FINAL
Planning and Environmental Linkages (PEL) Report

SH 79 and Kiowa-Bennett Corridor PEL Study

town of Bennett

ADAMS COUNTY COLORADO

Arapahoe County Colorado's First

DOT DEPARTMENT OF TRANSPORTATION

November 2013

AGENCY SUPPORT

The public agencies that were engaged in the preparation of this Planning and Environmental Linkages (PEL) Study for the State Highway (SH) 79 and Kiowa-Bennett Corridor have expressed their support of this plan, as defined in this *Final Planning and Environmental Linkages Report*, dated November 2013.

- Federal Highway Administration (FHWA) and Colorado Department of Transportation (CDOT) agree that this study fits the criteria for the FHWA PEL planning process. Through this process, the evaluation and findings of the PEL study can be more readily applied to subsequent National Environmental Policy Act (NEPA) evaluations where required. Resource agencies with jurisdiction in the study area have expressed support for the process and willingness to work cooperatively on future NEPA processes, as required, for future projects. (See the "Agency and Public Coordination" section.)
- The agencies will work to complete the NEPA environmental evaluation requirements for the area improvements recommended in this report, as required with funding options and/or facility type. Subsequent to future NEPA clearances, the agencies will work cooperatively to fund and implement the improvements.
- The agencies will develop collaborative transportation partnerships to support the corridor recommendations through the Denver Regional Council of Governments (DRCOG) planning process to help facilitate transportation improvements to this study area.

Written letters of support from the agencies represented on the SH 79 and Kiowa-Bennett Corridor PEL Study Technical Advisory Committee (TAC) have been requested and will be compiled as they are received. The TAC supports the recommendations of this study as indicated by those letters.

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ACKNOWLEDGEMENTS

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List of Acronyms and Abbreviations

ac - acres

CDOT – Colorado Department of Transportation

CDPHE - Colorado Department of Public Health and Environment

CFR – Code of Federal Regulations

CO – carbon monoxide

CPW – Colorado Parks and Wildlife

DRCOG – Denver Regional Council of Governments

EB – eastbound

EPA - U.S. Environmental Protection Agency

ESA – Environmental Site Assessment

FHWA – Federal Highway Administration

GIS – Geographic Information Systems

IAR – Interstate Access Request

I-70 – Interstate 70

K-B – Kiowa-Bennett Road

LOS – Level of Service

MBTA – Migratory Bird Treaty Act

MIMR – Minor Interchange Modification Report

mph – miles per hour

MSATs – mobile source air toxics

NAC – Noise Abatement Criteria

NB - Northbound

NEPA – National Environmental Policy Act

NR-B – Non Rural Arterial

NRCS – Natural Resources Conservation Service

NRHP – National Register of Historic Places

PEL – Planning and Environmental Linkages

PE – Professional Engineer

PM_{10} – particulate matter less than 10 microns in size

PTOE – Professional Transportation Operations Engineer

ROW – right-of-way

SB - Southbound

SH – State Highway

SHPO – State Historic Preservation Officer

TAC – Technical Advisory Committee

UPRR – Union Pacific Railroad

U.S. – United States

US 36 - United States Highway 36

USACE – U.S. Army Corps of Engineers

USFWS – U.S. Fish and Wildlife Service

WB – westbound

WUS - Wetlands and Waters of the U.S.

This report documents the PEL study process conducted to identify and evaluate transportation improvements to the SH 79 and Kiowa-Bennett Road corridors near Bennett, Colorado. The information presented in this report will provide the framework for the long-term implementation of transportation improvements as a resource for future NEPA documentation.

INTRODUCTION

SH 79 and Kiowa-Bennett Corridor PEL Study

This report documents the results of a PEL study conducted to identify and evaluate transportation improvements along the SH 79 and Kiowa-Bennett Road corridors near Bennett, Colorado, north and south of Interstate 70 (I-70). The Town of Bennett partnered with Adams and Arapahoe Counties and CDOT to conduct this detailed transportation study.

This study was conducted following FHWA PEL guidance regarding the integration of transportation planning and the NEPA process, which encourages the use of planning studies to provide information for incorporation into future NEPA documents (23 Code of Federal Regulations [CFR] 450). The goal of these early integrated planning efforts is to streamline subsequent coordination, analysis, and evaluation during the NEPA processes.

This PEL study is intended to provide the framework for the long-term implementation of transportation improvements as funding is available. The technical reports prepared for this PEL study are intended for use in support of future NEPA documentation for phased implementation of the identified transportation projects.

The following NEPA process principles were followed for this PEL study:

- Preparation of a Purpose and Need
- Development and screening of alternatives
- Coordination with federal, state, and local agencies, including concurrence at key decision points to align with those of the NEPA process:
  - Purpose and Need
  - Range of alternatives
  - Screening evaluation criteria
  - Identification of recommended alternatives

A project Purpose and Need was developed in accordance with Council on Environmental Quality NEPA regulations (40 CFR 1506.13). A thorough and inclusive technical and public process was applied to identify a reasonable range of alternatives, as described by the Council on Environmental Quality guidance (40 CFR 1502.14). Reasonable alternatives in NEPA include those that are practical or feasible from the technical and economic standpoint and use common sense, rather than being simply desirable from the standpoint of the applicant. The initial alternatives were screened to eliminate those that did not meet the project Purpose and Need and those that were deemed unreasonable based on an alternatives evaluation process that determined impacts and feasibility considering regional mobility

and connectivity, safety, environmental impacts, community impacts, multimodal accommodations, engineering, and cost. Based on the alternatives evaluation, recommended transportation improvements were identified to carry forward into future NEPA processes.

This PEL study report summarizes the findings and recommendations for the SH 79 and Kiowa-Bennett corridor improvements. The *Final Corridor Conditions Assessment Report* (available on the project website [www.sh79pel.com] and from project team members) was completed in January 2013 and provides additional information and details regarding the current and anticipated future conditions of the study area with regard to land use, the transportation system, and environmental resources.

Study Area

SH 79 and Kiowa-Bennett Road provide both local and regional mobility within the study area. **Figure 1** illustrates the regional nature of SH 79. With the indirect connection to Kiowa-Bennett Road south of I-70 which connects to SH 86 at Kiowa, and south of Kiowa along Elbert Road to US 24, a 75-mile north-south roadway corridor exists. This is the only north-south roadway corridor east of the Denver metro area until SH 71 at Limon, approximately 50 miles east of Bennett.

SH 79 begins at I-70 and continues north, terminating at SH 52, approximately 10 miles east of I-76 and 24 miles north of I-70. SH 79 is the Town of Bennett's most important north/south transportation corridor and Adams County's most important rural transportation corridor that supports regional mobility and economic activity for Bennett. However, regional corridor traffic on SH 79 must maneuver the Town's local street system and an at-grade crossing of the Union Pacific Railroad (UPRR) tracks. The existing SH 79 cross section within the study area consists of a two-lane roadway with turn lanes at intersections and major access points and varying shoulder width. Within downtown Bennett area, a section of the wide roadway shoulder, formerly used for parking, serves as a pedestrian and cyclist route and there are two striped pedestrian crossings signed as school crossings.

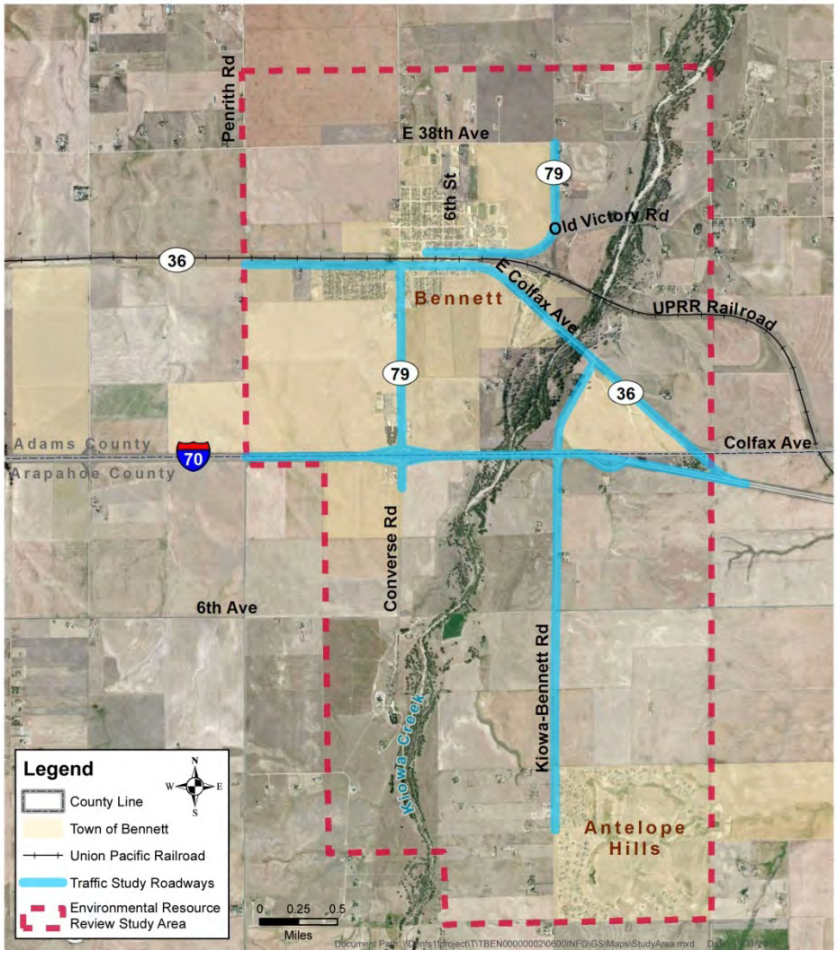
Figure 1: Regional Map

Kiowa-Bennett Road serves as a regional north-south corridor through eastern Arapahoe County. Kiowa-Bennett Road does not have full, direct access to I-70 and traffic traveling between Kiowa-Bennett Road and SH 79 must travel along Colfax Avenue/United States Highway 36 (US 36) and through downtown Bennett. Improving regional connectivity and access to the I-70 corridor will be essential to achieve economic development for eastern Adams and Arapahoe Counties.

The traffic study roadways and environmental resource review study area are illustrated in **Figure 2**. The traffic evaluation includes SH 79 and the existing I-70 interchanges at SH 79, Kiowa-Bennett Road, and Colfax Avenue/US 36. The study area limits include approximately three miles of SH 79 (from I-70 to 38th Avenue north of Bennett), approximately three miles of Kiowa-Bennett Road (from the Antelope Hills neighborhood to Colfax Avenue/US 36 north of I-70), about 3.5 miles of Colfax Avenue/US 36 within the Town of Bennett, and about 3.5 miles of I-70.

The environmental resource review area for the project is defined as the area of most likely physical impacts of corridor transportation improvements. To take into account the potential for indirect or secondary effects to community or environmental resources as a result of the potential improvements, the initial area surrounding the roadway corridors was extended to the back property line of area parcels to be more inclusive. This environmental resource review area is generally bounded by Penrith Road to the west, the southern edge of Antelope Hills to the south, Colfax Avenue/US 36 and County Road 2 to the east, and 38th Avenue to the north.

Figure 2: Study Area



Logical Termini

The study area boundaries meet the criteria for logical termini and independent utility. The FHWA guidance on NEPA and transportation decision-making includes a policy regarding development of logical project termini, which are defined as rational end points for a transportation improvement and for environmental review. In order to streamline subsequent analysis during NEPA, the PEL study will apply this FHWA policy. This guidance states that transportation projects must consider a "whole" or integrated project, satisfy an identified need, and be considered in the context of the local area. Otherwise, proposed improvements may only partially satisfy the need or may cause unexpected adverse impacts. An issue of "segmentation" may also occur when a transportation need extends throughout an entire corridor but environmental issues are evaluated for only a smaller segment of the corridor.

In order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the evaluated improvements must:

- Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
- Have independent utility; i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

There is a drop in traffic volumes outside the proposed study area boundaries, except on I-70 to the west, which experiences a steady increase in traffic closer to the Denver metropolitan area. A concentrated mixture of residential, commercial, industrial, and public/institutional properties is located within the study area boundaries, surrounded by predominantly agricultural land. This area is planned for urban development characterized by transportation access with rural land uses continuing to surround the study area. The traffic volume and land use data demonstrate that the area incorporates logical termini. The proposed study area is of sufficient length to address environmental matters on a broad scope. Future transportation expenditures to justify the current investment would not be required given the locations of the logical termini along I-70 from Penrith Road to US 36 and on SH 79 and Kiowa-Bennett Road between the Antelope Hills subdivision and 38th Avenue. Therefore, this project demonstrates independent utility.

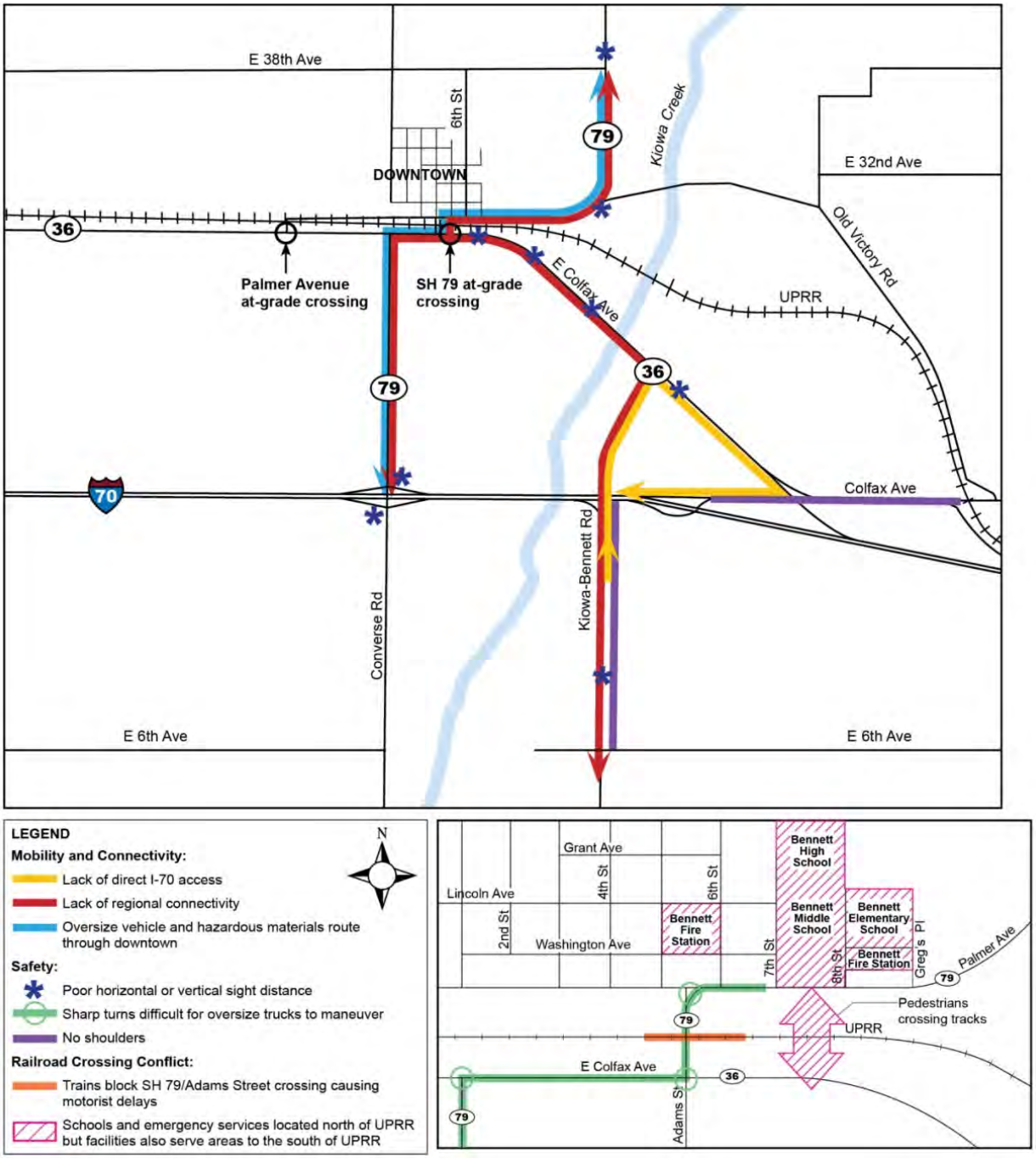
In addition, no other reasonably foreseeable transportation projects would be restricted by the recommended improvements of this study.

Purpose and Need Statement

The Town of Bennett in partnership with Adams and Arapahoe Counties and CDOT is preparing this PEL study to identify and assess potential transportation improvements along the SH 79 and Kiowa-Bennett Road corridors. Thorough documentation of the process and recommendations is a critical element of the PEL process so the decisions can be used in future NEPA processes, as applicable. This Purpose and Need and project goals were developed in coordination with agency stakeholders with review by the general public.

The specific needs, summarized in this section and shown in **Figure 3**, are based on the evaluation documented in this report and in the *Final Corridor Conditions Assessment Report* (January 2013). Land use and traffic information for the study area is provided in **Appendix A**.

Figure 3: Display of Area Needs



Purpose of the Project

The purpose of the SH 79 and Kiowa-Bennett corridor project is to improve regional connectivity, reduce conflict and delay at the SH 79 at-grade crossing of UPRR, and address safety concerns along the major corridors within the study area for existing and future conditions.

Need for the Proposed Action

The SH 79 and Kiowa-Bennett Road corridors have regional operational deficiencies, including a lack of connectivity to I-70. Both roadways are important transportation corridors supporting mobility and economic activity in Bennett and Adams and Arapahoe Counties for existing and future land use and transportation demand conditions.

Improvements are needed to:

- Improve regional mobility and connectivity
- Reduce conflict and delay at the at-grade railroad crossing
- Address safety concerns

Regional Mobility and Connectivity

SH 79 begins at the I-70 interchange, travels through the Town of Bennett with a UPRR at-grade crossing north of Colfax Avenue/US 36, and ends at SH 52 approximately 24 miles north of I-70. SH 79 is the Town of Bennett's most important north/south transportation corridor and Adams County's most important rural transportation corridor that supports regional mobility for Adams County and economic activity for the Town of Bennett. However, regional corridor traffic must maneuver the Town's local street system and an at-grade crossing of the UPRR tracks.

Kiowa-Bennett Road serves as a regional north-south corridor through eastern Arapahoe County. There are partial movement interchanges at Kiowa-Bennett Road and Colfax Avenue/US 36 along I-70 east of Bennett. Traffic traveling between Kiowa-Bennett Road and SH 79 must travel along Colfax Avenue / US 36 and through downtown Bennett. Improving regional connectivity and access to I-70 is essential to achieve economic development for eastern Adams and Arapahoe Counties.

Based on estimates and projections presented in the *2012 Town of Bennett Comprehensive Plan*, significant growth is projected between 2010 and 2035 for the eastern I-70 corridor, which includes the study area. The eastern I-70 corridor is estimated to grow by 6,454 housing units and 2,568 new jobs. The study area is well-positioned to capture a considerable portion of this growth, as the needed water and sanitary sewer systems are either available or planned by the Town of Bennett. This growth will lead to the inevitable increase in demands on the public infrastructure, especially streets and highways.

I-70 is the major east-west freeway in Colorado and rural communities originally focused on the UPRR line have grown along this highway spine. I-70 carries approximately 15,000 vehicles per day within the study area. SH 79 north of the UPRR crossing in downtown Bennett carries nearly 4,200 vehicles per day as measured by traffic counts collected in 2012. By 2035, the average daily traffic on SH 79 in downtown Bennett is expected to increase about 65% to approximately 6,300 vehicles per day.

SH 79 through Bennett is frequently used by heavy trucks, including those carrying oversize loads and hazardous materials. The large trucks are required to maneuver the tight turns at the UPRR crossing, which creates undesirable conditions within downtown Bennett, such as traffic congestion and increased noise and emissions.

The locations of Denver International Airport and Front Range Airport limit north-south arterial continuity east of E-470 until Kiowa-Bennett Road, which provides north-south continuity through Arapahoe County. As residential and commercial growth continues along the Front Range, Kiowa-Bennett Road will increasingly become a popular north-south alternative to I-25 and E-470.

Connecting traffic movements between SH 79 and Kiowa-Bennett Road more efficiently will provide an efficient connection between people and goods in the region to accommodate planned economic development and to be more congruent with the existing and future land uses.

The limitations of the regional roadway continuity and need for more efficient regional connections has been recognized in several transportation studies:

- The *Arapahoe County 2035 Transportation Plan* (2010) evaluated the regional benefits of connecting Kiowa-Bennett Road with SH 79 along a more direct route near Bennett. The adopted Transportation Plan includes a study for the location of potential realignment of Kiowa-Bennett Road and I-70 interchange improvements.
- The *I-70 Corridor Access Planning Summary Report* (2008) documents the support of Adams County, Arapahoe County, the Town of Bennett, and the Town of Strasburg for evaluation of potential road and interchange improvements to create an improved north-south corridor in the vicinity of SH 79 and Kiowa-Bennett Road.
- The *SH 83–86 Corridor Optimization Plan* (2004), commissioned by CDOT, clearly identifies the local and regional importance of a more direct and efficient Kiowa-Bennett Road and SH 79 connection near Bennett. Thirteen agencies were involved in the development of the plan, including CDOT, DRCOG, Town of Bennett, Arapahoe County, Eastern Colorado Council of Local Governments, City of Aurora, as well as the Town of Kiowa, Elbert County, Town of Parker, El Paso County, Douglas County, Town of Castle Rock, and Town of Elizabeth. A key recommendation of the study is the paving, upgrading, and improving of Kiowa-Bennett Road to provide a continuous, all-weather facility with new alignments near Bennett to SH 79 to fill in a large north-south gap in the regional transportation system.

These plans demonstrate a long-standing desire for an interregional corridor that provides mobility and resolves mobility concerns in the study area.

Railroad Crossing Conflict and Delay

Currently, the UPRR operates the Limon Subdivision rail line from Denver to Topeka, Kansas through the Town of Bennett. The Limon Subdivision consists of one main track and a siding track extending 0.4 miles past Palmer Avenue. The siding track is primarily used for trains to pass, but it can be used to store cars for the Farmers co-op facilities during the harvest season or for other railroad uses. There is also a spur track serving the co-op facilities east of the SH 79 at-grade crossing, which is utilized seasonally. At the SH 79 at-grade rail crossing, the main track is controlled with gates and lights and the siding track has reflectorized crossbucks and yield signs. At the Palmer Avenue at-grade rail crossing west of the downtown area, the crossing is controlled with gates and lights.

UPRR operates an average of 18 freight trains per day through the Town. With the projected steady growth of the railroad industry expected by UPRR through 2035, it is conceivable that the UPRR will add additional capacity on the Limon Subdivision to accommodate projected rail traffic growth, which could consist of one or two additional main line tracks. It is also possible that the UPRR could extend the existing Bennett siding to accommodate longer trains on the Limon Subdivision.

CDOT traffic data indicates that truck traffic on SH 79 at the UPRR crossing is about 10 percent of the total traffic with an average of 300 single unit and combination trucks per day. The amount of heavy truck traffic and substandard geometry of SH 79 through town with the at-grade crossing in the center of Bennett results in localized congestion and regional mobility issues. With the anticipated growth in future rail traffic reported by UPRR, the potential for truck and train conflicts will only increase. It is fully

developed surrounding the crossing and a rail-highway grade separation at the existing crossing location would be highly impactful to residents and businesses within downtown Bennett.

Bennett Elementary School, Middle School, and High School are located in the eastern section of downtown Bennett and north of the UPRR railroad tracks (see **Figure 3**). Residential areas are located south of the UPRR tracks with new residential areas expected south of the tracks with future development. The SH 79 railroad crossing is congested during the school ingress and egress periods with parents dropping off children, high school students driving to school, school buses, and many children walking across the tracks. Pedestrians are frequently observed illegally crossing the railroad tracks at locations east of SH 79/Adams Street as shortcuts to the schools. According to UPRR, trains traverse the tracks through Bennett with a typical number of daily train movements of nine through trains during the day and nine through trains during the evening.

The school buses are required by law to stop at the railroad crossing to look down the tracks. However, sight distance is a problem due to the siding track and co-op building location. Many of the side street intersections, such as Palmer Avenue and 6th Street, are blocked with the congestion surrounding the railroad crossing. Traffic in the crossing area is also busy mid-day during the High School lunch period as students rush to get lunch and get back to school during their relatively short break.

Freight trains frequently block Adams Street causing motorist delays for extended periods of time with limited options for alternate routes across the tracks. To avoid the congestion or a train at the SH 79 crossing, some drivers travel west to cross the tracks at the Palmer Avenue railroad crossing. Drivers have been observed speeding along Palmer Avenue trying to beat a train approaching from the east.

The *2035 DRCOG Metro Vision Regional Transportation Plan* adopted in February 2011 includes a grade separation at the SH 79 and UPRR at-grade crossing in Bennett. Inclusion of this grade separation in the plan is based on the crossing being located on the regional highway network, delay to auto and truck traffic, and safety concerns related to emergency services delay at the at-grade railroad crossings.

The Town of Bennett completed the *Bennett Railroad Grade Separation Preliminary Feasibility Study* (2008) to evaluate the general feasibility of a railroad grade separated crossing of the UPRR in the vicinity of Bennett. The study showed that constructing a highway-railroad grade separation in Bennett would provide substantial time savings and safety benefit for local and regional traffic on SH 79. Area transportation projects that would increase the traffic volume on SH 79 locally or regionally would only strengthen the need for a highway-railroad grade separation.

Safety Concerns

The Bennett Fire Rescue Department is located north of Palmer Avenue and east of 8th Street (see **Figure 3**). This fire station serves the area south of the railroad tracks as well as south of I-70. The principal fire and rescue equipment is located at the station at 5th Street and Washington Avenue, north of the railroad tracks. The emergency personnel cross the railroad tracks at SH 79 many times each day responding to various emergencies within the region. For emergencies south of I-70, the partial movement interchange at I-70 and Kiowa-Bennett Road increases the time for responders accessing westbound I-70 to travel to the hospitals within the Denver metropolitan area.

SH 79 through Bennett is designated as an oversize load route by CDOT and a hazardous materials route by the Department of Public Safety. SH 79 is also a primary agriculture and commercial trucking route. The tight turns to follow SH 79 through downtown Bennett are difficult for the large trucks to negotiate and the resulting congestion contributes to safety concerns with truck and passenger vehicle conflicts.

The vast majority of roadways within the study area do not have sidewalks and most do not have shoulders of more than four feet in width. The sidewalks often are located on only one side of a roadway and lack connectivity throughout the study area. This condition leads to safety concerns with pedestrians walking in the roadway travel lanes or taking risks at unsafe crossing locations. As previously noted, pedestrians have been observed illegally crossing the railroad tracks at various locations outside the SH 79/Adams Street crossing.

Kiowa-Bennett Road lacks paved shoulders between 6th Avenue and I-70. Paved shoulders with adequate width for bicyclists were recommended in the *Arapahoe County 2035 Transportation Plan* (2010) to improve traveler safety with the increase in recovery area and area for passing farm equipment and postal vehicles, as well as accommodating space for bicyclists.

In addition to shoulder width, other roadway deficiencies within the study area create safety concerns. Inadequate sight distance is noted at SH 79 and Old Victory Road with the curve south of the intersection. Sight distance at the eastbound I-70 off ramp at the SH 79 interchange has been identified as a safety concern at the stop-controlled intersection. The higher future traffic volumes associated with projected growth will likely exacerbate these safety concerns associated with the existing roadway network.

Project Goals

The objectives of the improvements should:

- Avoid and minimize environmental impacts
- Enhance economic opportunities to support area viability
- Support local and regional plans
- Balance mobility and access
- Accommodate multimodal connections

Planning Context

A number of plans have been developed that relate to the study area, including plans for the adjacent land use, local transportation plans, and statewide plans. Previous local and regional plans that were considered during the alternatives development process include:

- *The Town of Bennett Downtown Planning Study* (2010)
- *2012 Town of Bennett Comprehensive Plan* (2012)
- *Bennett Regional Trail Plan* (2011)
- *Adams County Transportation Plan* (2012)
- *Arapahoe County Comprehensive Plan* (2001)
- *Arapahoe County 2035 Transportation Plan* (2010)
- *Arapahoe County Open Space Master Plan* (2010)
- *I-70 Corridor Economic Assessment* (2011)
- *2035 Metro Vision Regional Transportation Plan* (2011)
- *2035 Statewide Transportation Plan* (2011)

Proposed transportation improvements along SH 79 and Kiowa-Bennett Road are consistent with local and regional plans. Specific roadway improvements are not included in DRCOG's *Fiscally Constrained 2035 Regional Transportation Plan*. The Kiowa-Bennett Road bridge over I-70 is on the Colorado Bridge Enterprise list as eligible for bridge repair/rehabilitation with FASTER funding, although it has not been included in the current bond program. The bridge improvements are currently being pre-scoped for cost and construction issues and may be programmed in the future. The realignment of SH 79 with a grade separation at the UPRR is included in the *2012 Town of Bennett Comprehensive Plan* and *Adams County Transportation Plan*. Improved connectivity for Kiowa-Bennett Road at I-70 is included in the *Arapahoe County 2035 Transportation Plan*.

Alternatives Development and Analysis

The alternatives development and evaluation process identified a broad range of improvement alternatives and screened them to yield short- and long-term projects that will be more thoroughly evaluated with future NEPA documentation.

An objective of the PEL study was to work with stakeholders to determine the short-term and long-term transportation needs of the SH 79 and Kiowa-Bennett Road corridors around the Bennett area, to address the increasing congestion and safety issues, and to identify transportation improvement alternatives that balance anticipated access needs with regional mobility and connectivity. The alternatives development and evaluation process included developing screening criteria based on the Purpose and Need, developing a range of conceptual alternatives, and documenting the elimination of alternatives to limit the need for reconsideration during future NEPA processes.

General alternative concepts were developed and subjected to a Level 1 "fatal flaw" screening to eliminate alternatives that do not meet the Purpose and Need. Alternatives from the Level 1 screening that were recommended for further evaluation were refined to complete additional and more detailed analyses to determine how well each alternative met the Purpose and Need elements, to compare the performance of each alternative against the evaluation criteria, and to identify what impacts each alternative would have. The alternatives remaining after the Level 2 evaluation were further refined through conceptual design in Level 3 for final improvement recommendations.

During the project initiation period, baseline data were collected for the physical, operational, and environmental conditions of the study area. This information led to the development of the Purpose and Need and Project Goals, presented earlier in this report.

Evaluation criteria were established for the Level 1 and Level 2 screening prior to the development of alternatives. The project TAC, comprised of Adams County, Arapahoe County, Town of Bennett, CDOT, FHWA, and DRCOG representatives, participated in the development of evaluation criteria and ultimately concurred with the evaluation criteria in accordance with the chartering agreement established at the beginning of the PEL process. The TAC members also concurred with the Purpose and Needs and Project Goals.

Initial Alternatives Development

The initial alternative concepts were developed to address the study area's primary issues identified in the Purpose and Need, including the lack of regional connectivity and access along SH 79 through the study area and from Kiowa-Bennett Road to I-70, concerns about the hazardous materials route and oversized vehicles route through downtown Bennett, and concerns regarding pedestrian, vehicles, and heavy truck conflicts at the at-grade railroad crossing.

The initial alternative concepts considered for the SH 79 and Kiowa-Bennett Road corridors were developed based on input from the TAC, public input, and the technical input of the project team. Overall, the alternatives focused on removing regional highway and heavy truck traffic from downtown Bennett, providing increased connectivity along SH 79 and Kiowa-Bennett Road, and improving mobility and safety at the SH 79 railroad crossing by providing a grade-separated crossing.

No Action Alternative

The No Action alternative is included as a means of comparison to the operational benefits that would result from potential improvements. Under the No Action alternative, only improvements that are already planned and funded by CDOT, the Counties, or municipalities are included.

There are several operational and maintenance projects funded within the study area, including the resurfacing of Colfax Avenue/US 36 and restriping of SH 79 within the area north of the I-70 interchange. A new multi-use path along Kiowa-Creek Road from Antelope Hills to 6th Avenue is currently being constructed and planning is underway for the section north of 6th Avenue. The Kiowa-Bennett Road bridge over I-70 is on the Colorado Bridge Enterprise list as eligible for bridge repair/rehabilitation with FASTER funding, although it has not been included in the current bond program. Currently, there are no planned transportation capacity improvement projects within the study area. No potential improvements related to this study are included in the No Action alternative.

The following projects, located west of the study area, were included in the travel demand modeling for the No Action Alternative. These projects are described in detail in the *SH 79 PEL Corridor Conditions Assessment Report*. These projects are fiscally-constrained projects included in the *2035 DRCOG Regional Transportation Plan*.

- 56th Ave from E-470 to Imboden Road: Widening from 2 lanes to 6 lanes
- Imboden Road from 48th Avenue to 56th Avenue: Widening from 2 lanes to 6 lanes
- 48th Avenue from Imboden Road to Quail Run Road: Widening from 2 lanes to 6 lanes
- Quail Run Road from Colfax Ave to 48th Avenue: New 6-lane major arterial
- Watkins Road from Quincy Avenue to I-70: Widening from 2 lanes to 6 lanes
- Quincy Avenue from Hayesmount Road to Watkins Road: Widen from 2 lanes to 6 lanes

In addition, DRCOG administers an annual Transportation Improvement Survey intended to gather information from member governments regarding planned capacity-related projects on minor and collector roadways. The following projects were identified during this process in the area surrounding the study area and are included in the travel demand modeling for the No Action alternative.

- 38th Avenue from Imboden Road to Manila Road: New 4-lane collector
- Manila Road from 48th Ave to I-70: Widening from 2 lanes to 4 lanes
- 6th Avenue from Powhaton Road to Watkins Road: New 4-lane minor arterial

Level 1 (Purpose and Need) Alternatives Screening

Level 1 screening identified a range of improvements that would meet the project Purpose and Need, and eliminated any concepts that had “fatal flaws” (that did not meet Purpose and Need).

Level 1 screening criteria were developed to screen concepts in the following areas: regional mobility and connectivity, railroad conflict and delay, and safety. Alternative concepts were evaluated with a

"Yes" or "No" answer to the following questions to demonstrate each alternative's ability to meet the Purpose and Need.

- Regional Mobility and Connectivity:
  - Does the alternative improve access between I-70 and Kiowa-Bennett Road?
  - Does the alternative reduce travel time along SH 79 between I-70 and 38th Avenue?
  - Does the alternative reduce travel time between Kiowa-Bennett Road south of I-70 and SH 79 north of Bennett?
  - Does the alternative accommodate trucks along the SH 79 and Kiowa-Bennett corridors in a safe and reliable manner?
- Railroad Conflict and Delay:
  - Will the alternative reduce the number of vehicles crossing at the existing at-grade railroad crossing on SH 79/Adams Street?
- Safety Concerns:
  - Will the alternative improve the reliability of emergency response time?
  - Will the alternative improve travel safety for students of Bennett Schools?

An alternative with a "No" answer to any of the above questions was considered to not meet the Purpose and Need and was eliminated.

Level 1 Alternatives

Based on the study area setting and the desired improvements described in the Purpose and Need, ten concepts, in addition to the No Action alternative, were considered. Larger illustrations of the Level 1 alternatives are included in **Appendix B**. The alternative numbers were assigned randomly and do not indicate any preferences or priorities.

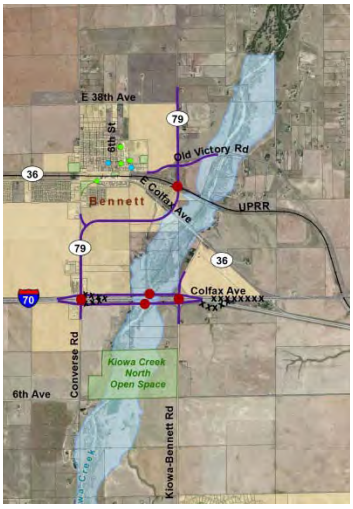
Alternative 1—East Railroad Crossing with Full Kiowa-Bennett Road Diamond Interchange

This alternative consists of realigning SH 79 south of downtown Bennett, which is consistent with the Town's local planning efforts, so that a mixed use commercial area can be developed in the future. SH 79 would be grade-separated at a new UPRR crossing east of Bennett, and would return to its existing alignment near Old Victory Road.

The SH 79 and I-70 interchange would be reconstructed to improve the existing sight distance issues and accommodate a four lane section. The existing SH 79 alignment through downtown Bennett would be converted to local town streets. The Kiowa-Bennett Road and I-70 interchange would be reconstructed to provide full ramp movements for both directions on and off the freeway.

This alternative was considered because it would provide improved access between I-70 and Kiowa-Bennett Road with a full interchange configuration at Kiowa-Bennett Road and may reduce travel time along SH 79 and Kiowa-Bennett Road through the study area, while reducing railroad conflict and delay at the at-grade crossing and addressing safety concerns.

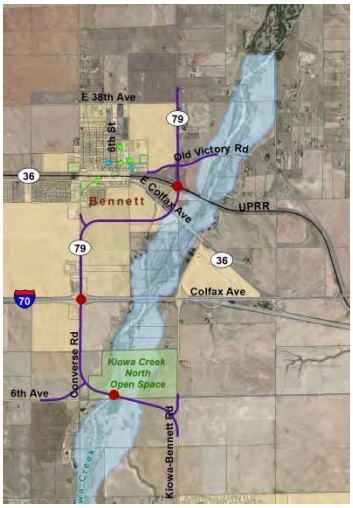
Alternative 2—East Railroad Crossing with Split Kiowa-Bennett Road Diamond Interchange



This alternative consists of the same roadway configuration as Alternative 1, providing similar connectivity and safety benefits with the railroad grade separation, except with a split diamond configuration with ramp connections between the SH 79 and Kiowa-Bennett Road interchanges at I-70. The SH 79 and I-70 interchange and Kiowa-Bennett Road and I-70 interchange would be reconstructed with the new ramp connections.

This alternative was considered because it may provide similar connectivity and safety benefits as Alternative 1 and also provide increased distance between ramp merge and diverge points on I-70 with the split diamond interchange configuration, providing the ramp spacing to meet FHWA rural guidelines. The ramp connection roadways between the SH 79 and Kiowa-Bennett Road interchange may also provide increased access for development and local traffic circulation.

Alternative 3—East Railroad Crossing with West Kiowa-Bennett Road Interchange Alignment



This alternative consists of the same SH 79 realignment south of downtown Bennett as Alternative 1, providing similar connectivity and safety benefits with the railroad grade separation. The SH 79 and I-70 interchange would be reconstructed to improve the existing sight distance issues and accommodate a four lane section. The existing partial Kiowa-Bennett Road and I-70 interchange would remain in-place and Kiowa-Bennett Road would be realigned south of I-70 to the SH 79 and I-70 interchange.

This alternative was considered because it may provide improved access between I-70 and Kiowa-Bennett Road with the realignment of Kiowa-Bennett Road to the SH 79 and I-70 interchange.

Alternative 4—East Railroad Crossing with East Kiowa-Bennett Road Interchange Alignment

This alternative includes the same SH 79 realignment south of downtown Bennett as Alternative 1, providing similar connectivity and safety benefits with the railroad grade separation. The SH 79 and I-70 interchange would be reconstructed to improve the existing sight distance issues and accommodate a four lane section. The existing partial Kiowa-Bennett Road and I-70 interchange ramps would be removed and Kiowa-Bennett Road would be realigned south of I-70 one mile east with a full interchange configuration.

This alternative was considered because it would provide improved access between I-70 and Kiowa-Bennett Road and adheres to the two-mile FHWA rural interchange spacing guidelines by locating the full Kiowa-Bennett Road interchange one mile east of the current location.

Alternative 5—East Railroad Crossing with Central Kiowa-Bennett Road Alignment

This alternative consists of the same SH 79 realignment south of downtown Bennett as Alternative 1, providing similar connectivity and safety benefits with the railroad grade separation, and the same split diamond configuration as Alternative 2. The SH 79 and I-70 interchange and Kiowa-Bennett Road and I-70 interchange would be reconstructed with the new ramp connections. Kiowa-Bennett Road would be realigned across Kiowa Creek north of I-70.

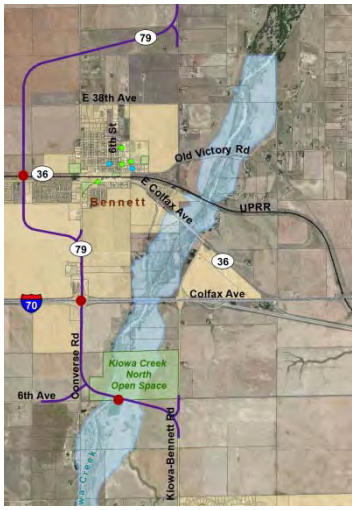
This alternative was considered because it may provide improved connectivity for the Bennett mixed use commercial development area with the Kiowa-Bennett Road realignment. The split diamond configuration would provide ramp connections between the SH 79 and Kiowa-Bennett Road interchanges and also provides increased distance between ramp merge and diverge points on I-70, which would meet the requirements for FHWA rural interchange spacing guidelines

Alternative 6—East SH 79 Alignment with Kiowa-Bennett Railroad Crossing

The alternative consists of the reconstruction of the Kiowa-Bennett Road and I-70 interchange to provide full ramp movements on and off the freeway and would become the new SH 79 alignment. The SH 79 railroad grade separation would occur near Kiowa Creek east of downtown Bennett. The Converse Road and I-70 interchange (at the existing SH 79 interchange) would remain in-place, but without the state highway designation.

This alternative was considered because it would provide improved access between I-70 and Kiowa-Bennett Road with a full interchange configuration at Kiowa-Bennett Road and may reduce travel time along SH 79 and Kiowa-Bennett Road through the study area with a direct north-south connection from I-70 at Kiowa-Bennett Road, while reducing railroad conflict and delay at the at-grade crossing.

Alternative 7—West Railroad Crossing with West Kiowa-Bennett Road Alignment



This alternative consists of realigning SH 79 west of downtown Bennett with the SH 79 grade separation at a new UPRR crossing west of Bennett, returning to its existing alignment north of town. The SH 79 and I-70 interchange would be reconstructed to improve the existing sight distance issues and accommodate a four lane section. The existing partial Kiowa-Bennett Road and I-70 interchange would remain in-place and Kiowa-Bennett Road would be realigned south of I-70 to the SH 79 and I-70 interchange.

This alternative was considered because it may provide improved access between I-70 and Kiowa-Bennett Road and reduce travel time along SH 79 and Kiowa-Bennett Road through the study area, while reducing railroad conflict and delay at the at-grade crossing.

Alternative 8—West Railroad Crossing with Full Kiowa-Bennett Road Diamond Interchange

This alternative combines the SH 79 realignment of Alternative 7 with the Kiowa-Bennett Road interchange connection of Alternative 1. The SH 79 and I-70 interchange would be reconstructed to improve the existing sight distance issues and accommodate a four lane section. The Kiowa-Bennett Road and I-70 interchange would be reconstructed to provide full ramp movements for both directions on and off the freeway.

This alternative was considered because it would provide improved access between I-70 and Kiowa-Bennett Road and may reduce travel time along SH 79 and Kiowa-Bennett Road through the study area, while reducing railroad conflict and delay at the at-grade crossing.

Alternative 9—Central Railroad Crossing with West Kiowa-Bennett Road Alignment

This alternative consists of the same realignment of Kiowa-Bennett Road to the SH 79 interchange as Alternative 3, providing similar connectivity benefits. The existing partial Kiowa-Bennett Road interchange would remain in-place. The SH 79 and I-70 interchange would be reconstructed to improve the existing sight distance issues and accommodate a four lane section. SH 79 would be realigned directly north through Bennett rather than follow the US 36 alignment in town. SH 79 would be grade-separated at the UPRR crossing and be realigned along 1st Avenue, returning to its existing alignment north of town.

This alternative was considered because it may provide improved access between I-70 and Kiowa-Bennett Road and reduce travel time along SH 79 and Kiowa-Bennett Road through the study area with a direct north-south connection from I-70 at SH 79, while reducing railroad conflict and delay at the at-grade crossing.

Alternative 10—Central Railroad Crossing with Full Kiowa-Bennett Road Diamond Interchange

This alternative combines the SH 79 realignment of Alternative 9 with the Kiowa-Bennett Road interchange connection of Alternative 1. The SH 79 and I-70 interchange would be reconstructed to improve the existing sight distance issues and accommodate a four lane section. The Kiowa-Bennett Road and I-70 interchange would be reconstructed to provide full ramp movements for both directions on and off the freeway.

This alternative was considered because it would provide improved access between I-70 and Kiowa-Bennett Road and may reduce travel time along SH 79 and Kiowa-Bennett Road through the study area, while reducing railroad conflict and delay at the at-grade crossing.

Level 1 Screening Evaluation

The alternatives developed were evaluated against the Level 1 screening criteria to identify fatal flaws related to the project Purpse and Need. Alternatives that received a fatal flaw rating on any of the criteria elements (that is, one or more "No" responses) were eliminated from further consideration.

The Level 1 Screening and Analysis Matrix is shown in **Table 1**. The reasons for elimination related to the Purpose and Need are shown in the summary of results.

Level 1 Screening Results

Three alternatives were eliminated from further consideration because they do not meet the Purpose and Need, which is to improve regional mobility and connectivity, reduce conflict and delay at the at-grade railroad crossing, and address safety concerns. The eliminated alternatives were:

- Alternative 7—West Railroad Crossing with West Kiowa-Bennett Road Alignment
- Alternative 8—West Railroad Crossing with Full Kiowa-Bennett Road Diamond Interchange
- Alternative 10—Central Railroad Crossing with Full Kiowa-Bennett Road Diamond Interchange

Eight alternatives were carried forward for consideration in Level 2 screening (including the No Action alternative). Those alternatives were:

- No Action
- Alternative 1—East Railroad Crossing with Full Kiowa-Bennett Road Diamond Interchange
- Alternative 2—East Railroad Crossing with Split Kiowa-Bennett Road Diamond Interchange
- Alternative 3—East Railroad Crossing with West Kiowa-Bennett Road Interchange Alignment
- Alternative 4—East Railroad Crossing with East Kiowa-Bennett Road Interchange Alignment
- Alternative 5—East Railroad Crossing with Central Kiowa-Bennett Road Alignment
- Alternative 6—East SH 79 Alignment with Kiowa-Bennett Railroad Crossing
- Alternative 9—Central Railroad Crossing with West Kiowa-Bennett Road Alignment

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Table 1: Level 1 Matrix

CATEGORY	LEVEL 1 SCREENING CRITERIA	NA	1	2	3	4	5	6	7	8	9	10
		NO ACTION	EAST UPRR CROSSING WITH FULL K-B DIAMOND	EAST UPRR CROSSING WITH SPLIT K-B DIAMOND	EAST UPRR CROSSING WITH WEST K-B ALIGNMENT	EAST UPRR CROSSING WITH EAST K-B ALIGNMENT	EAST UPRR CROSSING WITH CENTRAL K-B ALIGNMENT	EAST SH 79 ALIGNMENT WITH K-B UPRR CROSSING	WEST UPRR CROSSING WITH WEST K-B ALIGNMENT	WEST UPRR CROSSING WITH FULL K-B DIAMOND	CENTRAL UPRR CROSSING WITH WEST K-B ALIGNMENT	CENTRAL UPRR CROSSING WITH FULL K-B DIAMOND
Regional Mobility and Connectivity	Does the alternative improve access between I-70 and Kiowa-Bennett Rd?	**NO** limited access between I-70 and K-B remains	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**
	Does the alternative reduce travel time along SH 79 between I-70 and 38th Ave?	**NO**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**NO**	**NO**	**YES**	**YES**
	Does the alternative reduce travel time between Kiowa-Bennett Rd south of I-70 and SH 79 north of Bennett?	**NO**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**NO**	**NO**	**YES**	**NO**
	Does the alternative accommodate trucks along the SH 79 and Kiowa-Bennett corridors in a safe and reliable manner?	**NO** issues with trucks downtown remain	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**
Railroad Conflict and Delay	Will the alternative reduce the number of vehicles crossing at the existing at-grade railroad crossing on SH 79/Adams St?	**NO**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**NO**	**NO**	**YES**	**YES**
Safety Concerns	Will the alternative improve the reliability of emergency response time?	**NO**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**NO**	**NO**	**YES**	**YES**
	Will the alternative improve travel safety for students of Bennett Schools?	**NO**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**NO**	**NO**	**YES**	**YES**
SUMMARY OF RESULTS		**Carried Forward:** Baseline Comparison	**Carried Forward**	**Carried Forward**	**Carried Forward**	**Carried Forward**	**Carried Forward**	**Carried Forward**	**Eliminated:** Does not address connectivity with increased travel time on SH 79 and K-B and does not address safety concerns with emergency response or student safety due to UPRR conflict	**Eliminated:** Does not address connectivity with increased travel time on SH 79 and K-B and does not address safety concerns with emergency response or student safety due to UPRR conflict	**Carried Forward**	**Eliminated:** Does not address regional connectivity with increased travel time from K-B to SH 79 north of Bennett
NOTES			Addresses issues with regional connectivity on SH 79 and K-B and diverts local traffic from existing SH 79 at-grade UPRR crossing; Design should consider turns required for trucks on K-B	Addresses issues with regional connectivity on SH 79 and K-B and diverts local traffic from existing SH 79 at-grade UPRR crossing; Design should consider turns required for trucks on K-B	Addresses issues with regional connectivity on SH 79 and K-B and diverts local traffic from existing SH 79 at-grade UPRR crossing	Addresses issues with regional connectivity on SH 79 and K-B and diverts local traffic from existing SH 79 at-grade UPRR crossing; Design should consider turns required for trucks on K-B	Addresses issues with regional connectivity on SH 79 and K-B and diverts local traffic from existing SH 79 at-grade UPRR crossing; Design should consider turns required for trucks on K-B	Addresses issues with regional connectivity on SH 79 and K-B and diverts local traffic from existing SH 79 at-grade UPRR crossing	Location of UPRR grade separation too far from schools and fire station and lack of street connections fail to divert local traffic from existing SH 79 at-grade UPRR crossing	Location of UPRR grade separation too far from schools and fire station and lack of street connections fail to divert local traffic from existing SH 79 at-grade UPRR crossing	Addresses issues with regional connectivity on SH 79 and K-B and diverts local traffic from existing SH 79 at-grade UPRR crossing	Location of UPRR grade crossing does not allow at-grade intersection with Colfax, so travel between K-B to SH 79 travels across the existing SH 79 at-grade UPRR crossing

NOTE: "K-B" = Kiowa-Bennett Road

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Level 2 Alternatives Screening

Alternatives from the Level 1 screening that were recommended for further evaluation were refined to add more definition of the potential improvements, to better understand the operations and costs of the alternatives, and to provide information for further assessment in the Level 2 evaluation. The purpose of the Level 2 evaluation was to complete additional and more detailed analyses to confirm each alternative meets the Purpose and Need, compare how well each alternative would perform, and identify what impacts each alternative would have based on the project goals and objectives.

Alternative Conceptual Layout

In order to fairly compare the impacts of alternatives through the Level 2 screening process, key design elements were assumed as part of the conceptual layout for all alternatives. The right-of-way (ROW) assumptions for SH 79 and Kiowa-Bennett Road were based on appropriate County and Town standards for the assumed roadway classification. SH 79 within the Town of Bennett was assumed to have a 118-foot cross section to be consistent with the Town of Bennett's *Downtown Planning Study*, and a 114-foot ROW envelope was assumed for Kiowa-Bennett Road to meet Arapahoe County standards for a rural arterial.

The assumed SH 79 cross section allows for a four-lane roadway with a divided median, five-foot shoulders that accommodate bike traffic, and detached eight-foot multi-use paths. Kiowa-Bennett Road was assumed to be a two-lane rural arterial, which allows for two 14-foot lanes and a paved six-foot shoulder that accommodates bike traffic. A County standard four-lane rural arterial can be accommodated within the same ROW if future volumes require widening.

All alternative layouts assumed that SH 79 would be a four-lane section from I-70 until north of Old Victory Road. North of Old Victory Road, SH 79 would narrow to match the existing two-lane highway. The opportunity to reduce the ROW width to mitigate specific property impacts may be considered during future NEPA processes.

Level 2 Performance Measures

Performance measures were developed for each evaluation criterion to compare how well each alternative meets the project Purpose and Need and goals. These performance measures were either qualitative or quantitative, based on the criteria and the availability of data at this stage of development.

The color ratings shown with the performance measures are related to the colors provided in the Level 2 Screening Matrix in **Appendix C**. The ratings were used as a visual indication of the comparative characteristics of a criterion between alternatives, but not used as an indication of a decision (i.e., an alternative with many "red" ratings was not automatically rendered unreasonable). The colors are a general indication of whether the alternative favorably achieved the established criteria (green), had neutral impacts to the criteria (black), or poorly achieved the criteria/had negative impacts (red). The quantitative and qualitative ratings were based on industry standards or on a relative scale developed in coordination with the project TAC.

The alternatives were compared to determine how well each alternative met the evaluation criteria and performance measures described in this section.

Regional Mobility and Connectivity

Performance measures for this criterion considered improvements in travel time and regional access along SH 79 and Kiowa-Bennett Road.

SH 79 Travel Time

- The information was analyzed by calculating the total time (in minutes) to travel from the SH 79 and I-70 westbound ramps to SH 79 north of 48th Avenue (north of Bennett). All intersections were assumed to be stop-controlled and SH 79 was assumed to be the major movement at intersections.
- Travel time for each alternative was calculated based on the following speed limit assumptions:
  - SH 79 existing alignment: 40 miles per hour (mph) from I-70 off ramp to Colfax Ave/US 36
  - SH 79 realignment: 40 mph
  - Colfax Avenue/US 36: 40 mph (outside downtown area)
  - Existing streets in downtown area: 25 mph
  - SH 79 north of Old Victory Road: 55 mph
  - For Alternative 9, SH 79 realignment: 35 mph from Colfax Avenue/US 36 to 38th Avenue
- Delay due to intersections was added based on Synchro 8 computer analysis output (version Build 802, Revision 685).
- Rating:
  - Green = Travel time reduced by more than 30 percent compared to No Action (resulting in a travel time less than 4.6 minutes)
  - Black = Travel time reduced by 10 to 30 percent compared to No Action (resulting in a travel time of 4.6 to 5.9 minutes)
  - Red = Travel time reduced by less than 10 percent compared to No Action (resulting in a travel time greater than 5.9 minutes)

Kiowa-Bennett Road Travel Time

- The information was analyzed by calculating the total time (in minutes) to travel from Kiowa-Bennett Road north of the Antelope Hills community (south of I-70) to SH 79 north of 48th Avenue (north of Bennett). It was assumed drivers would take a route from Kiowa-Bennett Road to US 36, then travel on US 36 to the intersection of SH 79, then would travel on SH 79. All intersections were assumed to be stop-controlled and Kiowa-Bennett Road was assumed to be the major movement at intersections with the exception of the intersection with SH 79 and Colfax Avenue/US 36.
- Travel time for each alternative was calculated based on the following speed limit assumptions:
  - Kiowa-Bennett Road: 55 mph from 6th Avenue to 1,500 feet south of I-70; 45 mph from 1,500 feet south of I-70 to Colfax Ave/US 36
  - Kiowa-Bennett Road realignment: 55 mph south of I-70 and 40 mph north of I-70
  - SH 79 existing alignment: 40 mph from I-70 off ramp to Colfax Ave/US 36
  - SH 79 realignment: 40 mph
  - Colfax Ave/US 36: 45 mph
  - Existing streets in downtown area (Colfax Ave, Adams St, Palmer Ave): 25 mph
- Delay due to intersections was added based on Synchro 8 computer analysis output (version Build 802, Revision 685).

- Rating:
  - Green = Travel time reduced by more than 30 percent compared to No Action (resulting in a travel time less than 6.3 minutes)
  - Black = Travel time reduced by 10 to 30 percent compared to No Action (resulting in a travel time of 6.3 to 8.0 minutes)
  - Red = Travel time reduced by less than 10 percent compared to No Action (resulting in a travel time greater than 8.0 minutes)

Kiowa-Bennett Road Connection to I-70

- Performance measure considered the ability for motorists to access eastbound and westbound I-70 from Kiowa-Bennett Road south of I-70.
- The connection was measured by the travel distance from the Antelope Drive and Kiowa-Bennett Road intersection to the western study area limit (at a point on I-70 immediately west of Penrith Road/CR 129) and to the eastern study area limit (on I-70 immediately east of Yulle Road).
- Rating for eastbound I-70 access:
  - Green = Travel distance reduced by more than 30 percent compared to No Action (resulting in a travel distance less than 5.5 miles)
  - Black = Travel distance reduced by 10 to 30 percent compared to No Action (resulting in a travel distance of 5.5 to 7.5 miles)
  - Red = Travel distance reduced by less than 10 percent compared to No Action (resulting in a travel distance greater than 7.5 miles)
- Rating for westbound I-70 access:
  - Green = Travel distance reduced by more than 30 percent compared to No Action (resulting in a travel distance less than 5.0 miles)
  - Black = Travel time reduced by 10 to 30 percent compared to No Action (resulting in a travel distance of 5.0 to 6.0 miles)
  - Red = Travel time reduced by less than 10 percent compared to No Action (resulting in a travel distance greater than 6.0 miles)

SH 79 Heavy Vehicle Movements

- Each alternative was evaluated to determine the number and characteristics of turns that heavy vehicles must traverse along SH 79 from the I-70 westbound ramps to SH 79 north of 38th Avenue (north of Bennett).
- The intersections that heavy vehicles must traverse were evaluated and the number of required full stops and turns were counted along SH 79 for each direction and each alternative.
- Rating:
  - Green = No stops or turns
  - Black = 1 or 2 stops and turns required
  - Red = 3 or more stops and turns required

Kiowa-Bennett Heavy Vehicle Movements

- Each alternative was evaluated to determine the number and characteristics of turns that heavy vehicles must traverse along Kiowa-Bennett Road from 6th Avenue (south of I-70) to SH 79 north of 38th Avenue (north of Bennett).

- The intersections that heavy vehicles must traverse were evaluated and the number of required full stops and turns were counted along Kiowa-Bennett Road for each direction and each alternative.
- Rating:
  - Green = No stops or turns
  - Black = 1 or 2 stops and turns required
  - Red = 3 or more stops and turns required

Conflict and Delay at the At-Grade Railroad Crossing

Performance measures for this criterion considered delay and conflicts at the existing SH 79 at-grade railroad crossing.

At-Grade Crossing Delay

- The 2035 daily vehicle-hours of delay at the at-grade crossing were calculated for each alternative.
  - Eighteen trains are assumed to travel through town across the at-grade crossing daily. (Although steady growth in the rail industry is expected, the level of growth was not provided by UPRR, so the existing number of trains was used for this comparative calculation.) The crossing gates are assumed to be lowered a total of 25 seconds per train as the train approaches and 25 seconds after the train clears the intersection. The average train speed is 49 miles per hour, and the average train carries 100 55-foot long cars.
- Daily vehicular traffic volume at the crossing was estimated based on 2035 travel demand modeling and origin-destination study results.
- Based on an average closure time of 2.1 minutes per crossing and a No Action daily volume of traffic of 6,200 vehicles per day, there would be an average of 164 vehicles impacted by the closure per day for the No Action scenario.
- Rating:
  - Green = Delay at the at-grade crossing reduced by more than 60 percent compared to No Action (fewer than 65 impacted vehicles per day)
  - Black = Delay at the at-grade crossing reduced by 30 to 60 percent compared to No Action
  - Red = Delay at the at-grade crossing reduced by less than 30 percent compared to No Action (more than 115 impacted vehicles per day)

At-Grade Crossing School Bus Movements

- A qualitative assessment of the effect on school bus routes carrying school children across the railroad at-grade was described for each alternative, based on possible route options.
- Factors considered for this performance measure include the amount of out-of-direction travel required for a bus to access the grade separation, accessibility to the local street network, and likely bus routes based on regional connecting roadways.
- Rating:
  - Green = All buses expected to use the grade separation rather than the at-grade crossing
  - Black = Some buses may use the grade separation rather than the at-grade crossing
  - Red = The grade separation would not be easily accessible for buses and would likely result in no diversion of school buses compared to the No-Action alternative

Emergency Response Time

- Based on discussions with Bennett Fire Protection District staff, the following key safety concerns were identified as critical to area emergency response time:
  - A direct connection from Kiowa-Bennett Road to I-70 for all directions of travel is considered the most critical need based on transporting individuals from the Bennett area north and south of I-70 to hospitals located in Aurora.
  - A direct route from the fire station to Kiowa-Bennett Road south of I-70 is important due to the large population serviced in that area.
  - Removing trucks and reducing traffic in the downtown Bennett area would make it easier for emergency vehicles to exit their station to respond to calls.
- Each alternative was evaluated for how well it addresses the critical concerns identified by the emergency response staff.
- Rating:
  - Green = All three concerns were addressed
  - Black = 1 or 2 of the concerns were addressed
  - Red = None of the concerns were addressed

Safety Concerns

Performance measures for this criterion considered safety concerns expressed by area stakeholders and the general public.

Heavy Vehicle and Pedestrian Conflict

- Each alternative was evaluated for the potential conflict between heavy vehicles and pedestrians in downtown Bennett.
- The potential for conflict was represented by a qualitative assessment of the amount of trucks expected to travel along Palmer Avenue south of the schools, which is where most mid-block pedestrian crossings have been observed.
- Rating:
  - Green = Only local trucks will use Palmer Avenue
  - Black = Primarily local trucks will use Palmer Avenue with some potential for cut-through truck trips between Colfax Avenue/US 36 and SH 79
  - Red = Truck trips will need to use Palmer Avenue to obtain access between Colfax Avenue/US 36 and SH 79

Hazardous Materials Route

- SH 79 is an identified hazardous materials route from I-70 to north of Bennett.
- The number of homes and/or places where people work or congregate located within 300 feet of the hazardous materials route was identified for each alternative. The length of hazardous materials route was considered along SH 79 from the I-70 westbound ramps to north of 38th Avenue (north of Bennett).
- The No Action condition identifies 80 buildings located within 300 feet of the hazardous materials route.
- Rating:
  - Green = Reduction of more than 75 percent (resulting in 20 or fewer) in number of homes/places exposed to hazardous materials route over No Action conditions

- Black = Reduction of 25 to 75 percent in number of homes/places exposed to hazardous materials route over No Action conditions
- Red = Reduction of less than 25 percent (resulting in 60 or more) in number of homes/places exposed to hazardous materials route over No Action conditions

Roadway Geometric Improvements

- Improvements to the following existing roadway deficiencies were identified if they were within the project limits of each alternative:
  - Shoulder width along Kiowa-Bennett Road from 6th Avenue to I-70
  - Intersection sight distance at the SH 79 and Old Victory Road intersection
  - Intersection sight distance at the existing I-70 eastbound and westbound off ramp intersections at SH 79
  - Vertical sight distance along Kiowa-Bennett Road north of 6th Avenue
- Improvements were assumed to be made if the identified deficiencies were within the construction limits of the alternative. Improvements outside the construction limits may be completed, but were not considered part of this project. Construction limits are based on the extents of the conceptual roadway design developed for each alternative.
- Rating:
  - Green = Improves all 4 identified issues
  - Black = Improves 2 or 3 identified issues
  - Red = Improves 1 or less identified issues

Potential Design Variances

- Potential variances in federal or state design standards were noted for each alternative. For example, the FHWA standard two-mile interchange spacing for rural freeways was considered.
- Rating:
  - Green = No design variances anticipated
  - Black = One potential design variance anticipated
  - Red = More than one potential design variance anticipated

Environmental Impacts

Performance measures for this criterion considered the magnitude of environmental impacts to the main areas of concern identified in the study Environmental Overview section of the *Final Corridor Assessment Conditions Report*.

Potentially Impacted Parks and Recreation Areas

- The number of sites and acres impacted at parks and recreation locations within the study area (Bennett community parks and the Kiowa Creek North Open Space) were evaluated based on the existing parks and recreation areas identified in the *Final Corridor Conditions Assessment Report*.
- The area of impact expected from a park or recreation area was quantified in acres.
- Rating:
  - Green = No impact expected
  - Black = 1 site and 0.1 to 1 acre potentially impacted
  - Red = More than 1 site or more than 1 acre potentially impacted

Potentially Impacted Threatened and Endangered Species Areas

- Areas of threatened and endangered species potentially impacted by the alternatives were quantified based on the number of acres within the threatened and endangered species areas identified in the *Final Corridor Assessment Conditions Report*.
- Rating:
  - Green = Fewer than 5 acres potentially impacted
  - Black = 5 to 10 acres potentially impacted
  - Red = More than 10 acres potentially impacted

Potentially Impacted Sensitive Biological Habitat

- Potential impacts to sensitive biological habitat along Kiowa Creek were quantified based on the limits of the Kiowa Creek floodplain shown in the *Final Corridor Conditions Assessment Report*.
- If a crossing of Kiowa Creek is included in an alternative, the length of the alternative roadways across the identified floodplain limits determined the potential level of impact.
- Rating:
  - Green = Kiowa Creek floodplain impacts < 2,000 feet
  - Black = Kiowa Creek floodplain impacts 2,000 to 5,000 feet
  - Red = Kiowa Creek floodplain impacts > 5,000 feet

Potentially Impacted Noise Receptors

- Noise receptors that may be impacted due to each alternative were quantified based on the number of potential noise receptors within 500 feet of an existing roadway and 1,000 feet of a new roadway alignment where construction is proposed to occur.
- Potential noise receptors included in the impact analysis include receptors that likely require mitigation, such as churches and residential homes. Commercial businesses were not included in the total number of potentially impacted receptors.
- Rating:
  - Green = No noise receptors located within 500 feet of existing and 1,000 feet of new proposed roadways
  - Black = 1 to 30 noise receptors located within 500 feet of existing and 1,000 feet of new proposed roadways
  - Red = More than 30 noise receptors located within 500 feet of existing and 1,000 feet of new proposed roadways

Community Impacts

Performance measures for this criterion considered the magnitude of anticipated impacts to the existing and planned local community.

ROW Required (acres)

- The acres of property impacts were calculated for each alternative based on the conceptual roadway design layout and the anticipated ROW requirements.
- The property acreage impacts include corner portions of properties that may be considered an unusable remnant.

- Rating:
  - Green = Less than 50 acres
  - Black = Between 50 and 80 acres
  - Red = More than 80 acres

ROW Required (properties)

- The number of properties impacted was calculated for each alternative based on the conceptual roadway design layout and the anticipated ROW requirements. The number of impacted properties was summarized as partial and full acquisitions.
- The number of impacted properties was categorized as commercial, residential, or public. Commercial properties include commercial and mining land uses. Residential properties include residential and agricultural land uses. Public properties include churches, parks, and Town/County land uses.
- Rating:
  - Green = Less than 25 properties impacted
  - Black = Between 25 and 50 properties impacted
  - Red = More than 50 properties impacted

Consistency with Established Local Plans and Visions

- The consistency with the following established local plans and visions was determined for each alternative:
  - *Bennett Downtown Planning Study* – recommends SH 79 realignment out of the existing downtown area and a railroad grade separation
  - *Town of Bennett Comprehensive Plan* – recommends SH 79 realignment out of the existing downtown area and a railroad grade separation
  - *Adams County Transportation Plan* – recommends a railroad grade separation for SH 79
  - *Arapahoe County Transportation Plan* – recommends a more direct connection between Kiowa-Bennett Road and SH 79 and improved access for Kiowa-Bennett Road to I-70
  - *CDOT 2035 Statewide Transportation Plan* – recommends a railroad grade separation for SH 79
- New trails adjacent to SH 79 and Kiowa-Bennett Road are recommended in the Bennett planning documents.
- Rating:
  - Green = Alternative consistent with established local plans
  - Red = Alternative not consistent with one or more established local plans

Economic Opportunities

Performance measures for this criterion considered local access and mobility for projected future area economic growth within the study area.

Access for Economic Development

- The length of new SH 79 frontage for development to occur in Bennett's planned commercial areas was quantified. Based on the *Bennett Downtown Planning Study*, the proposed commercial areas are located:
  - At all quadrants of the existing I-70 and SH 79 interchange

- Along existing SH 79 north of Palmer Avenue
- South of Colfax Ave/US 36 in the currently undeveloped area between existing SH 79 and Kiowa Creek and north of I-70

- Rating:
  - Green = Adds at least one mile of commercial property frontage
  - Black = Adds less than one mile of commercial property frontage
  - Red = No new commercial property frontage added

Multimodal Connections

Performance measures for this criterion considered the relative level of accommodation for multimodal connections along SH 79 and Kiowa-Bennett Road through the study area.

Multimodal Access

- The provision for a new connection consistent with future trail and sidewalk planning identified in the *Bennett Regional Trail Plan* and by Arapahoe County Open Spaces staff was identified for each alternative.
- Future planned roadways that may connect east-west trails within the study area were noted to provide additional connectivity where sidewalks or wide roadway shoulders are planned.
- Rating:
  - Green = Alternative consistent with established multimodal planning
  - Red = Alternative not consistent with established multimodal planning

Constructability

Performance measures for this criterion addressed the practicability for implementation.

Conceptual Level Probable Construction Costs

- Construction costs were provided on a relative scale of low, moderate, and high with a general evaluation based on the amount of new or reconstructed roadway, size of required structures, major cut/fill variances, and overall footprint of alternative conceptual layout.
- Rating:
  - Green = Relative low costs
  - Black = Relative moderate costs
  - Red = Relative high costs

Constructability Issues

- General construction complexity was determined based on the number and length of major structures, utility impacts, traffic impacts, and complexity from a contractor perspective (e.g., staging area, construction phasing, and length of construction).
- Rating:
  - Green = Typical construction with low complexity
  - Black = Some anticipated construction complexity
  - Red = Multiple impacts and major anticipated construction complexity

Railroad Process and Requirements

- The coordination and potential issues with the railroad approval for construction and implementation of each alternative was identified, considering elements such as design standards and construction phasing requirements. Ability to meet railroad requirements was measured on a relative scale.
- Rating:
  - Green = Minimal concerns in ability to adhere to railroad requirements
  - Black = Some concerns in ability to meet railroad requirements
  - Red = Major concerns in ability to meet railroad requirements

Phasing Opportunities

- The ability to construct useful portions of the improvements over a phased implementation period was identified. Ability to construct in usable pieces with reasonable funding was measured on a relative scale.
- Rating:
  - Green = Opportunities for phased implementation
  - Black = Opportunities for phased implementation, but with specific sequence required
  - Red = Phased implementation difficult

Level 2 Screening Evaluation

The purpose of the Level 2 evaluation was to complete additional and more detailed analysis to confirm each alternative meets the Purpose and Need, compare how well each alternative would perform, and identify what impacts each alternative would have based on the project goals and objectives. The detailed Level 2 Screening Matrix providing the results of the analysis of the alternatives is included in **Appendix C**.

The following pages describe each alternative, the results of the evaluation criteria, and a conclusion for whether or not to carry forward the alternative into the Level 3 evaluation. An alternative was not carried forward if the more detailed evaluation showed the alternative does not meet the Purpose and Need or the alternative is unreasonable due to impacts and infeasibility.

Level 2 Screening Results

In the Level 2 screening, the following four alternatives were eliminated from further consideration:

- Alternative 3 – East Railroad Crossing with West Kiowa-Bennett Road Interchange Alignment
- Alternative 5 – East Railroad Crossing with Central Kiowa-Bennett Road Alignment
- Alternative 6 – East SH 79 Alignment with Kiowa-Bennett Railroad Crossing
- Alternative 9 – Central Railroad Crossing with West Kiowa-Bennett Road Alignment

The following four alternatives were carried forward for further consideration in a Level 3 evaluation:

- No Action
- Alternative 1—East Railroad Crossing with Full Kiowa-Bennett Road Diamond Interchange
- Alternative 2—East Railroad Crossing with Split Kiowa-Bennett Road Diamond Interchange
- Alternative 4—East Railroad Crossing with East Kiowa-Bennett Road Interchange Alignment

No Action

Under the No Action alternative, shown in **Figure 4**, the potential improvements would not take place. There are several operational and maintenance projects funded within the study area, including the resurfacing of Colfax Avenue/US 36 and restriping of SH 79 within the area north of the I-70 interchange. A new multi-use path along Kiowa-Creek Road from Antelope Hills to 6th Avenue is currently being constructed and planning is underway for the section north of 6th Avenue. Currently, there are no planned transportation capacity improvement projects within the study area.

Regional Mobility and Connectivity

- Regional traffic must travel through downtown Bennett and across the railroad at-grade crossing
- No direct connection from Kiowa-Bennett Road to I-70
- Large trucks required to maneuver through town streets and make several tight turns

At-Grade Railroad Crossing Conflict and Delay

- No reduction in the traffic delay at the existing at-grade crossing
- All buses must use at-grade crossing
- Does not address emergency responder primary concerns of a direct connection from Kiowa-Bennett Rd to I-70, a direct route from the fire station to Kiowa-Bennett south of I-70, and removing trucks and traffic congestion downtown

Safety Concerns

- Hazardous materials route travels through downtown Bennett past nearly 80 buildings
- Sight distance at SH 79/Old Victory Road and at SH 79/I-70 ramps and Kiowa-Bennett Road shoulders are not improved
- Interchange spacing meets FHWA guidelines for rural interstates

Environmental and Community Impacts

- Not consistent with local planning efforts for zoning or land use
- No environmental impacts
- No ROW impacts

Economic Opportunities

- No new commercial SH 79 frontage within Town limits consistent with future zoning

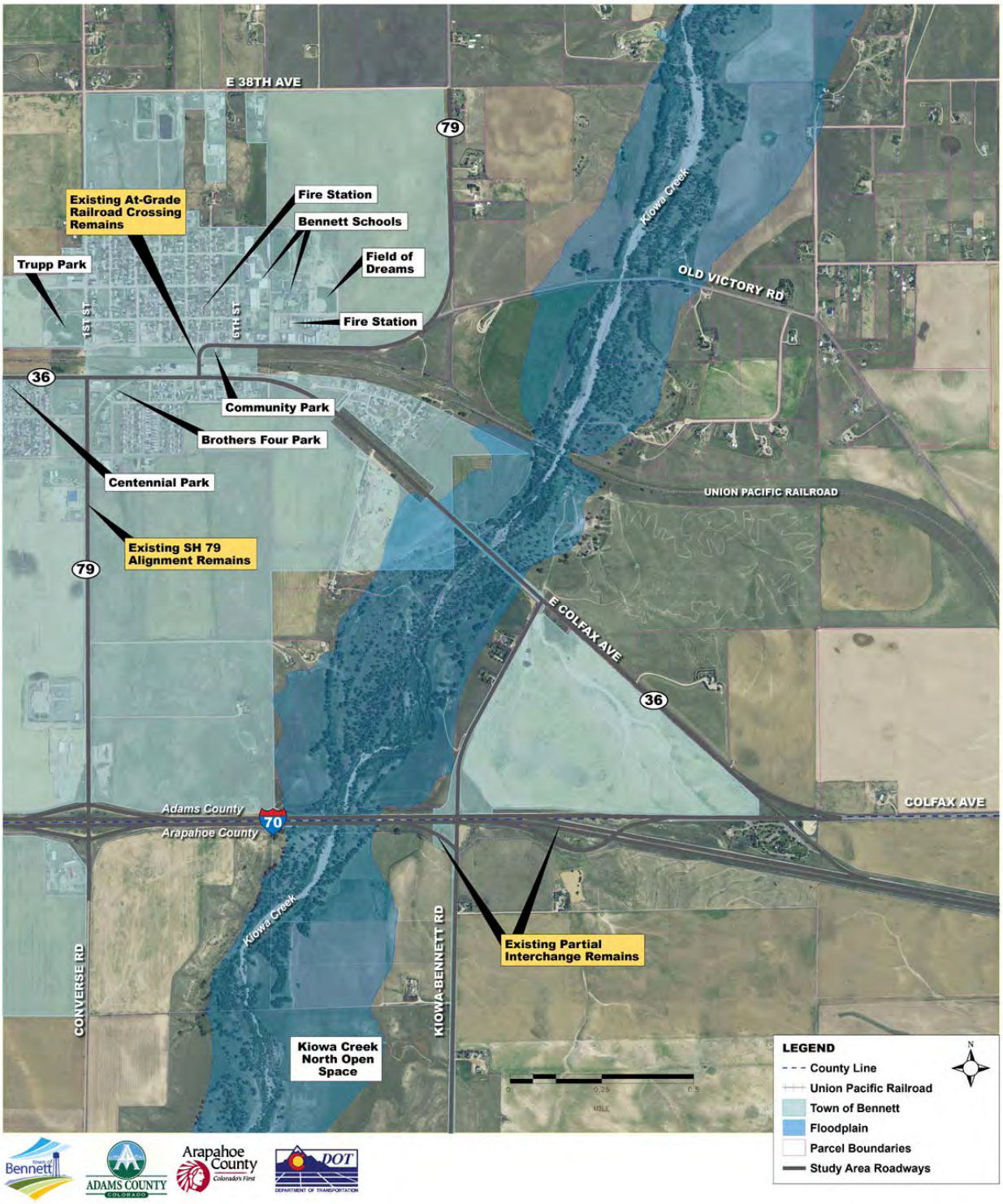
Multimodal Connections

- Not consistent with future trail network connections

Constructability

- No construction costs

Figure 4: No Action Alternative



Evaluation

Under the No Action alternative, the study area transportation network will continue to have regional operational deficiencies, including a lack of connectivity to I-70. Due to lack of connectivity, both the SH 79 and Kiowa-Bennett Road corridors will not be able to effectively support mobility and economic activity in Bennett and Adams and Arapahoe Counties for existing and future land use and transportation demand conditions.

Without a railroad grade separation for SH 79, the heavy truck traffic and train operations will continue to contribute to the localized congestion, mobility issues, and safety concerns at the at-grade UPRR crossing in downtown Bennett. With the anticipated growth in future rail traffic, the truck and train conflicts will increase. The lack of a grade-separated route over/under the railroad tracks and the lack of a direct connection from Kiowa-Bennett Road to I-70 west will continue to hinder emergency response for area residents and travelers south of I-70.

Critical Considerations

The No Action alternative does not meet the Purpose and Need, but is included as a baseline against which to compare impacts of action alternatives. This is important context information in determining the relative magnitude and intensity of the impacts of action alternatives.

Conclusion:

CARRIED FORWARD

Use as a baseline for comparison

Alternative 1 – East Railroad Crossing with Full Kiowa-Bennett Road Diamond Interchange

This alternative, shown in **Figure 5**, consists of realigning SH 79 south of downtown Bennett with a grade-separated railroad crossing on SH 79 east of Bennett and a full diamond interchange at Kiowa-Bennett Road and I-70.

Regional Mobility and Connectivity

- 23% reduction in travel time on SH 79 from I-70 to north of Bennett
- 23% reduction in travel time on Kiowa-Bennett Road from south of I-70 to north of Bennett
- Provides a direct connection from Kiowa-Bennett Road to I-70
- Two turns required for large trucks to travel from south of Bennett to north of town

At-Grade Railroad Crossing Conflict and Delay

- Approximately 55% reduction in traffic delay at existing at-grade crossing
- Addresses emergency responder primary concerns of a direct connection from Kiowa-Bennett Rd to I-70, a direct route from the fire station to Kiowa-Bennett south of I-70, and removing trucks and traffic congestion downtown

Safety Concerns

- Hazardous materials route outside downtown Bennett
- Reduction expected in truck and pedestrian conflicts near the school because trucks will move to SH 79 realignment
- Improves sight distance at SH 79/Old Victory Road and at SH 79/I-70 ramps
- Interchange spacing less than FHWA guidelines for rural interstates

Environmental and Community Impacts

- No impacts to parks and recreational areas
- Approximately 7 acres of potentially impacted threatened and endangered species areas
- Approximately 1,800 feet of floodplain impacts
- Approximately 41 acres of ROW impacts

Economic Opportunities

- Adds over one mile of commercial developable SH 79 frontage consistent with future zoning

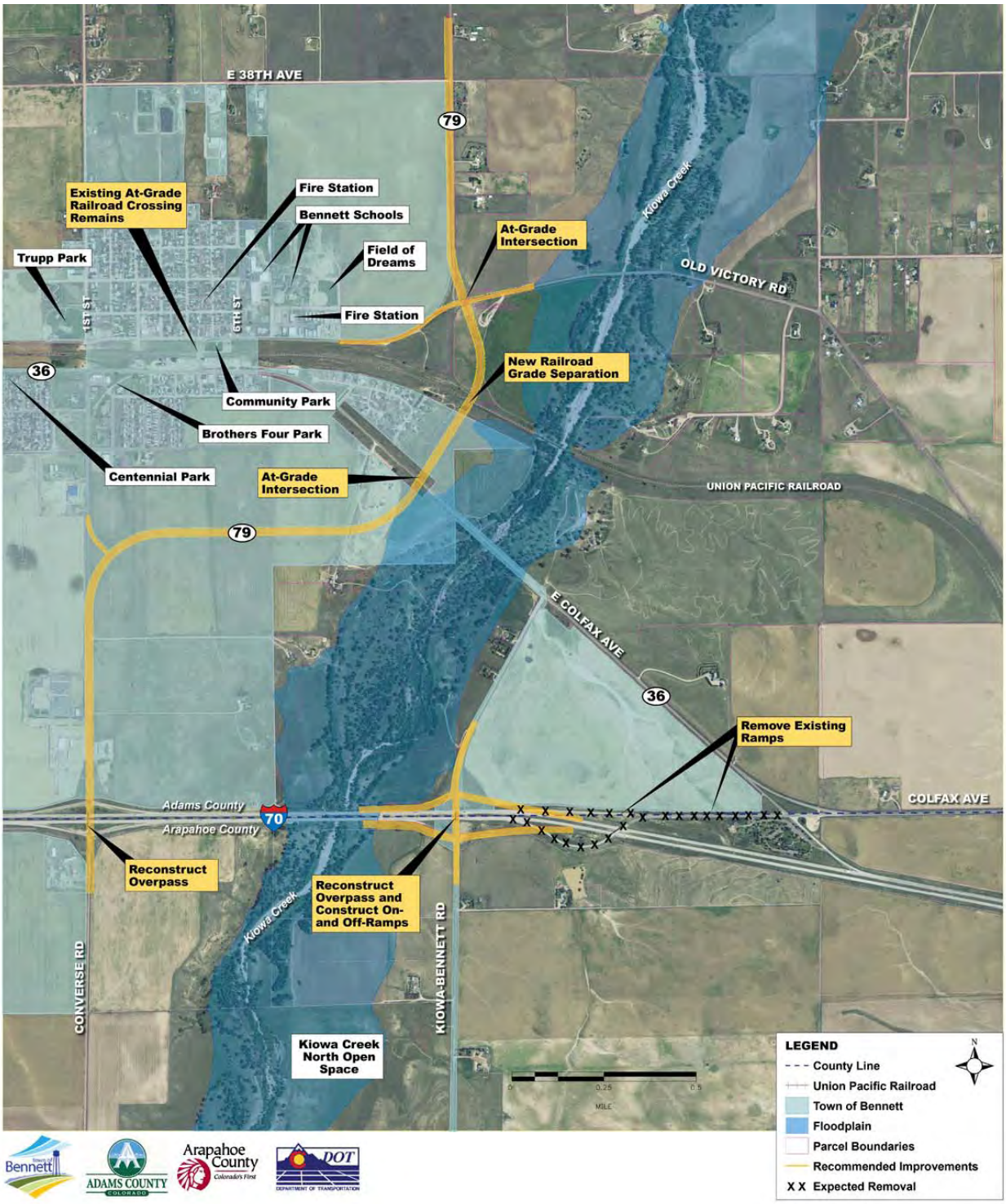
Multimodal Connections

- Consistent with future trail network connections

Constructability

- Relatively low construction costs
- Relatively low potential for construction issues anticipated
- Relatively easy for smaller usable sections to be constructed at separate times

Figure 5: Alternative 1 - East Railroad Crossing with Full Kiowa-Bennett Road Diamond Interchange



Evaluation

This alternative provides a direct connection between Kiowa-Bennett Road and I-70 at the current Kiowa-Bennett Road crossing, which significantly reduces travel times for drivers traveling from Kiowa-Bennett Road south of I-70 towards the Denver metropolitan area. Drivers on Kiowa-Bennett Road wishing to access SH 79 north can access the highway without traveling through downtown Bennett by traveling to Colfax Avenue/US 36 and the railroad grade separation on SH 79.

Regional traffic and hazardous material trucks would be removed from the downtown Bennett area with the realignment of SH 79. This would result in a 55 percent reduction of daily traffic delay experienced at the existing at-grade crossing due to regional traffic being redirected to the grade separation on SH 79.

Safety improvements include improving sight distance at the I-70 and SH 79 ramps with a new bridge over I-70 as well as improving the intersection of SH 79 and Old Victory Road. The Kiowa-Bennett Road and I-70 interchange would be reconstructed to provide full ramp movements for both directions on and off the freeway. The new SH 79 alignment would add over one mile of state highway frontage for commercial developable property within Town limits consistent with future zoning of the area south of downtown Bennett as a new mixed use commercial area. This alternative accommodates future multimodal connections consistent with the planned future trail network in the area by providing the opportunity for connections east and west of Kiowa Creek and adjacent to the development area.

This alternative has no direct impacts to parks and recreational areas. It is estimated to impact 7 acres of threatened and endangered species area, less than half an acre of which is the prairie dog colony near the SH 79 interchange, and 7 acres at the Kiowa-Bennett Road ramps that impact Kiowa Creek. The alternative is estimated to directly impact 22 properties with one full and 21 partial acquisitions (total = 41 acres). Of these properties, 17 are residential, 3 are commercial, and 2 are public.

In comparison to other alternatives, the construction costs are relatively low because structures are required only at the interchanges and railroad, there is minimal construction traffic impact expected, and there is less ROW acquisition compared to other alternatives. There are good opportunities for phased construction of the area improvements with smaller usable sections that can be constructed at separate times while providing transportation network benefits with smaller funding sources.

This alternative includes one-mile spacing between interchanges, which is less than what is recommended by FHWA for rural interchanges and would therefore require a variance.

Critical Considerations

There are regional mobility and connectivity improvements with the reductions in travel time provided with the more efficient connections along SH 79 and Kiowa-Bennett Road to I-70 and through the study area. The removal of traffic and heavy trucks from the downtown Bennett area reduces the conflict and delay experienced at the existing at-grade railroad crossing. Safety is improved with the realignment of the heavy truck and hazardous materials route outside the densely-populated and tightly-constrained area adjacent to the school. Safety concerns are also addressed with improvements to existing geometric deficiencies at SH 79/Old Victory Road and the SH 79/I-70 ramps intersections. However, this alternative will require a variance from FHWA for one-mile spacing between interchanges in a rural area.

Because this alternative meets the Purpose and Need by improving regional mobility and connectivity, reducing conflict and delay at the at-grade railroad crossing, and addressing critical safety concerns while minimizing private property and environmental impacts, this alternative was carried forward for further consideration.

Conclusion: CARRIED FORWARD

Alternative 2 – East Railroad Crossing with Split Kiowa-Bennett Road Diamond Interchange

This alternative, shown in **Figure 6**, consists of realigning SH 79 south of downtown Bennett with a grade-separated railroad crossing on SH 79 east of Bennett and a split diamond interchange between SH 79 and Kiowa-Bennett Road and I-70. This alternative was considered because it may provide similar connectivity and safety benefits as Alternative 1 and also provide increased distance between ramp merge and diverge points on I-70 with the split diamond interchange configuration, providing the ramp spacing to meet FHWA rural guidelines.

Regional Mobility and Connectivity

- 23% reduction in travel time on SH 79 from I-70 to north of Bennett
- 23% reduction in travel time on Kiowa-Bennett Road from south of I-70 to north of Bennett
- Provides a direct connection from Kiowa-Bennett Road to I-70
- Two turns required for large trucks to travel from south of Bennett to north of town

At-Grade Railroad Crossing Conflict and Delay

- Approximately 55% reduction in traffic delay at existing at-grade crossing
- Emergency responders concerned with additional stops on I-70 ramp connections

Safety Concerns

- Hazardous materials route outside downtown Bennett
- Reduction expected in truck and pedestrian conflicts near the school because trucks will move to SH 79 realignment
- Improves sight distance at SH 79/Old Victory Road and at SH 79/I-70 ramps
- Interchange spacing meets FHWA guidelines for rural interstates

Environmental and Community Impacts

- No impacts to parks and recreational areas
- Approximately 10 acres of potentially impacted threatened and endangered species areas
- Approximately 4,700 feet of floodplain impacts
- Approximately 57 acres of ROW impacts

Economic Opportunities

- Adds over one mile of commercial developable SH 79 frontage consistent with future zoning

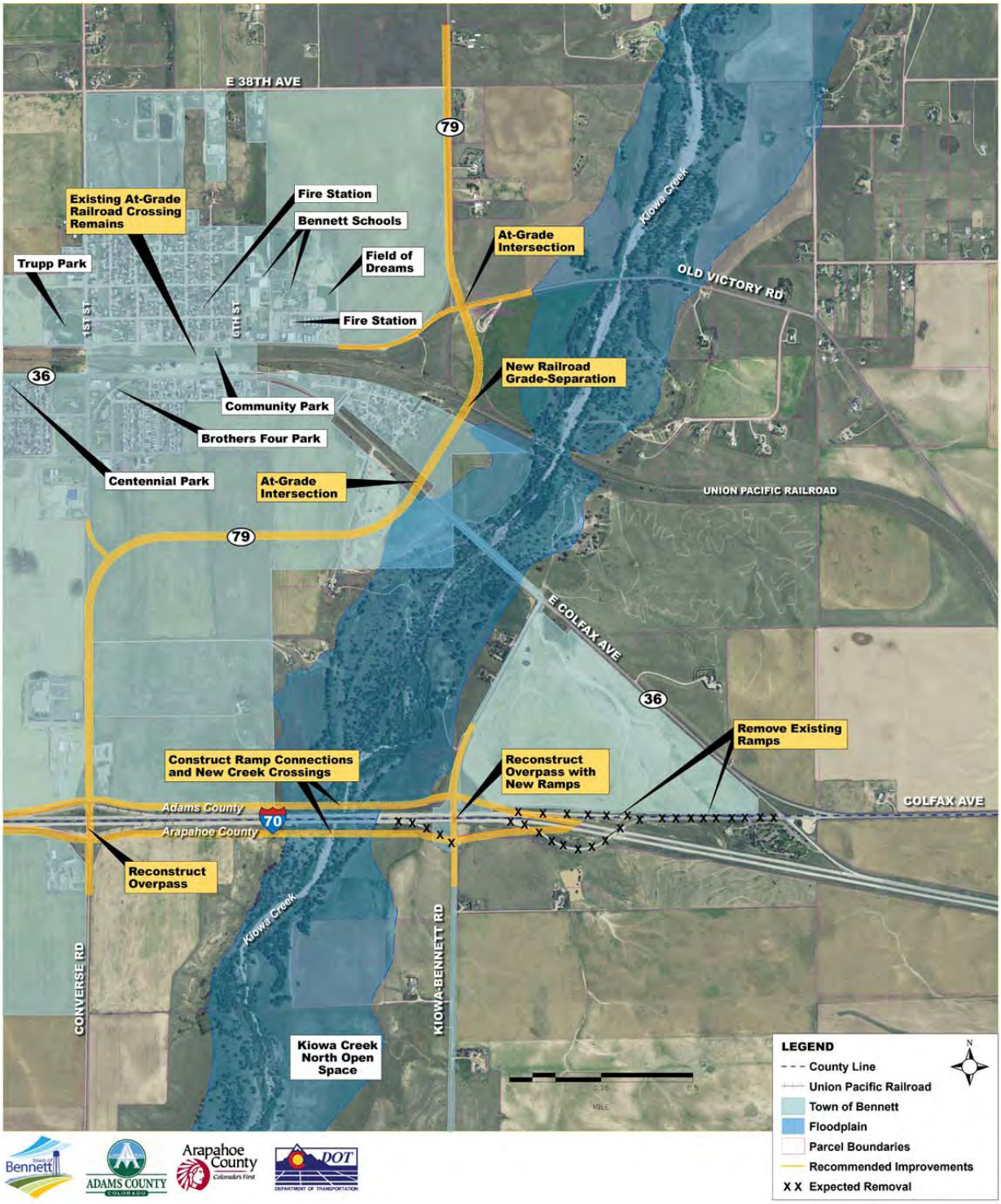
Multimodal Connections

- Consistent with future trail network connections

Constructability

- Relatively high construction costs
- Relatively moderate potential for construction issues anticipated
- Relatively moderate opportunities for phasing because of the larger cost to implement individual sections

Figure 6: Alternative 2 - East Railroad Crossing with Split Kiowa-Bennett Road Diamond Interchange



Evaluation

This alternative provides a split diamond configuration between the I-70 interchanges with SH 79 and Kiowa-Bennett Road to meet the FHWA guidance of two-mile spacing for rural interchanges. This provides a connection between Kiowa-Bennett Road and I-70, but an added stop would be required at the SH 79 ramps, which results in a lower travel time benefit than other alternatives for drivers traveling from Kiowa-Bennett Road south of I-70 towards the Denver metropolitan area. Drivers on Kiowa-Bennett Road wishing to access SH 79 north can access the highway without traveling through downtown Bennett by traveling to Colfax Avenue/US 36 and the railroad grade separation on SH 79.

Regional traffic and hazardous material trucks would be removed from the downtown Bennett area with the realignment of SH 79. This would result in a 55 percent reduction of daily traffic delay experienced at the existing at-grade crossing due to regional traffic being redirected to the grade separation on SH 79.

Safety improvements include improving sight distance at the I-70 and SH 79 ramps with a new bridge over I-70 as well as improving the intersection of SH 79 and Old Victory Road. The Kiowa-Bennett Road and I-70 interchange would be reconstructed to provide full ramp movements for both directions on and off the freeway. The new SH 79 alignment would add over one mile of state highway frontage for commercial developable property within Town limits consistent with future zoning of the area south of downtown Bennett as a new mixed use commercial area. This alternative accommodates future multimodal connections consistent with the planned future trail network in the area by providing the opportunity for path connections east and west of Kiowa Creek and adjacent to the development area.

This alternative has no direct impacts to parks and recreational areas. It is estimated to impact 10 acres of threatened and endangered species area, 2 acres of which is the prairie dog colony near the SH 79 interchange, and 8 acres at the split diamond interchange ramps that impact the Kiowa Creek area. The alternative is estimated to directly impact 26 properties with one full and 25 partial acquisitions (total = 57 acres). Of these impacted properties, 19 are residential, 5 are commercial, and 2 are public.

In comparison to other alternatives, the construction costs are relatively high due to the additional structures required for the split diamond ramp connections across Kiowa Creek. There are opportunities for phased construction of the area improvements with smaller usable sections, but the SH 79 and Kiowa-Bennett Road interchange improvements would require a larger funding source because the split interchange configuration must be constructed as one project.

This alternative meets the two-mile interchange spacing guidelines for rural interstates and, therefore would not require a variance from FHWA.

Critical Considerations

There are regional mobility and connectivity improvements with reductions in travel time provided with the more efficient connections along SH 79 and Kiowa-Bennett Road to I-70 and through the study area. The conflict and delay and safety improvements at the existing at-grade railroad crossing are similar to other alternatives with the same SH 79 realignment. Safety concerns are also addressed with improvements to existing geometric deficiencies at SH 79/Old Victory Road and the SH 79/I-70 ramps intersections. This alternative will not require a variance from FHWA for interchange spacing.

Because this interchange meets the Purpose and Need by improving regional mobility and connectivity, reducing conflict and delay at the at-grade railroad crossing, and addressing critical safety concerns while minimizing private property and environmental impacts, this alternative was carried forward for further consideration.

Conclusion: CARRIED FORWARD

Alternative 3 – East Railroad Crossing with West Kiowa-Bennett Road Interchange Alignment

This alternative, shown in **Figure 7**, consists of realigning SH 79 south of downtown Bennett with a grade-separated railroad crossing on SH 79 east of Bennett and realigning Kiowa-Bennett Road to the west to meet the SH 79 interchange at I-70.

Regional Mobility and Connectivity

- 23% reduction in travel time on SH 79 from I-70 to north of Bennett
- 4% reduction in travel time on Kiowa-Bennett Road from south of I-70 to north of Bennett
- Provides connection from Kiowa-Bennett Road to I-70 at existing SH 79 interchange
- No turns required for large trucks to travel from south of Bennett to north of town

At-Grade Railroad Crossing Conflict and Delay

- Approximately 55% reduction in traffic delay at existing at-grade crossing
- Emergency responders concerned with out-of-direction travel from fire station to access Kiowa-Bennett Road

Safety Concerns

- Hazardous materials route outside downtown Bennett
- Reduction expected in truck and pedestrian conflicts near the school because trucks will move to SH 79 realignment
- Improves sight distance at SH 79/Old Victory Road and at SH 79/I-70 ramps and Kiowa-Bennett Road shoulders are improved
- No change to interchange spacing over existing conditions

Environmental and Community Impacts

- Approximately 19 acres of potentially impacted parks and recreational areas
- Approximately 3 acres of potentially impacted threatened and endangered species areas
- Approximately 3,300 feet of floodplain impacts
- Approximately 86 acres of ROW impacts

Economic Opportunities

- Adds over one mile of commercial developable SH 79 frontage consistent with future zoning

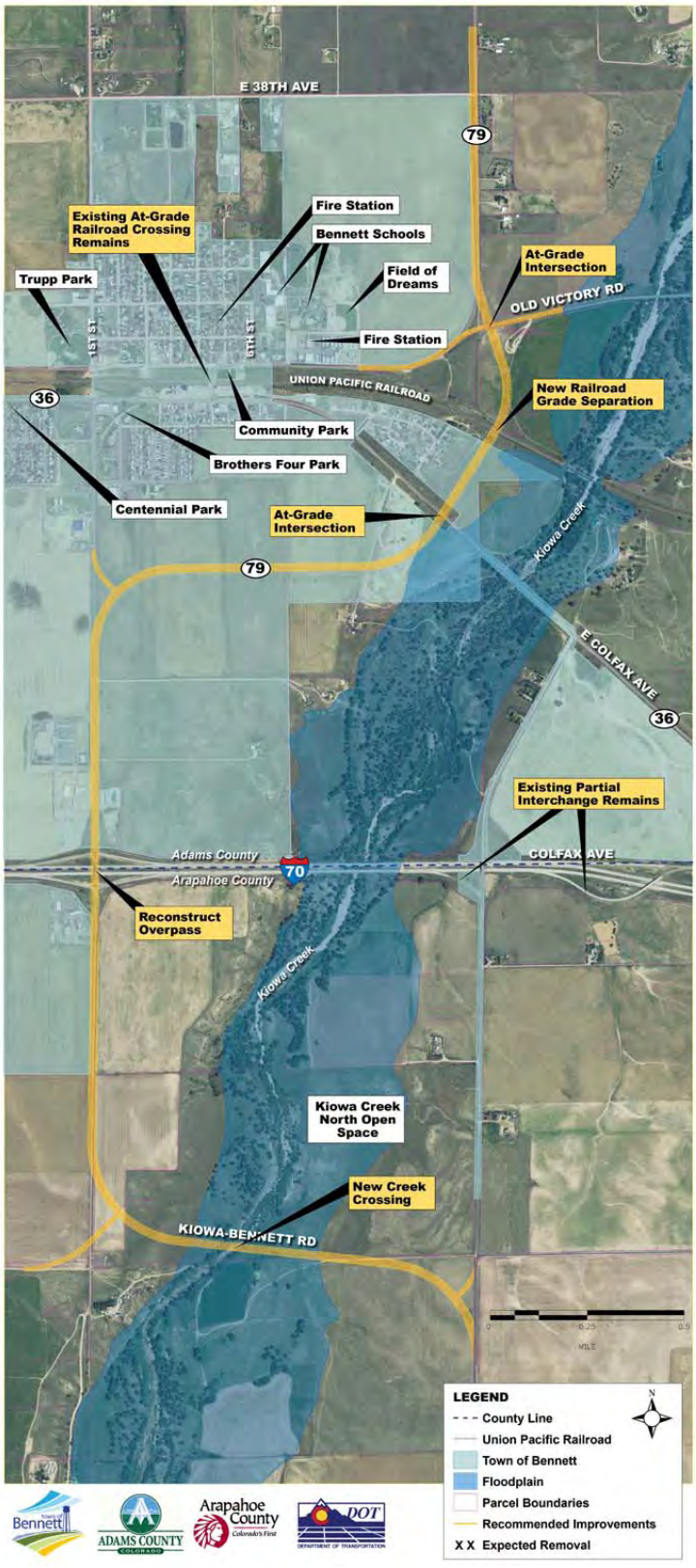
Multimodal Connections

- Consistent with future trail network connections

Constructability

- Relatively moderate construction costs
- Relatively low potential for construction issues anticipated
- Relatively easy for smaller usable sections to be constructed at separate times

Figure 7: Alternative 3 - East Railroad Crossing with West Kiowa-Bennett Road Interchange Alignment



Evaluation

This alternative provides a regional north-south route for drivers traveling from Kiowa-Bennett Road to north of Bennett, but would only provide a minimal reduction in travel time because of the curves of the roadway to the west and back east north of I-70. This alternative provides a direct connection between Kiowa-Bennett Road and I-70 at the existing SH 79 interchange.

Regional traffic and hazardous material trucks would be removed from the downtown Bennett area with the realignment of SH 79. This would result in a 55 percent reduction of daily traffic delay experienced at the existing at-grade crossing due to regional traffic being redirected to the grade separation on SH 79.

Safety improvements include improving sight distance at the I-70 and SH 79 ramps with a new bridge over I-70, improving the intersection of SH 79 and Old Victory Road, and widening the shoulders of Kiowa-Bennett Road along the new roadway alignment. In addition to the new state highway frontage provided with the new SH 79 alignment, the realignment of Kiowa-Bennett Road to the west would allow the Town's commercial areas near the SH 79 interchange to capture additional regional traffic traveling on Kiowa-Bennett Road. This alternative accommodates future multimodal connections consistent with the planned future trail network in the area by providing the opportunity for path connections east and west of Kiowa Creek, including a Kiowa Creek crossing south of I-70, and adjacent to the development area.

This alternative is expected to have substantial environmental impacts with impacts of approximately 19 acres of the Kiowa Creek North Open Space and approximately 3 acres of threatened and endangered species area, less than half an acre of which is the prairie dog colony near the I-70 and SH 79 interchange, and 3 acres at the Kiowa-Bennett Road crossing of Kiowa Creek. Arapahoe County Open Spaces strongly opposes any roadway alignment within the Kiowa Creek North Open Space. The alternative is estimated to directly impact 25 properties with one full and 24 partial acquisitions (total = 86 acres). Of these impacted properties, 18 are residential, 4 are commercial, and 3 are public.

In comparison to other alternatives, the construction costs are relatively moderate due to the large structure required for the Kiowa Creek crossing south of I-70. There are good opportunities for phased construction of the area improvements with smaller usable sections that can be constructed at separate times while providing transportation network benefits with smaller funding sources.

Because new ramps to/from I-70 are not constructed, this alternative would not require a variance from FHWA for interchange spacing.

Critical Considerations

Although there are regional mobility and connectivity improvements provided with the new corridor connections, the travel time benefits for Kiowa-Bennett Road through the study area are substantially less than with other alternatives with only a minimal reduction in travel time through the study area for Kiowa-Bennett Road. The conflict and delay and safety improvements at the existing at-grade railroad crossing are similar to other alternatives with the same SH 79 realignment.

This alternative has substantially more environmental impacts than other alternatives with direct property impacts to the Kiowa Creek North Open Space and a proposed crossing of Kiowa Creek. Arapahoe County Open Spaces strongly opposes any roadway alignment within the Kiowa Creek North Open Space. The alternative also has substantially more property impacts due to the Kiowa-Bennett Road realignment, directly impacting over twice as much ROW than other alternatives. Avoiding the Kiowa Creek North Open Space resource would result in substantially more private property impacts and would likely not meet the Purpose and Need because of increased travel time along Kiowa-Bennett Road since the realignment would need to shift farther south.

Due to the combination of environmental impacts to the Kiowa Creek North Open Space and Kiowa Creek habitat area, private property impacts, as well as the relatively moderate cost for the Kiowa Creek bridge structure, this alternative is not considered reasonable and was not carried forward for further consideration.

Conclusion: ELIMINATED

Alternative 4 – East Railroad Crossing with East Kiowa-Bennett Road Interchange Alignment

This alternative, shown in **Figure 8**, consists of realigning SH 79 south of downtown Bennett with a grade-separated railroad crossing on SH 79 east of Bennett and realigning Kiowa-Bennett Road to the east with a full diamond interchange approximately one mile east of the existing I-70 crossing. This alternative was considered to provide a full interchange for Kiowa-Bennett Road that adheres to the two-mile FHWA interchange spacing guidelines.

Regional Mobility and Connectivity

- 23% reduction in travel time on SH 79 from I-70 to north of Bennett
- 6% reduction in travel time on Kiowa-Bennett Road from south of I-70 to north of Bennett
- Provides connection from Kiowa-Bennett Road to I-70 with some out-of-direction travel from Kiowa-Bennett Road to I-70 west
- Two turns required for large trucks to travel from south of Bennett to north of town

At-Grade Railroad Crossing Conflict and Delay

- Approximately 55% reduction in traffic delay at existing at-grade crossing
- Emergency responders concerned with out-of-direction travel to access Kiowa-Bennett Road

Safety Concerns

- Hazardous materials route outside downtown Bennett
- Reduction expected in truck and pedestrian conflicts near the school because trucks will move to SH 79 realignment
- Improves sight distance at SH 79/Old Victory Road and at SH 79/I-70 ramps and Kiowa-Bennett Road shoulders are improved
- Interchange spacing meets FHWA guidelines for rural interstates

Environmental and Community Impacts

- Less than one acre of potentially impacted parks and recreational areas
- Approximately 3 acres of potentially impacted threatened and endangered species areas
- Approximately 1,500 feet of floodplain impacts
- Approximately 74 acres of ROW impacts

Economic Opportunities

- Adds over one mile of commercial developable SH 79 frontage consistent with future zoning

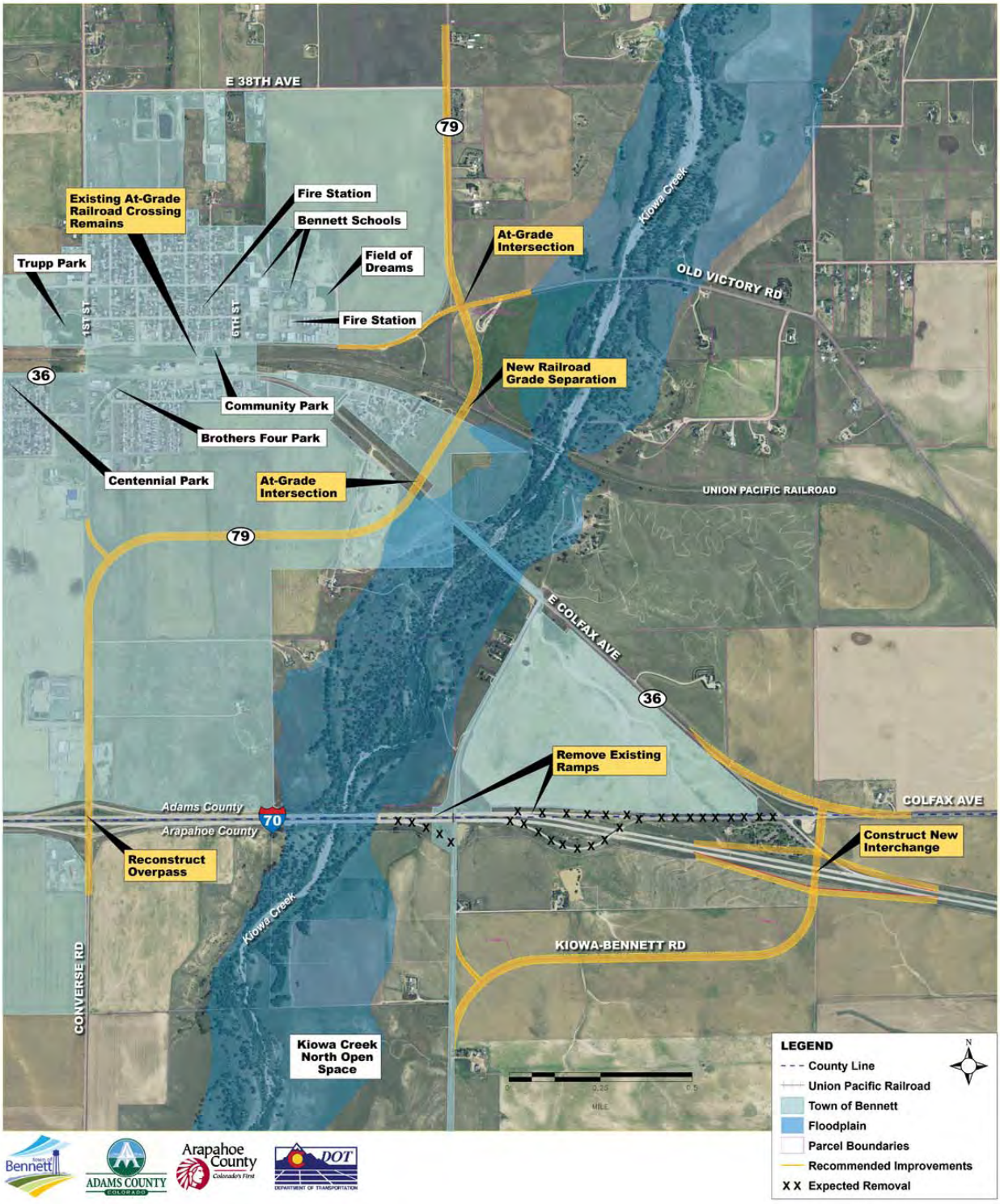
Multimodal Connections

- Consistent with future trail network connections

Constructability

- Relatively moderate construction costs
- Relatively low potential for construction issues anticipated
- Relatively easy for smaller usable sections to be constructed at separate times

Figure 8: Alternative 4 - East Railroad Crossing with East Kiowa-Bennett Road Interchange Alignment



Evaluation

This alternative provides a direct connection between Kiowa-Bennett Road and I-70, but would provide a lower travel time benefit than other alternatives for drivers traveling from Kiowa-Bennett Road towards the Denver metropolitan area due to the eastern out-of-direction travel. Drivers on Kiowa-Bennett Road can access SH 79 without traveling through downtown Bennett by traveling to Colfax Avenue/US 36 and the railroad grade separation on SH 79, but this would only provide a minimal reduction in travel time because of the curve of the roadway to the east.

Regional traffic and hazardous material trucks would be removed from the downtown Bennett area with the realignment of SH 79. This would result in a 55 percent reduction of daily traffic delay experienced at the existing at-grade crossing due to regional traffic being redirected to the grade separation on SH 79.

Safety improvements include improving sight distance at the I-70 and SH 79 ramps with a new bridge over I-70, improving the layout of the intersection of SH 79 and Old Victory Road, and widening the shoulders of Kiowa-Bennett Road along the new roadway alignment. The new SH 79 alignment would add over one mile of state highway frontage for commercial developable property within Town limits consistent with future zoning of the area south of downtown Bennett as a new mixed use commercial area. This alternative accommodates future multimodal connections consistent with the planned future trail network in the area by providing the opportunity for path connections west of Kiowa Creek and adjacent to the Bennett development area, although future plans do not include trails along the eastern Kiowa-Bennett Road alignment .

This alternative has less than one acre of potential impacts to the North Kiowa Creek Open Space with the realignment of Kiowa-Bennett Road. It is estimated to impact 3 acres of threatened and endangered species area, less than a half an acre of which is the prairie dog colony near the SH 79 interchange, and 3 acres at the riparian area at Colfax Avenue north of I-70. This alternative has no impacts to the Kiowa Creek habitat area. It is estimated to directly impact 25 properties with one full and 24 partial acquisitions (total = 74 acres). Of these properties, 19 are residential, 3 are commercial, and 3 are public.

In comparison to other alternatives, the construction costs are relatively moderate with the construction of a new Kiowa-Bennett Road alignment and the associated ROW costs. There are good opportunities for phased construction of the area improvements with smaller usable sections that can be constructed at separate times while providing transportation network benefits with smaller funding sources.

This alternative meets the two-mile interchange spacing guidelines for rural interstates and, therefore would not require a variance from FHWA.

Critical Considerations

There are regional mobility and connectivity improvements with reductions in travel time provided with the new corridor connections. However, the travel time benefits for Kiowa-Bennett Road to I-70 and through the study area are less than other alternatives. The conflict and delay and safety improvements at the existing at-grade railroad crossing are similar to other alternatives with the same SH 79 realignment. Safety concerns are addressed with improvements to existing geometric deficiencies at SH 79/Old Victory Road, the SH 79/I-70 ramps, and along the new Kiowa-Bennett Road alignment. This alternative will not require a variance from FHWA for interchange spacing.

Because this interchange meets the Purpose and Need by improving regional mobility and connectivity, reducing conflict and delay at the at-grade railroad crossing, and addressing critical safety concerns while minimizing environmental impacts, this alternative was carried forward for further consideration.

Conclusion: CARRIED FORWARD

Alternative 5 – East Railroad Crossing with Central Kiowa-Bennett Road Alignment

This alternative, shown in **Figure 9**, consists of realigning SH 79 south of downtown Bennett with a grade-separated railroad crossing on SH 79 east of Bennett and realigning Kiowa-Bennett Road across Kiowa Creek to meet the new SH 79 alginment north of I-70. A split diamond interchange is provided between SH 79 and Kiowa-Bennett Road and I-70 to provide ramp spacing to meet FHWA guidelines.

Regional Mobility and Connectivity

- 23% reduction in travel time on SH 79 from I-70 to north of Bennett
- 20% reduction in travel time on Kiowa-Bennett Road from south of I-70 to north of Bennett
- Provides a direct connection from Kiowa-Bennett Road to I-70
- One turn required for large trucks to travel from south of Bennett to north of town

At-Grade Railroad Crossing Conflict and Delay

- Approximately 55% reduction in traffic delay at existing at-grade crossing
- Emergency responders concerned with additional stops on I-70 ramp connections

Safety Concerns

- Hazardous materials route outside downtown Bennett
- Reduction expected in truck and pedestrian conflicts near the school because trucks will move to SH 79 realignment
- Improves sight distance at SH 79/Old Victory Road and at SH 79/I-70 ramps
- Interchange spacing meets FHWA guidelines for rural interstates

Environmental and Community Impacts

- No impacts to parks and recreational areas
- Approximately 15 acres of potentially impacted threatened and endangered species areas
- Approximately 7,200 feet of floodplain impacts
- Approximately 69 acres of ROW impacts

Economic Opportunities

- Adds over one mile of commercial developable SH 79 frontage consistent with future zoning

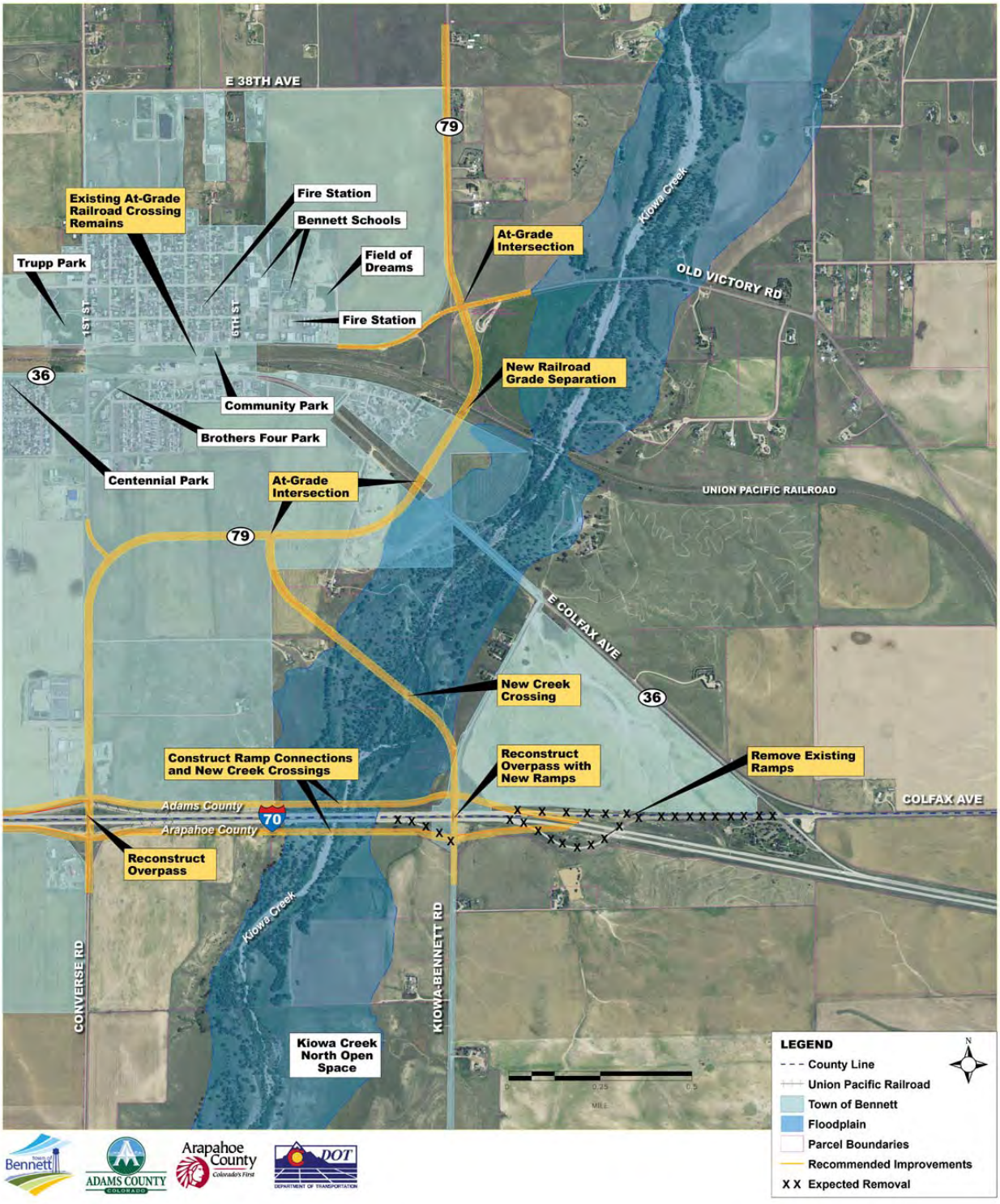
Multimodal Connections

- Consistent with future trail network connections

Constructability

- Relatively high construction costs
- Relatively high complexity of construction issues anticipated
- Relatively moderate opportunities for phasing because of the larger cost to implement individual sections

Figure 9: Alternative 5 - East Railroad Crossing with Central Kiowa-Bennett Road Alignment



Evaluation

This alternative provides a split diamond configuration between the I-70 interchanges with SH 79 and Kiowa-Bennett Road in order to adhere to the FHWA guidance of two-mile spacing for rural interchanges. This provides a connection between Kiowa-Bennett Road and I-70, but an additional stop would be required at the SH 79 ramps entering and exiting I-70, which results in a lower travel time benefit than other alternatives for drivers traveling from Kiowa-Bennett Road south of I-70 towards the Denver metropolitan area.

Regional traffic and the trucks carrying hazardous materials would be removed from the downtown Bennett area with the realignment of SH 79. This would result in a 55 percent reduction of daily traffic delay experienced at the existing at-grade crossing due to regional traffic being redirected to the grade separation on SH 79.

Safety improvements include improving sight distance at the I-70 and SH 79 ramps with a new bridge over I-70 as well as improving the intersection of SH 79 and Old Victory Road. The Kiowa-Bennett Road and I-70 interchange would be reconstructed to provide full ramp movements for both directions on and off the freeway. In addition to the new state highway frontage provided with the new SH 79 alignment, the realignment of Kiowa-Bennett Road to meet SH 79 would provide a direct connection for Kiowa-Bennett Road traffic to the new mixed use commercial development area south of downtown Bennett. This alternative accommodates future multimodal connections consistent with the planned future trail network in the area by providing the opportunity for path connections east and west of Kiowa Creek, including a Kiowa Creek crossing north of I-70, and adjacent to the development area.

This alternative has no expected impacts to parks and recreational areas, but negative impacts are expected to the Kiowa Creek habitat area with the new structures for the two split diamond ramp connections and the Kiowa-Bennett Road realignment, totaling 15 acres of potentially impacted threatened and endangered species area. The impacts include 2 acres to the prairie dog colony near the I-70 and SH 79 interchange, and 8 acres of impacts to Kiowa Creek at the split diamond interchange ramps, and an additional 5 acres at the north Kiowa Creek crossing. The alternative has substantial impacts to sensitive biological habitat with the additional 2,500 feet of structure for Kiowa-Bennett Road over the floodplain of Kiowa Creek. The alternative is estimated to directly impact 29 properties with one full and 28 partial acquisitions (total = 69 acres). Of these impacted properties, 22 are residential, 5 are commercial, and 2 are public.

In comparison to other alternatives, the construction costs are relatively high due to the three additional structures across Kiowa Creek. There are opportunities for phased construction of the area improvements with smaller usable sections, but the SH 79 and Kiowa-Bennett Road interchange improvements would require a larger funding source because the split interchange configuration must be constructed as one project.

This alternative meets the two-mile interchange spacing guidelines for rural interstates and, therefore would not require a variance from FHWA.

Critical Considerations

Although there are regional mobility and connectivity improvements with reductions in travel time provided with the new corridor connections, the travel time benefits for Kiowa-Bennett Road through the study area are lower than with other alternatives. The conflict and delay and safety improvements at the existing at-grade railroad crossing are similar to other alternatives with the same SH 79 realignment.

This alternative has substantially more environmental impacts, directly impacting at least 50 percent more threatened and endangered species area and over 50 percent more floodplain than other alternatives with the three new structures across Kiowa Creek. The floodplain impacts result in substantial impacts to sensitive biological habitat. Shifting the Kiowa-Bennett Road realignment cannot avoid or minimize these additional floodplain and habitat area impacts because the floodplain (and associated habitat area) is relatively wide between I-70 and Colfax Avenue/US 36.

Due to the combination of the substantial environmental impacts to the Kiowa Creek floodplain and habitat area and the relatively high cost for the multiple Kiowa Creek bridge structures, this alternative is not considered reasonable and was not carried forward for further consideration.

Conclusion: ELIMINATED

Alternative 6 – East SH 79 Alignment with Kiowa-Bennett Railroad Crossing

This alternative, shown in **Figure 10**, consists of a full interchange at Kiowa-Bennett Road and I-70 with SH 79 shifted to the new interchange and a grade-separated railroad crossing near Kiowa Creek east of Bennett.

Regional Mobility and Connectivity

- 37% reduction in travel time on SH 79 from I-70 to north of Bennett
- 28% reduction in travel time on Kiowa-Bennett Road from south of I-70 to north of Bennett
- Provides a direct connection from Kiowa-Bennett Road to I-70
- No turns required for large trucks to travel from south of Bennett to north of town

At-Grade Railroad Crossing Conflict and Delay

- Approximately 50% reduction in traffic delay at existing at-grade crossing
- Addresses emergency responder primary concerns of a direct connection from Kiowa-Bennett to I-70, a direct route from the fire station to Kiowa-Bennett south of I-70, and removing trucks and traffic congestion downtown

Safety Concerns

- Hazardous materials route outside downtown Bennett
- Reduction expected in truck and pedestrian conflicts near the school, but not to the extent of other alternatives
- Improves sight distance at SH 79/Old Victory Road
- Interchange spacing less than FHWA guidelines for rural interstates

Environmental and Community Impacts

- Not consistent with Town land use plans
- No impacts to parks and recreational areas
- Approximately 10 acres of potentially impacted threatened and endangered species areas
- Approximately 3,400 feet of floodplain impacts
- Approximately 27 acres of ROW impacts

Economic Opportunities

- Adds over one mile of commercial developable SH 79 frontage consistent with future zoning

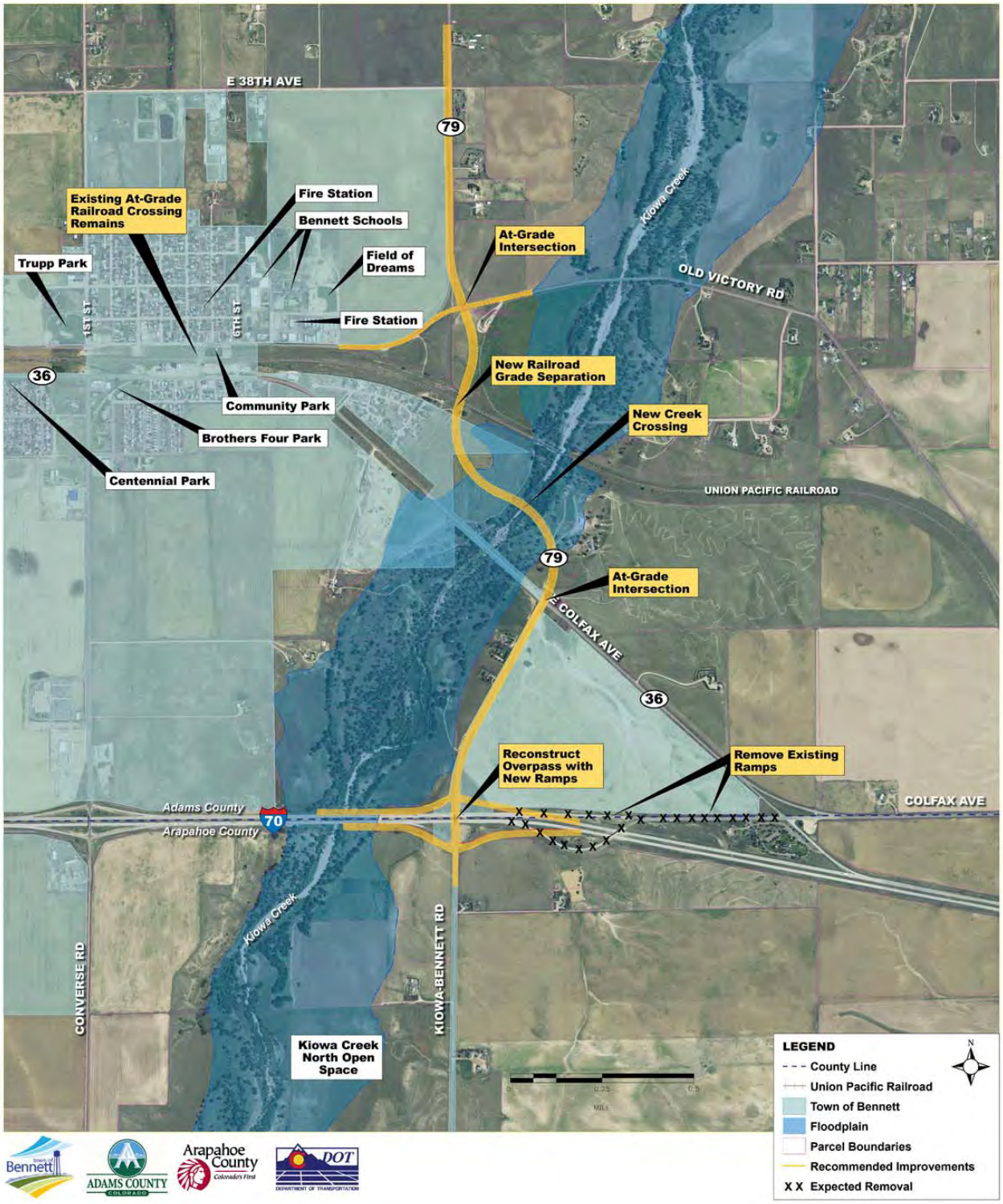
Multimodal Connections

- Not consistent with future trail network connections

Constructability

- Relatively moderate construction costs
- Relatively moderate potential for construction issues anticipated
- Relatively difficult to construct meaningful stand-alone sections

Figure 10: Alternative 6 - East SH 79 with Kiowa-Bennett Railroad Crossing



Evaluation

This alternative provides a direct connection between Kiowa-Bennett Road and I-70 at the current Kiowa-Bennett Road crossing, which substantially reduces travel times for drivers traveling from Kiowa-Bennett Road south of I-70 towards the Denver metropolitan area. The SH 79 realignment directly north from the I-70 interchange would also provide regional travelers on SH 79 a direct northern route that would not travel through downtown Bennett. Drivers on Kiowa-Bennett Road wishing to access SH 79 north can access the highway without traveling through downtown Bennett by traveling to Colfax Avenue/US 36 and the railroad grade separation on SH 79.

Regional traffic and the hazardous material trucks would be removed from the downtown Bennett area with the realignment of SH 79. However, this alternative results in slightly lower reduction in delay and conflicts than with other alternatives because traffic traveling from the west on Colfax Avenue/US 36 would likely continue to utilize the existing at-grade crossing to access SH 79 north of Bennett.

Safety improvements include improving the layout of the intersection of SH 79 and Old Victory Road. The Kiowa-Bennett Road and I-70 interchange would be reconstructed to provide full ramp movements for both directions on and off the freeway.

The alternative is not consistent with local and regional land use, economic development, and multimodal plans. This alternative would not provide notable new state highway frontage because the floodplain and structures at the railroad and Kiowa Creek would limit development along SH 79. The SH 79 realignment would also limit regional traffic traversing the planned mixed use commercial development area. This alternative does not accommodate local multimodal plans because the planned future trail network includes trail connections from SH 79 west of Kiowa Creek and adjacent to the development area into downtown Bennett. The alignment negatively impacts the existing and planned economic development areas for the Town of Bennett located around the I-70 and SH 79 interchange.

This alternative has direct impacts to the Kiowa Creek habitat area with the new structure between Colfax Avenue/US 36 and the railroad grade separation. Impacts from the Kiowa-Bennett Road ramps at I-70 total 10 acres of potentially impacted threatened and endangered species. The alternative has relatively low ROW impacts, directly impacting 16 properties, which would all be partial acquisitions (total = 27 acres). Of these impacted properties, 15 are residential and 1 is public.

This alternative would be difficult to divide into smaller usable sections to construct at separate times. The SH 79 railroad grade separation and Kiowa Creek structure would require a larger funding source because of the complexity of the structures crossing the creek and the railroad close together and they would need to be constructed as one project. This limits the funding opportunities, and the ultimate implementation, of the project.

This alternative includes one-mile spacing between interchanges, which is less than what is recommended by FHWA for rural interchanges and would therefore require a variance.

Critical Considerations

There are regional mobility and connectivity improvements with substantial reductions in travel time provided with the new corridor connections. However, the conflict and delay benefits and safety improvements in downtown Bennett are less than other alternatives. This alternative has more environmental impacts than other alternatives, directly impacting the Kiowa Creek habitat area. While the ROW impacts are relatively low, the alternative is not consistent with local and regional plans for land use, economic development, or multimodal connections. The alignment negatively impacts the existing and planned economic development areas for the Town of Bennett located around the I-70 and SH 79 interchange.

Due to the combination of the slight reduction in delay and safety benefits for downtown Bennett, Kiowa Creek habitat area impacts, inconsistency with local and regional plans, negative impacts to existing and planned Bennett economic development, as well as the relatively moderate cost and difficulty to construct in phases, this alternative is not considered reasonable and was not carried forward for further consideration.

Conclusion: ELIMINATED

Alternative 9 – Central Railroad Crossing with West Kiowa-Bennett Road Alignment

This alternative, shown in **Figure 11**, consists of realigning SH 79 directly north through Bennett with a grade-separated railroad crossing on SH 79 in downtown Bennett along 1st Avenue and realigning Kiowa-Bennett Road to the west to meet the SH 79 interchange at I-70.

Regional Mobility and Connectivity

- 12% reduction in travel time on SH 79 from I-70 to north of Bennett
- 4% increase in travel time on Kiowa-Bennett Road from south of I-70 to north of Bennett
- Provides connection from Kiowa-Bennett Road to I-70 at existing SH 79 interchange
- No turns required for large trucks to travel from south of Bennett to north of town

At-Grade Railroad Crossing Conflict and Delay

- Approximately 65% reduction in traffic delay at existing at-grade crossing
- Limited access to grade-separated crossing may reduce number of buses using it
- Does not address emergency responders concerns of providing a direction connection from Kiowa-Bennett to I-70 or removing trucks and traffic congestion downtown

Safety Concerns

- Hazardous materials route travels through residential area
- Regional truck traffic may utilize local street network with pedestrian conflicts near the school
- Improves sight distance at SH 79/I-70 ramps and Kiowa-Bennett Road shoulders are improved
- No change to interchange spacing over existing conditions

Environmental and Community Impacts

- Not consistent with Town land use plans
- Approximately 19 acres of potentially impacted parks and recreational areas
- Approximately 3 acres of potentially impacted threatened and endangered species areas
- Approximately 1,800 feet of floodplain impacts
- Approximately 98 acres of ROW impacts

Economic Opportunities

- Adds less than one mile of commercial developable SH 79 frontage consistent with future zoning

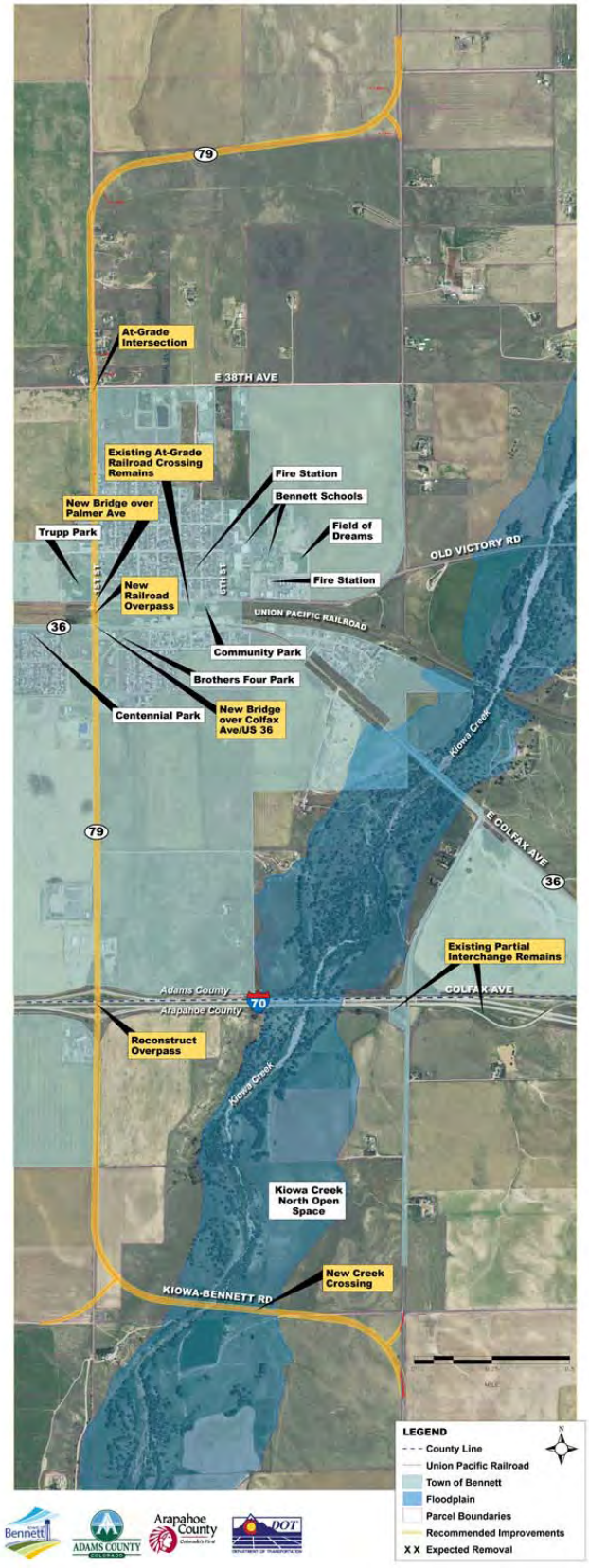
Multimodal Connections

- Not consistent with future trail network connections

Constructability

- Relatively high construction costs
- Relatively high complexity of construction issues anticipated
- Easier railroad coordination than with other alternatives due to overpass and location
- Relatively difficult to construct meaningful stand-alone sections

Figure 11: Alternative 9 - Central Railroad Crossing with West Kiowa-Bennett Alignment



Evaluation

This alternative provides a regional north-south route for drivers traveling from Kiowa-Bennett Road to north of Bennett, but would only provide a minimal reduction in travel time for Kiowa-Bennett Road because of the curves of the roadway to the west and back east north of Bennett. The minimal reduction in travel time on SH 79 is due to the lower speed limit that would be required along the west edge of downtown Bennett. This alternative provides a direct connection between Kiowa-Bennett Road and I-70 at the existing SH 79 interchange.

Regional traffic and the trucks carrying hazardous materials would be removed from the downtown Bennett area with the realignment of SH 79, although the traffic and trucks would be adjacent to the existing developed residential area north of downtown. This would result in a 55 percent reduction of daily traffic delay experienced at the existing at-grade crossing due to regional traffic being redirected to the grade separation on SH 79. Due to vertical grade differences required at the railroad grade separation, there would not be a direct connection between Colfax Avenue/US 36 and SH 79, which would result in a higher volume of regional traffic on residential streets. However, the grade separation within the downtown area would lead to a higher reduction of traffic delay at the existing at-grade crossing because more local traffic may use the grade separation.

Safety improvements include improving sight distance at the I-70 and SH 79 ramps with a new bridge over I-70 and widening the shoulders of Kiowa-Bennett Road along the new roadway alignment south of I-70. This alternative would not provide notable new state highway frontage within areas zoned for mixed use or commercial development. Conversely, the SH 79 alignment is inconsistent with local land use plans because it would place a regional arterial highway through existing and planned residential neighborhoods and the rural preservation area north of downtown Bennett. However, the realignment of Kiowa-Bennett Road to the west south of I-70 would allow the Town's commercial areas near the SH 79 interchange to capture additional regional traffic traveling on Kiowa-Bennett Road.

This alternative also does not accommodate local multimodal plans because the planned future trail network includes trail connections east and west of Kiowa Creek and adjacent to the planned development area south of downtown.

This alternative is expected to impact a substantial amount of parks and recreational area, including the North Kiowa Creek Open Space with the Kiowa-Bennett Road realignment and Trupp Park with the SH 79 realignment (total = 19 acres). Arapahoe County Open Spaces strongly opposes any roadway alignment within the Kiowa Creek North Open Space. This alternative has direct impacts to the Kiowa Creek habitat area with the new structure over Kiowa Creek, totaling 3 acres of potentially impacted threatened and endangered species. The SH 79 realignment along 1st Avenue would require extensive ROW acquisition with a large number of residential homes. The alternative is estimated to directly impact 77 properties with 22 full and 55 partial acquisitions (total = 98 acres). Of these impacted properties, 52 are residential, 14 are commercial, and 11 are public.

In comparison to other alternatives, the construction costs are relatively high due to the ROW acquisition and construction impacts of the SH 79 alignment and the large structure required for the Kiowa Creek crossing south of I-70. This alternative would be difficult to divide into smaller usable sections to construct at separate times. To provide network benefits, the entire SH 79 realignment from I-70 to north of Bennett would need to be constructed as one project. This would require a larger funding source because of the ROW acquisition required and complexity of the construction while maintaining local and regional traffic.

Because new ramps to/from I-70 are not constructed, this alternative would not require a variance from FHWA for interchange spacing.

Critical Considerations

The travel time benefits for SH 79 and Kiowa-Bennett Road through the study area are substantially less than with other alternatives with only a minimal (about 10 percent) reduction in travel time through the study area for SH 79 and a small increase in travel time through the study area for Kiowa-Bennett Road. The expected conflict and delay benefits at the existing at-grade railroad crossing and safety improvements are also less than other alternatives.

This alternative negatively impacts residential properties within downtown Bennett, directly impacting almost three times the number of properties compared to the other alternatives. It also has more broad environmental impacts than other alternatives with direct property impacts to the North Kiowa Creek Open Space, Trupp Park, and Kiowa Creek habitat area. The direct property impacts to the Kiowa Creek North Open Space include a proposed crossing of Kiowa Creek. Arapahoe County Open Spaces strongly opposes any roadway alignment within the Kiowa Creek North Open Space. Avoiding the Kiowa Creek North Open Space resource would result in even more private property impacts south of I-70.

The alternative is not consistent with local and regional plans for land use, economic development, or multimodal connections.

Due to the combination of the reduced travel time benefits, environmental impacts to parks and recreation areas and wildlife habitat, private property impacts, and inconsistency with project goals for local plans, as well as the relatively high cost, this alternative is not considered reasonable and was not carried forward for further consideration.

Conclusion: ELIMINATED

Level 3 Alternatives Screening

With the Level 3 alternatives evaluation, steps were taken to further narrow the alternatives and to refine the design elements of the remaining alternatives. The four alternatives carried forward from Level 2 screening were:

- No Action
- Alternative 1—East Railroad Crossing with Full Kiowa-Bennett Road Diamond Interchange
- Alternative 2—East Railroad Crossing with Split Kiowa-Bennett Road Diamond Interchange
- Alternative 4—East Railroad Crossing with East Kiowa-Bennett Road Interchange Alignment

Meetings with stakeholders and a public open house were held to present the Level 2 evaluation results and recommendations. Comments from the public and stakeholders indicated general concurrence with the Level 2 recommendations. Input on the remaining alternatives was considered in the Level 3 evaluation.

The evaluation criteria from Level 2 were narrowed and adjusted to show where there was a notable difference between remaining alternative concepts. Input provided during meetings with the TAC and area stakeholders, presentations to local agency elected officials, and the general public open house was considered in the evaluation criteria. The Level 3 evaluation criteria and performance measures were:

- Regional Mobility and Connectivity
  - Travel Time
  - I-70 Connection
  - Ramp and Freeway Operations
- Environmental Impacts
  - Potential Impacts to Parks and Recreational Areas and Sensitive Biological Habitat
- Property Impacts
  - ROW Required
  - Types of Property Impacts
- Project Costs
  - Phased Probable Costs
- Stakeholder and Public Input
  - General Support and Concerns

Level 3 Screening Evaluation

The four remaining alternatives were evaluated in more detail with additional conceptual design refinement and traffic operations analysis to further define alternative performance related to the Level 3 evaluation criteria. The existing and projected safety issues and concerns are considered in the Level 3 evaluation with the close relationship to the regional mobility and connectivity of the SH 79 and Kiowa-Bennett Road corridors and ramp and freeway operations. The evaluation is summarized in **Table 2**.

Regional Mobility and Connectivity

The travel time and forecasted 2035 interchange operations were evaluated for the key movements through the study area using Highway Capacity Manual methodology. There is a notable difference in the Kiowa-Bennett Road travel time with Alternative 4, which is 1.5 minutes more than the travel time with the other action alternatives. The split diamond ramp connections with Alternative 2 reduce the benefits of a direct connection between I-70 and Kiowa-Bennett Road compared to the other alternatives that have full movement interchanges at both SH 79 and Kiowa-Bennett Road.

The American Association of State Highway and Transportation Officials uses the term level of service (LOS) to describe the operational characteristics of intersections and roadways. LOS is related to control delay at intersection and speed and density at ramp merge and diverge areas as a measure of traffic flow and level of congestion, measured on a scale of A to F. LOS A describes conditions with essentially uninterrupted flow and minimal delay. LOS F describes a breakdown of traffic flow with excessive congestion delay. In urban and suburban areas, LOS D is generally considered to be acceptable for peak hour operations. In the *Arapahoe County 2035 Transportation Plan*, it states that Arapahoe County considers LOS C the minimum operational standard for arterial roadways in rural areas.

The SH 79 and Kiowa-Bennett Road interchange ramp merge and diverge areas with I-70 are expected to operate with essentially uninterrupted flow and minimal delay at LOS A or B with all alternatives. This indicates that the two-mile interchange spacing is not necessary to maintain acceptable freeway and ramp operations, and the freeway would not be negatively impacted with the one-mile interchange spacing in Alternative 1. Based on the LOS A and B operations, it is anticipated that a variance can be obtained from FHWA for the one-mile interchange spacing with the new ramps at Kiowa-Bennett Road.

Due to the concentration of traffic accessing the split diamond ramp connections between interchanges, the ramp intersections on SH 79 and on Kiowa-Bennett Road operate worse with Alternative 2 than with the other alternatives. Both ramp intersections at SH 79 and the eastbound ramp intersection at Kiowa-Bennett Road would warrant signalization to achieve the acceptable LOS D or better with Alternative 2. With Alternative 1 or Alternative 4, only the eastbound ramp intersection at SH 79 would warrant signalization and all ramp intersections would operate at LOS B during the peak hours. Other intersection configurations and control, such as roundabouts, may also be considered.

Environmental Impacts

There are no parks and recreational area impacts and minimal impacts to the Kiowa Creek habitat area under Alternative 1. Alternative 2 would impact future trail plans to cross I-70 and more Kiowa Creek habitat area because of two structures for the ramp connections of the split diamond interchange configuration. Alternative 4 has more environmental impacts than Alternative 1, but fewer environmental impacts than Alternative 2. The realignment of Kiowa-Bennett Road with Alternative 4 impacts a small amount of Kiowa Creek North Open Space and also impacts nesting habitat areas around Colfax Avenue north of I-70.

Property Impacts

Alternative 1 has the lowest number of properties impacted, with a total of 21 properties being partially impacted. It also has the fewest number of acres that would need to be acquired by the action alternatives. Alternative 2 requires almost 40 percent more residential and commercial ROW area than Alternative 1 because of the ramp connections along I-70 with the split diamond interchange configuration. Alternative 4 requires 80 percent more ROW area than Alternative 1 due to the new Kiowa-Bennett Road alignment across agricultural property and adjacent to single family homes.

Project Costs

The realignment of SH 79 consists of the same conceptual layout for all three Level 3 action alternatives, so the construction costs are the same between the alternatives for this portion of the project. The Kiowa-Bennett Road and I-70 interchange connection would cost substantially less with Alternative 1 than Alternative 2 due to the two additional structures over Kiowa Creek and new ramp roadway connections required for the split diamond interchange configuration. The cost estimate for Alternative 4 is more than Alternative 1 cost due to the additional ROW and new roadway and bridge construction required to align Kiowa-Bennett Road to a new interchange farther east.

The conceptual cost estimates are provided in **Appendix D**. The ROW cost estimates assume a square-foot unit cost for the estimated partial acquisitions.

Stakeholder and Public Input

During the public involvement activities and outreach throughout the PEL study, the most common concerns expressed by the general public were for private property impacts and impacts to the sensitive wildlife habitat along Kiowa Creek. Of the remaining three action alternatives, Alternative 1 minimizes private property impacts to the greatest extent with the lowest ROW acquisition and least number of properties impacted. Alternative 1 also has the smallest environmental impacts because there are no parks and recreational area impacts and minimal impacts to the Kiowa Creek habitat area.

Level 3 Screening Results

After a comparison of the three action alternatives against the Level 3 criteria, Alternative 1 (East Railroad Crossing with Full Kiowa-Bennett Road Diamond Interchange) was determined to meet the Purpose and Need and project goals to the highest degree while minimizing environmental and community impacts. Therefore, Alternative 1 is the Recommended Alternative to carry forward into future NEPA processes.

TAC members agreed to the identification of Alternative 1 as the Recommended Alternative from this PEL study. Meetings with stakeholders were held, along with local elected official presentations, to present the alternatives development and evaluation results and recommendations. Comments from the stakeholders indicated general concurrence with the evaluation results.

Further definition and evaluation the Recommended Alternative are described in the Study Recommendations section of this report.

Table 2: Level 3 Alternatives Evaluation

Evaluation Criteria	Performance Measure	NA No Action	1 East RR Crossing with Full Kiowa-Bennett Diamond	2 East RR Crossing with Split Kiowa-Bennett Diamond	4 East RR Crossing with East Kiowa-Bennett Alignment
Regional Mobility and Connectivity	Travel time through study area (minutes)	On SH 79: 6.5 min On K-B: 8.9 min	On SH 79: 5.0 min On K-B: 6.9 min	On SH 79: 5.0 min On K-B: 6.9 min	On SH 79: 5.0 min On K-B: 8.4 min
	I-70 connection to/from Kiowa-Bennett Road	No direct connection for I-70 & K-B ex. WB off ramp	Full interchange for I-70 & K-B at existing K-B alignment	I-70 interchange on/off movements split between SH 79 and K-B	Full interchange for I-70 and K-B, but moved one mile east of existing K-B alignment
	Interchange intersection operations - 2035 (AM/PM Peak Hour Intersection Level of Service)	I-70/SH 79: EB Ramps: A/B (signal) WB Ramps: B/C I-70/K-B: EB Ramp: A/A WB Ramps: NA	I-70/SH 79: EB Ramps: B/B (signal) WB Ramps: B/B I-70/K-B: EB Ramps: B/B WB Ramps: B/B	I-70/SH 79: EB Ramps: B/D (signal) WB Ramps: B/B (signal) I-70/K-B: EB Ramps: B/B (signal) WB Ramps: C/C	I-70/SH 79: EB Ramps: B/B (signal) WB Ramps: B/B I-70/K-B: EB Ramps: B/B WB Ramps: B/B
	Interchange ramp operations - 2035 (AM/PM Peak Hour Merge and Diverge Level of Service)	I-70/SH 79: EB Diverge: A/B EB Merge: A/B WB Diverge: B/B WB Merge: B/B I-70/K-B: EB Diverge: A/B EB Merge: A/A	I-70/SH 79: EB Diverge: A/B EB Merge: A/B WB Diverge: B/B WB Merge: B/B I-70/K-B: EB Diverge: A/B EB Merge: A/B WB Diverge: A/A WB Merge: B/B	I-70/SH 79: EB Diverge: A/B WB Merge: B/B I-70/K-B: EB Merge: A/B WB Diverge: A/A	I-70/SH 79: EB Diverge: A/B EB Merge: A/B WB Diverge: B/B WB Merge: B/B I-70/K-B: EB Diverge: A/B EB Merge: A/B WB Diverge: A/A WB Merge: B/B
Environmental Impacts	Potential impacts to parks & recreational areas and sensitive biological habitat	None	No parks & recreational area impacts Small Kiowa Creek area habitat impacts with mainline I-70 bridge widening for added ramps	Impacts to Arapahoe County Open Spaces trail plans to cross I-70 Moderate Kiowa Creek area habitat impacts with new bridges for ramp connection roadways	Small impact to North Kiowa Creek Open Space for K-B realignment Impacts to riparian nesting habitat at Colfax Ave/I-70
Property Impacts	ROW acquisition required (acres & properties)	None	Full = None Partial = 41.23 ac (21 properties) Total = 41.23 ac (21 properties)	Full = None Partial = 57.09 ac (25 properties) Total = 57.09 ac (25 properties)	Full = None Partial = 74.03 ac (24 properties) Total = 74.03 ac (24 properties)
	Types of property impacts	N/A	New SH 79 alignment through planned development property Limited K-B interchange property impacts	New SH 79 alignment through planned development property K-B interchange property impacts along I-70	New SH 79 alignment through planned development property New K-B alignment through farm property with adjacent homes
Project Costs	Probable costs (with right-of-way)	None	SH 79 (RR) = $11 – 14 M SH 79 = $18 – 21 M K-B = $6 – 7 M	SH 79 (RR) = $11 – 14 M SH 79 = $18 – 21 M K-B = $18 – 21 M	SH 79 (RR) = $11 – 14 M SH 79 = $18 – 21 M K-B = $11 – 13 M
Stakeholder and Public Input	General support and concerns	Public support to avoid any private property impacts	Public concern with impacts of RR crossing on Cordella residential area Public concern for private property & wildlife impacts Public & stakeholder support for full K-B interchange	Public concern with impacts of RR crossing on Cordella residential area Public concern for private property & wildlife impacts Public & stakeholder support for full K-B interchange	Public concern with impacts of RR crossing on Cordella residential area Public concern for private property impacts with K-B realignment

Legend:
EB = Eastbound
WB = Westbound
RR = Railroad
K-B = Kiowa-Bennett Road

STUDY RECOMMENDATIONS

Based on the results of the alternatives development and evaluation process, the PEL study recommendations identify the transportation improvements to carry forward into future project NEPA processes and further project development.

Based on the results of the alternatives development and evaluation process, one Recommended Alternative for area transportation network improvements will be carried forward into future NEPA evaluation and further project development. This evaluation information will be used to identify a Preferred Alternative during NEPA scoping.

Based on the PEL process, including a thorough alternatives evaluation and input from the area stakeholders, project TAC, and the general public, Alternative 1 is the Recommended Alternative to carry forward into future NEPA processes because it was found to meet the Purpose and Need to the highest degree while minimizing environmental and community impacts.

The Recommended Alternative is shown in **Figure 12**. The design concept for the Recommended Alternative is shown in a conceptual plan set included in **Appendix E**. Design elements of Alternative 1 were refined to add more definition, considering design solutions to minimize costs and property impacts while maximizing corridor benefits. This information may be utilized for further assessment during a future NEPA process.

This section describes the Recommended Alternative in more detail along with considerations for future implementation. The potential separate project phasing opportunities were also identified with the associated costs. To implement separate project phases, care must be taken to ensure that the area transportation system operates acceptably at the conclusion of each separate project. The ability of each separate project to operate on its own is referred to as “independent utility”. Also, mitigation measures needed in response to overall area impacts must be implemented with the phase in which the impacts occur and not deferred to a later phase of the ultimate planned transportation system.

The separate projects should meet the following criteria:

- Independent Utility – Each project should have independent utility to the extent that the project provides a functional transportation system even in the absence of other elements of the Recommended Alternative.
- Elements of the Purpose and Need – Each separate project phase should contribute to meeting the Purpose and Need for the overall Recommended Alternative.
- Environmental Impacts – Each separate project phase should avoid the introduction of substantial additional environmental impacts that cannot be mitigated.
- Mitigation Directly Related to Impacts – Each separate project phase should include appropriate mitigation measures to match the environmental impacts of that phase.

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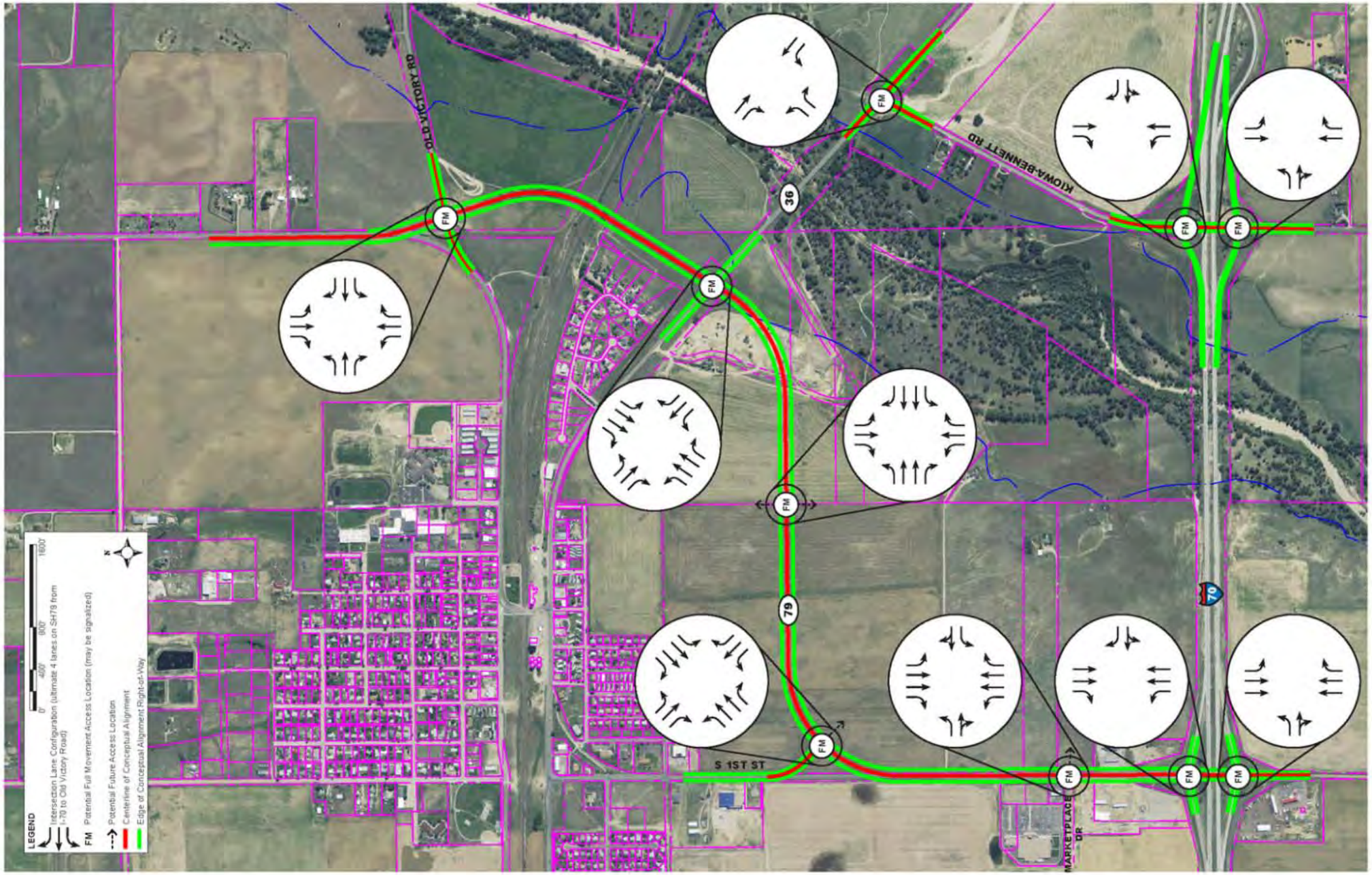
Figure 12: Recommended Alternative



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SH 79 Railroad Grade Separation

During the PEL study process, both an underpass and an overpass were considered for the grade-separated crossing of SH 79 and the UPRR tracks. The evaluation of the underpass and overpass options based on the conceptual design is summarized in **Table 3**. Based on this evaluation, the recommended option is an overpass of the UPRR due to the underpass having anticipated drainage and utility issues, higher cost, and more difficult railroad approval process to meet their design and construction requirements. An overpass was assumed for the conceptual cost estimates in this study. However, both the overpass and underpass options will be carried forward into the NEPA process for a final decision when there is more information on topographic survey, geotechnical conditions, and utility locations.

Table 3. SH 79 Railroad Grade Separation Evaluation

Design Evaluation Criteria	SH 79 Underpass of Railroad	SH 79 Overpass of Railroad	Recommended Option
Drainage	Lowpoint is created that is near and possibly below the creek elevation. It may be possible to gravity drain to where the creek is lower elevation. Insufficient survey for final determination.	Typical section does not include curb and gutter. No anticipated drainage issues.	Overpass
Floodplain	Lowpoint likely, but design can provide berm to protect roadway. Roadway may be in floodplain, but needs confirmation with future NEPA evaluation.	Roadway is not within floodplain. Fill may be within floodplain, but is minimal and needs confirmation with future NEPA evaluation.	Overpass
Cost	Higher cost due to: • Steel superstructure to reduce vertical clearance for drainage • Outfall pipe to drain lowpoint, including need to extend to creek • Railroad shoo-fly for construction • Impacted utilities not known	Embankment fill required, but considered equal to excavation required for underpass option. Lower cost for structure, drainage, and utilities. Construction cost savings because railroad shoo-fly not required.	Overpass
Railroad Coordination	Shoo-fly to maintain operations is anticipated, which is not preferred by UPRR and will complicate approval process.	Less impact to UPRR operations and more acceptable to UPRR to facilitate approval process.	Overpass
Geometric Design	Geometry within reasonable design criteria.	Geometry within reasonable design criteria.	Equal
Aesthetics / Adjacent Property Impacts	SH 79 less visible to adjacent properties. Less impact to adjacent neighborhood viewshed of Kiowa Creek.	SH 79 will be about 30 feet above the existing railroad elevation, impacting adjacent neighborhood viewshed of Kiowa Creek.	Underpass
Utilities	Utilities not known, but likely underground utilities within the UPRR ROW would be impacted by excavation.	Utilities not known, but likely underground utilities within the UPRR ROW may be avoided.	Overpass

SH 79 Access Control

Currently, CDOT defines the functional classification of SH 79 as a Major Collector between I-70 and 38th Avenue. For access control, that length of SH 79 is classified as Non Rural Arterial (NR-B). A NR-B roadway is intended to carry moderate to high traffic volumes at moderate travel speeds, and is appropriate for sections of regional highway passing through rural communities such as Bennett, so it is assumed the realigned highway would be designated NR-B. Following CDOT's *State Highway Access Code*, this roadway category allows one direct property access per parcel, but that access may be restricted to right-in, right-out only or a three-quarter movement access may be allowed if the left turns will provide operational benefits to an adjacent full movement intersection. In addition, the parcel access must not interfere with the operations or the auxiliary lanes of an adjacent intersection. Full movement intersections are allowed at one-half mile minimum spacing.

The approximate locations for future allowable full-movement and potentially signalized access along the Recommended Alternative for the realigned SH 79 corridor are illustrated in **Figure 12**. Traffic signals should only be constructed if warranted based on the criteria in the *Manual of Uniform Traffic Control Devices*. A roundabout may be considered at a full-movement access, if appropriate for the expected use (considering overall traffic volumes and truck and pedestrian/bicycle movements) and geometry of the intersection. Based on the traffic volume forecasts, conceptual layout, and *State Highway Access Code* requirements, full-movement and potentially signalized accesses may be allowed at the following locations along the realigned SH 79 corridor north of I-70:

- I-70 and SH 79 ramps
- SH 79 and Marketplace Drive
- SH 79 and 1st Avenue
- SH 79 and new roadway access midway between 1st Avenue and Colfax Avenue/US 36
- SH 79 and Colfax Avenue/US 36
- SH 79 and Old Victory Road

The Marketplace Drive intersection is currently a full-movement intersection on SH 79 with a traffic signal planned in the near future by the Town of Bennett. The existing intersections on the current SH 79 alignment north of the I-70 interchange may be changed if the land use changes or if there is an operational or safety issue.

The realigned SH 79 corridor traverses properties planned for new mixed use commercial development south of downtown Bennett. Specific information on the future parcels, land uses, and associated trip generation along the realigned corridor is not yet known. Between the full-movement potentially signalized accesses, only limited access, such as right-in, right-out and three-quarter movement intersections, will be granted if criteria outlined in the *State Highway Access Code* are met as determined by a development traffic study. The Town of Bennett is planning to complete an access control plan for SH 79 from I-70 to US 36 to reevaluate the existing accesses, as well as evaluate the potential for future accesses along the current highway alignment.

It is anticipated that no full movement access points other than those shown in this plan will be allowed. Therefore, it will be important for the new development surrounding the realigned SH 79 corridor to follow design guidelines that promote shared access to the regional highway with a logical and interconnected local street system, balanced with sidewalks and pathways, that creates better

orientation, mobility, and safety. This is consistent with the recommendations in the *Town of Bennett Downtown Planning Study*.

I-70 and Kiowa-Bennett Road Interchange

The operational analyses completed for the Level 3 alternatives evaluation shows that the intersections and the ramp merge and diverge areas at the I-70 and Kiowa-Bennett Road interchange are expected to operate very well at LOS A or B during the peak hours, based on the travel demand forecasts developed for the study based on the DRCOG regional travel demand model. This indicates that the standard two-mile interchange spacing is not necessary to maintain acceptable freeway and ramp operations, and the freeway would not be negatively impacted with the one-mile interchange spacing between SH 79 and Kiowa-Bennett Road interchanges. However, approval from FHWA for the one-mile spacing will be required with further analysis during future NEPA processes. If approval is not granted, a different alternative from the PEL study may be advanced in the NEPA process.

The operations of the I-70 and Kiowa-Bennett Road interchange were analyzed further with the Recommended Alternative to identify potential impacts to the interstate system if future retail and commercial development adjacent to the interchange exceeds current plans. The ramp movements between the SH 79 and the Kiowa-Bennett Road ramps during the evening peak hour were determined to be the constraining factor for the interchange operations. The analysis shows that the Kiowa-Bennett Road eastbound off ramp could carry up to 1,700 vehicles per hour during the evening peak and the westbound ramp could carry up to 1,800 vehicles per hour. The traffic volume forecasts developed for the study show that each ramp will carry approximately 250 vehicles per hour during the peak hour in 2035, which allows for an increase of 1,450 to 1,550 vehicles in the peak hour. This shows there is substantial capacity for additional future growth utilizing the I-70 and Kiowa-Bennett Road interchange before operations become unacceptable on the freeway or ramp areas.

Interchange Configuration Options

The Recommended Alternative includes a full diamond interchange at I-70 and Kiowa-Bennett Road. Although the traffic analysis completed for this PEL study shows that the diamond interchange configuration operates acceptably under 2035 conditions, the specific interchange configuration will be determined with further analysis during future NEPA processes.

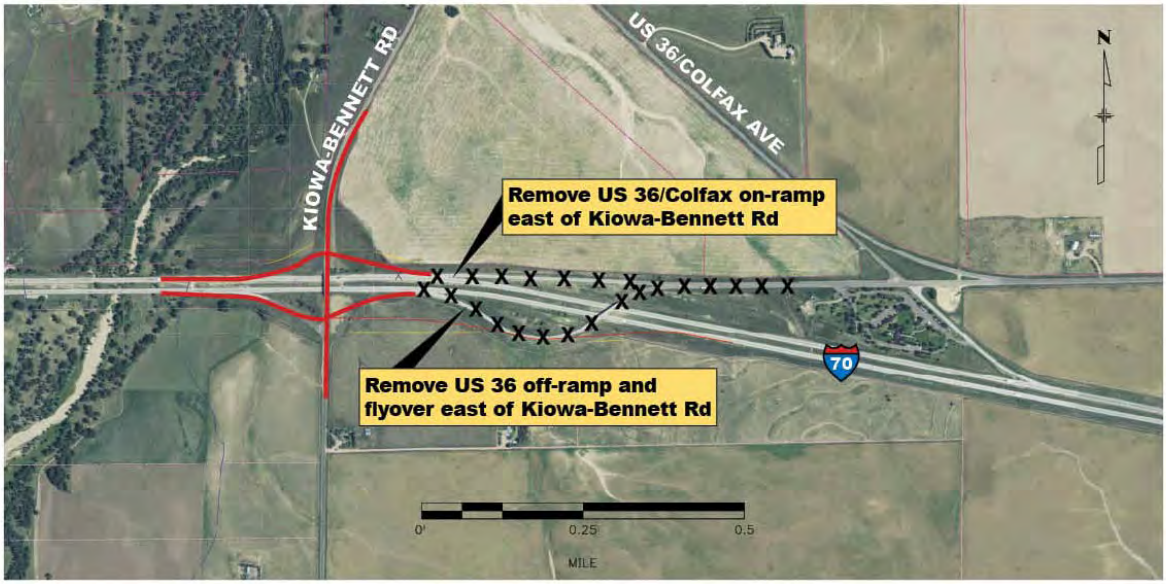
At the second public meeting for the PEL study, several members of the public raised concern with the removal of the existing ramps between I-70 (east of Kiowa-Bennett Road) and Colfax Avenue/US 36, which was shown as required to provide a full diamond interchange at I-70 and Kiowa-Bennett Road. It would increase travel distance to/from I-70 for residents living along Colfax Avenue/US 36 east of the study area. Another concern was that if the direct ramps to Colfax Avenue/US 36 were removed, the Strasburg interchange, located four miles east of the study area, would be negatively impacted by traffic diversion.

The travel demand model for the Recommended Alternative shows a minor increase in average daily traffic on I-70 east of Kiowa-Bennett Road. Compared to the No Action alternative, there is an additional 400 vehicles per day on I-70 east of Kiowa-Bennett Road with the diamond ramp interchange at Kiowa-Bennett Road, which equates to a one percent increase. This increase can be attributed to the additional traffic accessing I-70 from Kiowa-Bennett Road via the new eastbound I-70 on ramp. Based on this information, the Recommended Alternative is not expected to create additional impacts at the Strasburg interchange, which is the next I-70 access to the east, approximately five miles east of Kiowa-Bennett Road.

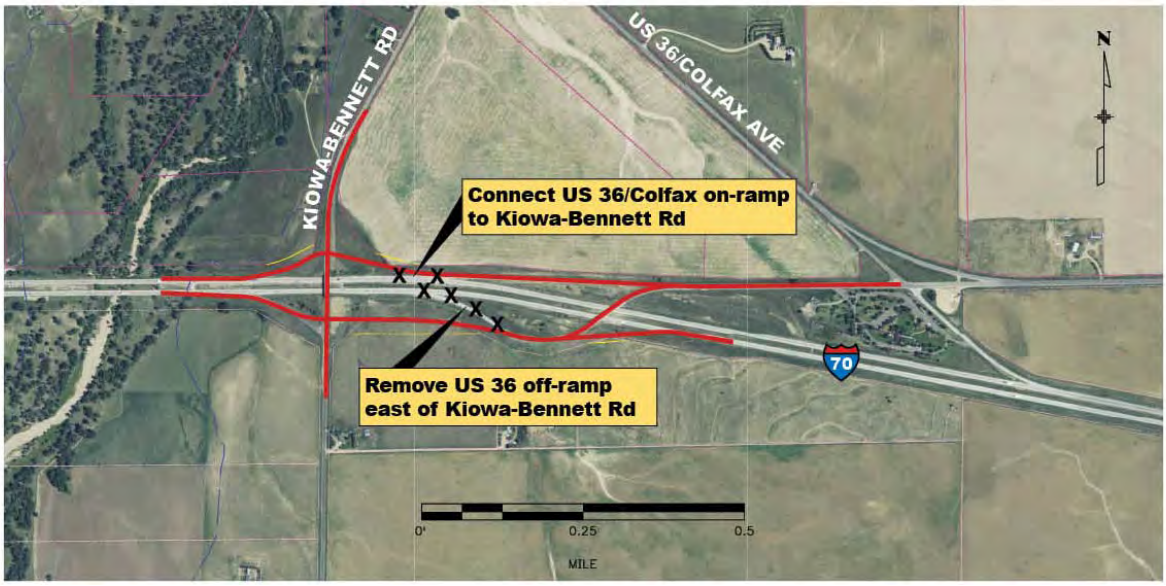
Based on the concerns expressed by the public, an additional I-70 and Kiowa-Bennett Road interchange configuration option was developed that keeps the existing ramps to and from Colfax Avenue/US 36. The base interchange option (Option A) and the modified option (Option B) are shown in **Figure 13**. Option B may require a relatively small amount of additional ROW in the northeast quadrant of the I-70 and Kiowa-Bennett Road interchange. The interchange configuration will be determined with further analysis during future NEPA processes and CDOT's *1601 Interchange Approval Process*, as described in the Next Steps section of this report.

Figure 13: Kiowa-Bennett Road Interchange Configuration Options

Kiowa-Bennett Road Ramp Configuration – Option A



Kiowa-Bennett Road Ramp Configuration – Option B



Separate Project Phasing Opportunities

The opportunities to construct the overall Recommended Alternative transportation system with a series of separate projects were evaluated based on independent utility, potential environmental impacts, ROW impacts, and cost. It is anticipated that the Recommended Alternative could be divided into four separate project phases for additional project development and construction, and that each of those projects would individually provide regional mobility and connectivity benefits to the overall transportation system. The identified separate project phases are not required to be built in succession and they may be constructed in any order, except the SH 79 realignment between I-70 and Colfax Avenue/US 36, which should be built after the SH 79 railroad grade separation to provide connectivity for the state highway.

SH 79 Interchange Improvements

The SH 79 interchange improvements, consisting of replacing the SH 79 bridge over I-70 with increased capacity to four lanes and improving the sight distance at the ramp intersections, can be implemented separately from the other phases of the Recommended Alternative. As a stand-alone project, this improvement would provide regional mobility benefits by improving traffic operations and reducing congestion at the interchange. The project would also address the safety concerns with sight distance at the I-70 off ramp intersections. This project is anticipated to cost approximately $5 to $10 million.

SH 79 Realignment from I-70 to Colfax Avenue/US 36

The realignment of SH 79 from I-70 to Colfax Avenue/US 36 can be implemented as a stand-alone project, but it should be built after the SH 79 railroad grade separation to provide connectivity for the state highway. SH 79 would be improved to four lanes along its existing alignment just north of the I-70 interchange and a new four-lane roadway would be constructed to the east through the planned development area to an intersection at Colfax Avenue/US 36.

Construction of this portion of the Recommended Alternative would facilitate the planned development of the area south of downtown Bennett and, therefore, it is anticipated that this project will be funded at least partially by developers. If built by the Town or developers, CDOT standards for design, construction, and access control would need to be followed in order for this roadway to be designated as a state highway (SH 79).

If this phase is constructed before the SH 79 railroad grade separation, it is assumed that the state highway would remain along the current alignment through downtown Bennett and the new roadway would provide minimal benefit to the regional transportation system. If this new roadway is constructed after the railroad grade separation, it would provide regional mobility and connectivity benefits by reducing SH 79 travel time, reduce conflict and delay at the at-grade railroad crossing by diverting regional traffic from the downtown area, and address safety concerns by reducing heavy trucks and trucks carrying hazardous materials through downtown Bennett. This project phase is anticipated to cost approximately $10 to $15 million.

The Town is currently planning potential changes to the local street network within downtown Bennett with connections to this future regional highway alignment, like the new roadway access midway between 1st Avenue and Colfax Avenue/US 36, which would connect to a new at-grade railroad crossing at 8th Street. If local streets are constructed with connections to the new roadway area, there may be regional connectivity benefits that can be realized with construction of this project phase before the

railroad grade separation. The potential designation of the roadway as SH 79 would need to be coordinated with CDOT at that time.

SH 79 Railroad Grade Separation

The construction of the SH 79 railroad grade separation, including the highway portion from Colfax Avenue/US 36 to Old Victory Road, can be implemented separately from the other phases of the Recommended Alternative. The railroad grade separation would provide regional mobility and connectivity benefits by reducing travel time for drivers traveling north-south through the study area. It would also reduce conflict and delay at the at-grade railroad crossing by diverting regional traffic from the downtown area and address safety concerns by reducing heavy trucks and trucks carrying hazardous materials through downtown Bennett, providing an alternate, reliable route across the railroad for emergency providers and improving the sight distance at Old Victory Road and SH 79. The railroad grade separation is anticipated to be the most costly portion of the Recommended Alternative with an estimated cost of $10 to $15 million.

I-70 and Kiowa-Bennett Road Interchange

The Kiowa-Bennett Road interchange improvements, consisting of replacing the Kiowa-Bennett bridge over I-70 for additional width to accommodate turn lanes for new ramps to provide a full diamond interchange, can be implemented independently from the other phases of the Recommended Alternative. As a stand-alone project, the new Kiowa-Bennett Road interchange would improve regional mobility and connectivity by providing a direct access for drivers traveling from Kiowa-Bennett Road to I-70 and address safety concerns by providing emergency responders with a full movement interchange for the area south of I-70 and providing shoulder improvements along Kiowa-Bennett Road at the I-70 interchange. The Kiowa-Bennett Road interchange project is anticipated to cost approximately $5 to $10 million.

Affected Environment and Environmental Consequences

Based on the scan of readily available environmental data and general field survey, the Recommended Alternative has been selected to minimize environmental impacts while meeting the Purpose and Need. Specific mitigation measures will be determined with future NEPA processes.

One of the goals of the PEL process is to identify potential impacts early in the planning process so that impacts can be avoided or minimized to the extent possible. The Recommended Alternative from this PEL study has been conceptually designed to minimize environmental impacts while meeting the Purpose and Need. Specific mitigation measures for remaining environmental impacts will be determined during subsequent NEPA evaluation processes during further project development.

Construction of the Recommended Alternative project elements may result in direct, indirect, and cumulative impacts to environmental resources depending on the type and location of the resource in proximity to the improvements. The resources that may be impacted by transportation improvements within the study area were evaluated in the *Final Corridor Conditions Assessment Report* (January 2013).

If a project from the Recommended Alternative receives Federal funding and/or involves a State or Federal facility, the results of the PEL study will be carried forward at that time into project development, additional environmental review (NEPA-level or similar state environmental review process), and design. If the project is solely funded with local funds, a NEPA review process would still be required if there is any "federal nexus", such as a permit or an access need. For example, the project for the I-70 and Kiowa-Bennett Road interchange ramps will require access to I-70, a federally designated freeway. Also, any project that will require permits from Federal agencies, such as a Section 404 Permit (impacts to wetlands) and/or modifications to the floodplain requiring coordination with the Federal Emergency Management Agency, will initiate the NEPA process.

The environmental resources that were studied were selected based on the characteristics of the study area. The resources considered are generally consistent with NEPA, its implementing regulations, and with FHWA and CDOT guidelines. A summary of the overview findings is described below for the Recommended Alternative, previously described in this report.

Air Quality

Air quality is generally assessed by comparing concentrations of air pollutants to National Ambient Air Quality Standards, which are set to protect human health and welfare. Air pollutants related to transportation that are of concern include carbon monoxide (CO), ozone, particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}), and Mobile Source Air Toxics (MSAT). MSATs are

hazardous air pollutants, and six priority MSATs have been identified by the Environmental Protection Agency as the priority transportation toxins to monitor.

It is assumed that before implementation, project phases will be part of a conforming RTP and TIP before moving forward. Therefore, when a NEPA study is conducted, qualitative air quality analyses will be necessary for ozone, CO, PM_{10}, MSATs, and Greenhouse Gas emissions. As of December 2012, all areas in Colorado were in attainment of all National Ambient Air Quality Standards criteria pollutants except for ground level ozone. The Denver region was in an ozone nonattainment area for exceeding the 8-hour standard. The SH 79 corridor resides in Adams and Arapahoe counties, which are both in the nonattainment area. A qualitative conformity-level emissions burden analysis of volatile organic compounds and nitrogen oxide ozone precursors and other criteria pollutants will be required to compare emissions from the Recommended Alternative to the No Action. In addition, quantitative analyses may be necessary for CO and PM_{10} pollutants. It does not appear that a quantitative MSAT analysis would be required, but this should be monitored for changing conditions and revised project concept and design.

The transportation conformity rule, promulgated through the Clean Air Act legislation, is the mechanism through which transportation projects are evaluated for air quality impacts in nonattainment and maintenance areas (40 CFR Parts 51.390 and 93). The conformity process has two levels - regional air quality conformity and project-level conformity. The regional conformity analysis is conducted for the long-range Regional Transportation Plan and the Transportation Improvement Program. Project-level conformity applies to transportation projects in air quality nonattainment and maintenance areas. It requires a review and possibly a quantitative "hotspot" analysis of CO and PM_{10} emissions. To pass project-level conformity, the project cannot create new, increase the frequency of, or exacerbate the severity of air quality violations.

Hazardous Materials

The hazardous materials review provided information about properties within the study area that pose a potential risk of environmental contamination from hazardous materials. Generally, if a facility identified in a database report was active with an event that had the potential to contaminate the study area, or groundwater flow could cause migration of the contaminants into the study area, then the facility was considered as a potential impact. Five potential hazardous materials sites could be impacted by the Recommended Alternative. Four of the sites are located near the I-70 and SH 79 interchange, including the Ace Hardware south of I-70, the Conoco gas station north of I-70, Love's Truck Stop north of I-70, and King Soopers north of I-70. The other site is located south of Old Victory Road, immediately east of the SH 79 grade separation. All of these sites would involve partial ROW acquisition.

The most fundamental management for hazardous materials is to avoid contaminated sites, which often is not feasible. Wherever possible, responsibilities for known hazardous materials issues at properties targeted for ROW should be resolved prior to acquisition. Site-specific Health and Safety Plans and Materials Management Plans will be developed to address contaminated soil and groundwater. Under the Recommended Alternative, it is not anticipated that buildings with hazardous materials will be demolished, so an Asbestos Abatement Plan and a Lead-Based Paint Assessment Plan are assumed to not be required. In the event septic systems and/or wells are disturbed during construction activities, proper closure in compliance with local regulations should be implemented.

A more in-depth hazardous materials assessment will be required during the NEPA phase. At a minimum, a CDOT Initial Site Assessment would be required. If the Initial Site Assessment identifies

hazardous materials concerns, then CDOT may require completion of an American Society for Testing and Materials-compliant Phase I Environmental Site Assessment (ESA), which would include more detailed review of historical sources, formal site visits, and agency contact. Based on the results of the Phase I ESA, further investigations (limited subsurface reports and Phase II ESAs), including the collection of surficial and subsurface soil samples and groundwater samples, may be required to delineate the horizontal and vertical extents of contamination in problem areas.

Floodways and 100-year Floodplains

There are two Federal Emergency Management Agency-designated floodplains in the study area. Although no bridge crossings are proposed over the floodplains, some impacts to the floodplain could occur due to roadway encroachment under the Recommended Alternative. The Town of Bennett, Arapahoe County and Adams County are responsible for floodplain management within their jurisdiction over the Kiowa Creek floodplain. Both Arapahoe County and Adams County have local floodplain permitting requirements for development activities within the floodplain. Arapahoe County requires a Conditional Letter of Map Revision for all projects that impact the floodplain. Arapahoe County also requires a Letter of Map Revision to be completed and issued in order to revise the effective floodplain.

As part of the NEPA process, floodplain modeling will be required to assess future floodplain impacts and may require a Conditional Letter of Map Revision and Letter of Map Revision.

Historic and Archeological Resources

Historic Resources

The Colorado Historical Society/Office of Archeology and Historic Preservation performed a file search for historic resources in October 2012 for land sections encompassed by the study area. The file search was followed by an online search for more information about the identified cultural resources in order to determine the potential for effects to these properties. Three potentially eligible historic resources and one eligible resource were identified in the study area: the Mount View Cemetery/Bennett Cemetery, the Kiowa-Creek Bridge on Colfax Avenue/US 36, the Muegge House, and a portion of the Kansas Pacific Railroad. No impacts are expected to the Muegge House and the Kiowa Creek Bridge with the Recommended Alternative. The bridge has also been replaced in its entirety and is no longer eligible for listing on the National Register of Historic Places (NRHP).

The Mount View/Bennett Cemetery is adjacent to the proposed improvements of SH 79, but the proposed roadway alignment was shifted west to avoid direct property impacts to the cemetery. The cemetery was surveyed in 1982 and was recommended to be “not eligible” by the Colorado Historical Society. However, no official determination has been made by the State Historic Preservation Officer (SHPO). When the project reaches the NEPA process and final design, impacts to this resource should be avoided.

The entire section of the Kansas Pacific Railroad within the study area is potentially historic. SHPO identifies this portion of the railroad as “field eligible,” although no official determination has been made. Minimizing impacts to this resource should be discussed as part of ongoing efforts with the railroad during the NEPA phase.

Archeological and Paleontological Resources

The file search revealed three prehistoric archaeological sites and one paleontological resource in the study area. Due to the sensitive nature of these resources, the sites cannot be disclosed. Once funding

has been identified, a registered archeologist and paleontologist will locate the resources and work with the project team to avoid, minimize and mitigate resource effects as part of future NEPA processes.

Section 4(f) Resources

Section 4(f) of the Department of Transportation Act of 1966 stipulates that FHWA and other Department of Transportation agencies cannot approve the use of land from public and private historic sites unless there is no feasible and prudent alternative to the use of land, and the action includes all possible planning to minimize harm to the property resulting from use. Section 4(f) protects historic sites either listed on the NRHP, eligible to be listed on the NRHP, or of state and local significance. This includes the Mount View Cemetery/Bennett Cemetery, Muegge House, and a portion of the Kansas Pacific Railroad. All measures to avoid them will be documented as part of future NEPA processes.

Mines

A file search of past and current mining operations revealed that two saleable mining sites occur in the study area, both privately owned by one individual. Saleable minerals include common mineral materials such as sand, gravel, stone, pumice, clay, and petrified wood. These sites are the Mitchell Pit and Mitchell Pit #2 located southeast of Bennett adjacent to Colfax Avenue/US 36. These sites are expected to be impacted by the SH 79 realignment with the Recommended Alternative.

The presence of existing mineral claims and leases could interfere with plans to construct a new roadway. As part of the pre-construction process, the project proponents will have to identify mineral claims and leases and either negotiate permission to use the land surface in these areas or re-locate the roadway to avoid existing claims and leases. Where access to mineral resources may be restricted, the proponents will provide compensation for damage, access rights, and easements with mine owners, claimants, and lease holders. If necessary, the proponents would provide mine operators with mine access during construction.

Air quality monitoring at the sand and gravel pits is recommended to determine the extent of Total Suspended Particulates (TSPs), which is a measure of all particulates emitted by a mine. An impact on air quality that could result from increased traffic or decreased congestion could combine cumulatively with potential air quality hazards presented by the mines. Similarly, an increase in impervious surfaces from roadway construction could combine cumulatively with possible groundwater contamination from the operations. On-site water availability during construction could also be an issue. These possibilities should be considered in the NEPA processes.

Water Wells

Approximately 254 water wells were identified in the study area through a survey of GIS data from the Colorado Division of Water Resources. The Recommended Alternative may potentially impact up to five wells along the existing SH 79 alignment for the widening to four lanes. In addition, there are two wells near Old Victory Road and SH 79 that may be impacted. One well south of Old Victory Road is classified for irrigation, but all of the other potentially-impacted wells are classified as “other” usages, which means that they are likely used as monitoring wells.

Consideration of water well resources during the NEPA process will be necessary and will include a detailed analysis of the project design impacts to existing water wells, a plan for avoidance of existing wells during and after construction, and identification of the necessary permits for construction activities.

Parks and Recreation Resources

Section 4(f) Resources

In addition to historic sites, Section 4(f) of the Department of Transportation Act of 1966 stipulates that FHWA and other Department of Transportation agencies cannot approve the use of land from publicly owned parks, recreational areas, or wildlife and waterfowl refuges unless there is no feasible and prudent alternative to the use of land, and the action includes all possible planning to minimize harm to the property resulting from use.

Seven Section 4(f) non-historic resources currently exist within the study area, and 16 park and trail facilities are planned in the future within the identified study area. None of the existing Section 4(f) resources are expected to be impacted by the Recommended Alternative. Future planned trail systems will be coordinated during the NEPA process to ensure collaboration between the Recommended Alternative alignment and the area's future planned trail network.

Section 6(f) Resources

The Land and Water Conservation Fund Act of 1965 established a Federal funding program to assist states in developing outdoor recreation sites. Section 6(f) of the act prohibits the conversion of property acquired or developed with these funds to a non-recreational purpose without the approval of the National Park Service and a one to one replacement of the land. A file search was conducted in November 2012 to determine whether Land and Water Conservation Fund money was used on any facilities within the study area. One facility was identified; the Bennett Swimming Pool located at Bennett Middle School, but it is not expected to be impacted by the Recommended Alternative.

Threatened and Endangered Species

There are nine federally-listed species with potential to occur in or be impacted by projects in the study area. Three of the nine listed species are associated with sub-irrigated soils along stream and floodplains in riparian habitat. The habitat is marginal along Kiowa Creek, having poorly-defined riparian, shrub and herbaceous layers, and it is unlikely that these species would occur in the study area. Five species are listed because they occur downstream of the study area along the South Platte River, and could be impacted by projects that would result in water depletions.

The Recommended Alternative will not alter the flow of the water to the South Platte River; therefore, there will be no impact to these species. No suitable habitat occurs for the remaining one species in the study area so it was assumed that the species is not present. Therefore, there are anticipated to be no impacts to federally-listed species as part of the project.

Two areas of active black-tailed prairie dogs were observed in the study area, which are a vacant field northeast of the I-70 and SH 79 interchange, and vacant land just north of Truman Avenue on the north side of Bennett. Black-tailed prairie dogs may provide nesting habitat for burrowing owls, which are a state Species of Concern and also protected under the Migratory Bird Treaty Act (MBTA). The habitat northeast of the I-70 and SH 79 interchange may be impacted by the ROW acquisition of the Recommended Alternative. There is moderate potential for the northern leopard frog and the common garter snake, both State Species of Concern, to occur in the wetland habitat along Kiowa Creek, ditches, ponds, and stormwater detention basins within the study area.

Tree removal, vegetation grubbing, earth moving, and other construction activities have the potential to destroy nests of bird species protected under the MBTA. Nearby construction activities during the

breeding season may cause raptors to abandon nests. Similarly, winter construction activities may cause bald eagles to abandon roosting areas and the U.S. Fish and Wildlife Service (USFWS) has published guidelines to minimize disturbance. Due to potential raptor nesting habitats that could be located in the study area, careful construction practices will be necessary. Construction activities should schedule clearing and grubbing operations and work on structures to avoid impacting migratory birds protected by the MBTA. Pre-construction surveys for nesting birds should be completed and should follow the methods set forth by the USFWS, Colorado Parks and Wildlife and CDOT Section 240 Protection of Migratory Birds Standard Specification.

Swallows were not observed in the study area, but bridges and larger culverts in the study area could provide habitat. Nesting locations may change from year to year, and areas will need to be re-surveyed prior to construction. No bridge or box culvert work will take place if there are nesting birds present. Bridge or box culvert work that may disturb nesting birds will be completed before birds begin to nest or after the young have fledged (typically between April 1 and August 31). If work activities are planned between these dates, and if swallow nests are present, they will be removed before nesting begins and appropriate measures taken to assure no new nests are built prior to construction.

Wetlands and Waters of the U.S.

Formal wetland delineations were not performed as part of the PEL study. Field maps of the study area were reviewed for potential wetlands and Waters of the U.S. and a site visit was performed. Several irrigation ditches and small stock ponds occur within the study area, but wetlands were generally not associated with the ditches. One potential wetland and Waters of the U.S. area that could be impacted by the Recommended Alternative is located north of the SH 79 interchange. Kiowa Creek has the potential to sustain fringe wetlands along its banks, although vegetation abutting the creek is marginal for wetland vegetation. The Recommended Alternative may impact Kiowa Creek near the Kiowa-Bennett interchange.

A Section 404 permit would likely be required from the U.S. Army Corps of Engineers (USACE) to authorize placement of dredge or fill material in any Waters of the U.S. including wetlands and open water features. Impacts under 0.5 acres can be permitted under existing Nationwide Permits. Impacts greater than 0.5 acres would require obtaining an Individual Permit. An Individual Permit includes a public notice and would trigger additional NEPA coordination with the USACE. Generally, mitigation would be required under either permit type for impacts exceeding 0.1 acre of jurisdictional Waters of the U.S., including wetlands and open water features. Prior to application for a permit, a wetland delineation survey would be conducted including a jurisdictional determination. This would include documented wetland boundaries and a determination of impacts.

CDOT regulates wetlands regardless of USACE jurisdiction. A CDOT Wetland Findings report may be required if permanent wetland impacts exceed 500 square feet or if temporary impacts exceed 1,000 square feet, regardless of whether USACE has jurisdiction.

Noxious Weeds

The Recommended Alternative is located in a predominantly rural area dominated by agricultural properties, which provides numerous landscaped areas associated with adjacent commercial and residential properties. Weeds present within the project boundaries are typical of Colorado Front Range roadsides and disturbed areas, and are managed and controlled by a noxious weed management plan. No species from Category A of the State of Colorado noxious weed list were identified in the study area,

which are those designated for eradication and require prevention of seed production or development of reproductive propagules.

Preparation of an Integrated Noxious Weed Management Plan, which would include steps to control existing noxious weeds, would be required during the NEPA process. Weeds in the study area should be mapped during the growing season and an Integrated Weed Management Plan may be warranted to reduce the spread of noxious weeds within the study area.

Noise

The FHWA has established activity categories based on various land uses to determine what is considered an acceptable noise level, known as Noise Abatement Criteria (NAC). No NAC Category A lands exist in the study area, which are those where serenity and quiet are of extraordinary significance. The majority of noise sensitive locations in the study area are residential, falling into NAC category B. Some noise sensitive land uses within the project limits fall into NAC category C, including parks, schools, churches, a cemetery, and a golf course. Areas of potential concern for noise impacts include the single family homes located near the proposed SH 79 realignment, and the neighborhood located southwest of the UPRR tracks, which is near the SH 79 grade separation. This neighborhood may experience additional impacts if a grade-separated overpass alternative is selected at the railroad tracks. Rural locations typically have low existing noise levels, so a new roadway would be more likely to cause a significant increase over existing noise levels.

A detailed noise study will be required during future NEPA processes. If the NAC will be exceeded after the construction of roadway improvements, mitigation needs to be considered and may be warranted depending on the land use category. For noise mitigation to be recommended as part of the project, it must be considered both “reasonable and feasible” based on CDOT criteria. During construction, a common-sense approach to controlling noise impacts of construction equipment and activities should be considered, such as limiting construction hours or avoiding routing heavy vehicles past residential neighborhoods. Best management practices can be incorporated to minimize the effect of construction on local residents and sensitive receivers while not affecting construction schedules.

Community Impacts

Neighborhood/Business Displacement

Ongoing conversations with property owners, businesses, and residences potentially affected will be a critical part of future project development. During the NEPA process, negative impacts to neighborhoods, businesses, and individual residences should be identified and avoided or minimized where possible. If property acquisition is required, acquisition proceedings will conform to the requirements set forth in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and the Uniform Relocation Act Amendments of 1987 (as amended). Stakeholders will be provided with opportunities to provide input and express concerns related to the project at each stage of the project development process.

Community Barrier

Existing and future land use data was reviewed for indicators of barrier effects due to existing transportation infrastructure, such as neighborhoods divided by transportation facilities, or isolation of a neighborhood from a community facility. Within the Town, the UPRR is a substantial transportation barrier. This railroad separates the southern portion of the Town from the schools and public services

available to the north of the railroad. The Recommended Alternative would provide a railroad grade separation as an alternate route for drivers and pedestrians east of the downtown area.

I-70 created a barrier to the property owners and residents in the community who wish to easily access areas north or south of the interstate. There are currently no pedestrian facilities to safely cross I-70 within the study area. The Recommended Alternative would enhance both of these crossing locations by providing pedestrian services and improved safety features at the interchanges.

Kiowa Creek acts as a natural barrier separating the properties on either side of it. However, property adjacent to the creek is rural and undeveloped, so it creates less of a barrier effect.

Ongoing coordination with local planners will be an essential part of future project development to ensure that changes resulting from the project are compatible with the intent of the local visions for the area. Ongoing conversations with property owners, businesses, and residences potentially affected will also be a critical part of future project development. A more detailed assessment of the businesses or residences potentially affected will be needed to identify avoidance options or mitigation measures to assist with concerns as a result of construction and ongoing operations.

Prime and Unique Farmlands

To determine whether any prime or unique farmland soils of statewide or local importance are present in the study area, data were downloaded from the 2012 Natural Resources Conservation Service (NRCS) Soil Data Mart database. The NRCS identified several categories of soil types that are protected in the study area, which is a contributing factor in determining if farmland is considered prime or unique. The protected soil types exist along the alignment of the Recommended Alternative.

A detailed analysis of the project design impacts to existing prime and unique farmlands, identification of the necessary permits for construction activities, and an assessment of the need for groundwater monitoring before, during, and after the project will be required during the NEPA process. Ongoing coordination with local planners and NRCS representatives is also needed to ensure that changes resulting from any recommendations are compatible with environmental regulations and the local planning offices.

Cumulative Impacts

During the NEPA process, additional analysis and agency coordination will need to be performed to determine cumulative impacts. Additional coordination with the resource agencies will be conducted to determine a study area for each resource. Resources that may be cumulatively impacted by future projects when combined with other past, present, and reasonably foreseeable future projects may include noise impacts to local residents, economic impacts, floodplain impacts, and direct/indirect loss of wetlands due to surface disturbance and increased impervious surface area. Wildlife habitat loss may also occur due to planned development.

The PEL process emphasized involvement from local agencies and the general public. Input from these stakeholders was used to guide project team decisions through a transparent process, resulting in a Recommended Alternative that best meets the needs of the local community.

AGENCY AND PUBLIC COORDINATION

Understanding the ideas, perspectives, and needs of key stakeholders in the study area is critical to building broadly supported decisions and solutions. Throughout the PEL process, stakeholder involvement was emphasized and feedback was solicited from local agency and public partners at key decision points to foster acceptance of study recommendations.

Agency Coordination

TAC Meetings

The study included the formation of a TAC that met frequently with the project consultant team to provide technical input. The TAC included staff from the Town of Bennett, Adams and Arapahoe Counties, CDOT Environmental Programs Branch, CDOT Region 1, DRCOG, and FHWA.

The TAC Charter, signed by all TAC members, identified roles, responsibilities, and the decision-making process for the PEL study. The Charter established the concurrence points with meetings at key milestones within the study process and stated that concurrence for decisions presented at TAC meetings was provided with acceptance of the distributed meeting notes. The signed Charter is included in **Appendix F**.

The TAC was heavily involved in shaping the alternatives evaluation criteria and performance measures, as well as the alternatives that were considered. Members of the TAC kept their respective elected officials updated and brought elected official feedback to the project team.

Concurrence was provided at the following key milestones:

- Technical Team Charter
- Purpose and Need Statement
- Evaluation Criteria
- Initial Alternatives Developed
- Level 1 Alternatives Screening Results
- Level 2 Alternatives Screening Results
- Level 3 Alternatives Screening Results and Recommended Alternative
- Final Study Recommendations

Ten TAC meetings were held:

- August 31, 2012
- September 27, 2012
- October 25, 2012
- December 13, 2012
- January 17, 2013
- February 26, 2013
- March 21, 2013
- April 25, 2013
- June 20, 2013
- August 6, 2013

Resource Agency Coordination

The study was coordinated with local, State and Federal resource agencies, including:

- Adams County Parks and Community Resources
- Arapahoe County Open Spaces
- Colorado Department of Public Health and Environment, Air Pollution Control Division
- Colorado Department of Public Health and Environment, Water Quality Control Division
- Colorado Parks and Wildlife
- Colorado SHPO
- Town of Bennett Parks and Recreation
- Urban Drainage and Flood Control District
- USACE
- U.S. Department of Agriculture, Natural Resource Conservation Service
- U.S. Environmental Protection Agency
- USFWS

Information was distributed to representatives at these resource agencies at two points during the study. Early in the study a letter and study area map were mailed as an introduction to this PEL process and request for input on the existing conditions and concerns within the study area. A second letter was mailed serving as an update on the study following Level 3 alternatives screening. A graphic of the Recommended Alternative was enclosed for review to identify potential resource impacts and next steps required for future NEPA processes and project development. A summary of the resource agency coordination and input is included in **Appendix F**.

Other Agency Coordination

Small group meetings were held with individuals representing stakeholders anticipated to be potentially affected by the potential improvements to identify likely impacts and help shape the study recommendations. Presentations to inform stakeholders and gather feedback were also made. These meetings and presentations occurred as follows:

- Arapahoe County Open Spaces Department – January 8, 2013 and April 11, 2013
- Bennett Fire District – February 26, 2013 and August 5, 2013
- Bennett School District – February 26, 2013 and August 5, 2013
- UPRR – April 11, 2013 and July 22, 2013
- I-70 Corridor Regional Economic Advancement Partnership – September 12, 2013

Public Participation

In an effort to gain as much community input as possible, public participation was emphasized throughout the study process. It was important that all participants, including potential users of the study corridors and roadways in the vicinity, clearly understand each alternative. The study website and graphics illustrated proposed alternatives, operational characteristics, impacts, and cost estimates.

General Public Meetings

This study held two public meetings in open house format. The first meeting, held on November 15, 2012, served to introduce the PEL study and to discuss study area conditions and the need for improvements, as well as past planning efforts. At the second meeting, held on May 16, 2012, alternatives and Level 1 and 2 evaluation results were presented for comment. Each meeting was attended by over 50 individuals.

Information Distribution

The study utilized several methods of advertising and outreach. A postcard was distributed via U.S. Postal Service or email to nearly 1,700 property owners, tenants and other interested individuals prior to each public meeting. Each public meeting was also preceded by a news release, which was sent to local media outlets as well as local jurisdictions' Public Information Officers for inclusion in their community bulletins. Prior to each meeting, an advertisement was placed in the *I-70 Scout* and the *Eastern Colorado News* newspapers, reaching an estimated 6,700 mailboxes along the I-70 corridor communities between Watkins and Agate.

A final study update to the project mailing list is planned at the end of the PEL study to describe the recommended improvements, facilitate final public comment on study recommendations, and inform the public regarding next steps towards project development and implementation.

Public Comments

Input was solicited at the public meetings and community members were also able to submit comments via the PEL study website throughout the course of the study. Public meeting graphics and summaries of comments received were subsequently posted on the study webpage, www.sh79pel.com.

Common public comments and responses are included in **Table 4**. Comments received were shared with project technical staff and the TAC representatives for consideration during the alternatives development, evaluation, and recommendations process. Summaries of comments received are included in **Appendix G.**

Table 4. Public Comment Themes and Responses

PUBLIC COMMENT	METHOD OF ADDRESSING COMMENT
Curves on new road alignments need to be safe and have good sight distance. Safety issues exist with existing turns on SH 79, and they cause problems for large trucks.	CDOT and County roadway standards were used when designing new roadway alignments considering large trucks as design vehicles.
A full interchange at Kiowa-Bennett Road and I-70 is needed.	Multiple alternatives were developed that included an interchange providing all movements. Stakeholder and public input was considered during Level 3 screening and used as an evaluation criterion to determine the study's Recommended Alternative, which does include a full interchange at this location.
Avoid private property impacts and acquisition, including residential property with homes and farmland.	During alternatives development, property impacts were minimized where possible through shifting the roadway alignments. Property impacts were considered in both Level 2 and Level 3 alternatives evaluation. The amount of ROW required as well as types of property impacts were documented and used as evaluation criteria to determine the study's Recommended Alternative.
Proposed new alignments will disturb wildlife, especially around the Kiowa Creek area.	Environmental impacts were considered in both Level 2 and Level 3 alternatives evaluation. Potential impacts to sensitive biological habitat were documented and used as evaluation criteria to determine the study's Recommended Alternative.
Do not impact Kiowa Creek North Open Space.	Some alternatives were developed that did not impact Open Space. Stakeholder coordination meetings were held with Arapahoe County Open Spaces staff to gather feedback on alternatives and discuss ways to minimize potential impacts of alternatives encroaching on Open Space. Environmental impacts were considered in both Level 2 and Level 3 alternatives evaluation. Potential impacts to parks and recreational areas were documented and used as an evaluation criterion to determine the study's Recommended Alternative.
Increased noise from improvements will impact residents.	Potentially impacted areas for noise were considered in the Level 2 alternatives evaluation. Specific mitigation measures for noise impacts will be determined during subsequent NEPA environmental evaluation processes, and if found reasonable and feasible, required mitigation would be included in final plans for incorporation into the project design.
A grade separated crossing of the UPRR and SH 79 will have visual impacts for Cordella neighborhood residents.	Both an underpass and overpass were evaluated for this grade separated crossing. Visual impacts will be investigated for potential mitigation during subsequent NEPA environmental evaluation processes.
Alternative 4 would cause out of direction travel.	Alternative 4 was eliminated in Level 3 alternatives evaluation.
The elimination of the existing off ramp from eastbound I-70 to Colfax Avenue /US 36 ramps near the Kiowa-Bennett Road/ I-70 interchange will cause problems for residents east of Bennett.	An additional option for this interchange configuration was developed following the second public meeting in response to these concerns, and documented in the final study report. Option B would keep the existing ramps between I-70 and Colfax Avenue/US 36. A final decision of the configuration will be determined during the NEPA process.

NEXT STEPS

Individual projects may be initiated as funding becomes available for elements of the Recommended Alternative transportation system. These projects may move forward with individual NEPA processes with this PEL study providing the documentation of the intent to implement the full improvements over time.

The PEL process is intended to provide the framework for the long-term implementation of the Recommended Alternative transportation system improvements as funding is available and to be used as a resource for future NEPA documentation.

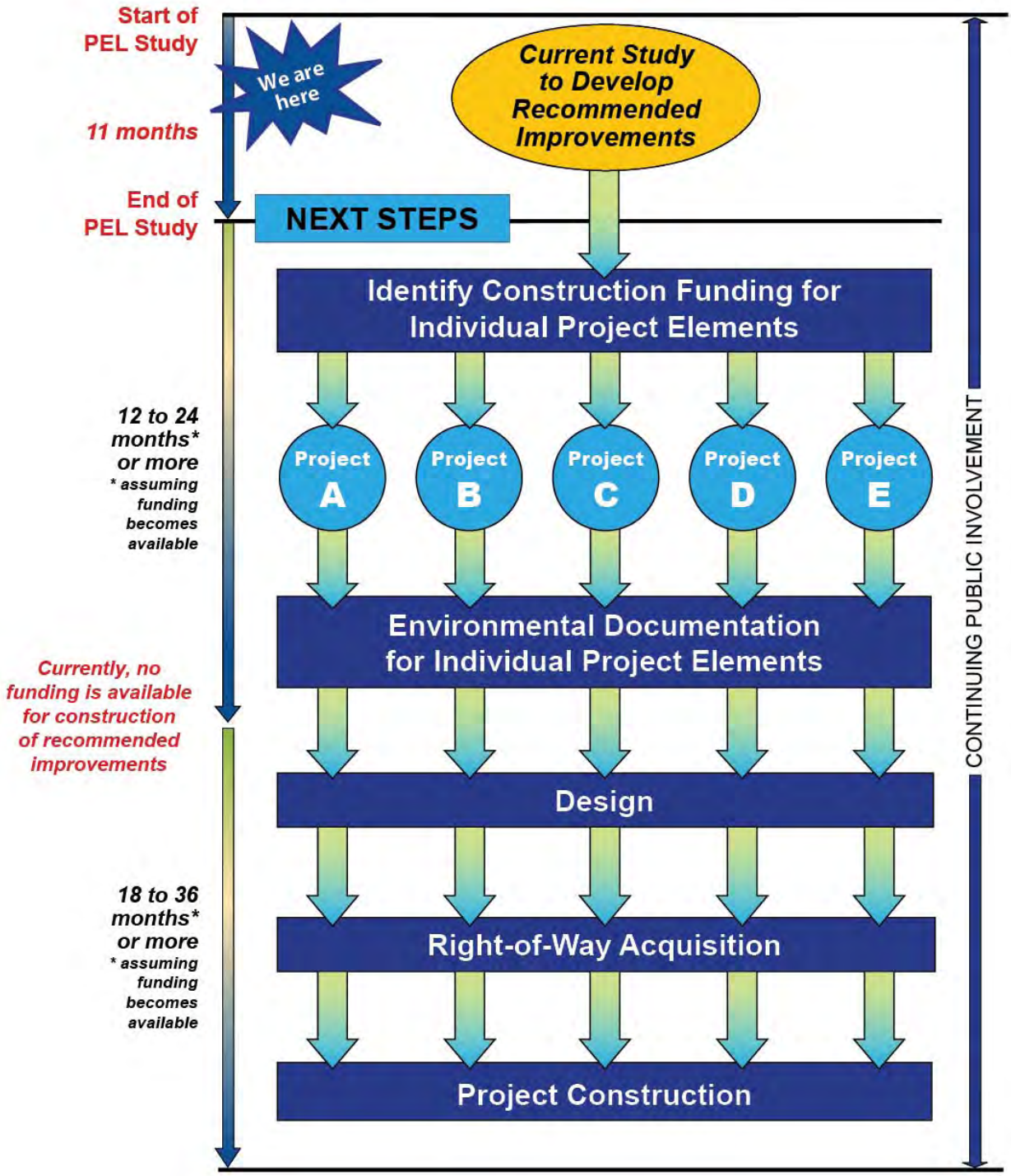
FHWA has developed a standard questionnaire to summarize the planning process and ease the transition from planning to a NEPA analysis. That questionnaire, included in **Appendix H**, summarizes the information that has been analyzed with the PEL study and identifies the issues a future project team should be aware of to efficiently move forward in future NEPA processes.

The next steps in the project development process are outlined and illustrated in **Figure 14**. Separate projects may be implemented if funding is available. These steps include:

- Secure necessary funding to move projects forward into NEPA process
- Complete NEPA analyses of Recommended Alternative or separate project phases
- Complete design
- Obtain ROW
- Complete Intergovernmental Agreement with local agencies regarding maintenance
- Complete construction

These steps will be coordinated with FHWA to ensure consistency with the NEPA process for each phase of the Recommended Alternative as a separate project. It is anticipated that each project could move forward with individual NEPA processes with this PEL study providing the documentation of the intent to implement the full corridor area improvements over time, as funding becomes available.

Figure 14: Overall Project Process



Project-Level Steps

It is anticipated that funding for the entire Recommended Alternative improvements will not be available all together. If smaller components of the project are implemented individually, each separate project will likely need to develop a Purpose and Need statement, which is expected to be based off the Purpose and Need developed with the PEL study, but focused on the needs of the smaller project area. Independent utility, including logical termini, will need to be demonstrated for each project with the documentation of the PEL study illustrating the overall framework for the long-term implementation of the Recommended Alternative.

The anticipated project-level steps for the separate project phases are described below and summarized in **Table 5**.

SH 79 Interchange Improvements

The Purpose and Need for the SH 79 interchange improvements would focus on improving regional mobility and addressing safety concerns. As an interstate interchange, this project would move into the NEPA process concurrently with CDOT's *1601 Interchange Approval Process*. Additional traffic analysis will be required for the area surrounding the interchange, as well as the adjacent interchanges on I-70, to identify the benefits to congestion, safety, and overall mobility for the local and regional transportation system. The type of NEPA study required will be dependent on the types and levels of environmental impacts.

The existing interchange provides full access to I-70 and no major changes are proposed to the ramp configuration, lengths, or merge/diverge areas on the freeway, so it is anticipated that a Minor Interchange Modification Request (MIMR) will be required for FHWA approval. This project may require a relatively small amount of ROW acquisition and would have potential environmental impacts to hazardous materials and water wells near SH 79, threatened and endangered species habitat, and prime and unique farmlands.

SH 79 Realignment from I-70 to Colfax Avenue/US 36

The Purpose and Need for the SH 79 realignment would focus on improving regional mobility and connectivity and addressing safety concerns. It is anticipated that this project phase would be funded as part of the planned development south of downtown Bennett. The NEPA requirements will be dependent on the types and levels of environmental impacts. This project phase will require ROW acquisition and coordination with a future developer. Potential environmental impacts are hazardous materials and water wells near SH 79, floodplains, potential Waters of the US, threatened and endangered species habitat, mines, noise impacts to single family homes, and prime and unique farmlands.

SH 79 Railroad Grade Separation

The Purpose and Need for the SH 79 railroad grade separation would focus on improving regional mobility and connectivity, reducing conflict and delay at the at-grade railroad crossing, and addressing safety concerns. One of the first steps of this separate project will be to perform a detailed survey near the location of the railroad grade separation. The survey will provide more information needed to define an overpass or underpass with the potential impacts and design constraints. An additional traffic study will need to be performed during preliminary design to identify the signing and striping to modify the truck route so it carries traffic along SH 79 and the grade separation rather than through downtown

Bennett. The type of NEPA study required will be dependent on the types and levels of environmental impacts.

This project will require ROW acquisition and continued coordination with the railroad and other property owners. Potential environmental impacts are hazardous materials sites near Old Victory Road, threatened and endangered species, the railroad and cemetery as a historic resource, water wells, noise impacts for homes near the grade separation, and prime and unique farmland impacts.

UPRR Coordination

On-going coordination with the UPRR for the grade separation will be required. UPRR requires an initial meeting with the Manager of Industry & Public Projects to review the scope of the project and the project submittal process. This typically occurs during preliminary design, which can be concurrent with the NEPA process. Because it may take some time to initiate and complete NEPA for the grade separation, due to funding constraints, the initial meeting with UPRR may be scheduled about six months prior to the completion of NEPA. UPRR's *Grade Separation Guidelines* define the project submittal process from inception through the Construction and Maintenance Agreement process.

Initially, CDOT must write a Preliminary Engineering letter to UPRR advising them of the project and authorizing a fee (typically between $15,000 to $20,000) for UPRR's project setup and plan review process by outside consultants. The Preliminary Engineering letter authorizing the project review costs will be included in the Detail of Estimate received from UPRR for any railroad work, which in turn will become part of the Construction and Maintenance Agreement. UPRR does not bill for the Preliminary Engineering costs until they have the fully executed Construction and Maintenance Agreement.

The real estate review process should be initiated by CDOT at approximately the same time as the initial meeting with UPRR to determine the necessary easement for SH 79. CDOT will have to provide a metes and bounds description and make an offer based on fair market value for the proposed easement area once it is determined. The final easement configuration will be included in the Construction and Maintenance Agreement along with the final easement cost to be paid to UPRR by CDOT.

The *Grade Separation Guidelines* require specific horizontal and vertical clearances for the existing track and for a future track. UPRR typically requires at a minimum room under the grade separation for at least one additional future track and a maintenance of way road to access their infrastructure. UPRR prefers that any grade separation clear span their ROW, so as not to impact future UPRR capacity improvement projects. However, the ROW at the proposed grade separation location is relatively wide (approximately 400 feet), so UPRR representatives indicted that they would expect a 100-foot minimum clear span with approach spans. One of the first coordination steps with the railroad will be for the design team to justify the span length inside the UPRR ROW to obtain approval by UPRR.

I-70 and Kiowa-Bennett Road Interchange

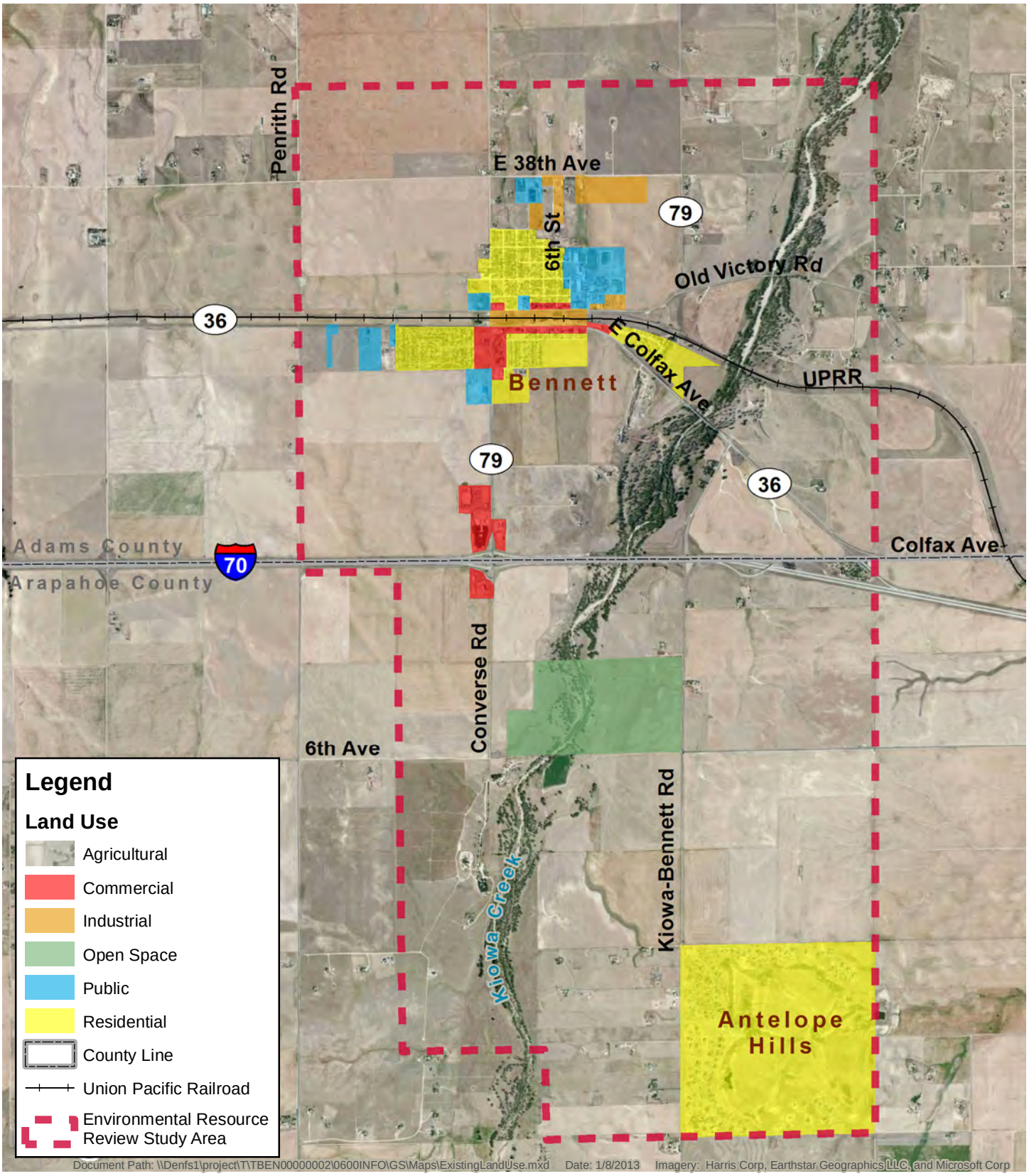
The Purpose and Need for the I-70 and Kiowa-Bennett Road interchange would focus on improving regional mobility and connectivity and addressing safety concerns. As an interstate interchange, this project would move into the NEPA process concurrently with CDOT's *1601 Interchange Approval Process*. Additional traffic analysis will be required for the area surrounding the interchange, as well as the adjacent interchanges on I-70, to identify the benefits to congestion, safety, and overall mobility for the local and regional transportation system. The type of NEPA study required will be dependent on the types and levels of environmental impacts.

The Recommended Alternative includes new ramps accessing I-70, so a full Interstate Access Request (IAR) will be required for FHWA approval. This project may require a relatively small amount of ROW acquisition and would have potential impacts to floodplains, wetlands and Waters of the US, and threatened and endangered species.

Table 5: Separate Project Phases – Next Steps

	SH 79 INTERCHANGE	SH 79 REALIGNMENT	SH 79 RAILROAD GRADE SEPARATION	KIOWA-BENNETT ROAD INTERCHANGE
Purpose and Need Elements	▪ Improves regional mobility ▪ Addresses safety concerns	▪ Improves regional mobility and connectivity ▪ Reduces conflict and delay at the at-grade railroad crossing ▪ Addresses safety concerns	▪ Improves regional mobility and connectivity ▪ Reduces conflict and delay at the at-grade railroad crossing ▪ Addresses safety concerns	▪ Improves regional mobility and connectivity ▪ Addresses safety concerns
Independent Utility Considerations	Project provides mobility and safety benefits independent of the completion of other project elements	Project only provides regional mobility and safety benefits if constructed after SH 79 railroad grade separation	Project provides mobility and safety benefits independent of the completion of other project elements	Project provides mobility and safety benefits independent of the completion of other project elements
Potential Environmental Resources Affected	▪ Hazardous Materials ▪ Threatened & Endangered Species ▪ Water Wells ▪ Prime/unique farmland	▪ Noise ▪ Hazardous Materials ▪ Threatened & Endangered Species ▪ Waters of the US ▪ Floodplains ▪ Water Wells ▪ Prime/unique farmland ▪ Mines	▪ Noise ▪ Hazardous Materials ▪ Threatened & Endangered Species ▪ Historic Resources ▪ Water Wells ▪ Prime/unique farmland	▪ Threatened & Endangered Species ▪ Wetlands and Waters of the US ▪ Floodplains
Anticipated Process / Requirements	▪ NEPA ▪ 1601 Process – Interchange Feasibility (CDOT) ▪ MIMR (FHWA) ▪ Survey & Design ▪ ROW acquisition	▪ NEPA ▪ Survey & Design ▪ ROW acquisition	▪ NEPA ▪ Railroad approval process (UPRR) ▪ Survey & Design ▪ ROW acquisition	▪ NEPA ▪ 1601 Process – Interchange Feasibility (CDOT) ▪ IAR (FHWA) ▪ Survey & Design ▪ ROW acquisition
Conceptual Cost Estimate	$5 - $10 Million	$10 - $15 Million	$10 - $15 Million	$5 - $10 Million

APPENDIX A
LAND USE AND TRAFFIC



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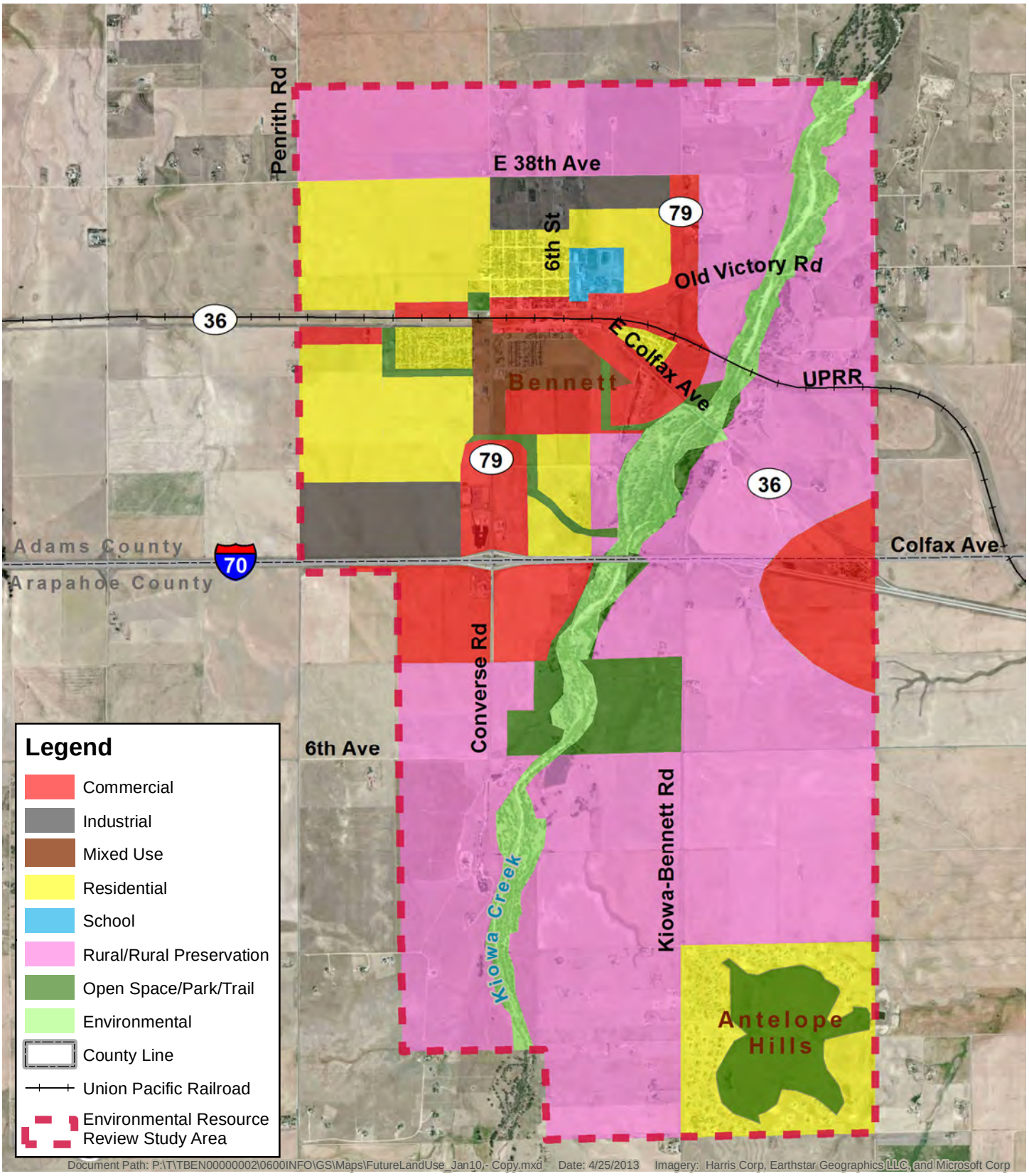
Future Land Use



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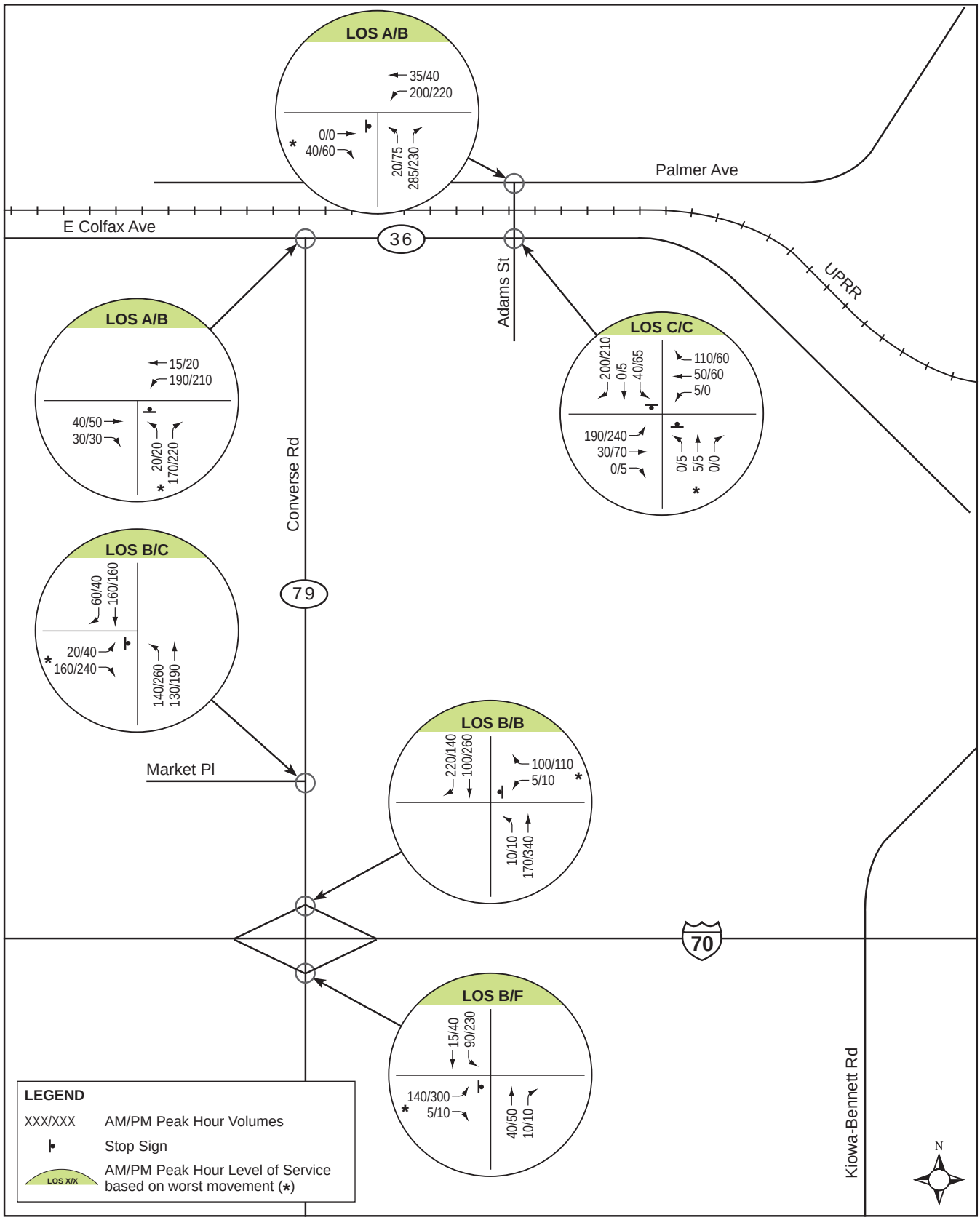
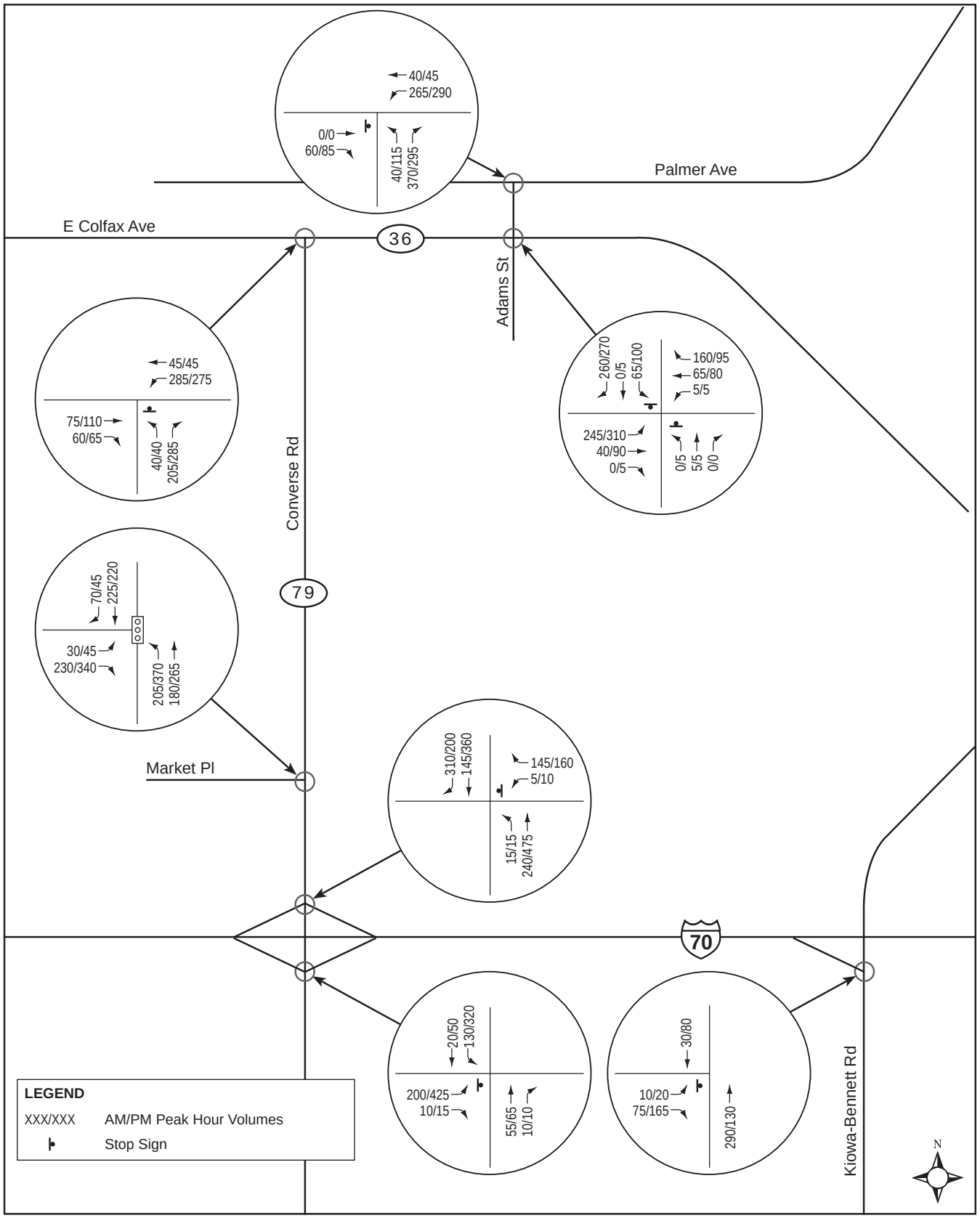
SH 79 Summary of Existing, No Action, and Alternative 1 Intersection Levels of Service

Intersection	Existing LOS		2035 No Action LOS		2035 Alternative 1 LOS	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Palmer Ave and Adams Street	A	B	B	C	A	A
Adams Street and Colfax/US 36	C	C	C	F	B	C
SH 79/1st St and Colfax/US 36	A	B	C	C	B	B
SH 79 and Marketplace Dr- Unsignalized	B	C	E	E	C	F
SH 79 and Marketplace Dr- Signalized	N/A	N/A	A	A	A	C
SH 79 and I-70 WB ramps	B	B	B	C	B	B
SH 79 and I-70 EB ramps- Unsignalized	B	F	C	F	A	F
SH 79 and I-70 EB ramps- Signalized	N/A	N/A	B	B	B	B
Kiowa-Bennett and I-70 WB ramps	N/A	N/A	N/A	N/A	B	B
Kiowa-Bennett and I-70 EB ramps	A	A	A	A	B	B
SH 79 and Mainstreet (realignment)	N/A	N/A	N/A	N/A	B	B
SH 79 and Colfax Ave (realignment) - Unsignalized	N/A	N/A	N/A	N/A	B	B
SH 79 and Colfax Ave (realignment) - Signalized	N/A	N/A	N/A	N/A	B	B
SH 79 and Old Victory Rd (realignment)	N/A	N/A	N/A	N/A	B	B

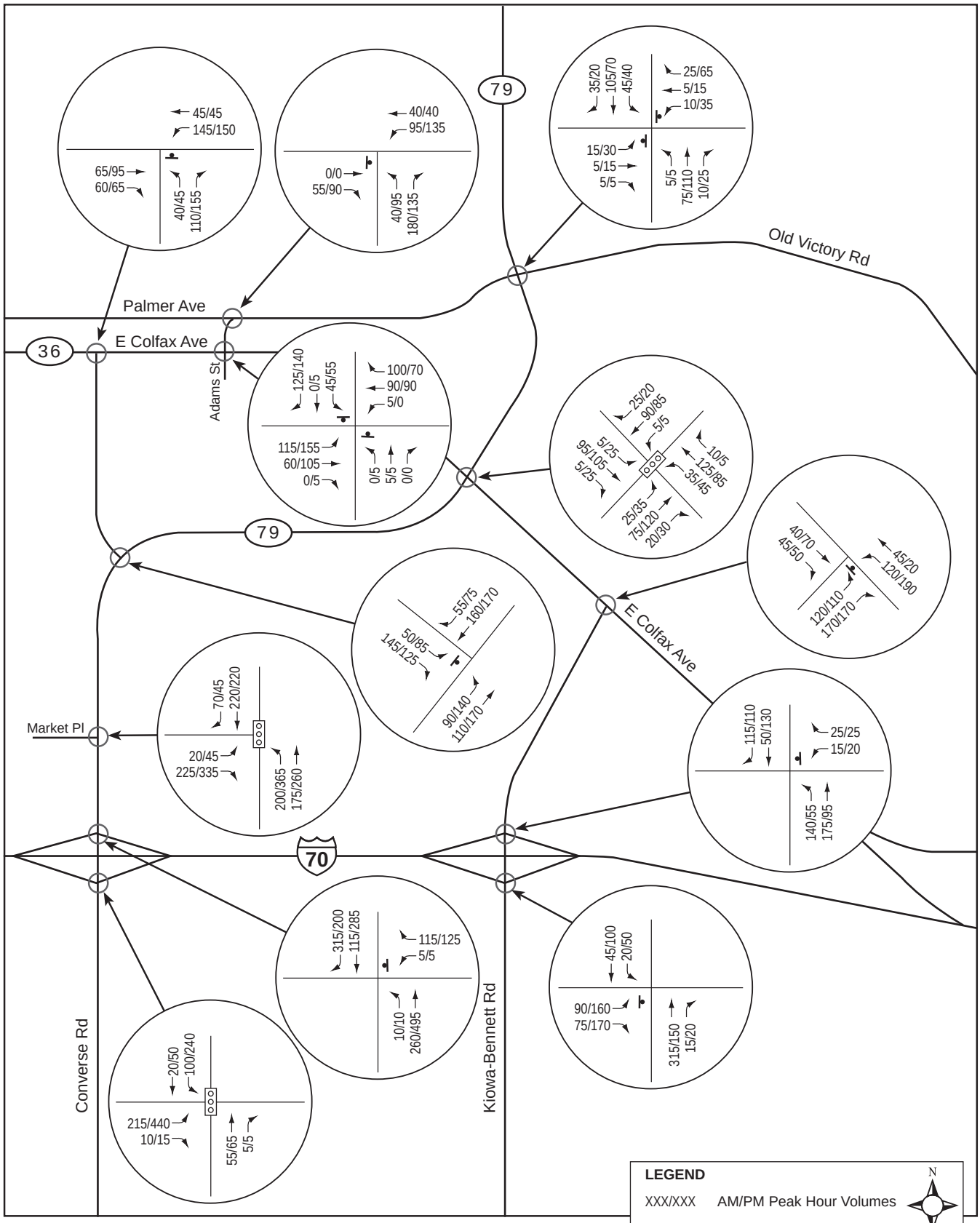
Existing Peak Hour Traffic Volumes and Level of Service



2035 No Action Peak Hour Traffic Volumes



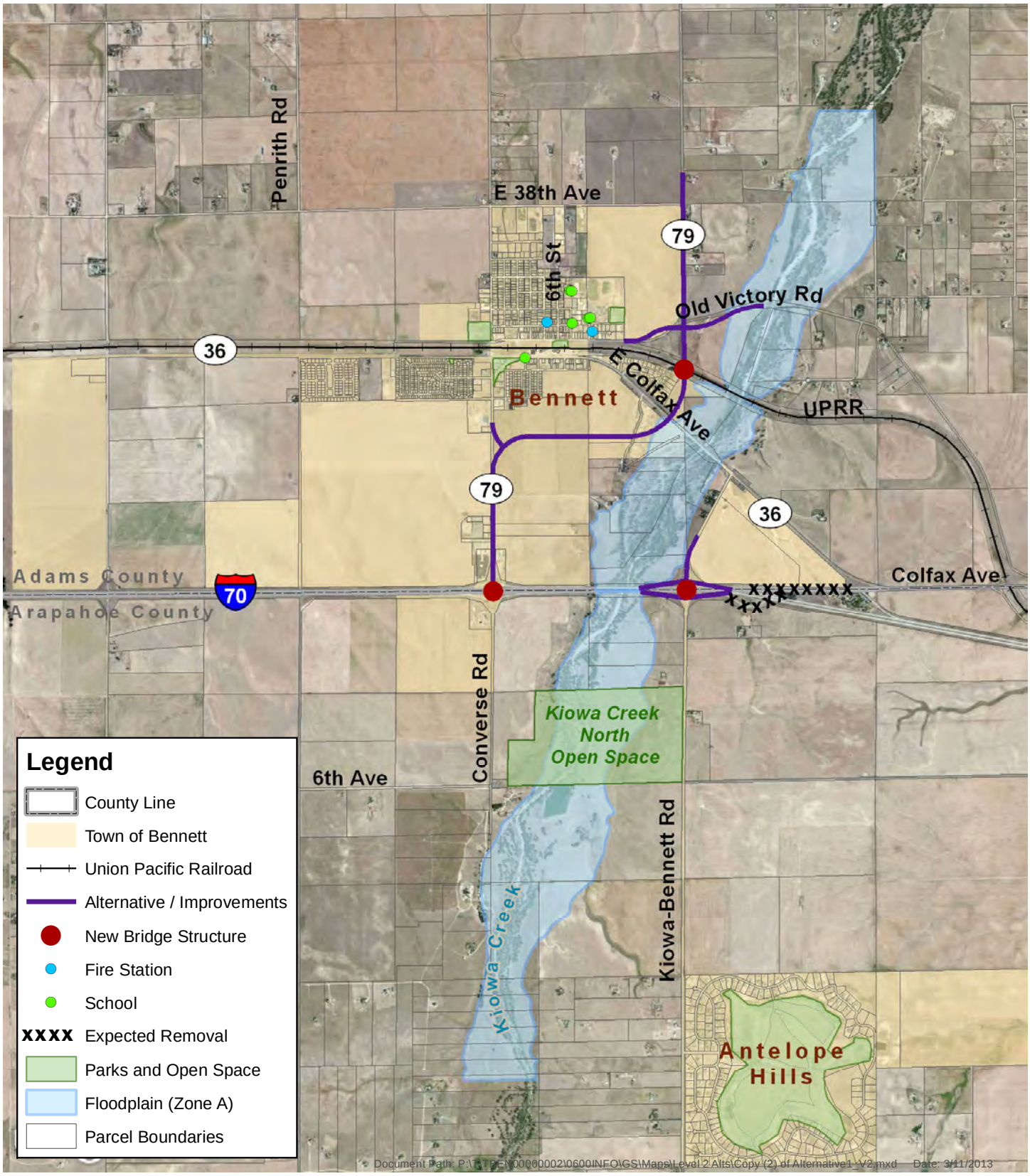
2035 Alternative 1
Peak Hour Traffic Volumes



APPENDIX B
LEVEL 1 ALTERNATIVES

SH 79 AND KIOWA-BENNETT CORRIDOR PEL STUDY

Alt 1: East Railroad Crossing with Full Kiowa-Bennett Diamond



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Alt 2: East Railroad Crossing with Split Kiowa-Bennett Diamond

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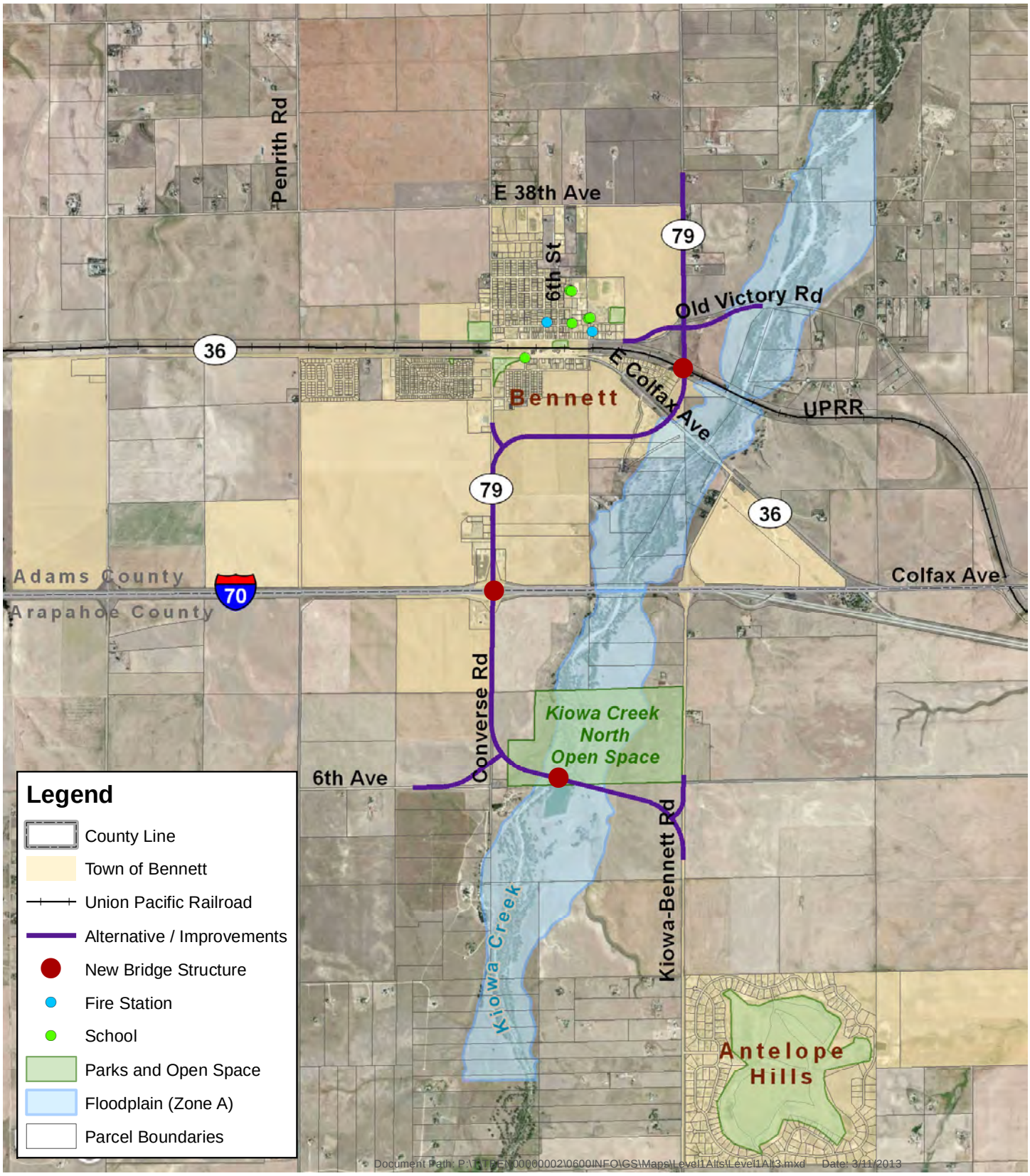
Alt 3: East Railroad Crossing with West Kiowa-Bennett Alignment



Alt 4: East Railroad Crossing with East Kiowa-Bennett Alignment

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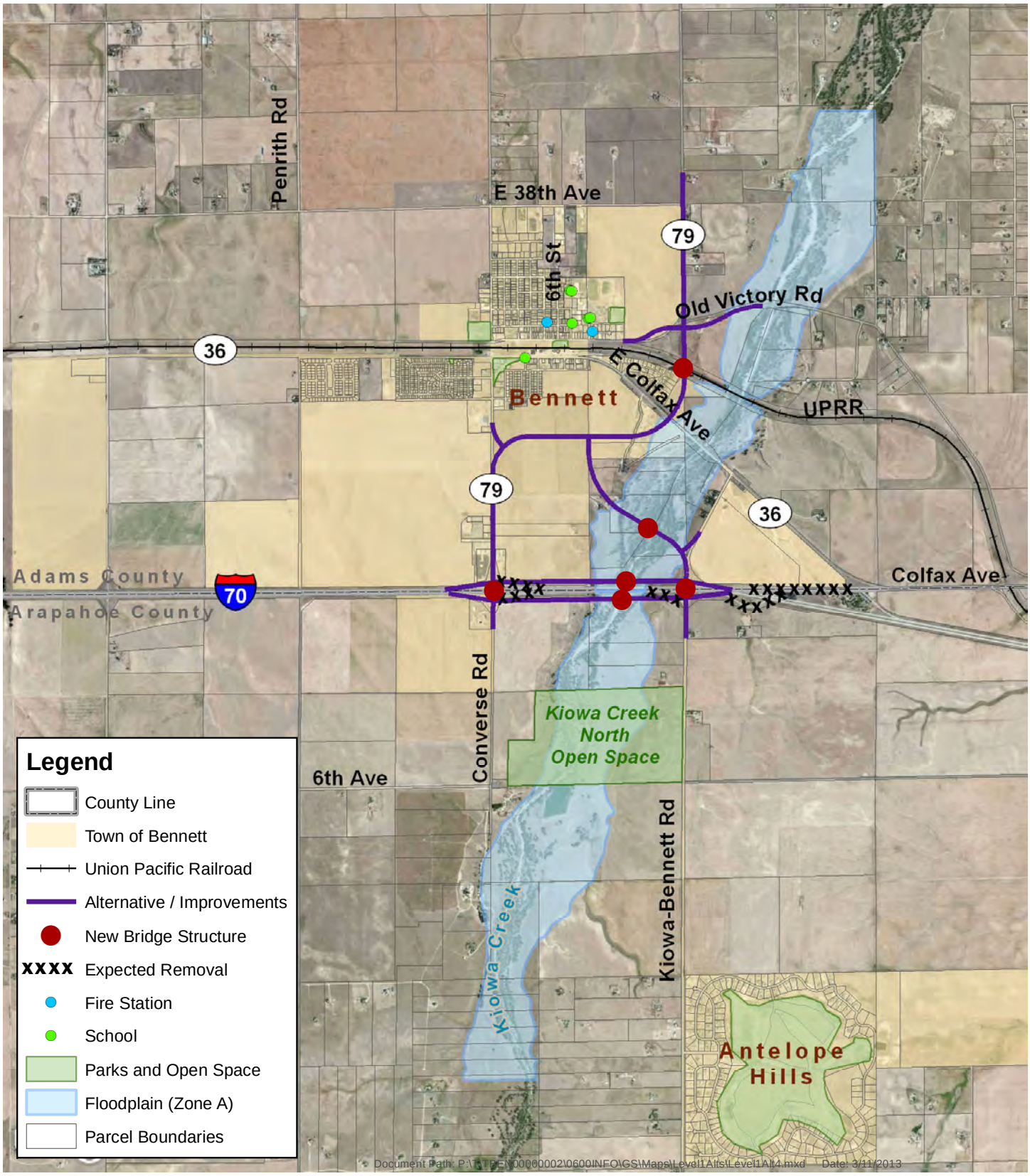
Alt 5: East Railroad Crossing with Central Kiowa-Bennett Alignment

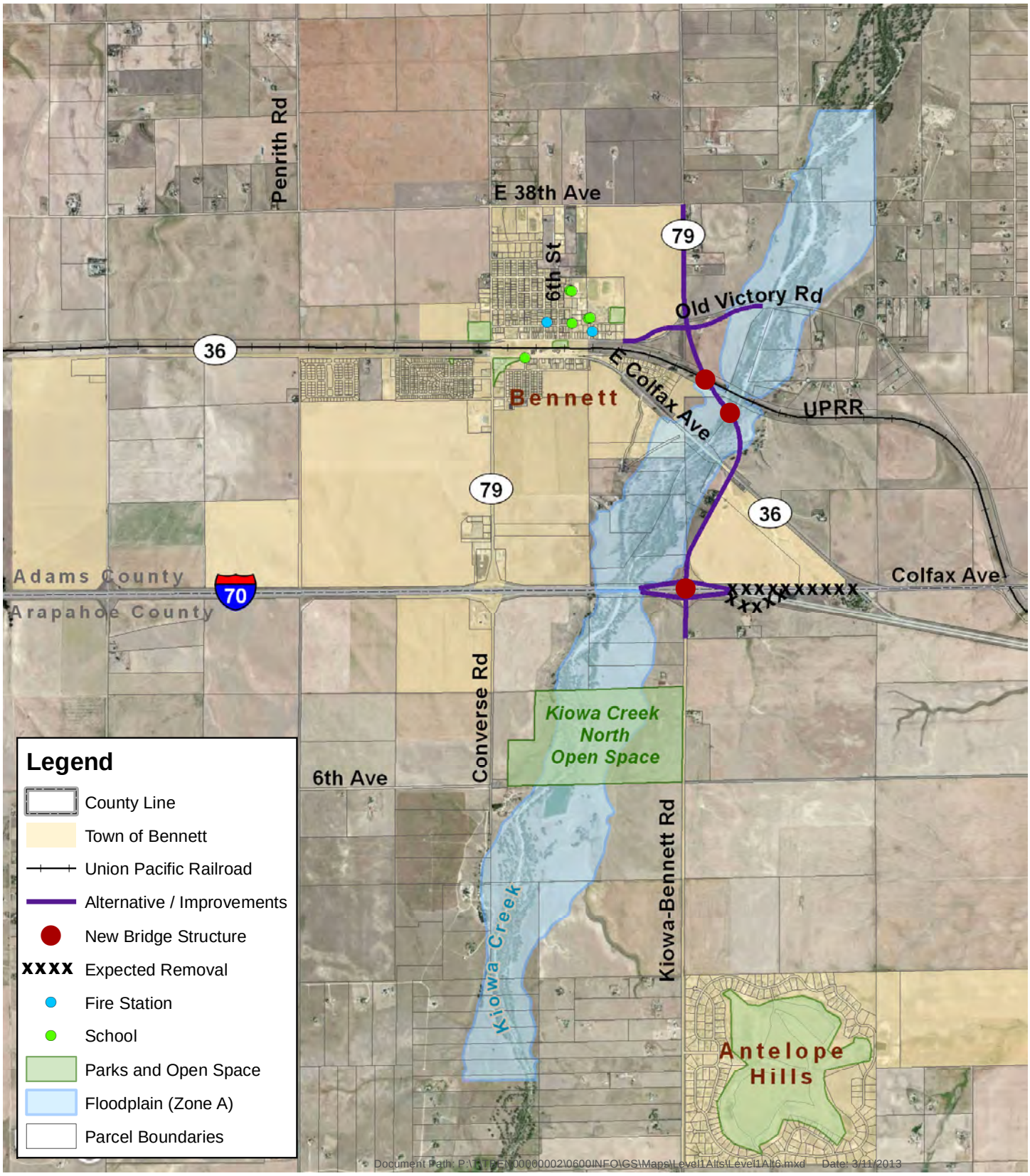


Bennett ADAMS COUNTY COLORADO Arapahoe County Colorado's First DOT DEPARTMENT OF TRANSPORTATION

0 0.25 0.5
Miles

N W E S

Alt 6: East SH 79 with Kiowa-Bennett Railroad Crossing

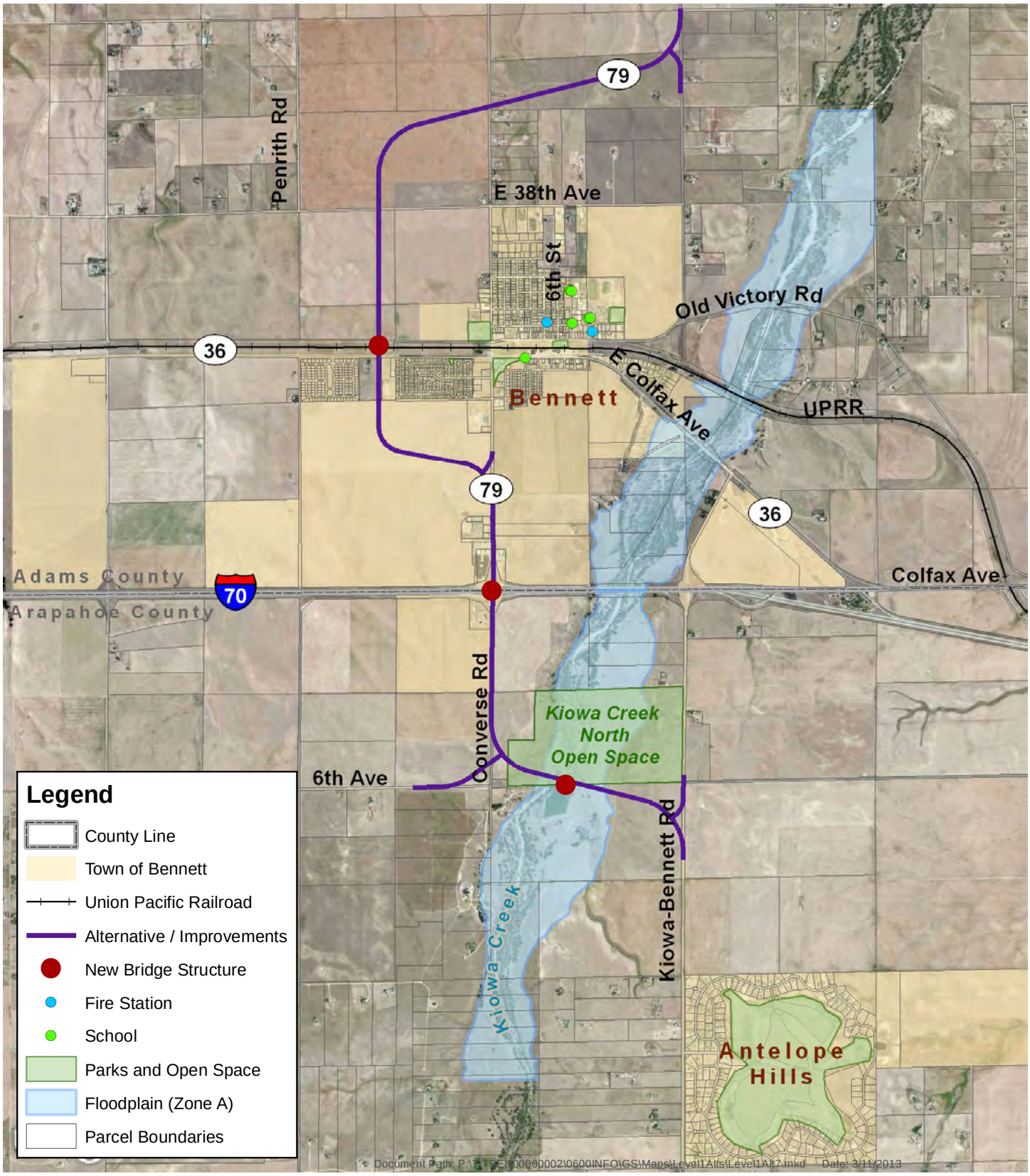


Bennett ADAMS COUNTY COLORADO Arapahoe County Colorado's First DOT DEPARTMENT OF TRANSPORTATION

0 0.25 0.5
Miles

N W E S

Alt 7: West Railroad Crossing with West Kiowa-Bennett Alignment



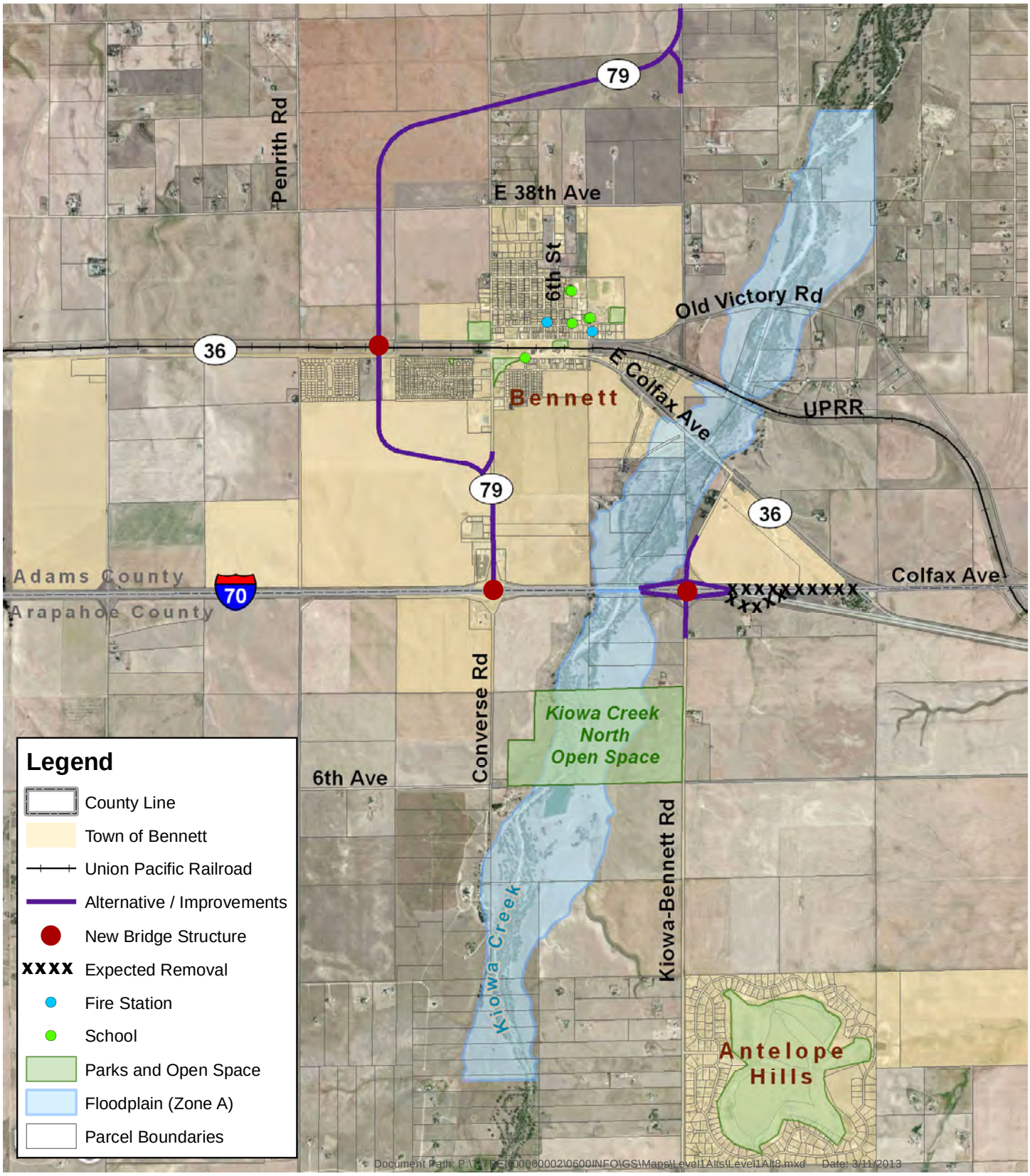
Bennett ADAMS COUNTY COLORADO Arapahoe County Colorado's First DOT DEPARTMENT OF TRANSPORTATION

0 0.25 0.5
Miles

N W E S

SH 79 and Kiowa-Bennett Corridor PEL Study

Alt 8: West Railroad Crossing with Full Kiowa-Bennett Diamond



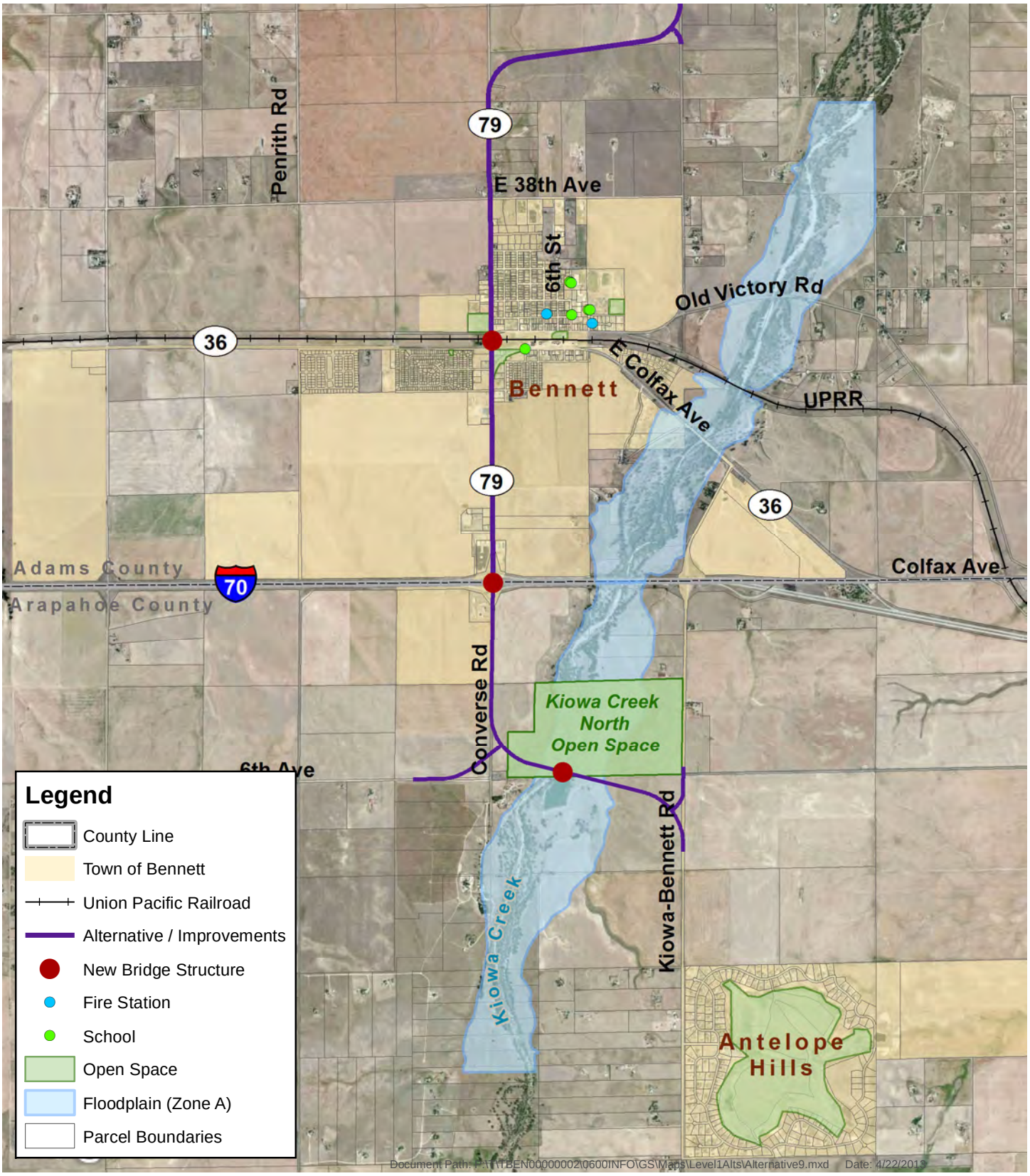
Bennett · Adams County Colorado · Arapahoe County Colorado's First · DOT Department of Transportation

0 0.25 0.5 Miles

N W E S

SH 79 AND KIOWA-BENNETT CORRIDOR PEL STUDY

Alt 9: Central Railroad Crossing with West Kiowa-Bennett Alignment



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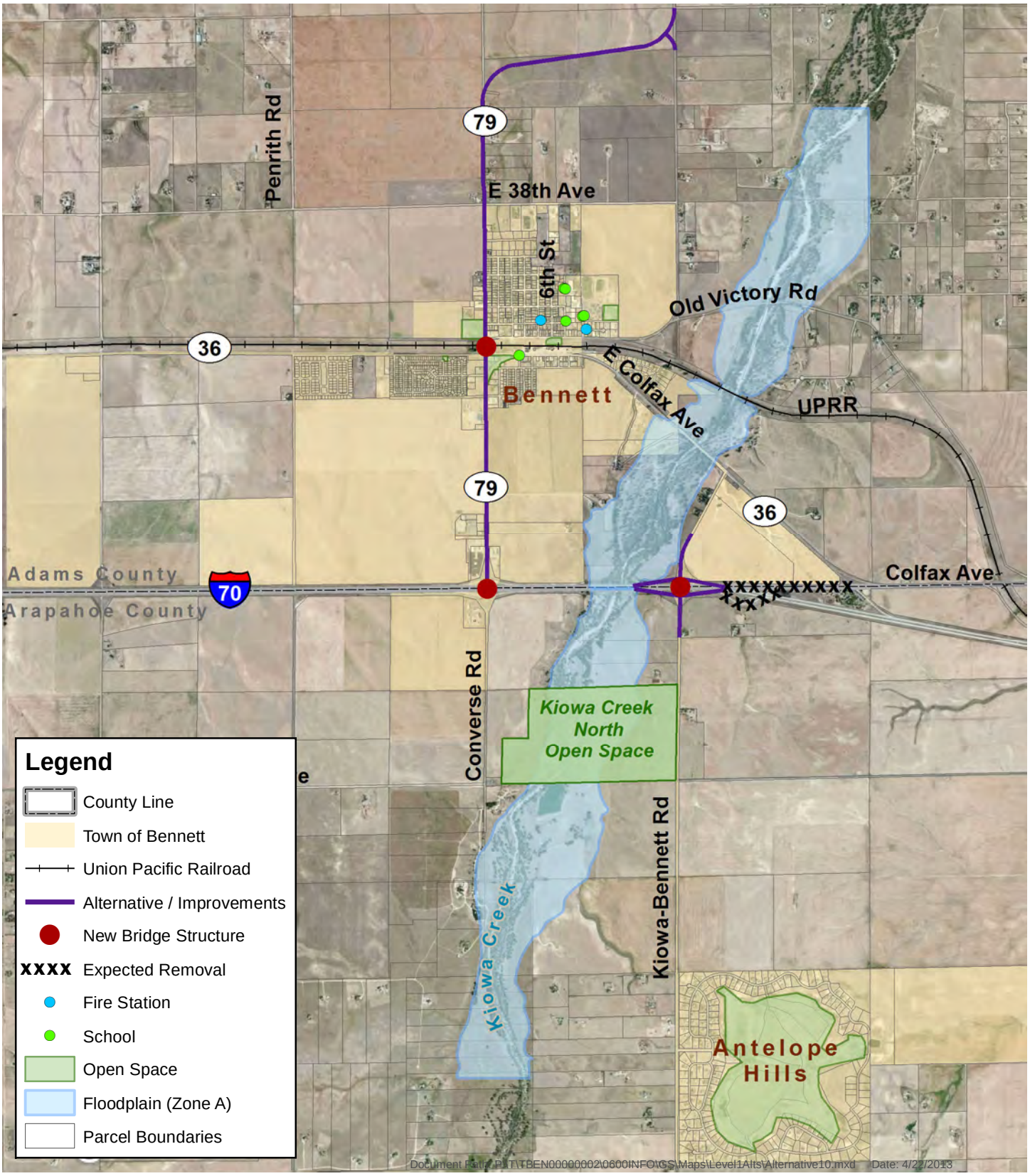
0 0.25 0.5
Miles

N W E S

SH 79 AND KIOWA-BENNETT CORRIDOR PEL STUDY

Alt 10: Central Railroad Crossing with Full Kiowa-Bennett Diamond



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APPENDIX C

LEVEL 2 SCREENING MATRIX

SH 79 and Kiowa-Bennett Corridor
Planning and Environmental Linkage (PEL) Study
Level 2 Screening Alternatives Matrix - 5/2/13

Category	Level 2 Screening Criteria	Color-Code Legend/Description	NA No Action	1 East UPRR Crossing with Full K-B Diamond	2 East UPRR Crossing with Split K-B Diamond	3 East UPRR Crossing with West K-B Alignment	4 East UPRR Crossing with East K-B Alignment	5 East UPRR Crossing with Central K-B Alignment	6 East SH 79 Alignment with K-B UPRR Crossing	9 Central UPRR Crossing with West K-B Alignment
Improve Regional Mobility and Connectivity	SH 79 Travel Time	Green = Travel time < 4.6 min Black = Travel time 4.6-5.9 min Red = Travel time > 5.9 min	6.5 min	5.0 min 10-30% reduction	5.0 min 10-30% reduction	5.0 min 10-30% reduction	5.0 min 10-30% reduction	5.0 min 10-30% reduction	4.1 min >30% reduction	5.7 min 10-30% reduction
	Kiowa-Bennett Road Travel Time	Green = Travel time < 6.3 min Black = Travel time 6.3 - 8.0 min Red = Travel time > 8.0 min	8.9 min	6.9 min 10-30% reduction	6.9 min 10-30% reduction	8.6 min <10% reduction	8.4 min <10% reduction	7.1 min 10-30% reduction	6.5 min 10-30% reduction	9.3 min <10% reduction
	Kiowa-Bennett Road Connection to I-70	Green = Travel distance EB < 5.5 mi, WB < 5.0 mi Black = Travel distance EB 5.5 - 7.5 mi, WB 5.0 - 6.0 mi Red = Travel distance EB > 7.5 mi, WB > 6.0 mi	EB = 9.03 mi WB = 6.88 mi	EB = 4.36 mi WB = 4.47 mi	EB = 4.36 mi WB = 4.49 mi	EB = 6.11 mi WB = 4.17 mi	EB = 3.03 mi WB = 6.11 mi	EB = 4.36 mi WB = 4.49 mi	EB = 4.36 mi WB = 4.47 mi	EB = 6.11 mi WB = 4.17 mi
	SH 79 Heavy Vehicle Movements	Green = No stops and turns Black = 1 - 2 stops and turns Red = 3 or more stops and turns	NB = 3 (2 right, 1 left) SB = 3 (1 right, 2 left)	NB = 0 SB = 0	NB = 0 SB = 0	NB = 0 SB = 0	NB = 0 SB = 0	NB = 0 SB = 0	NB = 0 SB = 0	NB = 0 SB = 0
	Kiowa-Bennett Road Heavy Vehicle Movements	Green = No stops and turns Black = 1 - 2 stops and turns Red = 3 or more stops and turns	NB = 3 (2 right, 1 left) SB = 3 (1 right, 2 left)	NB = 2 (1 right, 1 left) SB = 2 (1 right, 1 left)	NB = 2 (1 right, 1 left) SB = 2 (1 right, 1 left)	NB = 0 SB = 0	NB = 2 (1 right, 1 left) SB = 2 (1 right, 1 left)	NB = 1 (right) SB = 1 (left)	NB = 0 SB = 0	NB = 0 SB = 0
Reduce At-Grade Railroad Crossing Conflict and Delay	At-Grade Crossing Delay	Green = Reduction of more than 60% Black = Reduction of 30 to 60% Red = Reduction less than 30%	Approx. 3,900 veh-hrs of delay	Approx 55% reduction	Approx 55% reduction	Approx 55% reduction	Approx 55% reduction	Approx 55% reduction	Approx 50% reduction	Approx 65% reduction
	At-Grade Crossing School Bus Movements	Green = All buses will use grade separated crossing Black = Some buses will use grade separated crossing Red = No buses will use grade separated crossing	All buses must use at-grade crossing	Buses traveling to east and/or south may use SH 79 realignment	Buses traveling to east and/or south may use SH 79 realignment	Buses traveling to east and/or south may use SH 79 realignment	Buses traveling to east and/or south may use SH 79 realignment	Buses traveling to east and/or south may use SH 79 realignment	Buses traveling to east and/or south may use SH 79 realignment	All buses would use at-grade crossing; SH 79 access would be limited
	Emergency Response Time	Green = Addresses all three major concerns* Black = Addresses 1-2 major concerns* Red = Does not address major concerns* ** See evaluation criteria memo for a detailed description*	Does not address congestion in town or K-B connectivity to I-70	Addresses all concerns	Additional stops required on Frontage Road	A direct connection to I-70 at K-B is preferred	Out of direction travel required to access K-B area	Additional stops required on Frontage Road	Addresses all concerns	Does not address congestion in town or K-B connectivity to I-70
Address Safety Concerns	Heavy Vehicle and Pedestrian Conflict	Green = Only local trucks on Palmer Ave Black = Local and some cut-through trucks on Palmer Ave Red = Trucks will typically use Palmer Ave	Local and regional trucks use SH 79/Palmer Ave	Trucks will use SH 79 realignment or US 36/Colfax	Trucks will use SH 79 realignment or US 36/Colfax	Trucks will use SH 79 realignment or US 36/Colfax	Trucks will use SH 79 realignment or US 36/Colfax	Trucks will use SH 79 realignment or US 36/Colfax	Palmer Ave may serve as a cut-through route for US 36/Colfax trips	US 36/Colfax and SH 79 access will be limited and result in trucks on local roads
	Hazardous Materials Routes	Green = Reduction of more than 75% Black = Reduction of 25-75% Red = Reduction of less than 25%	80 buildings impacted	8 buildings impacted 90% reduction	8 buildings impacted 90% reduction	8 buildings impacted 90% reduction	8 buildings impacted 90% reduction	8 buildings impacted 90% reduction	8 buildings impacted 90% reduction	48 buildings impacted 40% reduction
	Roadway Geometric Improvements	Green = Improves all 4 identified issues* Black = Improves 2 - 3 of the identified issues* Red = Improves 0 - 1 of the identified issues* ** See evaluation criteria memo for a detailed description*	No Improvements	Improves SH 79/Old Victory Rd and SH 79/I-70 ramps	Improves SH 79/Old Victory Rd and SH 79/I-70 ramps	Improves SH 79/Old Victory Rd, SH 79/I-70 ramps, and K-B Road	Improves SH 79/Old Victory Rd, SH 79/I-70 ramps, and K-B Road	Improves SH 79/Old Victory Rd and SH 79/I-70 ramps	Improves SH 79/Old Victory and K-B Road	Improves K-B Road and SH 79/I-70 ramps
	Potential Design Variances	Green = No variances Black = 1 variance needed Red = More than 1 variance anticipated	N/A	Variance needed for 1 mi interchange spacing	No variance anticipated	No variance anticipated	No variance anticipated	No variance anticipated	Variance needed for 1 mi interchange spacing	No variance anticipated
Avoid and Minimize Environmental Impacts	Potentially Impacted Parks and Recreational Areas	Green = No impacts Black = 1 site and 0.1 - 1 acres Red = More than 1 site or more than 1 acre	No Impacts	No Impacts	No Impacts	18.65 acres impacted	0.26 acres impacted	No Impacts	No Impacts	19.43 acres impacted
	Potentially Impacted Threatened and Endangered Species Areas	Green = Fewer than 5 acres impacted Black = 5 to 10 acres impacted Red = More than 10 acres impacted	No Impacts	7.3 acres	10.1 acres	3.0 acres	3.4 acres	15.4 acres	10.3 acres	2.8 acres
	Potentially Impacted Sensitive Biological Habitat	Green = Floodplain impacts < 2,000 ft Black = Floodplain impacts 2,000 - 5,000 ft Red = Floodplain impacts > 5,000 ft	No Impacts	1,840 ft (0 structures)	4,700 ft (2 structures)	3,290 ft (1 structure)	1,520 ft (0 structures)	7,170 ft (3 structures)	3,410 ft (1 structure)	1,770 ft (1 structure)
	Potentially Impacted Noise Receptors	Green = No receptors within 500 or 1,000 ft of roadway Black = 1 - 30 receptors within 500 or 1,000 ft of roadway Red = More than 30 receptors within 500 or 1,000 ft of roadway	No Impacts	25 receptors	25 receptors	25 receptors	28 receptors	29 receptors	27 receptors	60 receptors
Avoid and Minimize Community Impacts	Right-of-way Required (acres) including "corner" property takes	Green = Less than 50 acres Black = 50 - 80 acres Red = More than 80 acres	None	41.55 acres	57.42 acres	85.62 acres	74.36 acres	69.24 acres	26.80 acres	98.42 acres
	Right-of-way Required (properties)	Green = Less than 25 properties Black = 25 - 50 properties Red = More than 50 properties	None	Residential= 17 Commercial= 3 Public= 2 (1 full, 21 partial)	Residential= 19 Commercial= 5 Public= 2 (1 full, 25 partial)	Residential= 18 Commercial= 4 Public= 3 (1 full, 24 partial)	Residential= 19 Commercial= 3 Public= 3 (1 full, 24 partial)	Residential= 22 Commercial= 5 Public= 2 (1 full, 28 partial)	Residential= 15 Commercial= 0 Public= 1 (0 full, 16 partial)	Residential= 52 Commercial= 14 Public= 11 (22 full, 55 partial)
	Consistency with Established Local Plans and Visions	Green = Consistent Red = Not consistent	**Not Consistent** Local plans include improvements	**Consistent** Local plans recommend realignment of SH 79 and K-B access to I-70	**Consistent** Local plans recommend realignment of SH 79 and K-B access to I-70	**Consistent** Local plans recommend realignment of SH 79 and K-B access to I-70	**Consistent** Local plans recommend realignment of SH 79 and K-B access to I-70	**Consistent** Local plans recommend realignment of SH 79 and K-B access to I-70	**Not Consistent** Town land use plans include realignment adjacent to downtown	**Not Consistent** Town plans do not include SH 79 through residential area
Enhance Economic Opportunities	Access Economic Development	Green = At least 1 mile of added commercial frontage Black = Less than 1 mile of added commercial frontage Red = No new developable commercial frontage	No new developable commercial frontage	>1 mile of added commercial development in town limits	>1 mile of added commercial development in town limits	>1 mile of added commercial development in town limits	>1 mile of added commercial development in town limits	>1 mile of added commercial development in town limits	<1 mile of new commercial development in town limits	<1 mile of new commercial development in town limits
Accommodate Multimodal Connections	Multimodal Access	Green = Consistent Red = Not consistent	**Not Consistent** Local plans include connections utilizing roadway improvements	**Consistent** Future trails connect to planned roadway improvements	**Consistent** Future trails connect to planned roadway improvements	**Consistent** Future trails connect to planned roadway improvements	**Consistent** Future trails connect to planned roadway improvements	**Consistent** Future trails connect to planned roadway improvements	**Not Consistent** Limited opportunity for future trail connections as planned	**Not Consistent** Limited opportunity for future trail connections as planned
Maximize Constructability	Conceptual Level Probable Construction Costs, excluding ROW costs (Low, Moderate, High)	Green = Relative low cost Black = Relative moderate cost Red = Relative high cost	None	**$** **Low** Few structures; minimal traffic control	**$$$** **High** Multiple structures spanning floodplain	**$$** **Medium** Kiowa Creek crossing requires large structure	**$** **Low** Few structures; minimal traffic control	**$$$** **High** Multiple structures spanning floodplain	**$** **Medium** Large amount of cut/fill work	**$$$** **High** Kiowa Creek crossing, high traffic control and ROW costs
	Constructability Issues (Low, Moderate, High)	Green = No major anticipated complexity Black = Some anticipated complexity Red = Major anticipated complexity	N/A	**Low** Typical structure and traffic impacts	**Moderate** Due to major water crossings	**Easy** Typical structure and traffic impacts	**Easy** Typical structure and traffic impacts	**High** Due to major water crossings	**Moderate** Due to complexity of bridge over Kiowa Creek	**High** Due to major water crossings and traffic impacts
	Railroad Process and Requirements (Easy, Moderate, Difficult)	Green = Minimal concerns with railroad coordination Black = Some concerns with railroad coordination Red = Major concerns with railroad coordination	N/A	**Moderate** Underpass would require shoe-fly railroad detour but overpass would require less coordination	**Moderate** Underpass would require shoe-fly railroad detour but overpass would require less coordination	**Moderate** Underpass would require shoe-fly railroad detour but overpass would require less coordination	**Moderate** Underpass would require shoe-fly railroad detour but overpass would require less coordination	**Moderate** Underpass would require shoe-fly railroad detour but overpass would require less coordination	**Moderate** Underpass would require shoe-fly railroad detour but overpass would require less coordination	**Easy** Overpass would need minimal railroad coordination
	Phasing Opportunities (Easy, Moderate, Difficult)	Green = Opportunities for phased improvements Black = Limited opportunities for phased implementation Red = Usable sections difficult to implement in phases	N/A	**Easy** Smaller usable sections could be implemented at separate times	**Moderate** Larger cost to implement individual sections	**Easy** Smaller usable sections could be implemented at separate times	**Easy** Smaller usable sections could be implemented at separate times	**Moderate** Larger cost to implement individual sections	**Difficult** Meaningful sections would require larger funding sources	**Difficult** Meaningful sections would require larger funding sources
DRAFT RECOMMENDATIONS			**CARRIED FORWARD**	**CARRIED FORWARD**	**CARRIED FORWARD**	**ELIMINATED**	**CARRIED FORWARD**	**ELIMINATED**	**ELIMINATED**	**ELIMINATED**
NOTES			Does not improve regional mobility and connectivity becuase trucks and through traffic must utilize the downtown Bennett roadway network and there is no reduction in travel time through the study area. Does not reduce conflict and delay at the at-grade railroad crossing. Does not address safety concerns. Not consistent with local plans for multimodal access or local planning efforts.	Improves regional mobility with reduced travel time along SH 79 & K-B. Improves regional connectivity with direct connection from K-B to I-70. Reduces conflict & delay at the at-grade crossing by diverting regional traffic and buses to the grade separation. Addresses safety concerns by reducing the vehicle and pedestrian conflict & reducing the homes/places exposed to haz mat route. Relatively low environmental & property impacts. Consistent with local & regional plans. Relatively low construction costs.	Improves regional mobility with reduced travel time along SH 79 & K-B. Improves regional connectivity with direct connection from K-B to I-70. Reduces conflict & delay at the at-grade crossing by diverting regional traffic & buses to the grade separation. Addresses safety concerns by reducing the vehicle and pedestrian conflict & reducing the homes/places exposed to haz mat route. Relatively high environmental impacts due to ramp connections. Relatively low property impacts. Consistent with local & regional plans. Relatively high construction costs due to multiple creek crossings.	Does not improve regional mobility to the extent of other alternatives with a minimal reduction in K-B travel time. Does not improve regional connectivity to the extent of other alternatives with K-B using Converse interchange. Reduces conflict & delay at the at-grade crossing by diverting regional traffic and buses to the grade separation. Addresses safety concerns by reducing the vehicle and pedestrian conflict & reducing the homes/places exposed to haz mat route. Relatively high environmental & property impacts with K-B realignment. Consistent with local & regional plans. Relatively moderate construction costs with creek crossing.	Does not improve regional mobility to the extent of other alternatives with a minimal reduction in K-B travel time. Does not improve regional connectivity to the extent of other alternatives with out-of-direction travel for K-B traffic to WB I-70. Reduces conflict & delay at the at-grade crossing by diverting regional traffic and buses to the grade separation. Addresses safety concerns by reducing the vehicle and pedestrian conflict & reducing the homes/places exposed to haz mat route. Relatively low environmental & moderate property impacts. Consistent with local & regional plans. Relatively low construction costs.	Improves regional mobility with reduced travel time along SH 79 & K-B. Improves regional connectivity with direct connection from K-B to I-70. Reduces conflict & delay at the at-grade crossing by diverting regional traffic & buses to the grade separation. Addresses safety concerns by reducing the vehicle and pedestrian conflict & reducing the homes/places exposed to haz mat route. Relatively high environmental & moderate property impacts. Consistent with local & regional plans. Relatively high construction costs due to multiple creek crossings.	Improves regional mobility with reduced travel time along SH 79 & K-B. Improves regional connectivity with direct connection from K-B to I-70. Reduces conflict & delay at the at-grade crossing by diverting regional traffic & buses to the grade separation. Addresses safety concerns by reducing the homes/places exposed to haz mat route, but does not reduce vehicle & pedestrian conflict as much as other alternatives. Relatively high environmental impacts & low property impacts. Not consistent with local plans due to bypass of planned high density areas. Relatively moderate construction costs due to creek crossing & difficult to implement in phases.	Does not improve regional mobility to the extent of other alternatives with a minimal reduction in K-B travel time. Does not improve regional connectivity to the extent of other alternatives with K-B using Converse interchange. Does not reduce conflict & delay at the at-grade crossing to the extent of other alternatives due to no access for US 36 and local roads to grade separation. Addresses safety concerns by reducing the homes/places exposed to haz mat route, but does not reduce vehicle & pedestrian conflict as much as other alternatives. Relatively high environmental & property impacts. Not consistent with local plans due to highway through downtown neighborhood. Relatively moderate construction costs with creek crossing & difficult to implement in phases.

"K-B" = Kiowa-Bennett Road

APPENDIX D

LEVEL 3 ALTERNATIVES COST ESTIMATES

SH 79 and Kiowa-Bennett Corridor PEL
Level 3 Alternatives Cost Estimates

Alternative 1A (Full Diamond Ramp Connections)	
Kiowa-Bennett Road	
Kiowa-Bennett Road at Colfax Avenue	$874,110
Kiowa-Bennett Road and I-70 Interchange (Inclues new bridge over I-70)	$5,728,254
	$6,600,000
SH 79	
SH 79 and I-70 Interchange (Includes new bridge over I-70)	$6,069,547
SH 79 Improvements (I-70 to Colfax Ave.)	$13,092,388
SH 79 Improvements (Colfax Ave to north end) (Includes bridge over railroad)	$11,899,282
	$31,100,000
Total Cost Alternative 1A	**$37,700,000**

Alternative 1B (Full Diamond Ramps With Colfax Ave. Connections)	
Kiowa-Bennett Road	
Kiowa-Bennett Road at Colfax Avenue	$874,110
Kiowa-Bennett Road and I-70 Interchange (Inclues new bridge over I-70)	$5,714,314
	$6,590,000
SH 79	
SH 79 and I-70 Interchange (Includes new bridge over I-70)	$6,069,547
SH 79 Improvements (I-70 to Colfax Ave.)	$13,092,388
SH 79 Improvements (Colfax Ave to north end) (Includes bridge over railroad)	$11,899,282
	$31,100,000
Total Cost Alternative 1B	**$37,700,000**

Alternative 2 (Split Diamond Ramp Connections)	
Kiowa-Bennett Road	
Kiowa-Bennett Road at Colfax Avenue	$874,110
Kiowa-Bennett Road and I-70 Interchange (Inclues new bridge over I-70)	$18,874,059
	$19,750,000
SH 79	
SH 79 and I-70 Interchange (Includes new bridge over I-70)	$6,069,547
SH 79 Improvements (I-70 to Colfax Ave.)	$13,092,388
SH 79 Improvements (Colfax Ave to north end) (Includes bridge over railroad)	$11,899,282
	$31,100,000
Total Cost Alternative 2	**$50,900,000**

Alternative 4 (East Kiowa-Bennett Road Alignment)	
Kiowa-Bennett Road	
Kiowa-Bennett Road at Colfax Avenue	$874,110
Kiowa-Bennett Road and I-70 Interchange (Inclues new bridge over I-70)	$11,069,417
	$11,940,000
SH 79	
SH 79 and I-70 Interchange (Includes new bridge over I-70)	$6,069,547
SH 79 Improvements (I-70 to Colfax Ave.)	$13,092,388
SH 79 Improvements (Colfax Ave to north end) (Includes bridge over railroad)	$11,899,282
	$31,100,000
Total Cost Alternative 4	**$43,000,000**

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS					
I-70 AT STATE HIGHWAY 79 - INTERCHANGE RECONSTRUCTION					
ITEM NO.	**ITEM**	**UNIT**	**UNIT COST**	**ALTERNATIVE ITEM TOTAL**	**ALTERNATIVE TOTAL COST**
201	Clearing and Grubbing	LS	$10,000		$0
202	Removal of Pavement	SY	$3.50	10,033	$35,117
202	Removal of Bridge	EA	$75,000.00	1	$75,000
203	Earthwork	CY	$10.00	8,241	$82,413
212	Seeding (Native)	ACRE	$1,000.00	0.6	$604
213	Mulching (Weed Free Straw)	ACRE	$1,000.00	0.6	$604
213	Mulch Tackifier	LB	$2.00	121	$242
304	Aggregate Base Course (Class 6)	TON	$15.00	3,699	$55,490
403	Hot Mix Asphalt (Grading SX) (100)	TON	$80.00	1,920	$153,586
412	Concrete Pavement (9 Inch) [I-70 Ramps & Intersections]	SY	$40.00	7,999	$319,951
412	Gravel Shoulder	TON	$25.00		$0
603	SH 79 Bridge over UPRR (60' wide x 190 lf)	SF	$120.00		$0
603	SH 79 Bridge Over I-70 (81' wide x 228 lf)	SF	$120.00	18,468	$2,216,160
603	Kiowa-Bennett Bridge Over I-70 (52' wide x 228 lf)	SF	$120.00		$0
603	Other Structures	SF	$200.00		$0
608	Concrete Sidewalk	SY	$40.00	565	$22,591
608	Concrete Curb Ramp	SY	$75.00	75	$5,592
609	Curb and Gutter Type 2 (Section I-B)	LF	$18.00		$0
609	Curb and Gutter Type 2 (Section II-B)	LF	$22.00	975	$21,450
610	Median Landscaping (native grasses/non irrigated)	SF	$2.00		$0
610	Median Cover Material (Patterned Concrete)	SF	$6.00		$0
614	Traffic Signal	EA	$300,000.00	1	$300,000
	SUB TOTAL:				**$3,288,800**
	RIGHT-OF-WAY	SF	$0.50		$0
	Temporary Easement (10% of total ROW)	SF	$0.15		$0
	RIGHT-OF-WAY TOTAL:				**$0**
	Erosion Control	LS	5%	$164,440	$164,440
	Drainage	LS	5%	$164,440	$164,440
	Mobilization	LS	4%	$131,552	$131,552
	Surveying	LS	5%	$164,440	$164,440
	Pavement Marking & Signing	LS	5%	$164,440	$164,440
	Traffic Control (5%)	LS	5%	$164,440	$164,440
	Utilities (5%)	LS	5%	$164,440	$164,440
	FORCE ACCOUNTS AND MINOR CONTRACT REVISIONS	LS	2%	$65,776	$65,776
	SUB TOTAL:				**$4,472,769**
	DESIGN		8%	$357,821	$357,821
	CONSTRUCTION MANAGEMENT		10%	$447,277	$447,277
	SUB TOTAL:				**$5,277,867**
	GENERAL CONTINGENCY AND UNACCOUNTED ITEMS		15%	$791,680	$791,680
	CONSTRUCTION COST TOTAL 2013				**$6,069,547**

Notes:

1) Assume 8" for Hot Mix Asphalt Application rate is 110 lb/sq yd/inch
2) Assume 6" for Aggregate Base Course (Class 6). Application rate is 133 lb/cf.
3) Lighting is not included.

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS					
STATE HIGHWAY 79 RECONSTRUCTION - I-70 TO COLFAX AVENUE					
ITEM NO.	**ITEM**	**UNIT**	**UNIT COST**	**ALTERNATIVE ITEM TOTAL**	**ALTERNATIVE TOTAL COST**
201	Clearing and Grubbing	LS	$25,000	1	$25,000
202	Removal of Pavement	SY	$3.50	26,570	$92,996
202	Removal of Bridge	EA	$75,000.00		$0
203	Earthwork	CY	$10.00	84,573	$845,730
212	Seeding (Native)	ACRE	$1,000.00	1.7	$1,651
213	Mulching (Weed Free Straw)	ACRE	$1,000.00	1.7	$1,651
213	Mulch Tackifier	LB	$2.00	330	$660
304	Aggregate Base Course (Class 6)	TON	$15.00	27,343	$410,152
403	Hot Mix Asphalt (Grading SX) (100)	TON	$80.00	42,779	$3,422,344
412	Concrete Pavement (9 Inch) [I-70 Ramps & Intersections]	SY	$40.00		$0
412	Gravel Shoulder	TON	$25.00		$0
603	SH 79 Bridge over UPRR (60' wide x 190 lf)	SF	$120.00		$0
603	SH 79 Bridge Over I-70 (81' wide x 228 lf)	SF	$120.00		$0
603	Kiowa-Bennett Bridge Over I-70 (52' wide x 228 lf)	SF	$120.00		$0
603	Other Structures	SF	$200.00		$0
608	Concrete Sidewalk	SY	$40.00	17,966	$718,653
608	Concrete Curb Ramp	SY	$75.00	226	$16,933
609	Curb and Gutter Type 2 (Section I-B)	LF	$18.00	1,326	$23,868
609	Curb and Gutter Type 2 (Section II-B)	LF	$22.00	18,037	$396,814
610	Median Landscaping (native grasses/non irrigated)	SF	$2.00	82,821	$165,642
610	Median Cover Material (Patterned Concrete)	SF	$6.00	9,860	$59,160
614	Traffic Signal	EA	$300,000.00	2	$600,000
	SUB TOTAL:				**$6,781,254**
	RIGHT-OF-WAY	SF	$0.50	826,276	$413,138
	Temporary Easement (10% of total ROW)	SF	$0.15	82,628	$12,395
	RIGHT-OF-WAY TOTAL:				**$425,533**
	Erosion Control	LS	5%	$339,063	$339,063
	Drainage	LS	5%	$339,063	$339,063
	Mobilization	LS	4%	$271,250	$271,250
	Surveying	LS	5%	$339,063	$339,063
	Pavement Marking & Signing	LS	5%	$339,063	$339,063
	Traffic Control (5%)	LS	5%	$339,063	$339,063
	Utilities (5%)	LS	5%	$339,063	$339,063
	FORCE ACCOUNTS AND MINOR CONTRACT REVISIONS	LS	2%	$135,625	$135,625
	SUB TOTAL:				**$9,648,038**
	DESIGN		8%	$771,843	$771,843
	CONSTRUCTION MANAGEMENT		10%	$964,804	$964,804
	SUB TOTAL:				**$11,384,685**
	GENERAL CONTINGENCY AND UNACCOUNTED ITEMS		15%	$1,707,703	$1,707,703
	CONSTRUCTION COST TOTAL 2013				**$13,092,388**

Notes:

1) Assume 8" for Hot Mix Asphalt Application rate is 110 lb/sq yd/inch
2) Assume 6" for Aggregate Base Course (Class 6). Application rate is 133 lb/cf.
3) Lighting is not included.

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS					
STATE HIGHWAY 79 RECONSTRUCTION - COLFAX AVENUE TO NORTH END					
ITEM NO.	**ITEM**	**UNIT**	**UNIT COST**	**ALTERNATIVE ITEM TOTAL**	**ALTERNATIVE TOTAL COST**
201	Clearing and Grubbing	LS	$25,000	1	$25,000
202	Removal of Pavement	SY	$3.50	10,221	$35,773
202	Removal of Bridge	EA	$75,000.00		$0
203	Earthwork	CY	$10.00	294,024	$2,940,240
212	Seeding (Native)	ACRE	$1,000.00	13.1	$13,073
213	Mulching (Weed Free Straw)	ACRE	$1,000.00	13.1	$13,073
213	Mulch Tackifier	LB	$2.00	2,615	$5,229
304	Aggregate Base Course (Class 6)	TON	$15.00	13,027	$195,409
403	Hot Mix Asphalt (Grading SX) (100)	TON	$80.00	19,155	$1,532,366
412	Concrete Pavement (9 Inch) [I-70 Ramps & Intersections]	SY	$40.00		$0
412	Gravel Shoulder	TON	$25.00		$0
603	SH 79 Bridge over UPRR (60' wide x 190 lf)	SF	$120.00	11,400	$1,368,000
603	SH 79 Bridge Over I-70 (81' wide x 228 lf)	SF	$120.00		$0
603	Kiowa-Bennett Bridge Over I-70 (52' wide x 228 lf)	SF	$120.00		$0
603	Other Structures	SF	$200.00		$0
608	Concrete Sidewalk	SY	$40.00	39	$1,560
608	Concrete Curb Ramp	SY	$75.00		$0
609	Curb and Gutter Type 2 (Section I-B)	LF	$18.00		$0
609	Curb and Gutter Type 2 (Section II-B)	LF	$22.00		$0
610	Median Landscaping (native grasses/non irrigated)	SF	$2.00		$0
610	Median Cover Material (Patterned Concrete)	SF	$6.00		$0
614	Traffic Signal	EA	$300,000.00		$0
	SUB TOTAL:				**$6,129,722**
	RIGHT-OF-WAY	SF	$0.50	839,598	$419,799
	Temporary Easement (10% of total ROW)	SF	$0.15	83,960	$12,594
	RIGHT-OF-WAY TOTAL:				**$432,393**
	Erosion Control	LS	5%	$306,486	$306,486
	Drainage	LS	5%	$306,486	$306,486
	Mobilization	LS	4%	$245,189	$245,189
	Surveying	LS	5%	$306,486	$306,486
	Pavement Marking & Signing	LS	5%	$306,486	$306,486
	Traffic Control (5%)	LS	5%	$306,486	$306,486
	Utilities (5%)	LS	5%	$306,486	$306,486
	FORCE ACCOUNTS AND MINOR CONTRACT REVISIONS	LS	2%	$122,594	$122,594
	SUB TOTAL:				**$8,768,815**
	DESIGN		8%	$701,505	$701,505
	CONSTRUCTION MANAGEMENT		10%	$876,882	$876,882
	SUB TOTAL:				**$10,347,202**
	GENERAL CONTINGENCY AND UNACCOUNTED ITEMS		15%	$1,552,080	$1,552,080
	CONSTRUCTION COST TOTAL 2013				**$11,899,282**

Notes:

1) Assume 8" for Hot Mix Asphalt Application rate is 110 lb/sq yd/inch
2) Assume 6" for Aggregate Base Course (Class 6). Application rate is 133 lb/cf.
3) Lighting is not included.

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS					
COLFAX AVENUE RECONSTRUCTION AT KIOWA-BENNETT ROAD					
ITEM NO.	**ITEM**	**UNIT**	**UNIT COST**	**ALTERNATIVE ITEM TOTAL**	**ALTERNATIVE TOTAL COST**
201	Clearing and Grubbing	LS	$25,000		$0
202	Removal of Pavement	SY	$3.50	7,985	$27,948
202	Removal of Bridge	EA	$75,000.00		$0
203	Earthwork	CY	$10.00	3,446	$34,458
212	Seeding (Native)	ACRE	$1,000.00	0.4	$397
213	Mulching (Weed Free Straw)	ACRE	$1,000.00	0.4	$397
213	Mulch Tackifier	LB	$2.00	79	$159
304	Aggregate Base Course (Class 6)	TON	$15.00	3,093	$46,401
403	Hot Mix Asphalt (Grading SX) (100)	TON	$80.00	4,548	$363,870
412	Concrete Pavement (9 Inch) [I-70 Ramps & Intersections]	SY	$40.00		$0
412	Gravel Shoulder	TON	$25.00		$0
603	SH 79 Bridge over UPRR (60' wide x 190 lf)	SF	$120.00		$0
603	SH 79 Bridge Over I-70 (81' wide x 228 lf)	SF	$120.00		$0
603	Kiowa-Bennett Bridge Over I-70 (52' wide x 228 lf)	SF	$120.00		$0
603	Other Structures	SF	$200.00		$0
608	Concrete Sidewalk	SY	$40.00		$0
608	Concrete Curb Ramp	SY	$75.00		$0
609	Curb and Gutter Type 2 (Section I-B)	LF	$18.00		$0
609	Curb and Gutter Type 2 (Section II-B)	LF	$22.00		$0
610	Median Landscaping (native grasses/non irrigated)	SF	$2.00		$0
610	Median Cover Material (Patterned Concrete)	SF	$6.00		$0
614	Traffic Signal	EA	$300,000.00		$0
	SUB TOTAL:				**$473,630**
	RIGHT-OF-WAY	SF	$0.50	21	$11
	Temporary Easement (10% of total ROW)	SF	$0.15	2	$1
	RIGHT-OF-WAY TOTAL:				**$12**
	Erosion Control	LS	5%	$23,682	$23,682
	Drainage	LS	5%	$23,682	$23,682
	Mobilization	LS	4%	$18,945	$18,945
	Surveying	LS	5%	$23,682	$23,682
	Pavement Marking & Signing	LS	5%	$23,682	$23,682
	Traffic Control (5%)	LS	5%	$23,682	$23,682
	Utilities (5%)	LS	5%	$23,682	$23,682
	FORCE ACCOUNTS AND MINOR CONTRACT REVISIONS	LS	2%	$9,473	$9,473
	SUB TOTAL:				**$644,149**
	DESIGN		8%	$51,532	$51,532
	CONSTRUCTION MANAGEMENT		10%	$64,415	$64,415
	SUB TOTAL:				**$760,096**
	GENERAL CONTINGENCY AND UNACCOUNTED ITEMS		15%	$114,014	$114,014
	CONSTRUCTION COST TOTAL 2013				**$874,110**

Notes:

1) Assume 8" for Hot Mix Asphalt Application rate is 110 lb/sq yd/inch
2) Assume 6" for Aggregate Base Course (Class 6). Application rate is 133 lb/cf.
3) Lighting is not included.

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS					
I-70 AT KIOWA-BENNETT ROAD - INTERCHANGE RECONSTRUCTION (ALTERNATIVE 1A)					
ITEM NO.	**ITEM**	**UNIT**	**UNIT COST**	**ALTERNATIVE ITEM TOTAL**	**ALTERNATIVE TOTAL COST**
201	Clearing and Grubbing	LS	$10,000	1	$10,000
202	Removal of Pavement	SY	$3.50	25,933	$90,765
202	Removal of Bridge	EA	$75,000.00	2	$150,000
203	Earthwork	CY	$10.00	18,870	$188,701
212	Seeding (Native)	ACRE	$1,000.00	2.2	$2,221
213	Mulching (Weed Free Straw)	ACRE	$1,000.00	2.2	$2,221
213	Mulch Tackifier	LB	$2.00	444	$889
304	Aggregate Base Course (Class 6)	TON	$15.00	8,470	$127,055
403	Hot Mix Asphalt (Grading SX) (100)	TON	$80.00	3,397	$271,799
412	Concrete Pavement (9 Inch) [I-70 Ramps & Intersections]	SY	$40.00	20,584	$823,342
412	Gravel Shoulder	TON	$25.00		$0
603	SH 79 Bridge over UPRR (60' wide x 190 lf)	SF	$120.00		$0
603	SH 79 Bridge Over I-70 (81' wide x 228 lf)	SF	$120.00		$0
603	Kiowa-Bennett Bridge Over I-70 (52' wide x 228 lf)	SF	$120.00	11,856	$1,422,720
603	Other Structures	SF	$200.00		$0
608	Concrete Sidewalk	SY	$40.00		$0
608	Concrete Curb Ramp	SY	$75.00		$0
609	Curb and Gutter Type 2 (Section I-B)	LF	$18.00		$0
609	Curb and Gutter Type 2 (Section II-B)	LF	$22.00		$0
610	Median Landscaping (native grasses/non irrigated)	SF	$2.00		$0
610	Median Cover Material (Patterned Concrete)	SF	$6.00		$0
614	Traffic Signal	EA	$300,000.00		$0
	SUB TOTAL:				**$3,089,713**
	RIGHT-OF-WAY	SF	$0.50	37,386	$18,693
	Temporary Easement (10% of total ROW)	SF	$0.15	3,739	$561
	RIGHT-OF-WAY TOTAL:				**$19,254**
	Erosion Control	LS	5%	$154,486	$154,486
	Drainage	LS	5%	$154,486	$154,486
	Mobilization	LS	4%	$123,589	$123,589
	Surveying	LS	5%	$154,486	$154,486
	Pavement Marking & Signing	LS	5%	$154,486	$154,486
	Traffic Control (5%)	LS	5%	$154,486	$154,486
	Utilities (5%)	LS	5%	$154,486	$154,486
	FORCE ACCOUNTS AND MINOR CONTRACT REVISIONS	LS	2%	$61,794	$61,794
	SUB TOTAL:				**$4,221,263**
	DESIGN		8%	$337,701	$337,701
	CONSTRUCTION MANAGEMENT		10%	$422,126	$422,126
	SUB TOTAL:				**$4,981,091**
	GENERAL CONTINGENCY AND UNACCOUNTED ITEMS		15%	$747,164	$747,164
	CONSTRUCTION COST TOTAL 2013				**$5,728,254**

Notes:

1) Assume 8" for Hot Mix Asphalt Application rate is 110 lb/sq yd/inch
2) Assume 6" for Aggregate Base Course (Class 6). Application rate is 133 lb/cf.
3) Lighting is not included.

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS					
I-70 AT KIOWA-BENNETT ROAD - INTERCHANGE RECONSTRUCTION (ALTERNATIVE 1B)					
ITEM NO.	**ITEM**	**UNIT**	**UNIT COST**	**ALTERNATIVE ITEM TOTAL**	**ALTERNATIVE TOTAL COST**
201	Clearing and Grubbing	LS	$10,000	1	$10,000
202	Removal of Pavement	SY	$3.50	13,888	$48,610
202	Removal of Bridge	EA	$75,000.00	1	$75,000
203	Earthwork	CY	$10.00	20,295	$202,953
212	Seeding (Native)	ACRE	$1,000.00	2.3	$2,320
213	Mulching (Weed Free Straw)	ACRE	$1,000.00	2.3	$2,320
213	Mulch Tackifier	LB	$2.00	464	$928
304	Aggregate Base Course (Class 6)	TON	$15.00	9,110	$136,651
403	Hot Mix Asphalt (Grading SX) (100)	TON	$80.00	3,397	$271,799
412	Concrete Pavement (9 Inch) [I-70 Ramps & Intersections]	SY	$40.00	22,721	$908,858
412	Gravel Shoulder	TON	$25.00		$0
603	SH 79 Bridge over UPRR (60' wide x 190 lf)	SF	$120.00		$0
603	SH 79 Bridge Over I-70 (81' wide x 228 lf)	SF	$120.00		$0
603	Kiowa-Bennett Bridge Over I-70 (52' wide x 228 lf)	SF	$120.00	11,856	$1,422,720
603	Other Structures	SF	$200.00		$0
608	Concrete Sidewalk	SY	$40.00		$0
608	Concrete Curb Ramp	SY	$75.00		$0
609	Curb and Gutter Type 2 (Section I-B)	LF	$18.00		$0
609	Curb and Gutter Type 2 (Section II-B)	LF	$22.00		$0
610	Median Landscaping (native grasses/non irrigated)	SF	$2.00		$0
610	Median Cover Material (Patterned Concrete)	SF	$6.00		$0
614	Traffic Signal	EA	$300,000.00		$0
	SUB TOTAL:				**$3,082,159**
	RIGHT-OF-WAY	SF	$0.50	37,386	$18,693
	Temporary Easement (10% of total ROW)	SF	$0.15	3,739	$561
	RIGHT-OF-WAY TOTAL:				**$19,254**
	Erosion Control	LS	5%	$154,108	$154,108
	Drainage	LS	5%	$154,108	$154,108
	Mobilization	LS	4%	$123,286	$123,286
	Surveying	LS	5%	$154,108	$154,108
	Pavement Marking & Signing	LS	5%	$154,108	$154,108
	Traffic Control (5%)	LS	5%	$154,108	$154,108
	Utilities (5%)	LS	5%	$154,108	$154,108
	FORCE ACCOUNTS AND MINOR CONTRACT REVISIONS	LS	2%	$61,643	$61,643
	SUB TOTAL:				**$4,210,991**
	DESIGN		8%	$336,879	$336,879
	CONSTRUCTION MANAGEMENT		10%	$421,099	$421,099
	SUB TOTAL:				**$4,968,969**
	GENERAL CONTINGENCY AND UNACCOUNTED ITEMS		15%	$745,345	$745,345
	CONSTRUCTION COST TOTAL 2013				**$5,714,314**

Notes:

1) Assume 8" for Hot Mix Asphalt Application rate is 110 lb/sq yd/inch
2) Assume 6" for Aggregate Base Course (Class 6). Application rate is 133 lb/cf.
3) Lighting is not included.

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS					
I-70 AT KIOWA-BENNETT ROAD - FRONTAGE ROAD CONSTRUCTION (ALTERNATIVE 2)					
ITEM NO.	**ITEM**	**UNIT**	**UNIT COST**	**ALTERNATIVE ITEM TOTAL**	**ALTERNATIVE TOTAL COST**
201	Clearing and Grubbing	LS	$10,000	1	$10,000
202	Removal of Pavement	SY	$3.50	25,933	$90,765
202	Removal of Bridge	EA	$75,000.00	2	$150,000
203	Earthwork	CY	$10.00	67,017	$670,169
212	Seeding (Native)	ACRE	$1,000.00	4.1	$4,101
213	Mulching (Weed Free Straw)	ACRE	$1,000.00	4.1	$4,101
213	Mulch Tackifier	LB	$2.00	820	$1,641
304	Aggregate Base Course (Class 6)	TON	$15.00	15,041	$225,617
403	Hot Mix Asphalt (Grading SX) (100)	TON	$80.00	3,397	$271,799
412	Concrete Pavement (9 Inch) [I-70 Ramps & Intersections]	SY	$40.00	42,541	$1,701,645
412	Gravel Shoulder	TON	$25.00		$0
603	SH 79 Bridge over UPRR (60' wide x 190 lf)	SF	$120.00		$0
603	SH 79 Bridge Over I-70 (81' wide x 228 lf)	SF	$120.00		$0
603	Kiowa-Bennett Bridge Over I-70 (52' wide x 228 lf)	SF	$120.00	11,856	$1,422,720
603	I-70 Frontage Road Bridges (40' wide x 550 lf) X 2 Bridges	SF	$120.00	44,000	$5,280,000
608	Concrete Sidewalk	SY	$40.00		$0
608	Concrete Curb Ramp	SY	$75.00		$0
609	Curb and Gutter Type 2 (Section I-B)	LF	$18.00		$0
609	Curb and Gutter Type 2 (Section II-B)	LF	$22.00		$0
610	Median Landscaping (native grasses/non irrigated)	SF	$2.00		$0
610	Median Cover Material (Patterned Concrete)	SF	$6.00		$0
614	Traffic Signal	EA	$300,000.00		$0
	SUB TOTAL:				**$9,832,557**
	RIGHT-OF-WAY	SF	$0.50	1,041,530	$520,765
	Temporary Easement (10% of total ROW)	SF	$0.15	104,153	$15,623
	RIGHT-OF-WAY TOTAL:				**$536,388**
	Erosion Control	LS	5%	$491,628	$491,628
	Drainage	LS	5%	$491,628	$491,628
	Mobilization	LS	4%	$393,302	$393,302
	Surveying	LS	5%	$491,628	$491,628
	Pavement Marking & Signing	LS	5%	$491,628	$491,628
	Traffic Control (5%)	LS	5%	$491,628	$491,628
	Utilities (5%)	LS	5%	$491,628	$491,628
	FORCE ACCOUNTS AND MINOR CONTRACT REVISIONS	LS	2%	$196,651	$196,651
	SUB TOTAL:				**$13,908,666**
	DESIGN		8%	$1,112,693	$1,112,693
	CONSTRUCTION MANAGEMENT		10%	$1,390,867	$1,390,867
	SUB TOTAL:				**$16,412,225**
	GENERAL CONTINGENCY AND UNACCOUNTED ITEMS		15%	$2,461,834	$2,461,834
	CONSTRUCTION COST TOTAL 2013				**$18,874,059**

Notes:

1) Assume 8" for Hot Mix Asphalt Application rate is 110 lb/sq yd/inch
2) Assume 6" for Aggregate Base Course (Class 6). Application rate is 133 lb/cf.
3) Lighting is not included.

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS					
I-70 AT KIOWA-BENNETT ROAD - NEW ROADWAY ALIGNMENT (ALTERNATIVE 4)					
ITEM NO.	**ITEM**	**UNIT**	**UNIT COST**	**ALTERNATIVE ITEM TOTAL**	**ALTERNATIVE TOTAL COST**
201	Clearing and Grubbing	LS	$40,000	1	$40,000
202	Removal of Pavement	SY	$3.50	25,933	$90,765
202	Removal of Bridge	EA	$75,000.00	2	$150,000
203	Earthwork	CY	$10.00	50,284	$502,845
212	Seeding (Native)	ACRE	$1,000.00	4.0	$4,000
213	Mulching (Weed Free Straw)	ACRE	$1,000.00	4.0	$4,000
213	Mulch Tackifier	LB	$2.00	800	$1,600
304	Aggregate Base Course (Class 6)	TON	$15.00	22,571	$338,572
403	Hot Mix Asphalt (Grading SX) (100)	TON	$80.00	24,388	$1,951,019
412	Concrete Pavement (9 Inch) [I-70 Ramps & Intersections]	SY	$40.00	20,000	$800,000
412	Gravel Shoulder	TON	$25.00	455	$11,372
603	SH 79 Bridge over UPRR (60' wide x 190 lf)	SF	$120.00		$0
603	SH 79 Bridge Over I-70 (81' wide x 228 lf)	SF	$120.00		$0
603	Kiowa-Bennett Bridge Over I-70 (52' wide x 228 lf)	SF	$120.00	11,856	$1,422,720
603	Concrete Box Culvert (16x8)(3-Sided)(Precast)	LF	$2,000.00	76	$152,000
608	Concrete Sidewalk	SY	$40.00		$0
608	Concrete Curb Ramp	SY	$75.00		$0
609	Curb and Gutter Type 2 (Section I-B)	LF	$18.00		$0
609	Curb and Gutter Type 2 (Section II-B)	LF	$22.00		$0
610	Median Landscaping (native grasses/non irrigated)	SF	$2.00		$0
610	Median Cover Material (Patterned Concrete)	SF	$6.00		$0
614	Traffic Signal	EA	$300,000.00		$0
	SUB TOTAL:				**$5,468,891**
	RIGHT-OF-WAY	SF	$0.50	1,397,240	$698,620
	Temporary Easement (10% of total ROW)	SF	$0.15	139,724	$20,959
	RIGHT-OF-WAY TOTAL:				**$719,579**
	Erosion Control	LS	5%	$273,445	$273,445
	Drainage	LS	5%	$273,445	$273,445
	Mobilization	LS	4%	$218,756	$218,756
	Surveying	LS	5%	$273,445	$273,445
	Pavement Marking & Signing	LS	5%	$273,445	$273,445
	Traffic Control (5%)	LS	5%	$273,445	$273,445
	Utilities (5%)	LS	5%	$273,445	$273,445
	FORCE ACCOUNTS AND MINOR CONTRACT REVISIONS	LS	2%	$109,378	$109,378
	SUB TOTAL:				**$8,157,271**
	DESIGN		8%	$652,582	$652,582
	CONSTRUCTION MANAGEMENT		10%	$815,727	$815,727
	SUB TOTAL:				**$9,625,580**
	GENERAL CONTINGENCY AND UNACCOUNTED ITEMS		15%	$1,443,837	$1,443,837
	CONSTRUCTION COST TOTAL 2013				**$11,069,417**

Notes:

1) Assume 8" for Hot Mix Asphalt Application rate is 110 lb/sq yd/inch
2) Assume 6" for Aggregate Base Course (Class 6). Application rate is 133 lb/cf.
3) Lighting is not included.

APPENDIX E

RECOMMENDED ALTERNATIVE CONCEPTUAL PLAN SET

Oversight / NHS	
FHWA REGION VIII OVERSIGHT?	☒ NO ☐ YES
NATIONAL HIGHWAY SYSTEM?	☒ NO ☐ YES

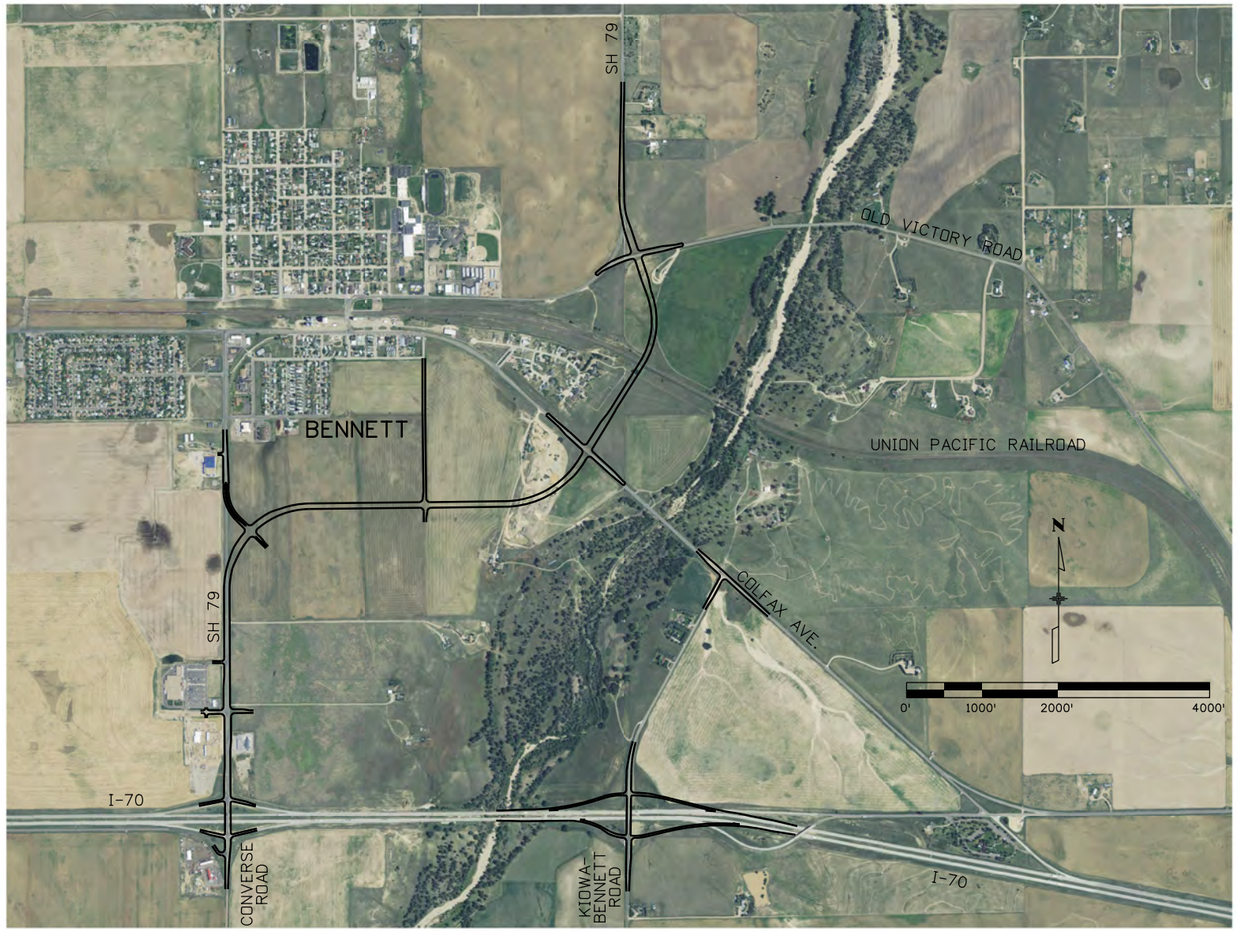
DEPARTMENT OF TRANSPORTATION
STATE OF COLORADO

HIGHWAY CONSTRUCTION BID PLANS OF PROPOSED
PROJECT NO. XXX ####-###
STATE HIGHWAY 79 AND KIOWA-BENNETT
CORRIDOR PLANNING AND ENVIRONMENTAL LINKAGE STUDY
ADAMS AND ARAPAHOE COUNTIES
CONSTRUCTION PROJECT CODE NO. #####

Related Projects:
P. E. UNDER PROJECT: XXX ####-###
Project Number
Project Code: #####

R.O.W. Projects:
R.O.W. Project Description
XXXXXXXXXXXXXX

SHEET NO.	INDEX OF SHEETS
01	TITLE SHEET
02	TYPICAL SECTIONS
03-14	ALT 1 PLAN SHEETS
15-26	ALT 1 PROFILE SHEETS



PROJECT LOCATION MAP

Print Date: 10/17/2013	Sheet Revisions	Colorado Department of Transportation	As Constructed
File Name: 30877GEN_TITLE.dgn	Date: / Comments / Init.	7328 S. Revere Parkway, Suite 204A, Centennial, CO 80112	No Revisions:
Horiz. Scale: 1:2000 Vert. Scale: As Noted		Phone: 303-365-7234 FAX: 303-790-1037	Revised:
Unit Information Unit Leader Initials		Region 1 DRG	Void:
ATKINS 4601 DTC Boulevard, Suite 700, Denver, CO 80237, Phone: (303) 221-7275 Fax: (303) 221-7276			

Contract Information	Project No./Code
Contractor:	Project Number
Resident Engineer:	Code
Project Engineer:	Sheet Number 01
PROJECT STARTED: / / ACCEPTED: / /	
Comments:	

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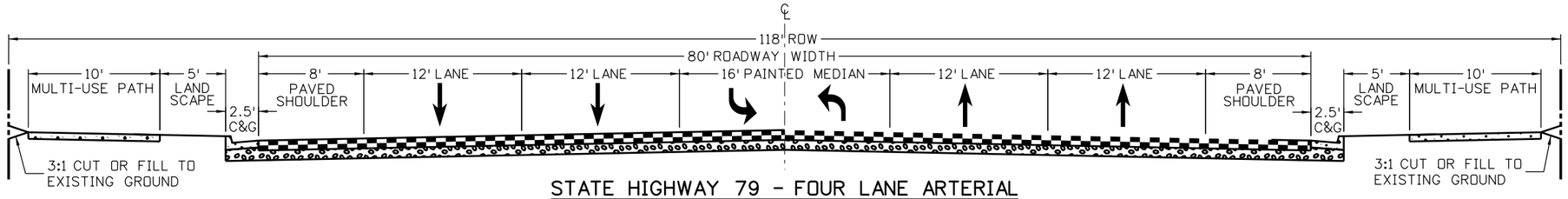
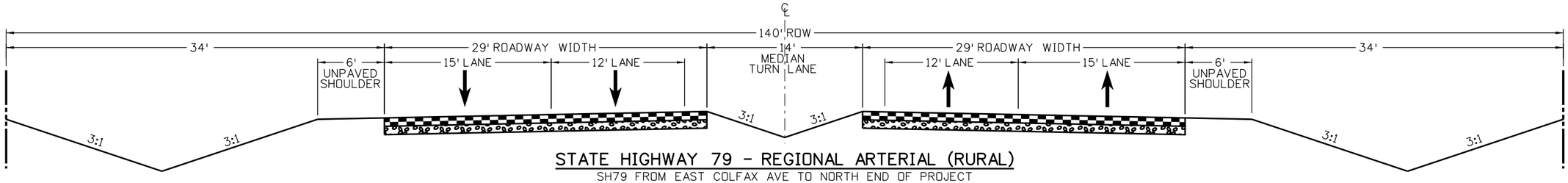


STATE HIGHWAY 79 - FOUR LANE ARTERIAL

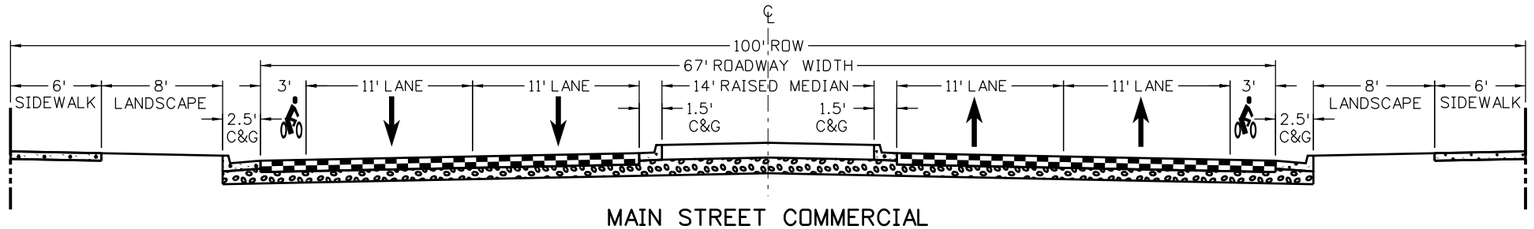
SH79 FROM I-70 TO EAST COLFAX AVE



STATE HIGHWAY 79 - REGIONAL ARTERIAL (RURAL)

SH79 FROM EAST COLFAX AVE TO NORTH END OF PROJECT

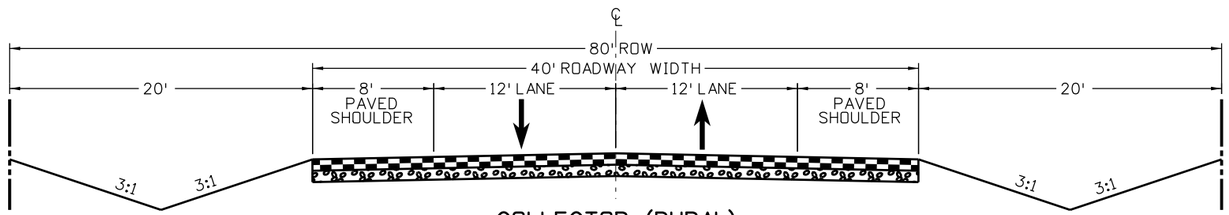
TYPICAL SECTION IS FROM FIGURE 10b OF THE ADAMS COUNTY TRANSPORTATION PLAN (DEC. 2012)



MAIN STREET COMMERCIAL

MAIN STREET

TYPICAL SECTION IS FROM PAGE 15 OF THE TOWN OF BENNETT DOWNTOWN PLANNING STUDY (DEC. 2010)



COLLECTOR (RURAL)

EAST COLFAX AVE
OLD VICTORY ROAD

TYPICAL SECTION IS FROM FIGURE 10b OF THE ADAMS COUNTY TRANSPORTATION PLAN (DEC. 2012)

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Horiz. Scale: 1:10 Vert. Scale: As Noted		Phone: 303-365-7234 FAX: 303-790-1037	Revised:
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SH 79 TYPICAL SECTIONS			Project No./Code
Designer: LDL	Structure Numbers		Project Number
Detailer: LDL			Code
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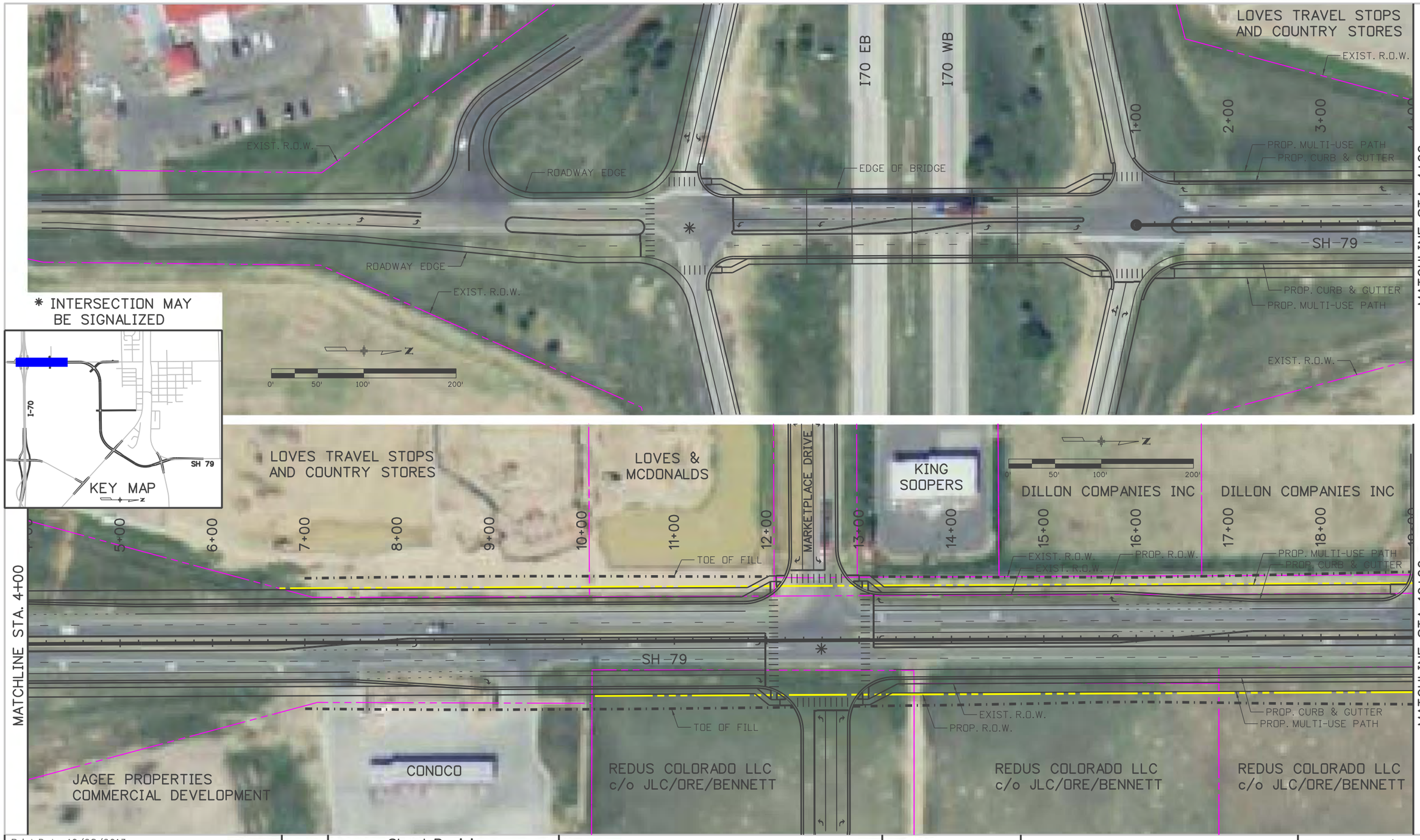

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Unit Information Unit Leader Initials			
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Void:

SH 79 PLAN SHEETS
ALTERNATIVE 1

Designer:	BCBS	Structure Numbers	
Detailer:	LDL		
Sheet Subset:	PLAN	Subset Sheets:	01 of 12

Project No./Code	
Project Number	
Code	
Sheet Number	03

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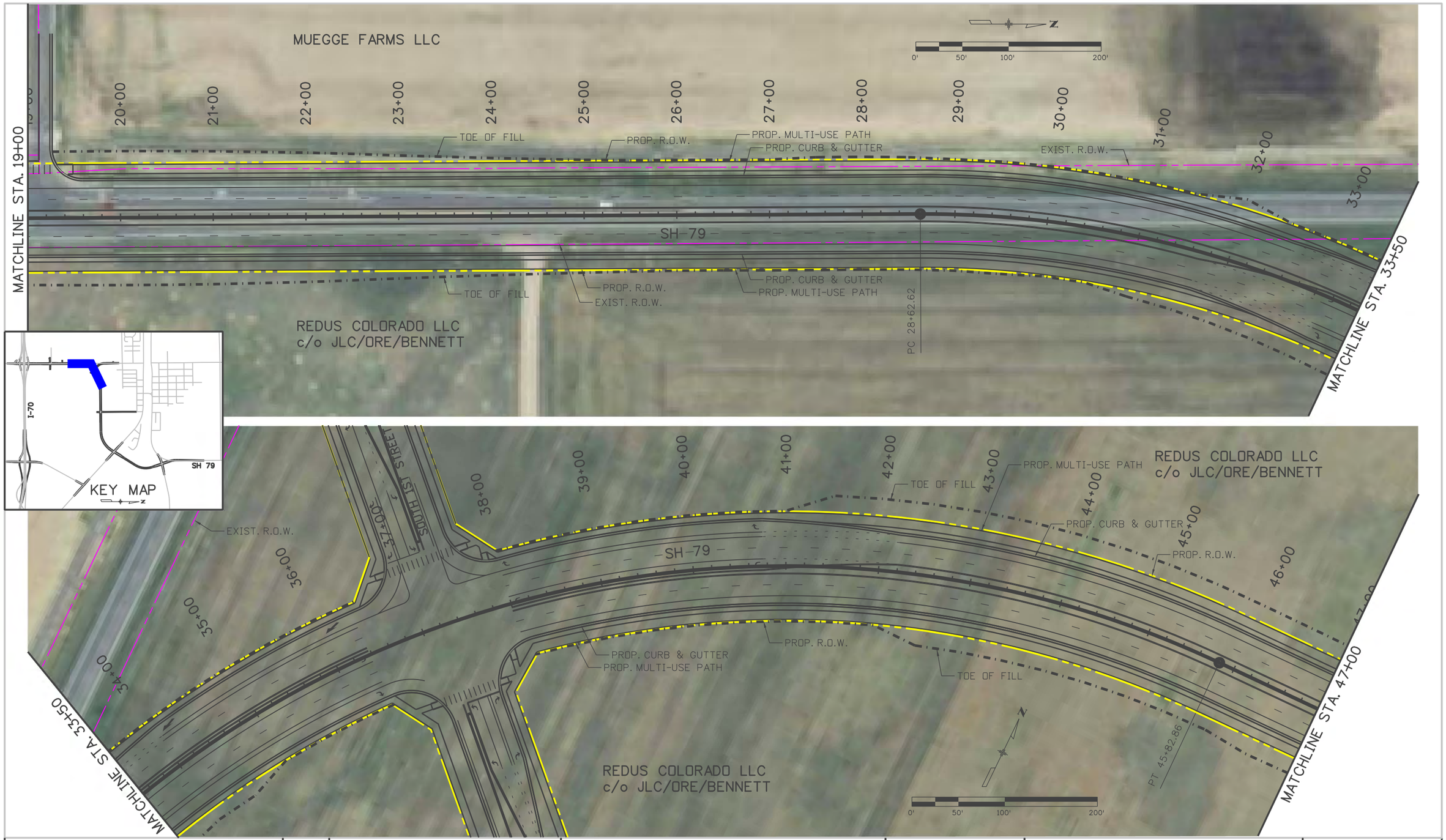

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Unit Information Unit Leader Initials			
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As Constructed	SH 79 PLAN SHEETS ALTERNATIVE 1			Project No./Code
No Revisions:				Project Number
Revised:	Designer: BCBS	Structure Numbers		Code
Void:	Detailer: LDL			
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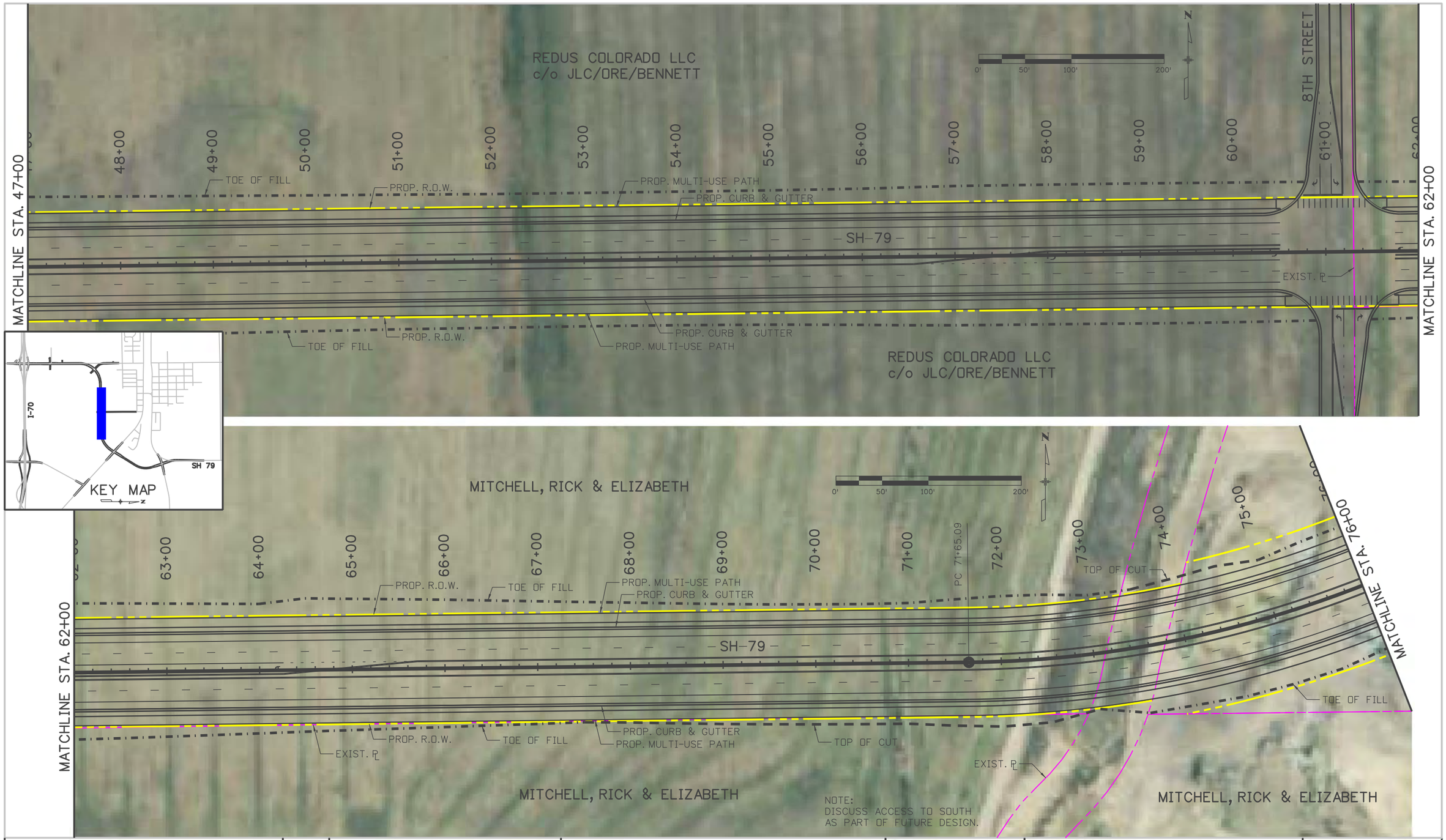

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Unit Information Unit Leader Initials			
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SH 79 PLAN SHEETS
ALTERNATIVE 1

Designer:	BCBS	Structure Numbers	
Detailer:	LDL		
Sheet Subset:	PLAN	Subset Sheets:	03 of 12

Project No./Code	
Project Number	
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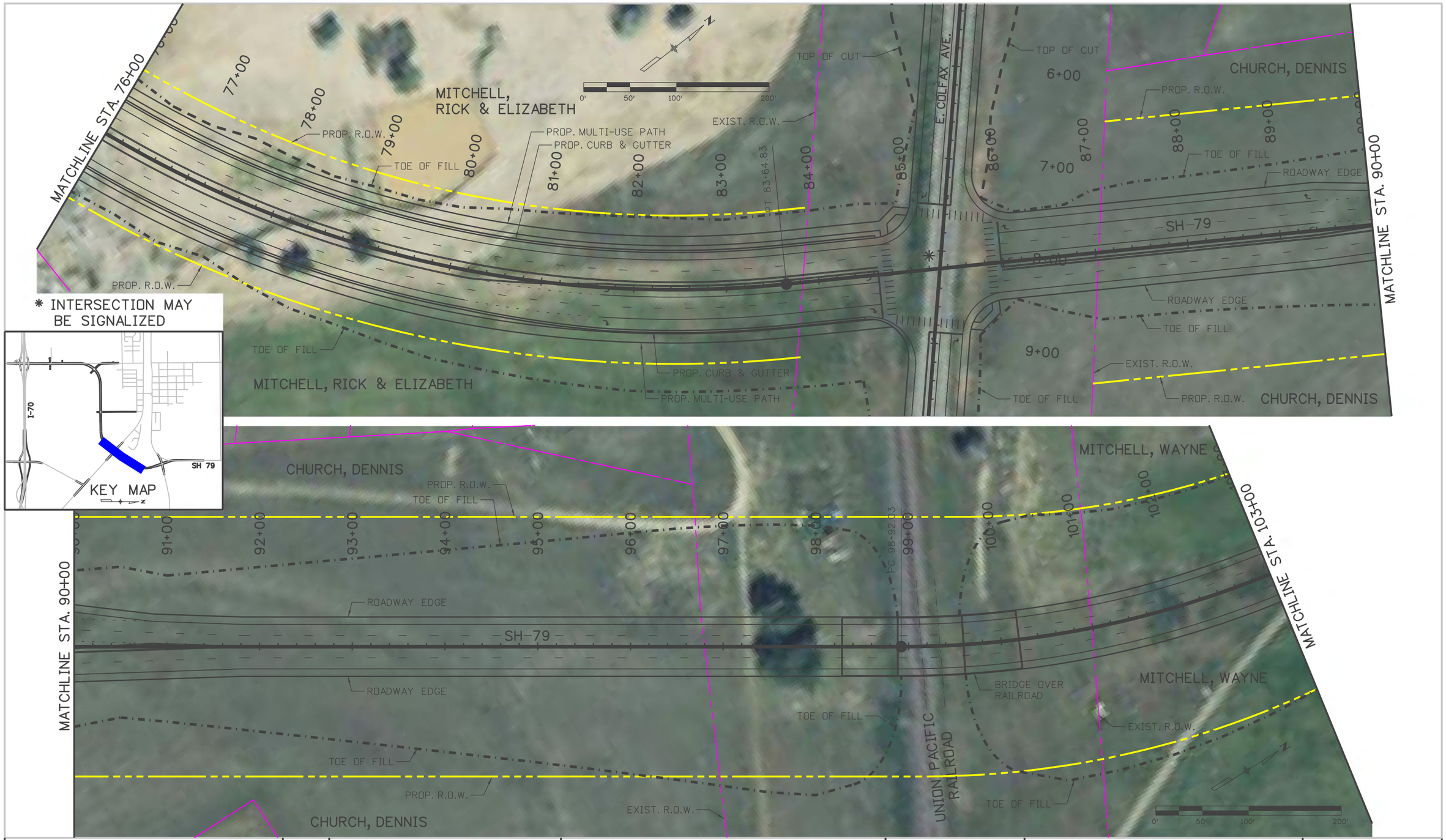

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Horiz. Scale: 1:100	Vert. Scale: As Noted					Revised:				Code
Unit Information	Unit Leader Initials				Region 1 DRG	Void:	Designer: BCBS	Structure Numbers		Sheet Number 06
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276							Detailer: LDL			
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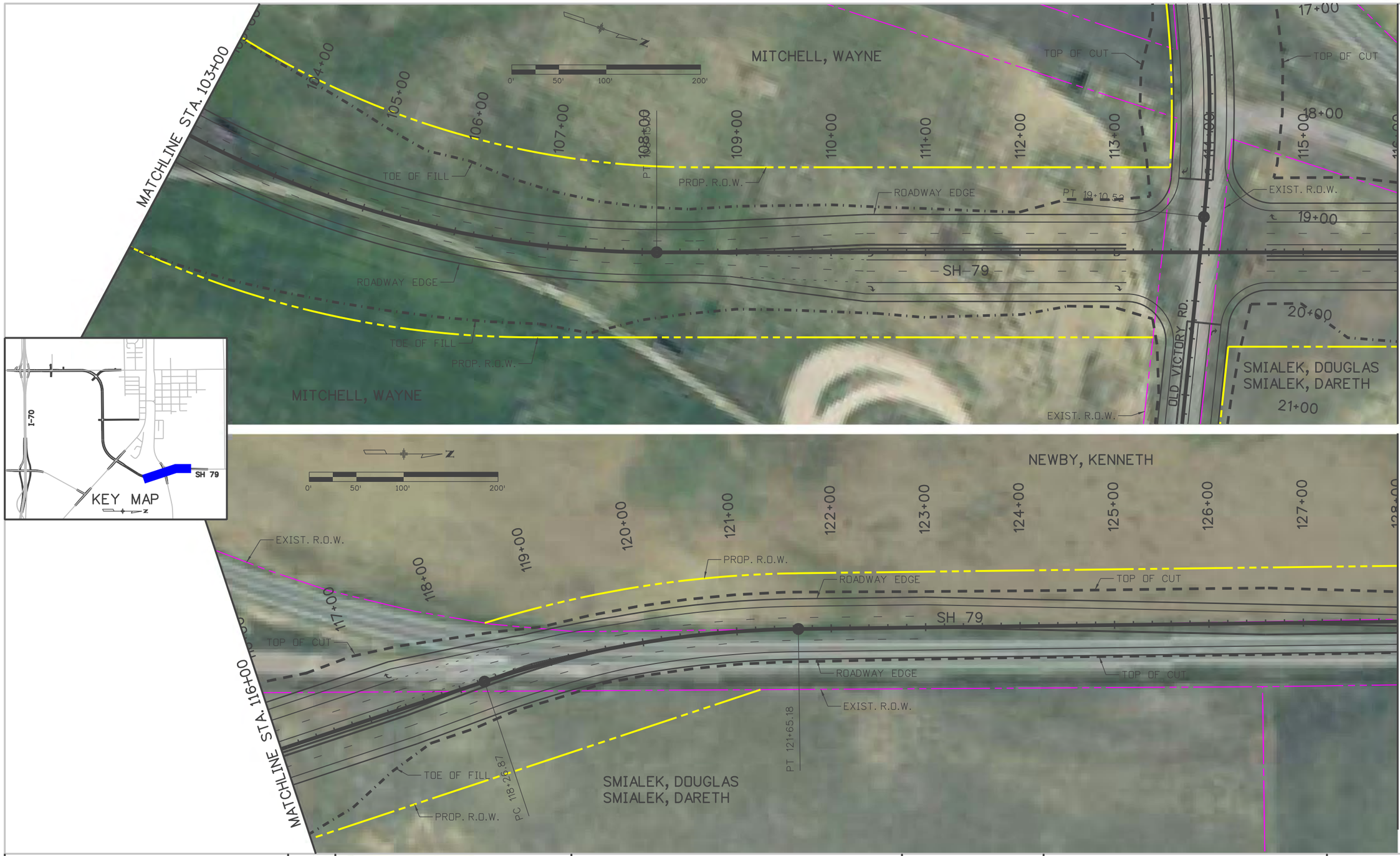

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Unit Information Unit Leader Initials		Region 1 DRG	Void:
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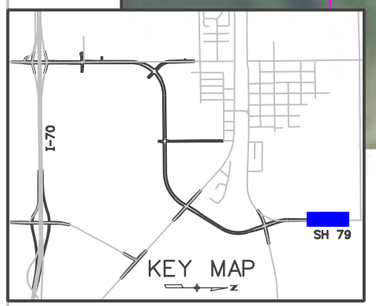

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Date:	Comments	Init.

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Print Date: 10/29/2013
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Unit Information Unit Leader Initials

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SOUTH 1ST STREET PLAN SHEET
ALTERNATIVE 1

Designer: BCBS
Detailer: LDL
Sheet Subset: PLAN
Structure Numbers
Subset Sheets: 07 of 12

Project No./Code
Project Number
Code
Sheet Number 09

Print Date: 10/29/2013	Sheet Revisions		
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Unit Information Unit Leader Initials			
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As Constructed	COLFAX AVE. & OLD VICTORY RD. PLAN SHEETS ALTERNATIVE 1			Project No./Code
No Revisions:	Designer: BCBS	Structure Numbers		Project Number
Revised:	Detailer: LDL			Code
Void:	Sheet Subset: PLAN	Subset Sheets: 08 of 12		Sheet Number 10

Print Date: 10/17/2013			
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Unit Information	Unit Leader Initials		

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Sheet Revisions		
Date:	Comments	Init.

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No Revisions:
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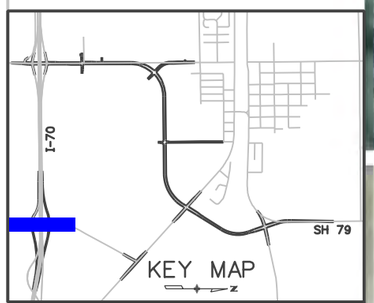
Void:

COLFAX AVE. AT KIOWA-BENNETT RD.
PLAN SHEET
ALTERNATIVE 1

Designer:	BCBS	Structure Numbers	
Detailer:	LDL		
Sheet Subset:	PLAN	Subset Sheets:	09 of 12

Project No./Code
Project Number
Code
Sheet Number 11



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Unit Information Unit Leader Initials

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Centennial, CO 80112
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Region 1 DRG

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KIOWA-BENNETT RD. PLAN SHEET
ALTERNATIVE 1

Designer:	BCBS	Structure Numbers	
Detailer:	LDL		
Sheet Subset:	PLAN	Subset Sheets:	10 of 12

Project No./Code
Project Number
Code
Sheet Number 12

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Horiz. Scale: 1:100	Vert. Scale: As Noted
Unit Information	Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

Colorado Department of Transportation
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Region 1 DRG

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No Revisions:	
Revised:	
Void:	

I70 RAMPS AT KIOWA-BENNETT RD. PLAN SHEET (WEST) ALTERNATIVE 1

Designer:	BCBS	Structure Numbers	
Detailer:	LDL		
Sheet Subset:	PLAN	Subset Sheets:	11 of 12

Project No./Code	
Project Number	
Code	
Sheet Number	13

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Print Date: 10/17/2013	Sheet Revisions	Colorado Department of Transportation	As Constructed
File Name: 30877DES_Plans12.dgn	Date: / Comments / Init.	7328 S. Revere Parkway, Suite 204A, Centennial, CO 80112	No Revisions:
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Unit Information Unit Leader Initials		Region 1 DRG	Void:
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I70 RAMPS AT KIOWA-BENNETT RD. PLAN SHEET (EAST) ALTERNATIVE 1			Project No./Code
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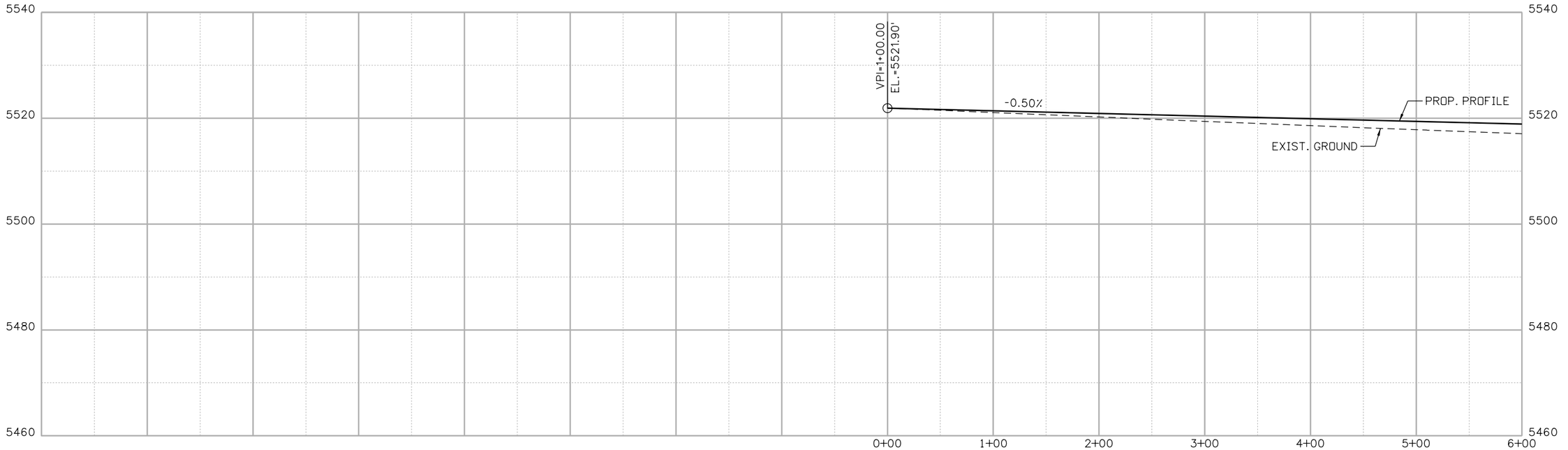

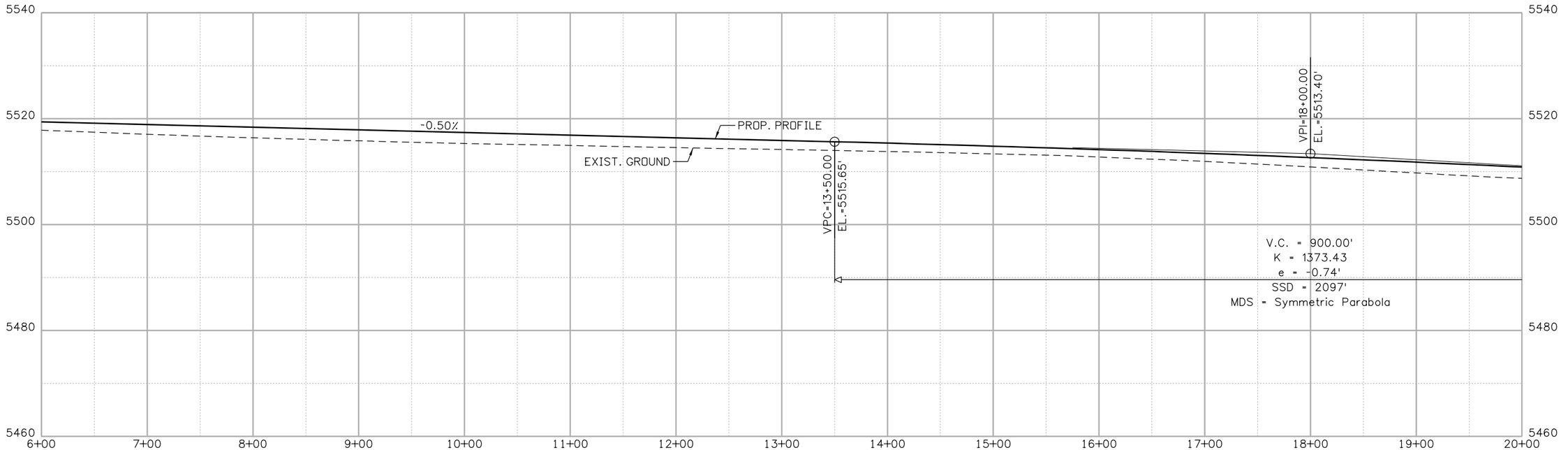

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Unit Information Unit Leader Initials

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Sheet Revisions		
Date:	Comments	Init.

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SH 79 PROFILE SHEETS
ALTERNATIVE 1

Designer:	BCBS	Structure Numbers	
Detailer:	LDL		
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Project No./Code
Project Number
Code
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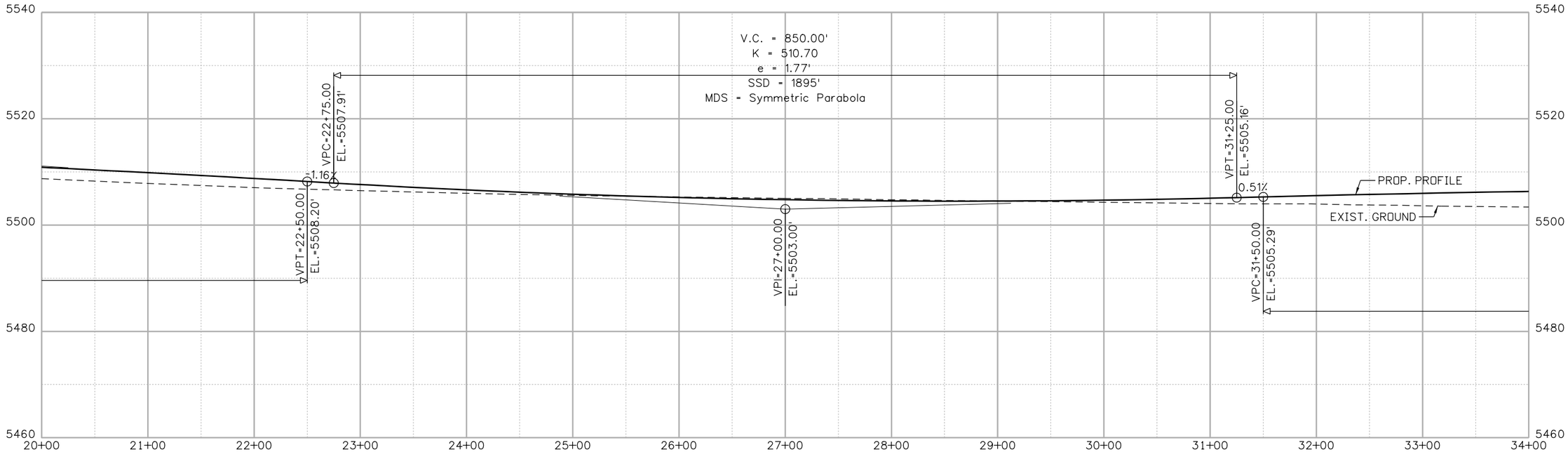

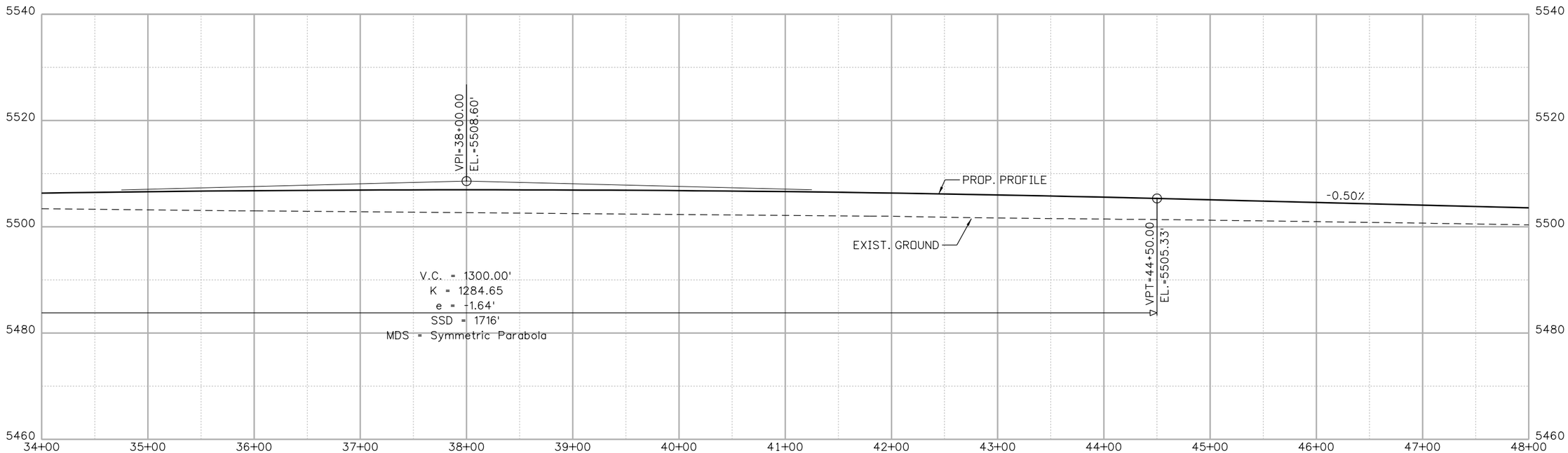

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Unit Information Unit Leader Initials		Region 1 DRG	Void:
ATKINS 4601 DTC Boulevard, Suite 700, Denver, CO 80237, Phone: (303) 221-7275 Fax: (303) 221-7276			

SH 79 PROFILE SHEETS ALTERNATIVE 1			Project No./Code
Designer: BCBS	Structure Numbers		Project Number
Detailer: LDL			Code
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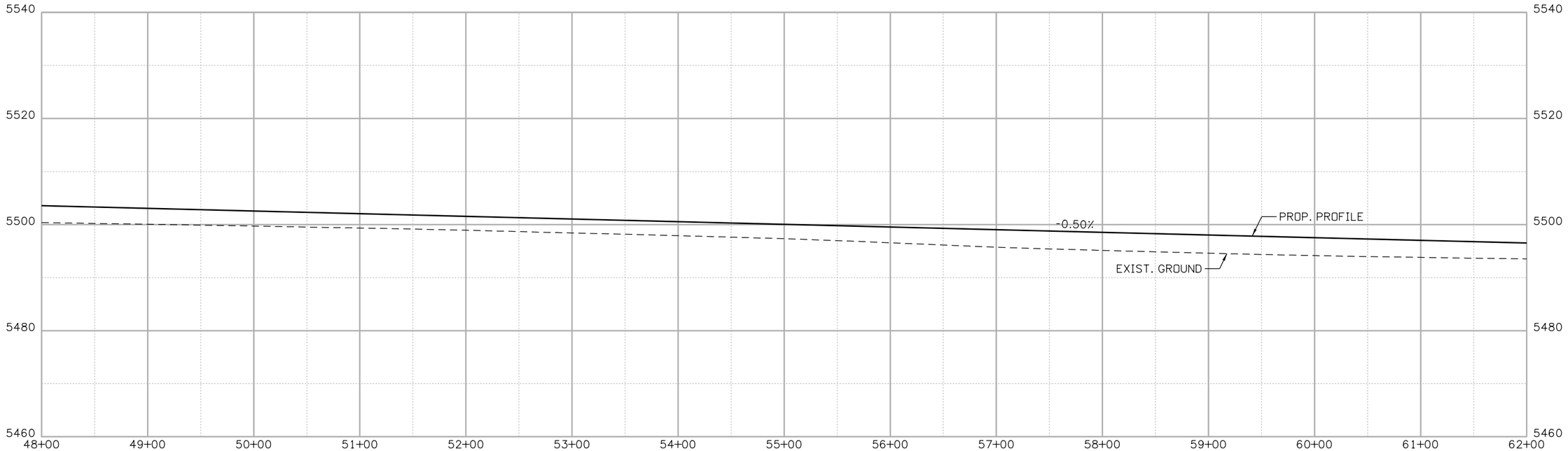

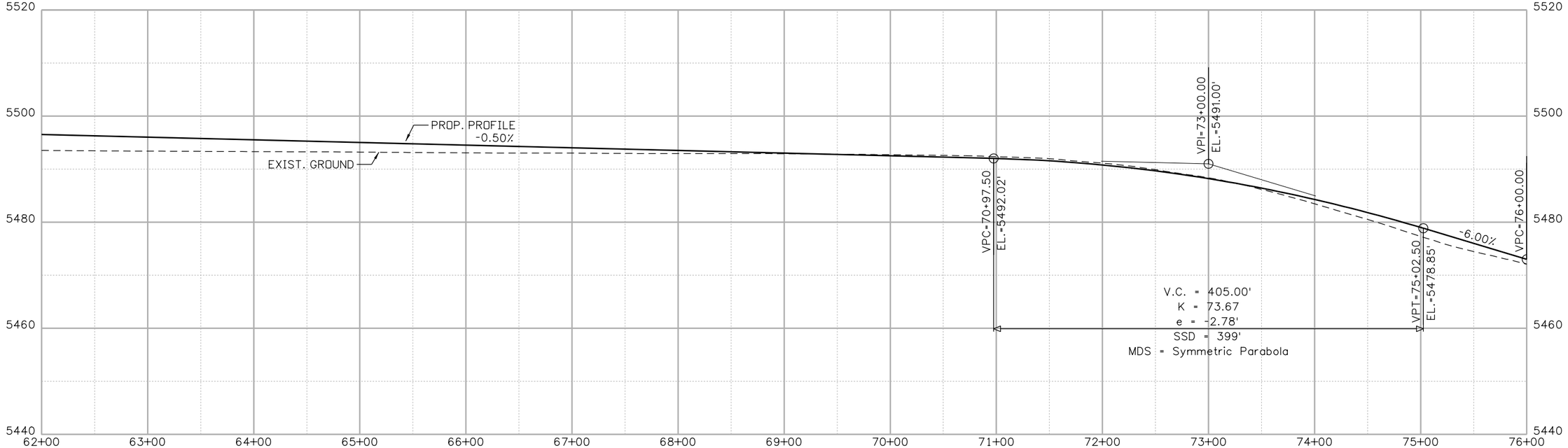

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SH 79 PROFILE SHEETS
ALTERNATIVE 1

Designer:	BCBS	Structure Numbers	
Detailer:	LDL		
Sheet Subset:	PROFILE	Subset Sheets:	03 of 12

Project No./Code	
Project Number	
Code	
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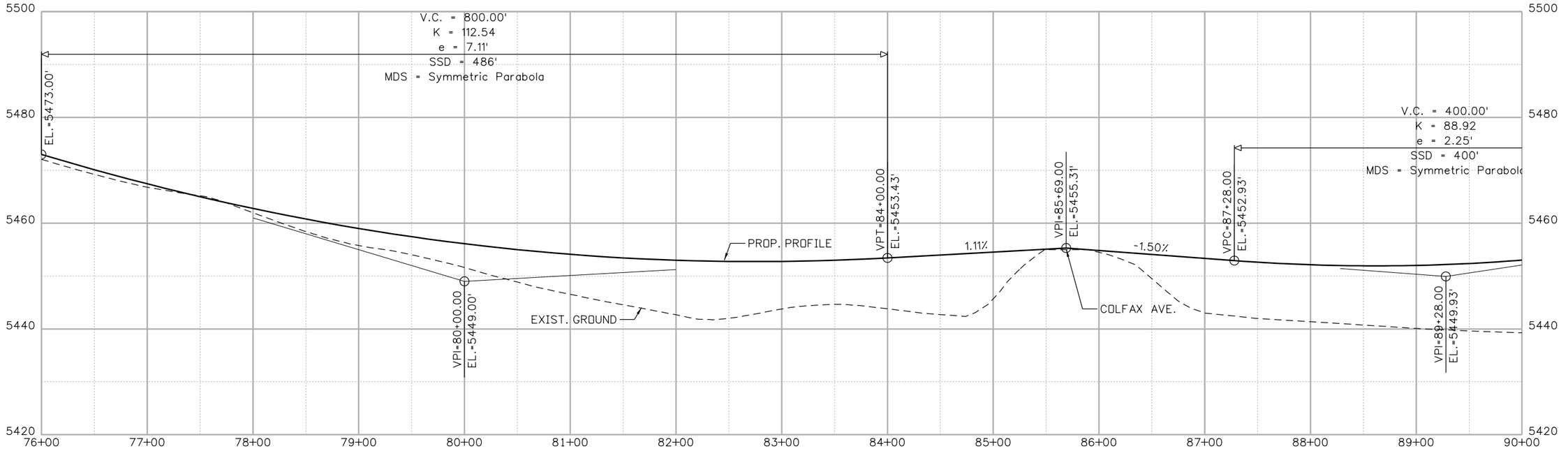

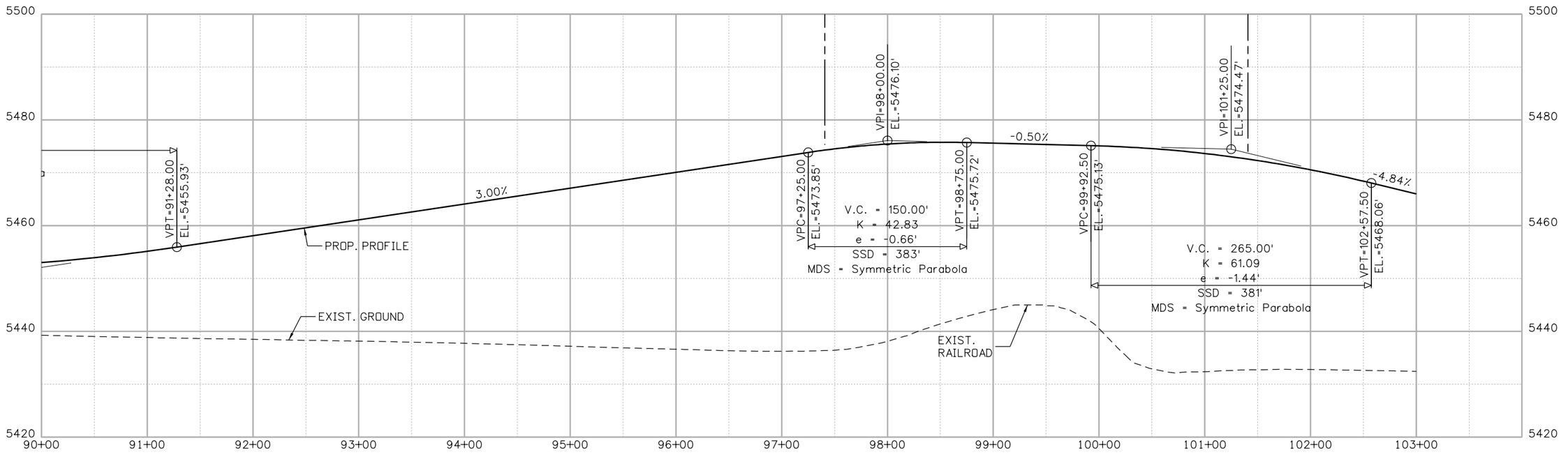

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Unit Information Unit Leader Initials

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SH 79 PROFILE SHEETS
ALTERNATIVE 1

Designer:	BCBS	Structure Numbers	
Detailer:	LDL		
Sheet Subset:	PROFILE	Subset Sheets:	04 of 12

Project No./Code
Project Number
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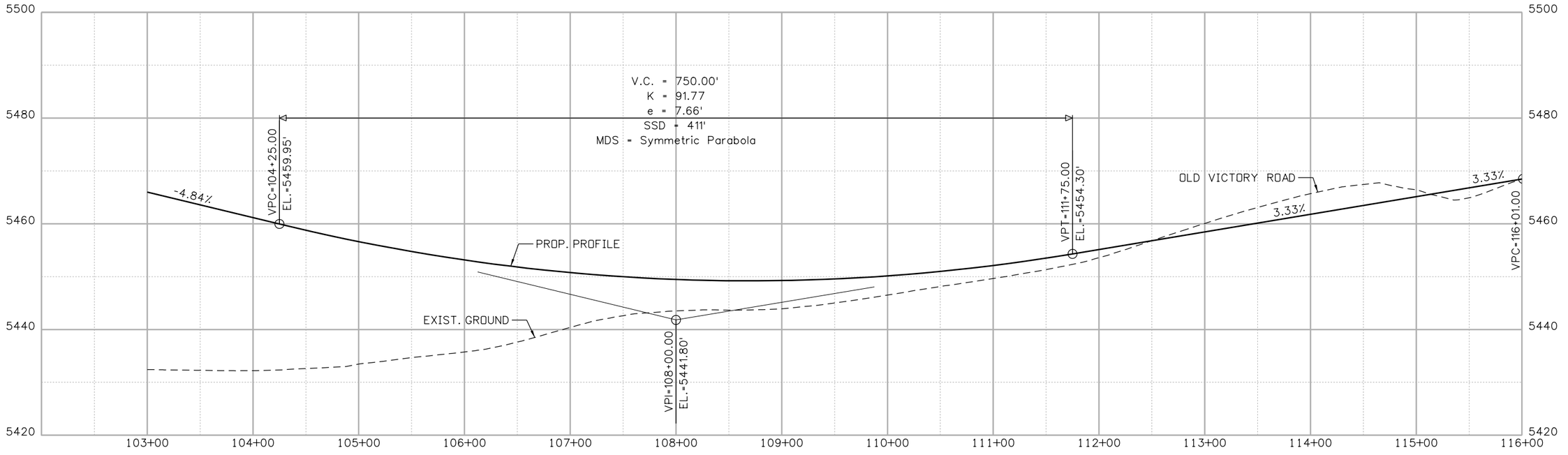

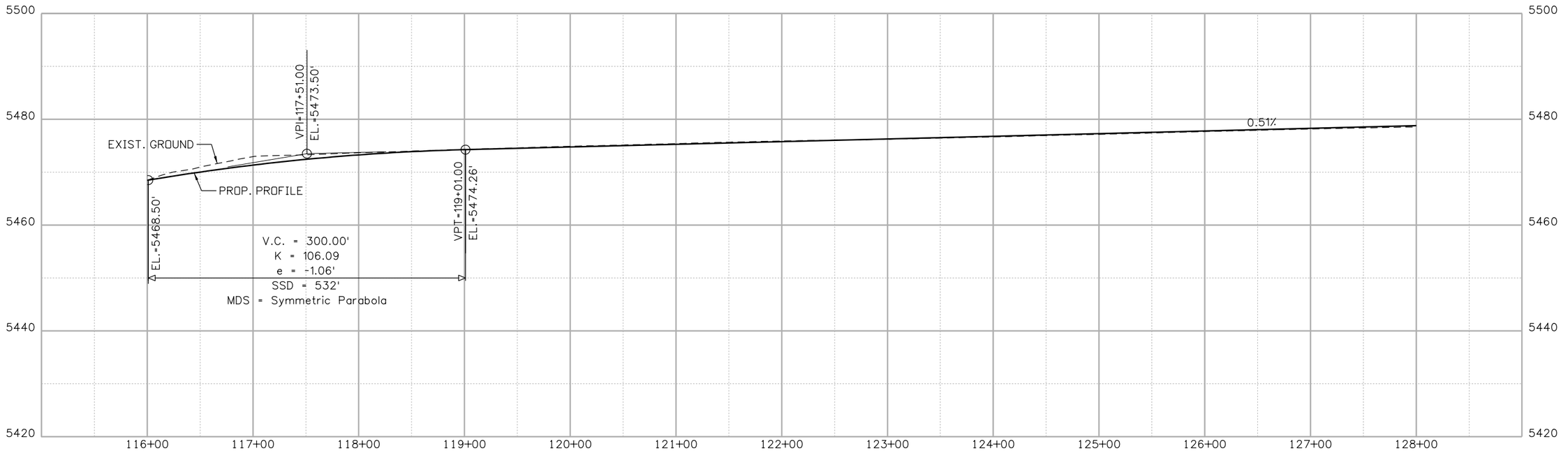

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Sheet Revisions		
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Colorado Department of Transportation
7328 S. Revere Parkway
Suite 204A
Centennial, CO 80112
Phone: 303-365-7234 FAX: 303-790-1037
Region 1 DRG

As Constructed
No Revisions:
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SH 79 PROFILE SHEETS
ALTERNATIVE 1

Designer: BCBS
Detailer: LDL
Sheet Subset: PROFILE
Structure Numbers:
Subset Sheets: 05 of 12

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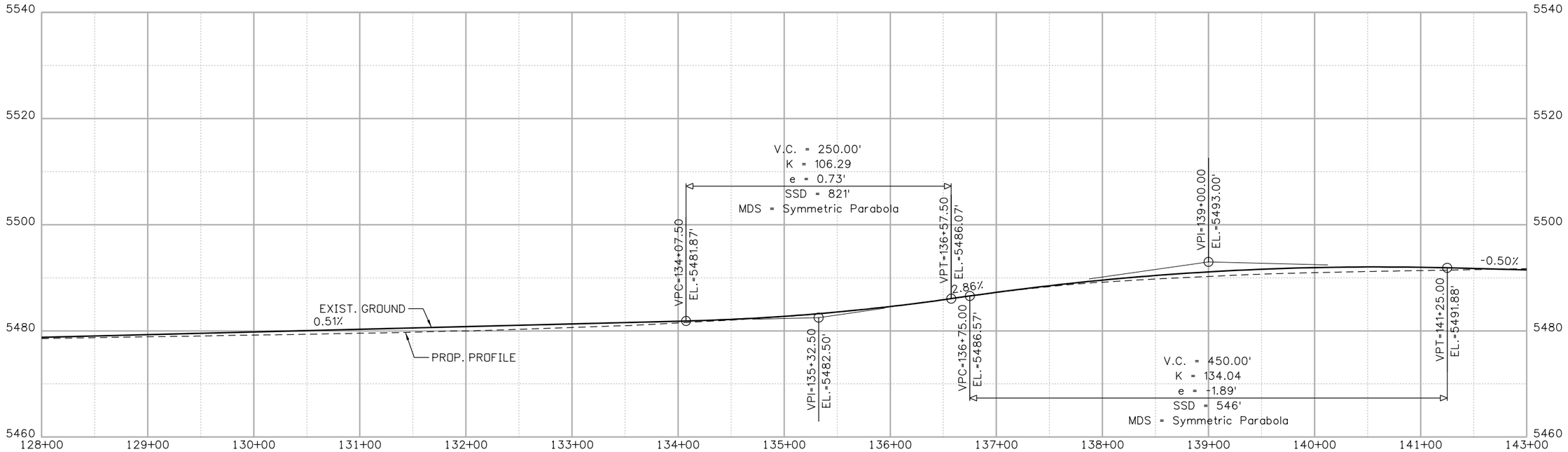

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Unit Information Unit Leader Initials			
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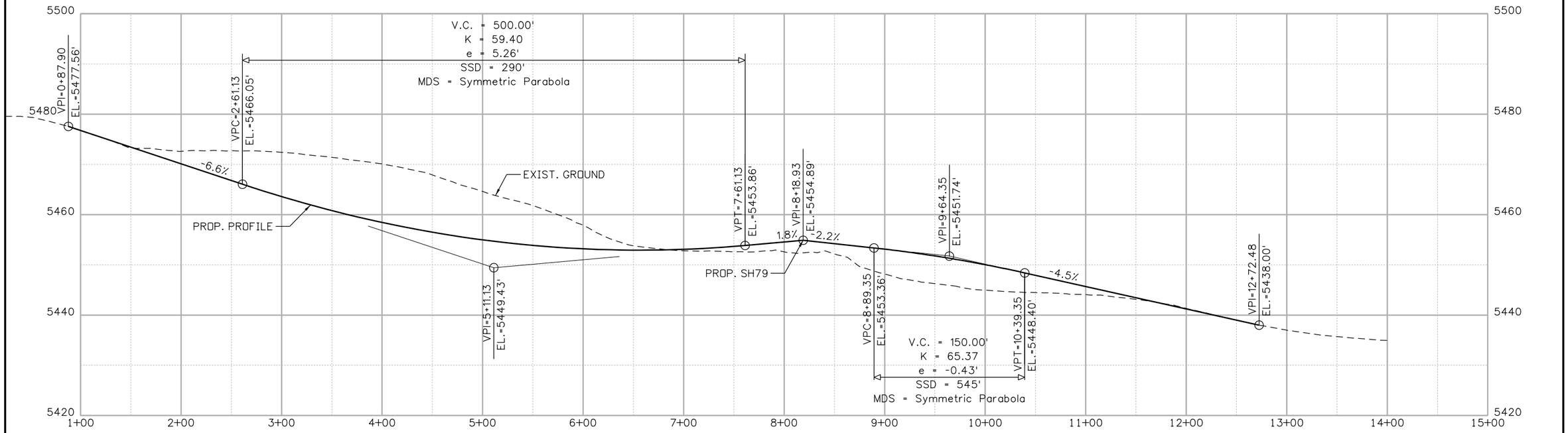

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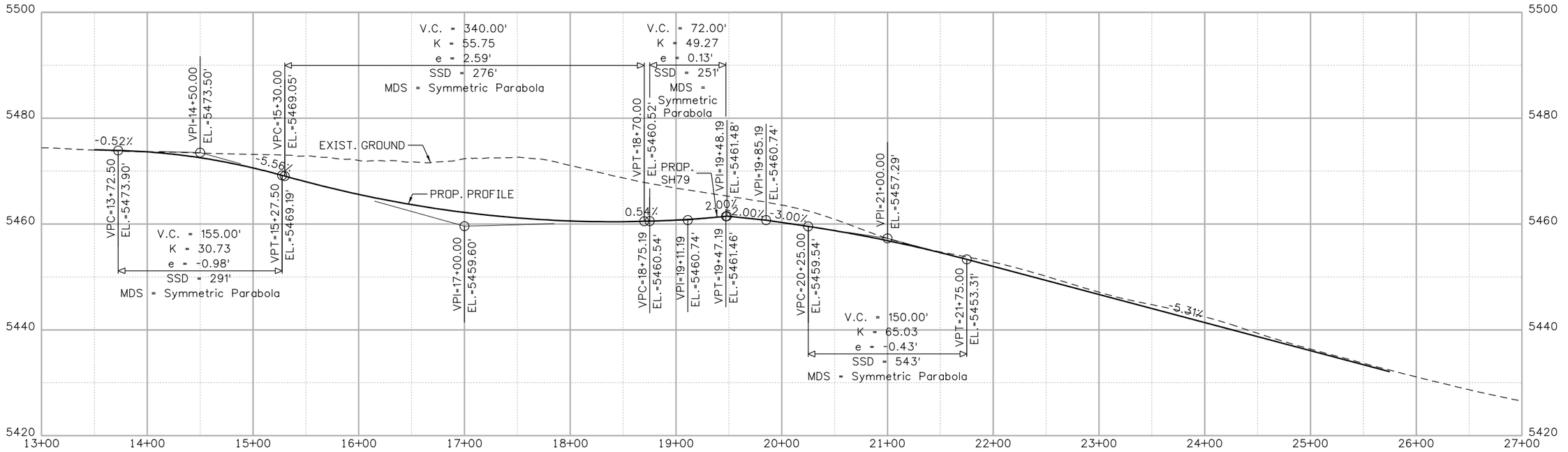

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Unit Information Unit Leader Initials					Region 1 DRG	Void:	Detailer: LDL	Sheet Number 22
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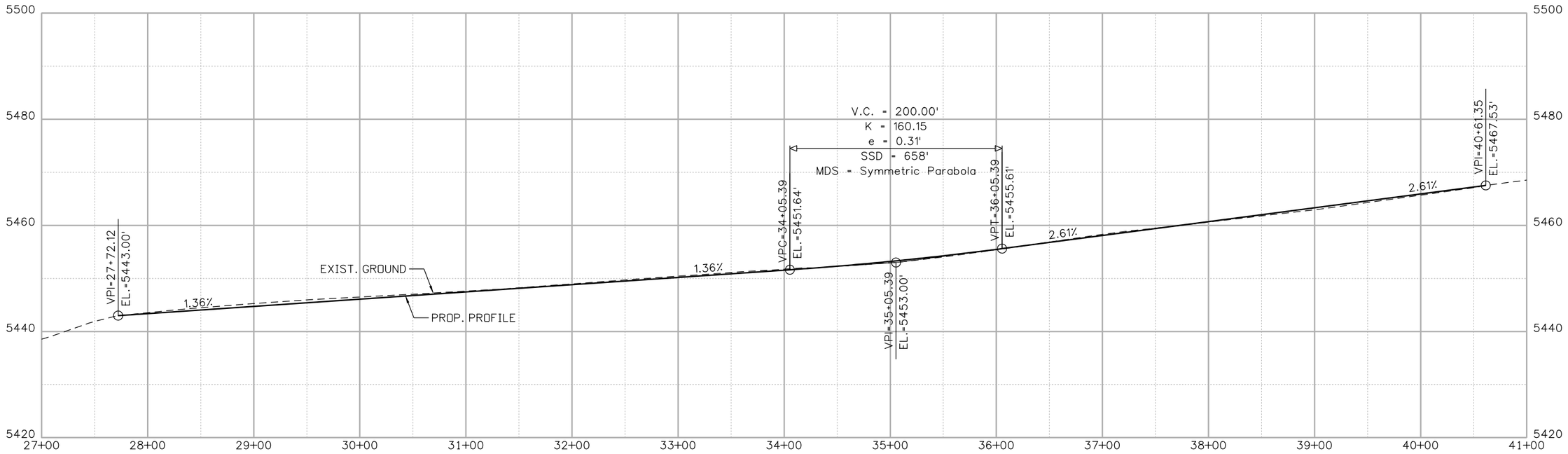

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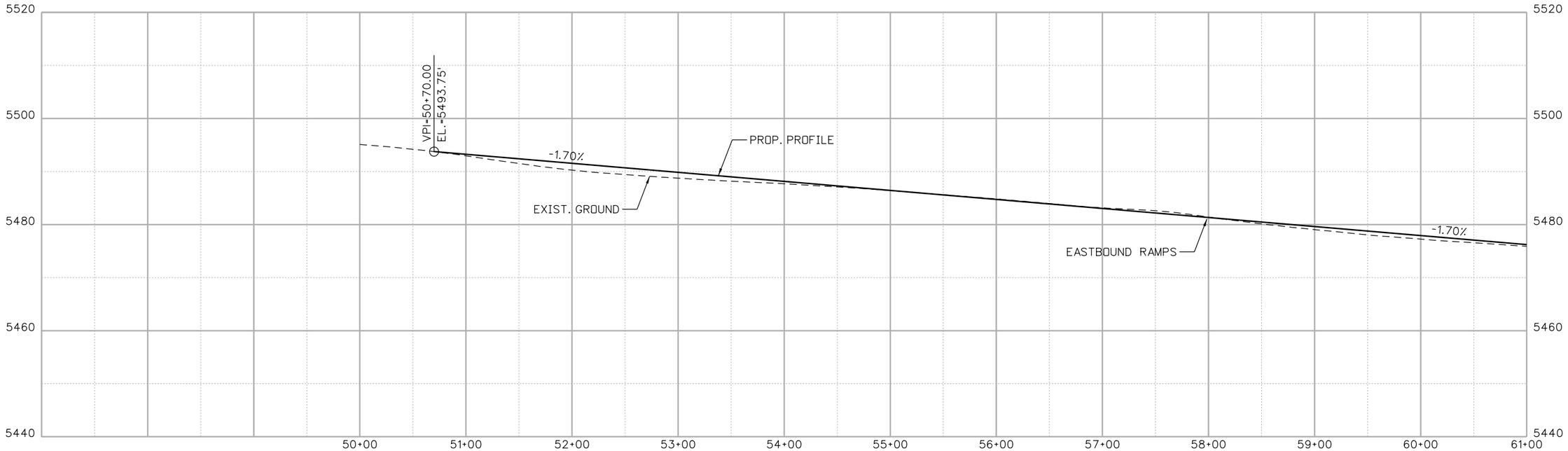
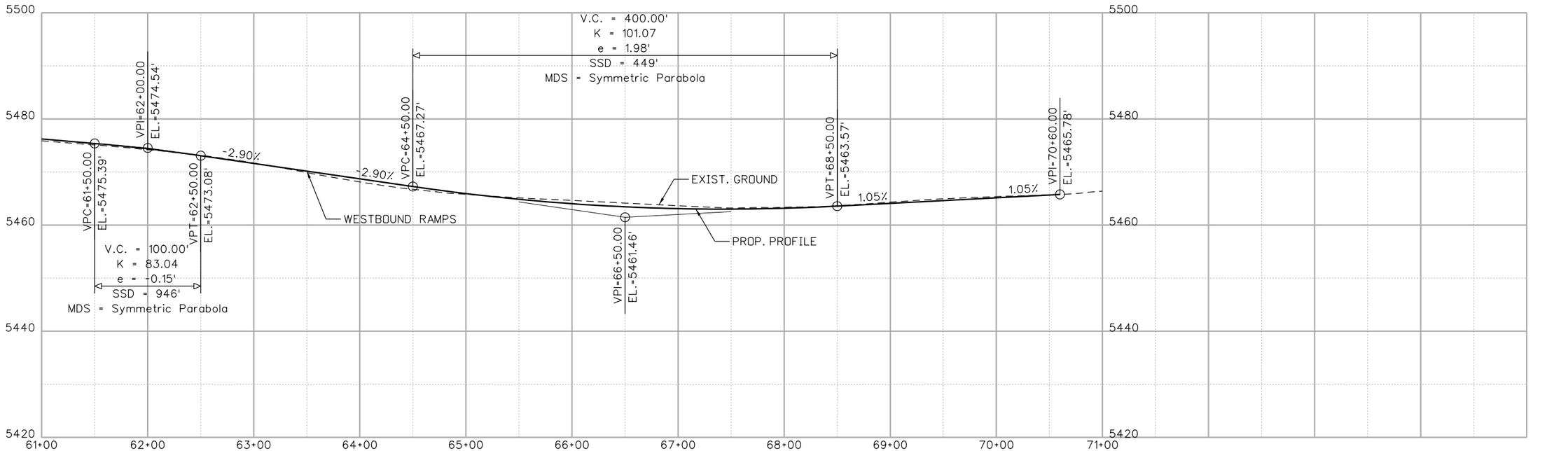
ATKINS 4601 DTC Boulevard, Suite 700 Denver, CO 80237 Phone: (303) 221-7275 Fax: (303) 221-7276								





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Unit Information Unit Leader Initials		Region 1 DRG	Void:
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KIOWA-BENNETT RD. PROFILE SHEET ALTERNATIVE 1			Project No./Code
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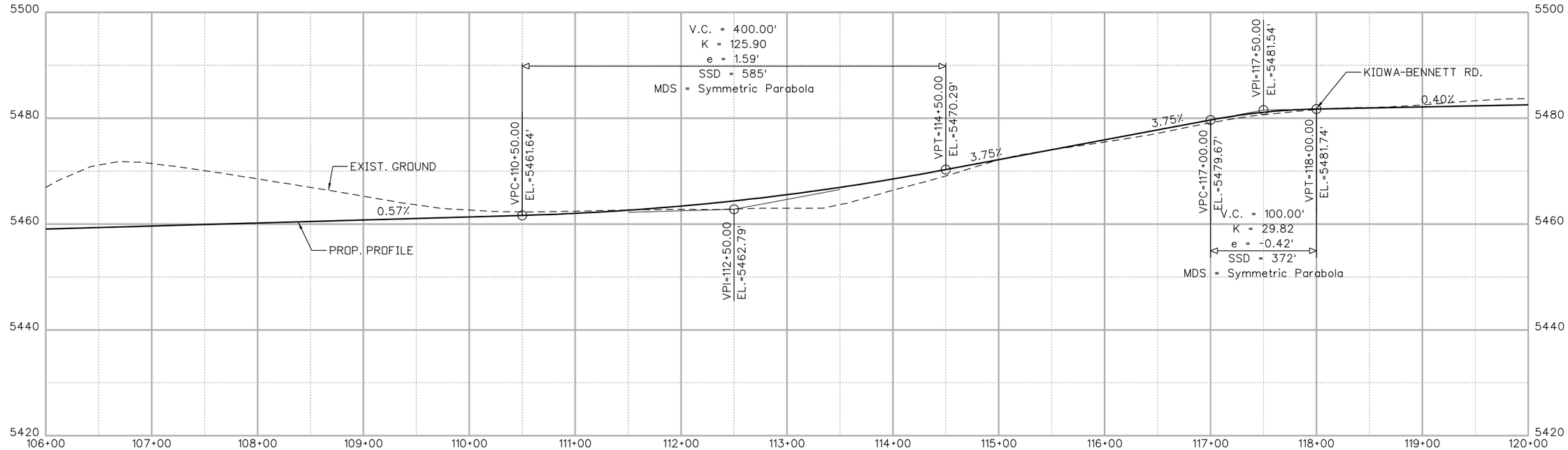

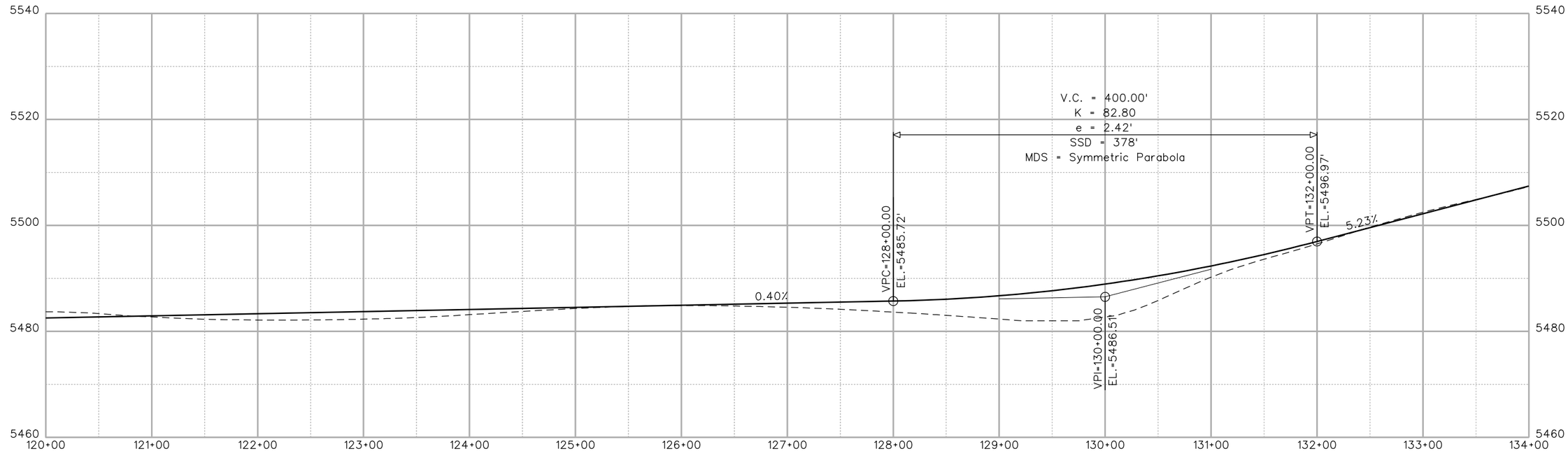

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KIOWA-BENNETT EASTBOUND RAMP PROFILE SHEET ALTERNATIVE 1

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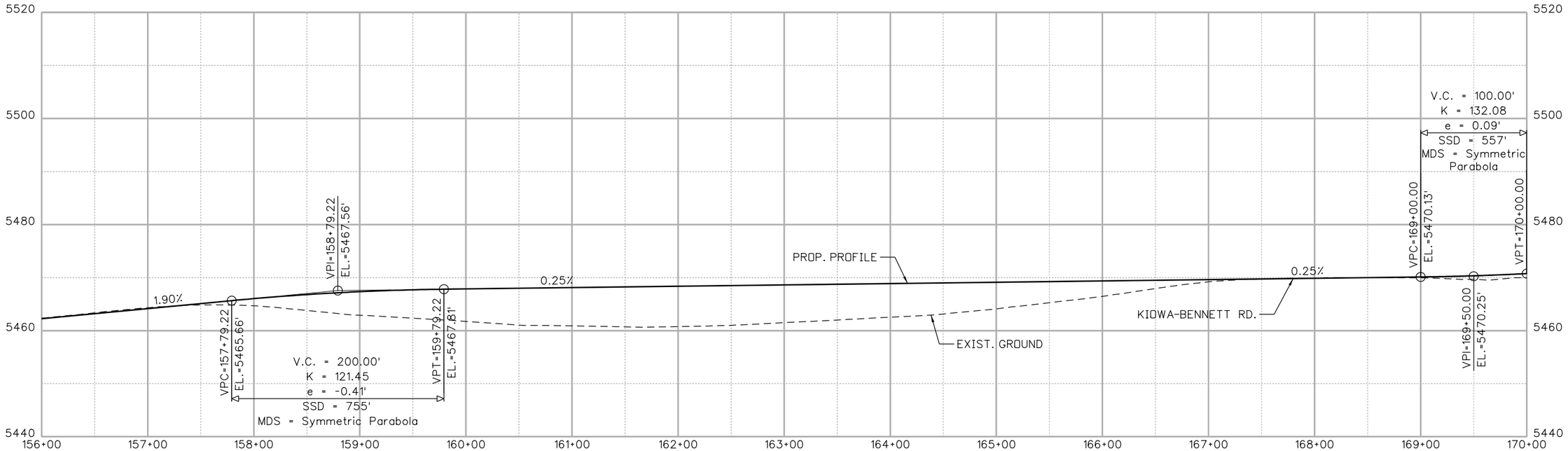

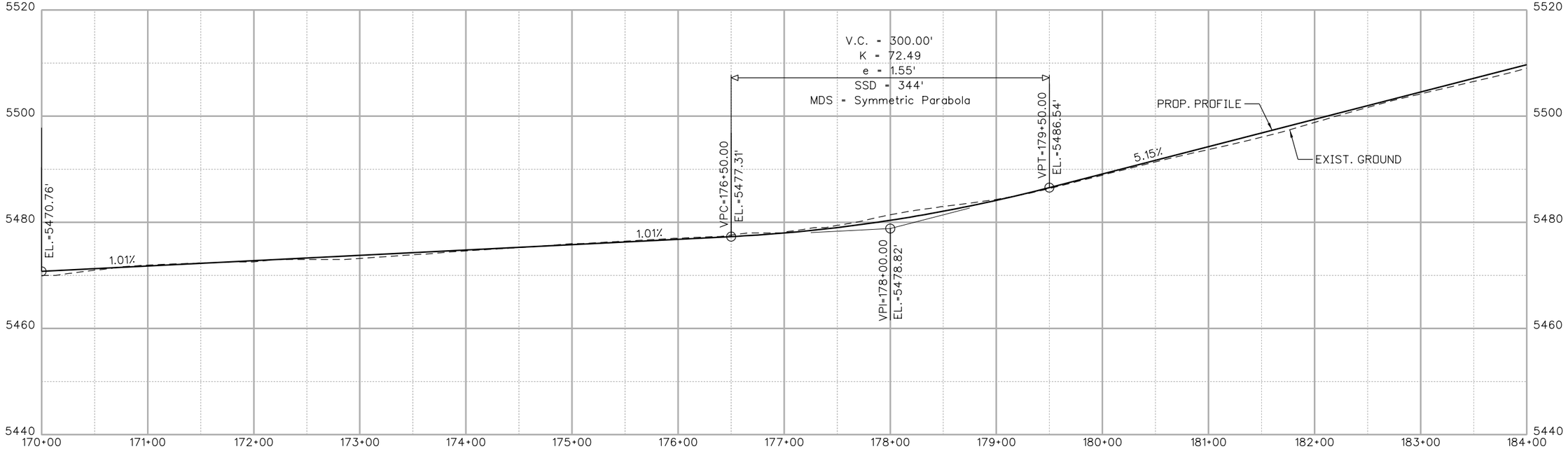

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Unit Information	Unit Leader Initials		

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KIOWA-BENNETT WESTBOUND RAMP PROFILE SHEET ALTERNATIVE 1

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APPENDIX F

TECHNICAL ADVISORY COMMITTEE AND RESOURCE AGENCY COORDINATION

TECHNICAL ADVISORY COMMITTEE CHARTER

9/27/12

Introduction

The purpose of this Charter agreement is to identify roles, responsibilities, and a decision-making process for the State Highway 79 (SH 79) and Kiowa-Bennett Corridor Planning and Environmental Linkage (PEL) Study Technical Advisory Committee (TAC) to help facilitate reasonable, feasible recommendations for transportation improvements to the SH 79 and Kiowa-Bennett Road corridors.

It is understood that this Charter is a living document and may be revised as needed to adapt to changes in the project scope or Technical Advisory Committee membership.

Project Background

SH 79 begins at I-70 and continues north. SH 79 is the Town of Bennett's most important north/south transportation corridor and Adams County's most important rural transportation corridor that supports regional mobility for Adams County and economic activity for the Town of Bennett. However, regional corridor traffic must maneuver the Town's local street system and an at-grade crossing of the UPRR tracks. SH 79 through Bennett is designated as a hazardous materials route by the Department of Public Safety. Colorado Department of Transportation (CDOT) traffic data indicate that truck traffic on SH 79 at the UPRR crossing is about 10 percent of the total traffic. Future rail traffic is anticipated to grow, and the exposure to this safety issue will only increase.

Kiowa-Bennett Road serves as a regional north-south corridor through eastern Arapahoe County. Kiowa-Bennett Road does not have full, direct access to I-70 and traffic traveling between Kiowa-Bennett Road and SH 79 must travel along Colfax Avenue (US 36) and through downtown Bennett. Improving regional connectivity and access to the I-70 corridor will be essential to achieve economic development for eastern Adams and Arapahoe Counties.

The purpose of the SH 79 and Kiowa-Bennett Corridor PEL Study is to work with stakeholders to determine the short-term and long-term transportation needs of the SH 79 and Kiowa-Bennett Road corridors around the Bennett area, to address the increasing congestion and safety issues, and to identify transportation improvement alternatives that balance anticipated access needs with regional mobility and connectivity. To assist with alternatives development and evaluation, the study process includes the formation of a Technical Advisory Committee comprised of stakeholder agency representatives.

The Technical Advisory Committee will meet frequently (anticipated monthly) with consultant representatives to provide technical input as the PEL study progresses. The Technical Advisory Committee will include staff from the local communities, state and federal agencies, and other regional partners. Agencies represented by the Technical Advisory Committee include:

- Town of Bennett
- Adams County
- Arapahoe County
- CDOT

- Denver Regional Council of Governments (DRCOG)
- Federal Highway Administration (FHWA)

Technical Advisory Committee Purpose and Objectives

The purpose of the Technical Advisory Committee is to provide a formal mechanism through which agency representatives can communicate regional and local needs relating to transportation decisions for the SH 79 and Kiowa-Bennett Road corridors in the study area and provide direction to the consultant regarding the project. The Technical Advisory Committee will assist in developing recommendations that are mutually consistent with agency mandates, meet the project Purpose & Need statement for the project, and will lead to timely implementation of improvements.

To accomplish these objectives, the Technical Advisory Committee will:

- Work together to build trust by meeting regularly using frequent and effective communication.
- Participate fully and have authority to represent their agencies.
- Serve as the primary connection with their communities or organizations.
- Coordinate with elected officials and appropriate staff within their respective agencies on specific transportation, community, economic, or environmental issues.
- Develop an understanding of the varying interests and requirements of the involved agencies and other parties.
- Conduct timely reviews of project information and findings, contributing to the development of improvement recommendations.
- Evaluate options considering mitigation concepts and opportunities specific to the project, based on current agency standards, and consistent with local and regional plans and state and federal guidelines.

Agreement by Consensus

Every effort will be made to achieve consensus within the Technical Advisory Committee on each of the project key milestones. Consensus is an agreement achieved by identifying and exploring all parties' interests and assembling an agreement that satisfies those interests to the greatest extent possible. A consensus is reached when all parties agree that their major interests have been taken into consideration and addressed in a satisfactory manner.

Consensus does not necessarily mean unanimity of agreement. Some parties may strongly endorse a particular recommendation, while others may accept it as a workable agreement. Members can participate in the consensus without fully embracing each element of the agreement or having each interest fully satisfied. In a consensus agreement, the parties recognize that given the combination of gains and trade-offs in the package agreement, the resulting recommendations are the best the parties can make at this time.

To achieve consensus, the following principles should be followed:

- To participate fully and freely, all members must have a common base of information and keep up-to-date on the progress of the Committee;
- A working environment and expectation must be created in which everyone will feel comfortable stating his/her views and to disagree;
- A disagreement can illuminate unrecognized problems and serve as a catalyst for improving the recommendation;

- When there is an objection, the goal of the Committee is to discover the unmet need or adverse implication that has produced the objection and find a way to meet that need, address the concern, or mitigate impacts via a revised agreement, rather than to suppress the objection; and
- Agreement on definitions, principles and criteria should precede and become the foundation of substantive agreements.

Concurrence Points

The Technical Advisory Committee members will provide concurrence on decisions at the following key milestones:

Milestone	Expected Schedule	Means of Concurrence
Technical Advisory Committee Charter	TAC Meeting #2 September 27, 2012	Committee member signatures
Purpose and Need Statement	TAC Meeting #3 October 25, 2012	Committee acceptance of meeting notes
Evaluation Criteria	TAC Meeting #4 December 13, 2012	Committee acceptance of meeting notes
Alternatives Developed	TAC Meeting #5 January 17, 2013	Committee acceptance of meeting notes
Level 1 Alternatives Screening Matrix	TAC Meeting #5 January 17, 2013	Committee acceptance of meeting notes
Level 2 Alternatives Screening Matrix	TAC Meeting #6 February 28, 2013	Committee acceptance of meeting notes
Alternatives Refinement Results / Draft Recommendations	TAC Meeting #7 April 11, 2013	Committee acceptance of meeting notes
Final Study Recommendations	Study Completion May 2013	Committee member signatures on a support page; Agency support letter and/or Resolution

Technical Advisory Committee Concurrence

Concurrence for decisions presented at Committee meetings, as shown above, will be provided by acceptance of the distributed meeting notes. When distributed, members will be given five business days to offer corrections to the notes. Lack of response within the deadline will constitute acceptance of the notes as originally recorded.

Revisiting decisions with previous concurrence may have substantial impacts to the study schedule and budget. Technical Advisory Committee members are expected to consult and coordinate within their respective agencies for responses to project issues and recommendations. If concurrence cannot be provided at the meeting, Technical Advisory Committee members will respond to the Town of Bennett Project Manager within the number of days requested, in order to keep the project on schedule. If a member's response is not received within the requested timeframe, the non-responding member will be recorded as having not objected to the decision.

Based on elected official availability and need for input, there may be schedule impacts to wait for agency concurrence.

Final concurrence of the SH 79 and Kiowa-Bennett Corridor PEL Study and improvement recommendations will be requested of each participating agency. An agency "support" page will be routed to Technical Advisory Committee members to acknowledge their respective agency's support for the study recommendations. Agencies will also be requested to provide, as appropriate, a letter or resolution in support of the study recommendations.

Ultimate Responsibility for Decision Making

Responsibility for decision making on a recommended alternative(s) for the SH 79 corridor prior to NEPA environmental clearance will rest with CDOT, in collaboration with the Town of Bennett and Adams County. Responsibility for decision making on a recommended alternative(s) for the Kiowa-Bennett Road corridor prior to NEPA environmental clearance will rest with Arapahoe County. Planning for the two corridors' recommendations will be coordinated through the PEL study. Each roadway north and south of I-70 may impact one another and the decisions made for one segment may adversely affect the other. Therefore, decisions need to be made with this understanding and efforts need to be made to minimize such adverse impacts.

Because SH 79 is a state highway, I-70 is an interstate, and there is a possibility of state or federal funding for some improvements proposed through this study, final selection of a preferred alternative will be made through a subsequent NEPA process by the lead federal agency (FHWA) in conjunction with the appropriate project partners. This selection will be made on the basis of an appropriate environmental clearance document, subsequent to this PEL study. This applies to SH 79 and I-70 only and Kiowa-Bennett Road if state or federal funds are used.

Meeting Guidelines

In agreeing to this Charter, the Technical Advisory Committee adopts the following guidelines to promote effective Committee work:

- Meetings will begin and end on time;
- Committee members will regularly attend and prepare for work sessions;
- Committee members will listen to other points of view and try to understand the interests of others;
- Committee members will openly discuss issues with those who hold diverse views and participate in cooperative problem-solving to resolve differences;
- Committee members will keep his/her organization or agency, including elected officials, informed and get the right people to make decisions, as appropriate;
- The Committee will resolve issues that are within their power to solve and re-direct those issues that cannot be solved.

Communication Plan

Communication between the Technical Advisory Committee and the Town of Bennett and consultant team will be as follows:

- Technical Advisory Committee members will serve as the main point of contact for their agency for information relating to this process and project.

- Meeting agendas will be e-mailed to Technical Advisory Committee members approximately one week in advance of the meeting date. Meeting handouts will be e-mailed to members prior to the meeting, when available.
- Meeting notes and summary of the meeting will be distributed in draft form within five business days of the associated meeting date. Notes will consist of the highlights of the meeting, recap of discussion, agreements or disagreements of note, action items, and commitments made. Members will be given five business days to offer corrections to the notes. Lack of response within the deadline will constitute acceptance of the notes. Final notes, edited to reflect comments made by members, will be provided within two business days of the corrections deadline.
- Offline meeting results will be shared with the Technical Advisory Committee.
- Meeting dates will be confirmed at the previous meeting and scheduled at least two weeks in advance. Meetings may be arranged with less notice if needed to keep the study on schedule.

Alternative Representatives

The designated Technical Advisory Committee representatives of each agency may need to name an Alternate to represent the agency due to scheduling conflicts.

- Alternates will be briefed by the designated agency Technical Advisory Committee member. Materials distributed to date will be shared so that the Alternate is up to date on Committee activities.
- Alternates will represent the agency in consensus decision making at meetings they attend.
- If an agency's representative on the Technical Advisory Committee must change, the Committee member or a designated Committee member will brief new members. Departing members will recommend an appropriate replacement.

Charter Changes

Any necessary changes to amend this Charter or the decision making process, as may be proposed by the Technical Advisory Committee, will be evaluated by the Town of Bennett Project Manager for impacts to the schedule.

Agency Support

The SH 79 and Kiowa-Bennett Corridor PEL Study Technical Advisory Committee members support the Technical Advisory Committee Charter as indicated by the following signatures:

Stuart McArthur – **Town of Bennett** — 9/27/12 (Date)

Jeanne Shreve – **Adams County** — 9-27-2012 (Date)

Bryan Weimer – **Arapahoe County** — 9/27/12 (Date)

Dole Grebenik – **Colorado Department of Transportation (CDOT)** — 9/27/12 (Date)

Todd Cottrell – **Denver Regional Council of Governments (DRCOG)** — 9/27/12 (Date)

Melinda Urban – **Federal Highway Administration (FHWA)** — 9-28-12 (Date)

Agency Name	1st Outreach - Project Intro & Existing Conditions Review Request Letter Sent	Agency Response Received?	Agency Comments	2nd Outreach - Project Update Letter Sent	Updated Information Provided to Agency	Agency Response Received?	Agency Comments	Follow-up Needed/ Action Items
Adams County Parks and Community Resources	11/21/12, to Rick Anderson, Director	12/11/2012, via letter to DEA from Roger Harvey, Natural Resources Specialist	Concurs with this study regarding potential wetlands, Preble's habitat, and riparian habitat in Kiowa Creek floodplain. Limit transportation impacts in Kiowa Creek floodplain. For new crossings of Kiowa Creek, consider or accommodate a public trail running north/south underneath.	7/16/2013	Project update and graphic of recommended alternative (Alt. 1). The map of Alternative 1 shows that the majority of the proposed improvements would occur outside of the Kiowa Creek floodplain. Alternative 1 does not include new crossings of Kiowa Creek.	No		
Arapahoe County Open Spaces	11/21/12, to Josh Garcia	1/8/13, meeting held with Open Spaces representatives	Landowners in Arapahoe County have noted that they will not grant a trail easement through their property for the Kiowa Creek Trail. Open Spaces is opposed to a roadway alignment bisecting the Kiowa Creek North Open Space. Due to the drainage of the open space and the conservation values, County Open Spaces would like to keep the Kiowa Creek North Open Space as a quiet, rural, natural open space area. Open Spaces preference is to use the east side of the Kiowa Creek North Open Space property for access instead of developing a trailhead in the southwest corner. The existing topography and a drainage culvert makes a trail on the west side of Kiowa-Bennett Road difficult. The riparian area needs to be preserved.	7/16/2013	Project update and graphic of recommended alternative (Alt. 1). As shown in the map of Alternative 1, there would be no impacts to parks and recreational areas or open space, including Kiowa Creek North Open Space or the proposed Bennett Regional Park and Open Space (formerly Antelope Hills Golf Course). Alternative 1 includes no new crossings of Kiowa Creek. Improvements under Alternative 1 would remain a minimum of 300 feet from riparian areas. Because I-70 currently crosses Kiowa Creek, some improvements to I-70 under Alternative 1 would be within a riparian area. These improvements would cross Kiowa Creek at a perpendicular angle, minimizing impacts to the riparian area	No		During NEPA process, include mitigation measures to minimize impacts to Kiowa Creek riparian areas for reconstruction of overpass and construction of on/off ramps at I-70 and Kiowa-Bennett Road.
Colorado Department of Health and Environment, Air Pollution Control Division	11/21/12, to Jim DiLeo	No		7/16/2013	Project update and graphic of recommended alternative (Alt. 1).	7/25/2013	Reviewed request for air quality determination for the PEL. Noted that all sources of potential construction project air emissions obtain a construction permit. An Air Pollution Emission Notice is required for specific uncontrolled emission quantities: 2 tons/year in attainment areas; 1 ton/year in nonattainment areas; 100 lbs lead/year all areas. Earth moving activities >25 acres or >6 mos duration also require an Air Pollution Emission Notice and start-up notice 30 days prior to project start.	During the NEPA process, verify that an Air Pollution Emission Notice is required (Air Quality Regulation No 3, Section II.D.1). Identify construction permit(s) required for each emission point (construction equipment) or group of similar emission points based on expected emissions quantities. Determine the need for an Air Pollution Emission Notice if earth moving activities would affect >25 acres or last >6 months.
Colorado Department of Health and Environment, Water Quality Control Division	11/21/12, to Bret Icenogle, Engineering Section Manager	No		7/16/2013	Project update and graphic of recommended alternative (Alt. 1).	No		
Colorado State Historic Preservation Office	11/21/12, to Amy Pallante, 106 Compliance Officer	No		7/16/2013	Project update and graphic of recommended alternative (Alt. 1).	No		
Town of Bennett Parks and Recreation	11/21/12, to Chris Raines, Executive Director	No		7/16/2013	Project update and graphic of recommended alternative (Alt. 1).	No		
Urban Drainage and Flood Control District	11/21/12, to Bill DeGroot, Manager, Floodplain Management	No		7/16/2013	Project update and graphic of recommended alternative (Alt. 1).	No		
U.S. Department of Agriculture, Natural Resource Conservation Service	11/21/12, to Sammie Molinaro, District Conservationist	No		7/16/2013	Project update and graphic of recommended alternative (Alt. 1).	No		

Agency Name	1st Outreach - Project Intro & Existing Conditions Review Request Letter Sent	Agency Response Received?	Agency Comments	2nd Outreach - Project Update Letter Sent	Updated Information Provided to Agency	Agency Response Received?	Agency Comments	Follow-up Needed/ Action Items
Colorado Parks and Wildlife, NE Region	11/21/12, to Liza Hunholz, Area 5 District Wildlife Manager	1/14/2013, via letter to DEA from Liza Hunholz	Recommends Town of Bennett, Adams and Arapahoe Counties employ collaborative approach with other developments to maintain wildlife habitat in as whole a state as possible. Regarding improvements to SH 79 and Kiowa-Bennett Road, roads should remain at least 300 feet from riparian areas (Kiowa Creek), and run parallel to existing riparian corridor ROW. If any roads must cross riparian areas, they should cross perpendicular to creek bottom. Trails should remain at least 50 feet from riparian areas and be no wider than 8 feet for entire length. Conduct burrowing owl survey to locate any active burrows prior to any disturbance in a prairie dog town. Incorporate survey protocols [sent with letter] to protect nesting burrowing owls. Concerned about impacts to raptors; incorporate buffer zones and seasonal restrictions for raptors [sent with letter] Recommends buffer of at least 150 feet of any active burrows or nest sites; maintain this buffer during construction periods that may interfere with nesting season. Consult with USFWS regarding federally protected threatened or endangered species. Use principles from integrated weed management plan(s) that counties may already have in place.	7/16/2013	Project update and graphic of recommended alternative (Alt. 1). The map of Alternative 1 shows that improvements to Highway 79 would remain a minimum of 300 feet from riparian areas. Because I-70 currently crosses Kiowa Creek, some improvements to I-70 under Alternative 1 would be within a riparian area. I-70 currently crosses Kiowa Creek at a perpendicular angle. Therefore, the improvements proposed under Alternative 1 would as well.	No		As this project moves into the NEPA process, surveys for burrowing owls and any other species identified upon consultation with USFWS would be conducted according to established state and/or federal protocols. This may include a formal concurrence request from the USFWS that no federally-listed species would be adversely affected by the project. Clearing and grubbing operations and work on structures would be scheduled to avoid take (pursue, hunt, take, capture or kill; attempt to take, capture, kill or possess) of migratory birds protected by the Migratory Bird Treaty Act. Pre-construction surveys for nesting birds would be completed and would follow the methods set forth by the USFWS and CPW. Seasonal restrictions would be incorporated and buffers established for construction periods for active burrows or other nest sites as warranted during nesting season. To further protect habitat, principles from county integrated weed management plans would also be incorporated into mitigation measures.
U.S. Army, Corps of Engineers	11/21/12, to Timothy Carey, Denver Regulatory Office	Yes, informal in January 2012	Kyle from the USACE called and told Wendy Wallach (DEA) he would be sending standard letter about complying with requirements of Section 404 of Clean Water Act. She said she was aware of requirements and we were considering impacts to wetlands and floodplains in evaluation.	7/16/2013	Project update and graphic of recommended alternative (Alt. 1). Wetlands and Waters of the US (WUS) have been identified and considered in the study area. One irrigation ditch located in the southeast corner of the study area would be impacted by the recommended alternative. This ditch has been identified as a potential wetland.	7/19/13 via email to Stacy Tschuor (DEA) from Kiel Downing, Regulatory Project Manager, Denver	Office is unable to provide comments or recommendations at this time. Once aquatic resources are identified within the proposed corridor, we will be able to provide substantive comments regarding the Preferred Alternative.	Under Section 404 of the Clean Water Act, impacts to WUS, including wetlands and open water features, must be avoided, minimized, or mitigated (in order of preference) to ensure that there is no net loss of functions and values of jurisdictional wetlands. A Section 404 permit would likely be required from the USACE to authorize placement of dredge or fill material in any WUS, including wetlands.
U.S. Environmental Protection Agency	11/21/12, to Robin Coursen, Transportation Sector, NEPA Compliance Division	No		7/16/2013	Project update and graphic of recommended alternative (Alt. 1).	No		
U.S. Fish and Wildlife Service (USFWS)	11/21/12, to Alison Michael	12/10/12, via letter to DEA from Susan Linner, Colorado Field Supervisor	Letter lists T&E species most likely to be affected for Arapahoe and Adams Counties. Federally listed species downstream of the project area could be affected if project results in water depletions of the South Platte River. It is assumed such depletions will be mitigated through the South Platte Water Related Activities Program. Have qualified biologist conduct field survey during nesting season to determine absence or presence of migratory birds prior to construction. Avoid construction activities in grassland, wetland, stream, and woodland habitats, and those that occur on bridges to avoid take of migratory birds and/or active nests. Consult with USFWS if any water bodies will be modified.	7/16/2013	Project update and graphic of recommended alternative (Alt. 1). The PEL notes that downstream impacts to aquatic species could occur due to impacts to water resources as a result of depletions to the South Platte River.	8/1/2013 sent to Stacy Tschour from Susan C. Linner, CO Field Supervisor	USFWS anticipates habitat surveys will be needed for Preble's meadow jumping mouse, Ute's ladies' tresses orchid, and Colorado butterfly plant. However, the list of threatened and endangered species may change by the time proejct construction begins. USFWS acknowledges the project commitments to avoid impacts to migratory birds and wetlands.	As this project moves into the NEPA process, mitigation through the South Platte Water Related Activities Program would be incorporated. Surveys for burrowing owls and any other species identified upon consultation with the USFWS would be conducted according to established state and/or federal protocols. This may include a formal concurrence request from the USFWS that no federally-listed species would be adversely affected by the project. Conduct habitat surveys for Preble's meadow jumping mouse, Ute's ladies' tresses orchid, and Colorado butterfly plant. Consult with USFWS to determine if surveys for additional species is warranted. Consult with USFWS if any water bodies would be modified. Construction activities would avoid grasslands, wetlands, streams, and other wetland habitats to the extent possible. Clearing and grubbing operations and work on structures would be scheduled to avoid take of migratory birds protected by the Migratory Bird Treaty Act. Pre-construction surveys for nesting birds would be conducted by a qualified biologist during nesting season and would follow the methods set forth by the USFWS and state. Seasonal restrictions would be incorporated and buffers established for construction periods for active burrows or other nest sites as warranted during nesting season.

APPENDIX G

PUBLIC COMMENTS RECEIVED

PUBLIC MEETING #1 SUMMARY

November 15, 2012

Public Meeting # 1 was held on November 15, 2012 at the Bennett Recreation Center (455 S. First Street, Bennett, CO 80102). The meeting was held from 5:00 – 7:00 PM in an open house format. Over 40 members of the public attended, along with 13 agency and consultant team staff members. Following is a summary of project comments submitted by meeting attendees on comment sheets, via the project website comment form, and recorded by open house staff during one-on-one conversations with attendees during the meeting. This summary includes comments received through December 11, 2012.

Study Introduction/Purpose & Need

- I don't agree with the Project Purpose and Goals. (4 comments)
- I agree with the Project Purpose and Goals. (2 comments)
- I have not been convinced of the need for the project.
- There is no issue with connectivity; it's not much of an inconvenience.
- Opposed to spending money on a new road and study.
- Not enough traffic to warrant a new road.
- Understand issues regarding schools and increasing truck traffic.
- There does need to be improvement for railroad crossing.

Traffic Conditions

- Bennett is not that big. Impact of traffic would be horrible.
- I am concerned that the improved access through SH 79 will bring major increase in traffic down SH 79 where I live.
- It is your own fault. You annex outlying property and then complain that there is traffic. You put in a truck stop and then complain because there are trucks. You need to straighten out that mess at the railroad crossing.
- Concern regarding truck traffic. (5 comments)
  - Don't want a truck route on Kiowa-Bennett Road.
  - Fear more truck traffic at higher speeds will open up the area for more traffic going north.
  - Where is truck traffic coming from? Paradise Valley? I-76? Where is scale to north? Oversize permit records? Oversize loads really tie up traffic.
  - Semis and traffic from north is dangerous near school.

Roadway Features

- Existing condition is hard on trucks turning.
- Keep substantial green area between Cordella estates and west side of new road.
- A large bridge over the creek may be needed because it floods.
- Concern regarding curves and sight distance. (4 comments)

- The curve on SH 79 near Old Victory Road is dangerous.
- Make sure any curves on new roads are safe and have good sight distance.
- Sight distance issue from I-70 ramps turning left onto SH 79.
- Concrete curbs added have narrowed the road too much on SH 79 for large vehicles to maneuver curves and turns.

- This is an agricultural community and need wide enough roadways (especially around the elevators) for haul trucks to stay in their lanes.

Environmental and Community Resources

- Concern about more pollution (fuel).
- Don't avoid or relocate prairie dogs – just go through their habitat and get rid of them.
- You will drastically disturb wildlife – deer, turkeys, etc. (3 comments)
  - Lots of animals live near the creek.
- Road should stay out of Kiowa Creek floodplain.
- Besides being real expensive, a road over the railroad tracks may hurt businesses if it bypasses the town.
- A realigned road will have visual impacts (changing peaceful views).
- Very concerned regarding noise impacts. (3 comments)
- A new trail or roadway will cut horse pasture and farmland in half.
- How will farm equipment cross and use a busy new highway?
- I am not for a road through our farm at CR 133. It would connect from Antelope Hills (north) going 45 degrees west to CR 133. It would impact our whole way of life. The new road would almost be in our front yard. No peace and quiet anymore. It would ruin our horse pasture, the wildlife at the creek. We've (Converse) been there almost 100 years. Hate to see our land ruined by a major road. Have to look out our windows all day long to noise and traffic. May be more crime on our farm, etc.
- Quality of life is more important than the money that would be offered for property impacts.
- I live on View Ridge Road (Cordella) and would rather the road did not interfere with our neighborhood.

Alternative Modes

- Do owners of land know of proposed trails and have they given permission?
- Crossing railroad tracks is not appropriate for children or pedestrians.
- Need to widen SH 79 and US 36 to provide room for bikes.

Improvement Suggestions

- Create a full interchange at the existing Kiowa-Bennett Road location. (6 comments)
  - Put off and on ramp on existing Kiowa-Bennett Road. I now have to drive 2 miles but if we turn urban what would be the big deal?
  - We live at US 36 & Kiowa-Bennett Road. We would like to see an on/off ramp at I-70 and Kiowa and remove the Lady Bird Hill exchange.

- Full interchange at Kiowa-Bennett Road and go straight north to provide the most choices.
- Interchange at Kiowa Bennett Road and I-70 is needed and will help remove some traffic from SH 79. Ramp to rest area not needed now with the closure of the rest area.
- I don't really see a lot of need for realignments other than increasing ramps at I-70 and Kiowa-Bennett Road.

- Nobody even knows who has the right of way. How about one of those turn-about things?
- Keep SH 79 exit east of Cordella, put through to Kiowa-Bennett Road and swing road through old village homes to connect with existing SH 79.
- Need to get highway away from school.
- Need turn lanes at school and on US 36 when trains are present so through traffic can still move.
- No roundabouts – difficult to get through with horse trailer which exist a lot in the community.
- Widening is needed all the way to the north (north of 38th).
- Consider new route further east to ridge line with interchange at I-70 where US 36 meets Colfax.
- Consider a split diamond configuration for the replacement I-70 Exit 304 interchange (at Converse Road). This would move the existing I-70 West off-ramp from 304 to 305 (1 mile further east) and the I-70 West on-ramp from 304 to 305. In between 304 and 305, a frontage road would connect exits 304 and 305 on both sides. (3 comments)
  - Like the split diamond idea best as it has least impact on property owners.
  - I like the split diamond idea to solve the Kiowa-Bennett road situation – if it even needs solved. Those people knew what the I-70 access situation was when they moved here.
  - The representative from Bennett recommended a split-diamond. This has several advantages. 1) The right-of-way for the two frontage roads already exists. 2) This would remove the need to re-align Kiowa-Bennett Road across the Arapahoe County green space to Converse Road (exit 304). We travel to Bennett over Kiowa-Bennett Road to US 36; it seems to us that this approach of frontage roads would be the most direct route with the least impact to existing homeowners, causing a very minimal amount of re-alignment for Kiowa-Bennett Road. This change seems to be independent of where SH 79 goes.

General Comments

- Would like to have taken home maps of proposals.
- Everyone in area gets I-70 Scout. It is the best way to advertise meetings.
- Meeting was well publicized.
- Can Town of Bennett website include link to SH79 website?
- Want to get Spaceport, so need roadways to support it.
- Can't visualize where realignments could be, need to see alternatives.
- Should have built the railroad crossing separation years ago, before recent development. (2 comments)
- Limited opportunities exist for new route due to recent and proposed development.
- Taxes are already too high.
- Conoco Phillips has five drilling rigs coming west of town. Need to look further into the future.

PUBLIC MEETING #2 SUMMARY

Meeting held May 16, 2013

Public Meeting # 2 was held on May 16, 2013 at the Bennett Community Center (1100 W. Colfax Avenue, Bennett, CO 80102). The meeting was held from 5:00 – 7:00 PM in an open house format. 40 members of the public attended, along with 11 agency and consultant team staff members. Following is a summary of project comments submitted by meeting attendees on comment sheets, via the project website comment form, and recorded by open house staff during one-on-one conversations with attendees during the meeting. This summary includes comments received through June 14, 2013.

Alternatives Evaluation – Level 1 and 2 Screening

No Action

- Prefer the No Action alternative. (2 comments)
    - Bennett needs to fix their own problems and not just pass them on to someone else.

Alternative 3

- Prefer Alternative 3. (3 comments)
    - Alternative 3 is the most direct connection southbound.
    - It would make sense to direct trucks on Kiowa-Bennett Road south of I-70 to the commercial area of SH 79 (truck stop).
- Alternative 3 would cut off our east property and another road west of us would cut off another property, affect wildlife going across the creek, and would be more expensive then Alternative 1 and 2.

Alternative 5

- Alternative 5 is a waste of money.

Alternative 6

- Residents like Alternative 6, but understand that keeping SH 79 in the existing location is best for commercial properties. (2 comments)
- Alternative 6 is preferred due to full interchange at SH 79/I-70 and at Kiowa-Bennett Road/I-70.

Alternative 9

- Pleased Alternative 9 eliminated, since it would go in the middle of our farm and ruin our way of life with a main highway a few hundred feet from our house.

Various Alternatives

- Alternatives 3 and 9 are not favorable.
- All ideas about an alignment on Converse Road to the south of Bennett and west of Kiowa Creek and cutting southeast back to Kiowa-Bennett Road will be fought tooth and nail by local landowners. This idea was brought forward by a few for their convenience to access I-70 to the west of Bennett.
- Going through or near the open space was a horrible idea.

Process

- Level 2 process is well defined and well along.
- Concerned that eliminated alternatives could come back to life. (2 comments)
- I support your decision to eliminate all of the plans that you did. Showing them at this meeting confused people.
- Top priorities should be the impact on landowners, the environment and wildlife. The wishes, desires and convenience of some come at the expense of long-time residents.
- Preserve natural areas and reduce environmental impact. Do not cut through Kiowa North Open Space.
- The cost and priority to connect SH 79 and Kiowa-Bennett Road does not seem warranted at this time.
    - The proposals presented seemed to differ as to the priority of connecting SH 79 directly to Kiowa-Bennett Road or simply funneling that traffic into the Commercial District (SH 79, aka First Street, and I -70). The connection of SH 79 and Kiowa-Bennett Road would provide the only north-south continuously paved road in the easterly portion of the counties that traverses the entire depth of Adams and Arapahoe County. Kiowa-Bennett Road provides access to Highway 86 at Kiowa and Highway 24 at Falcon. This route is a valuable alternative to driving I-25. Currently the road does not appear to sustain much thru traffic, primarily serving the residential areas in the county. Without modification to the terminus areas at Falcon and Prospect Valley, the likelihood of significant thru traffic volume is unlikely. The two roads will likely continue as collectors for I-70.

Alternative 1 – East Railroad Crossing with Full Kiowa-Bennett Diamond

- The most favorable of the remaining alternatives. (8 comments)
    - Addresses safety concerns with low environmental impact.
    - Is the most practical and has the least cost and disruption to wildlife and private landowners.
    - Nearby interchanges, but serves different traffic requirements.
    - This makes the most sense. There might still be some problems but those can be handled down the road.
    - Prefer because of the full interchange at I-70/Kiowa-Bennett Road.
    - After considering all the alternatives, it appears this alternative is the best.
    - Makes the most sense and is least costly.
    - I like this one because it puts an interchange where there is a partial one right now and the cost is better than others.
- This is my second choice.
- Opposed to this alternative if it results in private property acquisition.
- Would require young drivers use I-70 to get to Bennett. Add a continuous accel/decel lane between Converse and Kiowa-Bennett Roads to keep local traffic off of I-70.
- Diverts traffic to narrow two lane roads which is a bad idea.

- I've been told a full diamond would not be granted by CDOT because of its proximity to the Bennett exit interchange.

Alternative 2 – East Railroad Crossing with Split Kiowa-Bennett Diamond

- This is the best alternative as it allows SH 79 traffic to pass through the town much more efficiently.
- Favor this alternative for safety reasons since it keeps local traffic off the interstate.
- Alternative 2 is more popular and preferred.
- A westbound on ramp from Kiowa-Bennett Road is very appealing and long overdue. (2 comments)
- Favor this as long as it is east enough of Cordella Estates to provide sound isolation and vision.
- Second best if Alternative 1 is not approved.
- Addresses the southbound issue but bypasses the commercial area of Bennett.
- Ignores a direct southern route, but the new roads that parallel I-70 will help develop commercial activity.
- Should be eliminated. (9 comments)
    - Too complicated.
    - Does not provide service to the most lots and is expensive.
    - The cost potentially associated with constructability of the road is not appealing. This alternative has potential to impact endangered species, and affect park and recreation areas.
    - Too costly, with two extra bridges. Impacts a fragile wildlife environment.
    - Requires the construction of frontage roads which is an unnecessary waste of resources.
    - Don't like this because I'd have to use frontage roads to get home.
    - No point to run two roads parallel to I-70. This would cause congestion at all ramp points from residents waiting behind semis, and would add time and frustration to community members commute.
    - Has direct environmental and wildlife impact with new frontage roads.
- Opposed to this alternative if it results in private property acquisition.
- Would depress or decrease home values if current access to I-70 was reduced or disrupted.
- Would remove a house plus many trees for frontage roads/new ramp connections.
- Traffic lights at Converse Road to the north simply make no sense. Bennett solving their own problem (i.e. that the town was foolishly built on both sides of the UPRR) would simply shift their problems to the south, especially at I-70 both eastbound and westbound.
- Frontage roads may prove difficult and disruptive considering truck traffic.

Alternative 4 – East Railroad Crossing with East Kiowa-Bennett Alignment

- Like this alternative because it does not include Converse Road. Although the cost would be more, it affects less farmer's ground.
- My favorite because of new interchange at I-70 and Kiowa Bennett Road.
- Maybe okay, depending on need to move interchange to the east.

- Alternative 4 may favor light industrial development (included in County's new master plan).
- Better than Alternative 2 but not better than Alternative 1. Try to minimize or eliminate impacts to parks and rec areas and endangered species habitat.
- Should be eliminated (7 comments)
    - Does not accomplish much improvement and is a waste of money.
    - Complicated and does not resolve what needs to be resolved.
    - Directly impacts a resident and their large amount of active farmland. Any alternative that impacts a member of the community should not be an option.
    - It is a crazy idea to make a new road leading to an interchange through private property, just to be in compliance with CDOT's regulation. Very expensive way of directing people to go out of their way to get on I-70.
    - Requires the displacement of people who have lived here for generations and serves no purpose.
    - North-south traffic would have to go out of direction (go east to go west). (2 comments)
- A lot of land would be taken to the south of I-70 for a new Kiowa-Bennett Road east-west alignment south of I-70.
- The high cost of land could delay the acquisition process.

Comments Common to Alternative 1, 2 and 4

- The elimination of the two existing ramps near the Kiowa-Bennett Road interchange will cause problems for residents east of Bennett. If these ramps are eliminated, improvements will need to be made at the existing Strasburg interchange (which is already operating poorly and couldn't handle additional traffic). (2 comments)
    - Local businesses would be impacted if the Exit 304 westbound off-ramp were removed or eliminated.
    - The Strasburg interchange is narrow and has poor sight distance, so people use the Colfax interchange instead.
    - Closing the Lady Bird Hill interchange will have a negative effect for future industrial/commercial development along US 36 from the railroad underpass to Strasburg. A master plan for this area is currently underway by Arapahoe County. It appears this study was not considered in the SH 79 PEL.
    - The study indicates that 2,500 cars per day utilize the current interchange. A large portion of this traffic originates in the Strasburg area. Should the interchange be closed, the traffic originating in Strasburg would be forced to use the Strasburg interchange (Exit 310). The Strasburg interchange is an eclectic collection of access roads funneling into a narrow bridge, which have been marginally functional for years. The interchange and access via Wagner Street to US 36 only operates because of the low traffic count. The addition of thousands of cars per day will cause unacceptable traffic issues unless the interchange is re-designed and modified as part of this project.
- Keep Colfax/US 36 westbound access open with Alternatives 1 and 2.
- Don't fix something that isn't broken/the problem doesn't need to be resolved. (3 comments)
    - All of the alternatives are pointless, a waste of resources, time, and money. The alternatives affect the community in a negative way.

- No need to mess with I-70. Exit 306 currently works fine, especially westbound exit to new US 36/Colfax Avenue to the northwest.

- The three remaining alternatives would all impact wildlife, people, and connectivity.
- Concerned with Kiowa Creek North Open Space impacts.
- Don't take property at the southeast corner of I-70 and Kiowa-Bennett Road.
- My property will be impacted by all three of your existing options. If you think you are going to get even one inch of my property for your connectivity project, you are in for a fight. I will fight with everything I have.

Railroad Grade Separation

- Why consider a railroad bridge – there aren't that many trains.
- Cordella Estates resident concerned about visual and noise impacts to his property located next to the proposed alignment. Cordella Estates subdivision values would depreciate to the point they'd have no resale value at all, especially homes with views to the south/southeast towards either a new flyover or suppressed underpass highway. (SH 79 under the Union Pacific rail line would not be an improvement).
- It was somewhat unclear as to how the grade separation would address the traffic flow in the CBD (the historic shops facing the railroad on US 36 and Front Street) and the Bennett school complex, which generates the highest level of peak traffic flow. The vertical and horizontal distances required for the clearance over the railroad will certainly provide some engineering challenges. Without a modification of traffic flow in the core area, congestion could become worse, rather than better.

Improvement Suggestions

- Pave E. 38th Avenue and 1st Street.
- Consider constructing one westbound ramp on Kiowa-Bennett Road.
- Consider other alternatives that address the traffic concerns in the congested sections of the Town of Bennett. Concern that none of the alternatives will address those traffic concerns.
- Consider improvements to the east of 6th Street at Colfax, a bit west of the fire station.
- Need four lanes on SH 79 to accommodate trucks from I-76 and oil and gas trucks.
- SH 79 should be extended south from the interchange to CR 6, then west along the section line to Kiowa-Bennett Road. As part of this project CR 6 would then be extended from CR 125 (Brick Center) to the extension of SH 79. This simple plan is consistent with the Town of Bennett's Master Plan which indicates massive development south of I-70. CR 6 would become a major east-west collector from Manila road to the Strasburg Road allowing residents easy access to the Bennett commercial district and the interstate interchange at Bennett. This plan also preserves Arapahoe County Open Space at the corner of road 6 and Kiowa Bennett road. As the route follows existing roads and ROW, the acquisition cost and disruption of area residents is minimal. This plan would also allow the existing interchange to remain intact saving millions of dollars. This differs from Alternative 3 in that there would be intersections, not wide swooping curves that prioritize non- stop traffic on SH79.

Railroad Grade Separation

- Construct improvements only in the northern section of the project area. (6 comments)
    - It would make more sense to construct SH 79 from the north to Colfax. (2 comments) Stop there! This will solve the problem with the railroad crossing.
    - Take SH 79 over the railroad and stop at Colfax Avenue. This gives you access over the railroad which is the only necessary point of construction. Doing anything other than that is a waste of resources, money, and time, in addition a pointless act of damage to the environment.
    - Most concerned with the at-grade crossing of the railroad in town, which creates safety issues. But, I understand there is no good way to improve this.
    - Do whatever you need to do in old town Bennett and Adams County, but leave Arapahoe County alone. Get across railroad tracks any way you want, but don't include Kiowa-Bennett Road.
    - Add another alternative that simply addresses the problem of access over the railroad and stopping at Colfax Avenue.

General Comments

- It's apparent much analysis and hard work has been accomplished. Keep up the good work. Thank you.
- We really appreciate the meeting to learn and discuss this strategic project.
- As a landowner and provider of open space, outdoor enjoyment and trail connections for public use, we appreciate your work in gathering broad input for this study and its significant implications for the future of the Bennett area. Thank you for the open house and for taking our comments and feedback.
- Consider accommodating bicycle traffic along Kiowa-Bennett Road. (2 comments)
- The Strasburg interchange currently has no pedestrian access.
- Open Space has funded trail access north along Kiowa-Bennett from Antelope Hills, under I-70 (Bennett's application). Alternatives need to allow for that trail.
- Concern regarding construction impacts, especially if the Kiowa-Bennett/I-70 bridge is out of service and traffic is required to travel out of direction to access US 36 and I-70.
- Please take into consideration the truck traffic on Kiowa Bennett/SH 79. I live six miles south of Bennett on CR 137. In the last nine months the truck traffic has tripled. The oil well traffic has now entered the area with all the other truck traffic. Oil well trucks ran in groups of 6-8 trucks coming into the new wells that are being drilled. These trucks need to be separated and be able to move through or around Bennett without bottling the traffic around the Love's and King Soopers area. Kiowa Bennett Road is a major road for through traffic without going to Limon or on E-470, and now that it is paved all the way to Fountain, the traffic is increasing a lot.
- From Denver we always use I-70 and exit 306.
- Drainage from northeast of Kiowa-Bennett Road/I-70 comes across Kiowa-Bennett Road and impacts the property on the northwest corner of Kiowa Bennett Road/I-70. The culvert needs inspected and cleaned.
- The southwest parcel of Old Victory Road was a city dump until the 1970's.
- The do-nothing option should have been listed for comments.

- People knew there wasn't a full interchange on Kiowa-Bennett Road when they moved here, but came anyway. The people wanting a change are the ones who caused the problem in the first place. They want quick access to get to the Denver metro area, but if it is important to get to the big city that quick they should have never moved here. They truly don't "live" here anyway, they only sleep here and spend the majority of their waking hours back in the city, filling our schools with problems.
- I do not feel the current study proposals adequately address the long term traffic needs of the area. These studies should be re-defined and re-prioritized before moving ahead.
- The proposals for closing the Lady Bird Hill interchange were not publicized to Strasburg area residents.

APPENDIX H

FHWA PEL QUESTIONNAIRE

FEDERAL HIGHWAY ADMINISTRATION
PLANNING/ENVIRONMENTAL LINKAGES QUESTIONNAIRE

SH 79 and Kiowa-Bennett Corridor PEL Study

Date Prepared: 10/29/13

This questionnaire is intended to act as a summary of the planning process and ease the transition from planning to a National Environmental Policy Act (NEPA) analysis. Often, there is no overlap in personnel between the planning and NEPA phases of a project, so consequently much (or all) of the history of decisions made in the planning phase is lost. Different planning processes take projects through analysis at different levels of detail. Without knowing how far, or in how much detail a planning study provided, NEPA project teams are not aware of and may often re-do work that has already been done. This questionnaire is consistent with the 23 CFR 450 (Planning regulations) and other FHWA policy on Planning and Environmental Linkages (PEL) process.

The Planning and Environmental Linkages study (PEL Study) is used in this questionnaire as a generic term to mean any type of planning study conducted at the corridor or subarea level which is more focused than studies at the regional or system planning levels. Many states may use other terminology to define studies of this type and are considered to have the same meaning as a PEL study.

At the inception of the PEL study, the study team must decide how the work will later be incorporated into subsequent NEPA efforts. A key consideration is whether the PEL study will meet standards established by NEPA regulations and guidance. One example is the use of terminology consistent with NEPA vocabulary (e.g. purpose and need, alternatives, affected environment, environmental consequences).

1. **Background:**

   a. **Who is the sponsor of the PEL study? (state DOT, Local Agency, Other)**

      Town of Bennett, Adams County, Arapahoe County, Colorado Department of Transportation (CDOT)

   b. **What is the name of the PEL study document and other identifying project information (e.g. sub-account or STIP numbers, long-range plan or transportation improvement program years)?**

      SH 79 and Kiowa-Bennett Corridor PEL Study

   c. **Who was included on the study team (Name and title of agency representatives, consultants, etc.)?**

      Town of Bennett, Adams County, Arapahoe County, CDOT, Denver Regional Council of Governments (DRCOG), and Federal Highway Administration (FHWA)

      Please see the Acknowledgements section at the beginning of the *PEL Report* for a detailed list of study team participants.

   d. **Provide a description of the existing transportation facility within the corridor, including project limits, modes, functional classification, number of lanes, shoulder width, access control and type of surrounding environment (urban vs. rural, residential vs. commercial, etc.)**

      The traffic evaluation includes SH 79 and the existing I-70 interchanges at SH 79, Kiowa-Bennett Road, and Colfax Avenue/US 36. The study area limits include approximately three miles of SH 79 (from I-70 to 38th Avenue north of Bennett), approximately three miles of Kiowa-Bennett Road (from the Antelope Hills neighborhood to Colfax Avenue/US 36 north of I-70), about 3.5 miles of Colfax Avenue/US 36 within the Town of Bennett, and about 3.5 miles of I-70.

The environmental resource review area for the project is defined as the area of most likely physical impacts of corridor transportation improvements. To take into account the potential for indirect or secondary effects to community or environmental resources as a result of the potential improvements, the initial area surrounding the roadway corridors was extended to the back property line of area parcels to be more inclusive. This environmental resource review area is generally bounded by Penrith Road to the west, the southern edge of Antelope Hills to the south, Colfax Avenue/US 36 and County Road 2 to the east, and 38th Avenue to the north.

The study area is located in a rural area characterized by a concentrated mixture of residential, commercial, industrial and public/institutional properties surrounded by predominantly agricultural land. With the exception of the Antelope Hills residential subdivision located south of I-70, urban uses are generally located north of I-70 within the Town of Bennett's incorporated boundaries. Bennett consists primarily of low density, single family residential neighborhoods with light industrial development on its northern and eastern edges.

SH 79 is a regional north-south highway that is designated as an oversize load route by CDOT and a hazardous materials route by the Colorado Department of Public Safety. North of I-70, SH 79 is the primary entrance to the Bennett community, which makes it a dominant and focal element in the community. The stretch of highway from I-70 to Colfax Avenue/US 36 is also known as Converse Road. It is a two-lane rural highway with a posted speed limit of 35 miles per hour (MPH) through town and 50 MPH between I-70 and Colfax Avenue/US 36 and north of town to 38th Avenue. North of 38th Avenue, the speed limit is 65 MPH. CDOT recently conducted a speed study along the limits of SH 79 known as Converse Road and is recommending that the speed be reduced from 50 MPH to 45 MPH for approximately one mile both northbound and southbound.

SH 79 has an at-grade crossing of the Union Pacific Railroad (UPRR) in the center of town. The crossing is controlled with gates and lights. CDOT defines the functional classification of SH 79 as a Major Collector. For access control, CDOT classifies SH 79 as Non Rural Arterial (NR-B) between I-70 and 38th Avenue and Rural Highway (R-B) north of 38th Avenue.

Kiowa-Bennett Road provides north-south travel from SH 86 in Kiowa in Elbert County (30 miles south of the study area), through Arapahoe County, to the intersection with Colfax Avenue/US 36 north of I-70. The roadway consists of two lanes and is relatively continuous, with a few curves. There is an off ramp for eastbound I-70, but other connections to I-70 are via Colfax Avenue/US 36 and County Road 2 east of Kiowa-Bennett Road. The speed limit along Kiowa-Bennett Road south of Colfax Avenue/US 36 is 45 MPH.

Colfax Avenue/US 36 is a regional east-west two-lane rural highway with a posted speed limit of 35 MPH through town. CDOT defines the functional classification of Colfax Avenue/US 36 as a Major Collector west of the SH 79/Adams Street intersection and as a Local east of the intersection. For access control, CDOT classifies Colfax Avenue/US 36 as a Non Rural Arterial (NR-B) between Penrith Road and Kiowa-Bennett Road. Outside that segment within the study area, Colfax Avenue/US 36 is designated as a Rural Highway (R-B) for access control.

I-70 is a major east-west interstate highway that crosses central Colorado and travels through the middle of the Denver metropolitan area. Within the study area from Milepost (MP) 303.0 to MP 308.0, I-70 is a four-lane divided rural interstate freeway with a posted speed limit of 75 MPH. I-70 has a full diamond-style interchange at SH 79 with stop signs at the ramp intersections providing direct access to Bennett and an eastbound off ramp at Kiowa-Bennett Road, one mile east of SH 79. There is another eastbound off ramp, plus westbound off and on ramps at Colfax Avenue/US 36 and County Road 2, located one mile east of Kiowa-Bennett Road.

Please see the Introduction section of the *PEL Report* and the full *Corridor Conditions Assessment Report* for more detailed information on the existing transportation facilities.

e. Provide a brief chronology of the planning activities (PEL study) including the year(s) the studies were completed.

(Month/year noted below indicates date the activity and documentation was completed.)

- Study Initiation – August 2012
- Data Collection – September 2012
- Existing Conditions Evaluation – December 2012
- Environmental Scan – January 2013
- Purpose and Need Statement – February 2013
- Alternatives Development/Evaluation – June 2013
- Final PEL Study Report – November 2013

Please also see the Agency and Public Coordination section in the *PEL Report* for dates of meetings held during the study.

f. Are there recent, current or near future planning studies or projects in the vicinity? What is the relationship of this project to those studies/projects?

A number of plans have been developed that relate to the study area, including plans for the adjacent land use, local transportation plans, and statewide plans. Previous local and regional plans that were considered during the alternatives development process include:

- *Town of Bennett Downtown Planning Study* (2010)
- *2012 Town of Bennett Comprehensive Plan* (2012)
- *Bennett Regional Trail Plan* (2011)
- *Adams County Transportation Plan* (2012)
- *Arapahoe County 2035 Transportation Plan* (2010)
- *Arapahoe County Open Space Master Plan* (2010)
- *I-70 Corridor Economic Assessment* (2011)
- *2035 Metro Vision Regional Transportation Plan* (2011)
- *2035 Statewide Transportation Plan* (2011)

Transportation improvements along SH 79 and Kiowa-Bennett Road are consistent with local and regional plans. Specific roadway improvements are not included in DRCOG's Fiscally Constrained *2035 Regional Transportation Plan.* The Kiowa-Bennett Road bridge over I-70 is on the Colorado Bridge Enterprise list as eligible for bridge repair/rehabilitation with FASTER funding, although it has not been included in the current bond program. The realignment of SH 79 with a grade separation at the UPRR is included in the *2012 Town of Bennett Comprehensive Plan* and *Adams County Transportation Plan*. Improved connectivity for Kiowa-Bennett Road at I-70 is included in the *Arapahoe County 2035 Transportation Plan*.

Currently, there are no planned transportation capacity improvement projects within the study area. There are operational and maintenance projects funded in the study area, as well as a new multi-use path. These programmed improvements with committed funding sources are described with the No Action alternative in the Alternatives Development and Analysis section of the *PEL Report*.

2. Methodology used:

a. What was the scope of the PEL study and the reason for completing it?

The scope of the PEL study was to work with stakeholders to determine the short-term and long-term transportation needs of the SH 79 and Kiowa-Bennett Road corridors around the Bennett area, to

address the increasing congestion and safety issues, and to identify transportation improvement alternatives that balance anticipated access needs with regional mobility and connectivity.

b. Did you use NEPA-like language? Why or why not?

Yes, NEPA-like language was used to provide the framework for the implementation of the study recommendations as funding is available and to be used as a resource for future NEPA documentation (future Categorical Exclusions or Environmental Assessment).

c. What were the actual terms used and how did you define them? (Provide examples or list)

The following terms in this PEL study are the same in meaning to those used in NEPA:

- Purpose and Need
- Independent Utility
- No Action Alternative
- Recommended Alternative

d. How do you see these terms being used in NEPA documents?

The terms in this PEL study will be used in NEPA documents in the same way as they were used in the PEL study.

e. What were the key steps and coordination points in the PEL decision-making process? Who were the decision-makers and who else participated in those key steps? For example, for the corridor vision, the decision was made by state DOT and the local agency, with buy-in from FHWA, the USACE, and USFWS and other resource/regulatory agencies.

The primary decision-makers in the study process were the agency participants involved in the Technical Advisory Committee (TAC), including Town of Bennett, Arapahoe County, Adams County, CDOT, DRCOG, and FHWA. Concurrence was gained at the TAC meetings at the following key study milestones:

Milestone	Expected Schedule	Means of Concurrence
TAC Charter	Technical Advisory Committee Meeting #2 September 2012	Committee member signatures
Purpose and Need Statement	Technical Advisory Committee Meeting #3 October 2012	Committee acceptance of meeting notes
Evaluation Criteria	Technical Advisory Committee Meeting #4 December 2012	Committee acceptance of meeting notes
Alternatives Developed	Technical Advisory Committee Meeting #5 January 2013	Committee acceptance of meeting notes
Level 1 Alternatives Screening Results	Technical Advisory Committee Meeting #5 January 2013	Committee acceptance of meeting notes
Level 2 Alternatives Screening Results	Technical Advisory Committee Meeting #8 April 2013	Committee acceptance of meeting notes
Level 3 Alternatives Screening Results	Technical Advisory Committee Meeting #9 June 2013	Committee acceptance of meeting notes
Final Study Recommendations	Study Completion August 2013	Committee member signatures on a support page; Agency support letter and/or Resolution

The study was coordinated with local, State and Federal resource agencies with distribution of information to representatives at two points during the study. Early in the study a letter and study area map were mailed as an introduction to this PEL process and request for input on the existing conditions and concerns within the study area. A second letter was mailed serving as an update on the study following Level 3 alternatives screening. A summary of the resource agency coordination and input is included in Appendix E of the *PEL Report*.

f. How should the PEL information be presented in NEPA?

The PEL study documentation was prepared consistent with NEPA and allows the future NEPA study effort to readily extract pertinent data from the reports. The PEL alternatives evaluation process included developing screening criteria based on the project Purpose and Need, developing a full range of alternatives, and documenting the elimination of alternatives to limit the need for consideration during future NEPA processes. Three levels of screening occurred to evaluate alternatives. The alternatives screening process included public involvement, and outreach efforts that were conducted with the local agencies and area stakeholders. The screening process is described in detail in the Alternatives Development and Analysis section of the *PEL Report* and can be directly incorporated into a subsequent NEPA document.

Potential steps for proceeding through the NEPA process include identifing possible actions that could be categorically excluded from development of an environmental assessment (EA) or environmental impact statement (EIS). Possibilities include actions identified in the PEL Study as separate project phases, such as the I-70 and SH 79 interchange improvements, which would provide mobility and safety benefits as a stand-alone project. The alternatives screening, environmental overview information, and agency and public coordination completed in the PEL study can be directly referenced in a Categorical Exclusion (CE) document for a separate project phase.

Should the NEPA process result in development of an EA for the overall transportation network improvements or a separate project phase, the Introduction, Purpose and Need, and Agency and Public Coordination sections of the *PEL Report* can be used to develop the Purpose and Need chapter of the EA. The Alternatives Evaluation Summary and Study Recommendations sections of the *PEL Report* can be used as background for the Alternatives chapter. The Affected Environment and Environmental Consequences section, appendices, and *Corridor Conditions Assessment Report* can provide the starting point to develop more in-depth evaluation and descriptions of the affected environment and expected impacts.

3. Agency coordination:

a. Provide a synopsis of coordination with federal, tribal, state and local environmental, regulatory and resource agencies. Describe their level of participation and how you coordinated with them.

The study was coordinated with local, State and Federal resource agencies with distribution of information to representatives at two points during the study. Early in the study a letter and study area map were mailed as an introduction to this PEL process and request for input on the existing conditions and concerns within the study area. A second letter was mailed serving as an update on the study following Level 3 alternatives screening. Graphics of the Recommended Alternative and a summary of critical considerations were enclosed for review to identify potential resource impacts and next steps required for future NEPA processes. A summary of the resource agency coordination and input is included in Appendix E of the *PEL Report*.

The following input was received from resource agencies:

- Adams County Parks and Community Resources stated a preference to limit impacts to the Kiowa Creek floodplain and that any new crossings of Kiowa Creek accommodate a public trail running north/south along the creek.

- Arapahoe County Open Spaces opposed any roadway alignment within the Kiowa Creek North Open Space and indicated that mitigation to minimize impacts to the Kiowa Creek riparian area will be required during construction.
- Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division indicated that the need for an Air Pollution Emission Notice permit should be determined during the NEPA process.
- Colorado Parks and Wildlife, NE Region recommended that the local agencies employ a collaborative approach with other developments to maintain wildlife habitat in as whole a state as possible and indicated that additional field surveys will be required during NEPA.
- U.S. Army Corps of Engineers (USACE) indicated that impacts to wetlands and open water features must be avoided, minimized, or mitigated and that a Section 404 permit would likely be necessary in future project efforts.
- U.S. Fish and Wildlife Service (USFWS) noted that habitat surveys will be needed during the NEPA process. They appreciate efforts to avoid impacts to migratory birds.

No response was received by the following agencies:

- Colorado Department of Health and Environment, Water Quality Control Division
- Colorado State Historic Preservation Officer (SHPO)
- Town of Bennett Parks and Recreation
- Urban Drainage and Flood Control District
- U.S. Department of Agriculture, Natural Resource Conservation Service
- U.S. Environmental Protection Agency (EPA)

b. What transportation agencies (e.g. for adjacent jurisdictions) did you coordinate with or were involved during the PEL study?

Coordination occurred between:

- Town of Bennett
- Arapahoe County
- Adams County
- CDOT
- DRCOG
- FHWA

As part of the TAC, each of these agencies had a high level of involvement throughout the PEL study and concurred with each step of the process. Please see the Agency and Public Coordination section of the *PEL Report* for more description of the coordination efforts between transportation agencies.

c. What steps will need to be taken with each agency during NEPA scoping?

Scoping meetings will be conducted during subsequent NEPA processes to inform the resource and regulatory agencies of the findings of the PEL study and to discuss the anticipated impacts from the NEPA proposed action. Information from the PEL study will be used in scoping, such as the *Corridor Conditions Assessment Report* data and mapping, and the alternatives development and analysis process and findings used to refine the Recommended Alternative. It will be determined at the scoping meetings if there are additional agency concerns or if there are additional data/information that was not available during the PEL study.

4. Public coordination:

a. Provide a synopsis of your coordination efforts with the public and stakeholders.

Stakeholder involvement was emphasized throughout the PEL process and feedback was solicited from the agency and public partners at key decision points to foster acceptance of recommendations. Please see the Agency and Public Coordination section of the *PEL Report* for a

summary of the public and stakeholder involvement process, which included ten TAC meetings, two general public meetings, and small group meetings with groups affected by the project, including emergency providers, the school district, Union Pacific Railroad, and Arapahoe County Open Spaces.

5. **Purpose and Need for the PEL study:**

   a. **What was the scope of the PEL study and the reason for completing it?**

   The scope of and the reason for the PEL study was to work with stakeholders to determine the short-term and long-term transportation needs of the SH 79 and Kiowa-Bennett Road corridors around the Bennett area, to address the increasing congestion and safety issues, and to identify transportation improvement alternatives that balance anticipated access needs with regional mobility and connectivity.

   The PEL study was completed to streamline future NEPA processes with documentation of the Purpose and Need, alternatives development and evaluation process. The PEL alternatives evaluation process included developing screening criteria based on the project Purpose and Need, developing a full range of alternatives, and documenting the elimination of alternatives to limit the need for consideration during future NEPA processes.

   b. **Provide the purpose and need statement, or the corridor vision and transportation goals and objectives to realize that vision.**

   The Purpose and Need was developed in coordination with agency stakeholders with review by the general public. Please see the Purpose and Need Statement section of the *PEL Report*.

   Purpose of the Project

   The purpose of the SH 79 and Kiowa-Bennett corridor project is to improve regional connectivity, reduce conflict and delay at the SH 79 at-grade crossing of UPRR, and address safety concerns along the major corridors within the study area for existing and future conditions.

   Need for the Proposed Action

   The SH 79 and Kiowa-Bennett Road corridors have regional operational deficiencies, including a lack of connectivity to I-70. Both roadways are important transportation corridors supporting mobility and economic activity in Bennett and Adams and Arapahoe Counties for existing and future land use and transportation demand conditions. Improvements are needed to:

   - Improve regional mobility and connectivity
   - Reduce conflict and delay at the at-grade railroad crossing
   - Address safety concerns

   c. **What steps will need to be taken during the NEPA process to make this a project-level purpose and need statement?**

   It is anticipated that funding for the entire Recommended Alternative improvements will not be available all together. If smaller components of the project are implemented individually, such as the potential separate projects identified in the *PEL Report*, each separate project will likely need to develop a Purpose and Need statement. Those project-level Purpose and Need statements are expected to be based off the Purpose and Need developed with the PEL study, but focused on the specific needs of the smaller project area.

6. **Range of alternatives: Planning teams need to be cautious during the alternative screen process; alternative screening should focus on purpose and need/corridor vision, fatal flaw analysis and possibly mode selection. This may help minimize problems during discussions with resource agencies.**

Alternatives that have fatal flaws or do not meet the purpose and need/corridor vision cannot be considered viable alternatives, even if they reduce impacts to a particular resource. Detail the range of alternatives considered, screening criteria and screening process, including:

a. What types of alternatives were looked at? (Provide a one or two sentence summary and reference document.)

The range of alternatives were developed to address the issues identified in the Purpose and Need, including the need to improve regional connectivity from Kiowa-Bennett Road to north of Bennett and from I-70 to north of Bennett on SH 79, to reduce delay at the at-grade railroad crossing, and to improve identified safety concerns with sight distance and narrow shoulders on study area roadways.

The initial alternatives considered for the project were developed based on input from the TAC, public input, and the technical input of the project team. Overall, the project focused on alternatives that remove traffic from the downtown Bennett area and provide a grade-separated railroad crossing location, as well as provide additional Kiowa-Bennett Road access for regional users. The No Action alternative was included as a baseline for comparison to the potential improvement alternatives.

Please see the Alternatives Development and Analysis section of the *PEL Report* for more details on the range of the alternatives considered.

b. How did you select the screening criteria and screening process?

The alternatives development and evaluation process included developing screening criteria based on the project Purpose and Need, developing a full range of alternatives, and documenting the elimination of alternatives to limit the need for consideration during future NEPA processes.

Ten build alternative concepts were developed and subjected to a Level 1 "fatal flaw" screening to eliminate alternatives that do not meet the project Purpose and Need. Seven alternatives were carried forward from the Level 1 screening and were refined to complete a more detailed analysis for a Level 2 screening to determine how each alternative meets the Purpose and Need and identify what impacts each alternative would have. Three build alternatives were carried forward after the Level 2 evaluation and were further refined through additional conceptual design and traffic operations analysis in Level 3 screening. The TAC concurred with the final Recommended Alternative and it is described as four potential separate project phases in the *PEL Report*.

Evaluation criteria were established for each level of the screening process prior to the development and analysis of alternatives. These criteria were developed based on the project Purpose and Need by the project TAC, comprised of Town of Bennett, Adams County, Arapahoe County, CDOT, DRCOG, and FHWA. This group ultimately concurred with the evaluation criteria and alternatives to carry forward at the end of each screening process.

c. For alternative(s) that were screened out, briefly summarize the reasons for eliminating the alternative(s). (During the initial screenings, this generally will focus on fatal flaws)

In the Level 1 screening, alternatives that did not reduce travel time on the SH 79 and Kiowa-Bennett Road corridors, reduce the number of vehicles crossing at the at-grade railroad crossing, or address identified safety concerns were eliminated based on not meeting the Purpose and Need. During Level 2 screening, the elimination of alternatives focused on a more detailed evaluation of the project Purpose and Need and analyzed impacts to travel time and truck movements within the project area, reduction in the at-grade crossing delay, emergency response time, potential

reductions in truck and hazardous material conflicts within downtown Bennett, environmental impacts, right-of-way (ROW) needs, phased implementation opportunities, and project costs.

During the Level 3 screening, alternatives were eliminated based on a comparison of evaluation criteria showing where there was a notable difference between the remaining alternative concepts and input from the TAC, area stakeholders, local agency elected officials, and the general public. In the Level 3 screening, the Recommended Alternative was identified to carry forward into future NEPA processes because it was determined to meet the Purpose and Need and project goals to the highest degree while minimizing environmental and community impacts.

All screening was coordinated with TAC members. Please see the Alternatives Development and Analysis section of the *PEL Report* for more detailed information about each level of evaluation.

d. Which alternatives should be brought forward into NEPA and why?

The No Action alternative will be brought forward into NEPA to be used for baseline comparison purposes. Also, one action alternative was determined to clearly meet the Purpose and Need to the highest degree while minimizing environmental and community impacts. The Recommended Alternative recommended to be carried forward is Alternative 1: East Railroad Crossing with Full Kiowa-Bennett Road Diamond Interchange.

Please see the Study Recommendations section of the *PEL Report* for more information about the Recommended Alternative.

e. Did the public, stakeholders, and agencies have an opportunity to comment during this process?

Yes, outreach included ten TAC meetings, two general public meetings, and small group meetings with groups affected by the project including emergency providers, the school district, Union Pacific Railroad, and Arapahoe County Open Spaces.

Please see the Agency and Public Coordination section of the *PEL Report* for an overview of the opportunities for the public, stakeholders, and agencies to engage and inform the study process.

f. Were there unresolved issues with the public, stakeholders and/or agencies?

This PEL study provides the framework for the long-term implementation of the Recommended Alternative transportation system improvements as funding is available. Several specific design decisions will need to be made in the next steps of project development.

For the SH 79 railroad grade separation, both the overpass and underpass options will be carried forward into the NEPA process for a final decision when there is more information on topographic survey, geotechnical conditions, and utility locations.

This PEL study identified potential access locations along the SH 79 realignment consistent with access code requirements. However, the specific allowable accesses along the SH 79 realignment will need to be determined in future project implementation phases.

The traffic analysis completed for this PEL study shows that the diamond interchange configuration at the I-70 and Kiowa-Bennett Road interchange operates acceptably under 2035 conditions. However, the specific interchange configuration will be determined with further analysis during future NEPA processes.

7. Planning assumptions and analytical methods:

a. What is the forecast year used in the PEL study?

The forecast year in the PEL Study was 2035.

b. What method was used for forecasting traffic volumes?

The travel forecast modeling for the traffic analysis of alternatives was conducted based on the DRCOG 2035 regional travel demand model with modifications to the socioeconomic data and network based on coordination with DRCOG and the local agencies regarding current and future land use in the study area.

c. Are the planning assumptions and the corridor vision/purpose and need statement consistent with the long-range transportation plan?

Yes, the travel forecast modeling was conducted based on the DRCOG fiscally-constrained model. The project Purpose and Need is consistent with the DRCOG 2035 Regional Transportation Plan and local transportation planning elements.

d. What were the future year policy and/or data assumptions used in the transportation planning process related to land use, economic development, transportation costs and network expansion?

Travel forecast modeling data were based on the DRCOG 2035 fiscally-constrained regional model with modifications to the socioeconomic data and network based on coordination with DRCOG and the local agencies regarding current and future land use in the study area.

8. Environmental resources (wetlands, cultural, etc.) reviewed. For each resource or group of resources reviewed, provide the following:

a. In the PEL study, at what level of detail was the resource reviewed and what was the method of review?

Data collection to identify the existing resources in the area was conducted in the fall of 2012 using readily available resources resulting in data from file searches from agencies with jurisdictions, GIS mapping, a literature review, and windshield surveys. In addition, the study was coordinated with local, State and Federal resource agencies, including:

- Adams County Parks and Community Resources
- Arapahoe County Open Spaces
- CDPHE Air Pollution Control Division
- CDPHE Water Quality Control Division
- Colorado Parks and Wildlife
- SHPO
- Town of Bennett Parks and Recreation
- USACE
- United States Department of Agriculture, Natural Resource Conservation Service
- EPA
- USFWS
- Urban Drainage and Flood Control District

Information was distributed to representatives of the resource agencies at two points during the study. Early in the study a letter and study area map were mailed as an introduction to this PEL process and requested input on the existing conditions and any known resources or issues of concern in the study area. A second letter was mailed following the Level 3 alternatives screening. A graphic of the Recommended Alternative and a summary of critical considerations were enclosed for review to identify potential resource impacts and next steps required for future NEPA processes.

A review of each resource is included in the *Corridor Conditions Assessment Report*. A summary of the resource agency input is included in the appendix of the *PEL Report*.

b. Is this resource present in the area and what is the existing environmental condition for this resource?

The *Corridor Conditions Assessment Report* provides an overview of the existing conditions for air quality, hazardous materials, floodways and 100-year floodplains, historical and archaeological resources, mines, water wells, parks and recreation, biological resources, wetlands, noise, community impacts, and farmland resources in the project area. Please see the Environmental Overview section of the *PEL Report* for the potential impacts of the Recommended Alternative.

c. What are the issues that need to be considered during NEPA, including potential resource impacts and potential mitigation requirements (if known)?

The following presents a summary of the resources potentially impacted by the Recommended Alternative. Avoidance and minimization through design will need to be documented as each project is carried forward in NEPA and design. Please see the Affected Environment and Environmental Consequences section of the *PEL Report* for more information.

RESOURCE	ISSUES TO CONSIDER DURING NEPA
Air Quality	Moving forward with the NEPA process, air quality impact analysis should be conducted for the Recommended Alternative to determine regional conformity by inclusion in the Regional Transportation Plan and conduct local project-level analysis for carbon monoxide and particulate matter.
Hazardous Materials	Moving into the NEPA process, a hazardous materials assessment, such as a Modified Phase I Environmental Site Assessment, would typically be needed as part of future project development. During the ROW acquisition process, site assessments and/or preliminary site investigations will be performed for properties with potential hazardous materials, and may require remediation prior to acquisition or development.
Floodways and 100-year Floodplains	Two Federal Emergency Management Agency-designated floodplains occur in the study area. Although no bridge crossings are proposed over the floodplains, some impacts to the floodplain could occur under the Recommended Alternative. As part of the NEPA process, floodplain modeling will be required to assess future floodplain impacts and may require a Conditional Letter of Map Revision and Letter of Map Revision.
Historic Resources	The Mount View/Bennett Cemetery is adjacent to the proposed improvements of SH 79, but the proposed roadway alignment was shifted west to avoid impacts to land from the Cemetery. The cemetery was surveyed in 1982 and was recommended to be "not eligible" by the Colorado Historical Society. However, no official determination has been made by the SHPO. When the project reaches the NEPA phase and final design, impacts to this resource should be avoided. The Kansas Pacific Railroad within the study area is potentially historic. The SHPO identifies this segment of the railroad as "field eligible," although no official determination has been made. Minimizing impacts to this resource should be discussed as part of ongoing efforts with the railroad during the NEPA phase.
Archeological Resources	Three prehistoric archaeological sites and one paleontological resource are located in the study area. Due to the sensitive nature of these resources, the sites cannot be mapped. As part of future NEPA processes, a registered archeologist will locate the resources and work with the project team to avoid, minimize and mitigate resource effects.

RESOURCE	ISSUES TO CONSIDER DURING NEPA
Mines	Two saleable mining sites occur in the study area, both privately owned by one individual. These sites are the Mitchell Pit and Mitchell Pit #2 located southeast of Bennett adjacent to Colfax Avenue/US 36. These sites are proposed to be impacted by the realigned SH 79 as part of the Recommended Alternative. As part of the pre-construction process, mineral claims and leases will need to be identified and either permission to use the land surface in these areas or re-location of the roadway will need to occur. Where access to mineral resources may be restricted, the proponents will provide compensation for damage, access rights, and easements with mine owners, claimants, and lease holders. Mine operators may need to be provided with mine access during construction. Air quality monitoring at the sand and gravel pits is recommended to determine the extent of TSPs and particulate matter they emit. On-site water availability during roadway construction could also be an issue.
Water Wells	The Recommended Alternative may potentially impact up to five wells along the existing SH 79 alignment due to obtaining additional ROW. In addition, there are two wells near Old Victory Road and SH 79 that may be impacted. One well south of Old Victory Road is classified for irrigation, but all of the potentially-impacted wells are classified as "other" usages, which means that they are likely used as monitoring wells. Consideration of water well resources during the NEPA process will be necessary and will include a detailed analysis of the project design impacts to existing water wells, a plan for avoidance of existing wells during and after construction, and identification of the necessary permits for construction activities.
Parks and Recreation Resources	None of the existing parks and recreation resources identified within the study area are within the proposed ROW of the Recommended Alternative. Future planned trail systems will be coordinated during the NEPA process to ensure collaboration between the Recommended Alternative alignment and the area's future planned trail network.
Threatened and Endangered Species	Two areas of active black-tailed prairie dogs were observed in the study area, which were a large area in a vacant field northeast of the I-70 and SH 79 interchange, and vacant land just north of Truman Avenue on the north side of Bennett. Black-tailed prairie dogs may provide nesting habitat for burrowing owls, which are a state Species of Concern and also protected under the Migratory Bird Treaty Act. The habitat east of SH 79 may be impacted by the ROW acquisition of the Recommended Alternative. There is moderate potential for the northern leopard frog and the common garter snake, both State Species of Concern, to occur in the wetland habitat along Kiowa Creek, ditches, ponds, and stormwater detention basins within the study area. Cliff swallows often nest under bridges and within box culverts. Nesting locations may change from year to year, and areas should be re-surveyed prior to construction.
Wetlands and Waters of the U.S. (WUS)	Several irrigation ditches and small stock ponds occur within the study area, but wetlands were generally not associated with the ditches. One potential WUS area that could be impacted by the Recommended Alternative is located north of the I-70 and SH 79 interchange. Kiowa Creek has the potential to sustain fringe wetlands along its banks, although vegetation abutting the creek is marginal for wetland vegetation. The Recommended Alternative may impact Kiowa Creek near the I-70 and Kiowa-Bennett interchange. Under the Section 404 of the Clean Water Act, impacts to WUS, including wetlands and open water features, must be avoided, minimized, or mitigated to ensure that there is no net loss of functions and values of jurisdictional wetlands. CDOT regulates wetlands regardless of USACE jurisdiction. A CDOT Wetland Findings report may be required if permanent wetland impacts exceed 500 square feet or if temporary impacts exceed 1,000 square feet, regardless of whether USACE has jurisdiction.

Resource	Issues to Consider during NEPA
Noxious Weeds	No species from the State of Colorado noxious weed list were identified in the study area that are designated for eradication and require prevention of seed production or development of reproductive propagules. Preparation of an Integrated Noxious Weed Management Plan, which would include steps to control existing noxious weeds, would be required during the NEPA process. Weeds in the study area should be mapped during the growing season and an Integrated Weed Management Plan may be warranted to reduce the spread of noxious weeds within the study area.
Noise	No Noise Abatement Category (NAC) A lands exist in the study area, which are those where serenity and quiet are of extraordinary significance. Areas of potential concern for noise impacts include the single family homes located near the proposed SH 79 realignment, and the neighborhood located southwest of the UPRR tracks which is near the railroad grade separation. A detailed noise study will be required during future NEPA processes.
Community Impacts	During the NEPA process, impacts to neighborhoods, businesses, and residences should be identified and avoided where possible. ROW acquisition must conform to the requirements set forth in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and the Uniform Relocation Act Amendments of 1987 (as amended).
Prime and Unique Farmlands	The Natural Resources Conservation Service (NRCS) identified several categories of soil types that are protected in the study area, which is a contributing factor in determining if farmland is considered prime or unique. The protected soil types exist along the existing SH 79 alignment and along the SH 79 realignment. A detailed analysis of the project design impacts to existing prime and unique farmlands, identification of the necessary permits for construction activities, and an assessment of the need for groundwater monitoring before, during, and after the project are needed during the NEPA phase. Ongoing coordination with local planners and NRCS representatives is also needed to ensure that changes resulting from any recommendations are compatible with environmental regulations and the local planning offices.

d. How will the data provided need to be supplemented during NEPA?

See the table above and the Affected Environment and Environmental Consequences section of the *PEL Report* for what supplemental data is needed for future NEPA processes. Depending on the timing of future NEPA efforts, resources may require an assessment due to new regulations. Data that is time dependent will need to be updated to obtain more detailed information during NEPA.

Consultations with appropriate agencies will also be required. These tasks are described below:

- Air Quality:
  - Conduct a local project-level air quality impact analysis for carbon monoxide and particulate matter, as required.
  - Coordinate with the CDPHE, Air Pollution Control Division on local project conformity requirements.
- Hazardous Materials
  - Conduct a Modified Phase I Environmental Site Assessment.
- Floodways and 100-year floodplains:
  - Model floodplains to assess future floodplain impacts.
  - Develop a Conditional Letter of Map Revision and/or Letter of Map Revision.
- Historic Resources:
  - Consult with the SHPO under Section 106 regarding potentially eligible historic structures.

- Consult with SHPO to define an appropriate Area of Potential Effects (APE) for historic and archaeological resources.
- Identify and invite relevant government agencies, organizations, and tribes to participate as consulting parties in the Section 106 process.
- Conduct intensive-level field surveys in all areas that may be subject to project impacts. All identified cultural resources will be evaluated or re-evaluated for National Register of Historic Places (NRHP) eligibility and documentation submitted to SHPO for concurrence.
- Evaluate effects to NRHP-eligible or listed properties from the project by applying federal Criteria of Adverse Effect.
- Consult with SHPO and other consulting parties to resolve any adverse effects through project redesign/avoidance, minimization of impacts, or mitigation.
- Document the resolution of identified adverse effects and mitigation prescriptions in a Memorandum of Agreement with FHWA, CDOT, SHPO and if appropriate, consulting parties.

- Archeological Resources:
  - Consult with a registered archeologist to locate the existing archaeological and paleontological resources within the site.
  - Avoid, minimize, and mitigate impacts to the archaeological and paleontological resources during the NEPA phase.
- Mines:
  - Identify existing mineral claims and leases on the current mines in the study area.
  - Obtain permission to use the land surface or relocate the proposed roadway.
  - The project team will provide compensation for damage, access rights, and easements with the mine owners, claimants, and lease holders.
  - Maintain mine access to mine operators during construction.
  - Monitor air quality at the existing pits.
- Water Wells:
  - Conduct a detailed analysis of the project design impacts to existing water wells.
  - Develop a plan for avoidance of existing wells during and after construction and identify necessary permits for construction activities.
  - Conduct an assessment of the need for groundwater monitoring before, during, and after the project.
  - Coordinate with local planners and other Town officials.
- Parks and Recreation
  - Confirm that a Section 4(f) evaluation for parks and recreation resources is not required.
  - Coordinate with local agencies about the future planned trail network in the project area.
- Threatened and Endangered Species and Wildlife:
  - Consult with the U.S. Fish and Wildlife Service during the NEPA process to determine if there are existing species identified under the Endangered Species Act in the study area.
  - Conduct surveys for the northern leopard frog and the common garter snake in the wetland habitat along Kiowa Creek, ditches, ponds, and stormwater detention basins prior to construction.

- Conduct preconstruction surveys following methods set forth by the USFWS, CDOW or CDOT Section 240 Protection of Migratory Birds Standard Specification.
- Conduct surveys for nesting cliff swallows prior to construction.

- Wetlands and Waters of the U.S.:
  - Conduct an approved jurisdictional determination for any wetlands that could be affected.
  - Obtain a Clean Water Act Section 404 permit to authorize placement of dredge or fill material in any waters of the U.S., including wetlands, if necessary.
  - Develop a CDOT Wetland Findings report, if necessary.
- Noxious Weeds
  - Prepare an Integrated Noxious Weed Management Plan.
- Noise:
  - Conduct a detailed noise study.
- Community Impacts:
  - Evaluate mitigation measures related to affected business or residences.
  - Ensure that any ROW acquisition proceedings conform to the requirements set forth in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) and the Uniform Relocation Act Amendments of 1987 (as amended).
- Prime and Unique Farmland:
  - Consult with the Natural Resources Conservation Service regarding the status of prime or unique farmland in the study area.
  - Conduct a detailed analysis of impacts to prime and unique farmland areas.
  - Identify and obtain necessary construction permits within prime and unique farmland areas.
  - Conduct an assessment of the need for groundwater monitoring in the project area.
  - Coordinate with local planners and Natural Resources Conservation Service to ensure compliance with environmental regulations.

9. List environmental resources you are aware of that were not reviewed in the PEL study and why? Indicate whether or not they will need to be reviewed in NEPA and explain why.

An environmental resource commonly encountered with new grade separations that was not considered in this PEL study was visual assessment. The visual nature of the railroad grade separation was noted in the preliminary evaluation of an underpass versus overpass option. A visual assessment of the potential improvements will need to be reviewed in the NEPA processes. Direct consultation with and concurrence from resource agencies were not conducted as a part of this PEL study and will need to be performed in NEPA.

10. Were cumulative impacts considered in the PEL study? If yes, provide the information or reference where it can be found.

Cumulative impacts were briefly described for some resources included in the *Corridor Conditions Assessment Report*. A cumulative impact assessment for the entire SH 79 and Kiowa-Bennett corridors was not conducted. Additional analysis is expected during the NEPA process as separate projects move forward. Additional coordination with the resource agencies should be conducted to determine a study area for each resource.

11. **Describe any mitigation strategies discussed at the planning level that should be analyzed during NEPA.**

    Mitigation strategies were only developed schematically in this PEL study and are described with each resource considered in the Affected Environmental and Environmental Consequences section of the *PEL Report*. The detailed mitigation measure for each impacted resource will need further analysis during the NEPA phase. Such mitigation measures may include noise mitigation, wetland replacement, and/or construction scheduling to avoid wildlife nesting activities.

12. **What needs to be done during NEPA to make information from the PEL study available to the agencies and the public? Are there PEL study products which can be used or provided to agencies or the public during the NEPA scoping process?**

    Relevant planning products that are readily available to a subsequent NEPA process include:

    - *Corridor Conditions Assessment Report* – January 2013
    - *Purpose and Need Statement Technical Memorandum* – February 2012
    - *Evaluation Criteria (Level 1) Technical Memorandum* - January 2013
    - *Evaluation Criteria (Level 2) Technical Memorandum* – March 2013
    - *Level 3 Evaluation of Alternatives Technical Memorandum* – June 2013
    - *Final PEL Report* – November 2013

    All documentation will be posted on the project website (www.sh79pel.com) and will also be readily available to the public through the offices of each TAC member agency.

13. **Are there any other issues a future project team should be aware of?**

    a. **Examples: Controversy, utility problems, access or ROW issues, encroachments into ROW, problematic land owners and/or groups, contact information for stakeholders, special or unique resources in the area, etc.**

    The Recommended Alternative layout and associated impacts are based on a conceptual level of design. As the potential separate projects move to NEPA and preliminary design, issues to be addressed include:

    - Coordination with UPRR regarding the grade separated crossing and whether it will be an underpass or overpass of the railroad
    - Locations of future accesses allowable along the new SH 79 alignment
    - Interchange ramp configuration for the I-70 and Kiowa-Bennett Road interchange
    - Construction phasing for the reconstruction of the existing roadways and bridges reconstruction while maintaining traffic operations on I-70, SH 79, and Kiowa-Bennett Road and minimizing impacts to the traveling public

APPENDIX I
AGENCY SUPPORT LETTERS

U.S. Department of Transportation
Federal Highway Administration

Colorado Division

12300 W. Dakota Ave., Ste. 180
Lakewood, Colorado 80228
720-963-3000

January 9, 2014

Bryan Weimer
Arapahoe County
Transportation Division Manager
6924 South Lima Street
Centennial, CO 80112

Subject: SH 79 Planning and Environmental Linkage (PEL) Process

Dear Mr. Weimer:

This letter is to acknowledge the completion of the Planning and Environmental Linkage study initiative undertaken by Arapahoe County, the Town of Bennett, the Colorado Department of Transportation (CDOT), and David Evans and Associates on the SH 79 study project. We appreciate and commend the efforts the team has undertaken to conduct this corridor planning study in a manner consistent with the Federal Highway Administration (FHWA) PEL guidance which outlines a process similar to that required by the National Environmental Policy Act (NEPA). The benefits of this streamlining effort will undoubtedly be realized in terms of time and cost savings on future NEPA studies conducted within the corridor planning study limits.

The completed PEL Questionnaire submitted to FHWA in December 2013 provides a good summary of the work completed in the PEL study and the information that will be needed once projects enter into the NEPA process. The strengths of the corridor study include focused coordination with resource agencies, meaningful public involvement through the process, and a detailed look at access management in the corridor. Cumulative effects were not addressed in the corridor study and will be required in subsequent NEPA studies. As individual projects are initiated and funding becomes available, it will be necessary for FHWA to meet with Arapahoe County, the Town of Bennett, and CDOT on a project by project basis to determine the scope of the NEPA study including level of study required, purpose and need, logical termini, and the extent to which the corridor study can be used to supplement or replace certain milestone in the NEPA process.

If you have any questions, please feel free to contact Melinda Urban at 720-963-3015.

Sincerely,

Melinda Urban

John M. Cater, P.E.
Division Administrator

By: Melinda Urban, P.E.
Operations Engineer

Cc: Chuck Attardo, CDOT Region 1
Carrie DeJiacomo, CDOT Region 1
Dole Grebenik, CDOT Region 1
Trish Stiles, Town of Bennett
Stacy Tschuor, David Evans and Associates

U.S. Department of Transportation
Federal Highway Administration

Colorado Division

12300 W. Dakota Ave., Ste. 180
Lakewood, Colorado 80228
720-963-3000

January 9, 2014

Trish Stiles
Town of Bennett
Town Administrator
355 Fourth Street
Bennett, CO 80102

Subject: SH 79 Planning and Environmental Linkage (PEL) Process

Dear Ms. Stiles:

This letter is to acknowledge the completion of the Planning and Environmental Linkage study initiative undertaken by Arapahoe County, the Town of Bennett, the Colorado Department of Transportation (CDOT), and David Evans and Associates on the SH 79 study project. We appreciate and commend the efforts the team has undertaken to conduct this corridor planning study in a manner consistent with the Federal Highway Administration (FHWA) PEL guidance which outlines a process similar to that required by the National Environmental Policy Act (NEPA). The benefits of this streamlining effort will undoubtedly be realized in terms of time and cost savings on future NEPA studies conducted within the corridor planning study limits.

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If you have any questions, please feel free to contact Melinda Urban at 720-963-3015.

Sincerely,

Melinda Urban

John M. Cater, P.E.
Division Administrator

By: Melinda Urban, P.E.
Operations Engineer

Cc: Chuck Attardo, CDOT Region 1
Carrie DeJiacomo, CDOT Region 1
Dole Grebenik, CDOT Region 1
Bryan Weimer, Arapahoe County
Stacy Tschuor, David Evans and Associates

ARAPAHOE COUNTY
COLORADO'S FIRST

Carrie DeJiacomo-Wiedner, Program Engineer
Colorado Department of Transportation, Region 1
2000 South Holly Street
Denver, Colorado 80222

SUBJECT: C12-022; STATE HIGHWAY 79 & KIOWA_BENNETT ROAD PLANNING AND ENVIRONMENTAL LINKAGE (PEL) STUDY SUPPORT FOR STUDY RECOMMENDATIONS

Dear Ms. DeJiacomo-Wiedner:

Arapahoe County is proud to have been a participant in the State Highway 79 and Kiowa-Bennett Road PEL Study. Our involvement in the study on the Technical Team and through elected official briefings provided us the opportunity to discuss the significance of these two roadways and their interface with I-70 and each other with fellow stakeholders. We applaud the efforts and vision of the study team members and their respective agencies to help define these critical improvements for the future.

This planning study included Arapahoe County staff at key intervals, where they provided comments and guidance that improved the study. Study efforts included extensive and meaningful public and stakeholder involvement, which helped shape the study recommendations. Recently, recommendations for both early action and ultimate improvements, including separate phased project options, were documented in the *Final Planning and Environmental Linkage Report*. Following review and involvement by our technical staff, we are confident that recommendations have been made that best meet the project Purpose and Need of 1) Improving Regional Connectivity, 2) Reducing conflict and delay at the SH79 at-grade crossing of the Union Pacific Railroad, and 3) Addressing safety concerns along the major corridors within the study area. Our intention from both a planning and engineering perspective is to strive to support the recommendations of the study through the NEPA process and into detailed project implementation. We will continue to work with the various jurisdictional stakeholders of CDOT, Town of Bennett, and Adams County to help

facilitate the recommended improvements. In particular, Arapahoe County's focus will be on the I-70 and Kiowa-Bennett Road Interchange improvements. We encourage all of the agencies involved in the study to continue to partner and work toward collaborative partnerships that will ultimately provide benefits for all parties

Sincerely,

BOARD OF COUNTY COMMISSIONERS

Nancy A. Doty
Chair of the Board

cc: Board of County Commissioners
David M. Schmit, Director – Public Works
Bryan D. Weimer, Division Manager – Transportation
Brian R. Love, Program Manager – CIP
Stacy Tschuor, David Evans and Associates, Inc.
File (C12-022)
Reader

town of Bennett

Sue F. Horn, Mayor

January 13, 2014

Mr. Dole Grebenik, PE
Resident Engineer, Region 1
Colorado Department of Transportation
4670 Holly Street
Denver, Colorado 80216

RE: SH 79 and Kiowa-Bennett Corridor Planning and Environmental Linkage (PEL) Study Support for Study Recommendations

Dear Mr. Grebenik:

The Town of Bennett is proud to have been a participant in the SH 79 and Kiowa-Bennett Corridor PEL Study. Our involvement in the study on the Technical Advisory Committee provided the Town the opportunity to discuss the significance of the realignment of SH 79 with fellow stakeholders. We applaud the efforts and vision of the study team members and their respective agencies to help assess the full range of alternative alignments for SH 79 as well as improving the connectivity for the Kiowa-Bennett corridor with I-70.

This planning study included the Town of Bennett staff throughout the entire process and provided briefings of the elected officials at key points in the process. Study efforts included extensive and meaningful public and stakeholder involvement, which helped shape the study recommendations. The screening of the full range of alternatives and the recommendations regarding the implementation of each element of the preferred alternative were fully documented in the Final Planning and Environmental Linkage Report. Following review and involvement by our technical staff, we are confident that the recommendations have been made that best meet the project's Purpose and Need of improving regional mobility and connectivity, reducing conflict and delay at the at-grade railroad crossing, and addressing safety concerns.

Our intention from both a planning and engineering perspective is to strive to support the recommendations of the study through the NEPA process and into detailed project implementation. We will continue to work with you to help facilitate the implementation of the preferred alternative. We encourage all of the agencies involved in the study to continue to partner and work toward collaborative partnerships that will ultimately provide benefits for all.

Sincerely,

Sue F. Horn

Sue F. Horn, Mayor

Town of Bennett • 355 4th Street • Bennett, CO 80102 • 303-644-3249 / Fax: 303-644-4125 • shorn@bennett.co.us