

**APPENDIX B**  
**FHWA PEL QUESTIONNAIRE**



**Federal Highway Administration  
Planning/Environmental Linkages Questionnaire**

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 Linkage (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).

*Instructions: These questions should be used as a guide throughout the planning process, not just answered near completion of the process. When a PEL study is started, this questionnaire will be given to the project team. Some of the basic questions to consider are: "What did you do?", "What didn't you do?" and "Why?". When the team submits a PEL study to FHWA for review, the completed questionnaire will be included with the submittal. FHWA will use this questionnaire to assist in determining if an effective PEL process has been applied before NEPA processes are authorized to begin. The questionnaire should be included in the planning document as an executive summary, chapter, or appendix.*

**1. Background:**

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

Boulder County

**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)?**

State Highway 7 (SH 7) (75<sup>th</sup> Street to US Highway 287) Planning and Environmental Linkages (PEL) Study

Project: PEL Study (21190)

Routing #: 16-HA4-XC-00028

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

Agency	Name	Title	Role
Boulder County	Marc Ambrosi	Long Range Transportation Planner	Project Manager
Boulder County	Scott McCarey, PE, AICP	Multimodal Division Manager	Project Support
Boulder County	George Gerstle	Transportation Director	Project Support
Felsburg Holt & Ullevig	Kevin Maddoux, AICP, CEP	Senior Planner	PEL Project Lead
Felsburg Holt & Ullevig	Holly Buck, PE, PTP	Senior Planner	Project Manager
Felsburg Holt & Ullevig	Brian Fauver	Environmental Scientist	Project Support
Felsburg Holt & Ullevig	Colleen Guillotte, PE	Traffic and Safety Engineer	Project Support
Felsburg Holt & Ullevig	Tyler Spurlock, EIT	Transportation Engineer	Project Support
Felsburg Holt & Ullevig	Kevin Hock, PE	Roadway Engineer	Project Support
Felsburg Holt & Ullevig	Barry Novak	Roadway Designer	Project Support
City of Boulder	Kathleen Bracke	Go Boulder Manager	Project Support
City of Boulder	Jean Sanson	Sr. Transportation Planner	Project Support
Town of Erie	Gary Behlen	Former Director of Public Works	Project Support
Town of Erie	Fred Diehl	Assistant Town Administrator	Project Support
City of Lafayette	Paul Rayl	Planning & Building Director	Project Support

<b>City of Lafayette</b>	Karen Westover	Planning Manager	Project Support
<b>FHWA</b>	Patricia Sergeson	Transportation Specialist	FHWA Representative
<b>FTA</b>	Larry Squires	Community Planner	FTA Representative
<b>CDOT Region 4</b>	Karen Schneiders	Local Agency Environmental and Planning Manager	Region 4 Staff
<b>CDOT Region 4</b>	Dan Marcucci	CDOT Resident Engineer	Region 4 Staff
<b>CDOT Region 4</b>	Adnana Murtic	CDOT Resident Engineer	Region 4 Staff
<b>CDOT Region 1</b>	Danny Harmon	Local Agency Environmental and Planning Manager	Region 1 Staff
<b>CDOT HQ</b>	Lindsay Edgar	PEL Program Manager	CDOT Staff
<b>DRCOG</b>	Matthew Helfant	Sr. Transportation Planner	DRCOG Staff
<b>RTD</b>	Chris Quinn	Project Manager	RTD Staff

**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.)**

This section of SH 7 is a critical east-west arterial in the transportation system serving the City of Boulder, the City of Lafayette, Boulder County, and the north Denver metropolitan area.

The existing roadway characteristics of SH 7 between 75th Street and US 287 are highly variable. SH 7 primarily consists of a two-lane cross-section with approximately 64 feet of right-of-way. Approaches from eastbound and westbound SH 7 at 75<sup>th</sup> Street are configured with two through lanes in each direction (four travel lanes), while the remainder of the corridor consists of a single travel lane in each direction (two travel lanes).

Shoulder widths vary, primarily due to varying auxiliary lane configurations. All shoulders are paved, but most are not curbed. Typical shoulder widths range between non-existent and 12 feet. Auxiliary lanes are frequently provided at both signalized and stop-controlled public street intersections for deceleration and acceleration movements.

Most of the corridor has no center median, but when present, center median configurations vary significantly. Raised medians exist at the SH 7/75<sup>th</sup> Street intersection, as well as for channelized right-turn movements at other intersections including the SH 7/US 287 intersection. Most median configurations are painted and exist only near access drives and auxiliary lanes. Painted median widths range from 3 to 18 feet but are typically between 4 and 13 feet.

Bicycle lanes exist east of 75th Street; however, the corridor lacks a bicycle facility or consistently wide enough shoulder widths to provide safe travel for bicyclists along the rest of the corridor. Pedestrian facilities consist of sidewalks concentrated around the three signalized intersections, with other sidewalk segments located where residential and commercial land use is adjacent to SH 7. Most of the

corridor does not include sidewalks.

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

The study was initiated in June 2016 and concluded in January 2018. A technical advisory committee comprised of the staff listed in question 1c was formed at the beginning of the study and met four times over the course of the study to help guide development of the plan. In addition, an ongoing SH 7 Coalition comprised of decision makers and elected officials from corridor municipalities and counties was formed and is ongoing. The coalition also includes representatives from TDM organizations, Chambers of Commerce, RTD, and CDOT. This coalition helps promote projects on the corridor and provides policy guidance and direction to staff from the participating organizations. Finally, Marc Ambrosi, the Boulder County project manager frequently met with the consultant team to provide feedback and refine elements of the PEL study.

- 1) Notices about the PEL initiation were sent to agencies on July 29, 2016.
- 2) Purpose and Need – A draft purpose and need statement was developed by the consultant team shortly after the completion of the draft corridor conditions report. This purpose and need statement was refined before eventually being endorsed by the SH 7 Coalition at their October 26, 2016 meeting. Notices were sent to resource agencies and CDOT regarding the purpose and need and the corridor conditions report in January of 2017. The public had the opportunity to review and provide feedback about the Purpose and Need statement on the Boulder County PEL website and at the public meetings.
- 3) Corridor Conditions Report- The draft report was completed and sent to agencies in September of 2016. There were no significant comments from agencies regarding the report.
- 4) Project Evaluation Criteria- Three level of evaluations criteria were developed and presented for the second PEL TAC meeting that took place in September of 2016. The evaluation criteria were refined and finalized based on feedback received from participants.
- 5) A range of unique alternative highway cross sections were developed for the corridor. Two sets of cross sections were devised to address the different corridor characteristics that exist for areas east and west of the intersection of SH 7 and 95<sup>th</sup> Street. The initial set of alternatives were presented in the September 2016 PEL TAC meeting. These alternatives were screened through the three levels of evaluation criteria as the project progressed.
- 6) Two public meetings were held to review and solicit feedback about the purpose and need statement and to provide feedback about the highway cross section alternatives and intersection improvement alternatives. These meetings took place on April 26<sup>th</sup>, 2017 and June 26, 2017.
- 7) Alternative corridor improvements were further refined after the public meetings to incorporate the feedback from the public and continue refinement and repackaging through level 2 and 3 screening. A phased corridor improvement plan was developed that included recommendations to address the highest priority improvements in the near term, and promoted two longer term highway cross sections that met the goals of the purpose and need statement and made it through the screening process. These recommendations were taken to the PEL TAC at their final meeting on August 9, 2017 and were endorsed.
- 8) In the Fall of 2017 the consultant team provided a draft report to the TAC team and solicited comments. The final SH 7 PEL (US287-75<sup>th</sup> St.) document was provided to the TAC group in January of 2018.

**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?**

Similar planning efforts for parts of SH 7 to the west of 75<sup>th</sup> and to the east of US 287 are either completed or underway. In 2014, CDOT completed the **SH 7 PEL study (US 287 to US 85)**. Findings and recommendations from CDOT's SH 7 PEL were considered in the development of the Boulder County SH 7 PEL (75<sup>th</sup> St. – US 287) to ensure consistency between the plans. The City of Boulder will complete development of the **East Arapahoe Transportation Plan** for SH 7 between Folsom and 75th Street in early 2018. City of Boulder and Boulder County staff responsible for managing the East Arapahoe Transportation Plan and Boulder County SH 7 PEL (75<sup>th</sup> St. – US 287) participated in both projects ensuring consistency and compatibility of the respective plans.

Together these three plans make comprehensive recommendations for multimodal transportation improvements on SH 7 between the Cities of Brighton and Boulder. These plans recommend consistent strategies for corridor improvements, while ensuring context sensitive solutions have been recommended for the areas of the SH 7 corridor with unique characteristics and needs.

**2. Methodology used:**

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

For the SH 7 (75<sup>th</sup> Street to US 287) PEL Study, recommendations were made with a planning horizon year of 2040. Land use changes and transportation demands were projected out to 2040. A natural resource inventory and analysis document was developed for the study area to help understand potential impacts from a wide variety of alternatives. Throughout the process a team of stakeholders collaborated with the study team to help develop the alternatives and the study team worked with the public to help refine alternatives and ensure the communities' transportation issues in study area were addressed.

Through this process, the study team was able to identify three potential Recommended Alternatives that will allow for phased improvements and will address the safety and mobility challenges in the SH 7 corridor. The study area for this PEL extends approximately 4 miles along SH 7 from the SH 7/75<sup>th</sup> Street intersection east to the SH 7 (Arapahoe Road)/US 287 intersection (milepost [MP] 60.68).

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

Yes, NEPA-like language was used to streamline the NEPA process for transportation projects along the corridor.

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

- A Purpose and Need Statement was prepared for the study (Chapter 1).
- No-Action Alternative - Would leave SH 7 as it currently is and would not provide any major capacity improvements; however, the No-Action Alternative would include safety and maintenance activities that would be required to sustain an operational transportation system.
- Recommended Alternatives - Include the package of both highway cross sections and intersection related improvements that advanced through the three levels of evaluation criteria. Based on the alternatives evaluation conducted in the PEL study, the recommended alternatives are the alternatives that were determined to meet the Purpose and Need to the highest degree while minimizing environmental and community impacts. Ultimately two alternatives were selected as "recommended alternatives" and are being promoted as preferred alternatives in a subsequent NEPA process.
- Environmental Consequences – Discusses the impacts on the environmental and cultural resources

that would be expected.

- Next Steps/Mitigation Strategies – Describes the next steps necessary for the environmental and cultural resources analyzed and mitigation measures that have been identified to address adverse impacts.

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

These terms will be used in NEPA documents in a similar fashion 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.**

Agency involvement activities included regular progress committee meetings held with FHWA, CDOT, Boulder County, and local community participants during the PEL study. The PTAC’s primary role was to provide input on a range of issue analyzed in the PEL study. The participating agencies and their representatives on the PTAC included:

Boulder County	Marc Ambrosi	Long Range Transportation Planner	Project Manager
Boulder County	Scott McCarey, PE, AICP	Multimodal Division Manager	Project Support
Boulder County	George Gerstle	Transportation Director	Project Support
City of Boulder	Kathleen Bracke	Go Boulder Manager	Project Support
City of Boulder	Jean Sanson	Sr. Transportation Planner	Project Support
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Town of Erie	Fred Diehl	Assistant Town Administrator	Project Support
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CDOT Region 4	Adnana Murtic	CDOT Resident Engineer	Region 4 Staff
CDOT Region 1	Danny Harmon	Local Agency	Region 1 Staff

		Environmental and Planning Manager	
<b>CDOT HQ</b>	Lindsay Edgar	PEL Program Manager	CDOT Staff
<b>DRCOG</b>	Matthew Helfant	Sr. Transportation Planner	DRCOG Staff
<b>RTD</b>	Chris Quinn	Project Manager	RTD Staff

The study team met with the PTAC regarding the following topics on:

- June 30, 2016
  - Study Overview and Schedule
  - Corridor Conditions
  - Draft Purpose and Need
  - Draft Alternatives Development and Evaluation Process
- September 12, 2016
  - Purpose and Need
  - Project Goals and Evaluation Criteria
  - Preliminary Alternatives
- February 9, 2017
  - Alternatives Development and Evaluation Process
    - Vehicular Operations
    - Regional Bicycle Connectivity
    - Transit Service
  - Preliminary Alternatives
  - Preliminary Recommended Alternative(s)
- August 9, 2017
  - Public Meetings Summary
  - Alternatives Development and Evaluation Process
  - Retained Alternatives and Phasing

Resource agencies have specific technical expertise and regulatory oversight on various environmental issues and potential impacts associated with the project. Boulder County notified representatives from the U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), U.S. Environmental Protection Agency (USEPA), Colorado Parks and Wildlife (CPW), State Historic Preservation Officer (SHPO), Boulder County Parks and Open Space, and City of Boulder Open Space and Mountain Parks of the SH 7 (75th Street to US 287) PEL study on July 29, 2017. The resource agencies were invited to comment on the SH 7 (75th Street to US 287) PEL Corridor Conditions Assessment Report on January 19, 2017. The study team received comments about the project from CDPHE, USACE, CDPHE APCD, USEPA, and USFWS. In addition, coordination meetings were held with Boulder County Parks and Open Space, and City of Boulder Open Space and Mountain Parks.

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

The “Recommended Alternative” can be used to refer to the recommendations from the alternatives screening conducted in the PEL study when identifying the Preferred Alternative in the Alternatives chapter of the NEPA document or when referencing PEL Study recommendations for the NEPA documentation of a project phase. The environmental overview can provide the basis for environmental scoping. The other terms in this PEL study will also be used in NEPA documents in the same way as they were used in the PEL study.

**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 team prepared an Agency Coordination and Public Outreach Plan for the PEL study at the outset of the study. The purpose of the agency coordination and public involvement program was to set forth the public involvement process for the SH 7 (75th Street to US 287) PEL study and to describe how federal, state, and local governmental officials; regional transportation planning entities; citizen groups; community groups; civic and professional organizations; businesses; citizens; and low-income and minority populations would be involved in the process.

Boulder County notified representatives from the U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), U.S. Environmental Protection Agency (USEPA), Colorado Parks and Wildlife (CPW), State Historic Preservation Officer (SHPO), Boulder County Parks and Open Space, and City of Boulder Open Space and Mountain Parks of the SH 7 (75<sup>th</sup> Street to US 287) PEL study on July 29, 2017. The resource agencies were invited to comment on the SH 7 (75<sup>th</sup> Street to US 287) PEL Corridor Conditions Assessment Report on January 19, 2017. The study team received comments about the project from CDPHE, USACE, CDPHE APCD, USEPA, and USFWS (**Appendix D**). In addition, coordination meetings were held with City of Boulder Open Space and Mountain Parks.

Transportation agency involvement activities included regular progress committee meetings held with FHWA, CDOT, DRCOG, Boulder County, and local community participants during the PEL study. The PTAC’s primary role was to provide input on a range of issue analyzed in the PEL study.

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

Transportation agency involvement activities included regular progress committee meetings and TAC meetings held with FHWA, FTA, CDOT, CDOT Region 1, CDOT Region 4, DRCOG, Boulder County, Lafayette, City of Boulder, and Erie during the PEL study. The TDM agencies Smart Commute Metro North and Commuting Solutions participated as the study progressed and presentations were given to the NATA group and the US 36 MCC.

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

The steps to be taken will depend on the type of future NEPA documentation prepared for the construction projects that will be developed for the corridor.

**4. Public coordination:**

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

Corridor-wide public open houses were held on April 26, 2017 at the YMCA of Boulder Valley at 2800 Dagny Way in Lafayette, CO, and on June 26, 2017 at the Boulder County Recycling Center – Education Room at 1901 63rd Street in Boulder, CO. There were approximately 75 attendees for the April open

house, and approximately 85 attendees for the June meeting.

The April 26, 2017 open house focused on the:

- Study Overview and Schedule
- Corridor Conditions
- Draft Purpose and Need
- Draft Alternatives Development and Evaluation Process
- Level 1 Evaluation Process

The June 26, 2017 open house focused on the:

- Level 2 Evaluation Process
- Retained Alternatives
- Next Steps

Additionally, Marc Ambrosi, Boulder County Project Manager, presented about the project at open houses, meetings, and other opportunities to a wide variety of public and stakeholder groups including: the Northwest Chamber Alliance (Boulder, Longmont, and Broomfield Chambers of Commerce); North Area Transportation Alliance; US 36 Mayors and Commissioners Coalition; the East Arapahoe Transportation Plan Community Working Group; and at City of Boulder Open Houses.

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

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

The SH 7 (75<sup>th</sup> Street to US 287) PEL Study was conducted by Boulder County to continue the planning efforts from the SH 7 PEL Study (CDOT, 2014), which extended from US Highway 85 (US 85) in the City of Brighton to US 287 in the City of Lafayette.

This SH 7 (75<sup>th</sup> Street to US 287) PEL addresses safety and person mobility on this stretch of SH 7 while recognizing the existing and future role of the corridor. It identifies future transportation improvements that will enhance safety and meet the growing demand for mobility within and through the corridor for all modes of transportation. In identifying improvements, the study respects local values by preserving the rural, natural, and historic characteristics of the area to the greatest extent possible while ensuring the route remains a viable transportation corridor that anticipates regional population and employment growth.

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

#### Purpose Statement:

“The purpose of the proposed multimodal transportation improvements is to address safety for all users and move people efficiently through the corridor.”

#### Needs:

- **Safety:** Compared to other two-lane, rural roads in Colorado there is a higher than expected frequency of rear-end vehicle crashes at the SH 7/75<sup>th</sup> Street, SH 7/95<sup>th</sup> Street, and SH 7/US 287 intersections along the corridor (**Figure 1.3**). The overall corridor also has a higher than expected frequency of rear- end crashes, when compared to similar rural facilities. While this section of the corridor is largely rural in nature, the roadway functions similar to urban

roadways because it carries high traffic volumes. The frequency of rear-end crashes is similar to the expected rate for comparable urban corridors. The majority of crashes in the corridor are related to queuing that occurs as a result of traffic congestion at these intersections and minor driveway access points along the corridor.

- **Mobility:** SH 7 is a commuter corridor connecting the City of Boulder with the communities along SH 7 and the surrounding area. Single occupancy vehicles (SOV) are the predominant mode share. Single occupancy vehicles (SOV) are the predominant mode share on SH7 (**Table 1.1**) and the corridor experiences daily peak hour, peak direction vehicle congestion at the 75th, 95th and US 287 intersections. The cumulative effects of this existing mode share split are increased parking demand over existing parking capacity and roadway network congestion exceeding capacity within the City of Boulder, City of Lafayette, and Boulder County.
- **Access to Transit Facilities:** First and final mile bike and pedestrian access to transit stops on the corridor is limited and often non-existent. Of the pedestrian facilities that do exist, very few comply with Americans with Disabilities Act (ADA) requirements. Bus stop amenities, such as benches, lighting, and shelters at transit stops are not currently present on the corridor limiting passenger comfort, safety, and security.
- **Bicycle:** Infrastructure for and connectivity with the existing and planned bicycle network does not exist along the corridor (Figure 1.2). On-street bicycle lanes/shoulders are currently available on Baseline Road, a parallel facility that is one mile south of SH 7 and Valmont Road/Isabelle Road that is one to two miles north of SH 7. Bicyclists traveling on SH 7 must travel on shoulders of varying widths, primarily due to auxiliary lane configurations. Typical shoulder widths range between non-existent and 12 feet. In areas with no shoulders, bicyclists travel in mixed traffic with vehicular traffic traveling at high speeds. The posted speed limits along SH 7 vary from 45 miles per hour (mph) to 50 mph. Bicycling on SH 7 today has a perceived low level of comfort and safety. The corridor does not meet standards outlined in Boulder County planning documents for bicycle facilities.
- **Pedestrian:** Pedestrian facilities along the corridor consist of 8-foot detached sidewalks in the immediate vicinity of the SH 7/95th Street intersection (Figure 1.2). Pedestrian facilities do not exist along the remaining portions of the corridor. Existing land use and land use densities along the corridor generate limited pedestrian trips. In areas without pedestrian facilities, pedestrians must travel on the shoulder or along the vegetated slope of the roadway, which creates a low level of comfort and perceived safety for the pedestrian.
- **Corridor Operations:** Traffic (bus and vehicular) operations along the corridor and at the SH 7/75th Street, SH 7/95th Street, and SH 7/US 287 intersections are congested today (Figure 1.4) and are expected to worsen by 2040 due to regional population and employment growth (Figure 1.5). Peak period peak direction queues regularly reach 2,000 feet long and vehicles wait two to three signal cycles to be processed. Bus operations are affected by congestion at these intersections resulting in unreliable travel times and delays for buses.

#### Project Goals:

Boulder County's transportation vision is to "provide high-quality, safe, sustainable, and environmentally responsible transportation infrastructure and services across all modes, to meet the mobility and access needs of all users (Boulder County, 2012)." This PEL study is designed to establish a vision of how the future multimodal transportation system along SH 7 will fit with the County's vision and serve the communities along the corridor. The objectives of the transportation improvements are to:

- Provide a multimodal transportation system for all users.
- Address inadequate first and final mile connectivity.
- Provide mobility and corridor solutions that preserve the natural, rural, and historic character of the corridor to the greatest extent possible.

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

A project-level purpose and need statement may not be required depending upon project phasing and implementation. The PEL Purpose and Need statement is appropriate for a corridor-wide project.

**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 alternatives development and evaluation process consisted of a three-level iterative process and focused on the diverse multimodal elements of the SH 7 cross-section. The fundamental philosophy in the evaluation process was to systematically identify the notable positive and negative characteristics and tradeoffs among alternatives, and to evaluate alternatives one by one as the determinations were made. If a certain attribute (or attributes) of an alternative showed promise, an attempt was made to retain the individual attribute.

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

Agency coordination and public involvement played a major role in this process. Agency involvement activities included regular progress committee meetings with agency participants and a series of resource agency scoping meetings. To ensure that the needs and concerns of affected entities and groups would be heard and considered in the alternatives development and evaluation process, a PEL Technical Advisory Committee (PTAC) was formed. The PTAC was involved at each step of the evaluation process, as well as during the development of alternatives and alternative refinement.

**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)**

Based on the Level 1 evaluation results transit treatments, increased shoulder widths and roundabouts do not appear to address the Purpose and Need and were eliminated from further consideration. As shown, on-street bicycle lanes, protected bikeways, and additional general purpose lanes were not retained in Level 2. These alternatives were eliminated because they could not address the project's Purpose and Need as well as other comparable alternatives or because they have the potential to substantially increase single occupant vehicle demand along the corridor.

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

The Managed Lanes, Reversible Transit Lane, and Additional Lanes Through the Intersections were retained for further evaluation because they each had the ability to meet Purpose and Need.

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

The public provided feedback via comment forms at the meetings, one-on-one interactions with the study team, online through the webpage, or over the phone by those who were unable to attend. The following public outreach activities provided the public multiple ways of participating in the study:

- E-Mail, Mailing List, and Contact Database: The study team developed a contact database to include individuals who wanted to stay informed about the study. The database incorporated contact lists from previous studies. The database allowed the study team to communicate directly with the public, including sending notifications of the public open houses.
- Project Web Page: Boulder County hosted a dedicated web page on its website to provide updated information about the study and to enable ongoing communication. The web page <https://www.bouldercounty.org/transportation/multi-modal/bus/sh7-brt-study/state-highway-7-planning-environmental-linkages/> included study information, presentation materials, meeting summaries, and meeting announcements. The web page enabled the public to sign up for the study's mailing list and to submit comments. The webpage also contained contact information for the public to be able to speak directly with the Boulder County Project Manager and the study team.
- Media Outreach and Advisories: The Boulder County Transportation Department Communications Office distributed study-related media advisories to announce the public open houses.
- Social Media Outreach: The Boulder County Transportation Department Communications Office used Facebook and Twitter to communicate announcements about the study and to publicize public open houses.
- Points of Contact: Stakeholders contacted Marc Ambrosi, Boulder County Project Manager, with comments or questions throughout the study.

Throughout the study, the public had ongoing, accessible, and distinct opportunities to participate and provide input to inform the study. Over the course of the study, the public submitted approximately 164 comments that were reviewed and taken into consideration. **Appendix D** includes the comments submitted by members of the general public during the course of the study.

On January 19<sup>th</sup> of 2017 a meeting was set up with agencies to solicit feedback about the spectrum of alternative cross sections and intersection designs in order to help work through the alternative screening process. The meeting included RTD, CDOT Region 4, and municipal representation. Agencies were encouraged to attend public meetings. Multiple agencies participated on the PEL TAC where they were asked for feedback. On August 2<sup>nd</sup>, 2017 project manager Marc Ambrosi met face to face with CDOT Region 4 staff to review the recommended alternatives and solicit any additional feedback from Region 4 about the recommended alternatives.

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

Additional public involvement will be required with the public and agencies.

**7. Planning assumptions and analytical methods:**

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

2040 was the 20-year planning horizon.

**b. What method was used for forecasting traffic volumes?**

To conduct the existing conditions analysis, a traffic model of the SH 7 corridor was built using Synchro 8 traffic analysis software. Recent satellite imagery was used to inventory roadway and intersection geometry

along the corridor and included in the modelling effort. Signal timing data were collected from CDOT, and traffic volumes and turning movements were input into the model from counts completed along the corridor.

Existing daily traffic counts were grown to the year 2040 using DRCOG 2040 fiscally constrained regional travel demand model and the NCHRP 765 adjustment process, resulting in a growth of between 10 to 20 percent over existing volumes.

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

Yes.

**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?**

DRCOG develops a travel demand model that is divided into Transportation Analysis Zones (TAZs) covering the entire metro region, including the study area. Each TAZ has existing (2015) and 2040 projected socioeconomic variables, including population, household, employment, and income to be used for local and regional planning purposes. DRCOG incorporates a wide variety of variables in its estimates and projections, including, but not limited to, overall regional growth, each jurisdiction's potential share of future growth, and current and long-range development plans. However, the primary concern within the travel demand model related to the growth in trips for an area is the growth in households and employment.

Most TAZs adjacent to the corridor are projected to experience growth of around 50 to 200 households by 2040, with additional growth projected southeast of SH 7 along US 287. When looking further from the corridor, household growth is also primarily anticipated to be south and east within Lafayette. Little to no employment growth is projected within the TAZs along the corridor or surrounding area by 2040. TAZs with growth are again situated south and east of the corridor in Lafayette. The location and level of growth projected by the travel demand model appear consistent with the local land use plans for areas along the corridor.

**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?**

See **Table 4.1 Summary of Affected Environment, Environmental Consequences, and Next Steps/Mitigation Strategies** below

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

See **Table 4.1 Summary of Affected Environment, Environmental Consequences, and Next Steps/Mitigation Strategies** below

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

See **Table 4.1 Summary of Affected Environment, Environmental Consequences, and Next Steps/Mitigation Strategies** below

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

See **Table 4.1** *Summary of Affected Environment, Environmental Consequences, and Next Steps/Mitigation Strategies* below.

**Table 4.1** *Summary of Affected Environment, Environmental Consequences, and Next Steps/Mitigation Strategies*

The Table Below Contains Information Pertinent to Questions 8(a-d), 11, 12

Affected Environment	Environmental Consequences	Next Steps/Mitigation Strategies
<b>Parks, Open Space and Trails</b>		
<p>Some of the park properties present within the study area are publicly owned and are afforded protection under Section 4(f) of the US Department of Transportation (USDOT) Act of 1966, as defined in 23 Code of Federal Regulations (CFR) 774. A Section 4(f) resource is a property that functions or is designated as a significant publicly owned park, recreation area, wildlife or waterfowl refuge, or historic site. If the proposed action has an impact on one of these properties, a Section 4(f) evaluation may be required for that particular resource.</p> <p>In addition, these park properties may be afforded protection under Section 6(f) of the Land and Water Conservation Fund Act of 1965 if these properties are Section 6(f) assisted properties. Section 6(f) of the Act assures that once an area has been funded with Land and Water Conservation Fund assistance, it is continually maintained for public outdoor recreation use unless the Colorado Department of Natural Resources Parks and Wildlife (CPW) and the National Park Service (NPS) approves replacement property. Importantly, Section 6(f) applies to all transportation projects involving possible conversions of the property whether or not federal funding is being used for the project.</p> <p>While various parks, trails, and open space are located along the corridor, the largest concentration of parks and open space is located between North 95<sup>th</sup> St and 75<sup>th</sup> St.</p>	<p>Based on the conceptual level of design, the Recommended Alternative would have an approximate impact on the following parks, open space, and trails:</p> <ul style="list-style-type: none"> <li>▶ Anderson North</li> <li>▶ Anderson Central</li> <li>▶ Williamson Moore Holmes</li> <li>▶ Audrey</li> <li>▶ Aweida</li> <li>▶ Woodley</li> <li>▶ Kolb Brothers</li> <li>▶ Hunter Kolb open space properties</li> <li>▶ East Boulder Trail</li> <li>▶ Potential trail south of Bullhead Gulch</li> <li>▶ Potential Teller Lakes Corridor Trail</li> </ul>	<p>Separate evaluations of publicly-owned parks, trails, and open space lands will be conducted during the NEPA process to determine if there are any properties that qualify for protection under Section 4(f) and/or are Section 6(f) assisted properties.</p> <p>Section 4(f) of the USDOT Act of 1966 mandates that the Secretary of Transportation shall not approve any transportation project requiring the use of publicly owned parks, recreation areas or wildlife and waterfowl refuge, or significant historic sites, regardless of ownerships, unless:</p> <ul style="list-style-type: none"> <li>▶ There is no prudent and feasible alternative to using that land, and</li> <li>▶ The program or project includes all possible planning to minimize harm to the public park, recreation area, wildlife or waterfowl refuge, or significant historic site, resulting from that use.</li> </ul> <p>Section 6(f) assisted properties require coordination with the affected local agency, as well as approval from the CPW and NPS to convert Section 6(f) assisted land for transportation improvements.</p>

Affected Environment	Environmental Consequences	Next Steps/Mitigation Strategies
<b>Traffic Noise</b>		
<p>The potential for noise or vibration impacts from vehicles to the receptors (that is, properties) near transportation facilities is a general concern. State and federal transportation agencies have established thresholds for determining noise impacts to guide these conclusions. When impacts are identified from an improvement, mitigation actions for the affected receptors must be considered for the project design. This is an important consideration for this project because many properties are along the project corridor and may be affected by noise.</p> <p>Many residential neighborhoods and individual residences (Noise Abatement Criteria [NAC] Category B) can be found in the PEL study area between the 75<sup>th</sup> Street and 95<sup>th</sup> Street intersections. Likewise, several Category C areas (parks, schools, churches, etc.) are also spread throughout the PEL study area.</p>	<p>Based on the conceptual level of design, the Recommended Alternative would move the edge of the roadway closer to noise receptors along the corridor.</p>	<p>The CDOT <i>Noise Analysis and Abatement Guidelines</i> (CDOT 2011) specify that a noise analysis study is required for all Type I projects if noise sensitive receptors are present within the study area during the NEPA process. A Type I project consists of a proposed Federal or Federal-aid or CDOT- administered highway project for construction of a highway on a new location or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment or increases the number of through lanes. Construction of the Recommended Alternative would be a Type I project, and a traffic noise study will need to be prepared.</p> <p>Construction noise would be subject to relevant local regulations and ordinances, and any construction activities would be expected to comply with them.</p>

Affected Environment	Environmental Consequences	Next Steps/Mitigation Strategies
<b>Historic Resources</b>		
<p>Historic resources are afforded consideration by Section 106 of the National Historic Preservation Act of 1966, as amended, as well as Section 4(f) of the Department of Transportation Act of 1966. Significant historic resources are those that are listed or may be eligible for inclusion on the National Register of Historic Places (NRHP). Historical resources are buildings, structures, districts (groups of buildings or structures), sites, and objects meeting the minimum age criterion of 45 years. Typically, 50 years is used as an age threshold; however, a 45-year threshold is often used in transportation projects to account for their protracted schedules including environmental clearance, design, and obtaining funding. For purposes of this study, only properties on the NRHP or officially eligible for the NRHP are listed as previously identified historic sites.</p> <p>The SH 7 corridor includes 23 existing historic properties. Potential historic sites were also evaluated. Potential historic sites are properties over 45 years of age that have not yet been surveyed, but based on a visual reconnaissance appear to possess architectural qualities that may make them eligible for the NRHP under Criterion C – Distinctive Architecture and/or Construction.</p>	<p>Based on the conceptual level of design, the Recommended Alternative would potentially effect 13 potentially eligible NRHP Properties, including relocation of Road to Remembrance Gateway monument at the US 287/SH 7 intersection.</p>	<p>An additional intensive-level inventory will be required to adequately assess these potential impacts. An intensive survey of cultural resources will be conducted, including preparation of a Cultural Resources Inventory Report, to facilitate official evaluations of NRHP-eligibility and assess specific project impacts as required for National Historic Preservation Act Section 106 review.</p> <p>If any archaeological materials (such as artifacts and faunal remains) or features are encountered or unearthed during construction, work would be immediately halted in the vicinity of the find, and the CDOT archaeologist and State Historic Preservation Officer (SHPO) would be promptly notified. The site of the find would be secured and work would remain halted until a qualified professional archaeologist could evaluate and/or remove the materials. If warranted, additional archaeological testing or data recovery may be necessary before work could be resumed in the vicinity of the find.</p> <p>If bones of potential human origin are encountered during construction, ground-disturbing work would be halted in the vicinity of the discovery, and the CDOT archaeologist would be promptly notified. The CDOT archaeologist would assess the find, and the county coroner would be summoned, if necessary, to determine the relative age and ethnicity of the individual(s) represented. Work would not resume in the vicinity of the find until CDOT grants clearance.</p>

Affected Environment	Environmental Consequences	Next Steps/Mitigation
<b>Floodways and 100-year Floodplains/Water Quality</b>		
<p>Two drainageways have Federal Emergency (FEMA) designated floodplains in the study area: Bull and Dry Creek.</p>	<p><b>Floodplains</b> Based on the conceptual level of design, the Alternative would have an approximate impact on the following floodplains:</p> <ul style="list-style-type: none"> <li>▶ Bull Head Gulch</li> <li>▶ Dry Creek</li> </ul>	<p><b>Floodplains</b> Bull Head Gulch and Dry Creek floodplains would be the most sensitive to any changes in the floodplain and would require a Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) from FEMA. Floodplain modeling would be required to assess significant changes. Some relatively small changes may be incorporated in the floodplain without triggering the CLOMR/LOMR process. Floodplain modeling would be required to assess significant changes. Engineering design will take into account the floodplain and floodway issues. The location of bridges and bridge piers within the floodplain and floodway will be considered in the engineering design. Piers located within the floodway will require a specialized hydrologic assessment and approval by FEMA and Colorado Water Conservation Board. The placement of piers within the active channel of Bull Head Gulch and Dry Creek will be avoided or placed in a position to reduce impacts on the stream channel, stream habitat, and biota.</p>

Affected Environment	Environmental Consequences	Next Steps/Mitigation
Floodways and 100-year Floodplains/Water Quality (Continued)		
	<p><b>Water Quality</b></p> <p>Stormwater from the adjacent impervious areas (roadways, parking lots, etc.) currently discharges directly to Bull Head Gulch and Dry Creek Roadway runoff typically may contain the following pollutants:</p> <ul style="list-style-type: none"> <li>▶ <b>Sediment:</b> Solids such as sand, silt, and clays that are washed from paved surfaces or eroded from roadway slopes and become suspended in water. Sediment due to construction is a common water quality concern.</li> <li>▶ <b>Heavy metals:</b> Metals such as zinc and copper from fuels, brake pads, and vehicle wear. In the past, lead was a common pollutant, but the use of unleaded gasoline has now substantially reduced this roadway contaminant.</li> <li>▶ <b>Magnesium chloride and salt:</b> Deicers used on roads for winter maintenance.</li> <li>▶ <b>Oil and grease:</b> Petroleum hydrocarbons deposited by vehicles on roadways and parking lots.</li> </ul>	<p><b>Water Quality</b></p> <p>CDOT has a Phase I Municipal Separate Storm Sewer System (MS4) permit from the Colorado Department of Public Health and Environment (CDPHE). Boulder County and the City of Lafayette also have Phase II MS4 permits. Jurisdictions that have Phase I or Phase II MS4 permits are required to provide permanent water quality facilities for new development or redevelopment where there will be 1 acre or greater of new paved (impervious) areas.</p> <p>During construction, stormwater impacts will be minimized by using the appropriate CDOT standard construction best management practices (BMPs) as appropriate. Potential BMPs would include silt fence, inlet protection, stabilized construction entrances, slope stabilization, concrete washouts, erosion logs, inlet filters, sediment basins (at permanent water quality pond locations), vehicle tracking pads, and other BMPs. Specific temporary and permanent stormwater management strategies will be identified during preliminary/final design as part of a drainage/hydraulics assessment and development of a storm water management plan (SWMP). Construction-related mitigation measures will be outlined in the SWMP and will include a detailed set of erosion control plans as part of the roadway design set.</p>

Affected Environment	Environmental Consequences	Next Steps/Mitigation Strategies
<b>Wetlands and Waters of the US</b>		
<p>Wetland resources are protected under Section 404 of the Clean Water Act (CWA) and Executive Order 11990 <i>Protection of Wetlands</i>. CDOT has incorporated FHWA environmental guidance into its <i>NEPA Manual</i> (CDOT, 2013), which emphasizes efforts to avoid and minimize wetland impacts. Most wetlands identified within the corridor are small palustrine emergent, palustrine scrub/shrub, and palustrine scrub/shrub-emergent mix wetlands, with most occurring along existing waterways and drainages and in roadside ditches.</p>	<p>Based on the conceptual level of design, the Recommended Alternative would potential impact wetlands and other waters of the U.S. along the Davidson Highline Lateral Ditch, Bullhead Gulch, McGinn Ditch and Dry Creek.</p>	<p>A Wetland Delineation Report will be required during the NEPA process. A Wetland Findings Report will be prepared based on the recommended design included in the environmental document. FHWA and CDOT policy requires compensatory mitigation for permanent impacts on both jurisdictional and non-jurisdictional wetlands. Wetland mitigation is typically done on a one-to-one basis; however, a CWA Section 404 permit, which the USACE will issue, may require higher ratios if unique or high-quality wetlands are affected.</p>
<b>Wildlife/Threatened and Endangered Species</b>		
<p>Various federal laws have been established to protect wildlife, including the Endangered Species Act (ESA); the Migratory Bird Treaty Act (MBTA); and the Bald and Golden Eagle Protection Act (BGPA). Threatened and endangered species habitat that is present in the study area includes habitat for the Colorado butterfly plant (<i>Gaura neomexicana coloradensis</i>), the Ute ladies'-tresses orchid (<i>Spiranthes divulialis</i>), the common shiner (<i>Notropis cornutus</i>) and the Preble's meadow jumping mouse (<i>Zapus hudsonius preblei</i>). The primary drainage that was identified from the field survey and that contained suitable habitat for these species was Dry Creek. A field survey noted major wildlife corridors that facilitate wildlife movement. These corridors include:</p> <ul style="list-style-type: none"> <li>▶ Davidson Highline Lateral Ditch</li> <li>▶ Bullhead Gulch</li> <li>▶ McGinn Ditch</li> <li>▶ Dry Creek</li> </ul>	<p>The SH 7 corridor crosses the Davidson Highline Lateral Ditch, Bullhead Gulch, McGinn Ditch and Dry Creek.</p> <p>Threatened and endangered species habitat may be present along Dry Creek. Several black-tailed prairie dog colonies are located adjacent to the corridor, and migratory birds are present.</p>	<p>A biological survey of threatened and endangered species, including aquatic species, will be required during the NEPA process. Coordination with the US Department of Interior Fish and Wildlife Service (USFWS) and CPW would be necessary to mitigate potential impacts on special status species habitat. Also, Senate Bill 40 (SB 40) wildlife certification will be required for the crossing of riparian corridors in the project. CPW will determine if Formal or Programmatic certification may be required depending on SB 40 guidelines.</p> <p>If proposed construction is planned to occur during the primary nesting season for migratory birds in eastern Colorado (typically April 1 – August 31, with some species nesting outside this period), a qualified biologist will resurvey the study area to verify if any active nests are present. If no active nests are present, trees can be removed. However, if active migratory bird nests are identified and cannot be avoided by proposed construction activities, the USFWS field office will be contacted to help determine the appropriate mitigation action, which may include removing nests before egg laying begins or ceasing construction until all nestlings have fledged.</p>

Affected Environment	Environmental Consequences	Next Steps/Mitigation Strategies
<b>Hazardous Materials</b>		
<p>For this hazardous materials assessment summary, sites within the study area were identified as having known (current and historic) soil or groundwater contamination and are distinguished in this report as sites with recognized environmental conditions. Sites with the potential for soil and/or groundwater contamination that could not be confirmed without additional inspection or investigation are distinguished as sites with potential environmental conditions.</p> <p>A total of 16 sites with recognized and potential environmental conditions were identified within 500 feet of the SH 7 study area. Two of these sites were leaking underground storage tank (LUST) sites adjacent to the study area.</p>	<p>Based on the conceptual level of design, the Recommended Alternative would potentially be affected by six sites with potential hazardous material concerns.</p>	<p>Properties to be acquired will require a site-specific Phase I Environmental Site Assessment or Initial Site Assessment with an updated search of environmental databases as part of the ROW acquisition process.</p> <p>Contamination from hazardous materials is most likely to be encountered during ground-disturbing activities in areas near properties with potential or recognized environmental conditions (hazardous materials). During the design process, the information concerning these properties can be used to identify avoidance options, if possible, and to assist with the development of materials management and worker health and safety plans. An asbestos-containing materials survey is required for all structures to be demolished as part of this project and must be completed as part of the CDPHE demolition permit. Additionally, a lead- based paint survey and regulated materials clearance survey are recommended for all structures to be demolished as part of this project.</p>
Affected Environment	Environmental Consequences	Next Steps/Mitigation Strategies
<b>Other Resources</b>		
<p>The following resources were not evaluated as part of the SH 7 PEL:</p> <ul style="list-style-type: none"> <li>▶ Air Quality</li> <li>▶ Farmlands</li> <li>▶ Socio-Economics and Community</li> <li>▶ Properties Acquired for Right-of-Way and Displacements</li> <li>▶ Archaeological Resources</li> <li>▶ Paleontology</li> <li>▶ Soils and Geology</li> <li>▶ Water Resources</li> </ul>	<p>Potential impacts were not analyzed for these resources as part of this SH 7 PEL.</p>	<p>Additional environmental analysis will be required as part of future NEPA analysis and documentation.</p>

**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.**

The following resources were not evaluated as part of the SH 7 PEL:

- Air Quality
- Farmlands
- Socio-Economics and Community
- Properties Acquired for Right-of-Way and Displacements
- Archaeological Resources
- Paleontology
- Soils and Geology
- Water Resources

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

During the future NEPA process, additional analysis and agency coordination will need to be performed based on the environmental scan that was conducted. 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 to local businesses, and direct/indirect loss of wetlands due to surface disturbance and increased impervious surface area.

No additional cumulative impacts analysis was conducted.

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

Please refer to **Table 4.1 Summary of Affected Environment, Environmental Consequences, and Next Steps/Mitigation Strategies** Above

**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?**

Please refer to **Table 4.1 Summary of Affected Environment, Environmental Consequences, and Next Steps/Mitigation Strategies** Above

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

Additional public involvement will be required with the public.