CITY OF GOLDEN - 1041 APPLICATION
US 6 / 19TH STREET INTERCHANGE PROJECT

Golden's Plan for the Highway 6 & 93 Corridor (the *Golden Plan*) was unanimously adopted by City Council in October 2003 and updated in January 2013 as a vision for improving transportation within Golden city limits. The study illustrates how traffic needs can be met through a specific set of upgrades or realignments of existing roads (including US 6 and SH 93). Currently, Golden staff are working with CDOT to identify potential improvements for the US 6 and SH 93 corridors that meet the goals of the Golden Plan, as well as benefit the entire region. The first project to be forwarded from the process is the design and construction of the US 6/19th Street interchange.

The heavy pedestrian and bicyclist volumes through the existing US 6/19th Street signalized intersection have a large impact on the intersection level of service. Student housing for Colorado School of Mines (CSM) students is located on the other side of US 6 from the main campus. For every pedestrian cycle, 30 seconds must be provided for the crossing, even if 19th Street vehicular traffic clears faster, which substantially impacts the levels of service for US 6 drivers.

The Project will also have substantial multi-modal mobility benefits for area residents, employees, and visitors through the creation of convenient connections across the regional US 6 highway corridor. The Project will allow an entire neighborhood of 300 homes, along with over 550 CSM students, to safely walk or bike across US 6 at 19th Street. In addition, the Project will open up connections to transit in the form of a safe connection to bike paths leading to the W Line station and direct access to the Golden/RTD Community Call and Ride bus that now cannot effectively serve the peak needs west of US 6 due to trip delay and limited trip reliability. The Project will also more safely accommodate the hundreds of bikes currently crossing US 6 at 19th Street to access the Lookout Mountain area.

The application summarizes information provided in reports developed for the City on the interchange operational analysis and environmental documentation for the project. The application shows that the project will provide local multimodal access, operations, safety, and neighborhood community benefits without regional impacts or benefits beyond the immediate interchange area. The area surrounding the project is fully developed and the interchange will not disrupt the local and regional community land use patterns as planned in the *City of Golden Comprehensive Plan*.
The application references and appends the following documents:

- *Air Quality Clearance for US 6/19th Street Intersection Project*, City of Golden, Jefferson County, June 2015
- *City of Golden Comprehensive Plan*, City of Golden, June 2011
- *Environmental Noise Study for US 6/19th Street Interchange – Lookout Lid*, City of Golden, June 2015
- *US 6/19th Street Interchange – Lookout Lid Assessment of City of Golden Noise Standards,* City of Golden, July 2015
- *Golden's Plan for the Highway 6 & 93 Corridor,* City of Golden, January 2013
- *US 6 and 19th Street Interchange Project Biological Resources Report*, City of Golden, Jefferson County, June 2015
- *US 6 and 19th Street Interchange Project Cultural Resources Survey*, City of Golden, Jefferson County, June 2015

- *US 6 and 19th Street Interchange Project Draft Categorical Exclusion*, City of Golden, Jefferson County, June 2015
- *US 6 and 19th Street Interchange Project Minor Resources Technical Report*, City of Golden, June 2015
- *US 6 and 19th Street Interchange Project System Level Feasibility Study*, City of Golden, Jefferson County, June 2015
- *US 6 and 19th Street Interchange Project Visual Resources Technical Report*, City of Golden, Jefferson County, June 2015

1. Non-Refundable Fee

No fee is required for this application.

2. Reasonable Alternative Corridor Locations

Three alternatives were considered for detailed evaluation in the *US 6 / 19th Street Interchange System Level Feasibility Study*. They include a compressed diamond interchange, a roundabout interchange, and a free-left (modified diamond) interchange providing an uncontrolled westbound left-turn. Each alternative includes construction of a "lid" overpass structure that provides additional space for separated multi-modal connectivity and park-like amenities consistent with the *Golden Plan*. The alternative configurations are depicted in Figure 1.

Alternative A—Compressed Diamond Interchange: This concept includes the construction of four ramps to create two signalized intersections on 19th Street. The spacing between the ramps on 19th Street would be approximately 275 feet. US 6 would be lowered to pass under 19th Street. Improvements would also be made to 19th Street between US 6 and the proposed roundabout at the Elm Street intersection.

Alternative B—Roundabout Interchange: The roundabout interchange concept would provide a single roundabout centered on the 19th Street overpass. The roundabout would have six legs providing access to all four US 6 ramps as well as 19th Street. The alternative would also include improvements to 19th Street between US 6 and Elm Street. Since 19th Street has a steep grade ranging from 6 to 9 percent, more traditional roundabout interchange configurations such as a "dog bone" or separate roundabouts at each terminal intersection were considered not feasible for the interchange.

Alternative C—Free-Left (Modified Diamond) Interchange (Preferred Alternative): The free-left (modified diamond) interchange alternative is proposed as an unsignalized interchange. The western ramp intersection (southbound ramps) would be split into two T-intersections, one for the southbound off-ramp and one for the southbound on-ramp. The intersection with the southbound on-ramp would be designed to provide a free westbound left-turn movement. Eastbound 19th Street would be stop controlled at the southbound on-ramp intersection. Improvements to 19th Street between the interchange and Elm Street would also be included in this alternative.

Northbound On-Ramp Options: As part of the construction of the 19th Street overpass, an option for the northbound on-ramp was considered that would reduce conflicts between pedestrians, bicyclists, and vehicles. The proposed modification would have the northbound on-ramp tucked under the 19th Street "lid," providing an unrestricted pedestrian and bicycle crossing from the 19th Street structure to the CSM campus. This ramp alternative would require eastbound left-turn drivers to perform a U-turn at the proposed Elm Street roundabout. In Figure 1, both Alternatives B and C are shown with this northbound on-ramp option. However, as part of the value engineering process for the interchange, the pedestrian grade separation was removed and an at-grade pedestrian and bicycle crossing of the ramp near 19th Street was added.

Figure 1. Interchange Alternatives Evaluated

Alternative A:
Compressed Diamond Alternative

Alternative B:
Roundabout Alternative

Alternative C:
Free-Left Alternative

The following criteria were identified in the *US 6 / 19th Street Interchange System Level Feasibility Study* to evaluate the alternatives. The Free-Left (Modified Diamond) Interchange alternative was identified as the Preferred Alternative for the interchange configuration.

Table 1: Detailed Evaluation Summary

Evaluation Criterion	No Build	Alt A Compressed Diamond	Alt B Roundabout	Alt C Free-Left
Traffic Operations	○	●	●	●
Vehicular Safety	○	◐	●	●
Multi-modal Operations	◐	◐	○	●
Multi-modal Safety	○	◐	◐	◐
Construction Costs	●	◐	◐	◐
Environmental Impacts	●	◐	◐	◐
Maintenance Considerations	◐	○	○	○
Constructability	●	◐	◐	◐
Life Cycle Costs	●	○	○	○
Consistency with Neighborhood Vision	○	◐	◐	●

Source: Muller Engineering Company

Notes:

● Meets criteria parameters

◐ Partially meets criteria parameters

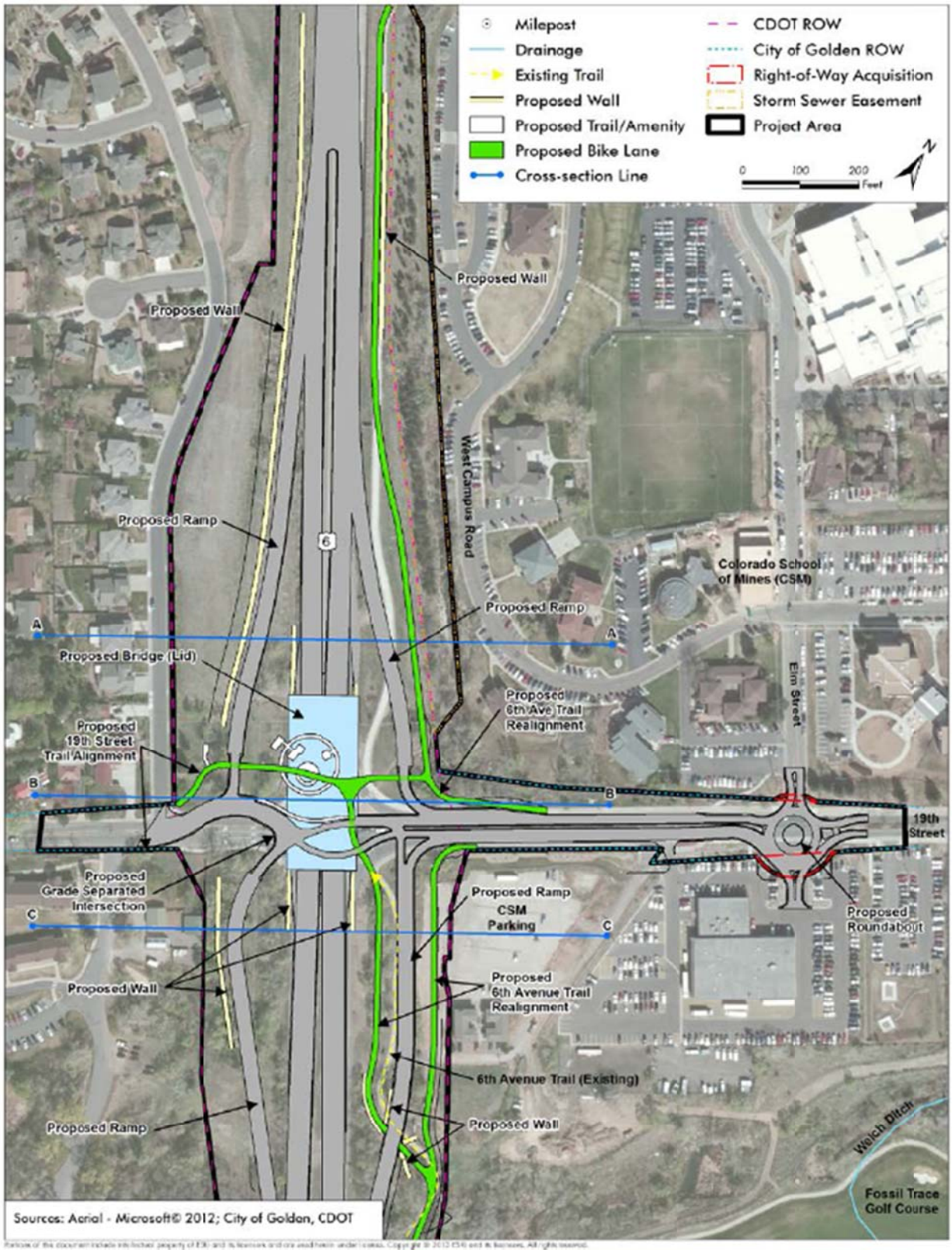
○ Does not meet criteria parameters

3. PROJECT LOCATION

The Project area encompasses the rights-of-way at the intersection of US 6 and 19th Street in Sections 33 and 34, Township 3 South, Range 70 West of the 6th Principal Meridian in the City of Golden, Jefferson County, Colorado. The UTM coordinates of the approximate center of the Project area are NAD 83, Zone 13N –32 480808mE, 4399570mN, and the latitude/longitude is 39.745818°N/105.224007°W.

The Project location and layout are illustrated in Figure 2.

Figure 2: Project Location and Detail



As described in the *US 6 / 19th Street Interchange Categorical Exclusion*, the Project would create a grade-separated unsignalized interchange at US 6 and 19th Street.

- US 6 would be lowered on its current alignment, allowing 19th Street to remain at existing grade. Ramps would be constructed to allow traffic to access 19th Street from US 6.
- An extended lid (bridge structure) would be constructed over US 6 that would separate pedestrian and bicycle traffic from vehicle traffic on US 6 and move the at-grade crossings to the north side of 19th Street to the lower volume ramps, thereby improving safety at the intersection for pedestrian, bicycle, and motor vehicle users.
- The extended lid would also include landscaping, trails, and design for potential park amenities. The 6th Avenue Trail, which runs parallel to and north of US 6, would be realigned both vertically and horizontally to integrate with the proposed grade separation. A spur of the regional trail would be added to provide access to the existing sidewalk along 19th Street.
- The improvements to 19th Street include a reconfigured intersection on top of the lid to provide unimpeded travel for the westbound traffic to southbound US 6. The existing footprint of 19th Street east of US 6 would not change except for the addition of a roundabout at Elm Street.

The following advantages and disadvantages of the selected interchange configuration are provided in the *US 6 / 19th Street Interchange System Level Feasibility Study.*

Advantages of the Project

Traffic Operations

The Free-Left Alternative interchange configuration will provide the necessary facilities to accommodate the forecasted multi-modal travel demand through 2035. The Project creates an entirely unsignalized interchange complex, providing a free-flow westbound left-turn movement from 19th Street to US 6, serving the primary movement during the Noon and PM peak hours. Each intersection is forecast to operate at LOS A or B during all peak hours.

Vehicular Safety

The Free-Left Alternative reduces the number of conflict points from 32 to 12: 3 crossing conflicts, 5 diverging conflicts and 4 merging conflicts. In addition, the proposed free-left design will provide traffic control at the location where the westbound left-turn crosses the eastbound bicycle movement. In this alternative, the bicycle traffic will be stop-controlled, which should reduce the frequency of vehicle-bicycle collisions.

Multi-Modal Operations and Safety

The Project minimizes at-grade crossings and provides simplicity in navigating the interchange, as well as an improved sense of comfort and safety for bicyclists and pedestrians. The lid overpass structure with trail connections provides for improved neighborhood connectivity and safety, consistent with Golden community goals as listed in the *Golden Plan*.

Environmental Issues

The Project would have a positive impact on the air quality of the US 6 corridor based on the anticipated decreases in intersection delay and congestion along US 6. The minor loss of wildlife habitat would have a negligible effect on wildlife due to the similar and higher quality habitat available locally and regionally. There would be no adverse effect on cultural resources. It is not anticipated that the geologic Laramie Formation, which is highly fossiliferous in this area and located just east of the Project, would be disturbed by the Project.

Disadvantages of the Project

Traffic Operations

To provide the free-left in the westbound direction of 19th Street, eastbound 19th Street must be stop-controlled. However, the forecast delay is less than the No Build Scenario.

Vehicular Safety

There are no identified vehicular safety disadvantages.

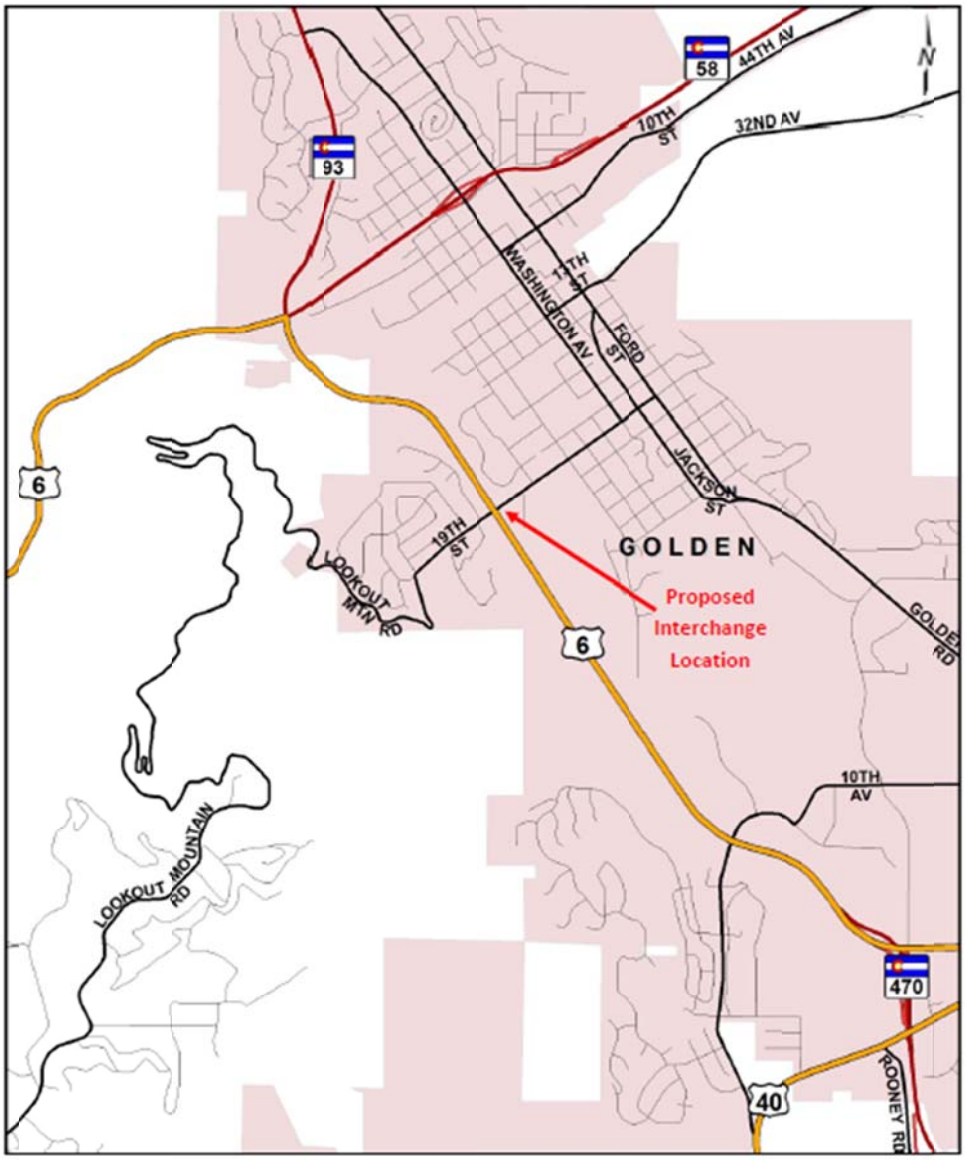
Multi-Modal Operations and Safety

There are no identified multi-modal operations and safety disadvantages.

Environmental Issues

This Project would impact small wetlands within the roadside swale west of US 6 and along Chimney Gulch. Impacts on wetlands may also occur along Clear Creek at the stormwater outfall.

4. Location Map



5. TYPE, SCALE, AND APPEARANCE OF THE PROJECT

The Project will create a grade-separated unsignalized interchange at US 6 and 19th Street. Typical cross-sections of the proposed US 6 improvements include:

- Two 12-foot-wide lanes with 10-foot outside shoulders and 4-foot inside shoulders in each direction underneath the structure/lid.
- A cross-section of US 6 with an 18-foot-wide raised landscaped median north of the 19th Street intersection, a 32-foot-wide raised landscaped median south of the intersection, and a concrete barrier adjacent to the bridge piers under the 300-foot extended lid.
- Retaining walls placed to accommodate a third future 12-foot travel lane in both directions on US 6 (to be constructed as necessary, based on future traffic volumes).

Cost Estimate

As identified in the *US 6 / 19th Street Interchange System Level Feasibility Study,* the total Project design and construction costs are anticipated to be $25.28 million. The costs are broken down in Table 2.

Table 2: Project Conceptual Costs including Value Engineering

Element	Cost Estimate
Interchange Construction	$16.79 million
Design/Construction Engineering	$3 million
Construction Management	$2.84 million
Contingency	$2.65 million
Total Cost	$25.28 million

Construction and Right-of-Way Acquisition Timetable

Detailed right-of-way (ROW) acquisition plans are expected by October 2015. Construction is anticipated to begin in January of 2016 and be completed by August of 2017, contingent on CDOT approvals.

6. DEMOGRAPHIC INFORMATION

Population and Density

According to the City of Golden Community & Economic Development Department, the population was estimated to be 19,200 individuals in 2015, with a population density of 2,133 people per square mile.

Table 3: Population Projections in Five Year Increments over Next 20 Years

Year	Population
2020	19,685
2025	20,182
2030	20,692
2035	21,214

Total Employment

According to the City of Golden Community & Economic Development Department, the total employment is approximately 17,000 in 2015.

Occupation Types

The City's economy is characterized by professional scientific and technical services, or the "tech industry". Several businesses, including coffee shops, restaurants, doctors' offices, professional scientific

services, and retailers, are within the socioeconomic study area surrounding the Project. The top five industries, according to the 2010 US Census, are listed in Table 4.

Table 4: Top Five Occupations in City of Golden

Occupation (2010 Census)
Management, Business, Science, and Arts
Sales and Office
Service
Production, Transportation, Material Moving
Natural Resources, Construction, and Maintenance

Major Employer Locations
Most City businesses are clustered in the downtown Golden business district on Washington Avenue, northeast of the Project. One business, Performance Car Care Center on 19th Street and Jackson, is located in the immediate vicinity of the Project construction. According to the City of Golden Community & Economic Development Department, additional employer locations include the Coors Technology Center, Canyon View Business Park, Interstate Denver West Business Park, and Jefferson County Government Campus.

Average Family Income
The median family income is substantially higher in the City of Golden ($92,561) than Jefferson County ($84,957), Colorado ($72,687), and the nation ($64,719).

7. NEED FOR PROPOSED PROJECT

The *US 6 / 19th Street Interchange System Level Feasibility Study* indicates the need for a grade-separated interchange at US 6 and 19th Street is desired by both the City of Golden and the Colorado School of Mines (CSM). The needs are based on the increasing demands to serve pedestrian, bicycle and vehicular traffic through the intersection. Mines Park, a CSM student housing complex, is located in the southwest quadrant of the intersection, while the school's campus is located in the northeast quadrant. This requires over 500 students to cross both 19th Street and the heavily traveled US 6 corridor to get to and from the main campus. Two neighborhoods with approximately 300 homes utilize 19th Street as a main route to and from downtown Golden. The intersection also provides bicycle access to Lookout Mountain and the US 6 regional trail.

The *US Highway 6 and 19th Street Interchange Categorical Exclusion* describes the following needs for the Project:

- Meet Current and Future Traffic Demands (Including Denver Regional Council of Governments (DRCOG) Planning).
- Provide Operational Efficiency while Meeting the Community's Goals
- Increase Safety
- Support Neighborhood Connectivity by Expanding Multimodal Connections

8. Major Traffic Generators

The Colorado School of Mines, associated Mines Park student housing, and the Beverly Heights residential neighborhood are local major traffic generators for this Project. Downtown Golden and Lookout Mountain are major regional generators for traffic utilizing the intersection to travel on/off or across US 6 on 19th Street. Most of the traffic traveling on US 6 through the intersection is regional traffic with origins and/or destinations outside of the City of Golden.

9. Planned Level of Service

The *US 6 / 19th Street Interchange System Level Feasibility Study* indicates Project will improve the current peak hour levels of service from LOS E/F to LOS A/B. The Project will also improve travel time reliability accessing Golden on 19th Street and along US 6. The Project will significantly reduce driver delays and queues at the US 6/19th Street intersection and will dramatically improve pedestrian and bicyclist mobility across US 6.

10. Existing Land Use

As described in the *US 6 / 19th Street Interchange System Level Feasibility Study*, the US 6/19th Street intersection is surrounded by residential and educational development. Existing land use is depicted in Figure 4. The CSM campus is located in the northeast quadrant of the intersection. Mines Park, a student housing complex for CSM, is located in the southwest quadrant of the intersection. Single family housing is located northwest of the intersection. Commuter student parking lots are currently located southeast of the intersection.

The US 6/19th Street intersection provides access to the following major destinations within Golden:

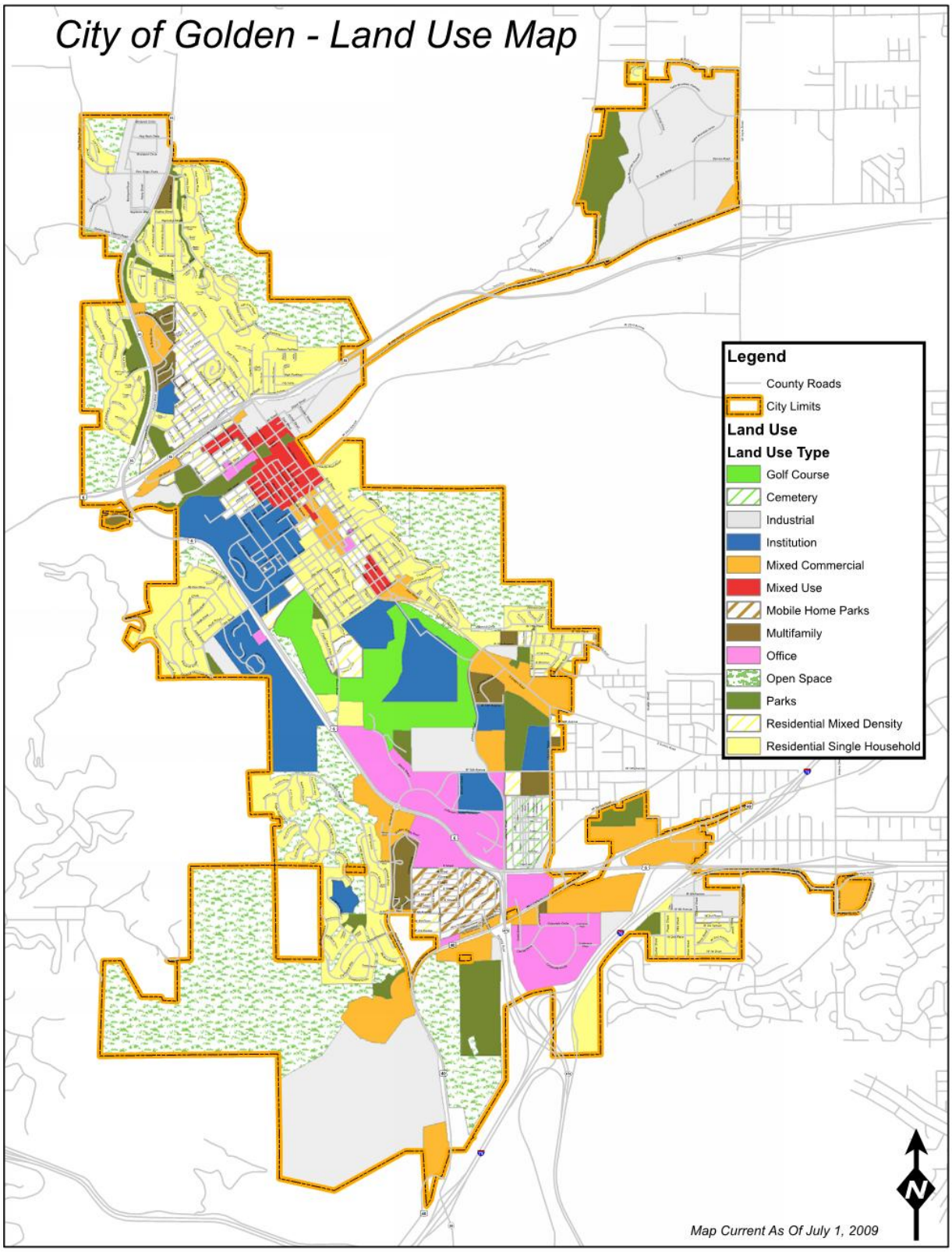
- Downtown Golden is located on Washington Avenue, which is accessed via 19th Street. Downtown Golden has multiple shops and restaurants that attract employees and visitors alike. The main brewing and bottling factory for Molson Coors is also accessible from 19th Street.
- The CSM campus is accessed from 19th Street, primarily at the Elm Street intersection. The US 6/19th Street intersection provides access to all academic and athletic facilities on campus, with the majority of campus parking along 19th Street.
- Lookout Mountain is located west of US 6 along 19th Street, a popular cycling route for road cyclists. As a result, on-street bicycle traffic is higher than typical in the immediate Project vicinity.

11. Planned Land Use

The area surrounding the Project is largely built-out or protected from private development. Development is forecast within other parts of the City or along the US 6 and SH 93 corridor. There is also the potential for future development within the Project area by CSM. Additional student residential units may be added to the Mines Park residential area southwest of the Project. In addition, the existing CSM commuter and residential parking lots southeast of the Project may be redeveloped into additional academic and campus buildings, as well as providing a structure to consolidate campus parking. Potential future development and land uses by CSM would remain largely the same as current uses.

Although CSM plans to intensify development levels both on campus and within the student housing area, none of these land use changes are under formal planning processes at this time. Although no formal changes to land use are planned as a result of the Project, the landscaped lid would result in increased student commuter and recreational use on the lid including bicyclists and pedestrians.

Figure 4. Existing Land Use



12. APPROXIMATE NUMBER OF PROJECT USERS

Project User	2015	2035
Existing City Users	13,600	13,600
New City Users	Not applicable	374
Non-City Users	42,000	50,116

13. ALTERNATIVE MODES OF TRANSPORTATION

The Project will dramatically improve pedestrian and bicyclist mobility across US 6, which currently acts as a barrier for multi-modal mobility. CSM has over 550 students housed across the highway from the main campus and they must cross US 6 to access campus multiple times each day. The Project also allows the Golden/RTD Community Call and Ride bus to enter the neighborhood, which has not been able to serve the area due to trip delay and reliability. The Project will more safely accommodate the hundreds of bikes currently crossing US 6 at 19th Street to access the Lookout Mountain area.

The *US 6 / 19th Street Interchange System Level Feasibility Study* states that the Project will provide dedicated pedestrian and bicycle facilities. A shared use path is proposed on the north side of 19th Street across the bridge structure over US 6. The path will have two at-grade crossings; one across the southbound off-ramp and one across the northbound on-ramp. Across the southbound off-ramp, the crossing will be set back approximately 50 feet from the intersection to provide a more direct travel path between Mines Park and the CSM campus. The set-back will also reduce the number of multi-modal conflict points at the unsignalized intersection with 19th Street.

The 6th Avenue Trail will be routed under the northbound off-ramp. The trail will then parallel the off-ramp to the top of the overpass. The trail will cross 19th Street approximately half way between the northbound off-ramp and southbound on-ramp intersections at a mid-block unsignalized crossing. The median of 19th Street will provide a two-stage crossing at this location. The regional trail will then connect into the other pedestrian and bicycle paths on the north side of the interchange. A spur will also be added to the regional trail prior to the crossing under the northbound off-ramp. This spur will travel along the east side of the ramp and connect to the CSM property along the south side of 19th Street.

A bicycle lane will be provided along 19th Street in the westbound direction extending from the Elm Street roundabout through the interchange complex. No bicycle lane will be provided in the eastbound direction of 19th Street, as the steep downhill nature of the existing street enables bicycles to travel close to vehicle speeds in a shared lane.

14. ANTICIPATED NOISE LEVELS

The *Environmental Noise Study for the US 6/ 19th Street Interchange* states the increase in noise levels with the Project over existing conditions generally range from 1 to 3 dBA. Existing noise ranges from 42 dBA to 68 dBA. The increase is due to a combination of increased traffic volumes and additional acoustical reflections from the new retaining walls along both sides of US 6. The increased noise from reflections is somewhat offset by the extra acoustical shielding provided by the terrain of the depressed highway. A few receptors are predicted to experience a decrease in noise of 1 to 3 dBA. The increase in noise near the tunnel portal due to acoustical reflections from the tunnel's interior vertical and horizontal surfaces is less than 0.5 dBA at all receptors.

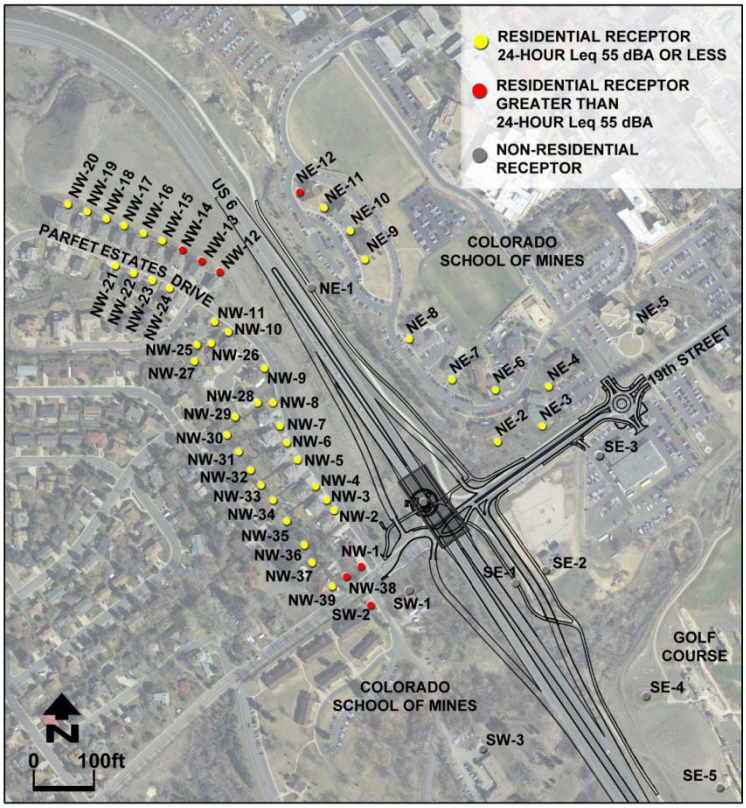
Table 5 shows the calculated noise levels with noise descriptors related to the 1041 approval process. The 8-hour L_{eq} is the average noise level during the eight noisiest hours of the day and the 24-hour L_{eq} is the average noise level over the full day. The 24-hour L_{eq} is the metric used in the City's standards for highway interchanges, which is a 24-hour L_{eq} less than 55 dBA. The Typical L_{max} describes the maximum noise level during single-events such as truck pass-bys.

Table 5. Locations with Anticipated Future Noise Levels with the Project over City Standard

Residential Receptors		8-hour L_{eq}	24-hour L_{eq}	Typical L_{max}
CSM Fraternity/Sorority	NE-12	57	56	63
Homes on Parfet Estates Dr	NW-1	62	61	67
	NW-12	59	58	64
	NW-13	59	58	64
	NW-14	58	57	64
Homes along 19th Street	NW-38	60	58	65
CSM Apartments on 19th St	SW-2	59	58	65

Figure 5 shows the receptor locations and identifies those residential receptors exposed to a future 24-hour L_{eq} greater than 55 dBA. As shown, most receptors within the area are not anticipated to exceed the City standard.

Figure 5. Noise Receptor Locations



15. Air Quality Impacts

The *Air Quality Clearance Memorandum for the US 6/19th Street Intersection Project* notes that upon completion of the Project, the US 6/19th Street intersection will no longer be signal controlled—the

ramps will have stop signs. Intersections controlled by stop signs and/or roundabouts do not need to be modeled for carbon monoxide concentrations, so no further analysis was completed for local conditions. Therefore, carbon monoxide concentrations are unlikely to exceed the NAAQS from the proposed Project. Finally, the proposed Project is not a type that is a "Project of concern" for particulate matter—a Project with a high concentration of diesel vehicles, etc. Therefore, localized analysis for particulate matter was not completed for the Project.

The Project is included in the fiscally constrained 2040 RTP and in the 2012-2017 Transportation Improvement Program. These plans demonstrate regional conformity; therefore, this Project demonstrates conformity with the air quality State Implementation Plan.

16. IMPACTS ON ACCESSIBILITY

Based on the level of service benefits noted in the *US 6 / 19th Street Interchange System Level Feasibility Study, t*he grade separated interchange at US 6 and 19th Street will improve overall accessibility. Although it will primarily benefit local accessibility, it will also benefit regional travel on US 6 by removal of the traffic signalized intersection, which eliminates a signalized stop along US 6 and the associated stopped vehicle delay.

Local accessibility is significantly improved with the proposed interchange. Existing traffic congestion causes a substantial barrier to accessibility. Access to existing public facilities, commercial and industrial facilities and residential areas will be greatly improved with the Project, directly related to the improvement in level of service for US 6/19th Street traffic. In particular, local accessibility to the CSM and Beverly Heights residential neighborhood will be greatly improved. The reduction in congestion will also improve access and travel time for emergency services.

Accessibility for pedestrians and bicyclists crossing through the intersection will be greatly improved due to the proposed grade separated movements. Many residents of the Beverly Heights neighborhood and CSM students walk or bike on 19th Street across US 6, which in its current at-grade configuration creates a substantial barrier to accessibility. The proposed grade separated pedestrian and bicycle connections will result in improved mobility and safety for non-motorized users.

17. HEALTH OR SAFETY HAZARDS

The *US 6 / 19th Street Interchange System Level Feasibility Study* indicates an environmental review was conducted to identify potential recognized environmental conditions (RECs) associated with the Project area. No potential RECs have been identified within the Project area. The potential RECs identified in the surrounding area are as follows:

- CSM Creekside Comprehensive Environmental Response, Compensation, and Liability Information System-No Further Remedial Action Planned (CERCLIS-NFRAP) site with documented ground water contamination adjoining the Project area to the north
- Stevinson Golden Ford leaking underground storage tank (LUST) site, 1301 19th Street, adjoining the Project area southeast of the intersection of 19th Street and Elm Street
- Parfet Clay Pits Voluntary Cleanup site adjoining the Project area to the east

All of the sites identified as potential RECs are located topographically and hydrologically downgradient of the Project area.

18. CONSISTENCY WITH COMPREHENSIVE PLAN

The *US 6 / 19th Street Interchange System Level Feasibility Study, US 6 / 19th Street Interchange Categorical Exclusion, City of Golden Comprehensive Plan* and *Golden's Plan for the Highway 6 & 93 Corridor* were referenced to identify the following consistent goals, objectives, and policies:

- One of the primary goals of the Project is to provide safer and more direct multi-modal connections across US 6 and 19th Street. This is in alignment with the *City of Golden Comprehensive Plan*, which identifies "safe, convenient and well-maintained biking and walking opportunities appropriate for all ages and ability levels" as one of its goals.
- The *City of Golden Comprehensive Plan* identifies "…fostering multi-modal opportunities (trails, paths, pedestrian bridges, roads) that enhance and maintain universal access, mobility and connectivity within and throughout the community." *Golden's Plan for the Highway 6 and 93 Corridor* identifies "Enhanc[ing] Neighborhood Connectivity by making the corridor friendly to pedestrians and bicyclists" and "enhanc[ing the] bridge connection…at 19th Street." The "lid" design of the interchange will reduce conflicts between pedestrians, bicyclists and vehicles and improve mobility and connectivity for alternate modes of travel. It will also provide an enhanced bridge connection at 19th Street.
- The *City of Golden Comprehensive Plan* identifies "be[ing] a place where we can go anywhere at any time and feel safe" as one of its goals. The Project will improve safety for all users of the transportation system.
- The Project is not anticipated to impact the geologic Laramie Formation and construction is expected to cause minimal disturbance to fossiliferous bedrock, which aligns with the *City of Golden Comprehensive Plan* and *Golden's Plan for the Highway 6 and 93 Corridor*'s respective goals of "…preserv[ing] the natural beauty of unique geologic features" and "protecting the Natural and Historic Beauty of the Mountain Backdrop."
- The "lid" design of the interchange is in alignment with the "Golden Option 19th Street and US 6" interchange identified in *Golden's Plan for the Highway 6 and 93 Corridor*.
- The *City of Golden Comprehensive Plan* identifies "continu[ing] to move toward roadway designs and improvements for US 6…that reduce highway noise, increase connectivity and safety for pedestrians motorists and bicyclists using or crossing such roadways, and respect the character of Golden while acknowledging an appropriate role in the regional transportation system" as a Community Theme. As discussed throughout this permit application, the Project will address the goals outlined in this Community Theme by increasing connectivity and safety for travelers, and respecting the character of Golden by preserving natural features.
- The US 6/19th Street interchange is consistent with City of Golden long-range plans. Planned land uses surrounding the interchange remain largely the same as current uses. However, CSM plans to intensify development levels both on campus and within their student housing area. The interchange improvements will serve the potential increase of school-related traffic, including pedestrians and bicyclists.

19. CONSISTENCY WITH REGIONAL AND STATE PLANS

DRCOG is the designated Metropolitan Planning Organization for the Denver area. Metro Vision 2035 (DRCOG 2011) is the current long-range unconstrained transportation plan for the Denver region, which includes the Project. Improvements to the US 6 and 19th Street intersection were not included in the Metro Vision 2035 Plan, but are included as a "Regionally Funded with CDOT-Controlled Funds" Project in the draft list of 2040 Regional Transportation Plan projects (DRCOG 2015). DRCOG is currently in the process of approving the updated Metro Vision 2040 regional plan.

The *Golden Plan* was adopted by City Council in October 2003 and updated in January 2013 as a vision for improving transportation within Golden city limits. The study illustrates how traffic needs can be met through a specific set of upgrades or realignments of existing roads (including US 6 and SH 93). Currently, Golden staff are working with CDOT to identify potential improvements for the US 6 and SH 93 corridors that meet the goals of the *Golden Plan*, as well as benefit the entire region. The first project to be forwarded from the process is the design and construction of the US 6/19th Street interchange. In 2013, the City submitted the proposed interchange Project to the Responsible Acceleration of Maintenance and Partnerships (RAMP) program and was selected to receive funding. As a result, the design and construction of the interchange has been accelerated to meet RAMP funding deadlines.

20. Development Potential

The area surrounding the Project is largely built-out or protected from development. The predominant land uses surrounding the study area are residential and university uses. For the most part, future development potential is limited within the area. Development within other parts of the City of Golden or along the US 6 and SH 93 corridor is forecast, but not in the immediate vicinity of the Project. The limited potential for future development is not expected to change with or without the interchange at US 6 and 19th Street. This includes the "mini" CSM conference center, being considered by the school regardless of the proposed interchange Project.

Due to the anticipated improvement in motorized and non-motorized local accessibility and safety resulting from the grade separation, land values in the Project vicinity will potentially increase. In addition, the proposed roundabout at Elm Street will improve accessibility to the former automobile dealership property east of the roundabout intersection.

21. Demand on Public Services

There is no demonstrated demand for development potential anticipated due to the proposed interchange Project. Therefore, there is minimal, if any, anticipated negative impact on public services. Because the grade separation will contain park amenities and be maintained by City Parks personnel, there will be the associated increase in park maintenance costs. Positive impacts on public services, as noted above, will come from improved accessibility and safety, especially for emergency services.

22. Costs and Benefits from Land Use Commitment

Since no change in land use commitment is anticipated or facilitated by the proposed interchange Project, there is no cost or benefit related to area land use. A minor amount of right-of-way is being donated by the Colorado School of Mines, so right-of-way costs are not part of the Project cost estimate.

23. Plan for Controlling Adjacent Land Use

Lands surrounding the interchange will be controlled by existing City of Golden zoning regulations, and the rezoning process for any proposed future changes in land use. Land use identified in the CSM Master Plan is controlled by the University Board, in coordination with the City of Golden.

24. Water Quality/Water Resources Impacts

The *US 6 / 19th Street Interchange Categorical Exclusion* states that six groupings of wetlands and other waters occur within the Project area. Additionally, a concrete-lined ditch occurs on the east side of US 6. This ditch is not considered a water of the U.S. because of the lack of evidence of flows as the concrete

is broken in some sections with rubber rabbitbrush and other upland species growing in the cracks. However, some isolated sections have pools of water. The total area of all wetlands and other waters in the Project area is 0.47 acre.

25. HISTORIC RESOURCES IMPACTS

The *US 6/19th Street Interchange Project Cultural Resource Survey* resulted in the identification and evaluation of six historical resources and six historical buildings for NRHP eligibility and Project effects. Documentation efforts included re-visiting two officially eligible segments of the Welch Ditch (5JF848.5 and 5JF848.6) and re-recording the previously documented Parfet Clay Mine (5JF2631) which is not eligible for NRHP listing. Additionally, ERO documented a new segment of U.S. Highway 6 (5JF4509.2) and previously unidentified resources including two historic rock walls (5JF6885 and 5JF6886) and six buildings on CSM property (5JF6887, 5JF6888, 5JF6889, 5JF6890, 5JF6891, and 5JF6892); of these ERO recommends CSM Aspen Hall (5JF6890) as eligible for NRHP listing.

The area of potential effect for the Project intersects the boundaries of the above-listed resources, but would not cause any physical impacts to the extant historic structures of the NRHP eligible Welch Ditch (5JF848), US Highway 6 (5JF4509), or CSM Aspen Hall (5JF6890). Since the Project would not cause any impacts to resources eligible for the NRHP, ERO recommends a determination of "no historic properties adversely affected" for the Project pursuant to CFR 800.5(d)(1) of the NHPA.

26. NATURAL RESOURCES IMPACTS

The *US 6 & 19th Street Interchange Project Biological Resources Report* was referenced for the following information regarding the impacts to natural resources.

Wildlife and Fisheries

Wildlife species likely to be present in and around the Project area include those found in montane shrubland habitat such as mule deer, coyote, red fox, cottontail, deer mouse, raptors, American magpie, and chickadees.

Threatened and Endangered Species

Several threatened and endangered (T&E) species have potential habitat in Jefferson County. These species are identified in Table 6. The Project would not directly or indirectly affect the Canada lynx, Mexican spotted owl, Pawnee montane skipper, Preble's jumping mouse, Colorado butterfly plant or Ute Ladies'-Tresses orchid because of the lack of potentially suitable habitat in the Project area. The interior least tern, piping plover, whooping crane, pallid sturgeon, and western prairie fringed orchid are species that are affected by water depletions from the South Platte River. The Project may result in short-term depletions during construction by use of water for construction activities.

<u>Other species</u>

- No black-tailed prairie dog towns were observed in the Project area, therefore prairie dogs would not be impacted by the Project.
- Peregrines have historically nested on the Ralston buttes northwest of the Project area. This bird may occasionally forage over the Project area, although prey habitat is limited.
- Bald eagles may occasionally perch in the trees within or near the Project area, although foraging areas of prairie dog towns and large streams are not found within or near the Project area. No bald eagle nest site, roost, or communal winter roost area is known or is likely to occur within the Project area.

- The Project area and adjacent area do not contain prairie dog town; therefore, burrowing owls would not nest within the Project area.
- Ferruginous hawks are not known to nest in or near the Project area. Habitat for ferruginous hawk prey is limited within the area, but they may occasionally forage in the area in winter.
- Leopard frogs may occur in the wetland areas within the Project area, although none were observed during the numerous surveys conducted by ERO.

Table 6: Threatened and Endangered Species in Jefferson County

Common Name	Scientific Name	Status	Habitat	Suitable Habitat Present or Potential Impacts
Mammals				
Canada Lynx	*Lynx Canadensis*	T	Subalpine forests	No
Preble's meadow jumping mouse	*Zapus hudsonius preblei*	T	Shrub riparian/wet meadows	No
Birds				
Interior least tern	*Sterna antillarum athalassos*	E	Sandy/pebble beaches on lakes, reservoirs, and rivers	No
Mexican spotted owl	*Strix occidentalis*	T	Closed canopy forests in steep canyons	No
Piping plover	*Charadrius melodus*	T	Sandy lakeshore beaches and river sandbars	No
Whooping crane	*Grus Americana*	E	Mudflats around reservoirs and in agricultural areas	No
Fish				
Pallid sturgeon	*Scaphirhynchus albus*	E	Large, turbid, free-flowing rivers	No
Plants				
Colorado butterfly plant	*Gaura neomexicana ssp. Coloradensis*	T	Moist areas of floodplains	No
Ute ladies'-tresses orchid	*Spiranthes diluvialis*	T	Moist to wet alluvial meadows, floodplains of perennial streams, and around springs and lakes below 6,500 feet	No
Western prairie fringed orchid	*Platanthera praeclara*	T	Tallgrass prairies and wetlands along the Platte River	No
Insects				
Pawnee montane skipper	*Hesperia leonardus montana*	T	Open woodlands, with blue grama grass and gayfeather, above 6,000 feet in elevation	No

Scenic

The overall Project setting is a scenic area consisting of a high diversity of landforms, extensive mountain park and open space areas, the Clear Creek corridor, nationally significant geologic features, and dynamic and contrasting urban architecture in historic buildings. The US 6 and 19th Street interchange serves as a "gateway" image to the entrance to the City. Permanent impacts to the landscape include:

- Landscape contrast of 19th Street landscape and roundabout to the following viewers:
  - CSM
  - 19th Street eastbound and westbound
- Landform and vegetation contrast of US 6 steep slopes to the following viewers:
  - Beverly Heights neighborhood
  - 6th Avenue Trail
  - Fossil Area NNL #3 and Geology Trail
  - Mines Park Housing
  - US 6 northbound and southbound
- Landform contrast of berm extension to the following viewers:
  - Beverly Heights neighborhood
  - Mines Park Housing
  - 19th Street eastbound and westbound
- Landform contrast of water quality pond to the Beverly Heights neighborhood
- Vegetation contrast of invasive tree removal to the following viewers:
  - Beverly Heights neighborhood
  - CSM
  - Fossil Area NNL #1 & #2 & Triceratops Trail
  - 6th Avenue Trail
  - Mines Park Housing
  - US 6 northbound and southbound
  - 19th Street eastbound an southbound
- Vegetation contrast of native riparian vegetation to the following viewers:
  - 6th Avenue Trail
  - Fossil Area NNL #1 & #2 & Triceratops Trail

Recreational and Parks

Recreational and park resources were assessed for the Project including Section 6(f) resources. There would be temporary impacts on bicyclists and pedestrians using the 6th Avenue and Triceratops Trails while the enhancements are constructed. The use of the Section 4(f) resources are solely for the purpose of preserving or enhancing an activity, feature, or attribute that qualifies the resources for Section 4(f) protection. Therefore, these activities would meet the requirements of the Department of Transportation Act of 1966 Section 4(f) enhancement exception in 23 4 CFR 774.13(g).

Archeological

A Class III pedestrian survey resulted in the identification of 12 historic cultural resources within the Project area. Three of the documented resources have been previously recorded. Since the three documented resources would be avoided, no National Register of Historic Places (NRHP)-eligible cultural resources would be affected by the Project. A recommendation would be made to the State Historic Preservation Office of "no historic properties affected" for the Project, pursuant to 36 CFR 800.5 of the National Historic Preservation Act.

Paleontological
Based on the construction design plans, it is not anticipated that the vertically inclined Laramie Formation, which is highly fossiliferous in this area and is mapped along the northeast boundary of the Project area and within the Project area on 19th Street, will be disturbed by the Project. The lowering of US 6 will disturb less fossiliferous units, including Slocum, Verdos, Louviers, and Broadway Alluvium, as well as Pierre Shale and Fox Hills Sandstone. These units are unlikely to contain significant fossils in this area based on the results of this analysis.

Other Resources
Other resources were assessed for the Project such as Environmental Justice concerns and socioeconomic resources. These resources are either not present in the Project area, or the effects, if any, would be temporary, localized, and slight.

27. ADJACENT NEIGHBORHOODS IMPACTS

The area surrounding the proposed interchange is largely built-out or protected from private development, so there are no adjacent neighborhood impacts from the Project. The predominant land uses surrounding the Project area are residential and university uses, which will benefit from the multimodal access improvements of the Project. Other community benefits include the removal of barriers to neighborhood connections and interaction. The transformation of the US 6/19th Street intersection a community barrier into a regional transportation facility that also encourages community connection and interaction is a quality of life benefit for City residents and visitors.

28. Feasible Alternatives for Mitigating Adverse Effects of the Project

Summary of Impacts and Mitigation for the Proposed Action

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation would be Implemented
1	Air Quality	There would be a slight increase in particulate matter emissions from construction equipment during construction activities. In addition, traffic congestion and delays during construction would result in increased emissions from vehicle idling.	Although no mitigations are required, standard Best Management Practices (BMPs) would be used to control dust from construction (such as watering disturbed areas) and control vehicle diesel exhaust emissions. The cleanest fuels available would be used in construction equipment, and low-emission vehicles would be used to reduce exhaust emissions.	CDOT Construction	During construction
2	Geologic Resources	No impact.	No mitigations are necessary.	CDOT Design Construction	During construction
3	Water Quality	• Increases in impervious area would raise concentrations of pollutants from vehicle traffic and increase stormwater runoff and the transport of pollutants, resulting in water quality degradation. • Erosion would lead to increased sedimentation. • Construction activity would degrade water quality due to erosion and sedimentation. • Construction activity would degrade water quality through spills of potentially harmful materials. • Construction excavation could degrade groundwater quality in areas of shallow groundwater.	• A Stormwater Management Plan would be developed to address construction activities. • A Construction Activities Stormwater Discharge Permit would be obtained from the CDPHE, and BMPs would be used to mitigate impacts on water bodies as a result of construction. • A permanent water quality extended detention basin would be constructed to treat runoff from the Project area. This facility would function for both water quality and detention. It would be sized to meet the requirements for CDOT's MS4 on US 6 and Golden's MS4 on 19th Street. • The Project would comply with state regulations and a Stormwater Pollution Prevention Plan would be implemented, which would address spill prevention, containment, and spill clean-up during construction. Construction vehicles and equipment would be properly maintained. • A Construction Dewatering Permit would be obtained from the state by the contractor.	CDOT Design Construction	During and post-construction.

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation would be Implemented
4	Wetlands	• Wetlands and other waters of the U.S. would be impacted by the Project. Preliminarily, the amount of wetlands impacted is anticipated to be less than 0.5 acre. • During construction, there may be small areas of temporary impacts on wetlands or waters.	Wetland impacts would be mitigated by purchasing credits through a mitigation bank acceptable to the U.S. Army Corps of Engineers (Corps) (which would be described in a wetland findings report).	CDOT Environmental	Pre-construction (during the Corps permitting process following Corps guidelines)
5	Vegetation	There would be approximately 530 trees and other vegetation (mostly nonnative) removed in the Project area during construction activities.	• Trees would be replaced on a 1:1 basis following construction. Trees replaced in the CDOT ROW would include native species supplemented by a limited number of adapted (low water use) trees. Trees replaced on the extended lid would be a combination of native and adapted nonnative species. • Vegetation disturbed by construction in the CDOT ROW would be replaced with native and adapted (low water use) species. Landscaping on the extended lid would be consistent with adjacent urbanized landscapes and would include a combination of native and adapted nonnative species. • To aid in erosion control following construction clearing and grading, disturbed areas would be revegetated with a seed mix developed and approved in coordination with CDOT and the City. Maintenance of plantings would be used to stabilize disturbed areas until vegetation is fully established. • Because this Project falls outside of the Shortgrass Prairie Initiative boundaries, compliance with the programmatic agreement is assumed to not be required.	CDOT Environmental and Design	All phases

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation would be Implemented
6	Noxious Weeds	• One List A noxious weed species, myrtle spurge, was found in the Project area, which would be removed prior to construction. Ten List B species were found in the Project area, which would be controlled prior to construction. • The possibility of new noxious weed infestation in and adjacent to the Project area would increase because of construction disturbance.	The City would coordinate with the Colorado Department of Agriculture and the Jefferson County Noxious Weed Coordinator for the removal of the species, and the City provides a copy of all correspondence to CDOT. A noxious weed control plan was prepared for controlling List B noxious weeds. Specifications (217 specifications) outlining BMPs to reduce the introduction and spread of noxious weeds would be added to the construction documents.	CDOT Environmental and Construction	All phases
7	Wildlife	• Construction has potential to displace migratory birds or destroy active nests. Several migratory bird nests were found in the Project area and other migratory birds are likely to nest in the area in the future. • Construction of the interchange would result in the loss of a small amount of wildlife habitat, but most of construction would occur in either low quality habitat in existing ROW or in unvegetated areas. Similar and higher quality habitat is available locally and regionally, the minor loss of habitat would have a negligible effect on wildlife. • Construction activities would have a temporary impact on wildlife because of the disturbance to wildlife habitat. Use of large equipment during construction would result in wildlife avoiding the area. Wildlife would likely return to the area following revegetation. Depending on the types of landscaping used on the 19th Street lid, some wildlife such as birds and small mammals may populate the lid area.	• Vegetation would be removed during the nonnesting season or, if vegetation must be removed during the breeding season, a survey for active nests per CDOT guidelines would be performed. The Project would comply with CDOT migratory bird guidelines to avoid and minimize impacts. • The vegetation species planted on the lid would be less palatable to deer and elk to avoid attracting these larger herbivores. • The drainages or ditches in the Project area do not meet the criteria for SB 40 jurisdiction; therefore, mitigation is not required.	CDOT Environmental	During construction

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation would be Implemented
8	Threatened/ Endangered Species (Migratory Bird Treaty Act (MBTA))	No impact.	The results of the ULTO survey would be submitted to the U.S. Fish and Wildlife Service for their concurrence. Depending on the timing of construction, the U.S. Fish and Wildlife Service may require an updated ULTO survey. Prior to construction, surveys would be conducted for bird nests to ensure compliance with the MBTA. If nests are present, mitigation measures would be implemented to avoid take of birds, active nests, or eggs. Additionally, standard CDOT MBTA notes and specifications would be added to the Project plans and specifications.	CDOT Environmental and Construction	Preconstruction and during construction
9	Wildlife Crossing	Use of large equipment during construction would result in wildlife avoiding the area.	Because the overall conclusion of the study is that wildlife-vehicle collisions at the crossing is beyond the scope of this Project, mitigations for the broader issue of overall vehicle-wildlife collisions would be identified and implemented under a separate process.	CDOT Environmental City CPW	Not applicable.
10	Historic Resources	The three documented resources would be avoided; therefore, no NRHP-eligible cultural resources would be affected by the Project.	Avoid and protect all documented resources by erecting construction barrier fencing around documented resources in or adjacent to the Project area.	CDOT Environmental and Construction	During construction
11	Paleontological Resources	Subsurface bones or other potential fossils could be found during construction.	It is recommended that the CDOT staff paleontologist spot-check the excavation to verify the accuracy of the geologic mapping and ensure that the Laramie Formation is not present in the subsurface. In addition, if subsurface bones or other potential fossils are found during construction, temporarily suspend work and notify a CDOT staff paleontologist.	CDOT Environmental and Construction	During construction

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation would be Implemented
12	Socioeconomic Resources	The proposed Project may result in the following temporary impacts: • Increased congestion due to construction • Increased noise during construction hours • Increased stress for pedestrian and bicycle commuters during construction • Increased commute times for motorists, pedestrians, and bicyclists during construction	• The intersection would remain open during construction and alternative routes to the City's business district and CSM would be designated. • Construction would take place during normal work hours to reduce disturbance to residences in the early mornings and evenings. • Detours for bicyclists and pedestrians would be routed away from construction to reduce stress and increase safety. • Increased commute and travel time cannot be fully mitigated, but efforts would be made to reroute through traffic and pedestrian and bicycle traffic.	CDOT Design and Construction	Preconstruction public outreach and during construction
13	Environmental Justice	• Long-term effects on low-income populations could include increased property values and rent over time, making it more difficult for low-income people to afford to live in the area. • Short-term negative impacts on low income and Native American and Alaska Native individuals during construction are similar to those that are likely to be experienced by the broader community and are not likely to be disproportionate.	• The intersection would remain open during construction and alternative routes to the City's business district and CSM would be designated. • Construction would take place during normal work hours to reduce disturbance to residences in the early mornings and evenings. • Detours for bicyclists and pedestrians would be routed away from construction to reduce stress and increase safety. • Increased commute and travel time cannot be fully mitigated, but efforts would be made to reroute through traffic and pedestrian and bicycle traffic.	CDOT Design and Construction	Preconstruction public outreach and during construction
14	Farmlands	No impact	Not applicable	CDOT Environmental	Not applicable
15	Land Use	• The landscaped lid would result in increased recreational use on the lid. • Temporary impacts could occur because bicyclists and pedestrians may avoid using the area during construction.	A detour would be provided for the 6th Avenue Trail to an existing bike route along Illinois Street.	CDOT Design and Construction	Preconstruction and during construction
16	Floodplains	No impact	Not applicable	CDOT Environmental	Not applicable

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation would be Implemented
17	Transportation and Safety	Temporary impacts would occur in the US 6 corridor and along 19th Street during construction. Delays occurring at the intersection of US 6 and 19th Street may cause delays north and south of the intersection along the US 6 corridor.	• During the City design review process, input would be solicited from other departments, in particular the fire department and police department, to ensure that emergency vehicle access is adequate. • CDOT would work with the City to minimize impacts on local traffic. • The City and CDOT would communicate construction delays such as detours and lane closures to the public via the Project website, variable messaging signs, and local media sources. • Emergency services would be notified by the City regarding detours and closures.	CDOT Design and Construction City	Preconstruction and during construction
18	Right-of-Way	The donation of approximately 4,303 square feet of ROW by CSM would result in impacts on the ROW from the change in land ownership.	All necessary steps would be taken as with the acquisition of parcels under the Uniform Act and Section 4 of the CDOT Right-of-Way Manual (2010).	CDOT ROW City CSM	Preconstruction
19	Utilities	No impact	Not applicable	CDOT Environmental	Not applicable
20	Parks/ Recreation Resources	Temporary impacts could occur because bicyclists and pedestrians may avoid using the area as a throughway during construction.	A 6th Avenue Trail detour would be in place during construction that would allow bicyclists and pedestrians to safely negotiate the interchange.	CDOT Design and Construction	Preconstruction and during construction
21	Section 4(f) Resources	• There would be temporary impacts on bicyclists and pedestrians using the 6th Avenue and Triceratops Trails during construction. • There would be temporary impacts during construction on Triceratops Trail access in the portion that runs parallel to the 6th Avenue Trail. • There would be disturbances to vegetation in and around Section 4(f) resources.	• A 6th Avenue Trail detour and signs would be in place during construction that would allow bicyclists and pedestrians to safely negotiate the interchange. • An alternate point of access would be available at the north end of the trail, through the CSM parking lot. • Signs would be placed along the 6th Avenue Trail to indicate the location of the Triceratops Trail access point. • The Project would include requirements for reestablishing any disturbed vegetation near the trail and restoring the area that contained the detour.	CDOT Design and Construction	All phases

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation would be Implemented
22	Section 6(f) Resources	No impact	Not applicable	CDOT Environmental	Not applicable
23	Noise	• Twelve residential structures (six CSM residential halls and six single family homes) are currently exposed to noise levels that equal or exceed the City of Golden's criteria (Leq 55 decibels, or dBA) for ground floor outdoor residential land use. Thirteen residential properties (the original twelve plus one more single family home) will exceed 55 dBA after the project is constructed and traffic volumes meet 2035 projected volumes. • While six receptors are expected to experience no increase in noise, seven receptors will experience increases between 1 – 3 dBA. • Noise impacts may occur on Category B receptors during construction from earthmoving and other construction equipment.	• Identify and design noise abatement alternatives prior to construction. • Monitor noise levels at receptors post construction. Modeling indicates that noise levels will be met post construction for most of the identified properties. Initiate construction activities, including public input< when noise criteria is exceeded. • Discuss mitigation alternatives with impacted property owners prior to construction. In some locations, mitigation will have impacts to views and property owners should have the opportunity to comment on abatement alternatives. During public meetings, some residents have indicated they would prefer higher noise levels to loss of views. • All construction activities would comply with City noise ordinances. Under the noise ordinance, approval for night work would fall under a waiver provision. • A final decision on abatement techniques would be determined through final engineering design considerations, future public outreach efforts, and coordination between the City and CDOT.	City of Golden	Preconstruction public outreach and during construction Construction within 2 years after noise levels are triggered based on input from residents
24	Visual Resources/ Aesthetics	• Landscape contrast of 19th Street landscape and roundabout to the following viewers: o CSM o 9th Street eastbound and westbound	For 19th Street, use street trees for shading in large massings, visual interest, and human scale.	CDOT Design and Construction	Preconstruction and during construction

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation would be Implemented
25	Visual Resources/ Aesthetics	• Landform and vegetation contrast of US 6 steep slopes to the following viewers: o Beverly Heights neighborhood o 6th Avenue Trail o Fossil Area NNL #3 and Geology Trail o Mines Park Housing o US 6 northbound and southbound	• Minimize 2:1 slopes to avoid erosion and difficulties with revegetation on steep slopes. • Apply BMPs for earthwork and revegetation on steep slopes, in compliance with the CDOT Erosion Control and Stormwater Quality Guide and specifications. • Emphasize slope rounding and warping grading techniques to blend earthwork with surrounding contours, achieve a natural appearance, and soften transitions between cuts and fills. • Create a natural and irregular edge to minimize linear contrast of roadway earthwork and embankment with existing contours and vegetation. • Select plant species that produce dense, fibrous roots to help prevent soil erosion. • Plant placement should be pleasing and coordinated with the total highway environment, with safety being the most important consideration. The planting design should correspond to adjacent land forms, grading, and drainage.	CDOT Design and Construction	Preconstruction and during construction
26	Visual Resources/ Aesthetics	• Landform contrast of berm extension to the following viewers: o Beverly Heights neighborhood o Mines Park Housing o 19th Street eastbound and westbound	Address local residential concerns regarding blocking mountain views, by evaluating optional grading and planting plans with visibility studies and simulations, in coordination with the community.	CDOT Design and Construction	Preconstruction and during construction
27	Visual Resources/ Aesthetics	• Landform contrast of water quality pond to the Beverly Heights neighborhood	• Reduce the visual contrast of the geometric shape by rounding corners and blending pond edges with existing grades through slope rounding techniques. • Establish a vegetation transition from the meadow into the pond to reduce visual contrast.	CDOT Design and Construction	Preconstruction and during construction

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation would be Implemented
28	Visual Resources/ Aesthetics	• Vegetation contrast of invasive tree removal to the following viewers: o Beverly Heights neighborhood o CSM o Fossil Area NNL #1 & #2 & Triceratops Trail o 6th Avenue Trail o Mines Park Housing o US 6 northbound and southbound o 19th Street eastbound and southbound	• Select plants and seed mixes that are consistent with native vegetation types, growth habits, and soil types. • Plan vegetation clearing edges that create a naturalized line and transition with the landscape setting. • Consider targeting specific locations (like clustered planting along the 6th Avenue Trail) to connect with riparian vegetation patterns). • Mimic surrounding native plant densities, spacing, and species composition.	CDOT Design and Construction	Preconstruction and during construction
29	Visual Resources/ Aesthetics	• Vegetation contrast of native riparian vegetation to the following viewers: o 6th Avenue Trail o Fossil Area NNL #1 & #2 & Triceratops Trail	• Avoid the removal of mature cottonwood, willow, and other native vegetation adjacent to the Project construction footprint to the extent possible. • Create irregular edge where native trees are being removed within a riparian corridor • Examine the viability of saving mature cottonwood trees within the footprint.	CDOT Design and Construction	Preconstruction and during construction
30	Visual Resources/ Aesthetics	Decreased visual quality due to construction activities, including: • US 6 excavation • Construction staging areas for trailers, equipment, and temporary stock piles • Construction lighting	• Apply CDOT standards for dust and noise control and erosion and stormwater guidance for earthwork during the excavation of US 6 to minimize the visual effects to residents and CSM. • Construction staging for trailers and equipment and temporary stock piles for excavation will be located away from residents or screened from views to the extent practicable to minimize visual disruption. • Limit lighting to that required for safety and security. Shield and direct lighting at working areas to minimize glare and ambient light conditions in nearby areas, including adjacent travel lanes.	CDOT Design and Construction	Preconstruction and during construction

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation would be Implemented
31	Hazardous Materials/ Waste	• Groundwater associated with Project activities is expected to be encountered during subsurface excavations. • The four painted metal signal poles, two painted metal fire hydrants, and numerous painted metal street signs located within the Project area have the potential to be painted with leadbased paint and, therefore, may impact preconstruction activities as these items require special handling with respect to removal and disposal.	• Workers shall be alert during excavation for visual and olfactory signs of contamination. If soil and/or groundwater contamination is encountered during construction activities, work would stop immediately, and the procedures outlined in the CDOT Specification 250 Environmental Health and Safety Management shall be followed. The contractor shall be responsible for the required workers' health and safety. If any contaminated water is encountered, it shall be contained in tank(s) or drums and shall not be directly discharged into a storm sewer, ditch, or any waters of the state. Contaminated soils, if any, shall be properly managed in accordance with local, state, and federal regulations. • Paint chip samples would be collected from all painted metal surfaces within the Project area potentially slated for removal and disposal.	CDOT Design and Construction	All phases