



# Longmont – North Metro Connection Alternative Evaluation

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October 2006

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## INTRODUCTION

The North I-25 EIS team is evaluating passenger rail service in the North Front Range. As part of the completed Level 3 screening, commuter rail was evaluated along the US 287/BNSF and I-25 corridors. During Level 3 screening, the project team assessed a potential connection between downtown Longmont and the I-25 corridor. The results of that evaluation have been documented in the *East-West Connection (Longmont to I-25) Alternative Evaluation Technical Memorandum*.

Since that time, the overall Level 3 screening has been completed, and the I-25 commuter rail alignment has been screened out, leaving commuter rail on the US 287/BNSF corridor. This service could connect with the proposed FasTracks service in downtown Longmont. However, interest has continued in a connection from Longmont to the North Metro FasTracks corridor at SH 7. This proposed line would provide a link between the BNSF commuter rail service and the North Metro service, avoiding the need for North Front Range passengers to travel through Boulder to reach Denver. Given the desire for this connection, a more detailed evaluation of potential alignments has been undertaken, and is presented in this technical memorandum.

The northern terminus of the alignment was assumed to be at (or near) the Sugar Mill site identified in RTD studies related to FasTracks. The southern terminus was assumed at the abandoned St Vrain Junction. This junction once connected various Union Pacific freight lines in the Tri-Town area. Today, it is the location of a short spur along the UP's Boulder Industrial Lead, which is the line RTD expects to use for the FasTracks North Metro rail service from SH 7 south. No suitable alternatives were identified to connect St Vrain Junction and the North Metro end-of-line at SH 7, reinforcing this decision. However, the various out-of-service rail lines that fan out north of the junction provide corridors for potential alternatives to connect with the BNSF liner in Longmont.

## UNIVERSE OF ALTERNATIVES

The project's transit team held a working session to develop a universe of alternatives for this analysis. Input was also obtained from stakeholders, including CDOT and the North Front Range Metropolitan Planning Organization (NFR MPO). During this effort, it became obvious that the connection from Longmont to the I-25 area could follow one of several alignments, while the I-25 crossing and connection to the St. Vrain Junction could also use one of several alignments. Therefore, the analysis was prepared using segments that could be mixed and matched to form alternatives. The team generally developed northerly segments (from the Sugar Mill site east and south, labeled A through L) and southerly segments (from St Vrain Junction north and west, labeled P through V). At the end of this effort, almost 20 segments had been identified. Refer to **Figure 1**.



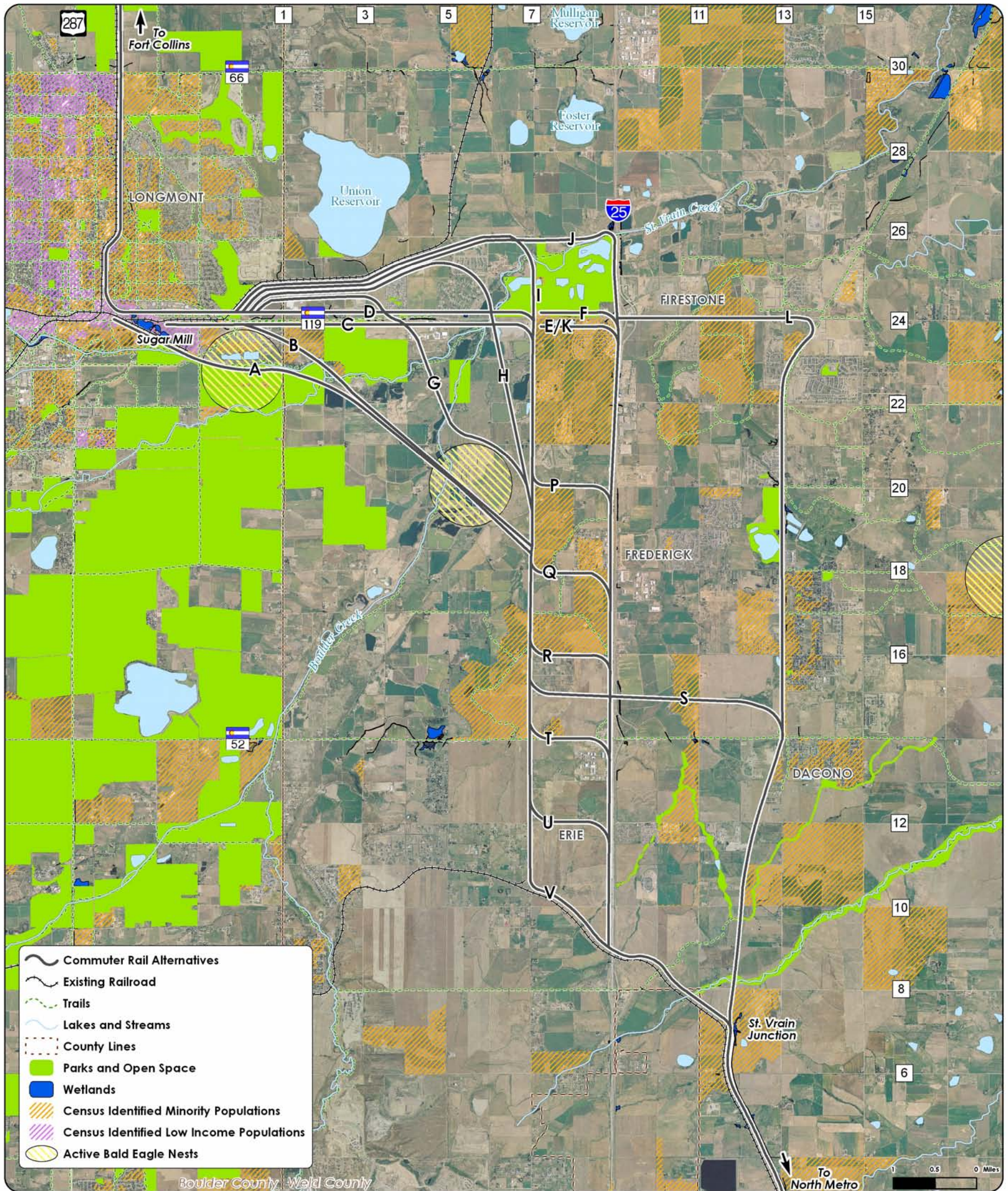


FIGURE 1



## INITIAL SCREENING

Once these alternatives were identified, an evaluation matrix was prepared. The matrix used pertinent evaluation criteria from overall Level 2 and Level 3 screening efforts developed for the project. The matrix is presented below as **Table 1**.

The results obtained from the evaluation performed for the matrix are summarized below:

### North end (from Sugar Mill to the southeast):

- Restoration of rail service on the abandoned BNSF (formerly Colorado and Southern) line that angles southeast from the Sugar Mill area toward I-25 (alignments A and B) would have the potential for environmental consequences to important resources that could be avoided with other alignments
- Running service from the Sugar Mill site north along the GWRR (alignments G, H, I, and J) introduces out-of-direction travel that could increase overall travel times. This is contrary to the goal of the Longmont – North Metro connection, which is to reduce travel time for north Front Range passengers.
- Development along SH 119 could be impacted by alignments in the SH 119 right-of-way (alignments C, D, E, F, K and L). This includes two parks – Longmont's Sandstone Regional Park and St Vrain State Park.
- Development along the I-25 frontage roads south of SH 119 would make CR in the I-25 envelope (alignments E, F, J, and K) costly due to adjacent commercial development.
- Alternatives to Alignment L would avoid impacts to the existing trail along the abandoned UP Dent Line through Frederick and Firestone.

At the conclusion of this effort, Alignment G was selected for further evaluation, assuming that identified environmental issues could be addressed. Many of the alternatives in this initial screening were dropped out due to combination of property impacts and environmental considerations.

### South end (from St Vrain Junction to the northwest):

- There was little to distinguish Alignments P, Q, R, T, and U. They all have similar potential conflicts along WCR 7 and/or I-25. They each require a turn from WCR 7 to the east, a turn into the I-25 corridor, and a turn east from I-25 onto the Boulder Industrial lead at the south end of the alignment. In general, they are all the same length, and are longer than Alignment V.

Align ment Code	Description	Start	End	Environmental	Design	Transportation Corridor	Potential Adjacent Property Impacts	Stations	Length (nearest 0.05 miles)	Comments	Recommendation
A	BNSF / CB&Q alignment	south of Sugar Mill site	CR 7 @ CR 20	2 creek crossings including paralleling a high quality stretch. Alignment also bisects Keyes Boulder County Open Space (potential 4(f)) and bisects two active bald eagle nests: <b>Not recommended to be carried forward-high potential for impacts</b>	two creek crossings	abandoned RR / new	2 residential (one along CB&Q; one between CB&Q & CR 7 may be avoidable); several gravel pits	Does not serve identified Sugar Mill platform on GWRR, but does serve site	5.15 miles	CB&Q corridor does not extend to CR 7; requires some new alignment	Drop due to potential environmental impacts (4(f) and bald eagle impacts)
B	GWRR / new corridor south of Longmont Park	GWRR / Sugar Mill	CR 7 @ CR 20	Minimal impacts to potential minority community, 4 creek crossings, Minor impacts to potential 4(f) Peschel Open Space, bisects one active eagle nest: <b>Not recommended to be carried forward-high potential for impacts</b>	two creek crossings, angled SH 119 crossing	GWRR / new / abandoned RR / new	2 residential (one s/side of SH 119 near CR 1; one between CB&Q & CR 7 may be avoidable); several gravel pits	Serves Sugar Mill platform	5.25 miles	Possible to use short segment of CB&Q alignment east of St Vrain Creek	Drop due to potential environmental impacts (4(f) and bald eagle impacts)
C	GWRR / south side of SH 119 to CR 7	GWRR / Sugar Mill	CR 7 @ CR 18	Impacts to Sandstone Ranch, both 4(f) and 106 property, minimal impacts to potential minority EJ community, One creek crossings, bisect lake: <b>Not recommended to be carried forward-high potential for impacts</b>	one creek crossing, angled SH 119 crossing; access conflicts along SH 119	GWRR / SH 119	1 residential (s/side of SH 119 near CR 1); Sandstone Park; business park between CR 3 and CR 5 (includes 2 auto dealerships & 7 other developed parcels along SH 119, s/side); concrete batch plant at CR 7	Serves Sugar Mill platform	6.10 miles	Curve at CR 7 would impact existing sand / gravel dealer	Drop due to potential environmental impacts (4(f) creek and lake impacts)

Align ment Code	Description	Start	End	Environmental	Design	Transportation Corridor	Potential Adjacent Property Impacts	Stations	Length (nearest 0.05 miles)	Comments	Recommendation
D	GWRR / north side of SH 119 to CR 7	GWRR / Sugar Mill	CR 7 @ CR 18	Bisects Longview Park and subdivision, impacts to St Vrain and associated wetlands, minimal impacts to potential minority EJ community: <b>Not recommended to be carried forward-high potential for impacts</b>	one creek crossing, uses existing GWRR S 3rd Street crossing; access conflicts along SH 119	GWRR / SH 119	2 residential (n/side of SH 119 either side of CR 3); Longview manufactured home community (includes park along SH 119); subdivision between CR5 and CR 5 1/2; possible St Vrain State Park expansion	Serves Sugar Mill platform	6.10 miles	Curve at CR 7 would impact water-filled gravel pits	Drop due to potential environmental impacts (4(f) river and wetland impacts)
E	South side of SH 119; south along I-25	GWRR / Sugar Mill	St Vrain Junction	Potential for disproportionate impacts to EJ communities, bisects lake and impacts associated wetlands: <b>Not recommended-high impacts</b>	Access conflicts along SH 119 and I-25 Frontage Road	GWRR / SH 119 / I-25	6 commercial sites along s/ side of SH 119 (includes 2 motel, 3 fast food, and 1 gas station)	Serves Sugar Mill platform	14.45 miles	Curve at SH 119 / I-25 would impact existing commercial development; original alignment in DEIS A	Drop due to potential environmental impacts (wetland, EJ and lake impacts)
F	North side of SH 119; south along I-25	GWRR / Sugar Mill	St Vrain Junction	Minimal impacts to potential minority community, Impacts to Barbour State Park 4(f), Barbour State Ponds and associated wetlands: <b>Not recommended-high impacts</b>	Access conflicts along SH 119 and I-25 Frontage Road	GWRR / SH 119 / I-25	2 residential sites; 4 commercial sites (includes a motel and a gas station); St Vrain State Park	Serves Sugar Mill platform	14.45 miles	Curve at SH 119 / I-25 would impact existing commercial development	Drop due to potential environmental impacts (4(f) and wetland impacts)

Align ment Code	Description	Start	End	Environmental	Design	Transportation Corridor	Potential Adjacent Property Impacts	Stations	Length (nearest 0.05 miles)	Comments	Recommendation
G	GWRR to CR 4 1/2; new corridor southeast to CR 7	GWRR / Sugar Mill	CR 7 @ CR 18	Impacts to Longview Park 4(f) property and Archery Range, slight impact to active bald eagle area, impacts to wetlands and to community, most of these impacts could be minimized with design readjustments. <b>Recommend forwarding for further investigation</b>	Two creek crossings, uses existing GWRR S 3rd Street crossing; crosses SH 119 at skew	GWRR / new	Fox Hill golf course; subdivision between golf course and CR 1; west edge of Longview manufactured home community; bisects business park between CR 3 and CR 5; potential 4(f) at archery range; CR 7 - 4 w/side or 8 e/side residential + 1 comm e/side	Serves Sugar Mill platform	6.40 miles	GWRR would require upgrades	This alternative was carried forward with the recommendation to modify the design to avoid adjacent environmental resource
H	GWRR to CR 5; new corridor south-southeast to CR 7	GWRR / Sugar Mill	CR 7 @ CR 18	Impacts to linear wetlands, impacts to community (subdivision), new crossing of St. Vrain and lakes. <b>Recommend forwarding for further investigation</b>	One creek crossing, uses existing GWRR S 3rd Street crossing; crosses SH 119 at small skew	GWRR / new	Fox Hill golf course; subdivision between golf course and CR 1; north edge of Longview manufactured home community; bisects subdivision and/or St Vrain expansion; bisects lake & subdivision at CR 22; CR 7 - 4 w/side or 8 e/side residential + 1 e/side commercial	Serves Sugar Mill platform	7.20 miles	GWRR would require upgrades	Although this had a minimal potential for environmental impacts, it was dropped due to potential impacts to subdivisions (4 subdivisions, multiple homes)
I	GWRR to CR 26; CR 26 to CR 7; CR 7 / new alignment south	GWRR / Sugar Mill	CR 7 @ CR 18	Minor impact to St. Vrain State Park (di minimis?), potential minor impact to EJ community, impact to canal (106?) <b>Recommend forwarding for further investigation</b>	One creek crossing, uses existing GWRR S 3rd Street crossing; crosses SH 119 perpendicular at CR 7	GWRR / CR 26 / CR 7	Fox Hill golf course; subdivision between golf course and CR 1; subdivision between CR 5 and CR 5 1/2; bisects (planned) St Vrain State Park; CR 7 - 9 w/side or 15 e/side residential + 1 w/side or 2 e/side commercial	Serves Sugar Mill platform	8.35 miles	GWRR would require upgrades	Drop due to out-of-direction travel; in concert with potential 4(f) impacts at St Vrain Park expansion



Align ment Code	Description	Start	End	Environmental	Design	Transportation Corridor	Potential Adjacent Property Impacts	Stations	Length (nearest 0.05 miles)	Comments	Recommendation
J	GWRR to CR 26; CR 26 to I-25; I-25 south	GWRR / Sugar Mill	St Vrain Junction	Impacts to St. Vrain State Park and moderate quality wetlands associated with this <b>Recommend forwarding for further investigation</b>	One creek crossing, uses existing GWRR S 3rd Street crossing; crosses SH 119 perpend- icular at I-25	GWRR / CR 26 / I-25	Fox Hill golf course; subdivision between golf course and CR 1; subdivision between CR 5 and CR 5 1/2; bisects (planned) St Vrain State Park; I-25 - 1 w/side residential + 15 w/side commercial	Serves Sugar Mill platform	15.80 miles	GWRR would require upgrades	Drop due to out-of- direction travel; in concert with the potential 4(f) at St Vrain Park expansion
K	South side of SH 119 (CR 7 to I-25); structure at I-25 / SH 119 Junction	GWRR / Sugar Mill	St Vrain Junction	Potential for disproportionate impacts to EJ communities, bisects lake and impacts associated wetlands: <b>Not recommended-high impacts</b>	Access conflicts along SH 119 and I-25 Frontage Road	GWRR / SH 119 / I-25	6 commercial sites along s/ side of SH 119 (includes 2 motel, 3 fast food, and 1 gas station); structure could minimize access conflicts but decrease visibility and increase costs.	Serves Sugar Mill platform	14.45 miles	Curve at SH 119 / I-25 would impact existing commercial development; mitigated with structure over this area; original alignment in DEIS A	Drop due to costs of structure
L (north side of CR 24)	CR 24 to Dent Line; Dent Line to Boulder Industrial Lead	SH 119 / I-25	St Vrain Junction	Impacts to at least 5 areas where the concentration of minority populations is greater than 50%, EJ, potential (di minimis) impacts to Bella Rosa Public Golf Course and Stanley Lateral Open Space and to the planned trails in the Rails to trails area: <b>Not recommended, moderate potential for impacts</b>	New grade- separated crossing of I-25	CR 24 (north side); abandoned Dent Line; unused rail corridor (Boulder Industrial Lead)	CR 24 - 2 commercial n/e of interchange; 1 commercial & 2 residential at CR 11; subdivision between CR 13 and Dent line; Dent line - subdivision CR 22 to CR 22 1/2; 8 residences CR 20 to CR 22; 1 commercial + trail CR 18 to CR 22; subdivision + trail CR CR 16 1/2 to CR 18; 7 residential + trail CR 16 to CR 16 1/2; subdivision + trail CR 14 1/2 to CR 16; see "S" for south of SH 52	New station site in Tri-Cities area required	11.10 miles	Trail exists on portions of Dent Line in this segment; stays off of I-25 alignment	Drop due to out-of- direction travel; numerous residential / subdivision issues in concert with numerous 4(f) issues

Align ment Code	Description	Start	End	Environmental	Design	Transportation Corridor	Potential Adjacent Property Impacts	Stations	Length (nearest 0.05 miles)	Comments	Recommendation
L (south side of CR 24)	CR 24 to Dent Line; Dent Line to Boulder Industrial Lead	SH 119 / I-25	St Vrain Junction	Impacts to at least 5 areas where the concentration of minority populations is greater than 50%, EJ, potential di minimus impacts to Bella Rosa Public Golf Course and Stanley Lateral Open Space and to the planned trails in the Rails to trails area: <b>Not recommended, moderate potential for impacts</b>	New grade- separated crossing of I-25	CR 24 (south side); abandoned Dent Line; unused rail corridor (Boulder Industrial Lead)	CR 24 - American Furniture s/e of interchange; subdivision at CR 11; 8 residential & 1 commercial at CR 11 1/2; subdivision at CR 13, 1 residential at Dent Line; Dent line - subdivision CR 22 to CR 22 1/2; 8 residences CR 20 to CR 22; 1 commercial + trail CR 18 to CR 22; subdivision + trail CR CR 16 1/2 to CR 18; 7 residential + trail CR 16 to CR 16 1/2; subdivision + trail CR 14 1/2 to CR 16; see "S" for south of SH 52	New station site in Tri-Cities area required	11.10 miles	Trail exists on portions of Dent Line in this segment; stays off of I-25 alignment	Drop due to out-of- direction travel; numerous residential / subdivision issues in concert with the potential for 4(f) impacts and impacts to wetlands
<b>Since there are no alignments from Sugar Mill to I-25 that were considered feasible, an evaluation of connections between CR 7 and the Boulder Industrial Lead was also undertaken.</b>											
P	CR 7 to CR 20; CR 20 to I-25; I-25 to Boulder Industrial Lead	CR 7 @ CR 20	St Vrain Junction	Minor potential impacts to EJ/minority communities, minor impacts to wetlands near the southern terminus: <b>Recommend forwarding for further consideration</b>	Uses abandoned UPRR crossing of I-25; has to be fit through SH 52 interchange	CR 20; I-25; unused rail corridor (Boulder Industrial Lead)	CR 20 - 3 residential plus a church; I-25 F/R-7 commercial + 1 residential CR 20 to SH 52; business park s/w at SH 52; Boulder Industrial Lead - none	Serves SH 52 / I-25 CR station site A (preferred)	8.30 miles	Too far north to join with Alignments A & B (note - take care calculating total mileage from CR 7 @ CR 20)	Although this had a minimal potential for environmental impacts, it was dropped due to use of I-25, commercial and church impacts

Align ment Code	Description	Start	End	Environmental	Design	Transportation Corridor	Potential Adjacent Property Impacts	Stations	Length (nearest 0.05 miles)	Comments	Recommendation
Q	CR 7 to CR 18; CR 18 to I-25; I-25 to Boulder Industrial Lead	CR 7 @ CR 18	St Vrain Junction	Minor potential impacts to EJ/minority communities, minor impacts to wetlands near the southern terminus: <b>Recommend forwarding for further consideration</b>	Uses abandoned UPRR crossing of I-25; has to be fit through SH 52 interchange	CR 18; I-25; unused rail corridor (Boulder Industrial Lead)	CR 18 - 3 residential; school; 3 commercial; I-25 F/R - 1 residential CR 18 to SH 52; business park s/w at SH 52; Boulder Industrial Lead - none	Serves SH 52 / I-25 CR station site A (preferred)	7.30 miles		Although this had minimal potential for environmental impacts, it was dropped due to use of I-25, potential impacts to school, residential and commercial properties
R	CR 7 to CR 16; CR 16 to I-25; I-25 to Boulder Industrial Lead	CR 7 @ CR 18	St Vrain Junction	Minor potential impacts to EJ/minority communities, minor impacts to wetlands near the southern terminus: <b>Recommend forwarding for further consideration</b>	Uses abandoned UPRR crossing of I-25; has to be fit through SH 52 interchange	CR 7; CR 16; I-25; unused rail corridor (Boulder Industrial Lead)	CR 7 - 7 residential (subdivision under construction / more possible); CR 16 - 7 residential; I-25 F/R - business park s/w at SH 52; Boulder Industrial Lead - none	Serves SH 52 / I-25 CR station site A (preferred)	7.30 miles		Although this had minimal potential for environmental impacts, it was dropped due to use of I-25 and potential residential impacts
S	CR 7 to new alignment; new alignment east to abandoned Dent Line; abandoned Dent Line to Boulder Industrial Lead	CR 7 @ CR 18	St Vrain Junction	Very minor potential impacts to EJ community. Impact to Dry Creek Open Space and Dry Creek and associated wetlands: <b>Not recommended-high impacts</b>	New grade- separated crossing of I-25; may be able to recapture abandoned UP mine tracks extending west from Dent Line to CR 11	CR 7; new alignment at about CR 14 1/2; abandoned mine tracks; abandoned Dent Line; unused rail corridor (Boulder Industrial Lead)	CR 7 - 7 residential; CR 16 1/2 - 5 residential (subdivision under construction / more possible); Dent Line - subdivision CR 12 1/2 to SH 52; commercial CR 12 1/4 to SH 52; 1 commercial s/of CR 12. 1 residential n/of CR 8	Station site A (preferred SH 52 / I-25 station site) may be accessible; new site could be located at SH 52 / CR 13 in Dacono (closer to Tri-Cities population centers)	8.45 miles	No trail exists on Dent Line today in this segment (does exist to the north), but construction is planned (4f); stays off of I-25 alignment	Drop due to environmental impacts (4(f) and wetlands)



Align ment Code	Description	Start	End	Environmental	Design	Transportation Corridor	Potential Adjacent Property Impacts	Stations	Length (nearest 0.05 miles)	Comments	Recommendation
T	CR 7 to SH 52 (CR 14); SH 52 to I-25; I-25 to Boulder Industrial Lead	CR 7 @ CR 18	St Vrain Junction	Minor potential impacts to EJ/minority communities, minor impacts to wetlands near the southern terminus: <b>Recommend forwarding for further consideration</b>	Uses abandoned UPRR crossing of I-25; has to be fit through SH 52 interchange	CR 7; SH 52; I-25; unused rail corridor (Boulder Industrial Lead)	CR 7 - 14 residential (subdivision under construction / more possible); SH 52 - 2 residential + 2 businesses + interchange commercial; I-25 F/R - business park s/w at SH 52; Boulder Industrial Lead - none	Misses preferred SH 52 / I-25 CR station site (site A); site G (south of SH 52 & feasible) could still be accessed	7.30 miles	Curve at SH 52 / I-25 would impact existing commercial development	Drop due to residential impacts
U	CR 7 to CR 12; CR 12 to I-25; I-25 to Boulder Industrial Lead	CR 7 @ CR 18	St Vrain Junction	Minor impacts to wetland crossing at I-25. <b>Recommend forwarding for further consideration</b>	Uses abandoned UPRR crossing of I-25	CR 7; CR 12; I-25; unused rail corridor (Boulder Industrial Lead)	CR 7 - 20 residential (subdivision under construction / more possible) + water district pump station; CR 12 - 6 residential; I-25 F/R - none; Boulder Industrial Lead - none	Misses SH 52 / I-25 CR station sites; new site could be located at SH 52 / CR 7 (further from Tri-Cities population centers)	7.30 miles		Although this had minimal potential for environmental impacts, it was dropped due to use of I-25 and the potential for a high number of residential impacts
V	CR 7 to Boulder Industrial Lead	CR 7 @ CR 18	St Vrain Junction	Impacts to wetland crossing at I-25 and at Dry Creek. Potential impacts to several small pockets of EJ population: <b>Recommend forwarding for further consideration</b>	Uses abandoned UPRR crossing of I-25	CR 7; unused rail corridor (Boulder Industrial Lead)	CR 7 - 23 residential (subdivision under construction / more possible); 1 commercial + water district pump station; Boulder Industrial Lead - none	Misses SH 52 / I-25 CR station sites; new site could be located at SH 52 / CR 7 (further from Tri-Cities population centers)	6.80 miles	Makes the most use of the Boulder Industrial lead; stays off of I-25 alignment	Although this had potential for environmental impacts, it was dropped due to the potential for a high number of residential impacts

- Alignment S makes use of the Dent Line in the area where the trail has not been yet developed (primarily through Dacono), although plans for a trail exist. It also serves the Tri-Town population better than the remaining alignments. However, it is the longest alignment in the southern area.
- Alignment V provides the shortest distance. This, coupled with one less major curve, is expected to provide the best travel time for the south end alternatives. It also does not use the I-25 corridor, similar to Alignment S.
- The team reviewed these alignments with CDOT, and it was determined that the use of the I-25 alignment would be a fatal flaw since it may preclude long-range improvements (beyond 2030) along the interstate in the North Front Range.

At the end of this screening process, the southerly alignment results were not nearly as clear as the northerly alignment results. Alignments S and V were the only two alternatives that were not fatal flawed because of the use of I-25. Therefore, these two alternatives for the south end were advanced to determine if potential environmental impacts could be avoided.

## **ADDITIONAL EVALUATIONS**

Since Alignment G required refinement and no conclusion between S and V could be reached using the initial evaluation criteria, refinements and supplemental analyses were performed.

### Analysis Refinements

A new alignment (referred to as G(2)) was developed in an attempt to minimize the negatives associated with Alignment G. During this evaluation, it was found that the City of Longmont owns land that is contiguous from Sandstone Ranch west past the archery range to the St. Vrain Greenway. Those potential 4(f) properties rendered an alignment crossing from SH 119 south toward WCR 20.5 between Sandstone Ranch and WCR 7 infeasible. This finding precluded any options for Alignment G. The team re-examined the matrix of northerly alignments as shown in Table 1. The shortest alignments with potentially avoidable impacts were those parallel to SH 119 (Alignment C and Alignment D). After further consideration, these two alignments were combined to minimize the potential environmental impacts that had initially removed them from consideration. The preferred north end alignment stays as close to SH 119 as possible while minimizing park and water resource impacts. It begins as Alternative D on the north side of SH 119. It crosses SH 119 east of Sandstone Ranch and follows Alignment C to and along WCR 7. This combined alternative will be forwarded for further evaluation.

To better evaluate the differences between Alignment S and Alignment V, additional population and employment data were collected for Erie and the Tri-Town area. The Tri-Town area clearly showed more population and employment in both the base year

(2000) and the forecast year (2030). The team felt that the ability to serve Tri-Town population (Alignment S) outweighed the travel time benefits of Alignment V, and moved forward with Alignment S for discussion with stakeholders.

Following the initial screening process, the results outlined above were presented to the Technical Advisory Committee (TAC). Although the TAC concurred with the selection of a northerly alignment, the TAC requested additional analysis on the southerly segment. Therefore, additional meetings and analysis were undertaken.

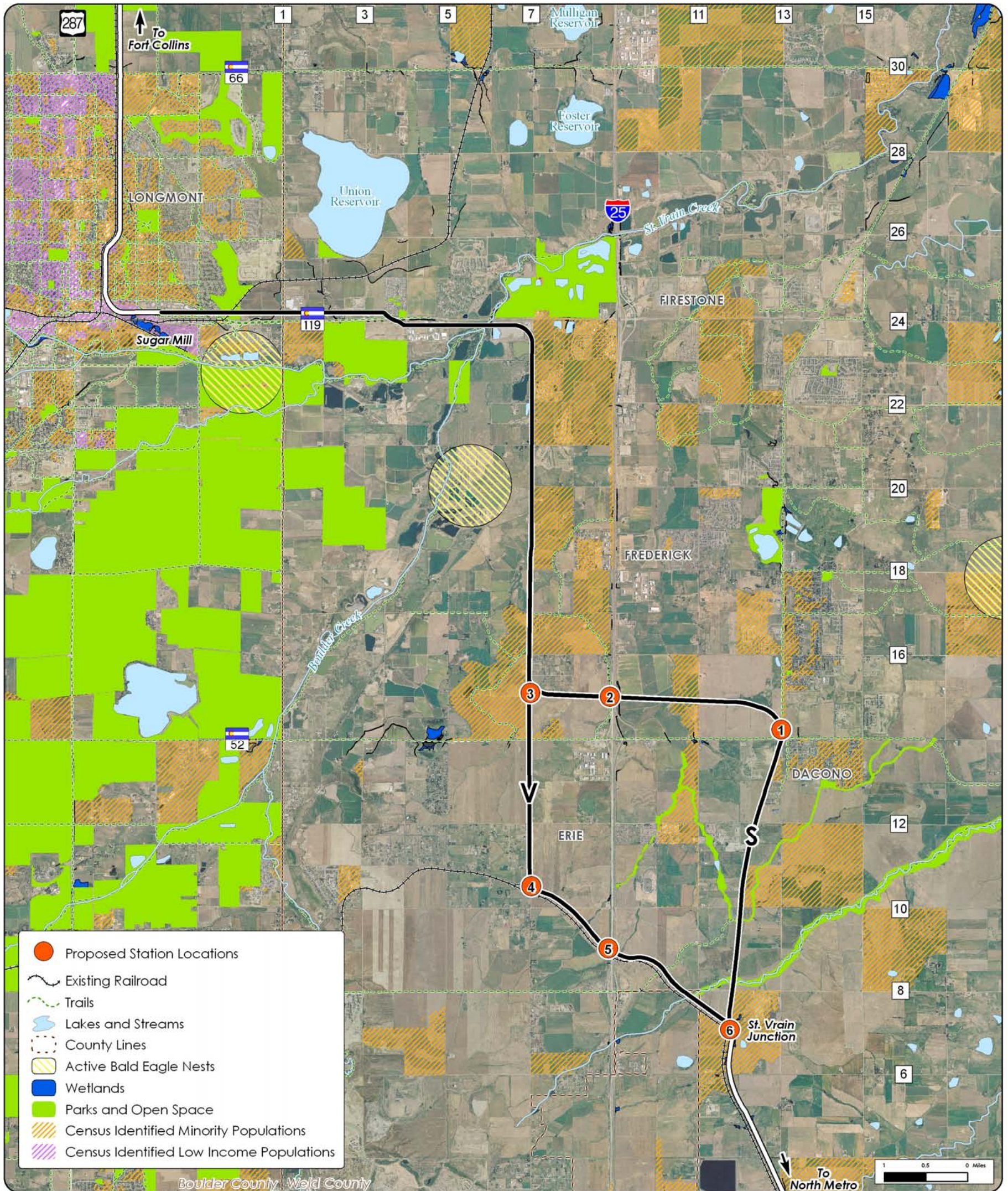
### Small Group Meeting

To obtain additional input, the team decided to hold a small group meeting with the communities that would be directly affected by the southerly alignment selection. Since the TAC requested more detail on population and employment, the team identified six possible stations along alignments S and V. Refer to **Figure 2**. Two stations are located where Alignments S and V meet, two are located along Alignment S, and two are located along Alignment V.

Using thresholds developed in *An Analysis of Passenger Origins at Peer Commuter Rail Systems*, population (in a 4-mile radius) and employment data (in a ½-mile radius) were collected for each of these potential station sites. These data are presented in **Table 2**.

Table 2 Station Population and Employment Data		
Site	Population	Employment
1	60,860	200
2	62,500	580
3	59,750	20
4	64,570	150
5	58,580	640
6	56,040	240
Basis	4 mile drive radius	½ mile walk radius
Note – all data are 2030		





**FIGURE 2**



As Table 2 shows, stations 4 and 5 (both along Alignment V) serve the most population and employment, respectively. However, during the analysis, it was noted that much of the population and employment shown along Alignment V is actually located in areas south of the alignment, and that these users may be unwilling to travel north to a station to take transit south into the Denver area. Therefore, another table was prepared with population and employment generally north of the station but within the same radii. Refer to **Table 3**.

Table 3 Station Population and Employment Data – North of Station only		
Site	Population	Employment
1	39,110	200
2	42,840	580
3	42,740	20
4	33,740	150
5	32,090	640
6	37,360	240
Basis	4 mile drive radius, north of station	½ mile walk radius
Note – all data are 2030		

These data are inconclusive with the largest employment base at site 2 (along Alignment S) and the largest population base remaining at site 5 (along Alignment V). Given these data and the other information contained in the evaluation matrix, no recommendation was developed at the small group meeting.

Feedback from the meeting included information on several planning efforts in the area. The participants also asked the team to evaluate impacts to potential subdivisions in addition to subdivisions already under construction, as documented in the initial screening. In addition, a modification of Alignment S was proposed along WCR 11. **Refer to Figure 3.**



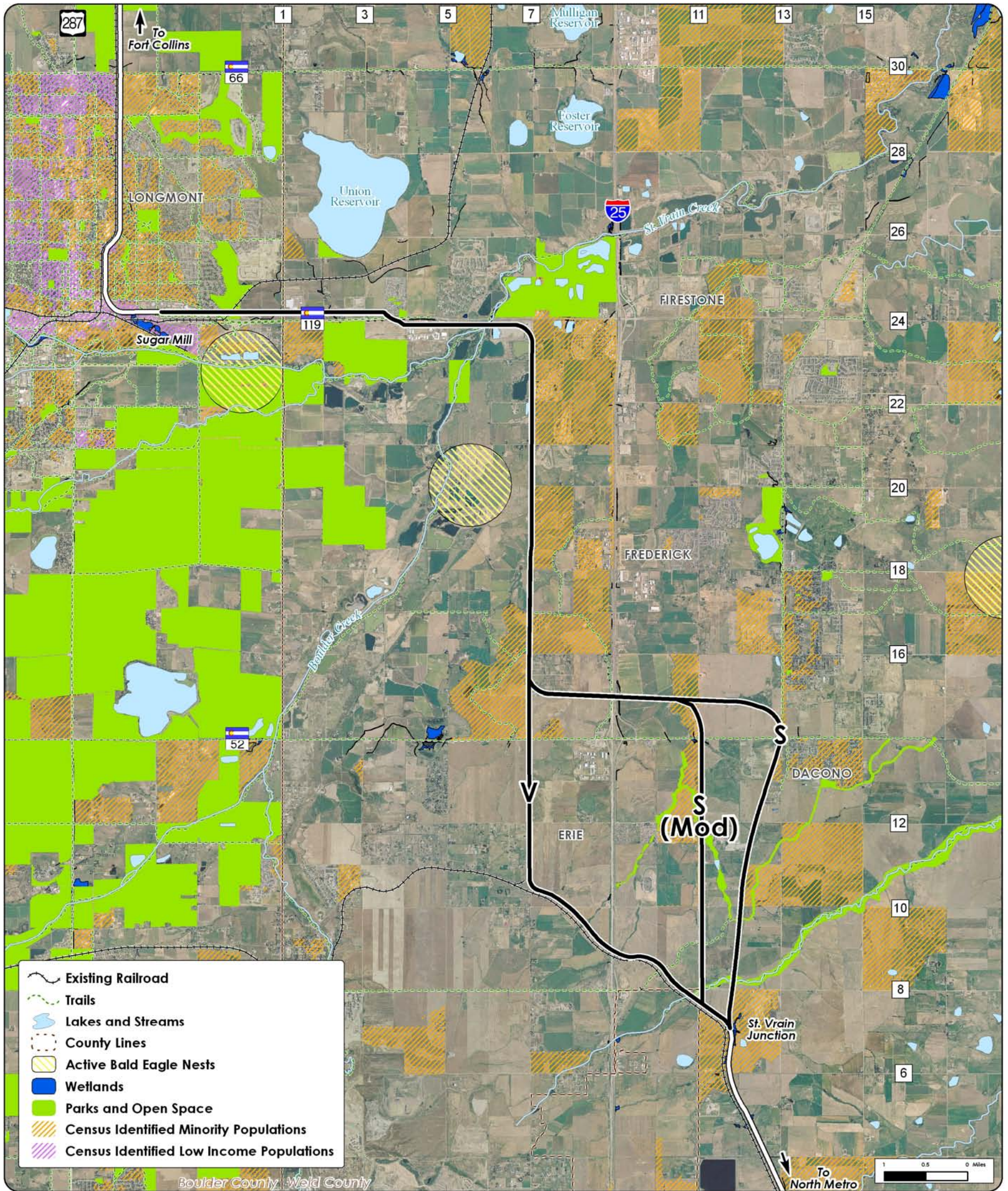


Figure 3



### Additional Technical Analysis

Since the small group meeting was inconclusive, additional evaluation criteria were developed to specifically address the three southerly alignments. The team then collected data to allow for a more comprehensive comparison between the alignments. This analysis is shown in **Table 4**.

Table 4 reflects the following new data:

- Dacono's Land Use Plan assumes Alignment V.
- The future subdivision analysis follows CDOT's current guidance, including subdivisions that have issued building permits at the time of analysis.
- At-grade crossings have been assumed based on engineering judgment; further grade crossing analysis will occur during the DEIS.
- Utility crossings are based on the Level 3 utility inventory, and may change as design moves through the DEIS process.

Criteria viewed as 'positive' for the alignment have been highlighted. Given the supplemental analyses documented in Table 4, the team recommends Alignment V. This is a change from the initial recommendation discussed with the TAC and RCC, and is based on the subsequent input and evaluation described above.

<b>Table 4: Additional Technical Analysis</b>			
<b>Criteria</b>	<b>Alignment S</b>	<b>Alignment V</b>	<b>Alignment S using WCR 11</b>
<b>Socio-Economic Data</b>			
2030 Population	68,670 (Tri-Town)	46,260 (Erie)	In between
2030 Employment	22,750 (Tri-Town)	4,150 (Erie)	In between
<b>Alignment Configuration</b>			
Length	14.55 miles	12.9 miles	13.75 miles
Percentage in Transportation Corridor	~55%	>95%	~70%
Parallel to planned trail	Yes	No	No
At-Grade Crossings (SH 52, I-25 & Frontage Roads are grade separated)	WCR 7, WCR 11, WCR 13, WCR 12, WCR 8 (five total)	WCR 7, WCR 12, WCR 10, WCR 8, WCR 11 (five total; re-uses three)	WCR 7, WCR 11, WCR 12, WCR 8 (four total)
Major Utilities (115kv electric east-west between Erie & Dacono affects all)	8" gas & ditch cross I-25 between SH 52 & WCR 16; gas line parallel to I-25, west side; 115kv electric parallel to I-25, east side	Water pumping station	8" gas & ditch cross I-25 between SH 52 and WCR 16; gas line parallel to I-25, west side; 115kv electric parallel to I-25, east side
<b>Community and Municipal Input</b>			
Community interest	Frederick	Dacono (via Land Use Plan), Erie	Dacono
Existing Subdivisions	2	1	2
Future Subdivisions <sup>1</sup> Permitted / Pending	6/10	0/3	4/6
<b>Stations</b>			
Stations: east-west connectivity	SH 52	SH 52	SH 52
Stations: north-south connectivity	WCR 7 or WCR 11 or WCR 13	WCR 7	WCR 7 or WCR 11
<b>Environmental</b>			
T&E	Equivalent	Equivalent	Equivalent
Aquatic Resources	In between	Re-uses existing RR crossings	Highest
Community Impacts	In between	Fewest	Most
Parks and Open Space	In between	Fewest	Most
<b>Criteria Met<sup>2</sup></b>	<b>5 (31%)</b>	<b>12 (75)%</b>	<b>4 (25)%</b>

<sup>1</sup> The current CDOT noise policy states that impacts should be evaluated for future developments that have been platted and have issued building permits at the time of analysis. The first number indicates subdivisions that meet this criteria; the second number is subdivisions that are expected to meet this criteria in the near future.

<sup>2</sup> Represents the number of criteria viewed as 'positive' for the Alignment. Percentage is number of positive criteria divided by total # of criteria (currently 16), and does not total 100% since some criteria rated positive for more than one alignment.

## CONCLUSION

Along the northerly alignment the recommended alignment is a combination of “C” and “D” for the following reasons:

- It is substantially within an existing transportation corridor.
- It minimizes potential parkland impacts.
- It does not include out-of-direction travel.

Along the southerly portion, the recommended alignment is “V” for the following reasons:

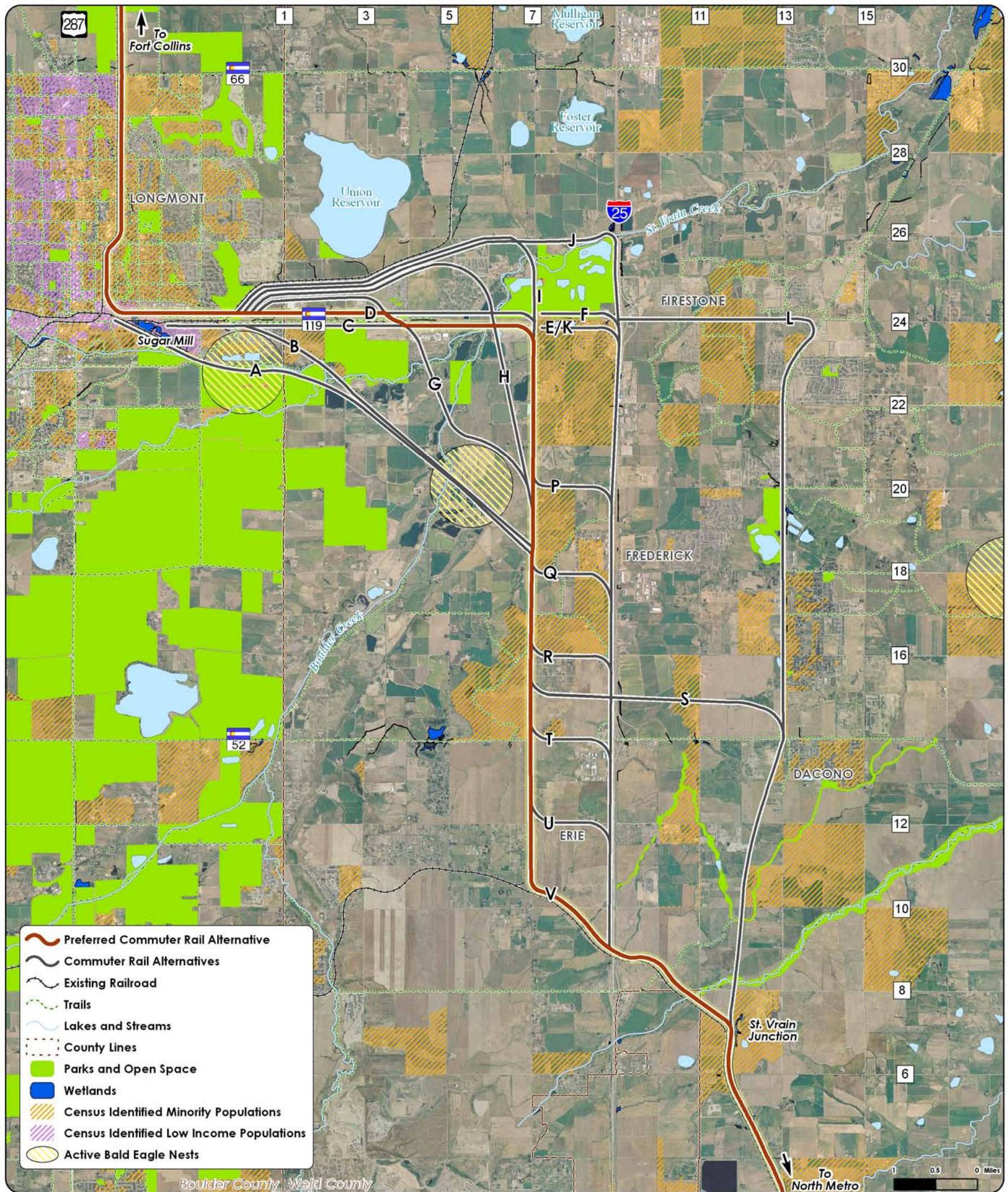
- It is the shortest distance so is expected to have the fastest travel time.
- It is substantially within an existing transportation corridor.
- It is not parallel to a planned trail.
- It has the least number of potential utility conflicts.
- It affects the least number of existing and platted subdivisions.
- It has the least need to acquire parks and open space areas; and has the least potential for negative community impacts.
- It has the least potential impacts to aquatic resources.

Based on the evaluation described above, the following conclusions were drawn:

- The preferred alignment for the north end is a combination of Alignments C and D, generally parallel to SH 119 and WCR 7.
- The preferred alignment for the south end is Alignment V, generally parallel to WCR 7 and along the Boulder Industrial Lead.

It is recommended that this combination of Alignment C, Alignment D, and Alignment V, as shown on **Figure 4**, be carried through the DEIS evaluation. Additional analyses will be performed to select the preferred station site along the selected alignment for use in the DEIS.





**FIGURE 4**