

# **APPENDIX A7**

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## **FLOODPLAINS TECHNICAL MEMORANDUM**

### **FOR THE State Highway 9 Iron Springs Alignment Environmental Assessment**

**Prepared for**

COLORADO DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

**Prepared by**

FELSBURG HOLT & ULLEVIG

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## ACRONYMS

CDOT	Colorado Department of Transportation
EA	Environmental Assessment
EIS	Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
ROD	Record of Decision
SH 9	State Highway 9

1 INTRODUCTION

2 This technical memorandum has been prepared in support of the State Highway (SH) 9 Iron  
3 Springs Alignment Environmental Assessment (EA). This memorandum evaluates the effects of  
4 the Iron Springs Alignment (Proposed Action) and the No Action Alternative (widening on the  
5 existing alignment) with respect to floodplains.

6 The Federal Emergency Management Agency (FEMA) regulates floodways and floodplains  
7 through the consideration of changes in the floodway and floodplain limits. Of primary concern  
8 regarding these resources is the ability to convey stormwater flows and potential encroachment  
9 on property and structures.

10 The current 100-year flood maps published by FEMA were reviewed and compared to the No  
11 Action Alternative and the Proposed Action (FEMA, 2013). The FEMA maps indicate that the  
12 entire study area is outside the limits of all FEMA regulatory floodplains for the Blue River and  
13 Dillon Reservoir.

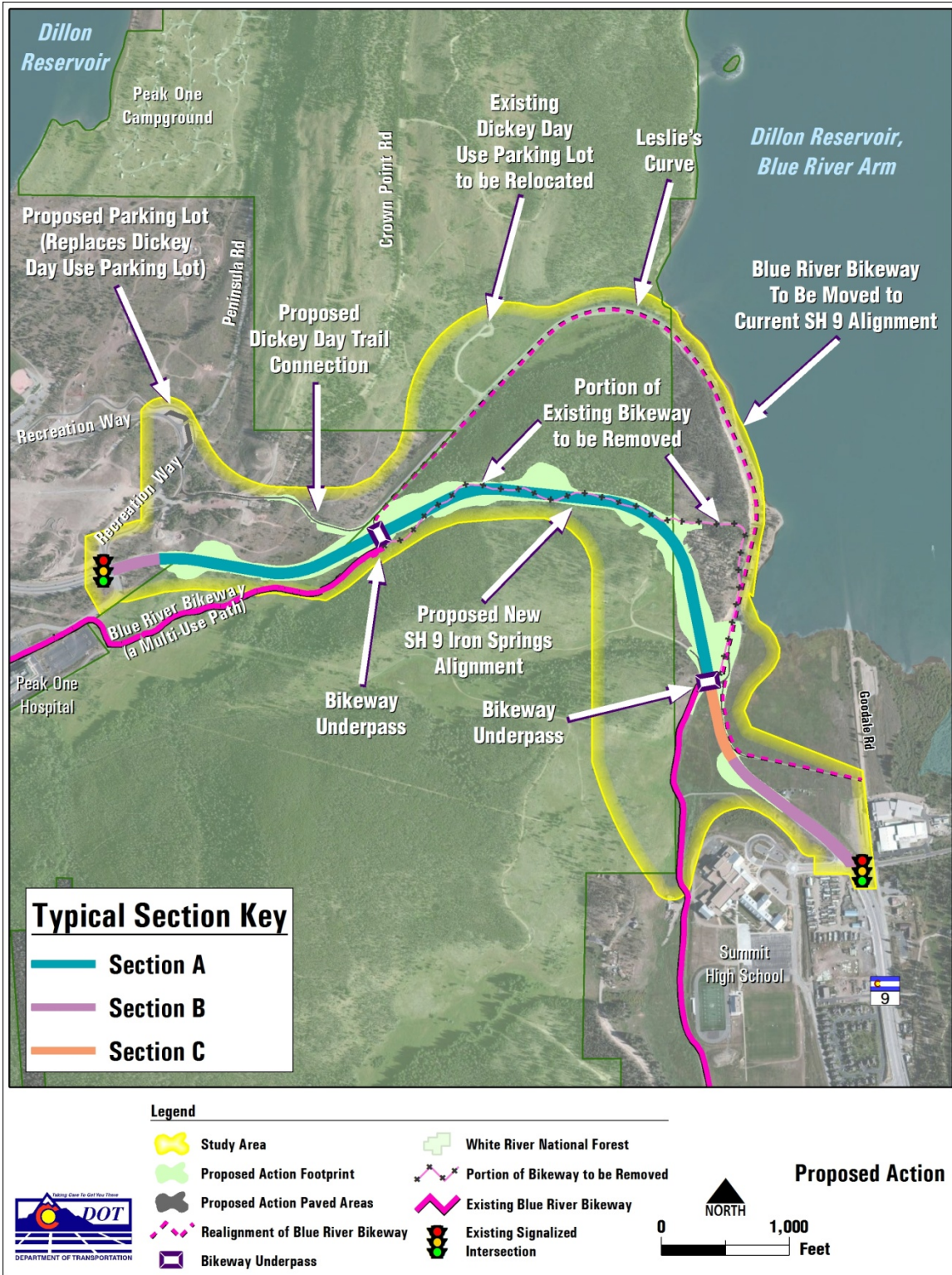
14 PROPOSED ACTION

15 As part of implementation of the SH 9 improvements between Frisco and Breckenridge, the  
16 Colorado Department of Transportation (CDOT) and Federal Highway Administration (FHWA)  
17 are proposing to realign approximately 1.3 miles of existing SH 9 just south of the Town of  
18 Frisco, Colorado (see **Figure 1**). This stretch of SH 9, which falls between mileposts 93 and 95,  
19 would be realigned to provide a four-lane reduced section roadway away from Dillon Reservoir.  
20 This Proposed Action, also referred to as the Iron Springs Alignment, would shorten SH 9 by  
21 approximately 0.4 mile. The Proposed Action would provide roadway safety benefits, as well as  
22 water quality and drinking water protection benefits, as a result of straightening the highway to  
23 remove a tight, compound curve (known as Leslie’s Curve), which is in close proximity to Dillon  
24 Reservoir. The existing condition on Leslie’s Curve is considered substandard and contributes to  
25 accidents in the area.

26 The Proposed Action would include realignment of a portion of the existing Frisco-Farmer’s  
27 Korner-Blue River Bikeway (also referred to herein for brevity as the Blue River Bikeway or  
28 bikeway). This portion of the bikeway would be moved to the alignment currently occupied by  
29 SH 9, would be approximately 0.4 mile longer than the existing bikeway, and would be at a  
30 gentler grade than the current alignment. In addition, the Dickey Day Use Parking Lot would be  
31 moved west to a new parking lot to be constructed as part of the project, with access provided  
32 via Recreation Way using the existing signalized intersection at SH 9 and Recreation Way. A new  
33 trail connection would be provided to link the proposed parking lot with the realigned bikeway  
34 and existing trail, which currently begins at the old Dickey Day Use Parking Lot.

35 Additional detail regarding the Proposed Action, including typical sections, is provided in the EA  
36 main text and the project drawings provided in Appendix A1 of the EA.

1 **Figure 1 Proposed Action**



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1 **NO ACTION ALTERNATIVE**

2 If the Proposed Action is not selected for implementation, SH 9 would be widened to provide a  
3 four-lane reduced section roadway along the existing alignment as previously approved in the  
4 SH 9 Frisco to Breckenridge Environmental Impact Statement (EIS) and Record of Decision (ROD)  
5 (CDOT and FHWA, 2004a; 2004b) (**Figure 2**). The 2004 Preferred Alternative is considered the  
6 “No Action Alternative” for this EA and is used as a baseline for comparison with the Proposed  
7 Action. These improvements would be implemented if the Proposed Action is not selected.

8 Widening along the existing alignment would require large rock cuts and retaining walls  
9 (problematic to design and construct), and the highway would remain in close proximity to  
10 Dillon Reservoir. The length of SH 9 would remain the same as the existing highway. The tight  
11 Leslie’s Curve would not be eliminated; however, safety features such as a barrier between  
12 opposing lanes would be installed to improve safety.

13 With this alternative, approximately 0.8 mile of the existing Blue River Bikeway would be  
14 realigned to allow space for the highway widening. The length of bikeway would not change  
15 appreciably and the current relatively steep grades on the path would remain.

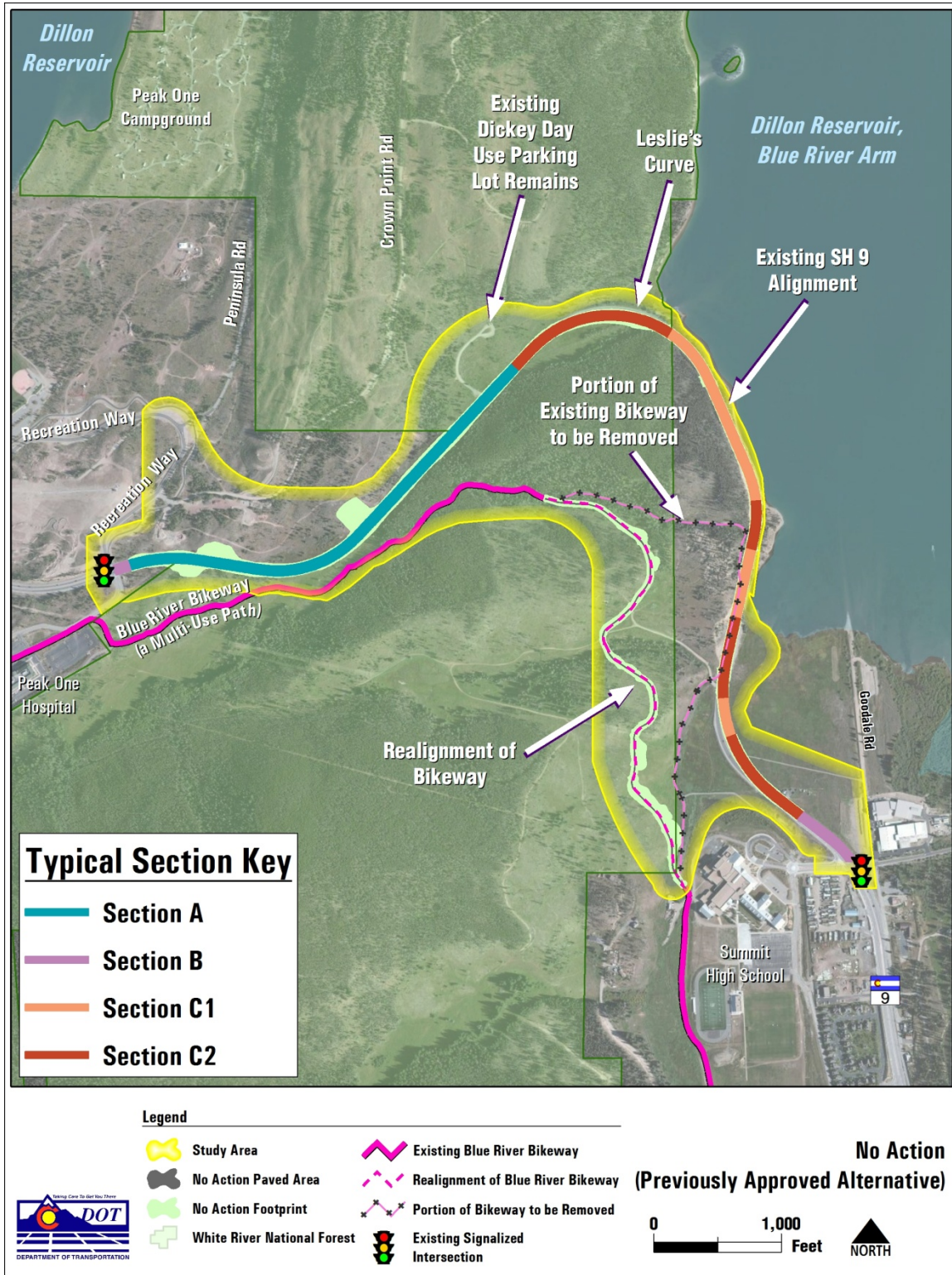
16 Additional detail regarding the No Action Alternative, including typical sections, is provided in  
17 the EA main text and the project drawings provided in Appendix A1 of the EA.

18 **FEMA FLOOD ZONE DESIGNATION**

19 The 100-Year Floodplain FEMA designation (also referred to as Zone A) is the only flood zone  
20 designation for Dillon Reservoir. FEMA defines the 100-Year Floodplain as an area with a one  
21 percent annual chance of flooding (FEMA, 2013). Dillon Reservoir is located east of the study  
22 area (**Figures 1 and 2**). **Figure 3** shows the current location of identified floodplains and  
23 floodways in the vicinity of the study area. Both the No Action Alternative and the Proposed  
24 Action are located in areas that have a low risk of a flood hazard.



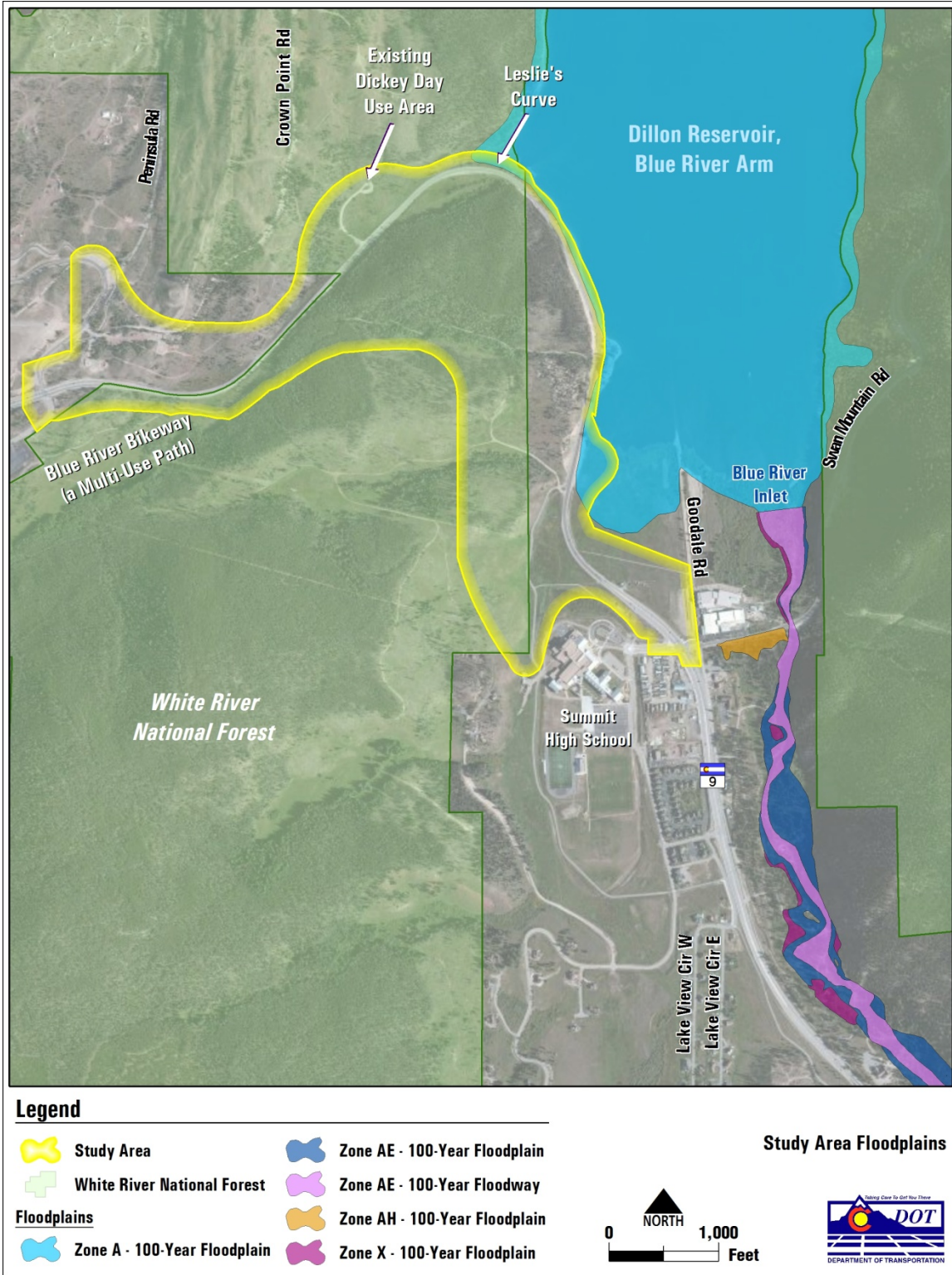
1 Figure 2 No Action Alternative (Previously Approved)



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1 **Figure 3 Study Area Floodplains**



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1 ENVIRONMENTAL CONSEQUENCES OF THE NO ACTION  
2 ALTERNATIVE

3 The No Action Alternative would not modify, raise water surface elevations, or encroach onto  
4 the Blue River or Dillon Reservoir floodplains. Due to the proximity to Dillon Reservoir and its  
5 100-year floodplain, the No Action Alternative zone of construction would be adjacent to the  
6 floodplain, but the completed structure would not be in the floodplain. The No Action  
7 Alternative would include a fill wall between SH 9 and Dillon Reservoir preventing any impacts  
8 to the 100-year floodplain.

9 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

10 Because the Proposed Action would be well outside the boundaries (over 1,500 feet) of the  
11 100-year floodplain, the Proposed Action would not modify, raise water surface elevations, or  
12 encroach onto the Blue River or Dillon Reservoir floodplains.

13 MITIGATION

14 The No Action Alternative will be constructed with fill walls where needed to avoid the 100-year  
15 floodplain. No mitigation will be necessary for the Proposed Action due to the absence of  
16 floodplains within the study area. It is not anticipated that floodplain permits or coordination  
17 will be required from FEMA, Summit County, CDOT, or any other federal, state or local agencies.

18 REFERENCES

19 Colorado Department of Transportation (CDOT) and Federal Highway Administration (FHWA).  
20 2004a. *State Highway 9 Frisco to Breckenridge Final Environmental Impact Statement and 4(f)*  
21 *Evaluation*. February. [Note: This document is an abbreviated Final EIS, which incorporates the  
22 Draft EIS, constituting the complete Final EIS.]

23 Colorado Department of Transportation (CDOT) and Federal Highway Administration (FHWA).  
24 2004b. *State Highway 9 Frisco to Breckenridge Record of Decision*. May.

25 Federal Emergency Management Agency (FEMA). 2013. Website accessed April 2013:  
26 <https://msc.fema.gov>