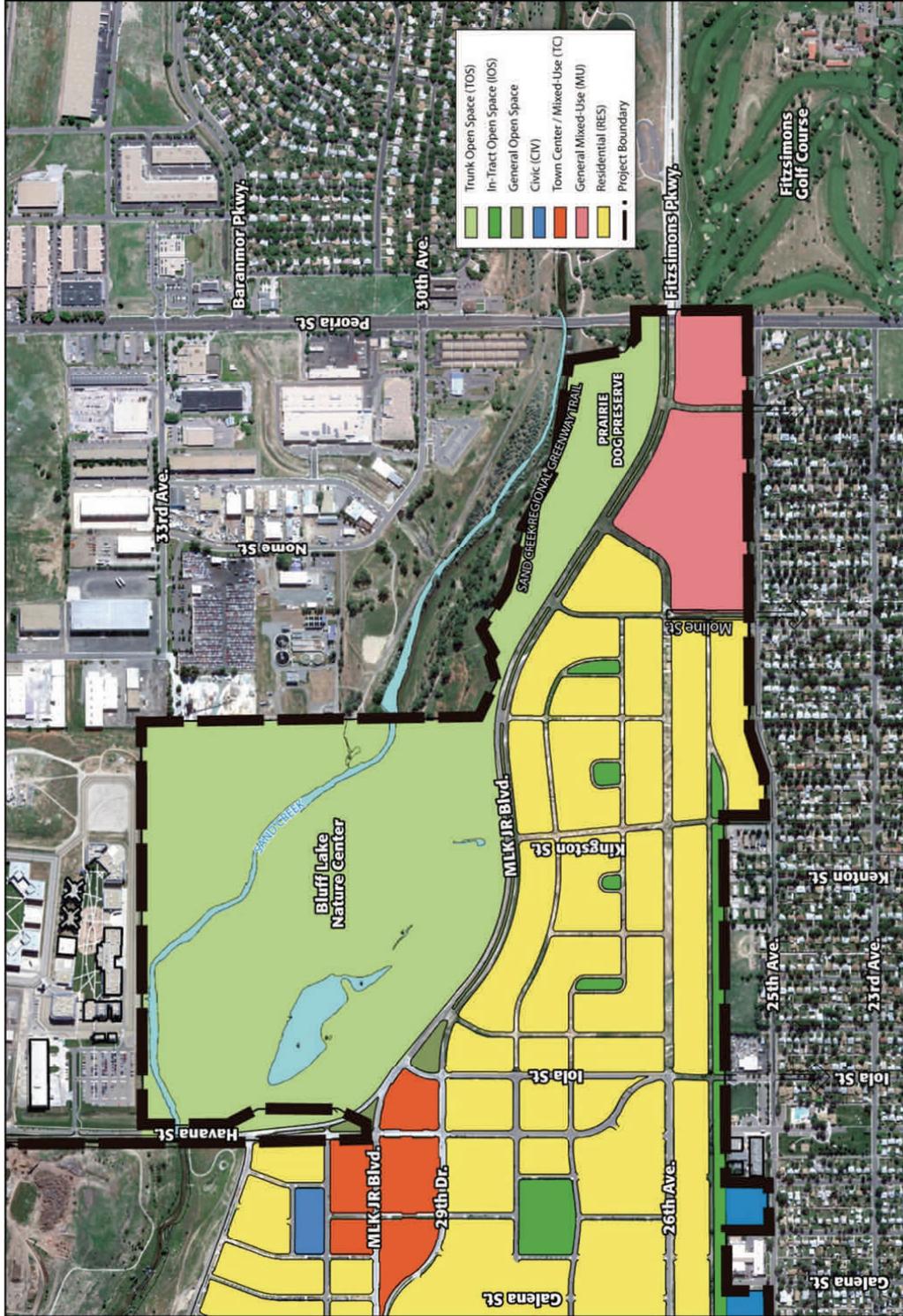
### 3.4 Hazardous Materials

Prior to redevelopment, the project area was actively used as SIA. At the SIA redevelopment site, CCD Aviation and former airport tenants have been performing environmental investigations and cleanup activities since the 1980s. As part of the redevelopment, cleanup standards suitable for residential development were developed using regulations and guidelines published by CDPHE, the Colorado Department of Labor and Employment, and the Division of Oil and Public Safety. The resulting cleanup criteria are known as the Stapleton Numeric Criteria (SNC).

The Havana Way/Moline Street roadway provided an eastern perimeter route around the airport with runways to the west of Moline and a safety zone to the east. Asbestos contamination in the area west of Moline Street from debris disposal and grading activities is being addressed by CCD Aviation at this time (see **Figure 3-1**). Prior to any development, CCD Aviation property will meet all SNC standards.

A lateral of the Highline Canal previously crossed the project area. The canal lateral (roughly 100-foot wide) crossed the Havana Way right-of-way between Iola Street and the entrance to BLNC, near the proposed intersection of MLK Boulevard and Kingston Street (see **Figure 2-2**). This canal was abandoned prior to redevelopment of SIA and filled with unknown material. During previous investigations in the southern portion of the project area, asbestos containing material was found in the canal area. Construction of the Build Alternative may result in vertical grade changes in the abandoned canal area under the existing roadway. Mitigation within the existing roadway alignment would be conducted as part of the Build Alternative and meet standards established by CCD and CDPHE. Any contaminated material encountered in the grade change that does not meet CCD and CDPHE standards for roadways would be removed and disposed of properly.

In the area east of Moline Street to Peoria Street, both a Phase I and Phase II Environmental Site Assessment (ESA) (Matrix 2008a and Matrix 2008b) were conducted in anticipation of development. The Phase I ESA found several recognized environmental conditions (RECs), including numerous small pieces of asbestos containing materials and low concentrations of volatile organic compounds (VOCs) in the groundwater. Groundwater depths are below anticipated residential and infrastructure construction activities (approximately 20 feet). Sampling conducted for the Phase II ESA found these RECs at levels of concentration below the SNC (VOCs) or no additional presence (asbestos containing material) was identified. As a result, it was determined these items were no longer considered RECs. In addition to the above Phase I and Phase II ESAs, a database search was performed by CDOT (CDOT 2010).



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**Figure 3-1**  
Land Use Map in Accordance with GDP

This database search did not identify any additional areas of concern. No additional remediation in this area is expected.

### **3.5 Noise**

While most of the project area is undeveloped, there are townhomes located in the southwest quadrant of the Iola Street and 29<sup>th</sup> Avenue intersection. The BLNC was also considered a sensitive receptor. A noise analysis was performed for the entire corridor.

The Noise Abatement Criteria for both the townhomes and the BLNC, category B receptors, is 66 dBA. Existing noise levels at the townhomes ranged from 64.0 dBA to 66.6 dBA. Future 2035 Build Alternative noise levels at this location are predicted to range from 65.4 dBA to 69.3 dBA. Noise abatement measures were evaluated for this site as required by 23 CFR 772. Of the nine townhomes located along Iola Street, seven would be impacted by noise. Mitigation was determined to not be feasible due to the close proximity of the townhomes to the roadway limiting potential locations for noise barrier siting, need for multiple wall gaps for access to public sidewalks, and location of utility easements to allow construction of a continuous, effective sound barrier. As a result, mitigation is not recommended because it cannot effectively be constructed. More information on the noise analysis can be found in **Appendix E**.

For the remainder of the corridor, the 66 dBA contour line was calculated to be 120 feet from the proposed roadway centerline. It is anticipated that residential development will be constructed adjacent to the currently undeveloped portions of MLK as is allowed by the current zoning. It is expected that the MLK Extension EA will be completed before any residential/commercial development building permits are issued. However, it is expected that future development has the potential to encroach into the forecasted 66dBA noise boundary.

The current master developer of this area, Forest City Stapleton will be informed of this issue and urged to manage builder and buyer expectations by including the forecasted area of noise impact, gathered from this EA analysis, as part of the information included within the entitlement documents and property deeds as they are finalized. Denver and Aurora can include information related to noise impacts in public documents like subdivision plats or RDP's for this area. Any future mitigation measures will be handled outside of this project and are at the discretion of the future property owners.

### **3.6 Parklands and Recreation**

The BLNC is located in the northern portion of the study area. No right-of-way would be acquired from the BLNC by the Build Alternative. However, vehicle access to the BLNC would be improved through the MLK connection to Peoria Street. Access to additional utilities, such as electricity and water, may also be provided as a result of the Build Alternative.

At the BLNC, the SCRG runs between the BLNC and the proposed MLK. As part of the Build Alternative, the greenway in this location would be reconstructed to include a hard surface bicycle and pedestrian trail, a soft surface trail for equestrians, and a larger buffer between the trail and roadway. Throughout the remainder of the project area the SCRG would remain in its existing location and condition, except for the portion described in Section 3.6, Section 4(f), below.

### 3.7 Section 4(f)

The southern portion of the SCRG trail, near Peoria Street, would be realigned as part of the Build Alternative. A *de minimis* report describing the alternatives and impacts is included in **Appendix C**. Coordination with the Sand Creek Regional Greenway Partnership is ongoing and will continue during the public and agency comment period. After public and agency comment, FHWA may make a *de minimis* finding.

### 3.8 Other Resources

#### Land Use

The existing land use (vacant) would be changed according to the South Stapleton General Development Plan (GDP). The Land Use Plan is a refined development plan, which is in accordance with the approved GDP and involves the construction of the proposed roadway extension as well as residences and mixed-use development to the south of MLK Boulevard as shown in **Figure 3-1**. The BLNC and SCRG north of MLK Boulevard would maintain their existing uses.

#### Socioeconomics

Data from the 2000 census (the latest available) shows no population in the immediate vicinity of the Build Alternative. The 2000 census data show that 21,818 people live in 6,426 households in the area surrounding the project. The majority of these are located in the neighborhood south of 25<sup>th</sup> Avenue. The average median income for these households is \$38,621.

Since 2000, homes have been constructed west of 29<sup>th</sup> Drive and residential and mixed-use development adjacent to the Build Alternative is planned as part of the Stapleton Redevelopment. This development would occur with or without the construction of the Build Alternative. Construction of the Build Alternative would create approximately 80 direct and 128 indirect jobs.

The Northwest Aurora Neighborhood Organization (NANO) represents the neighborhood located immediately south of Stapleton. It is anticipated that the construction of the Build Alternative would create some temporary community disruption and inconvenience, but the long-term effect of the project should improve traffic circulation, flow, and safety in the project area.

#### Environmental Justice

Environmental Justice refers to the fair treatment and meaningful involvement of all people regardless of race, color, national origin or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies. One of the environmental justice core principles is to avoid disproportionately high and adverse human and environmental effects on minority and low-income populations. Based on data from the 2000 census the neighborhoods south of the project have low-income populations. However, as a result of the Build Alternative, there would be less traffic on 25<sup>th</sup> Avenue. This could be considered a positive impact on the neighborhoods south of the project area. Other impacts caused by the project are minor in nature and thus the effects of this project do not result in a disproportionately high and adverse effect on minority and low income populations.

### Historic Properties

No archaeological or historic sites listed on or eligible for the National Register of Historic Places are located within the study area (Fariello 2010).

### Paleontological Resources

No fossil localities were identified within the study area. It is unlikely that construction of the Build Alternative would impact presently buried paleontological resources (Wallace 2010).

### Native American Consultation

As mandated by federal regulations, FHWA contacted 12 federally recognized Native American tribes with a potential interest in the project, and solicited their participation as consulting parties under Section 106 of the National Historic Preservation Act. The Rosebud Sioux Tribe responded (see Appendix A), indicating it was not interested in being a consulting party. No other tribal governments elected to submit a response to the solicitation or otherwise express interest in the project.

### Aesthetics

The Stapleton Design Book contains goals and objectives related to housing, land use patterns, landscaping, and many other elements of the Stapleton Redevelopment. The project area has mountain views and is adjacent to the BLNC. Construction of the Build Alternative would have minimal to no affect on the existing conditions and views.

### Air Quality

A carbon monoxide hot spot air quality analysis was performed for the Peoria Street/Fitzsimons Parkway/MLK Boulevard intersection, as the future LOS at this intersection was LOS D (a.m.) and LOS E (p.m.). Emission factors and background values used in the analysis were obtained from the Air Pollution Control Division of the CDPHE. The analysis showed that carbon monoxide levels would not exceed the National Ambient Air Quality Standards (see Appendix D for more information).

The Environmental Protection Agency (EPA) has not released final guidance for a quantitative analysis of particulate matter less than 10 microns in diameter (PM<sub>10</sub>). A qualitative analysis of PM<sub>10</sub> was performed for this project by evaluating monitor data and the CDPHE 2008 emissions inventory. This project would not result in any meaningful changes to traffic volumes, vehicle mix, or other factors that would cause an increase in emissions impacts compared to the No-Build Alternative.

This project is included in the fiscally-constrained Regional Transportation Plan, *2035 Metro Vision Regional Transportation Plan* (DRCOG 2009) and is considered regionally significant.

Mobile source air toxics (MSATs) are toxic compounds emitted from vehicles. MSATs are a subset of the 188 air toxics defined by the Clean Air Act. The EPA has identified the following seven compounds as MSATs: acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases, formaldehyde, naphthalene, and polycyclic organic matter (FHWA 2009). Current modeling tools are not able to estimate emissions of MSATs. Quantitative analysis is difficult to perform due to the lack of air quality monitors measuring these pollutants. Currently, a model or thresholds to measure or determine negative health effects resulting from the construction or modification of transportation facilities, with

regard to MSATs, has not been approved by the EPA. Even though there is no accepted model or accepted science for determining the impacts of project specific MSATs, as noted above, EPA predicts that its national control programs will result in meaningful future reductions in MSAT emissions, as measured on both a per vehicle mile and total fleet basis.

In general, the Build Alternative would reduce congestion in the area by providing a direct route between Havana Street and Peoria Street. This project would not result in any meaningful changes to traffic volumes, vehicle mix, or other factors that would cause an increase in emissions impacts compared to the No Build Alternative.

Prior to approval of a decision document for this project, regional air quality conformity will be demonstrated through inclusion of the Preferred Alternative in the Denver Area Council of Governments Transportation Improvement Program.

### Wetlands

No wetlands or waters of the U.S. were found within 100 feet of the proposed right-of-way (see Appendix B).

### Vegetation

Vegetative communities within the project area fall into two habitat types: short grass prairie occupies approximately 1.5 acres and disturbed/barren approximately 8.5 acres within the area of impact. See Appendix B for more information.

Shortgrass prairie habitat vegetation includes all the northern grassy verges along the existing portion of Havana Way. The short grass prairie habitat within the corridor is long and narrow with a dirt trail running through most of the habitat; therefore, the vegetation community is considered low quality.

Disturbed/barren habitat vegetation comprises approximately 8.5 acres within the project area and includes the grassy verge along the south side of Havana Way, all vacant land, and paved or gravel roads or trails. This community is considered to be of an overall low quality. Vegetation within this community is predominantly noxious and other weedy species, with native species comprising less than 30 percent of the total community.

Three noxious weeds occur within the shortgrass prairie and disturbed vegetative communities. The species are field bindweed (*Convolvulus arvensis*), Canada thistle (*Cirsium arvense*), and Russian knapweed (*Acroptilon repens*).

Field bindweed is the most dominant of the three species and is common throughout both vegetative communities. The vacant land located to the east of the existing Havana Way is dominated by dead field bindweed. The lot appears to have been sprayed for noxious weeds. The area has only a few living plants of rubber rabbitbush (*Chrysothamnus nauseosus*), purple aster (*Machaeranthera canescens*), and cowpen daisy (*Verbesina encelioides*).

Individual Canada thistle plants were observed in both vegetative communities. The western end of the project area has more individual plants than the eastern end but the plants are still isolated occurrences within the project area.

Occasional individual Russian knapweed plants were observed in both vegetative communities.

### **Threatened and Endangered Species**

No Threatened and Endangered species were observed in the project area (see **Appendix B** for more information).

### **Geology and Soils**

No geologic hazards or impacts to geological resources are expected in the project area. Soils near the project area are mainly of the Ascalon-Vona-Tructon association. Most soils within this association have no major limitation for building construction and present few drainage problems (URS 2009).

### **Farmland**

The project area is located in the CCD, which is considered an urbanized area by the Natural Resource Conservation Service. Therefore, none of the land in the project area is considered prime or unique farmland (NRCS 2010).

### **Public Services and Utilities**

A 16-inch gas line is located adjacent to the proposed alignment. Portions of the line may be relocated as a result of the Build Alternative construction. In addition, a 12-inch reclaimed water line is in the Moline Street alignment and may also require relocation. Public services such as the SCRG either would remain or be constructed according to the Stapleton Land Use Plan.

### **Floodplains**

The Build Alternative is located entirely outside the 100-year floodplain (FEMA 2010).

## **3.9 Construction Impacts**

The Build Alternative would create short-term construction impacts. A description of long-term impacts as a result of the Build Alternative can be found earlier in this Chapter. These impacts, described below, include the potential for impacts to wildlife, hazardous materials, water quality/untreated stormwater runoff, air quality, and disruptions to the transportation network. Mitigation for potential impacts is addressed in **Table 3-2**.

### **Wildlife**

Construction activities could lead to increased mortality of BTPD due to vehicle traffic and earth moving activities.

**Other Species.** Construction activity is likely to temporarily displace other animals from the construction zone due to noise, human presence, and heavy equipment. Predator species, such as fox and coyote, would be impacted by the loss of foraging habitat during construction. The reduction in prey populations would be temporary and would not affect long-term use of the areas by predators.

### **Hazardous Materials**

The following construction concerns are associated with areas of soil and/or groundwater contamination:

- health and safety of workers encountering contaminated material
- special handling and disposal requirements for contaminated material and a corresponding cost increase
- If encountered, these concerns would be addressed through the Materials Management Plan or the health and safety plan.

### Water Quality

The proposed construction would present erosion and sediment control issues related to earthwork and loss of vegetation. The resulting bare surfaces would be highly susceptible to erosion from rain and wind. The erosion and sediment effects on water quality would be relatively short-lived, as numerous Best Management Practices (BMPs) would be implemented to mitigate adverse impacts.

### Air Quality

Construction activities from excavation, grading, and fill activities could increase local fugitive dust emissions. Airborne fugitive dust particles have a relatively large particle size (>100 micrometers in diameter) and typically settle within 30 feet of their source. The smaller particles could travel as much as several hundred feet depending on the wind speed.

### Transportation Network

The transportation network would experience minor disruptions during construction. While Havana Way and Moline Street will remain open during construction, there may be temporary lane closures. Traffic may also be disrupted at intersections such as the MLK/Peoria Street, and Fitzsimons Parkway intersection. Access to the BLNC will be maintained during construction. A traffic control plan will be developed to identify traffic disruptions and develop mitigation measures.

## **3.10 Secondary and Cumulative Effects**

This section describes the potential secondary and cumulative effects related to the No Build and Build Alternatives under consideration in this EA. Cumulative effects are impacts to the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.

The Council on Environmental Quality (CEQ) guidance limits cumulative effects analysis to “important issues of national, regional, or local significance” (CEQ 1997). Therefore, this section does not address cumulative effects to all resources; only resources with potentially adverse cumulative impacts are discussed.

The geographic area used for regional analysis of potential cumulative effects is contained within the secondary and cumulative effects area for the *I-70 East DEIS* (PBS&J 2008). Since the Stapleton Redevelopment was included in the *I-70 East DEIS*, cumulative effects were summarized from that analysis and then updated to reflect the impacts associated with this project. Cumulative effects for the MLK Boulevard extension project are discussed for four resources: wildlife, water quality, hazardous materials, and noise. A discussion on issues of global climate change is also included in this section.

### **3.10.1 Summary of I-70 East DEIS Cumulative Effects Analysis**

The following resource areas were evaluated for potential cumulative effects as part of the *I-70 East DEIS*: Land Use and Development, Stormwater Runoff and Water Quality, Wetlands, Historic Resources, Community Cohesion, Air Quality, and Noise.

The *I-70 East DEIS* concluded that the study area has developed rapidly over the past 45 years as a result of transportation infrastructure and land development spurred by a positive economic environment. Over the next 25 years, it is likely that land development and redevelopment activities throughout the study area will continue, as major ongoing and announced development projects move toward build-out. Supporting this continuing development are transportation investments, primarily in the form of transit projects such as the Regional Transportation District's (RTD) East Corridor project. This cumulative effects assessment has examined the potential for project alternatives to contribute to cumulative effects on a series of impacted environmental resources. The test of this assessment is whether there is a connection between the effects of the project alternatives and other past and future actions to create a collective harm to a resource area. The general conclusion of this assessment is that project alternatives would not result in significant cumulative effects to the resources that have been evaluated, provided that ongoing coordination between project sponsors and reviewing agencies continues and mitigation of the direct effects of project alternatives is completed (PBS&J 2008).

### **3.10.2 MLK Cumulative Effects Analysis**

General categories of actions and projects that may contribute to significant cumulative effects include transportation improvements and commercial, housing, or industrial development and are shown in **Appendix F**.

The No Build Alternative and other past, present, and future actions serve as the baseline for which the project alternatives are assessed. Cumulative effects are assessed by impacted resource for the MLK Boulevard extension project.

#### **Wildlife**

This project has a greater potential for wildlife occurrence and impacts than most urban projects due to the proximity of the BLNC and SCRG. The BTPD resides within the project area and would be affected by the Build Alternative. Loss of habitat due to construction activity may impose direct effects to BTPDs, raptors, and other predators.

Completion of this project will likely facilitate planned development of the area, specifically redevelopment of the former SIA, thus indirectly impacting BTPD colonies. However, redevelopment of the former SIA is expected regardless of completion of the Build Alternative.

A study was completed by EDAW, Inc. in 2000 on behalf of the Colorado Department of Natural Resources (EDAW 2000). One objective of the study was to locate and assemble existing data sets of BTPD occurrences in Colorado, and to determine a number that best reflects the current total acreage of known occupied BTPD habitat in eastern Colorado. The study found that BTPDs were historically abundant throughout the eastern third of Colorado. Early 20th century studies suggest that three species occur in Colorado: the BTPD; the white-tailed prairie dog; and Gunnison's prairie dog. These species cumulatively occupied approximately 12 million acres. Based on its likely range, it was assumed that seven million

of those acres were occupied by the BTPD. The *Black-tailed Prairie Dog Conservation Assessment and Strategy* estimates that BTPDs may have historically occupied up to 20 percent of short-and mid-grass prairies in Colorado (Van Pelt 1999). In their 2000 study, EDAW estimated that 214,332 acres of active BTPD colonies are located in Colorado, and that 2,248 acres of BTPD colonies exist within CCD. Mapping provided in the study identified most of the colonies in the CCD within the former SIA, open lands in the eastern margins of the County, and near Denver International Airport (DIA). Considerable acreages of inactive colonies, as well as potential habitat, were also identified in the same study. Current threats to BTPDs throughout its range include sylvatic plague, recreational shooting, control efforts, and habitat fragmentation.

The estimated permanent loss of BTPD colonies within the project area is at most 8 acres; therefore, a net loss of BTPD colonies in CCD would be 0.4 percent of the total identified active colonies. The cumulative effects of the Build Alternative would be similar to the No Build Alternative. Some of the vacant land that now serves as existing or potential BTPD habitat would continue to be developed as population increases, and redevelopment of the former SIA progresses. However, construction of the Build Alternative would slightly modify this trend because development would be stimulated in the project area due to improved access, and development would likely be accelerated within vacant lands south of the project. This would have a large negative effect on BTPDs residing in the southern portion of the vacant lot. The cumulative effects of permanent impacts to the BTPD population in CCD and Colorado as a whole would be minimal.

As part of the BTPD colony would be preserved, the loss of BTPD colonies due to this action would have a minor to moderate effect on raptors and other predators' winter foraging areas. By preserving some of the existing BTPD, the project is not likely to reduce the number of local breeding pairs of raptors. Conversations with Rocky Mountain Arsenal National Wildlife Refuge biologists indicated that approximately 3,000 acres of undisturbed BTPD colonies occur there. It is likely that raptors and other predators would also utilize those colonies for foraging in a more natural, undisturbed setting.

### Water Quality

Historically, land use patterns and urbanization have influenced water quality by changing stormwater runoff levels and composition. The nature of runoff is directly related to land use type and the geographic coverage of urbanized areas. Therefore, growth of the study area's urban footprint since 1960 has increased stormwater runoff's potential to affect water quality. Furthermore, increases in impervious area affect the ability of existing drainage systems to accommodate peak stormwater events. Through landcover analysis, it is estimated that impervious surface in the study area has increased 255 percent from 1965 to 2002, translating to an increase of approximately 32,000 acres during the 36-year span (PBS&J 2008).

Despite this increase in impervious urban landcover, water quality has improved throughout the region as local, state, and federal regulations have produced positive changes. Ordinances have strengthened over time, beginning with the Federal Water Pollution Control Act of 1972 and later in 1974 with the passage of the Safe Drinking Water Act. The National Pollutant Discharge Elimination System permit program placed limits on the amount of pollutants that may be discharged from point sources. Colorado was granted authority from EPA to issue these permits and managed the permitting program through Regulation 61 of the *Colorado Discharge Permit System Regulations* (CDPHE 2006). The outcome required that

operators of large MS4s obtain a permit and develop a stormwater management program. These programs include enacting construction and maintenance BMPs designed to prevent harmful pollutants from being washed by stormwater runoff or from being allowed directly into stormwater systems. More recent changes provide more immediate and more stringent controls on construction activity discharges by requiring construction projects one acre or larger in size to secure a Colorado Discharge Permit System (CDPS) permit for stormwater discharges during construction (PBS&J 2008).

Foreseeable future development as part of Stapleton would result in additional stormwater runoff and may adversely affect water quality due to conversion of non-urbanized pervious land into impervious development. However, local, state, and federal stormwater regulations will serve to control and minimize the effects of this foreseeable future development. The No Build Alternative would have minimal improvement to water quality since new stormwater detention features would not be implemented. The construction of the Build Alternative would add impervious surface and would result in additional runoff. However, requirements to comply with all local, state, and federal stormwater regulations will control and minimize the effects of this and future development. Therefore, the project would have a negligible cumulative effect when added to existing and future development in the project area.

The Build Alternative would thereby improve water quality compared to the existing conditions as the existing roadway was constructed before such rigorous stormwater and water quality standards existed. The Build Alternative would have beneficial cumulative effects in this regard, irrespective of the effects caused by other foreseeable future projects.

### **Hazardous Materials**

This section describes properties that have been impacted due to current or previous use, or by a release of hazardous substances or petroleum products. Since SIA was decommissioned in 1995, the CCD Aviation Department has been responsible for environmental clean up, including asbestos management, before transferring the property.

Construction of the Build Alternative may encounter hazardous materials in the area of the abandoned Highline Canal lateral. These materials would be removed from the site and properly disposed. The construction of all other infrastructure required for full build-out of the Stapleton Redevelopment would result in the exposure and remediation of unknown quantities of hazardous materials, as has been seen during development at the former SIA. Therefore, these materials would no longer present a potential threat to human health and the environment in the future. The operational effects of future projects on hazardous waste generation are closely controlled by state and federal regulation, thereby avoiding the hazardous materials impacts of the past.

### **Noise**

The geographic extent of noise effects has grown with the expansion of Denver's urban area. Noise levels have also been influenced by increasing urban density and intensity of use over time. Noise effects associated with urban areas have encroached into rural lands as new development and transportation systems have been constructed over the past 40 years. These changes occur when un-built areas are replaced or become encroached upon by more intensive land uses such as roads or urban development. Major transportation projects that have previously increased noise levels include the construction of I-70 during the 1960s, and Peña Boulevard and DIA in 1995. While noise levels have generally increased and have expanded spatially, some improvements have been made such as the closure of SIA in 1995.

Foreseeable future actions will also contribute urban noise as new development will convert large areas of rural land into more noise-intensive urban development. Additional housing, office, and commercial capacity coupled with forecasted population and employment growth will intensify noise generation. Future transit projects will also contribute to noise levels. Transit alignments located in existing transportation corridors will have the potential for cumulative effects through combined highway and transit noise. However, mitigation can limit these noise levels to be within acceptable thresholds.

Cumulative effects to noise levels would exist if projects added to past increases in noise levels or contributed to the collective noise effect of foreseeable future projects. Unmitigated, projects would cause cumulative effects through both scenarios. Cumulative noise effects are controlled by the successful abatement of each major transportation action. Noise impacts for the Build Alternative would comply with CDOT's Noise Abatement Criteria (CDOT 2002). Detailed information regarding the noise analysis can be found in Appendix E. Other present and reasonably foreseeable future transportation projects are also expected to mitigate such that noise effects are minimal. Change in noise levels due to the future planned development of open areas does not require mitigation as this is within the context of urbanization. Denver zoning and regional plans are used to separate incompatible land uses in order to avoid noise nuisance. Ultimately, the potential for cumulative noise effects exists; however, it is likely to be minimized through mitigation.

### **Global Climate Change**

The issue of global climate change is an important national and global concern that is being addressed in several ways by the Federal government. The transportation sector is the second largest source of total greenhouse gases (GHGs) in the United States (U.S.), and the greatest source of carbon dioxide (CO<sub>2</sub>) emissions—the predominant GHG. In 2004, the transportation sector was responsible for 31 percent of all U.S. CO<sub>2</sub> emissions. The principal anthropogenic (human-made) source of carbon emissions is the combustion of fossil fuels, which account for approximately 80 percent of anthropogenic emissions of carbon worldwide. Almost all (98 percent) of transportation-sector emissions result from the consumption of petroleum products such as gasoline, diesel fuel, and aviation fuel.

Recognizing this concern, FHWA is working nationally with other modal administrations through the Department of Transportation Center for Climate Change and Environmental Forecasting to develop strategies to reduce transportation's contribution to GHGs—particularly CO<sub>2</sub> emissions—and to assess the risks to transportation systems and services from climate changes.

At the state level, there are several programs underway in Colorado to address transportation GHGs. The Governor's Climate Action Plan, adopted in November 2007, includes measures to adopt vehicle CO<sub>2</sub> emissions standards and to reduce vehicle travel through transit, flex time, telecommuting, ridesharing, and broadband communications. CDOT is working on a Policy Directive with input from a number of agencies, including CDPHE, EPA, FHWA, RTD, Federal Transit Administration, and the Denver Regional Air Quality Council. This Policy Directive will address unregulated MSATs and GHGs produced from Colorado's state highways, interstates, and construction activities. CDOT's commitments would include:

- Develop truck routes/restrictions with the goal of limiting truck traffic in proximity to facilities, including schools, with sensitive receptor populations.

- Continue researching pavement durability opportunities with the goal of reducing the frequency of resurfacing and/or reconstruction projects.
- Develop air quality educational materials, specific to transportation issues, for citizens, elected officials, and schools.
- Offer outreach to communities to integrate land use and transportation decisions to reduce growth in vehicle miles traveled (VMT), such as smart growth techniques, buffer zones, transit-oriented development, walkable communities, access management plans, etc.
- Commit to research additional concrete additives that would reduce the demand for cement.
- Expand Transportation Demand Management efforts statewide to better utilize the existing transportation mobility network.
- Continue to diversify the CDOT fleet by retrofitting diesel vehicles, specifying the types of vehicles and equipment contractors may use, purchasing low-emission vehicles, such as hybrids, and purchasing cleaner burning fuels through bidding incentives where feasible. Incentivizing is the likely vehicle for this.
- Explore congestion and/or right-lane only restrictions for motor carriers.
- Fund truck parking electrification (note: mostly via exploring external grant opportunities)
- Research additional ways to improve freight movement and efficiency statewide.
- Commit to incorporating ultra-low sulfur diesel for non-road equipment statewide before June 2010—likely using incentives during bidding.
- Develop a low-VOC emitting tree landscaping specification.

Because climate change is a global issue, and the emissions changes due to project alternatives are very small compared to global totals, the GHG emissions associated with the alternatives were not calculated. Because GHGs are directly related to energy use, the changes in GHG emissions would be similar to the changes in energy consumption. Energy consumption is expected to increase as population and development continue to grow in Colorado. The relationship of current and projected Colorado highway emissions to total global CO<sub>2</sub> emissions is presented in **Table 3-1**. Colorado highway emissions are expected to increase by 4.7% percent between now and 2035. The benefits of the fuel economy and renewable fuels programs in the 2007 Energy Bill are offset by growth in VMT; the draft 2035 statewide transportation plan predicts that Colorado VMT will double between 2000 and 2035. This table also illustrates the size of the project area relative to total Colorado travel activity.

**Table 3-1  
Highway Emission Comparison**

Global CO <sub>2</sub> Emissions, 2005, million metric tons (MMT) <sup>1</sup>	Colorado Highway CO <sub>2</sub> Emissions, 2005, MMT <sup>2</sup>	Projected Colorado 2035 Highway CO <sub>2</sub> Emissions, MMT <sup>2</sup>	Colorado Highway Emissions, % of Global Total (2005) <sup>2</sup>	Project Study Area (I-70, I-270) VMT, % of Statewide VMT (2005)
27,700	29.9	31.3	0.108%	0.5%

Source: FHWA Resource Center, n.d.

<sup>1</sup> EIA, International Energy Outlook 2007

<sup>2</sup> Calculated by FHWA Resource Center

### 3.10.3 Conclusion

Based on conclusions made in the *I-70 East DEIS* and the assessment of impacted resources for the MLK Boulevard extension project, the effects of this project when added to the past, present, and reasonably foreseeable future development in the study area would not result in significant cumulative effects.

### 3.11 Summary of Mitigation and Commitments

The following permits from CDOT and CDPHE, and other agencies will be required before construction begins:

- CDPS permit issued by CDPHE for stormwater discharge
- Construction Dewatering Permit or Groundwater Remediation Permit issued by CDPHE
- Property access and local permits as required
- Air Pollutant Emission Notice and Application for Construction Permit from the CDPHE Air Pollution Control Division

A summary of the relevant, reasonable mitigation and commitments and BMPs are listed in **Table 3-2**. BMPs are intended to minimize impacts associated with the Build Alternative during construction.

**Table 3-2**  
**Summary of Proposed Project Mitigation, Commitments, and BMPs**

Environmental Component	Mitigation, Commitments, and BMPs
Right-of-Way	<p>No relocations are anticipated. All property acquisition and relocation shall comply fully with federal and state requirements, including the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. For any person(s) whose real property interests may 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.</p> <p>Obtain permission to enter property, complete work within designated work zone, and restore land not utilized for project improvements to preconstruction conditions.</p>

**Table 3-2  
 Summary of Proposed Project Mitigation, Commitments, and BMPs**

Environmental Component	Mitigation, Commitments, and BMPs
Wildlife	<p>Implement CDOT <i>Impacted Black-tailed Prairie Dog Policy</i>, dated January 15, 2009 (CDOT 2009).                      Passive and active relocation of black-tailed prairie dogs (BTPD) will be used; BTPDs will be relocated to the adjacent proposed preserve if possible.                      Conduct burrowing owl surveys within potential BTPD colonies between March 15 and October 31, no more than one year prior to construction.                      If burrowing owls are present, the <i>Recommended Survey Protocol and Actions to Protect Nesting Burrowing Owls</i> (CDOW 2007) will be followed.                      Calculate acreage of impacted colonies and an estimated number of BTPDs in affected area during the final design phase.                      Coordinate manipulation of BTPD colonies with CCD, CDOT, and CDOW Wildlife manager prior to disturbance of habitat.                      BTPD manipulation will occur outside of pupping season (April – June).                      No vegetation removal will be done during the breeding season for migratory birds (April 1 - August 31). If this is unavoidable, a survey will be completed to determine if there are active nests on or within 50 feet of the project limits. If an active nest is found, no work will be done within 50 feet of the nest until the nest becomes inactive.</p>
Water Quality	<p>Implement BMPs per CDOT's <i>Urban Storm Drainage Criteria Manual and Erosion Control and Stormwater Quality Guide</i>.                      Prepare construction CDPS stormwater discharge permit.                      Obtain Section 402 dewatering permit; Install silt fence/erosion controls.                      Minimal disturbance of vegetated areas and re-seeding as soon as practical.                      Install stormwater facility and outfall with BMPs near Peoria Street to treat water quantity and quality to agency standards.                      Implement BMPs for material storage, re-fueling, and spill containment such as straw bales for erosion control.                      Follow CDOT's Standard Specifications, Sections 101, 107, and 208 and procedures in the Erosion Control for Contractor manual.                      Comply with CDPHE Water Quality Consent Decree with CDOT.                      The CCD Storm Drainage Design Criteria will be followed in the design of all water quality and detention features.</p>
Hazardous Materials	<p>Develop a Materials Management Plan (which includes asbestos-containing materials) and a health and safety plan, as required by Section 250 of the CDOT Standard Specifications for Road and Bridge Construction.                      Implement BMPs for storage of fuels and lubricants.                      If buried construction or other debris is encountered during construction activities, the CDPHE Hazardous Materials and Waste Management Division's Asbestos Contaminated Soil Guidance Document (CDPHE 2007a) will be followed, in accordance with Solid Waste Regulations.                      Soil characterization, management plans, and standard operating procedures should be implemented and submitted pursuant to Section 5.5.4(B) of the Solid Waste Regulations as defined in the Regulations Pertaining to Solid Waste Sites and Facilities 6 CCR 1007-2 (CDPHE 2007b), to minimize worker and public exposure and to ensure the construction debris is handled and disposed of in accordance with applicable regulations.                      Soil Characterization and Management Plans will be prepared according to CDPHE Hazardous Materials and Waste Management Division if construction debris is encountered during construction activities and is suspected to contain asbestos or other hazardous materials.</p>
Noise	<p>Restrict construction activities after 10 p.m. and before 7 a.m.                      Schedule noise intensive construction activities to occur simultaneously, if possible.                      Use well-maintained equipment (particularly with regard to mufflers).</p>
Section 4(f)	<p>On the eastern end of the project, the Sand Creek Regional Greenway Trail will be relocated adjacent to Peoria Street prior to construction of the roadway.</p>
Historic Resources	<p>Any subsurface archaeological discovery will result in an immediate halt in construction activities in the area and notification to CDOT, State Historic Preservation Officer, and FHWA. Construction activities will not resume until all materials have been evaluated and adequate measures have been taken for their protection.</p>

**Table 3-2  
Summary of Proposed Project Mitigation, Commitments, and BMPs**

Environmental Component	Mitigation, Commitments, and BMPs
Paleontological Resources	If paleontological resources are uncovered during project construction, construction activities in the discovery area will halt and the CDOT paleontologist will be notified immediately. Construction activities will not resume in the discovery area until all materials have been evaluated for scientific importance and, if necessary, a program for mitigation of impacts to scientifically important paleontological resources has been instituted.
Parklands and Recreation	Access to BLNC will be maintained during construction. On the eastern end of the project, the Sand Creek Regional Greenway Trail will be relocated adjacent to Peoria Street prior to construction of the roadway.
Aesthetics	Re-vegetate with native species. Store equipment in designated areas. Promptly remove stock piles and avoid storing materials on-site for extended periods. Comply with <i>Stapleton Design Book</i> (CCD 1995b).
Air Quality	Use proper construction scheduling to lessen impacts. Construction phase air quality impacts will be controlled by implementing the following measures. Implement appropriate BMPs including but not limited to: cover loads; wet disturbed soils and soil piles; stabilize and cover stock pile areas. Minimize off-site tracking of mud by washing construction equipment and use temporary stabilization. Limit vehicle speed of construction related equipment. Obtain Air Pollution Emission Notice and Application for Construction Permit from the CDPHE APCD; Prepare a Fugitive Dust Control Plan. Prohibit unnecessary idling of construction equipment. Use low-sulfur fuel. Locate diesel engines and motors as far away as possible from residential areas. Locate staging area as far away as possible from residential areas. Where possible, heavy construction equipment will use the cleanest available engines or be retrofitted with diesel particulate control technology. Where possible, use alternatives for diesel engines and/or diesel fuels (such as: biodiesel, liquefied natural gas, compressed natural gas, fuel cells, or electric engines). Install engine pre-heater devices to eliminate unnecessary idling during winter time construction. Prohibit tampering with equipment to increase horsepower or to defeat emission control devices effectiveness. Require construction vehicle engines to be properly tuned and maintained. Where practicable, use construction vehicles and equipment with the minimum practical engine size for the intended job.
Vegetation	Avoid impacting areas outside limits of construction. Replace vegetation and grasses in disturbed areas, reseed with weed-free native seed mix immediately after the topsoil has been replaced. Install silt fences, erosion logs, temporary berms to prevent degradation of habitats adjacent to the construction area by transport of eroded sediment. Prepare and implement Integrated Noxious Weed Management Plan. Inspect contractors' vehicles before construction to ensure they are free of soil and debris capable of transporting noxious weed seeds or roots. Treat noxious weeds with herbicides or physically remove them to prevent seeds from blowing into disturbed areas during construction. Conduct periodic surveys during the construction period to identify and treat noxious weed populations that have developed. Surveys will be conducted at a minimum of one prior to construction and one post construction. Additional surveys will be conducted based on initial survey findings. Assess potential areas of topsoil salvage for presence and abundance of noxious weeds prior to salvage. Topsoil from heavily infested areas will either be treated by spraying, taken offsite, or buried during construction. Reclaim areas of temporary disturbance in phases throughout construction in order to minimize disturbed, open ground that is often colonized by weedy species, and seed disturbed areas using a permanent native seed mixture. Only certified weed-free mulch and bales will be used.

**Table 3-2  
 Summary of Proposed Project Mitigation, Commitments, and BMPs**

Environmental Component	Mitigation, Commitments, and BMPs
Geology and Soils	Salvage uncontaminated, weed-free topsoil.
Public Services and Utilities	Accurately locate and mark utilities. Coordinate with utility owners/operators, if required. Utility lines will be moved, avoided, or rerouted to circumvent service disruption.
Transportation Network	Traffic on all streets will remain open, though temporary lane closures may be necessary. Maintain access to businesses per CCD and CDOT requirements. Coordinate with emergency and law enforcement services regarding any potential road closures or delays. Prepare a Traffic Control Plan to be implemented during construction. The Traffic Control Plan will require approval by CDOT and CCD.

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## 4.0 PUBLIC AND AGENCY INVOLVEMENT

Public involvement regarding the proposed MLK Boulevard extension has been ongoing as part of the Stapleton redevelopment for several years.

Below are some of the publications and forums where the MLK Boulevard extension project has been presented to the public:

- Stapleton Infrastructure Master Plan - July 2000
- Stapleton General Development Plan/Infrastructure Master Plan - 2001
- Planning Area 5 (conceptual land use plan, utility and roadway infrastructure master planning)- September 2005
- Stapleton Filing 16 (plat, infrastructure construction documents) - 2005 and 2006
- Stapleton Aurora General Development Plan - 2006
- Meetings with NANO, approval via public hearings and City Council action of the Stapleton Aurora General Development Plan - 2006
- Stapleton Aurora Filings 1 and 2 (site plan and construction documents [not through approval])- 2006
- Fitzsimons Infrastructure Master Plan - 1999
- Fitzsimons Parkway (design and construction documents) - 2006
- Colorado Science and Technology Center entitlement processes - 2002 to present
- Stapleton Annual Report - 2007 and 2008
- Stapleton Web Site:  
<http://stapletondenver.com/data/uploads/South%20Stapleton%20Traffic%20Signal%20Plan%20012809.pdf> - since 2005

In addition, an article about the project was published in the Front Porch, a Stapleton newsletter, October 2010. The contents of the article are included in **Appendix A**.

Meetings with representatives from the Park Creek Metropolitan District, BLNC, SCRG, CCD, and Forest City were held on October 26, 2010, December 17, 2010, and February 3, 2011 to discuss the project.

Agencies involved in the project included:

- CCD
- COA
- CDOT, Region 6
- FHWA
- CDPHE

A public hearing will be conducted during the 30-day public and agency comment period for the EA.

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