LINKNoCo
UNITING THE NORTH FRONT RANGE

FINAL REPORT

Premium Transit Study

October 2022

North Front Range Metropolitan Planning Organization

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Thank You - A note of gratitude to all the individuals and agencies that supported the development of the LINKNoCo project.

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PROJECT VISION 21 – Latinx Engagement

QUANDEL CONSULTANTS – Rail Planning Support

1 LINKNoCo - Advancing the Regional Transit Vision

The North Front Range Metropolitan Planning Organization (NFRMPO) led a collaborative effort to expand premium transit service connecting North Front Range communities. The project was branded 'LINKNoCo,' referencing the desire to efficiently link residential, commercial, employment, and activity centers across the North Front Range. This effort focuses on enhancing existing transit operations by prioritizing opportunities to spur the development of a premium transit network for the region.

HOW IS PREMIUM TRANSIT DEFINED FOR THE REGION?

Premium transit in a regional context for the North Front Range refers to creating focused, reliable, comfortable, and user-friendly transit that connects communities across the region. This does not mean duplicating local transit service, but rather focuses on express-style service to connect across greater distances to link towns, cities, and major activity centers where people live, work, and recreate in Northern Colorado. Premium transit could also include additional amenities at stops specific to the needs of express transit users.

LINKNoCo focuses on enhancing existing transit operations by evaluating opportunities for future regional transit connections. The result is the identification of the top priority corridors in the future transit network, in addition to the financial and operational structures required to support implementation and operations.

LINKNoCo builds on the transit vision set by the 2045 Regional Transit Element (2045 RTE). The 2045 RTE was adopted in 2018 and currently serves as the long-range transit plan for the NFRMPO. The ultimate product of the 2045 RTE was a high-level framework of transit corridors spanning Northern Colorado communities and building on existing service models like FLEX, Bustang, and the Poudre Express. LINKNoCo advances the framework presented in the 2045 RTE by further identifying and prioritizing the priority transit alignments.

Report Structure

The purpose of this report is to document each phase in the LINKNoCo planning process. This report has the following sections:

Acknowledgments. Reflects the leadership team and partners delivering LINKNoCo.

Advancing Regional Transit Vision. Describes the project vision and draft purpose and need statement for the future premium transit network.

Mobility Context. Summarizes the regional context information and past planning efforts.

Planning Process. Describes the process undertaken to prioritize the premium transit corridors and alignments.

Public and Agency Engagement. Presents a summary of the comprehensive public consultation process.

Transit Evaluation. Details each step taken throughout the evaluation process, including the initial screening and final evaluation.

Advancing Foundational Projects. Describes the three Foundational Projects recommended for advancement as a result of the LINKNoCo process.

Vision

The subsequent sections present LINKNoCo's vision statement and purpose and need development, based on past planning and input from project stakeholders.

LINKNoCo Vision

The vision for LINKNoCo is to analyze and advance the most promising transit corridors, linking communities across the North Front Range. This effort builds on recent transit planning and successful operations of existing routes to realize a complete North Front Range transit network. This premium transit network must be designed for ease of use and safety (focused on the user), including seamless connections between other local transit and multimodal options. Critical aspects to identify and prioritize transit corridors include:

- *Equitably serving the range of potential users – commuters, older adults, young people, persons with disabilities, and historically underserved communities.*
- *Balancing the provision of service (locations) with the level of service (frequencies) to create an efficient and desirable network.*
- *Offering a competitive alternative to driving and reducing regional traffic congestion.*
- *Supporting environmental benefits, including a reduction in greenhouse gas emissions (GHG).*

Purpose and Need

The purpose and need provide parameters for the potential transit improvements that are broad enough to create a range of options, but specific enough to address the problem at hand. The purpose and need are considered preliminary throughout the planning process. Following the planning, a formal purpose and need statement can be created (if necessary) to support the subsequent development of individual transit projects.

LINKNoCo – Preliminary Purpose and Need

The project team researched and reviewed past transit and mobility planning efforts and anticipated growth in the transit market across the North Front Range. Understanding regional growth, development, and future plans for transit provides the background

required to support the purpose and need. The project team's research was reinforced by input from the project's Guidance Committee of representatives from local government, transit agencies, and advocacy groups.

PRELIMINARY PURPOSE

The purpose of LINKNoCo is to identify those future premium transit corridors with the greatest potential to support current and future transit users (residents, workers, and visitors) with more frequent, reliable, and high-quality regional transit service. LINKNoCo corridors are focused on providing connectivity among the communities of the North Front Range to build a robust premium transit network.

This effort builds on the 2045 RTE and the objectives expressed in recent/ongoing mobility and transit plans led by the NFRMPO, Larimer County, Weld County, City of Greeley, City of Fort Collins, City of Loveland, Town of Windsor, and other members of the NFRMPO. Consistent with the 2045 RTE, planning and development of a premium transit network seeks to:

- Provide greater transit access to a wide range of users.
- Improve regional connectivity.
- Support the ongoing development of a frequent, regional transit network.
- Support the connectivity and mobility of residents, workers, and visitors.
- Integrate multimodal options, specifically bike, pedestrian, and micro-mobility connections.
- Support regional traffic congestion reduction.
- Support regional air quality and GHG reduction efforts.
- Enhance safety.
- Identify options for governance and operational structures for future transit.
- Connect to and augment the existing local and regional transit network in partnership with local and state transit agencies.
- Identify opportunities to integrate emerging mobility, such as mobility as a service (MaaS) and transit fleet electrification.

PRELIMINARY NEEDS

The needs for the development of LINKNoCo are indicated by the following:

MEET THE TRANSIT NEEDS OF EXISTING AND FUTURE LOCAL/REGIONAL RESIDENTS, BUSINESSES, AND VISITORS

Population and employment forecasts indicate that growth in the North Front Range is expected to continue through 2045, with an 83% increase in population and a 67% increase in jobs.

New housing to accommodate the growth is anticipated in areas without well-developed, reliable transit service, including the region's center and unincorporated areas. Conversely, job centers are predicted to continue to develop along established commercial corridors and within downtowns. Due to housing price and rent increases, population and housing has been growing farther from jobs, underlying the need for regional transit.

The NFRMPO is committed to keeping the future needs of the region's population in mind when planning for the future of regional transportation. The 2045 RTE recognizes that transit services could provide an effective alternative mode to driving.

REDUCE VEHICLE MILES TRAVELED AND SUPPORT CONGESTION REDUCTION AND AIR QUALITY IMPROVEMENT EFFORTS

As Vehicle Miles Traveled (VMT) increase, GHG emissions increase. The U.S. Environmental Protection Agency (EPA) estimates that passenger vehicles in the US emit an average of 0.0046 grams of nitrogen dioxide emissions and 0.0071 grams of methane per mile. Both types of emissions have a direct impact on the formation of tropospheric ozone.

Both congestion and VMT are expected to increase through 2045. The Travel Time Index, a congestion measure, predicts the percentage of roadway systems with an index considered "congested" is forecasted to grow from 1% in 2015 to 7% in 2045.

The NFMRPO has additional goals and specific actions to meet GHG emissions reduction targets to reduce VMT and to support congestion reduction. The NFRMPO 2045 Regional Transportation Plan (RTP) has a goal to provide a multimodal system that improves accessibility and transportation system continuity. Performance measures/targets for this goal include increasing non-motorized facility miles by 50% and targeting the percentage of non-single-occupant vehicle commuter trips to be greater than 25%. Draft GHG emissions reduction efforts are currently being developed as part of an update to the Regional Transportation Plan to meet the requirements of Colorado's SB21-260: Sustainability of the Transportation System.

The 2045 RTP also has a congestion objective to maintain daily VMT per capita at less than 24. A robust and viable regional transit system can help reduce both congestion and GHG emissions.

MEET THE MOBILITY NEEDS OF UNDERSERVED COMMUNITIES

Historically, transit usage has been highest among households with less accessibility to automobiles. In the 2045 RTE, NFRMPO identified five populations most likely to ride transit in the NFRMPO region: zero-vehicle households, population with a disability, older adults, population below the federal poverty level, and the college-aged population.

According to analysis completed in the 2045 RTE, populations with predicted higher transit usage are present in the region.

- Several cities within the NFRMPO region have significant numbers of zero-vehicle households, including Greeley (7%), Fort Collins (5%), Evans (5%), and Loveland (5%).

- Among the municipalities in the region, the percentage of the population with a disability ranges from 5% to 12%.
- The number of seniors (between ages 60 and 80) is expected to grow 78% by 2040 in Larimer County and by 134% in Weld County.
- Populations of low- and moderate-income populations are more prevalent in the larger municipalities in the region.
- Predictably, Fort Collins and Greeley, where the two major universities are located, have the highest percentages of college-aged populations (between 18 and 24). Eaton and Evans also have significant college-aged populations, with more than 10% of their population between 18 and 24.

ENHANCE THE CONNECTIVITY BETWEEN SIGNIFICANT ORIGIN AND DESTINATION POINTS WITHIN THE REGION

LINKNoCo's travel market analysis revealed significant level of travel between key communities across the North Front Range. These include Fort Collins to/from Loveland (65,000 daily trips), Greeley to/from Fort Collins (12,000 daily trips), and Greeley to/from Loveland (19,000 daily trips). This indicates there are opportunities to increase transit connectivity among these pairs of cities and other major origins and destinations.

Transfort operates the FLEX regional bus route serving stops between Fort Collins, Loveland, Berthoud, Longmont, and Boulder. Users of these services have consistently noted the desire for more frequency. Greeley Evans Transit (GET) also provides express style service, the Poudre Express, a dedicated commuter bus line connecting Greeley, Windsor, and Fort Collins. Overall, both Transfort and GET have reported growth in regional route ridership. No transit service is currently available connecting Greeley and Loveland; therefore, there is an opportunity for transit to serve this significant origin-destination pair.

2 Mobility Context

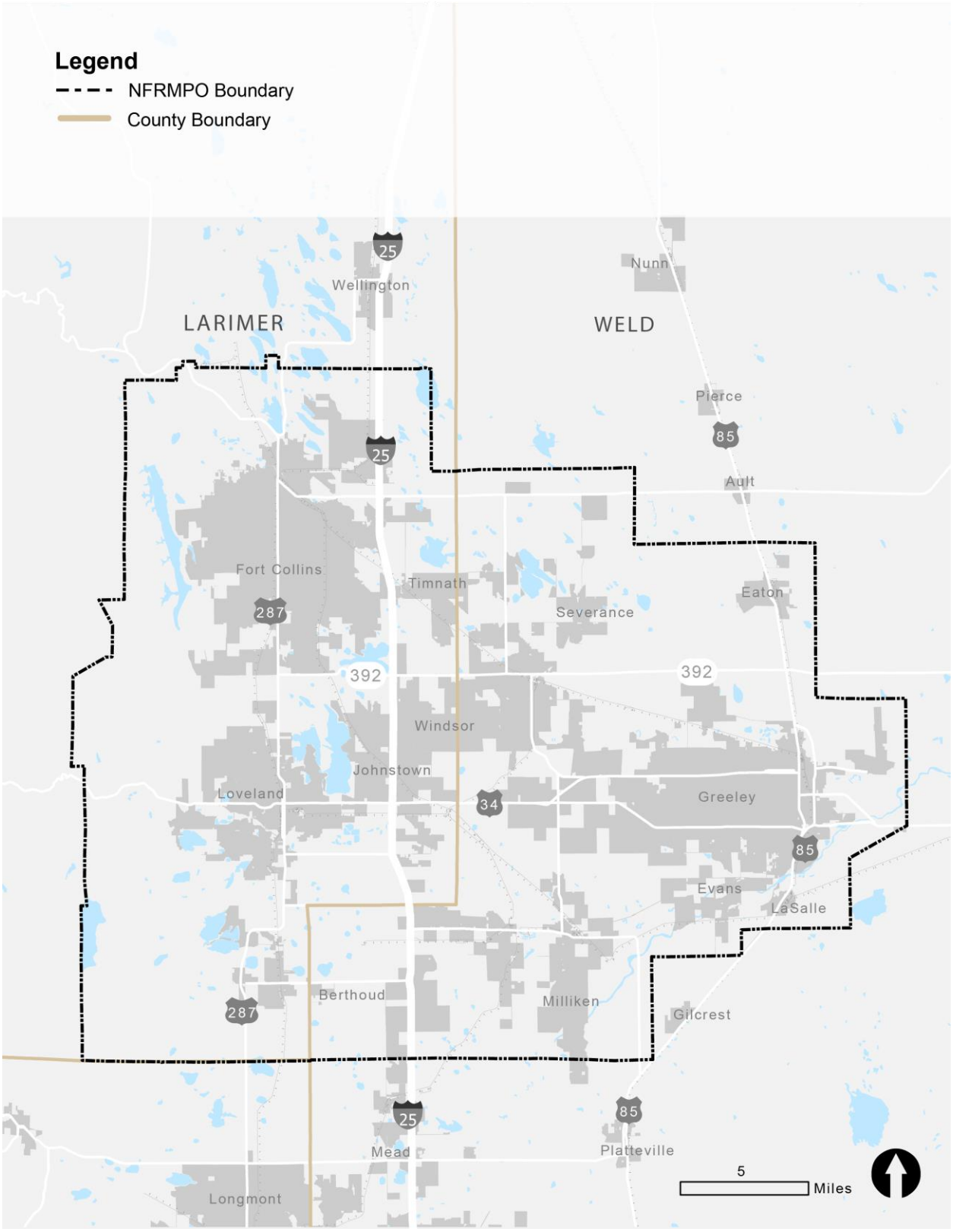
Researching the potential transit demand across the North Front Range served as a basis for LINKNoCo's evaluation and prioritization of transit corridors. The project team first defined the study area, coincident with the NFRMPO's region, to understand the potential origins and destinations any new premium transit service could connect. Layering in various data points, such as population growth, employment growth, and other demographic information, provided a view of potentially transit-supportive areas of the region for the team to target. Examining the need for high-quality transit in the North Front Range is not a new concept. In addition to the NFRMPO, all of the local jurisdictions and transit agencies have continued to advance multimodal plans and projects to improve transit and overall mobility. LINKNoCo's research efforts examined various data points, advancing mobility infrastructure projects, and numerous planning documents to better understand the positions of the local jurisdictions, agencies, and stakeholders. Details of the full research are captured in Appendix A. A summary of the study area, portions of the region most likely to use transit (referred to as transit

propensity), and key planning documents reviewed are presented below as the mobility background of the LINKNoCo effort.

LINKNoCo Study Area

The LINKNoCo study area includes the full extent of the NFRMPO. The NFRMPO covers about 675 square miles in Northern Colorado. It comprises the area in the North Front Range from Berthoud in the south to north of Fort Collins, west of Fort Collins and Loveland, to east of Greeley. The NFMRPO member governments include Berthoud, Eaton, Evans, Fort Collins, Garden City, Greeley, Johnstown, LaSalle, Loveland, Milliken, Severance, Timnath, Windsor, Larimer County, and Weld County. Most research and analysis completed for this LINKNoCo study were contained within these boundaries. Because the 2045 RTE included transit corridors that made connections outside these boundaries, several analyses did consider conditions along the entire span of these corridors to their logical connection. The LINKNoCo study area is illustrated in Figure 2-1.

Figure 2-1. LINKNoCo Study Area



Source: NFRMPO, 2022; HDR, 2022

Transit Propensity

Transit propensity is a concept that measures the likelihood of using public transit based on socioeconomic factors. A higher propensity toward an action suggests a greater likelihood to take the action. Along with other analyses, transit propensity can help prioritize corridors where the demand for transit is greatest and is most likely to be successful.

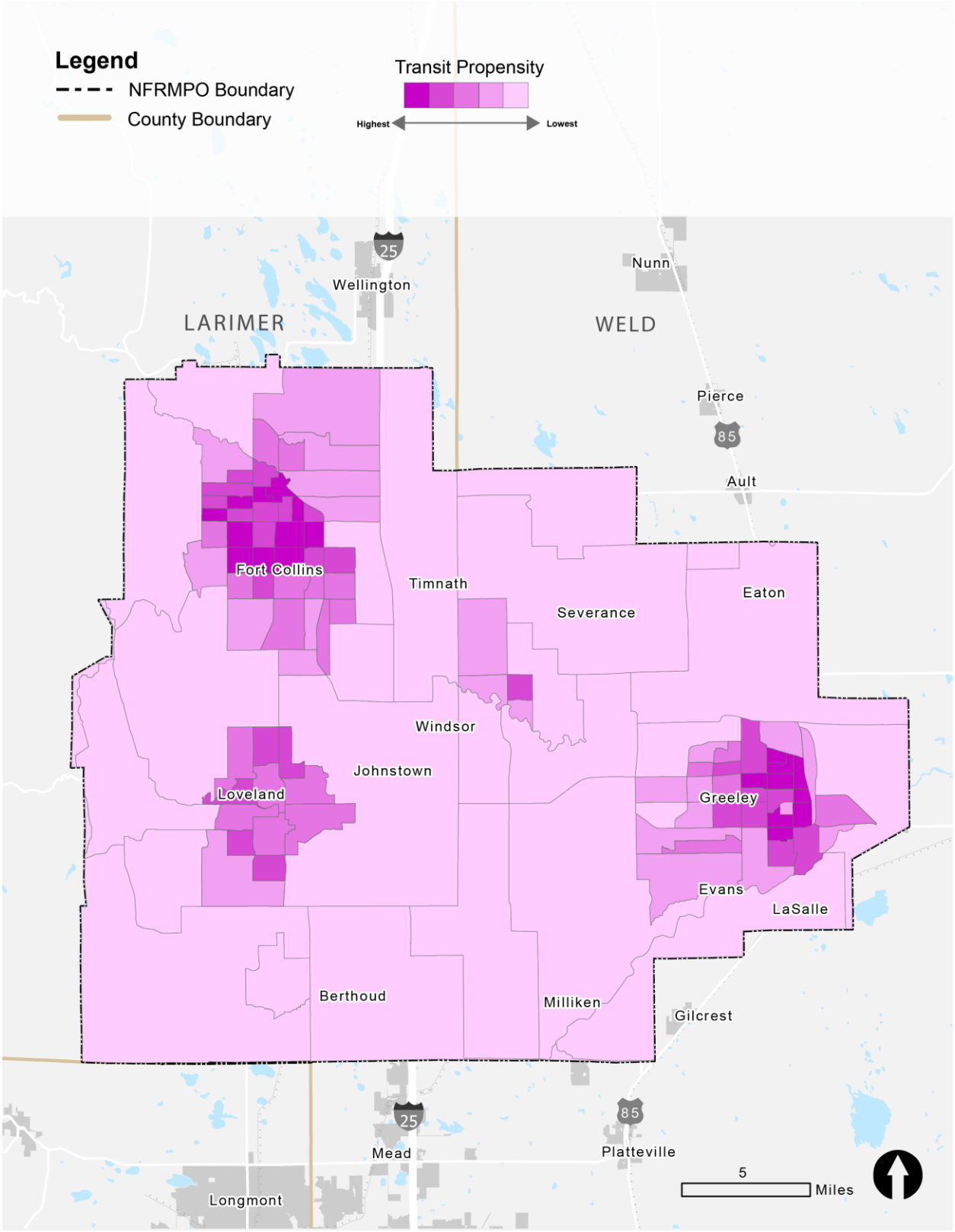
The NFRMPO previously developed a transit propensity index using the five populations most likely to ride transit in the region. These populations were identified in part based on the Centers for Disease Control's definition of vulnerable and transit-dependent populations. Other sources consulted in the development of the methodology included transit propensity definitions used by Transfort and the Larimer County Department of Health and Environment - Built Environment Program, in addition to discussions with stakeholders. LINKNoCo's five identified populations include:

- Zero-vehicle households.
- Population with a disability (as defined by the United States Census Bureau American Community Survey).
- Senior (60+) population.
- Population below the federal poverty level.
- College-aged (18-24) population.

The project team used this transit propensity approach and conducted additional analysis to further refine the understanding of transit propensity for each potential LINKNoCo transit corridor. The transit propensity by corridor results provides a greater insight into which populations with higher transit propensity live within proximity of the corridors.

The project team calculated the transit propensity by corridor based on an average of the transit propensity for each census tract within a one-mile buffer of each corridor. Census tracts were chosen for this analysis for consistency of data, but a more granular geographic region could be used for further analysis. The results are displayed in Figure 2-2 with darker areas scoring higher for transit propensity.

Figure 2-2. Transit Propensity



Source: NFRMPO, 2022; HDR, 2022

Past Planning

The project team reviewed the regional transit findings of relevant plans and studies. The objective of this review was to ensure alignment of the prioritized transit corridors with regional and local initiatives. Relevant information was compiled from these plans, including conditions for connecting transit and supporting regional coordination and transit. The findings and recommendations of the reviewed plans are summarized in Table 2-1.

Table 2-1. Key Planning Documents

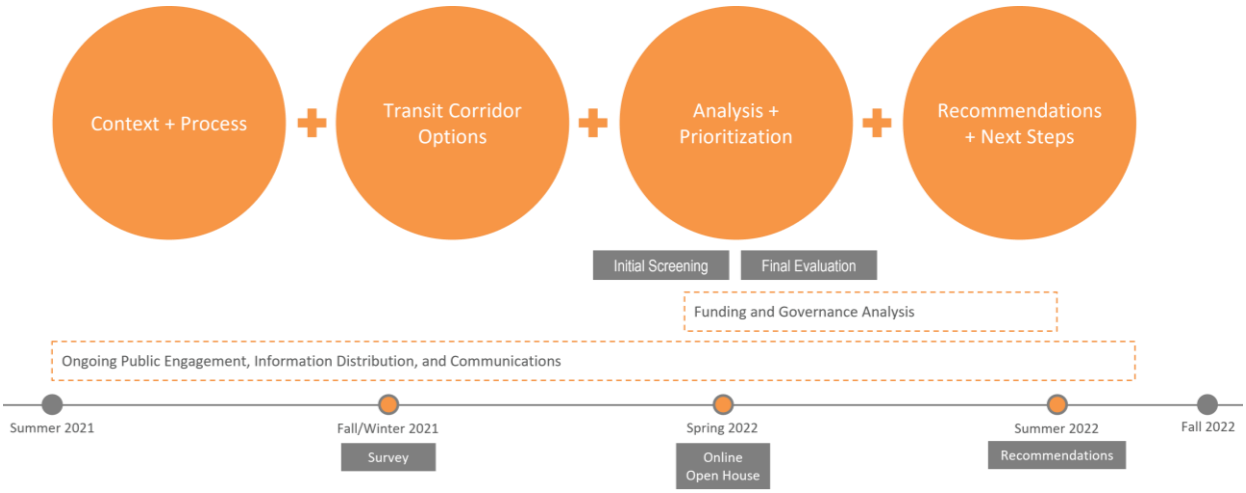
	Plan	Summary Details
	North I-25 Final Environmental Impact Statement (2011)	The Federal Highway Administration (FHWA), in cooperation with the Colorado Department of Transportation (CDOT), prepared a Final Environmental Impact Statement (EIS) to identify and evaluate multimodal transportation improvements along I-25 from the Fort Collins/Wellington area to Denver. CDOT's recommendations included transit investments along the US 287, I-25, and US 85 corridors.
	Greeley Evans Transit 5-10 Year Strategic Plan (2016)	The GET 5-10 Year Strategic Plan recommends a phased approach to expanding regional transit and connections to Windsor, Fort Collins, and Loveland over 10+ years. The phases recommend increased frequency and additional regional routes, like service to Loveland.
	2045 Regional Transit Element (2018)	The purpose of the 2045 RTE is to guide the development of regional transit in Northern Colorado. The 2045 RTE provided transit recommendations, including a recommendation for further study and possible build-out of proposed transit connections along SH 1, US 287, US 85, and US 34, as well as between Fort Collins, Windsor, and Greeley.
	Fort Collins Transit Master Plan (2019)	The Fort Collins Transit Master Plan is based on a goal to provide exceptional, equitable, customer-focused service that meets the community's present and future transit needs. The plan states that the community is very supportive of regional transit connections. The City's transit agency, Transfort, is studying transit service options between Fort Collins and Timnath and is collaborating with Front Range Passenger Rail planning efforts.
	Connect Loveland (2020)	This plan aims to provide transit options that feed into a regional transit network. The plan emphasizes regional coordination, especially working cooperatively with regional partners to identify opportunities to provide interregional transit connectivity along the North Front Range. It proposes regional transit routes connecting to Estes Park and Greeley, in addition to collaboration with Front Range Passenger Rail planning efforts.

	Plan	Summary Details
	Windsor Transportation Master Plan (2020)	The Windsor Transportation Master Plan stresses the importance of the Poudre Express providing regional connections to Fort Collins and Greeley and how regional transit aligns with Windsor's sustainability and public health goals. The plan states that the Poudre Express is planning a fourth Windsor transit stop at SH 392 and Larimer County Road 5 that will be considered during a second phase. It also discusses ways to increase awareness of multimodal access to transit.
	Southwest Chief and Front Range Passenger Rail Commission Front Range Passenger Rail Study (2020)	This study underlines the importance of providing a safe, efficient, and reliable transportation option for travel between major population centers and destinations along the North Front Range and creating a backbone for connecting and expanding rail and transit options in the state and region. The evaluated corridors would pass through the North Front Range, ultimately providing a terminal connection in Fort Collins.
	Weld County Transportation Plan 2045 (2020)	The Weld County Transportation Plan discusses the need to consider developing a Countywide Regional Transit Plan. It also includes two policies regarding transit. It states that whenever possible, the County should consider projects that assist with reducing vehicle miles traveled, including projects that encourage transit options. The plan recommends that Weld County work with adjacent counties to consider cost-sharing projects that would provide regional transportation services.

3 Planning Process

LINKNoCo followed a logical and stepped planning process to inform the prioritization of potential premium transit options. Throughout the process, input and guidance were provided by local jurisdictions, agencies, and project stakeholders. The process completes with the transit recommendations and release of this report for public review. Figure 3-1 presents a graphic representation of the basic steps in the project process and timeframes.

Figure 3-1. LINKNoCo Process



4 Public and Agency Engagement

LINKNoCo has engaged stakeholders, policymakers, and the general public to understand the region's transit needs, concerns, and priorities. This collaboration has helped establish a vision for a complete regional premium transit network and a consensus on initial steps for implementation. The NFRMPO is committed to an inclusive, accessible, and collaborative public engagement approach with targeted outreach to underrepresented communities. Local stakeholder expertise and public input has shaped all levels of the plan's technical development, including:

- Identification of the three priority alignments recommended being advanced.
- Potential governance structure options.
- Options to pursue competitive grants to fund initial premium transit service expansion.

The following section outlines LINKNoCo's engagement objectives, target audiences, communication tools, and engagement activities. This section also summarizes input themes that guided the transit network development, informs future implementation planning, and notes recommendations the NFRMPO and partners could act on through other planning initiatives.

Engagement Strategy and Tools

The engagement strategy was guided by a series of detailed objectives for stakeholder and public participation. The objectives were developed in collaboration with the project team as a framework for the overall strategy and aligned with the project's engagement tools and techniques. The objectives included four major themes: education, engagement, collaboration, and listening.

Education

- Educate local stakeholders on the benefits of transit for residents and local businesses.

Engagement

- Engage the public throughout the project to ensure the public's concerns and aspirations are consistently understood and considered.
- Involve traditionally underrepresented communities in the planning process by providing project materials in Spanish and directly reaching out to organizations that represent or serve North Front Range Latinx communities.

Collaboration

- Collaborate with the project's Guidance Committee to determine the corridors included in the complete premium transit network and the priority corridors recommended for initial advancement.

- Collaborate with the project's Governance and Funding Policy Advisory Committee (GFPAC) to ensure that the proposed governance structures and funding solutions meet the needs of the corridors and communities involved.
- Brief the project's Guidance Committee at major milestones.

Listening

- Listen to stakeholders and policymakers to develop a governance and funding model that reflects community values and has the strongest likelihood of success.
- Develop a united vision for a complete premium regional transit network and garner community consensus on initial steps for implementation.

Targeting key audiences in Northern Colorado, the project team utilized a range of tools to raise awareness about the planning effort, promote input opportunities, and provide mediums for the community to contact the project team:

- **Webpage**. Updated regularly to provide a focal point for project information, feedback, and contacts.
- **Phone hotline/email**. Available 24/7 in English and Spanish to connect with the project team.
- **Social media**. A central tool to convey information and allow stakeholders to repost and convey project messages as broadly as possible.
- **Press releases**. Providing formal documentation of the major project milestones to the media.
- **Eblasts and personalized outreach**. To community organizations, businesses, churches, social service organizations, higher education institutions, chambers of commerce, and planning boards.

Stakeholder Engagement Activities

The NFRMPO prioritized deep and enduring engagement with key regional stakeholders to guide the development of LINKNoCo. Stakeholder engagement involved three primary activities: stakeholder interviews, the project's Guidance Committee, and the project's GFPAC. Each of these groups provided ideas and input that shaped the project, and acted as a sounding board for concepts and recommendations at each of the project milestones.

Stakeholder Interviews

At the onset of the planning effort, the project team held listening sessions with key stakeholders in the region. These interviews targeted stakeholders representing broader transit constituents across the North Front Range, including:

- Museo de las Tres Colonias
- CDOT / Front Range Passenger Rail District

- City of Greeley
- Larimer County Public Health, Built Environment Program
- Larimer County (Commissioner and County Engineer)
- Town of Windsor
- Transit Agencies (COLT, Transfort)
- Weld County (Commissioner and Transportation Planning)

The interviews provided important insight into the stakeholders' priorities, goals, and recommendations for the transit network development. Additionally, interviewees noted their recommendations for communication tools, organizations to engage through the planning effort, and insight into jurisdictions' communication outlets the project could leverage to promote input opportunities. Key themes that emerged from the interviews are summarized in Table 4-1.

Table 4-1. Stakeholder Interviews Key Themes

What We Learned – Interviews	
• Expand on and/or synergize operations with existing and future transit services, including FLEX and Poudre Express. • Develop a regional transit system that connects to future passenger rail, smaller communities, and employers. • Provide multimodal first and last mile connections to the regional transit system. • Focus on transit-oriented development and preserving right-of-way (ROW) for transit centers and routes.	• Collaborate on stakeholder engagement and provide robust and inclusive engagement for critical and hard-to-reach populations. • Evaluate various technologies, ranging from an emphasis on rail to phasing bus or Bus Rapid Transit (BRT) to rail, and consider evolving technologies like autonomous and electric vehicles. • Determine financial feasibility and economic accessibility. • Consider the governance structure and opportunities for public/private partnerships.

Guidance Committee

At the beginning of the project, a Guidance Committee was formed to guide the transit analysis and network development. The Guidance Committee served as a critical technical group to help evaluate the transit corridors and alignments and to refine the final recommendations of the study. Guidance Committee members were identified based on their technical expertise in transit and community development and their deep knowledge of (and connection to) the North Front Range. The organizations represented on the Guidance Committee are listed in Table 4-2.

Table 4-2. Guidance Committee Representation

Organizations Represented	
• Berthoud Rural Alternative for Transportation (RAFT) • CDOT Region 4 • CDOT Division of Transit and Rail • City of Fort Collins • City of Greeley Public Works • City of Loveland Public Works • City of Loveland Transit (COLT) • Greeley Evans Transit • Larimer County Engineering • Larimer County Public Health	• Museo de las Tres Colonias • NFRMPO • Southwest Chief and Front Range Passenger Rail District • Town of Berthoud • Town of Severance • Town of Windsor • Transfort • Weld County Public Works • Weld County Public Health

The Guidance Committee met virtually four times throughout the project. Each meeting focused on a different aspect of the project as the work advanced toward the recommendations of transit alignments to prioritize for advancing planning and implementation. Each meeting provided an opportunity for open discussion and feedback from the participants for consideration by the project team.

The first meeting (August 2021) gave members an overview of the project, roles and expectations, and the region's transit market context. Through a breakout exercise, Guidance Committee members helped guide the development of LINKNoCo's purpose and need.

In the second meeting (September 2021), the project team detailed the screening process and described the corridors identified for the initial screening. Guidance Committee members provided valuable feedback on high-priority corridors and connections. In the third meeting (December 2021), the project team presented the results of the initial screening and the three priority corridors recommended for advancement. Guidance Committee members expressed support for the three priority corridors and provided feedback on the number of tentative stops proposed for each alignment.

In the final meeting (May 2022), the project team presented the final alignments and relevant details including, the recommended technology, stop locations, and service plans. Guidance Committee members expressed continued support for the three priority alignments and recommended a phased approach for the Greeley to Fort Collins corridor. The full summaries of the Guidance Committee meetings are provided in Appendix B.

Governance and Finance Policy Advisory Committee

The project convened the GFPAC, comprised of key policymakers who serve on the NFRMPO Planning Council and executive representatives from several regional transit providers and large academic institutions. Members of the GFPAC were tasked with providing guidance and feedback to the project team on a range of potential governance and funding options. Information on the governance and funding evaluation is included in sections 6.6 and 6.7. The organizations represented on the GFPAC are detailed in Table 4-3.

Table 4-3. GFPAC Representation

Organizations Represented	
• City of Fort Collins - Jeni Arndt, Mayor • City of Greeley - Johnny Olson, Councilmember • City of Loveland - Jon Mallo, Councilmember • Town of Berthoud - Will Karspeck, Mayor • Larimer County - Kirsten Stephens, Commissioner • Weld County - Scott James, Commissioner • CDOT Region 4 - Heather Paddock, Region Director • Transfort - Drew Brooks, Director	• Greeley Evans Transit - Will Jones, Deputy Public Works Director • Loveland Public Works - Mark Jackson, Public Works Director • Colorado State University - Aaron Fodge, Alternative Transportation Manager • Fort Collins Chamber - Ann Hutchison, President • NFRMPO - Suzette Mallette, Executive Director • NFRMPO - Becky Karasko, Transportation Planning Director

The GFPAC met three times throughout the project. The three meetings were structured to focus on the following:

1. Initial scoping of governance concepts and funding/financing options. This considered the methods to achieve the current regional partnerships like the FLEX and Poudre Express services.
2. Review of governance and funding/financing analysis and preliminary recommendations.
3. Final input on recommendations and discussion of review with the broader NFRMPO Planning Council.

In the first meeting (March 2022), the project team provided an overview of the planning work done to date and discussed the evaluation criteria that should be considered when determining the recommended governance approach. GFPAC members stressed the need for clear project goals and objectives and recommended that the governance options be incremental and not move directly to creating new governance entities.

In the second meeting (May 2022), the project team presented the preliminary governance recommendations, which include utilizing intergovernmental agreements (IGA) and developing thresholds and alternative approaches for when a limit has been reached. They also discussed potential funding sources, ranging from local to federal. GFPAC members recommended that the team focus on the funding component before governance structures and requested additional research on IGAs.

In the final meeting (July 2022), the project team presented the final alignments and governance recommendations for each corridor. The recommended initial approach was to utilize IGAs and advance to different models as needed. GFPAC members noted the preferred governance approach must focus on keeping things simple, allowing local entities to lead, building on existing resources, investments, and services, and preserving options for future project delivery.

The full summaries of the GFPAC meetings are included in Appendix C.

Public Engagement Activities

Public engagement centered on three project milestones.

Milestone 1. Project context, understanding, and examination of the potential transit options. This milestone included an online questionnaire.

Milestone 2. Evaluation and understanding of transit options performance. This milestone included a self-guided virtual public meeting.

Milestone 3. Recommendations and advancing transit options to future phases. This milestone included the public release of the final plan online and public presentations to the NFRMPO's Technical Advisory Committee (TAC) and Planning Council.

The public engagement activities were designed to incorporate the public's concerns and aspirations for the LINKNoCo effort. This included involving traditionally underrepresented communities in the planning process by providing project materials in Spanish and directly engaging with organizations that represent or serve North Front Range Latinx communities. A range of online and in-person activities were conducted to understand the perspectives and input from residents, employers/employees, and visitors across the North Front Range. These engagement activities are detailed below.

Online Questionnaire (October 2021)

An online questionnaire was developed to provide community members with information about the planning study and to solicit their input on transit options and preferences. The questionnaire was completed by almost 150 individuals. The questionnaire presented the 17 corridors preliminarily identified as candidates for premium transit service. Background information was presented and respondents were asked multiple questions. Respondents identified the corridors they believed were top priorities for premium transit. The questionnaire included optional open-ended questions regarding respondents' typical commuting patterns, current obstacles with transit use, desired future transit improvements, and demographics. The questionnaire was available in Spanish and open for three weeks, from October 19, 2021, to November 9, 2021.

Self-Guided Online Meeting (June 2022)

A self-guided online meeting was open to the public from June 1 through June 16, 2022. The online meeting was viewed over 400 times. Available in Spanish and English, this input opportunity provided background information on the study and technical progress to date, including the identification of three priority alignments to advance first for implementation and potential premium transit improvements that could be applied to those alignments. The meeting asked community members to identify the premium transit element that would most benefit the North Front Range. Additionally, participants were asked to report their level of support for each priority alignment, to identify the most important transit stops per each alignment, and to share additional community context for each alignment.

NFRMPO Technical Advisory Committee Meeting (September 2022)

The TAC includes staff from NFRMPO's local member agencies, as well as CDOT and the Colorado Department of Health and the Environment-Air Pollution Control Division. This is a technical committee that reviews, provides feedback, and makes recommendations to the NFRMPO Planning Council. Multiple TAC members participated

in various aspects of LINKNoCo, including serving on the project's Guidance Committee and GFPAC. In late September 2022, the TAC formally discussed the LINKNoCo recommendations and moved to advance the three transit alignments for further planning and project development as the top priorities of the future transit network.

Public Document Release (October 2022)

The LINKNoCo report was released on the NFRMPO's website in October 2022 (https://nfrmpo.org/transit/linknoco/) with a 30-day public period for all stakeholders to consider the recommendations and outcomes of the LINKNoCo effort. The 30-day public period represented the third public engagement milestone for LINKNoCo. Final feedback will be documented and considered in future phases as the three transit alignments continue to advance. The NFRMPO has requested additional funding to continue planning and project development of the three alignments beginning in 2023.

NFRMPO Planning Council Meeting (November 2022)

Coinciding with the public release of the LINKNoCo report, the NFRMPO Planning Council will discuss the document for any formal action. The Planning Council includes elected officials as representatives from the 15 local governments in Northern Colorado that make up the NFRMPO, as well as CDOT, the Colorado Department of Health and the Environment-Air Pollution Control Division, and the Colorado Transportation Commission. The NFRMPO Planning Council is empowered to advance LINKNoCo's recommendations as appropriate.

Feedback Themes

A majority of the feedback received expressed support for investing in premium transit in the North Front Range, balanced with the need to consider funding and the ability to successfully sustain any new services. The information in Table 4-4 provides a high-level overview of feedback topics garnered from the stakeholder interviews, Guidance Committee, GFPAC, online questionnaire, and self-guided online meeting. The associated feedback helped to guide the project team in the evaluations and final recommendations.

Table 4-4. Engagement Themes

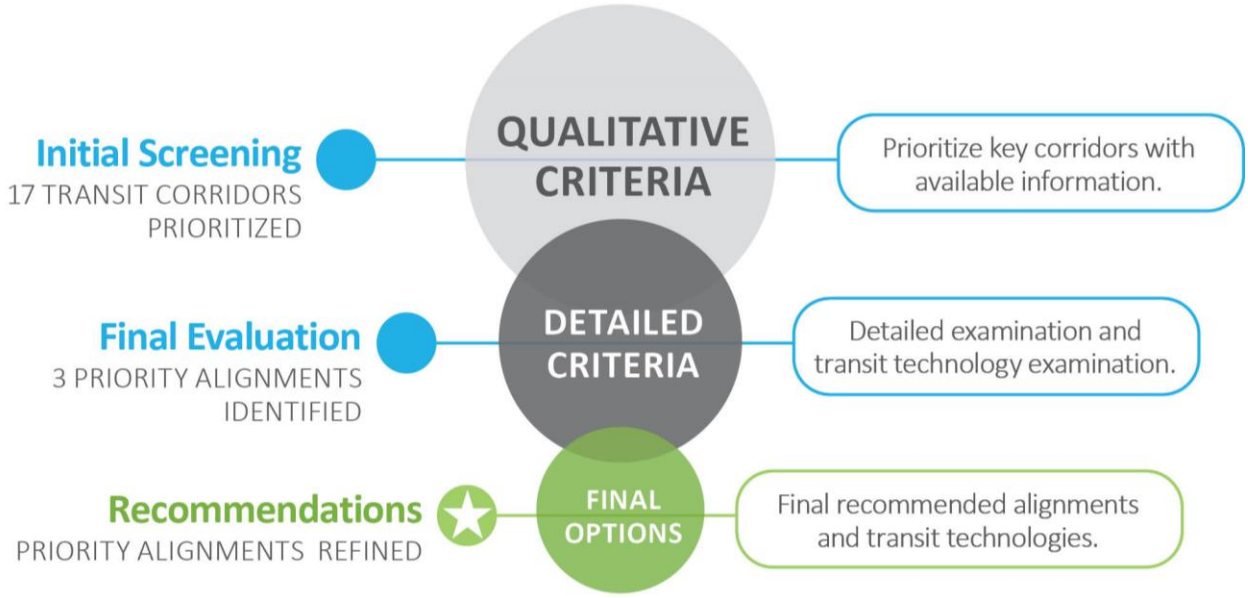
Theme	Details
Prioritize connections with greatest equity benefit	Advancing the Windsor to Loveland (Weld County Road - WCR 17/US 34) corridor to Level 2 received some pushback as the communities served by the corridor are not necessarily those of greatest need (low-income, transit-dependent).
Strategically preserve ROW	Having ample ROW is necessary to develop a new premium transit service. Growth-minded land use planning and land acquisition should be a focus before the land is no longer available or is cost prohibitive.
Add more stops to those proposed for the priority alignments	Many Guidance Committee members and community members noted additional stops they would like to see added to those initially proposed for the priority alignments.

Theme	Details
Consider Johnstown for the premium transit network and other communities with rapid growth	Stakeholders requested more intentional connections to Johnstown and asked to monitor areas expected to grow significantly, given their housing affordability.
Connect smaller communities to the premium transit network	Stakeholders and community members cited smaller communities they would like connected to the premium transit network.
Adopt a mindset of connecting key destinations, rather than a pure corridor focus	Rather than planning by roadways, stakeholders and the public encouraged identifying and connecting activity centers.
Emphasize multimodal connectivity	Potential riders would like the premium transit system to connect to the pedestrian and bike network. Additionally, people would like the ability to safely store bikes at stations and bring bikes on transit.
Connect with Front Range Passenger Rail	Community members are excited about rail, specifically connecting the premium transit service to the future Front Range Passenger Rail system.
Build off successes of Poudre Express, MAX, and FLEX	The North Front Range already has strong premium transit routes. Ensure future expansion connects with these successful systems.
Consider alternative technologies to a traditional fixed route-transit system	The North Front Range has been geographically and culturally more rural than many areas with robust premium transit. Consider utilizing vanpools, on-demand services, and more nimble technologies.

5 Transit Evaluation

The prioritization process for the LINKNoCo effort included two levels of evaluation. The initial screening considered a wide-ranging set of potential transit corridors. These corridors were drawn from the NFRMPO's 2045 RTE, representing the region's transit plan. The initial screening applied criteria to identify and advance the most promising transit corridors to the final evaluation. The final evaluation consisted of a more detailed analysis and the consideration of different transit technologies. The two-level evaluation resulted in the final priority transit alignments and technologies. The evaluation process is illustrated in Figure 5-1.

Figure 5-1. Evaluation Process



Initial Screening

The initial screening analyzed the corridors using primarily qualitative criteria in an effort to narrow the universe of alternatives to a few key corridors. The initial screening criteria are summarized in Table 5-1.

Table 5-1. Initial Screening Criteria

Criteria	Description
Does it connect to key destinations and activity centers?	Major destinations and activity centers within proximity to the corridor.
Does it integrate with existing transit services?	Assessment of transit connectivity at both termini and throughout the corridor.
What is the ridership potential?	High-level assessment of ridership potential based on available population, employment, and transit propensity data.
What is the conceptual cost?	Order of magnitude cost is based primarily on the linear length of the corridor.
Does it have public/stakeholder support?	Level of public and stakeholder support documented in stakeholder interviews, surveys, plans, etc.

Final Evaluation

In the final evaluation, the corridors advanced from the initial screening were further refined to optimize termini, routing, and connectivity to key destinations. At the final evaluation stage, the corridors were referred to as alignments to reflect the greater level of detail in potential operations. The final evaluation was not intended to eliminate any alignments but to determine each alignment's strengths and weaknesses, then refine them to enhance the strengths and improve upon the weaknesses. The alignments were

then evaluated using more detailed criteria that fell into several general categories, including cost and economic development, equity, multimodal access, regional considerations, and transit performance. The final evaluation alignment criteria are summarized in Table 5-2.

Table 5-2. Final Evaluation Criteria

Category	Criteria	Description
Cost / Economic Development	Capital cost estimate.	Assumed conceptual cost given the scale of potential infrastructure.
	Operating cost estimate.	Annual operating cost estimate.
	Economic benefit.	Projected population/employment growth within half-mile stop areas vs. the NFRMPO region.
Equity	Minority and low-income populations.	Percent minority and low-income populations within half-mile stop areas vs. the NFRMPO region.
	Environmental justice areas/ disproportionately impacted communities served	Number of environmental justice areas/ disproportionately impacted communities areas served within half-mile stop areas.
	Environmental considerations.	Assessment of potential environmental issues within close proximity of the corridor.
	Stakeholder support.	Assessment of level of stakeholder support based on feedback and agency coordination.
Multimodal Access	Destinations.	Number of destinations within half-mile stop areas.
	Population density (existing and future).	Population per square mile within half-mile stop areas.
	Multimodal connectivity.	Miles of bike lanes/routes and shared-used paths within half-mile stop areas.
Regional Considerations	Employment density (existing and future).	Employees per square mile within half-mile stop areas.
	Transit connectivity (existing and future).	Number of transit routes and facilities within half-mile stop areas.
	Consistency with local/regional plans.	Assessment of consistency with applicable local and regional plans.
Transit Performance	Physical/engineering constraints.	Assessment of obvious physical constraints that could affect feasibility or performance.
	Roadway impacts and ROW.	Assessment of potential impacts on traffic and ROW/property constraints.
	Ridership potential.	Assessment of ridership potential based on available data.

The final evaluation also included an analysis of potential transit technologies, ranging from enhanced bus to light rail and commuter/passenger rail. The goal of this effort was to match the right transit technology with each alignment. The technologies were evaluated to determine their consistency with local and regional plans, level of public and stakeholder support, and general feasibility. The screening identified and advanced the most promising technologies and then paired them with the final evaluation alignments. The technology evaluation criteria are summarized in Table 5-3.

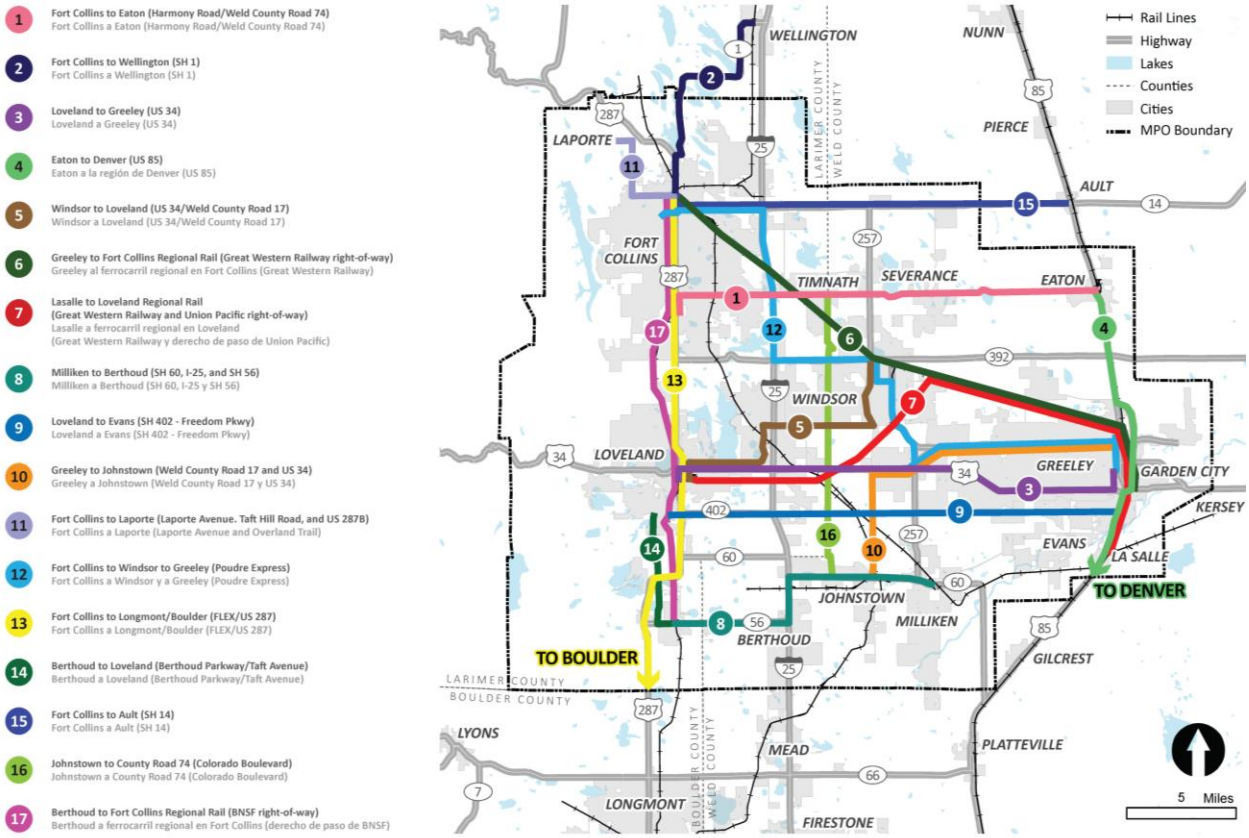
Table 5-3. Transit Technology Evaluation Criteria

Criteria	Description
Consistency with Local and Regional Plans	The unique operating characteristics and design features of each technology must generally fit within the planning efforts of North Front Range. Qualitative review of plans. Number of specific references to transit technologies.
Stakeholder Support	The technology is generally supported by stakeholders, as expressed through past planning efforts and ongoing engagement for this project. Qualitative review with public engagement team. Specific question regarding technology in public engagement questionnaire/meeting.
Engineering/Operational Feasibility	The unique operating characteristics and design features of each technology must generally fit with the context of the North Front Range. Technical review of technologies vs. alignments. Professional judgment.
Conceptual Capital and Operating Cost	Benefits (in terms of ridership and expected economic development) are maximized in terms of typical up-front planning, design, and construction cost associated with each technology in contexts similar to the North Front Range. Cost review of individual technologies (range).

5.1 Initial Screening

A total of 17 corridors were evaluated as part of the initial screening. This includes three corridors there were added based on feedback from the Guidance Committee and stakeholder interviews. The initial screening corridors are illustrated in Figure 5-2. Descriptions of the corridors are provided in Table 5-4**.**

Figure 5-2. Initial Screening Corridors



Source: NFRMPO, 2022; HDR, 2022

Table 5-4. Initial Screening Corridors

ID	Name	Description
1	**Fort Collins to Eaton (Harmony Rd/WCR 74)**	This corridor connects US 287/Fort Collins and US 85/Eaton along the Harmony Road/WCR 74 corridor. It also passes through the communities of Timnath and Severance.
2	**Fort Collins to Wellington (SH 1)**	This corridor connects downtown Fort Collins to Wellington along the US 287 and SH 1 corridors. The corridor was recommended as part of the medium investment scenario for the 2045 RTE.
3	**Loveland to Greeley (US 34)**	This corridor connects Loveland to Greeley along the US 34 corridor. This corridor was recommended as part of the low investment scenario for the 2045 RTE. This route is included in the NFRMPO's 10-Year Pipeline of Projects as voted on by the NFRMPO Planning Council.
4	**Eaton to Lasalle (with connections to Denver) (US 85)**	This corridor connects Eaton to Lasalle (with connections to Denver) along US 85. The corridor was recommended as part of the low investment scenario for the 2045 RTE. It is considered in the NFRMPO's 10-Year Pipeline of Projects as voted by the NFRMPO Planning Council.
5	**Windsor to Loveland (US 34/WCR 17)**	This corridor connects Windsor to Loveland along US 34, Rocky Mountain Ave, Crossroads Blvd, and 7th Street. The corridor was recommended as part of the high investment scenario in the 2045 RTE.

ID	Name	Description
6	**Greeley to Fort Collins (Great Western)**	This regional rail corridor connects Greeley and Fort Collins along the Great Western Railway freight line. The corridor was recommended as part of the full buildout scenario for the 2045 RTE.
7	**Lasalle to Loveland Regional Rail (Great Western and UPRR ROW)**	This corridor connects Lasalle to Loveland along the Great Western and Union Pacific Railroad freight rail lines. This corridor was added to the universe of alternatives based on feedback from the Guidance Committee.
8	**Milliken to Berthoud (SH 60, I-25, and SH 56)**	This corridor connects Milliken to Berthoud along SH 562, I-25, and SH 60.
9	**Loveland to Evans (SH 402 - Freedom Pkwy)**	This corridor connects Loveland to Evans along the SH 402/CR 18/37th Street corridor.
10	**Greeley to Johnstown (WCR 17 and US 34)**	This corridor connects Greeley to Johnstown along the US 34 and WCR 17 corridors.
11	**Fort Collins to Laporte (Laporte Ave, Taft Hill Rd, and US 287B)**	This corridor connects Fort Collins to Laporte along the Laporte Ave, Taft Hill Rd, and US 287B corridors. This corridor was added to the universe of alternatives based on feedback from the Guidance Committee.
12	**Fort Collins to Windsor to Greeley (Poudre Express)**	This corridor connects Fort Collins to Greeley along SH 14, I-25, SH 392, SH 257, to US 34 Business Route. The corridor was recommended as part of the low investment scenario for the 2045 RTE. A dedicated commuter bus line has been in operation along this corridor since January 2, 2020, and is operated by GET.
13	**Fort Collins to Longmont / Boulder (FLEX/US 287)**	The Fort Collins to Longmont/Boulder corridor connects Fort Collins to Boulder County via US 287. The corridor was recommended as part of the low investment scenario for the 2045 RTE. The Transfort FLEX F3X route is currently in operation along this corridor.
14	**Berthoud to Loveland (Berthoud Pkwy/Taft Ave)**	This corridor connects Berthoud to Loveland along the Mountain Ave and Berthoud Pkwy/Taft Ave corridors. This corridor was added to the universe of alternatives based on feedback from the Guidance Committee.
15	**Fort Collins to Ault (SH 14)**	This corridor connects Fort Collins to Ault along the SH 14 corridor. This corridor was added to the universe of alternatives based on feedback from the Guidance Committee.
16	**Johnstown to County Road 74 (Colorado Blvd)**	This corridor connects Johnstown to County Rd 74/Harmony Rd along Colorado Blvd. This corridor was added to the universe of alternatives based on feedback from the Guidance Committee.
17	**Berthoud to Fort Collins Regional Rail (BNSF)**	This corridor connects Berthoud to Fort Collins along the BNSF freight rail line. This corridor was added to the universe of alternatives based on feedback from the Guidance Committee.

Summary of Results

Each corridor area was evaluated using the initial screening criteria (Table 5-1). The results of the initial screening are illustrated in Table 5-5 using colors to indicate rating:

green for “high” (positive), yellow for “medium,” and red for “low.” The detailed initial screening matrix is provided in Appendix D.

Table 5-5. Initial Screening Matrix

Corridor	Does it connect to key destinations and activity centers?	Does it integrate with existing transit services?	What is the ridership potential?	What is the conceptual cost?	Does it have public / stakeholder support?	Recommendation
1. Fort Collins to Eaton	🔴	🟡	🔴	🟡	🔴	DEFER
2. Fort Collins to Wellington	🔴	🟡	🔴	🟢	🟢	DEFER
3. Loveland to Greeley	🟢	🟢	🟢	🟡	🟢	ADVANCE
4. Eaton to Lasalle	🔴	🟡	🟡	🔴	🟢	DEFER
5. Windsor to Loveland	🟡	🟡	🔴	🟢	🟡	ADVANCE
6. Greeley to Fort Collins Regional Rail	🟢	🟢	🟢	🔴	🟡	ADVANCE
7. Lasalle to Loveland Regional Rail	🟡	🟡	🟡	🔴	🟡	DEFER
8. Milliken to Berthoud	🔴	🔴	🔴	🟢	🔴	DEFER
9. Loveland to Evans	🔴	🟡	🔴	🟡	🔴	DEFER
10. Greeley to Johnstown	🔴	🟡	🔴	🟢	🔴	DEFER
11. Fort Collins to Laporte	🟡	🟡	🔴	🟢	🔴	DEFER
12. Fort Collins to Windsor to Greeley	🟢	🟢	🟢	🔴	🟢	EXISTING[1]
13. Fort Collins to Longmont / Boulder	🟢	🟢	🟢	🔴	🟢	EXISTING[1]
14. Berthoud to Loveland	🔴	🔴	🔴	🟢	🔴	DEFER
15. Fort Collins to Ault	🔴	🟡	🔴	🟢	🔴	DEFER

Corridor	Does it connect to key destinations and activity centers?	Does it integrate with existing transit services?	What is the ridership potential?	What is the conceptual cost?	Does it have public / stakeholder support?	Recommendation
16. Johnstown to County Road 74	🔴	🔴	🔴	🟢	🔴	**DEFER**
17. Berthoud to Fort Collins Regional Rail	🟡	🟡	🟡	🔴	🟡	**DEFER**

[1] Existing service, recommend focusing on advancing new priority corridors and evaluating existing services separately.

🔴 = Low, 🟡 = Medium, 🟢 = High

Initial Screening Results

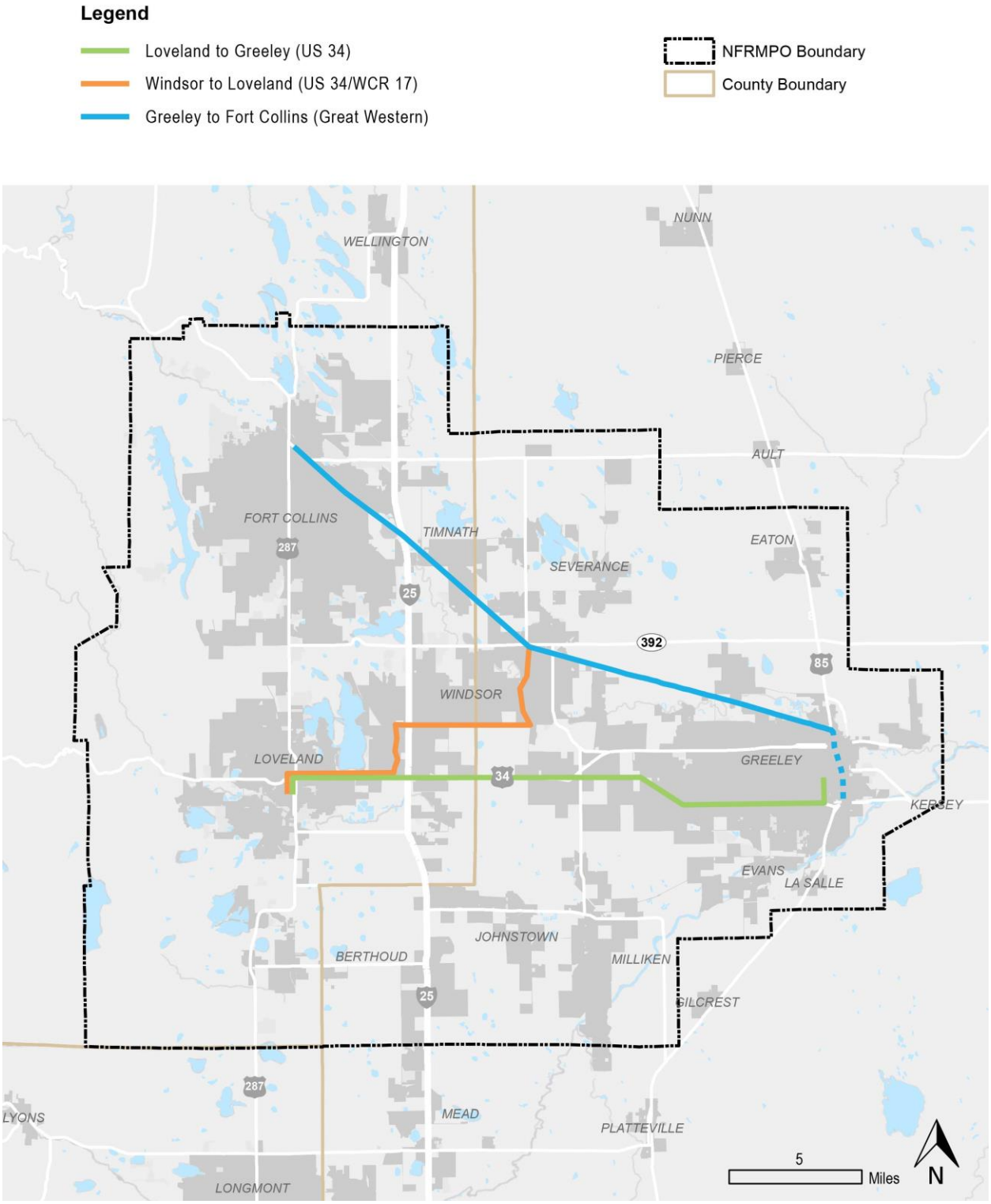
After the initial screening, it was recommended to defer multiple corridors and advance the top three with the highest ranking for priority. The corridors receiving the most “low” and “medium” ratings suggest that conditions may not yet be suitable for implementation in the near term. However, none of these corridors were eliminated from future consideration, as all have merit. The term ‘defer’ was used intentionally to imply that these corridors should be advanced at a later time. All of the corridors examined in the initial screening are important transit corridors that collectively would form a robust regional network of premium transit across the North Front Range. The goal is to use the development of the three corridors as the stimulus to develop the full network over time.

The following corridors were recommended for advancement to the final evaluation:

- 3. Loveland to Greeley (US 34)
- 5. Windsor to Loveland (US 34/WCR 17)
- 6. Greeley to Fort Collins (Great Western)

The initial screening recommendations are briefly described below and illustrated in Figure 5-3.

Figure 5-3. Initial Screening Recommendations



Source: NFRMPO, 2022; HDR, 2022

Loveland to Greeley (US 34)

The Loveland to Greeley alignment is recommended for advancement as it features strong integration with existing transit services, including those operated by GET, COLT, CDOT, and Transfort. These connections provide more flexibility to passengers, expanding the reach of where they can go via transit. The corridor also connects to numerous regional destinations, including Centerra, the UCHealth Medical Center of the Rockies, and the University of Northern Colorado. Service to these destinations, and the high transit propensity areas in Loveland and Greeley, suggest good ridership potential with this corridor. The City of Greeley is advancing a new multimodal mobility hub with a new transit station in the median of US 34. This mobility hub is part of a broader set of US 34 improvements branded MERGE - Mobility Expansion for Regional Growth and Equity. The corridor is also included in the NFRMPO's 10-Year Pipeline of Projects, as approved by the NFRMPO Planning Council.

Windsor to Loveland (US 34/WCR 17)

The Windsor to Loveland alignment is recommended for advancement as it serves areas with high projected growth and connects to regional destinations, including Medical Center of the Rockies, Centerra/Loveland Station Mobility Hub, and the Budweiser Center/Larimer County Fairgrounds. The corridor also integrates well with existing transit services, including those operated by GET, COLT, CDOT, and Transfort, while expanding service to new areas. Ridership for this corridor would likely develop over time as the planned residential development in the area is fully realized. The projected growth along the alignment suggests a strong future ridership base.

Greeley to Fort Collins (Great Western)

The Greeley to Fort Collins alignment is recommended for advancement as it provides a direct connection between the region's most populated cities and employment centers along an existing freight rail corridor. Transit culture is growing along the corridor due to the Poudre Express. The corridor integrates well with existing transit services at both termini and connects to important regional destinations in the urban centers of Greeley and Fort Collins. While cost is the primary concern with this alignment, potential phasing options could mitigate the higher cost over time.

5.2 Final Evaluation

In the final evaluation, the corridors advanced were further refined to optimize termini, routing, and connectivity to key destinations and activity centers. The corridors were then evaluated using quantitative criteria that fell into several general categories, including assumed cost and economic development, equity, multimodal access, regional considerations, and transit performance. The purpose of this effort was not to eliminate corridors but to maximize the performance potential of each alignment.

The final evaluation also included an analysis of potential transit technologies, which ranged from enhanced bus to light rail and commuter/passenger rail. The technologies were evaluated to determine their consistency with local and regional plans, level of

public and stakeholder support, and general feasibility. The evaluation identified and advanced the most promising technologies, paired with the final evaluation alignments.

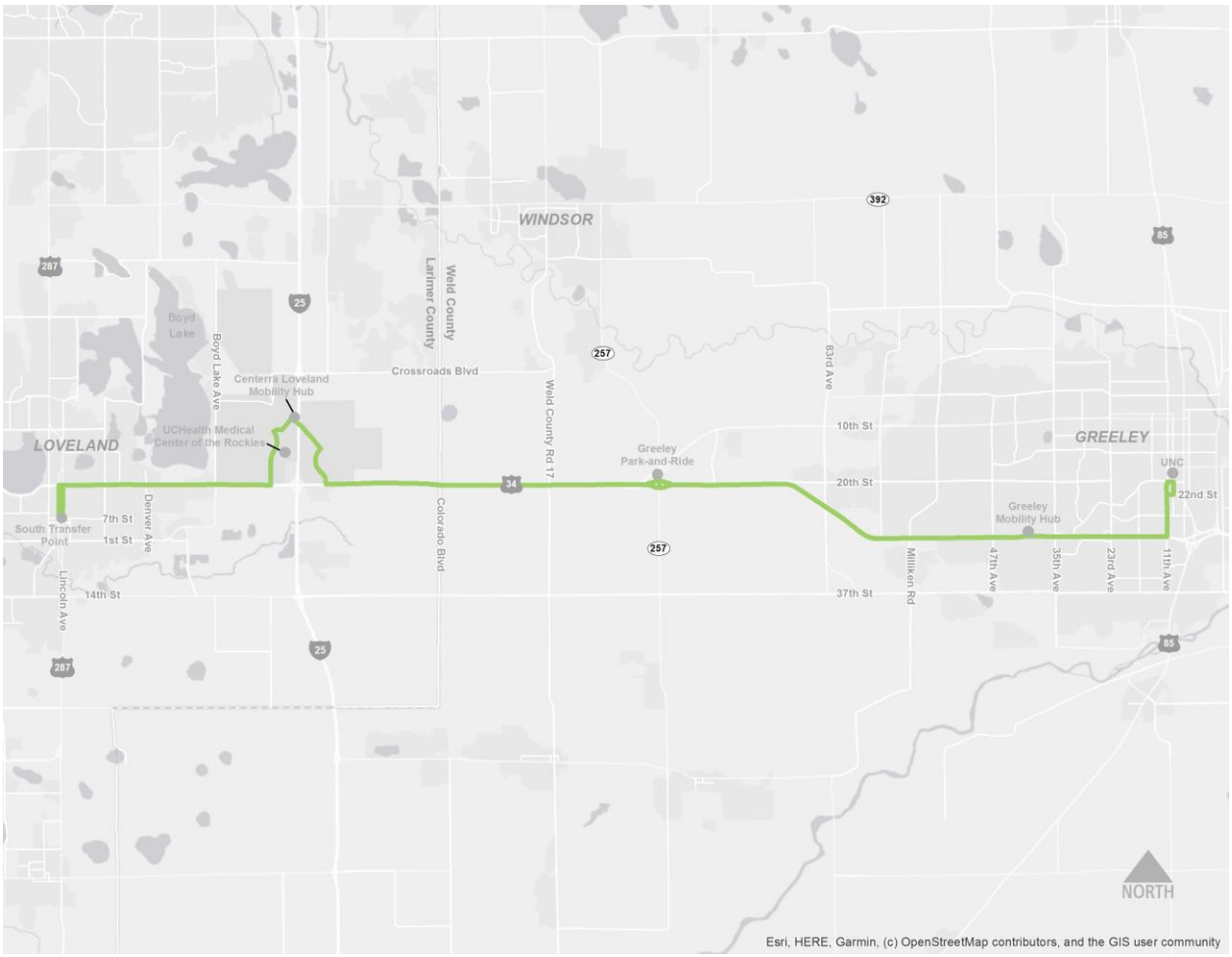
Final Evaluation – Alignments Descriptions

Loveland to Greeley (US 34)

The Loveland to Greeley alignment would directly connect the urban centers of Loveland and Greeley, primarily along the US 34 corridor. The alignment would initiate service at the South Transfer Point (Lincoln Ave and 8th St) in central Loveland, then proceed north on Lincoln Ave and then east on Eisenhower Blvd/US 34. It continues eastbound to Rocky Mountain Ave, where it proceeds north to serve the Medical Center of the Rockies and then east on 29th Street to serve the new Centerra/Loveland Station Mobility Hub. The route would cross east under I-25 via a new extension of Kendall Pkwy, which is anticipated to be completed in coordination with the Centerra/Loveland Station Mobility Hub. It would then proceed southeast on Kendall Pkwy, south on Centerra Pkwy, and then east on US 34. The alignment would utilize the planned median transit station at the City of Greeley's MERGE Mobility Hub (at 35th Ave) before advancing into Greeley. It would then proceed north on 11th Avenue and terminate at the University of Northern Colorado University Center (11th Ave and 22nd St). The Loveland to Greeley alignment is illustrated in Figure 5-4.

The Loveland to Greeley alignment would serve multiple destinations, including central Loveland, Centerra, Medical Center of the Rockies, and the University of Northern Colorado. The corridor also passes the Aims Community College campus in Windsor. It would offer convenient connections to existing local and regional transit services at several key facilities, including the South Transfer Point, the Centerra/Loveland Station Mobility Hub, and Greeley's MERGE Mobility Hub.

Figure 5-4. Loveland to Greeley Alignment



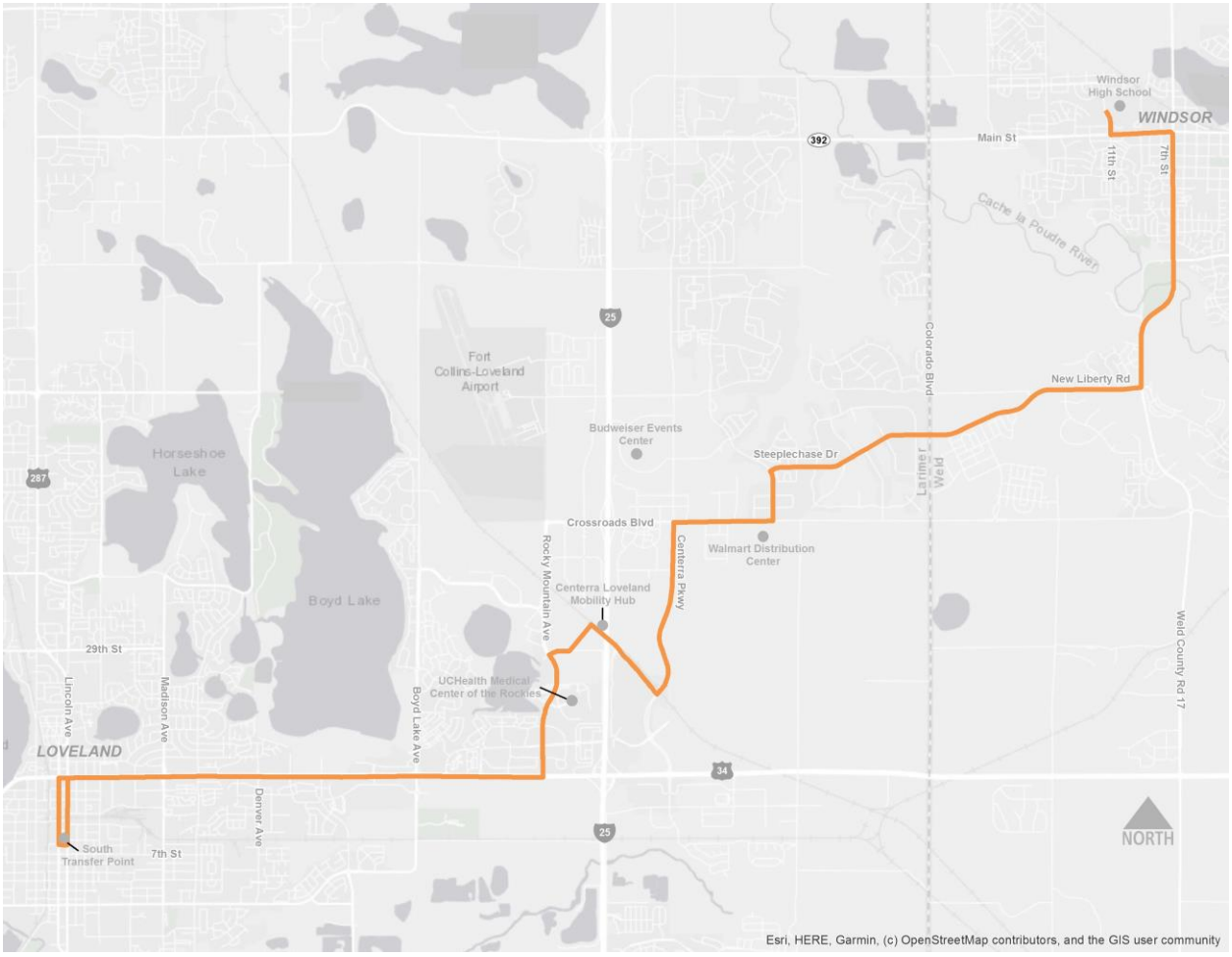
Windsor to Loveland (US 34 / WCR 17)

The Windsor to Loveland alignment would effectively link the emerging growth areas in central and southwestern Windsor to the rapidly developing Centerra area, the future Centerra/Loveland Station Mobility Hub, and central Loveland. The alignment would initiate service in the vicinity of the Windsor Community Center/Windsor High School, proceed south on 11th St, east on Main St/WCR 68, and south on 7th St/WCR 17. It would then proceed west on New Liberty Rd, west on Steeplechase Dr, south on Highland Meadows Pkwy, west on Crossroads Blvd, and south on Centerra Pkwy. It would then proceed northwest on Kendall Pkwy and use the new extension under I-25 to connect to the Centerra Loveland Mobility Hub. It would then proceed west on 29th St, south on Rocky Mountain Ave, west on US 34, and south on Cleveland Ave to its terminus at the South Transfer Point (Cleveland Ave and 8th St). The Windsor to Loveland alignment is illustrated in Figure 5-5.

The Windsor to Loveland alignment would serve multiple destinations, including central Loveland, Centerra, Medical Center of the Rockies, and the Walmart Distribution Center. It would also offer convenient connections to existing local and regional transit services

at several key facilities, including the South Transfer Point and the Centerra/Loveland Station Mobility Hub.

Figure 5-5. Windsor to Loveland Alignment

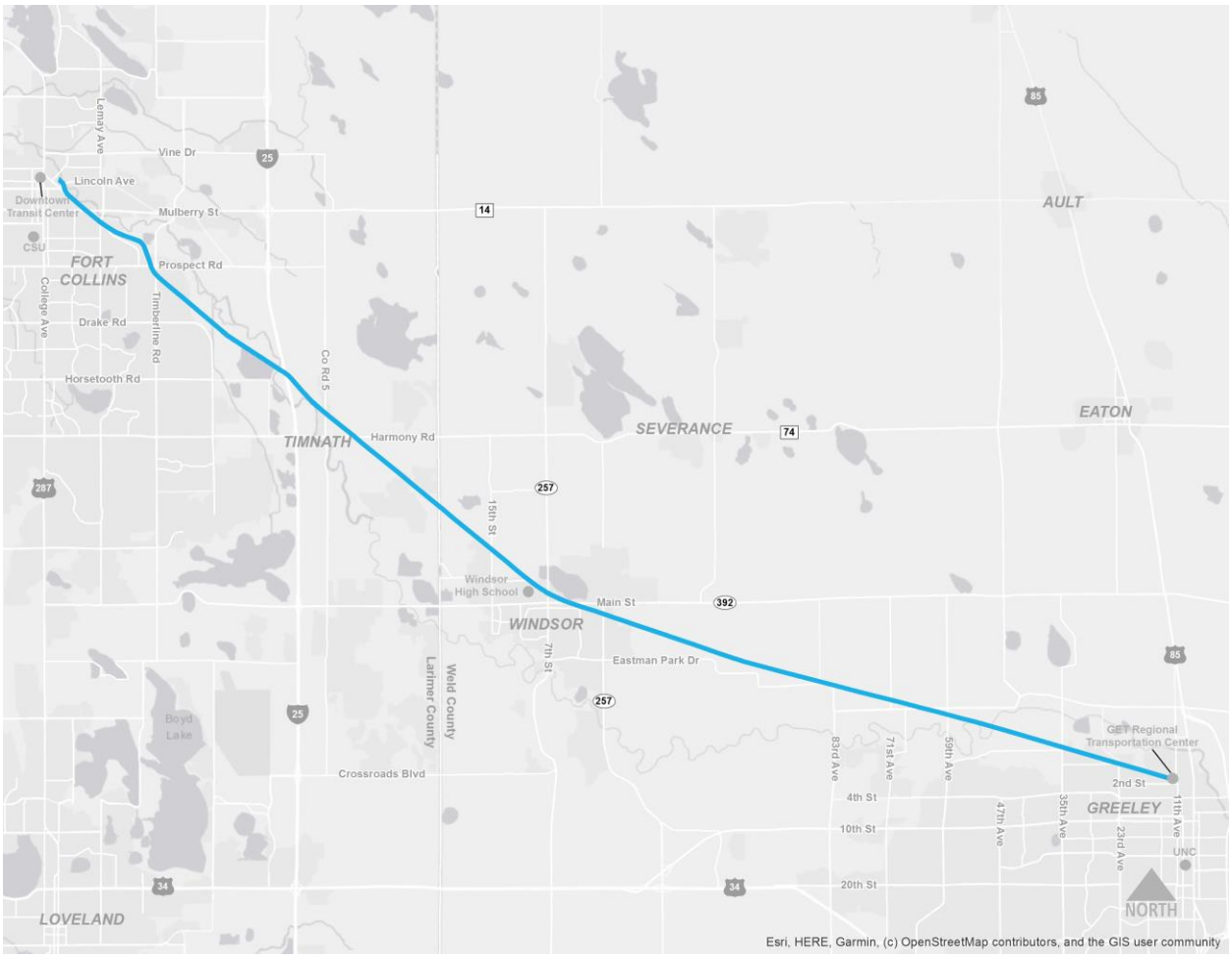


Greeley to Fort Collins (Great Western)

The Greeley to Fort Collins alignment would provide a direct connection between Greeley and Fort Collins along the Great Western Railway right-of-way. It would initiate service at the Greeley Regional Transportation Center (11th Ave and 1st St) and proceed northwest within the rail right-of-way through the towns of Windsor and Timnath before terminating in the vicinity of Lincoln Ave and Willow St in downtown Fort Collins. The Greeley to Fort Collins alignment is illustrated in Figure 5-6.

The Greeley to Fort Collins alignment would serve numerous destinations, including central Windsor and downtown Fort Collins. The alignment would offer convenient connections to existing local and regional transit services at several key facilities, including the Greeley Regional Transportation Center and the Downtown Transit Center in Fort Collins (within 0.5-mile walkshed distance).

Figure 5-6. Greeley to Fort Collins Alignment



Final Evaluation – Results

Each alignment was compared and contrasted using the final evaluation criteria (Table 5-2) and for summary purposes followed a rating scale – “high,” “medium,” or “low.” The results of the final evaluation are illustrated in Table 5-6. The detailed evaluation matrix is provided in Appendix E. A summary of the results for each alignment is provided in Table 5-6 and in the following sections.

Table 5-6. Final Evaluation Matrix

Category	Criteria	Loveland to Greely (US 34)	Windsor to Loveland (WCR 17/US 34)	Greeley to Fort Collins (Great Western)
Cost / Economic Development	Capital Cost Estimate	🟢	🟢	🔴
	Operating Cost Estimate	🟢	🟢	🔴
	Economic Benefit	🟡	🟢	🟡

Category	Criteria	Loveland to Greely (US 34)	Windsor to Loveland (WCR 17/US 34)	Greeley to Fort Collins (Great Western)
Equity	Minority and Low-Income Populations	🟡	🔴	🟢
	Environmental Justice Areas / Disproportionately Impacted Communities (DIC) Served	🟢	🔴	🟡
	Environmental Considerations	🟢	🟢	🟡
	Stakeholder Support	🟢	🟡	🟡
Multimodal Access	Destinations	🟢	🟡	🟡
	Population Density (Existing and Future)	🟡	🟡	🟡
	Multimodal Connectivity	🟢	🟢	🟡
Regional Considerations	Employment Density (Existing and Future)	🟡	🟡	🟢
	Transit Connectivity (Existing and Future)	🟢	🟡	🟢
	Consistency with Local / Regional Plans	🟢	🟡	🔴
Transit Performance	Physical / Engineering Constraints	🟢	🟢	🟡
	Roadway Impacts and Right-of-Way	🟢	🟢	🟡
	Ridership potential	🟢	🟡	🟡

🔴 = Low, 🟡 = Medium, 🟢 = High

Loveland to Greeley (US 34)

The Loveland to Greeley alignment received high scores for several evaluation criteria. The alignment serves a high number of environmental justice areas and disproportionately impacted communities. Environmental justice areas and disproportionately impacted communities refer to communities of color or low-income communities that may have a greater need for access to transit or have historically not received high-quality transit service. The Loveland to Greeley alignment would serve these communities directly, potentially resulting in higher ridership and filling an important community mobility need.

Through stakeholder engagement, this alignment received strong positive feedback. Stakeholders noted the importance of linking critical community destinations like central

Loveland, Centerra, and the Medical Center of the Rockies. The Loveland to Greeley alignment would also integrate with existing transit services at several key facilities, including the future Centerra/Loveland Station Mobility Hub and the future Greeley MERGE Mobility Hub. The alignment would connect to a high number of bicycle and pedestrian facilities. The alignment would have few physical or engineering constraints because, at startup, it is assumed to utilize existing travel lanes without roadway expansion. The alignment would not assume the completion of the extension of Kendall Pkwy under I-25 to make the full east-west connection across Centerra.

While the alignment received no “low” ratings, it did rate “medium” for several criteria. This includes economic benefit because the alignment’s population and employment growth rates serve somewhat mature markets and are anticipated to grow in line with the region or slightly below. The Centerra area is an exception, resulting in the “medium” rating.

Windsor to Loveland (US 34 / WCR 17)

The Windsor to Loveland alignment would serve areas projected to experience substantial growth. As such, it performed well on criteria that factored in future conditions. This includes the economic benefit criterion, which compared population and employment growth rates for the alignment to the greater region. Population along the alignment is projected to grow 81% from 2015 to 2045 (compared to 72% for the region), and employment is projected to grow 71% (compared to 67% for the region). The alignment also rated well for connecting to a high number of bicycle and pedestrian facilities. Similar to other alignments, the Windsor to Loveland alignment would require the completion of the extension of Kendall Pkwy under I-25. While Kendall Pkwy is the ideal connection to integrate with the Centerra/Loveland Station Mobility Hub, alternate routing should be considered if the timing of Kendall Pkwy does not align with the service launch. Other than Kendall Pkwy, the alignment would utilize existing travel lanes to minimize associated roadway improvements.

The Windsor to Loveland alignment received “medium” ratings for several criteria, including transit connectivity and access to destinations. While the alignment would not connect to transit services at key facilities (e.g., South Transfer Point, Centerra/Loveland Station Mobility Hub) and serve important destinations (e.g., central Loveland, Medical Center of the Rockies), these are mostly focused within Loveland versus distributed throughout the whole alignment. The alignment’s lowest ratings were for the equity criteria, as it would serve a low proportion of minority and low-income populations and would serve only a few environmental justice areas, and disproportionately impacted communities.

Greeley to Fort Collins (Great Western)

The Greeley to Fort Collins alignment rated well for the transit connectivity and access to destinations criteria, as it integrates with existing transit services at both termini and connects the two major regional destinations in the urban centers of Greeley and Fort Collins. It also rated high for serving areas with high employment densities, as well as areas with a high proportion of minority and low-income populations.

The Greeley to Fort Collins alignment rated “low” for several criteria, including conceptual cost, as rail modes are substantially more expensive than bus modes. The alignment also would have some physical/engineering constraints because the Great Western is an active freight corridor and primarily single track throughout the alignment. Passenger operations would need to be scheduled around freight service, thereby limiting operational flexibility.

Final Evaluation – Technology Screening and Results

The final evaluation included an examination of potential transit technologies (enhanced bus, light rail, commuter rail, etc.). The technologies were evaluated to determine their consistency with local and regional plans, level of public and stakeholder support, and general feasibility. Table 5-7 includes information on each technology considered.

Table 5-7. Technologies

	Technology	Summary Details
	Enhanced Bus	Enhanced bus service maintains but improves upon existing fixed-route bus service and includes more frequent service, improved stop/station infrastructure and amenities, and service/reliability improvements like Transit Signal Priority (TSP). Electric, compressed natural gas (CNG), and diesel vehicle technologies could all be considered for enhanced bus. Transit speed and reliability improvements (e.g., queue jumps, bus bulbs, bus lanes, etc.) can be implemented in coordination with enhanced bus service as determined by need or agency/ stakeholder desire. Enhanced bus does not typically include an exclusive dedication of ROW for bus only. However, Business Access And Transit (BAT) lanes are an element of enhanced bus. These lanes are primarily for buses but are not physically separated from general traffic. General traffic can cross the bus lanes to enter or exit businesses and access points along the road or at turning lanes. In areas where peak congestion exists, BAT lanes, combined with other bus priority measures, can provide more reliable transit service with less intense or costly infrastructure improvements.
	Bus Rapid Transit	BRT is a premium bus service designed to improve reliability by operating within exclusive ROW for a portion or the entirety of a corridor. Some of the key elements found in BRT systems include frequent service, enhanced stations, custom vehicles, advanced fare collection, and unique branding. Other key features include transit spot improvements such as TSP and queue jumps.
	Modern Streetcar	Modern streetcar technology includes rail vehicles powered by electricity (overhead catenary, battery, or both). Streetcars provide low floor/level or near level boarding and amenities similar to BRT. Streetcars can operate in mixed traffic (similar to existing bus services) or their own designated guideway. Streetcar vehicles are generally smaller than Light Rail Transit (LRT) vehicles and typically operate along shorter routes.

	Technology	Summary Details
	Light Rail Transit	LRT is a form of urban rail transit that typically operates within exclusive ROW and is powered by overhead electric. LRT provides low floor/level boarding and can operate with individual vehicles or multiple units coupled to form a train. LRT can serve urban and suburban destinations, generally traveling faster than bus, BRT, and streetcar.
	Commuter Rail	Commuter rail technology is a form of rail transit that operates within exclusive ROW using diesel and electric trainsets. Commuter rail vehicles can be designed to meet the safety standards necessary to operate in freight rail corridors. Commuter rail vehicles are optimized for maximum passenger capacity and can hold up to 150 passengers per car. Designed to meet commuter reeds in peak travel times, commuter rail service typically operates at lower frequencies than other rail technologies like streetcar and LRT. Commuter rail corridors are typically longer than streetcar or LRT services, with greater spacing between stations. Commuter rail technologies are continuing to evolve. New battery electric, hybrid, and alternative fuel commuter rail vehicles are in operation (in Europe) and being considered for similar shared freight corridors across North America. These vehicles are specifically designed to operate on freight tracks (considering freight track design and the necessary clearances). The battery electric service simplifies construction with no need to build overhead catenary lines along the alignment to power the commuter rail.

The results of the technology screening are summarized in Table 5-8. The detailed evaluation is provided in Appendix F.

Table 5-8. Final Evaluation Technology Matrix

Criteria	Enhanced Bus	BRT	Streetcar	Light Rail	Commuter Rail
Consistency with Local and Regional plans	 Enhanced bus principles consistently mentioned in local and regional plans.	 Transfort currently operates the state's only urban BRT service (MAX) and its Transit Master Plan recommends expanding the service to multiple corridors by 2040.	 Not mentioned as a potential mode in any of the plans reviewed.	 Mentioned in Fort Collins TMP as mode that could potentially be considered in the future. Not mentioned in any other plans reviewed.	 Several passenger rail specific studies have been completed. Most local and regional studies recommend consideration of passenger rail.
Stakeholder Support					

Criteria	Enhanced Bus	BRT	Streetcar	Light Rail	Commuter Rail
	Supported by the community as reflected in the success of comparable services and planned capital improvements to improve these services (e.g., center load slip ramps that are part of the Centerra/Loveland Station Mobility Hub).	BRT is generally supported by the community, as evidenced by the success and popularity of the Transfort MAX service, which the City of Fort Collins plans to expand to several corridors by 2040.	Limited documented support within the community. The technology's high cost potentially contradicts the community's desire for an equitable and low-cost system for users.	LRT is the most infrastructure-intensive technology among the options considered. Stakeholders would likely have concerns about the potential impacts of construction, property needs, and local access.	Supported by the community as evidenced by the planning efforts over the last ten years to develop a comprehensive passenger rail system, culminating in the creation of the Southwest Chief and Front Range Passenger Rail Commission in 2017
Engineering/ Operational Feasibility	🟡	🟡	🔴	🔴	🟡
	Least complex and likely least costly. However, service reliability may be an issue without provision of dedicated lanes or other reliability improvements	Scale or level of BRT dependent on several factors. Key aspect is provision of dedicated lanes. Center and side-running operations can be considered, each present its own challenges.	Would require subsurface work to implement, though scale of street reconstruction varies. As streetcars frequently operate in mixed traffic, would provide limited travel time or reliability improvements.	Would likely require substantial ROW acquisition, full street construction, and considerable subsurface work. The sequencing and length of construction and disruption to local businesses and the community would present significant challenges.	As services operate within existing freight corridors, construction is less intensive than other rail technologies. Would still require some capital improvements. Would require agreements with freight operators.
Conceptual Capital and Operating Cost	🟢	🟡	🔴	🔴	🔴
	CNG/Diesel buses can range from $500K to $750K, and Battery-Electric vehicles can range from $750K to $1.2M. Average operating cost: $154 - $246 per revenue hour (standard bus service - commuter bus service.	Capital costs vary depending on specific typology implemented. Can range from as low as $6-8 million per mile for BRT "lite" service, to $45 - $55 million per mile for "full" BRT service. Average estimated operating cost: $184 per revenue hour.	Capital costs vary depending on level of amenities, but generally range between $30M to $80M per mile. Average estimated operating cost: $267 per revenue hour.	Capital costs vary substantially, but recent projects in the US have averaged between $100M to $200M per mile. Average estimated operating cost: $359 per revenue hour.	The FRPR Alternatives Analysis estimated capital costs at $55-$62M per mile ($2020). Average estimated operating cost: $654 per revenue hour.
	ADVANCE	**ADVANCE**	**DEFER**	**DEFER**	**ADVANCE**

🔴 = Low, 🟡 = Medium, 🟢 = High

Source: National Transit Database, 2020; HDR, 2022

At the conclusion of the technology evaluation, it was recommended to defer streetcar and LRT from further consideration for the three priority alignments. Streetcar and LRT are not consistent with local and regional plans, have a lower level of stakeholder

support, and are the most infrastructure intensive and costly of the modes reviewed. It must be noted that enhanced bus, BRT, and commuter rail are most appropriate to the three priority alignments; however, other technologies should not be precluded from consideration in other future corridors as the development of the full regional transit network is advanced.

Enhanced bus has demonstrated regional applications, as reflected in the success of existing services like the Poudre Express, FLEX, and the Bustang North Line. Committed capital improvements will further enhance these services, including the center load slip ramps that are part of the Centerra/Loveland Station Mobility Hub. Enhanced bus can include many BRT elements (e.g., frequent service, unique branding, enhanced amenities, etc.) but is generally less infrastructure intensive. Enhanced bus also offers flexibility in that additional priority treatments and improvements (e.g., dedicated lanes, queue jumps, etc.) can be implemented in the future as warranted by demand.

BRT was recommended for advancement as it is a proven technology in the region. It is consistent with local and regional efforts, most notably in Fort Collins, where the City's TMP recommends expanding the MAX service into multiple corridors by 2040. When implemented with true priority treatments, BRT can provide capacity, service reliability, and travel time benefits comparable to urban rail modes, generally at a lower cost.

Commuter rail was recommended for advancement as its consistent with local and regional plans and has documented stakeholder support. Cost is the primary concern with this mode, but operating within existing freight corridors limits the scale of infrastructure, disruptive construction activities, and traffic impacts associated with the other rail modes considered.

Transit Market Assessment

The initial screening examined an amalgamation of data to identify the potential transit propensity across the region at a high level. Transit propensity combined various data sets, including no-car householders, equity data, future population, and future employment, to develop a general understanding of areas that likely need and desire additional transit services. The transit propensity analysis helped to define the three priority alignments for the final evaluation.

In the final evaluation, a more detailed travel market assessment was conducted to continue to refine and confirm the three priority alignments. A travel market analysis of this type examines trip patterns within a given area, considering travel activity and trip origins/destinations, and how the transportation system serves these trips.

Real-world travel pattern data provided by StreetLight Data, a big data provider, were compiled and analyzed for LINKNoCo. Additionally, travel patterns for existing and future years from the NFRMPO travel demand model were reviewed and compared to the StreetLight data as validation. The following sections summarize the primary findings for each alignment. Additional details of the travel market assessment are included in Appendix G.

StreetLight Data Analysis

StreetLight Data is a data analytics provider that allows users to access mobility patterns information based on the movements of electronic devices like mobile phones and Navigation-GPS (used by delivery fleets). The data provides an understanding of current movements from place to place without providing specific information about the user (to maintain privacy). Examining StreetLight provides an understanding of human behavior related to travel patterns and trends in the region. The StreetLight data is organized into geographic zones aligning with the NFRMPO's travel demand model zones. Because this is information regarding current movements, StreetLight gives a real understanding of current conditions based on existing infrastructure. With this information as a base, the project team further examined where people travel to and from today and what portion of that market may be influenced by future transit. Based on the characteristics of the StreetLight trips (speed, acceleration, route, etc.), conclusions were developed about the trip and modes involved (driving, walking, biking, etc.). The project team used the StreetLight data to reaffirm the potential transit markets of the three alignments.

ASSESSMENT METHODOLOGY – STREETLIGHT DATA

Data inputs for this analysis included a set of movements between zones (origin and destination zones) and date/time period sets. This analysis focused on data from the spring and fall of 2019. The year 2019 (before the COVID-19 pandemic) was selected to adjust for the reliability of data during the pandemic. Daily trip patterns for a typical weekday (Tuesdays, Wednesdays, and Thursdays) were the focus of the analysis.

The NFRMPO region was divided into 32 geographic origin/destination zones to analyze trip patterns. Zone activity, or the number of trips originating in and destined for each zone, and origin/destination patterns between zones were evaluated for trips. Two analyses were performed; one normalizes the data to account for differences in each zone's size and development level, while the other considers total trips without normalization. Three methods of normalizing the data were tested: by area, population/employment, and population/employment density.

For this analysis, zones adjacent to and surrounding the three priority alignments and their tentative stop locations were examined to determine trips between zones. Note that the data used for the zone activity analysis is, as with all StreetLight data, a sample of trips for modeling purposes and is not inclusive of all trips.

NFRMPO Regional Travel Demand Model Analysis

The NFRMPO maintains and continuously updates the official travel demand model for the region. The NFRMPO model is the basis for significant mobility decision-making and funding decisions by the regional partners that make up the NFRMPO. The model includes current mobility infrastructure to simulate the current conditions and validate these conditions against real congestion information collected for the North Front Range. The NFRMPO model also captures future mobility infrastructure that is assumed to be constructed within the future year timeframe of the model. With this information, the model can project future mobility travel patterns and potential demand. The base year

and future year of the model are updated at regular increments. For this analysis, the base model year is 2015, and future (horizon) years go to 2045.

ASSESSMENT METHODOLOGY – NFRMPO MODEL

The model data was expressed as movements of people from place to place (person trips between origins and destinations, zone to zone). The daily person trip information was organized into geographic zones that matched the StreetLight zone boundaries for comparison purposes. It should be noted, however, that the StreetLight data is in vehicle trips while the NFRMPO model data is in person trips.

The resulting person trip information for 2015 were compared to the 2019 StreetLight data results. Additionally, overall NFRMPO model trip growth from 2015 to 2045 was examined from zone to zone. This analysis was performed to identify future growth patterns that may benefit from the proposed alignments or suggest a shift in the alignment or stop locations. The NFRMPO model is continuously being improved and updated. As a region-wide tool, the model provides a reliable understanding of how new mobility infrastructure impacts overall congestion and movements (gross level). Ongoing adjustments to the model are working to improve its ability to provide specific modes (like transit) and mobility information at a more refined (alignment) level. This analysis used both the NFRMPO model and StreetLight data to balance the limitations of each.

Travel Market Assessment Results

Loveland to Greeley (US 34)

Over 21,100 daily trips occur between the Loveland and Greeley areas, according to StreetLight Data. Within Loveland, the Centerra development and surrounding area is the greatest draw for trips to/from Greeley at over 11,000 daily trips. By comparison, trips between the Loveland core and Greeley total under 7,000 daily. Additionally, the Loveland core to Centerra area has a strong trip pattern. Nearly 25,000 trips occur daily between these areas, suggesting this alignment could benefit from the connection to the existing COLT line that currently serves the Centerra area.

Future trip patterns along the Loveland-Greeley alignment are expected to grow substantially from 2015 to 2045. Trips between the Loveland core and Greeley are expected to grow moderately. However, trips between the Centerra area and either the Loveland core or Greeley are expected to grow substantially at about 125% and nearly 350%, respectively.

Windsor to Loveland (US 34/WCR 17)

Over 11,500 daily trips occur between the Loveland and Windsor areas. Of these trips, the Centerra development area is the major attractor, with just over 8,000 daily trips to/from Windsor. Trips between the Loveland core and Windsor total just under 2,000 daily. Nearly 25,000 trips occur daily between the Loveland core and the Centerra area suggesting this alignment could serve these trips.

Like the Loveland-Greeley alignment, trip patterns along the Loveland-Windsor alignment are expected to grow at a high rate from 2015 to 2045. Trips between the

Loveland core and Windsor are expected to grow at a more moderate rate. However, trips between the Centerra area and either the Loveland core or Windsor are expected to grow at about 125% and 150%, respectively.

Fort Collins to Greeley (Great Western)

There is substantial travel between the Fort Collins and Greeley areas, with more than 13,000 trips (6,500 in each direction) occurring daily. However, most of these trips are between areas outside the downtown Greeley and Fort Collins areas, with fewer than 700 trips occurring daily between them. A large number of overall trips from city to city could be served by transit transfer or park-n-ride options.

There is also relatively high trip demand at around 1,700 daily trips between Windsor and the Fort Collins core and another 1,700 trips between Windsor and the Greeley core. These totals exceed the trip totals between the Fort Collins and Greeley cores, suggesting the mid-stop location in Windsor could provide a boost to overall ridership.

Future trip patterns between the Fort Collins and Greeley cores are expected to grow slowly, while the outer areas of these communities will experience greater trip growth. Trips involving Windsor, to/from either Fort Collins or Greeley, are expected to grow at a greater rate.

6 Advancing the Foundational Projects

Through the evaluation process, three key transit alignments were identified as priority projects that would provide significant benefits to mobility across the North Front Range. The alignments connecting Loveland to Greeley (US 34), Windsor to Loveland (WCR 17/US 34), and Greeley to Fort Collins (Great Western) showed potential promise that warrants further development. These alignments, referred to as Foundational Projects, will serve as the foundation along with the existing regional FLEX, Poudre Express, and Bustang routes for establishing the complete regional transit network envisioned in the 2045 RTE. These Foundational Projects advance the overall purpose of LINKNoCo to identify those future premium transit corridors with the greatest potential to support current and future transit users with more frequent, reliable, and high-quality transit service.

The project team developed potential stop locations and the potential operating characteristics of each alignment (draft service plans). A base set of tentative stops were identified at major activity centers and transportation centers for initial analysis; however, future analysis and stakeholder engagement are required to refine and finalize the stop locations.

Additional analysis will also be required for future service plans (frequency of service). For purposes of analysis, the project team assumed consistent daily and weekend service. As with any new transit service, service levels can evolve, with adjustments to specifically meet the demand of the market as it grows or changes. It is recommended that additional services in the peak morning and evening periods continue to be examined.

The following sections present the three Foundational Projects, examples of the range of potential operational and infrastructure improvements, and the recommended next steps to continue advancing these alignments to implementation.

6.1 Foundational Project – Loveland to Greeley (US 34)

Seven stops are tentatively proposed for this alignment at key activity centers and destinations. Transit has been implemented along the US 34 corridor previously. The 34-Xpress service was launched in 2008 and ceased operations in 2010; the service previously connected Greeley Mall to Loveland Visitor's Center. Since the removal of this service in 2010, the conditions along the corridor have evolved. Increased congestion has resulted in a new focus (and commitment) to multimodal mobility to move more people along the US 34 corridor more efficiently. The City of Greeley continues to advance the MERGE Mobility Hub with a median bus station connecting to the new multimodal hub on US 34 between 35th Ave and 47th Ave. The new mobility hub would create a new connection for bikes, pedestrians, and transit users accessed through a tunnel under US 34, connecting residential and commercial areas. New and more simple opportunities for transfers among all modes of travel would be facilitated by the new hub.

"The (MERGE) project will alleviate the separation between north and south portions of the City of Greeley. The new mobility hub is the key component to removing this barrier and connecting the community with safe pedestrian and micro-mobility-friendly movements." – City of Greeley

Reintroduction of transit service along US 34 must learn from the challenges of the 34-Xpress. The transit market analysis and current congestion implies the viability of transit along the corridor. However, any new service must meet the expectations of potential users to build substantive ridership. Focusing on travel time, the number of stops, and the connectivity of bus stops to origins and destinations (first and last mile connections) are critical considerations to the success of the new service.

New connections and potential extensions may be considered in the future once the route has established a strong ridership base. One potential connection stakeholders have expressed interest in is Estes Park, which could be served via an extension of the route or a separately operated standalone service. Such extensions will be considered in the future as warranted by demand.

Travel Times

Travel time estimates were developed for two different operating scenarios (with and without bus priority improvements) for both afternoon peak and midday periods. Bus priority refers to various operational and infrastructure improvements that provide additional reliability for the bus service. Queue jumps, Traffic Signal Priority (TSP), and intersection improvements are examples of priority improvements. The travel time estimates include assumptions for vehicle speed, vehicle acceleration/deceleration,

intersection/signal timing, and dwell time at bus stops (for passengers to board/alight the bus).

Based on the existing levels of congestion along the alignment, travel times from end to end of the alignment would range from 55 to 58 minutes (with no priority improvements) and 53 to 55 minutes (with priority improvements).

Detailed estimates for both scenarios for the base year (2022) and an assumed level of congestion growth for the year 2040 are summarized in Table 6-1. Additional information on the travel time estimation methodology is provided in Appendix H.

Table 6-1. Travel Times: Loveland to Greeley (US 34)

Year	No Improvements		With Improvements	
	PM Peak	*Midday*	*PM Peak*	*Midday*
2022	0:57:36	0:55:06	0:55:05	0:52:41
2040	1:11:48	1:08:41	1:09:17	1:06:16

While most users are not necessarily traveling the full extent of the route, examining travel times to the general midpoint of the alignment can provide an understanding of average travel times for many users. The Centerra/Loveland Station Mobility Hub is a key destination and transfer point along the alignment and is roughly the midpoint of the alignment. Travel time from the western terminus of the alignment in central Loveland to the mobility hub is estimated at approximately 17 minutes. Travel time from the eastern terminus of the alignment at the University of Northern Colorado in Greeley to the mobility hub is estimated at approximately 37 minutes. These estimates assume a base level of priority improvements are in place. As the planning for this alignment advances, it will be critical to continue to refine the operating assumptions and implementation of infrastructure to improve travel time for users. The consideration of exclusive or semi-exclusive transit lanes could demonstrate significant travel time savings.

Preliminary Stop Locations

Several initial stop locations were identified through input from the project's Guidance Committee and other stakeholders. The preliminary set of stops offer access to residential developments, major destinations and activity centers, and key transfer opportunities to other transit services and facilities. These preliminary stops were identified to provide a basic set of stop assumptions at this early stage of planning the alignment. As the planning for this alignment advances, public discussions and community input on the final set of stops will be necessary. The stops proposed are considered tentative for analysis purposes.

Additional locations were identified that could warrant a stop in the future, as dictated by demand and emerging development patterns. For example, in the City of Loveland, the final terminus stop was considered at the Loveland Public Library (along 4th Ave). Based on discussions with stakeholders, it was determined this may be a stop for future consideration. The stop would have added significant time to the alignment and is

currently served by GET. Locating the terminus in Loveland at the South Transfer Point allows for maximum integration with GET.

The primary objective for the preliminary identification of stops was to find the appropriate balance between expanding access with additional stop locations and maintaining fast and efficient transit operations. As the stop locations are still conceptual in nature, they may be refined (stops added or removed) in future planning phases. The Loveland to Greeley (US 34) preliminary stop locations and important transfer opportunities are summarized in Table 6-2. The additional stops for consideration as planning advances are noted in Table 6-3.

Table 6-2. Preliminary Stop Locations: Loveland to Greeley (US 34)

ID	Stop Location	Description
1A/B	Cleveland/Lincoln and 8th St (South Transfer Point)	Access to central Loveland. Connections to COLT routes 1, 4, 5, and Transfort FLEX.
2	Eisenhower Blvd and Denver Ave (Walmart)	Access to Walmart. Connections to COLT routes 3 and 5.
3	Rocky Mountain Ave and Medical Center of the Rockies	Access to Medical Center of the Rockies. Connection to COLT route 3.
4	Centerra/Loveland Station Mobility Hub	Access to CDOT Mobility Hub. Connections to Bustang North Line and COLT routes (TBD)
5	Greeley Park and Ride (US 34/CO 257)	Access to existing Greeley Park and Ride. Recommend evaluating the feasibility of adding a stop on Poudre Express to maximize transfer opportunities.
6	Greeley Mobility Hub (US 34 between 35th and 47th Ave)	This mobility hub is part of the city's MERGE project. Transit connections TBD.
7	University of Northern Colorado (11th Ave and 22nd St)	Access to UNC campus and facilities. Connection to GET route 5.

Table 6-3. Stops for Future Consideration: Loveland to Greeley (US 34)

ID	Stop Location	Description
-	4th St and Monroe (Loveland Public Library)	Access to Loveland Public Library, Chilson Recreation, and various city facilities. Connections to COLT route 1.
-	Eisenhower Blvd and Boyd Lake Ave (Future Transfer Center)	Recommended as a Transfer Center site in Connect Loveland TMP. Would likely replace stop at Walmart (Eisenhower Blvd and Denver Ave) if implemented. Transit connections TBD.
-	McWhinney and Fall River (Centerra Marketplace)	Access to Centerra Marketplace. Connections to COLT route 3.
-	Centerra Pkwy and Kendall Pkwy (The Promenade at Centerra)	Access to the Promenade at Centerra. Connections to COLT route 3.
-	Eisenhower Blvd and Thompson Pkwy (Johnstown Plaza)	Provides access point to Johnstown residents. Access to commercial developments at Johnstown Plaza.

ID	Stop Location	Description
-	US 34 and WCR 17	Access to Woodward Rocky Mountain Technology and Innovation Center and Aims Community College Public Safety Institute. Would require pedestrian infrastructure to make this stop feasible without substantial route deviation. As a grade-separated interchange is being planned at this site, efforts should be made to incorporate basic transit and pedestrian elements (e.g., standard stop pad, sidewalks, etc.) so that a stop could be easily implemented in the future as warranted by demand.
-	GET Regional Transportation Center	Access to central Greeley. Connections to GET routes 1, 3, 4, 5, 6, Poudre Express, and Greyhound service.

Potential Service Plan

The proposed service span and frequency characteristics were developed based on industry best practices and market assessment findings. Proposed levels for the Loveland to Greeley service are every 30 minutes for most of the day for 17 hours on weekdays/Saturdays, and 15 hours on Sundays. The recommended operating characteristics are summarized in Table 6-4. Alternative plans will be considered as planning advances to best balance demand and operating costs.

Table 6-4. Recommended Operating Characteristics: Loveland to Greeley (US 34)

Day Category	Service Span	Frequency (Minutes)				
		Early	AM Peak	Midday	PM Peak	Evening
Monday - Saturday	5:00 am - 10:00 pm	30	30	30	30	60
Sunday	6:00 am - 9:00 pm	-	30	30	30	60

Assumptions: Early: 5:00 am - 6:00 am; AM peak: 6:00 am - 9:00 am; Midday: 9:00 am - 3:00 pm; PM Peak: 3:00 pm - 7:00 pm; Evening: 7:00 pm - 10:00 pm

Key Recommendations

The combination of ongoing investment in mobility improvements along US 34, combined with the strong potential transit market, presents a compelling opportunity for implementation of this priority alignment. While this alignment is presented as a phased approach, as funding can be identified, the Loveland to Greeley (US 34) alignment likely has the best potential for near-term implementation in combination with other improvements like the MERGE Mobility Hub. Table 6-5 presents the key recommendations of actions leading to implementation of the Loveland to Greeley (US 34) alignment.

Table 6-5. Key Recommendations: Loveland to Greeley (US 34)

	Recommendations	Details	Timeframe
LG1	Integrate transit infrastructure and considerations into planned improvements to US 34.	Several studies completed in recent years (e.g., US 34 Loveland Access Control Plan, NFRMPO 2045 RTP, US 34 Planning and Environmental Linkages, Connect Loveland, etc.) have recommended widening segments of US 34. As these improvements are evaluated and advanced, the potential exists to integrate transit infrastructure and other considerations (e.g., dedicated lanes, queue jumps, etc.) into these projects. Incorporating transit elements in the early stages of planning and design is substantially easier than having to work within the limitations of existing roadway cross sections (e.g., repurpose lanes, etc.). Finalize location of transit improvements and identify right-of-way requirements so that they can be incorporated into the planned US 34 improvements.	Near-term
LG2	Consider additional stops as warranted by demand and evolving development patterns.	As demand for the service grows, and development around the corridor evolves, additional stop locations could be warranted. However, the benefits of expanding access to the service by adding new stop locations should be carefully weighed against potential impacts to travel time.	Mid-term
LG3	Advance investment in priority treatments.	Congestion levels on US 34 are well documented and projected to worsen in the future. Any perceived benefits to transit service reliability and travel time competitiveness would be severely limited without the provision of transit priority treatments such as dedicated lanes, queue jumps, and TSP. Without some level of priority investments, transit service in the corridor would be subject to the same level of congestion as automobiles.	Near-term
LG4	Determine timing of Kendall Pkwy extension under I-25.	The planned extension of Kendall Pkwy under I-25 is being completed by McWhinney (the developers of Centerra). With the Centerra/Loveland Station Mobility Hub scheduled to open in late 2023, there is no confirmed date as to when the Kendall Pkwy extension will be completed. Thus, there is a risk that the extension would not be completed by the time the Loveland to Greeley (US 34) route is implemented.	Near-term
LG5	Identify, design, fund, and implement queue jumps at appropriate intersections.	Several intersections along the alignment with existing right turn lanes could be retrofitted to implement queue jumps, creating travel time savings. Changes to simple intersections with right turn lanes could require little design and implemented in the field during construction. More complex intersections with free right turns and pedestrian refuge islands may require additional design and traffic evaluation to implement changes. However, these intersections likely provide sufficient space to create queue jumps and other improvements with no additional ROW. At a minimum, queue jumps should be considered at the following intersections: Boise Ave Denver Ave (EB) Larimer Pkwy Colorado Blvd WCR 17 47th Ave 17th Ave (EB)	Near-term

	Recommendations	Details	Timeframe
LG6	Finalize and implement appropriate stop improvements with necessary amenities.	At a minimum, stops must provide basic elements to ensure compliance with applicable provisions of the Americans with Disabilities Act (ADA), such as a boarding and alighting area, an accessible pedestrian connection (sidewalk), and a stable, slip-resistant surface. The improvements listed below would ensure the proposed stop locations comply with ADA requirements. Additional improvements are recommended to provide for the basic needs of users. These could be phased based on various criteria, such as demand, heat exposure, equity/environmental justice, longer waiting times, etc. Additional improvements include shade/weather protection, seating, lighting, trash bin, route information/real time information, wayfinding, bike parking, etc. • 1A/B. Cleveland/Lincoln and 8th St (South Transfer Point): lighting and crosswalk on Cleveland Ave and Lincoln Ave. • 2. Eisenhower Blvd and Denver Ave (Walmart): EB - None. WB – lighting and sidewalk connection to Denver Ave and/or adjacent multi-use path. • 3. Rocky Mountain Ave and Medical Center of the Rockies: EB - none; WB (new stop) - ADA-compliant pad, accessible pedestrian connection, sign, bench, trash bin, lighting. • 4. Centerra Loveland Station Mobility Hub: Assumed to include all elements. • 5. Greeley Park and Ride: ADA-compliant pad, sidewalk, sign, seating, weather protection/shade, lighting, trash bin. • 6. Greeley MERGE Mobility Hub: Assumed to include all elements. • 7. 11th Ave and 22nd St (UNC): Weather protection/shade NB.	Near-term to mid-term
LG7	Evaluate and implement TSP for traffic operational improvements and transit reliability.	Evaluate TSP implementation and traffic operational benefits at the following intersections: Monroe Ave Redwood Dr Madison Ave Boise Ave Denver Ave Sculptor Dr Boyd Lake Ave Hahn's Peak Dr Rocky Mountain Ave Kendall Pkwy/Centerra Pkwy Eisenhower Blvd/Centerra Pkwy Larimer Pkwy Colorado Blvd WCR 17 Promontory Pkwy 65th Ave 47th Ave 35th Ave 17th Ave 11th Ave 26th St 25th St 24th St 23rd St	Mid-term to long-term
LG8	Implement enhanced bus service initially. Phase enhanced	The Loveland to Greeley (US 34) service could be implemented in phases and evolve over time. The initial service could be provided as enhanced bus, with minimal transit spot improvements and infrastructure investments	Long-term

	Recommendations	Details	Timeframe
	elements and treatments as warranted by demand and conditions in the corridor. Further study ultimate transition to BAT/BRT lanes.	(e.g., TSP, queue jumps, etc.). As demand increases, additional priority treatments and infrastructure investments could be implemented, such as dedicated lanes, enhanced stations, offboard fare collection, etc. Continued planning should be conducted to define ROW needs and refine costs for funding purposes. As conditions along the alignment evolve over time, the service could eventually transition to full scale BAT/BRT, as warranted by demand and local/regional desire.	

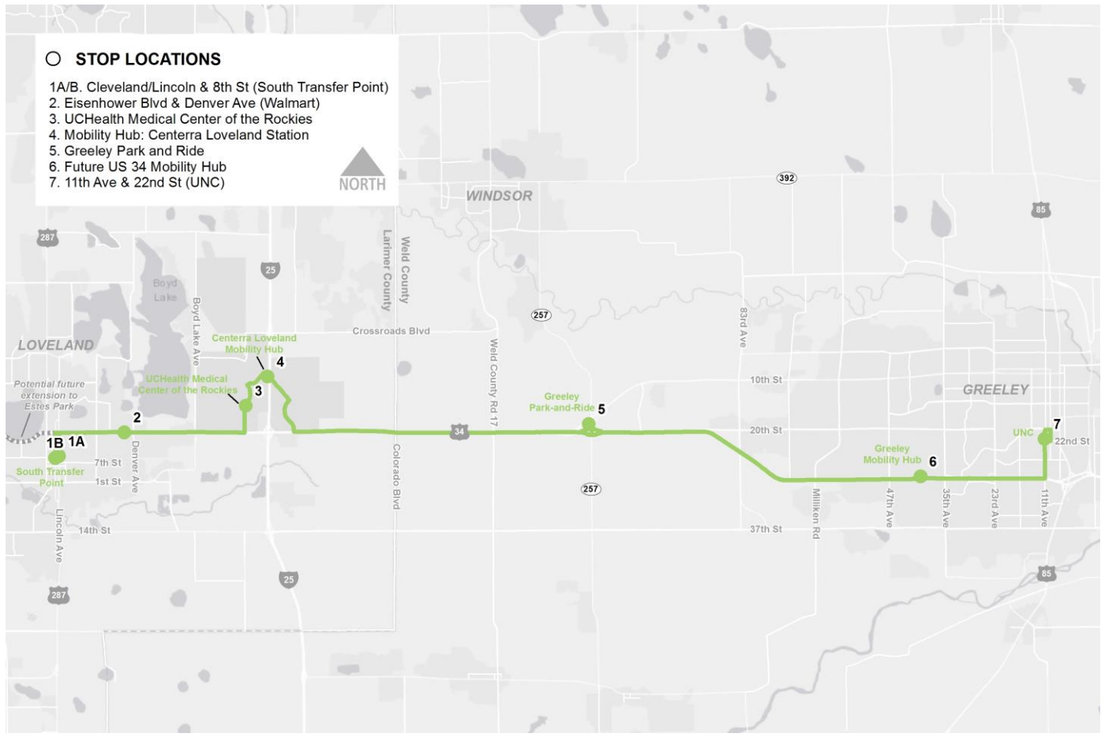
Alignment Information Sheet – Loveland to Greeley (US 34)

The following pages provide a graphic summary of key elements of the Loveland to Greeley (US 34) alignment.

Loveland to Greeley (US 34)

OVERVIEW

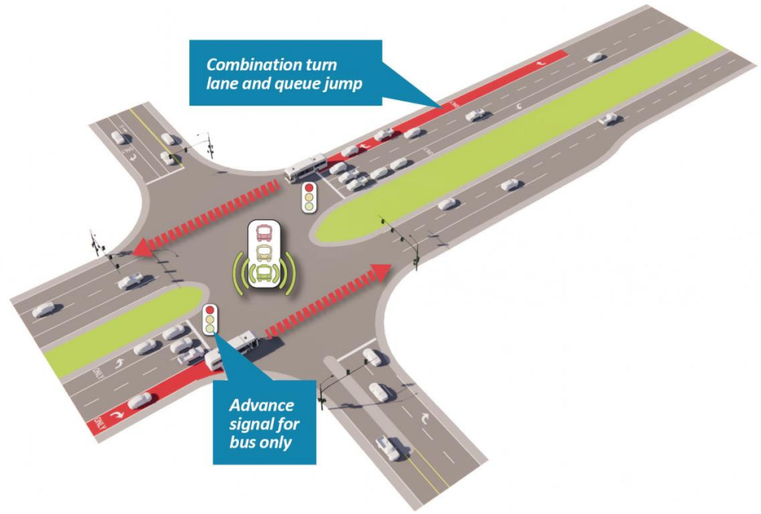
This enhanced bus alignment would connect the University of Northern Colorado campus to central Loveland, with seven stops at key destinations. The service is proposed to operate within existing travel lanes with priority measures for buses at key intersections. This may include queue jumps to allow buses to move ahead of other traffic at signals. Additional transit priority will be considered, including TSP, BAT lanes, and exclusive BRT lanes. The service is tentatively planned to operate every 30 minutes.



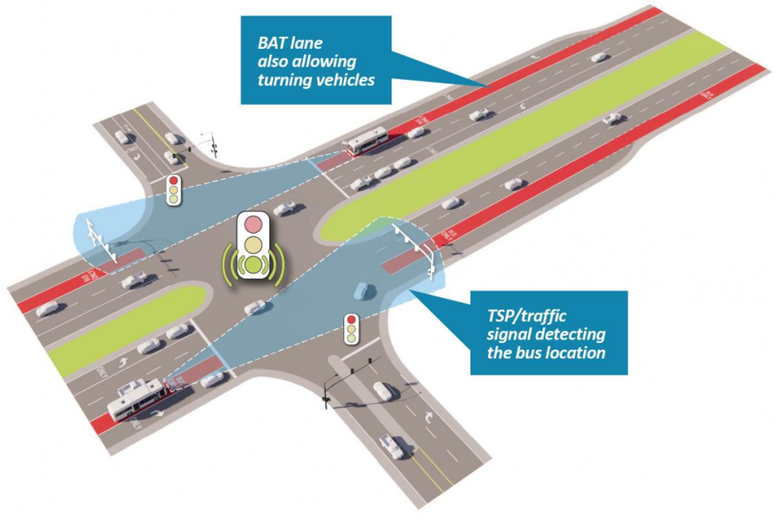
Technology	Fleet	Frequency	Travel Time	Stops	Operating Costs
Enhanced Bus	6 Vehicles ($3M to $7.2M)	Every 30 Minutes	52-57 Minutes (entire route)	7 Stops Proposed	$3.9M to $4.1M (annually)

POTENTIAL IMPROVEMENTS FOR CONSIDERATION – TYPICAL CONFIGURATIONS

QUEUE JUMPS

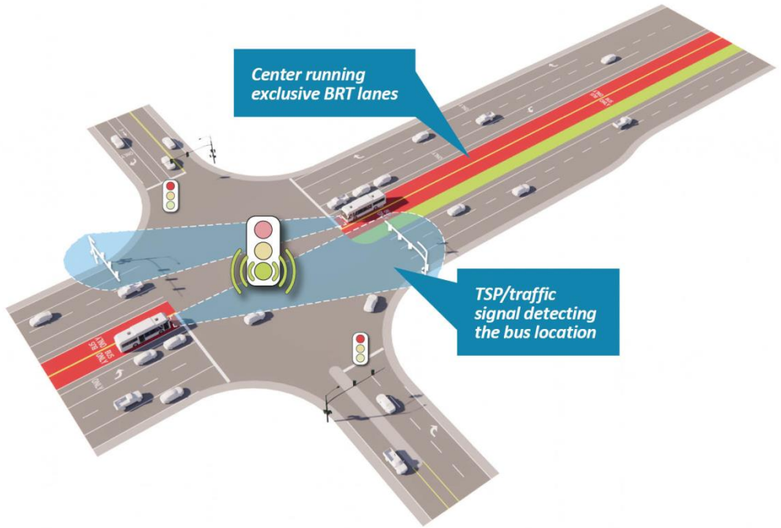


TSP AND BAT LANES



POTENTIAL IMPROVEMENTS AND IMAGES

BRT LANES AND TSP – TYPICAL CENTER RUNNING



EXISTING US 34

FUTURE CENTERRA-LOVELAND STATION MOBILITY HUB

POTENTIAL EASTERN TERMINUS

FUTURE MERGE MOBILITY HUB

Visualizations and images by HDR

6.2 Foundational Project – Windsor to Loveland (WCR 17/US 34)

Seven stops are proposed for this alignment in growing residential areas, major activity centers, and transportation centers.

Travel Times

Travel time estimates were developed for two different operating scenarios (with and without bus priority improvements) for both afternoon peak and midday periods. The travel time estimates include assumptions for vehicle speed, vehicle acceleration/ deceleration, intersection/signal timing, and dwell time at bus stops (for passengers to board/alight the bus).

The western portion of this alignment overlaps with the Greeley to Loveland (US 34) alignment from central Loveland to the Centerra/Loveland Station Mobility Hub. These alignments are currently planned to operate as separate services to meet the basic service frequencies. Integration could be considered as planning progresses, assuming this does not degrade the frequencies on the connection to the Windsor.

Based on the existing levels of congestion along the alignment, travel times from end to end of the alignment would range from 37 to 40 minutes (with no priority improvements) and 36 to 38 minutes (with priority improvements).

Detailed estimates for both scenarios for the base year (2022) and an assumed level of congestion growth for the year 2040 are summarized in Table 6-6**.** Additional information on the travel time estimation methodology is provided in Appendix H.

Table 6-6. Travel Times: Windsor to Loveland (WCR 17/US 34)

Year	No Improvements		With Improvements	
	PM Peak	*Midday*	*PM Peak*	*Midday*
2022	0:39:32	0:37:04	0:37:52	0:35:51
2040	0:49:08	0:46:09	0:47:28	0:44:56

Similar to the Loveland to Greeley (US 34) alignment, some users would not necessarily travel the full extent of the route. The Centerra Loveland Station Mobility Hub is a key destination and transfer point along the alignment and is roughly the midpoint of the alignment. Travel time from the western terminus of the alignment in central Loveland to the mobility hub is estimated at approximately 17 minutes. Travel time from the eastern terminus of the alignment near Windsor High School to the mobility hub is estimated at approximately 21 minutes. These estimates assume a base level of priority improvements are in place. As the planning for this alignment advances, it will be critical to continue to refine the operating assumptions and implementation of infrastructure to improve travel time for users. The consideration of exclusive or semi-exclusive transit lanes could demonstrate significant travel time savings.

Preliminary Stop Locations

The Windsor to Loveland alignment's preliminary set of stops would offer access to important municipal facilities (recreation center, schools), central Windsor, rapidly growing residential areas, major commercial centers, and key transfer opportunities to other transit services. As the planning for this alignment advances, public discussions and community input on the final set of stops will be necessary. The stops proposed are considered tentative for analysis purposes.

Additional locations were identified that could warrant a stop in the future, as dictated by demand and emerging development patterns. Stakeholders specifically discussed the Windsor terminus and if this should be central Windsor (Main St area), the Windsor High School area, or further west at Main St/15th St. For initial implementation, the project team assumed that the school and adjacent local government facilities might be strong destinations. Additionally, it is recommended that shared parking with these facilities be explored to potentially serve as a park and ride. The next phase of planning should further explore and confirm the terminus stop, considering central Windsor (and the potential to transfer with future commuter rail in Windsor). The Windsor to Loveland (WCR 17/US 34) preliminary stop locations and important transfer opportunities are summarized in Table 6-2. The additional stops for consideration as planning advances are noted in Table 6-3.

Table 6-7. Preliminary Stop Locations: Windsor to Loveland (WCR 17/US 34)

ID	Stop Location	Description
1	Windsor High School/Central Windsor	Access to central Loveland. Connections to COLT routes 1, 4, 5, and Transfort FLEX.
2	7th Street and Garden Dr	Access to residential areas in central Windsor. Connection to Poudre Express.
3	Crossroads Blvd and Greenfield Dr (Walmart Distribution Center)	Access to Walmart Distribution Center and surrounding industrial areas.
4	Centerra/Loveland Station Mobility Hub	Access to CDOT Mobility Hub. Connections to Bustang North Line and COLT routes (TBD)
5	Rocky Mountain Ave and Medical Center of the Rockies	Access to Medical Center of the Rockies. Connection to COLT route 3.
6	Eisenhower Blvd and Denver Ave (Walmart)	Access to Walmart. Connections to COLT routes 3 and 5.
7A/B	Cleveland/Lincoln and 8th St (South Transfer Point)	Access to central Loveland. Connections to COLT routes 1, 4, 5, and Transfort FLEX.

Table 6-8. Stops for Future Consideration: Windsor to Loveland (WCR 17/US 34)

ID	Stop Location	Description
-	Hwy 257/Eastman Park Dr	Access to Windsor Charter Academy Middle/High School, Future Legends Sports Complex, Tolmar Corporate Office,- etc.

ID	Stop Location	Description
-	New Liberty Rd and Steeplechase Dr segment	A stop along this route segment could be warranted based on emerging development patterns.
-	Centerra Pkwy and Kendall Pkwy (The Promenade at Centerra)	Access to the Promenade at Centerra. Connections to COLT route 3.
-	McWhinney and Fall River (Centerra Marketplace)	Access to Centerra Marketplace. Connections to COLT route 3.
-	Eisenhower Blvd and Boyd Lake Ave (Future Transfer Center)	Recommended as a Transfer Center site in Connect Loveland TMP. Would likely replace stop at Walmart (Eisenhower Blvd and Denver Ave) if implemented. Transit connections TBD.
-	4th St and Monroe (Loveland Public Library)	Access to Loveland Public Library, Chilson Recreation, and various city facilities. Connections to COLT route 1.

Potential Service Plan

Proposed levels for the Windsor to Loveland service are every 30 minutes for most of the day for 17 hours on weekdays/Saturdays and 15 hours on Sundays. The recommended operating characteristics are summarized in Table 6-4. Alternative plans will be considered as planning advances to best balance demand and operating costs.

Table 6-9. Operating Characteristics: Windsor to Loveland (WCR 17/US 34)

Day Category	Service Span	Frequency (Mins)				
		Early	AM Peak	Midday	PM Peak	Evening
Monday - Saturday	5:00 am - 10:00 pm	30	30	30	30	60
Sunday	6:00 am - 9:00 pm	-	30	30	30	60

Assumptions: Early: 5:00 am - 6:00 am; AM peak: 6:00 am - 9:00 am; Midday: 9:00 am - 3:00 pm; PM Peak: 3:00 pm - 7:00 pm; Evening: 7:00 pm - 10:00 pm

Key Recommendations

Successfully advancing the Windsor to Loveland (WCR 17/US 34) service could demonstrate the 'proof of concept' that latent transit demand exists within these communities. The LINKNoCo planning effort defined the priority corridors and set out a series of recommended next steps. Advancing to implementation will require a combined effort of the NFRMPO, local agencies, and jurisdictions to work together to finalize planning with stakeholders and finalize funding. Table 6-5 presents the key recommendations of actions leading to implementation of the Windsor to Loveland (WCR 17/US 34) alignment.

Table 6-10. Key Recommendations: Windsor to Loveland (WCR 17/US 34)

	Recommendations	Details	Timeframe
WL1	Integrate transit infrastructure and considerations into planned improvements to US 34.	Several studies completed in recent years (e.g., US 34 Loveland Access Control Plan, NFRMPO RTP 2045, US 34 PEL, Connect Loveland, etc.) have recommended widening segments of US 34. As these improvements are evaluated and advanced, the potential exists to integrate transit infrastructure and other considerations (e.g., dedicated lanes, queue jumps, etc.) into these projects. Incorporating transit elements in the early stages of planning and design is substantially easier than having to work within the limitations of existing roadway cross sections (e.g., repurpose lanes, etc.)	Near-term
WL2	Consider additional stops as warranted by demand and evolving development patterns.	As demand for the service grows, and development around the corridor evolves, additional stop locations could be warranted. However, the benefits of expanding access to the service by adding new stop locations should be carefully weighed against potential impacts to travel time.	Mid-term
WL3	Advance investment in priority treatments.	Congestion levels on US 34 are well documented and projected to worsen in the future. Any perceived benefits to transit service reliability and travel time competitiveness would be severely limited without the provision of transit priority treatments such as dedicated lanes, queue jumps, and TSP. Without some level of priority investments, transit service in the corridor would be subject to the same level of congestion as automobiles.	Near-term to mid-term
WL4	Determine timing of Kendall Pkwy extension under I-25.	The planned extension of Kendall Pkwy under I-25 is being completed by McWhinney (the developers of Centerra). With the Centerra Loveland Mobility Hub scheduled to open in late 2023, there is no confirmed date as to when the Kendall Pkwy extension will be completed. Thus, there is a risk that the extension would not be completed by the time the Loveland to Greeley (US 34) route is implemented.	Near-term
WL5	Influence the emerging travel characteristics of high growth areas.	Transportation options and easy access to destinations and activities is an increasingly important factor for individuals and businesses seeking the ideal place to live and operate. The provision of high-quality bus service in the emerging growth areas of Windsor and Loveland would not only connect existing populations to key destinations but could actually influence the type and scale of development that occurs throughout the corridor.	Mid-term (as areas develop)
WL6	Establishing initial ridership base and continue development of the transit market.	While the Windsor to Loveland service is focused in areas projected for substantial population and employment growth, ridership potential may be somewhat limited in the near-term. But understanding the scale of growth projected for the area, it is important to frame the service as a long-term investment that will pay dividends in the future. Making an investment in a regional transit service before roadways are at capacity will allow the service to grow and evolve in harmony with the areas it serves.	Near-term
WL7	Identify, design, fund, and implement queue jumps at appropriate intersections.	Several intersections along the alignment with existing right turn lanes could be retrofitted to implement queue jumps, creating travel time savings. Changes to simple intersections with right turn lanes could require little design	Near-term

	Recommendations	Details	Timeframe
		and implemented in the field during construction. More complex intersections with free right turns and pedestrian refuge islands may require additional design and traffic evaluation to implement changes. However, these intersections likely provide sufficient space to create queue jumps and other improvements with no additional ROW. At a minimum, queue jumps should be considered at Denver Ave and Boise Ave.	
WL8	Finalize and implement appropriate stop improvements with necessary amenities.	At a minimum, stops must provide basic elements to ensure compliance with applicable provisions of the ADA, such as a boarding and alighting area, an accessible pedestrian connection (sidewalk), and a stable, slip-resistant surface. The improvements listed below would ensure the proposed stop locations comply with ADA requirements. Additional improvements are recommended to provide for the basic needs of users. These could be phased based on various criteria such as demand, heat exposure, equity/environmental justice, longer waiting times, etc. Additional improvements include shade/weather protection, seating, lighting, trash bin, route information/real time information, wayfinding, bike parking, etc. • 1. Windsor High School/Central Windsor (new stop): ADA-compliant pad, accessible route connection, sign, bench, trash bin. • 2. 7th Street and Garden Dr: EB and WB – ADA-compliant pad, bench, trash bin. • 3. Crossroads Blvd and Greenfield Dr (Walmart Distribution Center) (new stop): EB and EB – ADA-compliant pad, accessible pedestrian connection, sign, bench, trash bin, lighting. • 4. Centerra Loveland Station Mobility Hub: Assumed to include all elements. • 5. Rocky Mountain Ave and Medical Center of the Rockies: EB - none; WB (new stop) - ADA-compliant pad, accessible pedestrian connection, sign, bench, trash bin, lighting. • 6. Eisenhower Blvd and Denver Ave (Walmart): EB - None. WB – lighting and sidewalk connection to Denver Ave and/or adjacent multi-use path. • 7A/B. Cleveland/Lincoln and 8th St (South Transfer Point): lighting and crosswalk on Cleveland Ave and Lincoln Ave.	Near-term to mid-term
WL9	Evaluate and implement TSP for traffic operational improvements and transit reliability.	Evaluate TSP implementation and traffic operational benefits at the following intersections: 11th St/Main St 9th St 7th St/Main St Ward Ave Crossroads Blvd/Centerra Pkwy Kendall Pkwy/Centerra Pkwy Rocky Mountain Ave Hahn's Peak Dr Boyd Lake Ave Sculptor Dr Denver Ave Boise Ave Madison Ave Redwood Dr Monroe Ave	Mid-term

	Recommendations	Details	Timeframe
WL10	Implement enhanced bus service initially. Phase enhanced elements and treatments as warranted by demand and conditions in the corridor. Consider ultimate transition to BAT/BRT lanes.	The Windsor to Loveland WCR 17/US 34 service could be implemented in phases and evolve over time. The initial service could be provided as enhanced bus, with minimal transit spot improvements and infrastructure investments (e.g., TSP, queue jumps, etc.). As demand increases, additional priority treatments and infrastructure investments could be implemented, such as dedicated lanes, enhanced stations, offboard fare collection, etc. Continued planning should be conducted to define ROW needs and refine costs for funding purposes. As conditions along the alignment evolve over time, the service could eventually transition to full scale BAT/BRT, as warranted by demand and local/regional desire.	Long-term

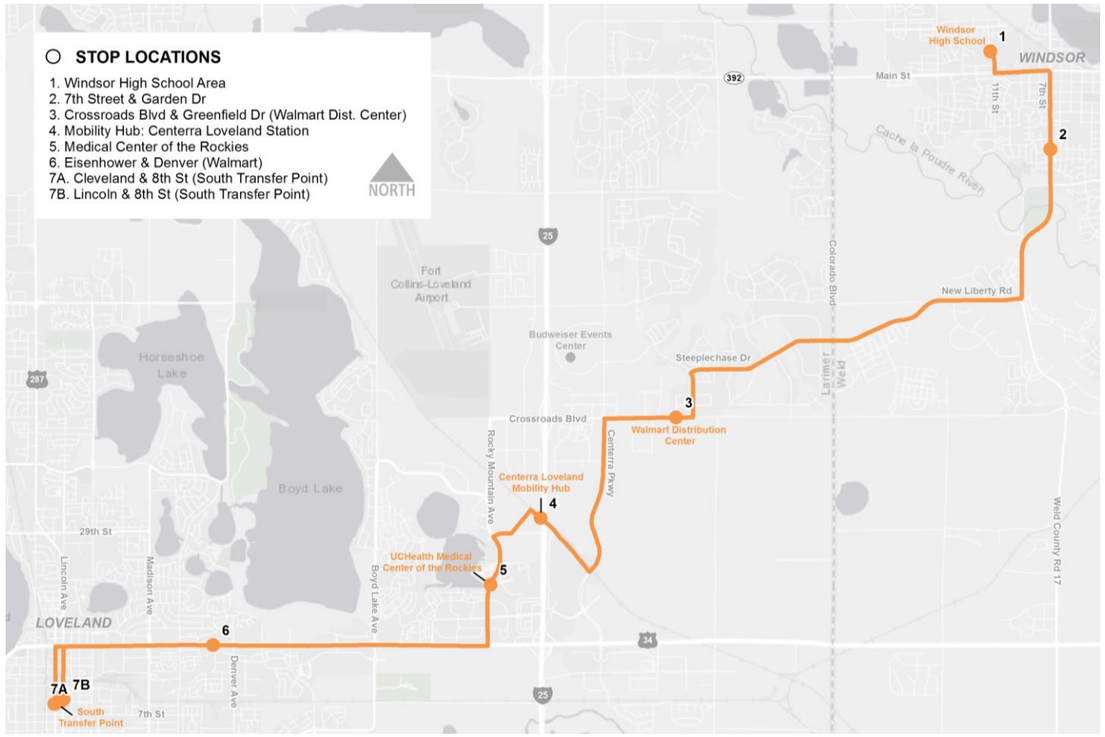
Alignment Information Sheet – Windsor to Loveland (WCR 17/US 34)

The following pages provide a graphic summary of key elements of the Windsor to Loveland (WCR 17/US 34) alignment.

Windsor to Loveland (WCR 17/US 34)

OVERVIEW

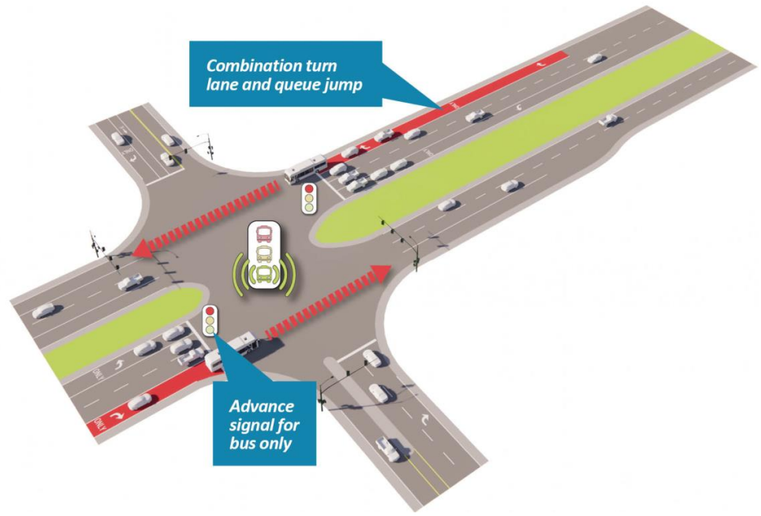
The Windsor to Loveland enhanced bus service would effectively link the emerging growth areas in central and southwestern Windsor to the rapidly developing Centerra area and the urban core of Loveland. The service is proposed to operate within existing travel lanes with priority measures for buses at key intersections. This may include queue jumps to allow buses to move ahead of other traffic at signals. Additional transit priority will be considered, including TSP, BAT lanes, and exclusive BRT lanes. The service is tentatively planned to operate every 30 minutes.



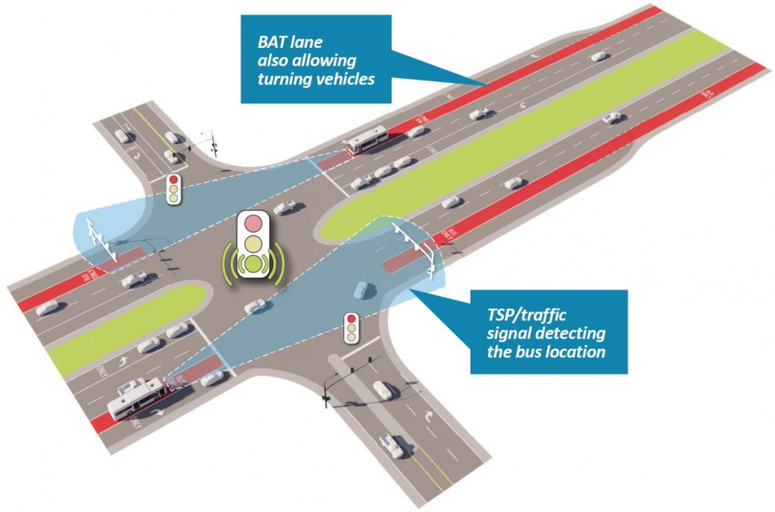
Technology	Fleet	Frequency	Travel Time	Stops	Operating Costs
Enhanced Bus	4 Vehicles ($2M to $4.8M)	Every 30 Minutes	35-39 Minutes (entire route)	7 Stops Proposed	$2.7M - $3.9M (annually)

POTENTIAL IMPROVEMENTS – TYPICAL CONFIGURATIONS

QUEUE JUMPS

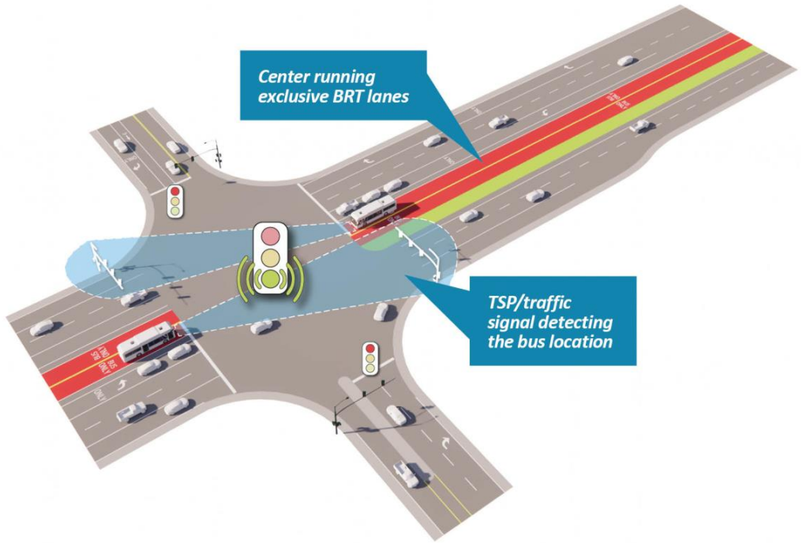


TSP AND BAT LANES



POTENTIAL IMPROVEMENTS AND IMAGES

BRT LANES AND TSP – TYPICAL CENTER RUNNING



DEVELOPING WINDSOR AREA

POTENTIAL WESTERN TERMINUS

KEY DESTINATION

POTENTIAL EASTERN TERMINUS

Visualizations and images by HDR

6.3 Foundational Project – Greeley to Fort Collins (Great Western)

Four stops are proposed for this service at important community centers and transportation connections.

As a potential commuter rail connection, the Greeley to Fort Collins (Great Western) alignment would require different considerations from the other priority alignments. The implementation of commuter rail is a long-term goal that would require more time, investment, and coordination to advance than the enhanced bus alignments. However, the mobility return on these efforts could result in a direct and efficient transit link between the two major municipalities along the North Front Range.

The Greeley to Fort Collins (Great Western) alignment would provide a nearly “straight-line” connection between Greeley and Fort Collins through Windsor. The Great Western Railway was originally built in 1902 and served the Great Western Sugar Company. It provided passenger service between 1917 and 1926.

Now owned by OmniTRAX, a large regional railroad operator in North America, the Great Western Railway serves various agricultural and industrial customers throughout Boulder, Larimer, and Weld Counties. The alignment is configured with a single freight rail track, with various rail sidings and connections to rail clients.

Travel Times

Only one travel time scenario was developed for the Greeley to Fort Collins commuter rail service as trains are assumed to have full preemption, and all major grade crossings will be protected. Speed assumptions were based on the Denver Regional Transportation District (RTD) A Line commuter rail service, which has comparable urbanized area characteristics and road crossings. One-way travel time for the Greeley to Fort Collins commuter rail service is estimated at 32 minutes. Additional information on the travel time estimation methodology is provided in Appendix H.

Preliminary Stop/Station Locations

Stop/station locations were identified in each of the communities along the alignment, including Greeley, Windsor, Timnath, and Fort Collins. Locations were selected based on their proximity to activity centers/destinations and connecting transit services. Commuter rail stations typically require a larger level of investment than a standard transit stop and can influence and drive adjacent development activity. As such, these locations are conceptual in nature and should be refined by local agencies and stakeholders in future planning efforts. Transfer service from the local transit network and the potential for park and ride locations along this alignment create opportunities to further enhance ridership. Opportunities are present for enhanced park and ride facilities at the GET Regional Transportation Center, Windsor, and Timnath stops/stations. The Greeley to Fort Collins (Great Western) stop locations are summarized in Table 6-11.

Table 6-11. Stop Locations: Greeley to Fort Collins (Great Western)

ID	Stop Location	Description
1	GET Regional Transportation Center	Access to central Greeley. Connections to GET routes 1, 3, 4, 5, 6, Poudre Express, and Greyhound service.
2	Central Windsor Area	Access to central Windsor with a station along the rail alignment between 3rd St and WCR 17.
3	Timnath Area	Access to the Town of Timnath with a station between Main St and Harmony Rd
4	Old Town Fort Collins Area	Access to downtown Fort Collins with a station in the Willow St area. Connections to Transfort services at Downtown Transit Center, which is within ½ mile walkshed.

Potential Service Plan

The service would be tailored to a commuter market during targeted travel times, with peak direction trips provided during morning and afternoon peak periods and roundtrips during the midday period. Peak direction refers to the direction of primary demand at a given time. For example, if the greatest demand is for jobs in Greeley in the morning, the focus of the service would be to Greeley at this time. The recommended operating characteristics are summarized in Table 6-12.

Table 6-12. Recommended Operating Characteristics: Greeley to Fort Collins (Great Western)

Day Category	Service Span	Frequency (Mins)				
		Early	AM Peak	Midday	PM Peak	Evening
Monday - Saturday	5:00 am - 10:00 pm	2 trips*	3 trips*	5 trips	4 trips*	2 trips*
Sunday	6:00 am - 9:00 pm	-	3 trips*	5 trips	4 trips*	1 trips*

* Peak direction only

Assumptions: Early: 5:00 am - 6:00 am; AM peak: 6:00 am - 9:00 am; Midday: 9:00 am - 3:00 pm; PM Peak: 3:00 pm - 7:00 pm; Evening: 7:00 pm - 10:00 pm

Key Recommendations

Conversations were held with representatives of the Great Western Railway in 2018 about the potential for passenger service on this alignment. Initial reactions were positive. They indicated that the Great Western Railway had the most potential for commuter-type passenger service of all OmniTRAX rail properties.

Based on the volume of existing freight rail traffic (current and projected traffic), it is possible that passenger rail could share the single track. Freight and commuter rail would be required to operate in separate time windows to avoid any interaction between the two. The single track could handle both the existing and future freight traffic and a reasonable number of commuter trains with appropriate sidings and passing tracks added to allow the passenger trains to adhere to their schedules.

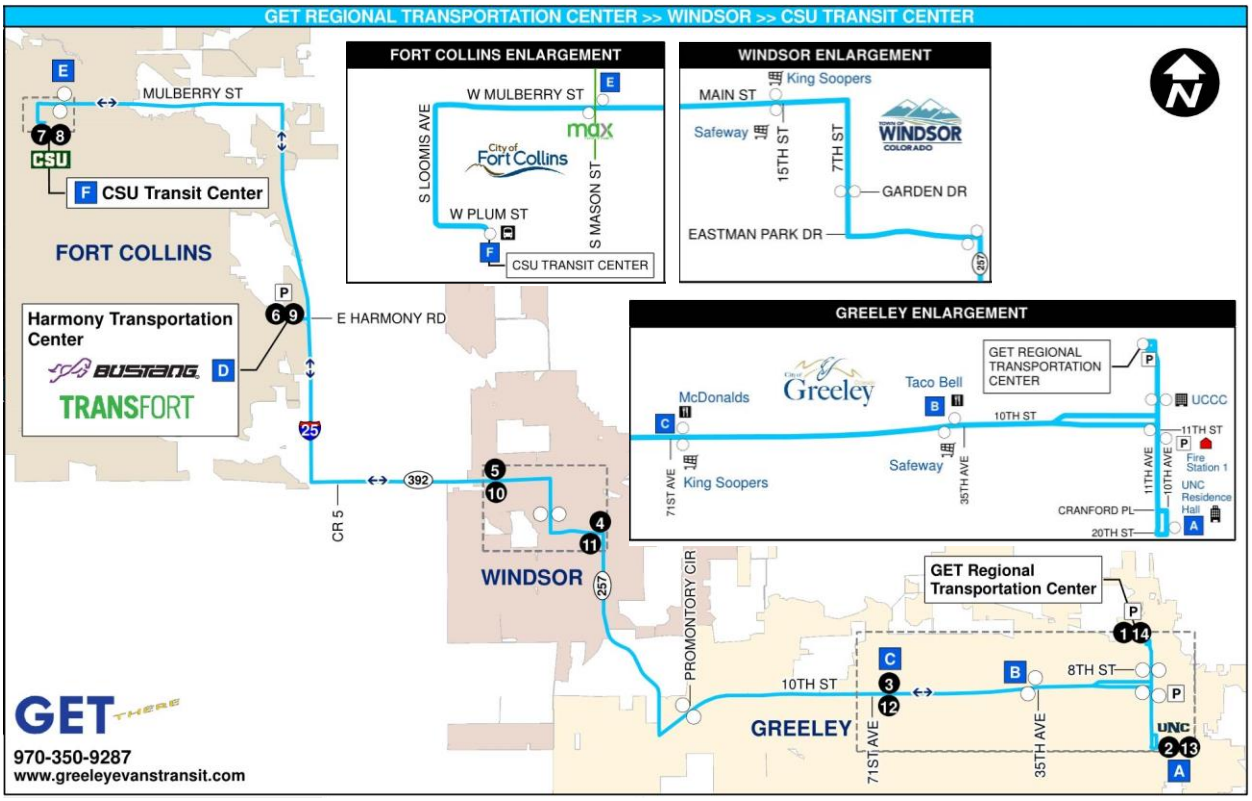
This particular segment of freight track between Greeley and Fort Collins is also in the best condition of all of Great Western Railway's lines in the North Front Range. The track was recently upgraded between Windsor and Greeley to support new rail freight movements connecting to the Union Pacific in Greeley. The railroad right-of-way between Greeley and Fort Collins is generally available to add additional sidings or passing tracks.

Phased Implementation Recommendations

Given the time and coordination required to implement commuter rail, the Greeley to Fort Collins (Great Western) service is a good candidate for phased implementation. It was recommended to continue to build the transit market between Greeley and Fort Collins by improving the existing bus service. While the transit market between these communities continues to mature, efforts will continue to advance the future commuter rail connection. Development of the transit market and transit options in the region would benefit both bus and rail ridership.

The first implementation phase could be increasing service levels on the existing Poudre Express route, which serves a similar market and links Greeley to Fort Collins (see Figure 6-1). To build the travel market between these areas, it is recommended to double peak period service and increase midday and evening periods to hourly frequency. This would bring the number of bidirectional trips up to eight during peak periods, six during the midday period, and four during the evening. A summary of the existing and recommended service levels for the Poudre Express is provided in Table 6-13.

Figure 6-1. Poudre Express



Source: Greeley Evans Transit

Table 6-13. Poudre Express Existing and Proposed Service Levels

Scenario	WEEKDAY			
	AM Peak *6:00 am - 9:00 am*	Midday *9:00 am - 3:00 pm*	PM Peak *3:00 pm - 6:00 pm*	Evening *6:00 pm - 10:00 pm*
Existing	3 Northbound (NB) trips 3 Southbound (SB) trips	1 NB trip 2 SB trips	4 NB trips 4 SB trips	No service
Proposed	8 bidirectional trips	6 bidirectional trips	8 bidirectional trips	4 bidirectional trips

Source: www.greeleyevanstransit.com, 2022; HDR, 2022

The proposed improvements to the Poudre Express would increase annual revenue hours by 6,950, requiring an additional $857K to operate each year. A summary of the existing and proposed annual operating costs for the Poudre Express is provided in Table 6-14.

Table 6-14. Poudre Express Existing and Proposed Operating Costs

Scenario	Cost per Revenue Hour	Annual Revenue Hours	Annual Operating Cost
Existing	$123.25	5,745	$708,100
Proposed	$123.25	12,695	$1,564,700
Net Increase	-	6,950	$856,600

Source: National Transit Database, 2020, Greeley Evans Transit - Cost per Revenue Hour

As ridership and demand grow within the corridor, the transition to a higher capacity transit service along the freight rail should be considered. This could be in the form of a BRT service along the alignment or a direct shift to commuter rail. Much of this decision would depend on funding availability and the status of necessary negotiations with the Great Western Railway. Because this is an active freight alignment, the transition to BRT may be challenging because of the space/separation necessary between the track and guideway. The opportunity to share track with combined freight and commuter rail is also challenging but may be the preferred choice for the freight railroad. Determining the potential operator for any future rail service will impact future planning and design. Several freight railroads in the US currently operate commuter rail services on behalf of local jurisdictions or agencies. This is a model that could be explored here. This will require detailed discussions and negotiations as the alignment progresses.

Additional phasing could occur with implementation of the commuter rail service. In Greeley, there is the potential for a second station location closer to downtown. The service could potentially be extended to tie into the Union Pacific Railroad line and continue to the former passenger rail station between 8th and 10th streets. This would provide better access to the downtown area, the University of Northern Colorado campus, and a potential future connection to a re-instated Amtrak “Pioneer” Service connecting Denver to Seattle through Greeley and Cheyenne (currently being evaluated as a part of a study on Discontinued Amtrak routes). In Fort Collins, the station location

may be revisited in the future when Front Range Passenger Rail extends to Fort Collins and potentially Cheyenne. There would be a definite synergy in connecting this proposed Greeley to Fort Collins commuter rail service with either the Amtrak or Front Range Passenger Rail services.

Table 6-15 presents the key recommendations of actions leading to the implementation of the Greeley to Fort Collins (Great Western) alignment.

Table 6-15. Key Recommendations: Greeley to Fort Collins (Great Western)

	Recommendations	Details	Timeframe
GF1	Advance formal consultation with OmniTRAX, the Great Western Railway owner.	Coordination and ultimate negotiations with the railroad will be a process. Near-term consultation, in combination with addition planning for the alignment, will provide an understanding of the opportunities and constraints associated with implementing transit. It will be important to determine if OmniTRAX would want to be considered as a potential operator of the rail service. Early and ongoing consultation will be critical.	Near-term
GF2	Continue development of the transit market between Greeley and Fort Collins with enhancements to the Poudre Express.	Additional frequencies at peak periods for the Poudre Express could increase the market of potential transit users. Any changes to service must be paired with marketing and educational campaigns targeted at potential riders. Additional services could be phases as funding is available. In the near-term, growing Poudre Express ridership builds a culture of transit use for residents that could benefit the ultimate commuter rail solution.	Near-term
GF3	Confirm project partners and continue discussions of governance and funding.	Implementation of a commuter rail corridor will require a strong commitment of the project partners to effectively compete for funding at a federal, state, or local level. Clarity on the overall governance structure will be key to developing the business case necessary to advance the project.	Near-term
GF4	Consider emerging rail technologies to speed implementation.	New commuter rail technology continues to evolve that may be specifically appropriate to a freight rail corridor like the Greeley to Fort Collins (Great Western) alignment. Battery-electric multiple units, diesel multiple unit, and other rail technology options should be examined that are specifically designed for rapid implementation on existing freight rail lines. Technologies like the “Pop-Up Metro” trains or similar emerging technologies could be considered to minimize the track improvements needed implement commuter rail.	Near-term to mid-term
GF5	Develop a business case and ridership forecasting to support the proposed project.	Given the level of investment required to implement rail, a detailed business case demonstrating both the financial, economic, and social benefits would support funding requests. More definition of the commuter rail and early phase bus enhancements will be required to advance the business case. Building on the travel market analysis conducted for LINKNoCo, refinements to the NFRMPO regional travel demand model should be advance to predict future ridership. Other transit specific models, like the Federal Transit Administration’s STOPS model, should be considered as a point of comparison and validation.	Mid-term

	Recommendations	Details	Timeframe
GF6	Continue planning, environmental, and design.	Further definition of the alignment with the railroad, partners, jurisdictions/agencies, and stakeholders will be essential to determine the final form and function within the freight rail corridor. In concept, sufficient ROW is available to accommodate the potential improvements. However, planning the operations to accommodate the freight and passenger services may demonstrate unforeseen conflicts and additional ROW needs. Determining these challenges early supports the finalization of the project details.	Mid-term
GF7	Commence planning with the local communities for transit oriented communities (TOC) to influence the emerging travel characteristics of high growth areas.	Transportation options and easy access to destinations and activities is an increasingly important factor for individuals and businesses seeking the ideal place to live and operate. Implementation of fixed guideway transit (commuter rail) has demonstrated direct impacts on the density, mix of uses, and quality of development adjacent to stations. This is a symbiotic relationship where residents, visitors, and employees of the development gain easy access to high-quality transit; while the local community can gain more efficient development patterns and expand their tax base.	Mid-term
GF8	Advance phases implementation.	Advancing towards commuter rail in an efficient and cost effective manner will require phasing. Building on the alignments developed in LINKNoCo, future high-level phases may include: • Funding and advancing near-term Poudre Express enhancements. • Early and ongoing railroad coordination and negotiations. • Business case development and further governance planning. • Funding identification and programming. • Project development, advanced planning, TOC planning, and subsequent design phases to determine the rail form and function. • Potential environmental clearances. • Final agreements, funding, design and construction.	Near-term to long-term

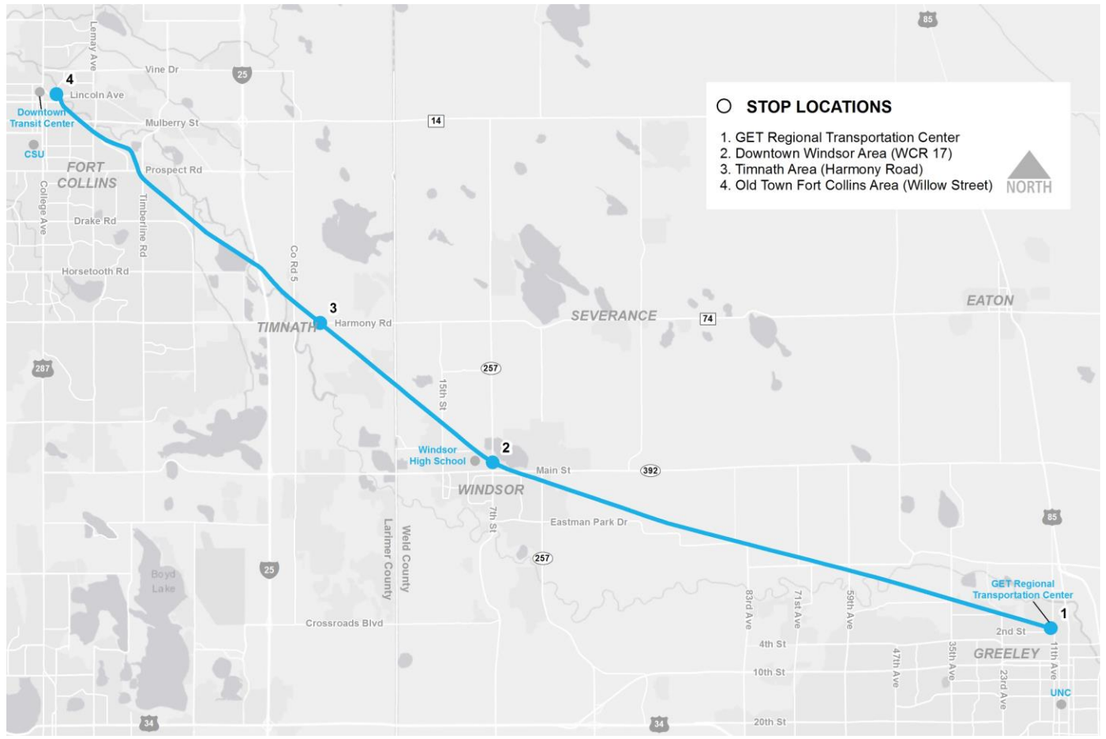
Alignment Information Sheet – Greeley to Fort Collins (Great Western)

The following pages provide a graphic summary of key elements of the Greeley to Fort Collins (Great Western) alignment.

Greeley to Fort Collins (Great Western)

OVERVIEW

The Greeley to Fort Collins commuter rail service would provide a direct connection between Greeley and Fort Collins along the Great Western Railway freight line. It would initiate service at the Greeley Regional Transportation Center (11th Ave and 1st St) and proceed northwest within the rail right-of-way through the towns of Windsor and Timnath before terminating in the vicinity of Lincoln Ave and Willow St in downtown Fort Collins. The service is tentatively planned to operate 16 trips per day. Additional service plans will be considered.



Technology
Commuter Rail (long-term goal)

Fleet
3 Vehicles ($12M to $24M)

Frequency
16 Trips Daily

Travel Time
32 Minutes (entire route)

Stops
4 Stops/Stations Proposed

Operating Costs
$472K Annually

EXAMPLE – COMMUTER RAIL SYSTEMS

EXAMPLE COMMUTER RAIL – RAILRUNNER

STATION – RAILRUNNER

MAINTENANCE FACILITY – TEXRAIL

RAIL ALIGNMENT EXISTING CONTEXT IMAGES

RAIL ALIGNMENT - WINDSOR

RAIL ALIGNMENT – FORT COLLINS

RAIL ALIGNMENT - GREELEY

RAIL ALIGNMENT - TIMNATH

images by HDR

6.4 Potential Infrastructure Improvements

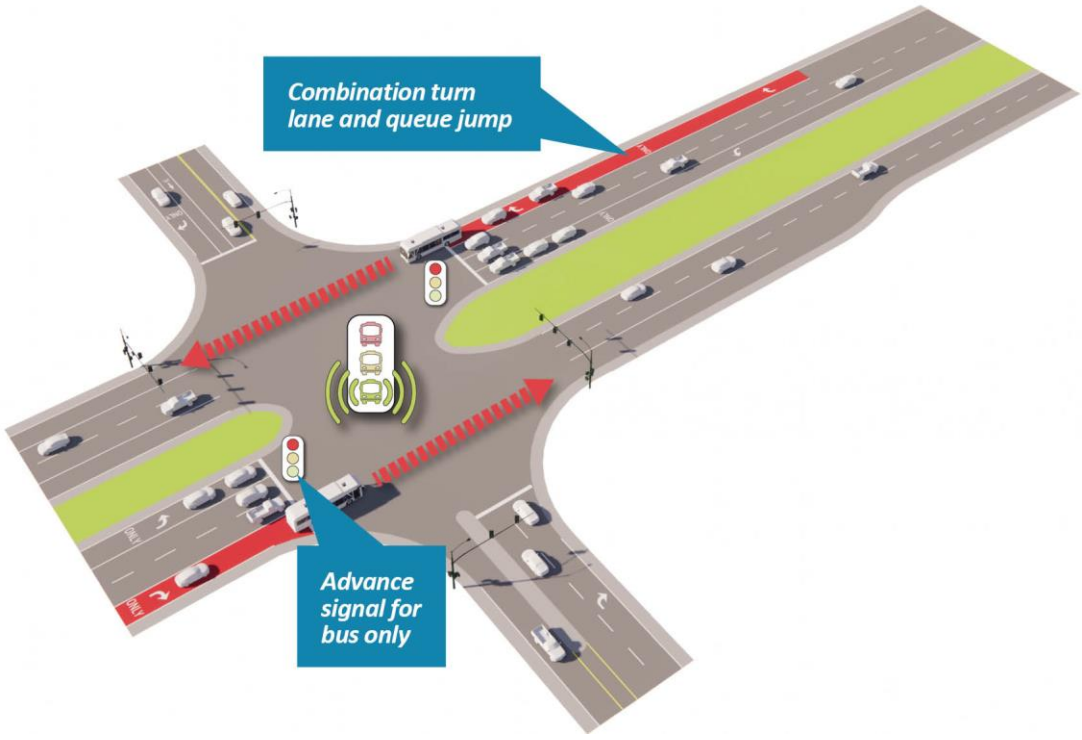
Enhanced bus implementation is intended to be a less infrastructure-intensive solution to moving more people more efficiently along an alignment. Major infrastructure adjustments are not anticipated in the near term to begin service and continue to build the transit market between major North Front Range destinations. Specific improvements to intersections and operational improvements along an alignment are assumed to provide priority and more consistent reliability for buses as congestion continues to grow. New bus service will also benefit from ongoing projects like the extension of Kendall Pkwy under I-25 and the proposed grade separations at US 34 and 47th Ave and 35th Ave as part of the MERGE project. These improvements are not part of LINKNoCo, but are important to create simple connections and transfers and eliminate congested signals for the proposed bus services. As transit alignments continue to advance and build ridership, additional infrastructure will be needed. More significant infrastructure should be evaluated in the next stage of planning, including the benefits and impacts of priority measures to improve the reliability and speed of transit. The following sections provide additional details on a range of potential infrastructure improvements to be considered as the development of the three priority alignments advances.

Bus Priority – Queue Jumps

Intersection design improvements, such as queue jumps, provide priority for buses and reduce conflicts between buses and general traffic. Given the current configuration of many signalized intersections along US 34 (and other area roadways), some right turn lanes could be modified to act as both a turn lane and a queue jump lane for buses. As the vehicles turning right clear the turn lane, the bus is advanced to the top of the queue. As the signal changes, a queue jump signal (specific to the bus) provides time for the bus to advance ahead of the general traffic stopped at the signal. Existing intersections with right turn lanes may be easily modified to act as queue jumps. More complex intersections may require additional infrastructure and operational analysis. Creating more consistent and predictable bus operations can also benefit overall traffic flow by removing conflict points. As planning for the alignments continues, each of the major signalized intersections should be evaluated for queue jumps and other priority measures as part of a comprehensive traffic and operational analysis.

Figure 6-2 illustrates an example of a typical intersection (based on US 34 conditions) and how it could be retrofitted to include a queue jump. This could be achieved with some physical modifications and the inclusion of the new signal hardware. The graphics are for illustrative purposes only and can be used as a guide as planning advances for the bus alignments.

Figure 6-2. Example Queue Jump Intersection



Bus Priority – TSP

Transit Signal Priority (TSP) is a transit operations tool that can improve bus reliability and speed through typically congested intersections. With a relatively limited investment in TSP signaling systems, transit alignments can be retrofitted to provide premium transit operations with limited changes to general traffic. TSP at traffic signals can detect approaching buses and adjust the signal phase to support efficient movement of the bus through the intersection (either lengthening or shortening the signal phases).

As part of the next phase of planning, a TSP concept of operations (Con Ops) plan is recommended with comprehensive traffic and operational analysis. The Con Ops analysis develops the TSP assumptions and provides an opportunity to verify that the range of project partners (cities, CDOT, etc.) agree on the goals, constraints, and conditions prior to proceeding. The Con Ops analysis provides inputs to the overall operational analysis to model and understands the potential impacts, benefits, and tradeoffs of TSP along the alignment.

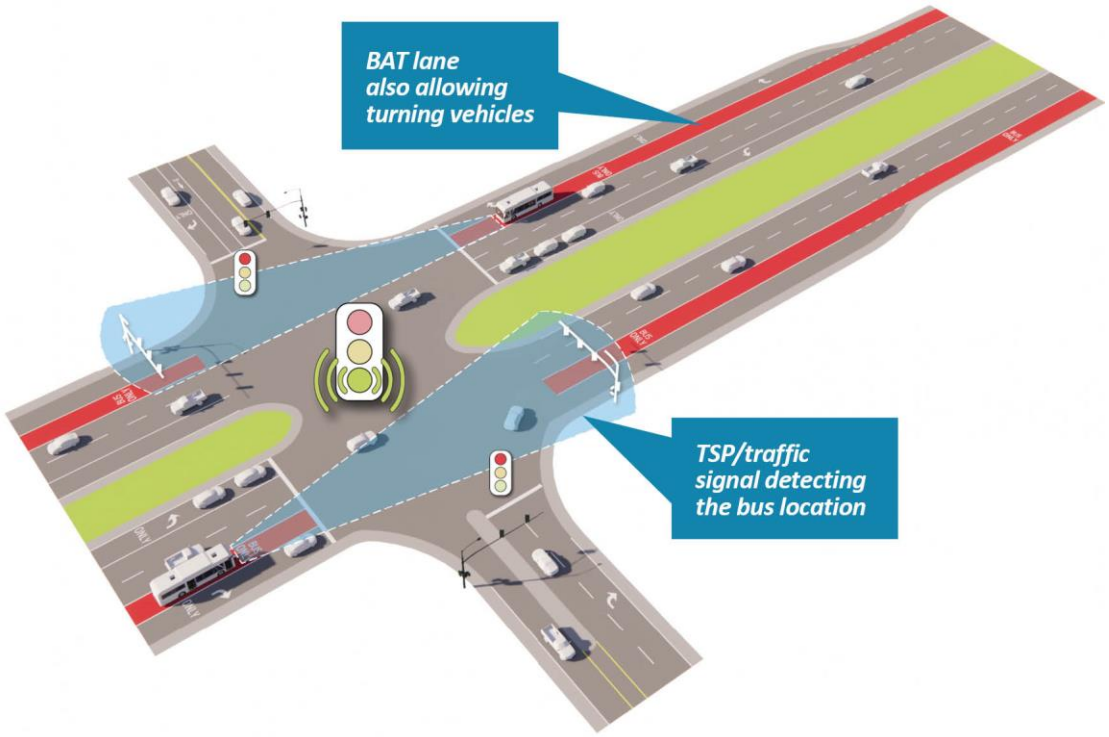
Bus Priority – BAT Lanes

Business Access and Transit (BAT) lanes support more efficient movement of transit vehicles and other traffic by providing better access to businesses. BAT lanes are typically curbside lanes for use by transit vehicles and turning traffic accessing adjacent businesses or access points. The success of BAT lanes depends on the ability to develop reasonable access controls along the alignment. The BAT lanes must balance the mix of transit vehicles while providing appropriate business access. A precursor to

BAT lanes that may be appropriate to alignment segments along US 34 includes enhanced bus and bus operations on the shoulder of the roadway. Given that right-of-way may vary along an alignment, BAT lanes can be a single solution or combined with other alignment configurations (like exclusive BRT lanes) where there is more space for implementation.

Figure 6-3 illustrates an example of TSP in combination with BAT lanes along a typical alignment for future planning consideration.

Figure 6-3. Example TSP and BAT Lanes

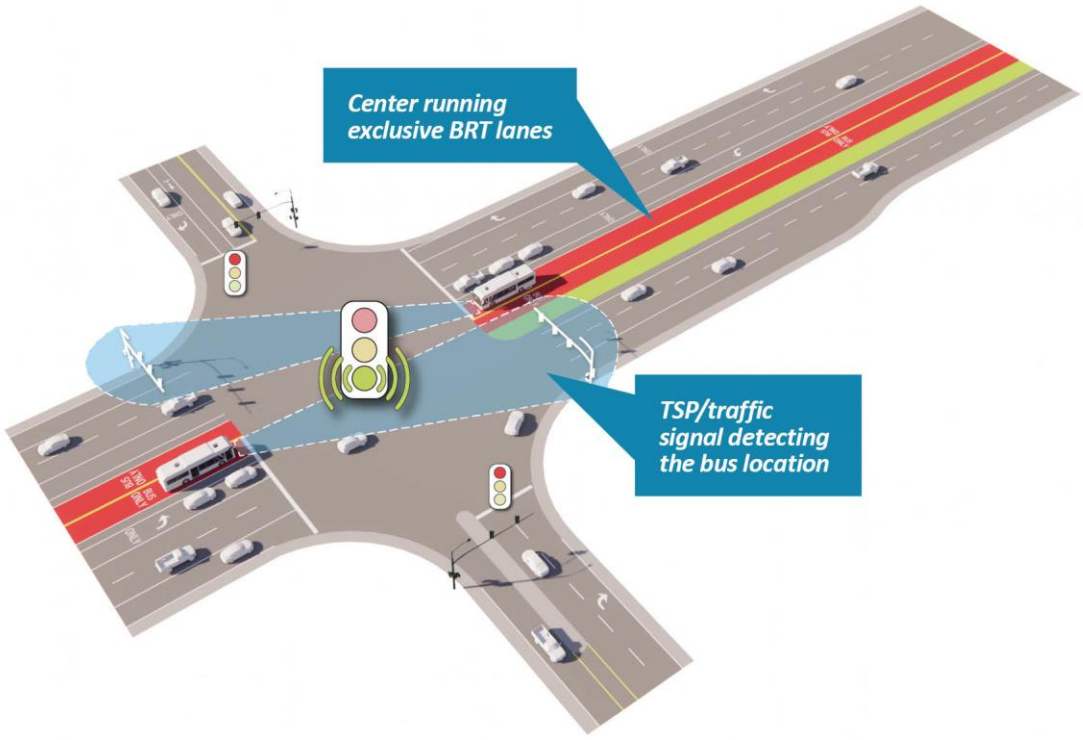


Bus Priority – BRT Lanes

Providing exclusive BRT lanes for transit can significantly improve transit travel times and travel time reliability. The magnitude of the benefit depends on factors, including the ability of transit vehicles to avoid delays from turning traffic, illegal encroachment in the lanes, and the level of congestion that existed on the roadway prior to the implementation of the exclusive transit lanes. Additional space is typically required beyond standard lane widths to provide physical separation barriers or painted buffers to denote the exclusive space for transit. The configuration of BRT can vary throughout a corridor depending on the right-of-way and the context of development along the alignment. Segments of US 34 include a wide center median that should be further evaluated for center running BRT. Center running BRT is currently being designed in the wide median of CO119, the diagonal highway between Boulder and Longmont. This alignment has both a developed and rural context similar to US 34.

Figure 6-3 illustrates an example of TSP combined with center/median running BRT lanes along a typical alignment for future planning consideration.

Figure 6-4. Example BRT Lanes



Commuter Rail Infrastructure

The existing track and infrastructure would need to be upgraded to provide passenger service because it now operates freight service at the Federal Railroad Administration (FRA) Class 2 level (25 mph for freight service). To operate an efficient passenger service, the tracks need to be upgraded to at least Class 3 standards (60 mph for passenger service) and eventually Class 4 (80 mph for passenger service). These improvements would also benefit the freight rail operations of the Great Western Railway as well.

For freight rail and the proposed commuter rail operations to occur on the same tracks, Positive Train Control (PTC) systems would need to be added to this corridor. PTC is a geographic positioning system (GPS)-based safety technology that can stop a train and prevent train-to-train collisions, over-speed derailments, and unauthorized train movement. PTC ensures the safety of passengers by acting as a safeguard against human errors and other potential hazards. PTC does not currently exist on the Great Western.

With the introduction of passenger services, improvements at level crossings (where roadways cross over the rail line) will require additional examination and potential enhanced crossing protection. Enhanced safety standards for crossings are typically required with passenger rail services. The enhanced crossing protection may provide an

opportunity to consider “quiet zones” along the alignment where trains (freight or passenger) are not required to use their horns at each crossing.

Sidings or passing tracks currently exist along this route. West of Greeley, there is a siding on each side of the mainline between 35th Ave to just east of 59th Ave. There is another siding west of WCR 25 to just east of SH 257 in Windsor. An additional short siding exists to the west of the previous siding in Windsor.

The Great Western Railway line merges with the Union Pacific Railroad’s line just east of Lemay in Fort Collins, which continues into Old Town Fort Collins to a potential station located in the vicinity of Willow St.

With future passenger trains leaving Greeley and Fort Collins at approximately the same time, these trains would be scheduled to meet at some point between Windsor and the Timnath station. A lengthy additional passing track would be needed in this general location to allow trains to meet and stay on schedule.

Within the Great Western Railway’s right-of-way between Greeley and Fort Collins, there could be adequate space to possibly construct a BRT corridor paralleling the railroad tracks. However, constructing BRT would likely require the full purchase of the railroad right-of-way, which is likely not the preferred scenario for OmniTRAX. The parallel BRT option should be further examined and discussed with OmniTRAX.

OmniTRAX elected not to consult formally as part of the LINKNoCo planning effort. This is not unusual for the early stages of planning, where the freight railroads would prefer more definition prior to committing resources to an effort. However, throughout the LINKNoCo effort, the project team provided OmniTRAX with various policy and stakeholder meeting notes, PowerPoint presentations, and other information to keep the railroad informed on the project’s progress.

Figure 6-5 provides images of commuter rail infrastructure examples in San Diego.

Figure 6-5. Example Commuter Rail Infrastructure

Cost Estimates

High-level cost estimates were examined relevant to this early planning stage of transit development. Specific assumptions were made to estimate the operating costs based on comparative operating costs from North Front Range transit agencies. Capital costs present individual costs for many of the core components of the infrastructure priority measures as an average unit cost or linear distance (per-mile) cost to provide a general understanding of the scale of the potential expenses. Capital costs will vary and depend on future decisions regarding the specific infrastructure improvements selected to support each alignment.

Capital Costs

The capital cost estimates present many of the individual elements of future bus or rail projects. This includes roadway (guideway), track, TSP, stations/stops, and vehicles (new buses/trains).

Capital costs are organized by Federal Transit Administration (FTA) Standard Cost Categories (SCC). Only those categories relevant to the three alignments are presented. This format serves as both a structure and a standardized format. It is recommended that future capital cost estimates utilize the FTA SCC or FHWA guidance on cost estimating to track and control changes over time as the estimates are defined in more detail. As decisions on infrastructure improvements of the alignments advance, additional costs will be required for all elements, including earthwork, utilities, drainage, support facilities, professional services (future design and construction management), contingencies, etc. The example unit costs are based on recent similar projects in Colorado and other western states.

Enhanced bus is the least costly of the improvements under consideration. At the base level, enhanced bus capital elements are mostly limited to vehicles and signal upgrades, with spot improvements at intersections incorporating priority measures (where possible and beneficial).

The cost of new bus stops can vary depending on the level of amenities. Basic bus stops with concrete pedestrian pads and signage can range from $7K to $10K depending on the level of site work and the extent of sidewalk connections. Enhanced bus/BAT stops with core amenities, such as lighting, seating, shelters, trash bins, route information, etc., can fall in the range of $140K to $250K.

CNG/diesel buses can range from $500k to $750k, and battery-electric vehicles can range from $750k to $1.2 million. Additional costs would be required for the infrastructure to support electric charging and the maintenance unique to electric buses.

Capital cost of BAT and BRT lanes can vary depending on the specific typology implemented. All BRT typologies share common elements like unique branding, advanced fare collection, TSP, enhanced stations, and custom buses. Elements that vary include dedicated lanes (e.g., minimal, partial corridor, entire corridor) and transit spot improvements (e.g., queue jumps, bus bulbs, etc.). As such, capital costs can range from as low as $4 to $6 million per mile for BAT lanes (primarily intersection

improvements, restriping, and new stop amenities) to $25 - $35+ million per mile for BRT service with full amenities.

Implementation of commuter rail will vary depending on the context of the alignment. The current condition of track between Greeley and Fort Collins is good, but it is not designed to support passenger rail service. In addition to track conditions, commuter rail costs must take into consideration the required implementation of PTC, level crossing improvements, higher cost vehicles, and new maintenance facilities. Table 6-16 presents the various costs associated with the primary components of BAT, BRT, and commuter rail.

Table 6-16. BAT, BRT, and Commuter Rail Capital Cost Elements

Cost Element	Assumptions and Unit of Measurement	Potential Cost Ranges
Guideway and Track Elements (SCC 10)	• Roadway, intersection, and track improvement costs. • The cost of queue jumps vary, but could be limited to restriping on the low end to some level of intersection reconfiguration on the high end. • Commuter rail costs based on Front Range Passenger Rail.	• BAT lane: $4 to $6 million per mile. • Full BRT lane: $25 to $35 million per mile. • Commuter rail: Upgrade existing track $1M to $1.5 million per mile. • PTC: $1.5 to $3 million per mile plus $2 million for the system. • New siding/passing track: $2.5M to $4 million per mile plus $1 million for tie in/switches. • Roadway crossings: $1.5M to $2.5M each.
Stations (SCC 20)	• Cost ranges from a standard bus stop (pedestrian pad and signage) to a full BRT station with significant amenities. • Final costs will depend on the level of amenities desired.	• Standard bus stop: $7K to $10K. • BAT/BRT stop including shelter, seating, and key amenities: $150K to $250K. • Full BRT stop (level boarding and full amenities): $300K+. • Rail Station: Small intermodal station $13 million each, Large Intermodal Station $32 million each.
Systems (SCC 50)	• Cost includes a typical bus TSP signal and a typical on bus unit. • Cost assumes and existing signalized intersection.	• Bus TSP/signal equipment: $40K per intersection. • Vehicle (bus) control unit: $10K per bus.
Vehicles (SCC 70)	• Base bus cost assumes a 40 foot vehicles similar to those of North Front Range transit agencies. • Vehicle need will be based on fleet assumptions for each alignment (to meet the service plan) and on future analysis of demand.	• CNG/diesel buses: $500K to $750K • Battery/electric buses: $750K to $1.2 million per bus. • Commuter rail vehicle: $4 to $8 million+ each assuming DMU and depending on configuration and FRA compliance.

Note: All costs in 2022 dollars

ALIGNMENT SPOT IMPROVEMENTS

As can reasonably be expected, a regional service route will transverse different roadway/alignment types and land use areas. As such, no one fixed set of transit elements are applicable for the entire route. For example, some bus alignments may have wide right-of-way that could be appropriate for BAT or BRT lanes, while other sections may be constrained by existing development. The elements may evolve, and

the capital cost and operating efficiencies may be adjusted to reflect changes in ridership, traffic volumes and congestion, and land use.

As planning and project development continues for the priority alignments, design details and tradeoffs will need to be resolved to determine the level of infrastructure improvements desired and the resulting scale of right-of-way acquisition needed. This is typically a balance between the incremental benefits of the infrastructure compared to the cost and level of any negative impacts (construction, acquisition, etc.).

The project team examined the length of each alignment to determine areas where potential queue jumps or other spot improvements may be appropriate. Additionally, the team highlighted those segments of each corridor where future planning should determine the extent of priority measures with the local jurisdictions and agencies. Spot improvement unit costs are presented in Table 6-17, and the locations for additional infrastructure planning for each alignment are discussed below.

Table 6-17. Alignment Spot Improvement Elements

Cost Element	Assumptions and Unit of Measurement	Potential Cost
TSP	• Transit Priority Signal installation. • Needed at each signal and on each bus.	• TSP - $40K per signal. • TSP - $10K per bus.
Queue Jump – Enhanced Bus or BAT Lanes	• Uses existing right turn lane as Queue Jump lane. • Bus operates in GP lane away from intersections.	• $150K per intersection.
Queue Jump – BAT or BRT Lanes	• Adds a Queue Jump Lane as an exclusive transit lane near intersections. • Bus operates in GP lane away from intersections.	• $350K per intersection.
Queue Jump – Fully Exclusive BRT Lanes	• Connects to exclusive BRT lanes (likely center running). • Bus operates in BRT lanes away from intersections.	• Included in BRT cost lane cost plus $150K per intersection.

Note: All costs in 2022 dollars

Figure 6-6 displays the Greeley to Loveland (US 34) alignment. The sections highlighted in purple (approximately 16 miles) are currently in the more urbanized and congested areas. These sections should be considered for more significant priority infrastructure improvements than the less urbanized stretch between. The urbanized segments are best candidates for BAT and BRT treatment, with near-term spot improvements as the first elements implemented. The remaining 10 miles are best suited for spot treatments, including queue jumps and TSP. Future planning should further examine the evolution of these sections to BAT/BRT.

Figure 6-6. Greeley to Loveland (US 34)

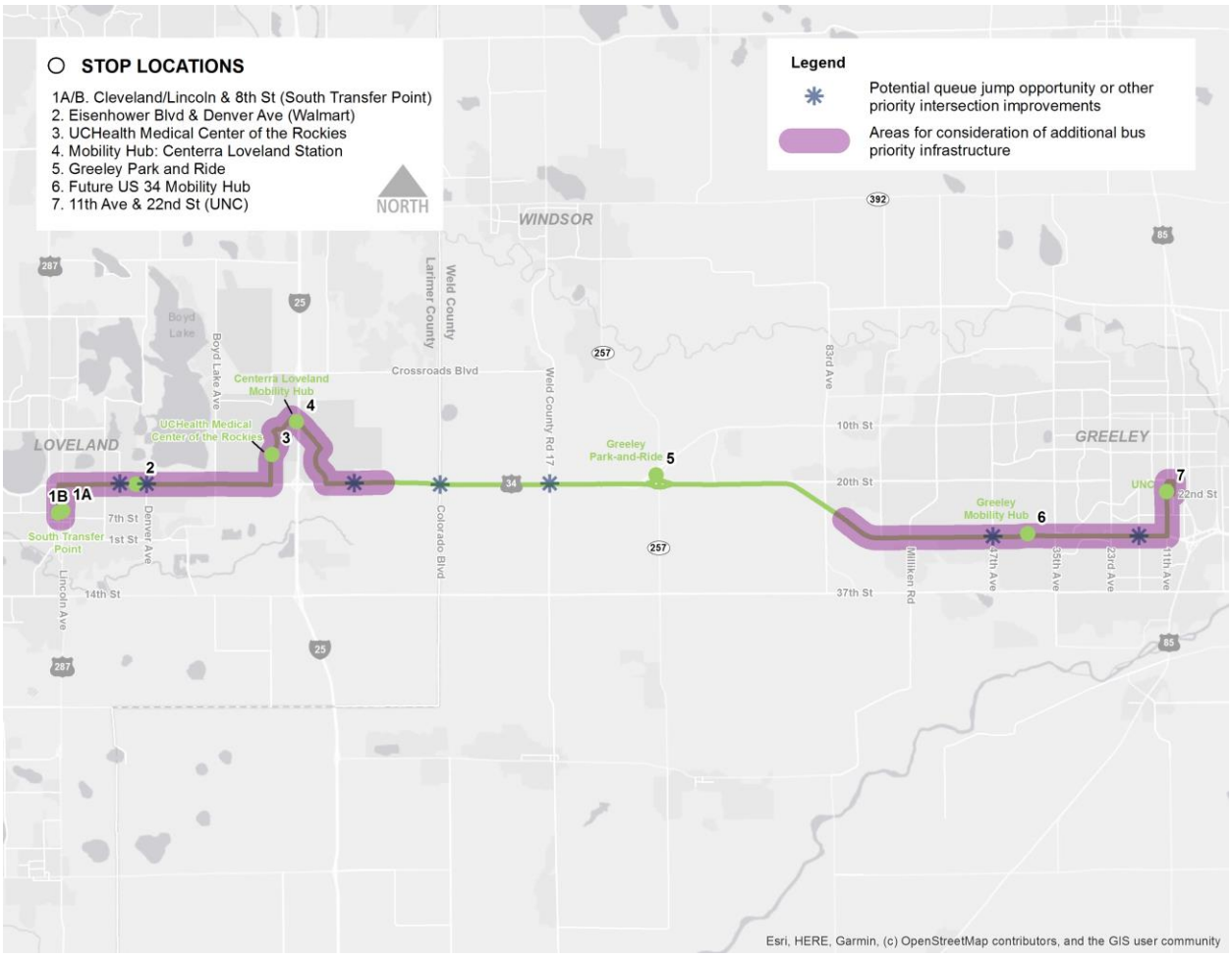


Figure 6-7 presents the Windsor to Loveland (WCR 17/US 34) alignment. The sections highlighted in purple (approximately 8 miles) are currently in the more urbanized and congested areas and should be considered for more significant priority infrastructure improvements. The remaining alignment is best suited for spot treatments and could evolve as BAT or BRT are considered to address developing needs. There are locations where typical intersections have been replaced with roundabouts. These locations are not marked as spot location improvements.

Figure 6-7. Windsor to Loveland (WCR 17/US 34)

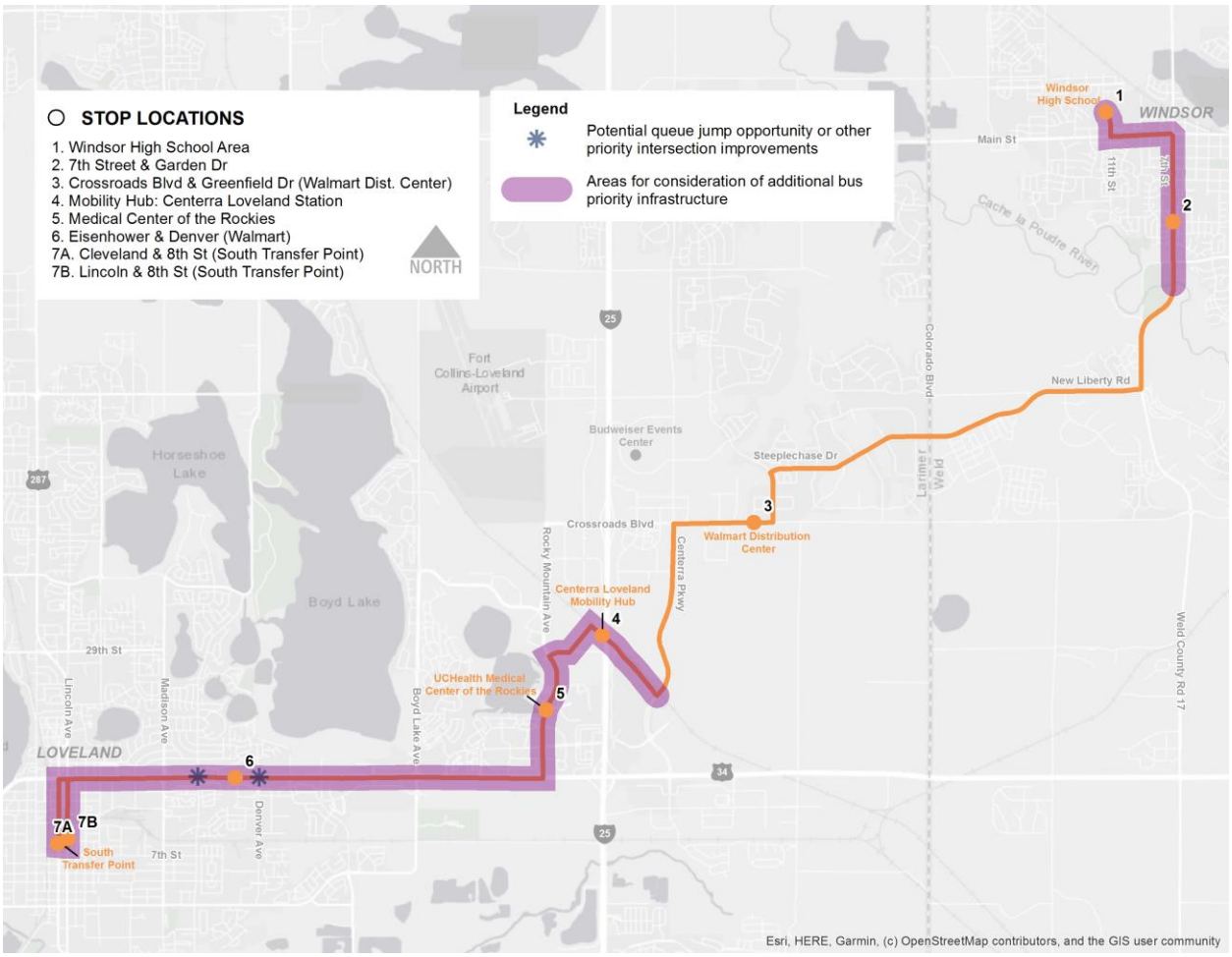


Figure 6-8 represents the Greeley to Fort Collins (Great Western) alignment. The track and rail infrastructure upgrades to Class 3/Class 4, the PTC system, and the level crossing improvements are required for the length of the corridor. The purple highlights represent the potential location of a new 2.5-mile-long siding/passing track to support dual passenger and freight operations. The grey areas represent the most likely candidate quiet zone locations. Other areas may also require this treatment as the residential development around the track continues to grow.

Figure 6-8. Greeley to Fort Collins (Great Western)

Operating Cost Estimates – Enhanced Bus

Annual operating cost estimates were developed for the enhanced bus services. The operating cost estimates were based on data reported to the FTA National Transit Database (NTD) by local transit providers Transfort, GET, and COLT for the latest available reporting year, 2020. Low, high, and average cost per revenue hour metrics were developed, which were then inflated to 2022 dollars using the Denver Metropolitan Area consumer price index for all urban consumers. An additional 15% premium was applied to main premium amenities/infrastructure associated with enhanced bus service.

Operating costs were developed for two different operating scenarios (with and without bus priority improvements). The improvements scenario creates operational efficiencies reflected in the lower overall cost of operations. Detailed estimates for both scenarios are summarized in Table 6-18. Additional information on the operational cost estimation methodology is provided in Appendix H.

Table 6-18. Annual Operating Cost Estimates: Enhanced Bus

	Scenario	Low	High	Average
Loveland to Greeley (US 34)	No Transit Priority Improvements	$4.4 million	$4.7 million	$4.5 million
	With Transit Priority Improvements	$3.9 million	$4.1 million	$3.9 million
Windsor to Loveland (WCR 17/US 34)	No Transit Priority Improvements	$3.9 million	$3.7 million	$3.5 million
	With Transit Priority Improvements	$2.7 million	$2.8 million	$2.7 million

Note: All costs in 2022 dollars

Operating Cost Estimates – Commuter Rail

Annual operating costs for the recommended commuter rail service were estimated using data reported to NTD by local transit providers. As the recommended technology for the Greeley to Fort Collins route is commuter rail, RTD's A-Line was selected for comparative costing. Low, high, and average cost per revenue hour metrics were developed, which were then inflated to 2022 dollars using the Denver Metropolitan Area consumer price index for all urban consumers.

As summarized in Table 6-19, the average annual operating cost for the Greeley to Fort Collins commuter rail service is estimated at $472K. Additional information on the operational cost estimation methodology is provided in Appendix H.

Table 6-19. Annual Operating Cost Estimates: Greeley to Fort Collins (Great Western)

		Low	High	Average
Greeley to Fort Collins (Great Western)	Assumes 16 daily rail trips	$470K	$495K	$472K

Note: All costs in 2022 dollars

6.5 Equity Analysis

This section provides an overview of environmental justice and Title VI regulations and considerations for LINKNoCo. It also includes a preliminary demographic analysis, which demonstrated that low-income, minority, and disproportionately impacted communities are present within proximity of the stop locations identified for the three Foundational Projects.

Environmental Justice

Recipients of FTA funds are required to comply with Executive Order 12898 and Department of Transportation (DOT) Order 5610.2(a) by incorporating environmental justice principles into transportation planning, decision-making processes, and environmental review processes. Environmental justice analysis evaluates the effects of programs, policies, and activities on low-income and minority populations (environmental justice populations). Furthermore, the analysis should identify and address, as

appropriate, disproportionately high and adverse human health and environmental effects on environmental justice populations. Environmental justice principles direct agencies:

- To ensure full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

Title VI

Title VI of the Civil Rights Act of 1964 prohibits discrimination by recipients of federal financial assistance based on race, color, and national origin, including matters related to language access for limited English proficient (LEP) persons. It is one tool for agencies to achieve the principles of environmental justice and imposes statutory and regulatory requirements that are broader in scope than environmental justice. There may be some overlap with environmental justice but engaging in environmental justice analysis will not satisfy Title VI requirements. Similarly, a Title VI analysis will not necessarily satisfy environmental justice because Title VI does not include low-income populations.

Title VI is intended to ensure that no person is excluded from participation in, or denied the benefits of, transit services based on race, color, or national origin. The following equity analyses may be required in subsequent phases of planning for premium transit in the North Front Range, depending on the scope of the transit project.

- A Title VI equity analysis is required if the project includes the construction of a facility, such as a vehicle storage facility, maintenance facility, operation center, etc.
- A Title VI service and/or fare equity analysis.
- A description of the procedures by which the mobility needs of minority populations are identified and considered within the planning process.

A checklist of Title VI requirements is found in Appendix I.

NFRMPO Environmental Justice Plan

In 2021, NFRMPO adopted an Environmental Justice Plan to serve as a guide for enhancing environmental justice considerations in transportation planning initiatives across Northern Colorado. This plan ensures the agency has plans, programs, and projects that consider the needs of all residents of the region. The plan describes the region's demographics and discusses areas of improvement for environmental justice analysis. Furthermore, it contains actionable best practices and recommendations for improving environmental justice in the region. As the Foundational Projects advance in subsequent planning phases, this plan can provide guidance for incorporating environmental justice principles into the project within the context of the North Front Range. Several considerations are noted here.

Beyond the low-income and minority communities that are the focus of environmental justice, NFRMPO’s Environmental Justice Plan identifies communities of concern in the

region. These include LEP populations, older adults and youths, populations with a disability, female-headed households, the homeless and unhoused populations, and zero-car households. Although they are not considered environmental justice populations, these additional communities of concern should be analyzed and considered alongside the minority and low-income environmental justice categories as part of the Regional Transportation Improvement Plan and call for projects.

The NFRMPO Environmental Justice Plan provides potential benefits and burdens of new transit services in environmental justice communities. It also suggests potential mitigation strategies. A new enhanced bus, rail, or BRT service could have the following benefits:

- Faster service to key destinations.
- Higher capacity to move more people.
- Economic development.

These new transit services may also bring the following burdens:

- Reduced local service due to high capital cost and competitive routes.
- Cost for low-income passengers.
- Property acquisition.
- Could raise property value and exacerbate affordability issues.

Mitigation strategies suggested by the report include:

- Provide low-income subsidized passes.
- Provide meaningful neighborhood/community involvement during planning processes.

Preliminary Demographic Analysis

The project team conducted a preliminary demographic analysis for the Foundational Projects. Low-income, minority populations, and disproportionately impacted communities were identified within a half-mile of each identified stop location. The low-income and minority populations in these areas were then compared to the North Front Range overall. The results indicate that each Foundational Project has stations with Environmental Justice Areas and Disproportionately Impacted Communities in proximity to the stations. Two of the Foundational Projects have a greater percentage of minority and low-income communities compared to the North Front Range region.

Data Sources and Definitions

Low-income and minority populations were calculated using the US Census American Community Survey 5-Year Estimates. The low-income data was derived from the US Census Bureau's calculation of poverty status. Minority populations include all people except white, non-Hispanic population. In 2021, Governor Polis signed HB21-1266, a piece of legislation that will advance environmental justice and help the state progress

toward reaching its science-based climate goals. The disproportionately impacted communities are defined by Section 3 of HB21-1266 as:

- A community that is in a census block group where the proportion of households that are low-income, that identify as minority, or that are housing cost-burdened is greater than 40%; or
- Any other community as identified or approved by a state agency, if the community has a history of environmental racism perpetuated through redlining, anti-Indigenous, anti-immigrant, anti-Hispanic, or anti-Black laws; or is one where multiple factors may act cumulatively to affect health and the environment and contribute to persistent disparities.

Data Analysis Results

The results of the preliminary equity analysis demonstrate that the Loveland to Greeley (US 34) and Greeley to Fort Collins (Great Western) alignments have a greater percentage of minority and low-income communities compared to the North Front Range overall. These two alignments also serve a greater number of environmental justice areas and disproportionately impacted communities compared to the Windsor to Loveland alignment.

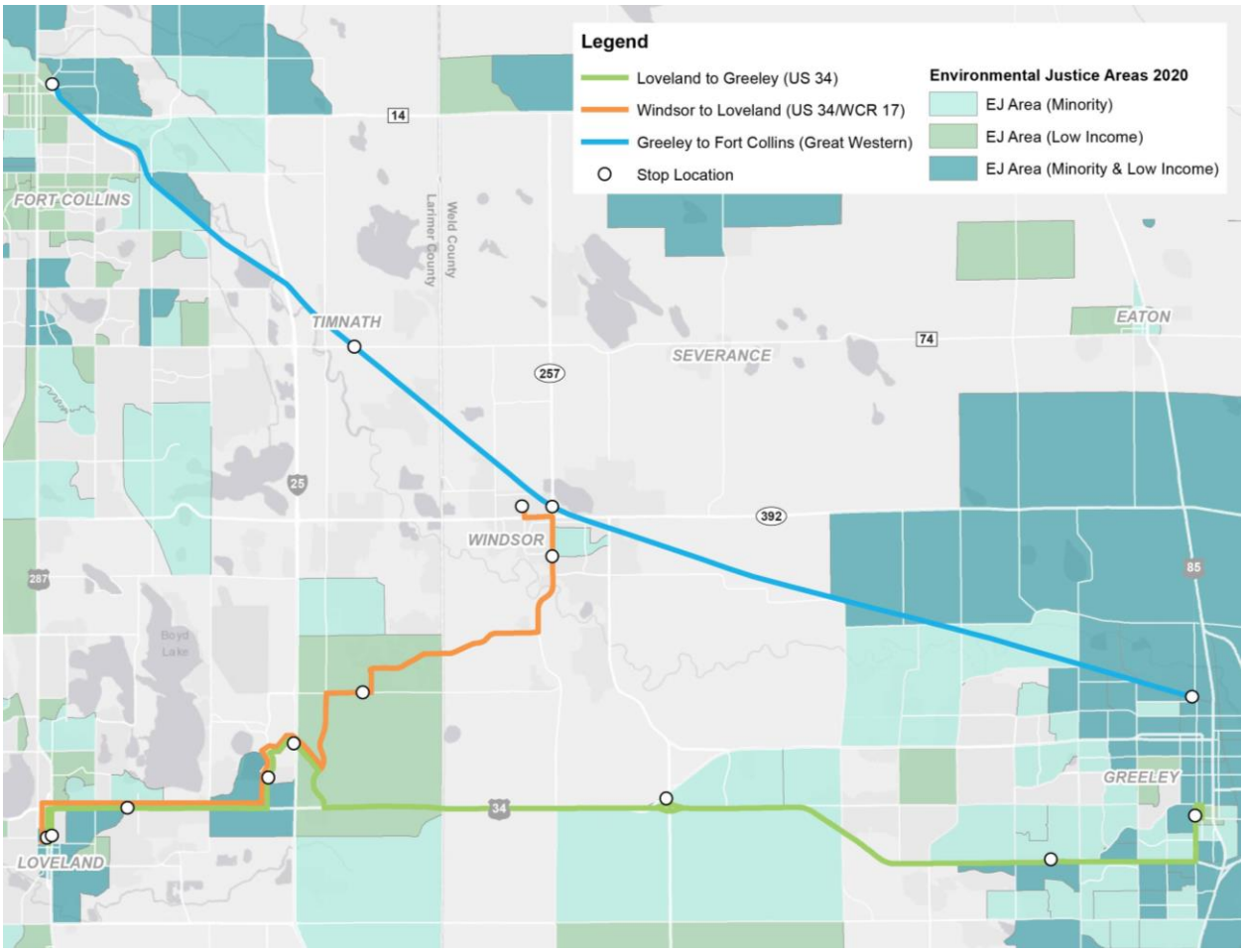
The results of this analysis are summarized in Table 6-20. The Environmental Justice Areas and their proximity to the priority projects' stop locations are displayed in Figure 6-9. The disproportionately impacted communities are displayed in Figure 6-10.

Table 6-20. Equity Analysis Results

	Total Population	Minority Population		Population for Whom Poverty Status is Determined	Low-income Population		EJ Areas Served	Disproportionately Impacted Communities Served
	Number	Number	Percent	Number	Number	Percent	Number	Number
Loveland to Greeley (US 34)	16,396	4,725	28.8%	13,467	2,131	15.8%	22	12
Windsor to Loveland (SCR 17/US 34)	12,127	2,424	20.0%	12,032	1,004	8.3%	7	2
Greeley to Fort Collins (Great Western)	6,189	2,825	45.6%	5,845	1,144	19.6%	13	11
Region	509,522	132,021	25.9%	493,148	58,980	12.0%	198	120

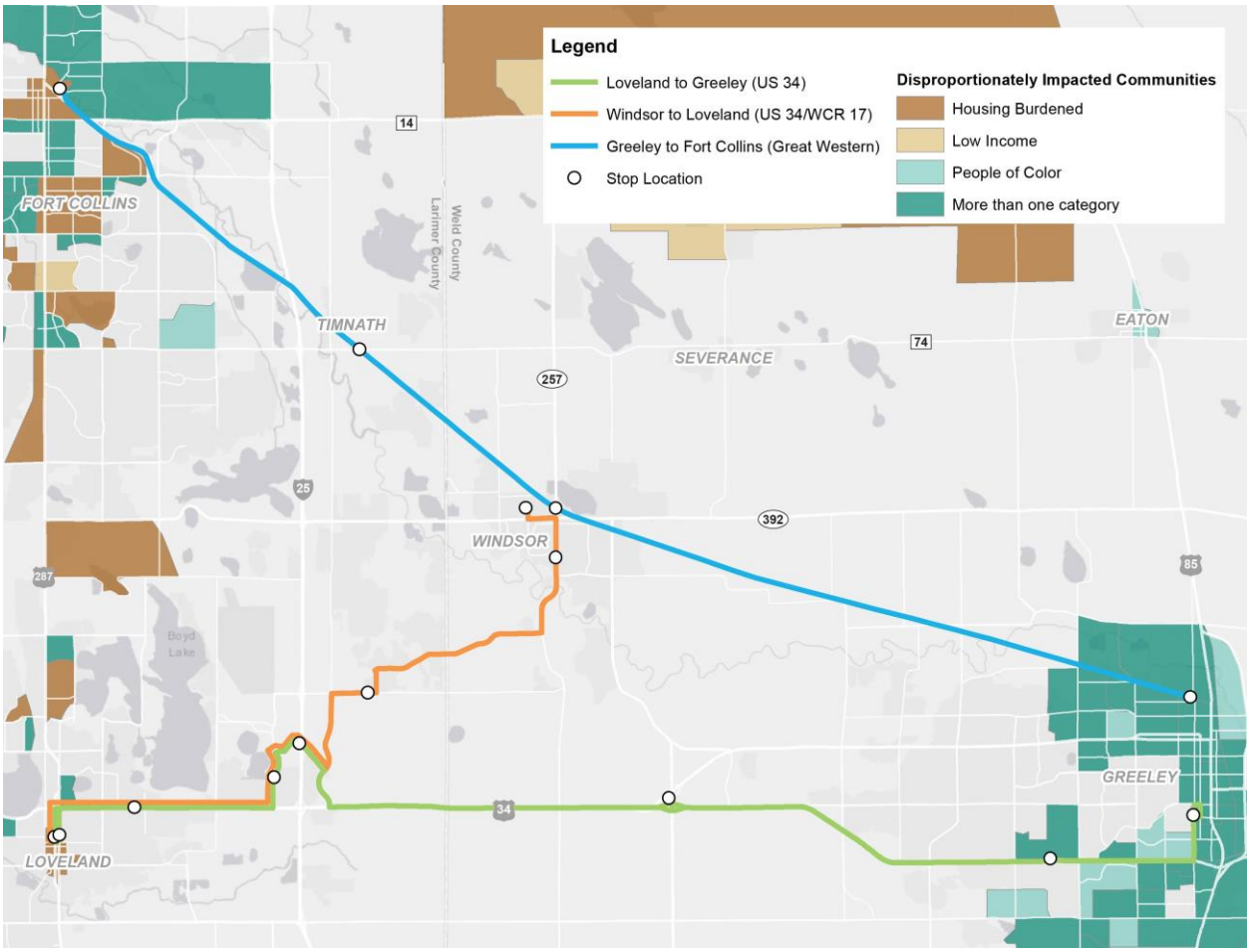
Note: route totals are for half-mile stop areas, not full alignment
Source: ACS 2020 5-year estimates; NFRMPO, 2022

Figure 6-9. Environmental Justice Areas



Source: NFRMPO, 2022; HDR, 2022

Figure 6-10. Disproportionately Impacted Communities



Source: NFRMPO, 2022; HDR, 2022

6.6 Governance

Implementing premium transit service in any Foundational Project alignments will require coordination between multiple project partners. None of the alignments can be implemented by one entity alone because all alignments cross at least two jurisdictions. Therefore, a governance structure is required to support cross-jurisdictional decisions and the implementation and operation of premium transit services.

For the LINKNoCo effort, the project team identified the range of potential governance structures and worked with stakeholders to narrow these to a set of reasonable governance options that would work for the North Front Range. The governance options would continue to advance for additional evaluation and development in parallel with the future planning and project development of the alignments. This report does not define the final governance structure but provides information to inform future decision-making at the local level.

Governance structures may need to allow for decision-making and authority to complete any of the following activities:

- Advancing further planning and design.
- Project development activities such as preliminary designs, development of conceptual service schedules, or preparing financial plans that may be required to obtain federal funding.
- Purchase and ownership of property to preserve right-of-way or for other transit facilities such as stations and vehicle maintenance.
- Solicitation and administration of design and construction contracts to build transit infrastructure.
- Execution of contracts to obtain rights to operate in railroad right-of-way, to operate transit bus service, to purchase vehicles, or to implement a fare collection system.
- To provide funding and resources to execute project implementation or manage the administration of agreements between project partners.

Project Partners

A wide range of potential project partners may be needed to advance the priority alignments beyond the planning stage and participate in a governance structure. Project partners may include various North Front Range jurisdictions and state entities depending on the alignment's geography. Various project partners served as representatives on the GFPAC to guide the governance options analysis. Table 6-21 includes potential project partners.

Table 6-21. Potential Project Partners

Local Jurisdictions	Counties	Regional Entities	State Entities
City of Fort Collins City of Greeley Town of Windsor Town of Timnath City of Loveland Town of Johnstown Town of Severance	Weld County Larimer County	NFRMPO	CDOT

Existing Governance Structures

The project partners already have an example of an established regional governance structure. The NFRMPO leads planning activities in the region and is governed by a board structure comprised of participating jurisdictions.

In addition, there are multiple cross-jurisdictional transit services being operated through IGA-based governance structures. The IGAs between various partners allow transit services to operate across jurisdiction boundaries, significantly benefiting regional mobility. The existing IGAs allow specific services and activities to provide regional transit services, define who operates the service, and define who bears the risk associated with operating the services. The IGAs are renewed and entered into on an

annual basis. This IGA governance model currently in use for two regional services has proven to work successfully for North Front Range communities thus far.

FLEX

The FLEX service is a collaboration between five local entities to deliver express regional bus service between Fort Collins and the City of Boulder and regional bus service between Fort Collins and Longmont. FLEX is operated by The City of Fort Collins's transit operator, Transfort, and funded by the City of Boulder, City of Longmont, City of Loveland, Town of Berthoud, and Boulder County. The route is supported with FASTER transit funds and funding from Colorado State University (CSU) and the University of Colorado (CU) Boulder. As an example agreement, the FLEX IGA is included in the governance memorandum in Appendix J.

Poudre Express

The Poudre Express is a regional bus service linking Greeley, Windsor, and Fort Collins. These three jurisdictions collaborate as partners to fund and implement the service with support from CSU. The service is operated by GET. As an example agreement, the Poudre Express IGA is included in the governance memorandum in Appendix J.

Governance Options Under Colorado Law

To determine the range of potential governance options, the project team identified and analyzed the various governance options for the implementation of transit service allowable under Colorado law. Governance options were evaluated by both by phase and by alignment.

Options Summary

Colorado law allows for the delivery of transit services under a variety of options. Based on Colorado law, three potential options were identified that allow for a regional entity to cross jurisdictional boundaries. Table 6-22 further details the three options.

Table 6-22. Governance Options

	Intergovernmental Agreement	Regional Transportation Authority	New Special District
Description	Any combination of state or local government entities may enter into an IGA to exercise the powers those entities already have.	An MPO may exercise its authority to act as a regional transportation authority.	Any combination of state or local government entities may enter into an IGA to exercise the powers those entities already have.
Citation	Colo. Const. Art. XIV, § 18(2); C.R.S. § 29-1-201 et seq.	C.R.S. § 43-4-601 et seq.	Colo. Const. Art. XIV, § 18(2); C.R.S. § 29-1-201 et seq.

	Intergovernmental Agreement	Regional Transportation Authority	New Special District
Example	FLEX; Poudre Express	Gunnison Valley Transportation Authority; Pikes Peak Rural Transportation Authority; Roaring Fork Transportation Authority; San Miguel Authority for Regional Transportation; South Platte Valley Regional Transportation Authority	Front Range Passenger Rail District, RTD

Project Partners' Goals

Integral to the consideration of governance options was input from jurisdictional stakeholders. The GFPAC provided input and guidance through the identification and analysis of the governance options. The GFPAC was comprised of key policymakers who serve on the NFRMPO Planning Council and executive representatives from several transit providers in the region and large academic institutions. Public engagement activities, early stakeholder interviews, and the project Guidance Committee also served as touch points to guide the development of the options. The GFPAC developed the following goals, which were used to focus on a set of governance options:

- Keep the approach simple until the case for the need for transit service is clearly established.
- Avoid creating more government entities.
- The local entities in the region (not the state legislature) should determine what is best for the region.
- Take advantage of existing resources, prior investments, and build on current services.
- Preserve options for future project delivery; provide guidance to project partners on how they can support future projects.
- Provide flexibility.
- Continue to work with CDOT.

Considerations – Other Projects

Examination of existing governance structures in use in the North Front Range and other parts of Colorado resulted in the following considerations that informed and helped to narrow the governance options:

- **Responsible party designation.** Most organizations with multiple jurisdictions identify a single entity as responsible for management and operations. This arrangement seems to have benefits in working with contractors and in responding to everyday challenges in transportation operations.

- **Transit agency expertise.** Multiagency governance or consolidation into other transit agencies can make sense due to FTA capital and operating funding programs. Having FTA as a primary funding partner may make transit agencies appropriate partners or contractors.
- **Administrative costs and burdens.** Relying upon a local provider to operate a regional route puts all the operational responsibility for providing the service on one entity. At some point, the administrative costs and burdens it incurs as a result of that service may outstrip its core mission, which is to deliver transit service at a local level.
- **Pursuit of near-term opportunities while preserving options**. As a project plan is being developed, it is important to pursue any near-term opportunities to deliver the project while still preserving all reasonable options. For example, it may be advantageous to start to preserve right-of-way now before a capital funding source is identified.

Governance Evaluation – Phase

The three governance options examined included IGAs, a regional transportation authority (RTA), and special districts. These options were evaluated against both the identified goals and considerations from other projects. Based on the analysis and guidance from the GFPAC, governance utilizing IGAs was identified as the preferred option in the near term, provided there would be an opportunity to consider other options as the Foundational Projects are further defined.

The project team evaluated how governance options might evolve over the life of a project.

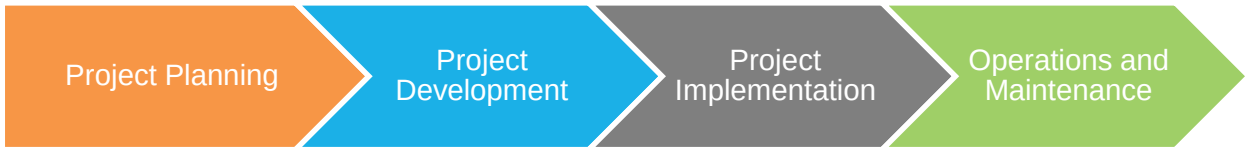
Evolution of Governance by Phase

LINKNoCo represents one step in the transit planning process. This effort prioritized and identified the three priority alignments to continue planning and project development. Future planning will continue to define the alignments to match the appropriate governance structure. The primary focus currently is to: (1) demonstrate the need for transit service to build support, (2) preserve property and right-of-way (where possible), and (3) identify funding to ensure maximum flexibility when a more defined implementation plan is completed. In the subsequent planning stages, incremental actions will be required to establish the political and financial goodwill to proceed. As a result, the governance structure is likely to evolve and scale up as the alignments' details are refined.

Governance Needs by Phase

The governance structure should serve the needs of each phase of a project. Figure 6-11 depicts the four phases of project delivery agreed upon by the GFPAC.

Figure 6-11. Phases of Project Delivery



The activities in each phase require certain decisions to be made. A thoughtful governance structure will establish a framework for making the decisions necessary for that phase, and the framework must allow for efficiency and the appropriate authority. Table 6-23 identifies what the decision-making needs are at each project phase.

Table 6-23. Governance by Project Phase

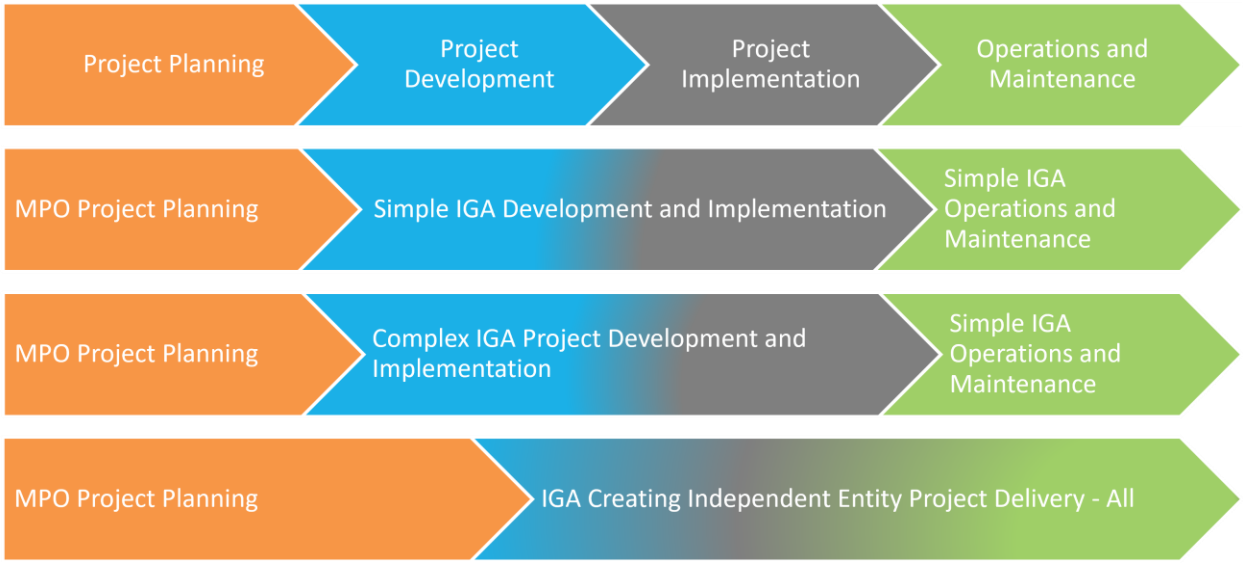
	Intergovernmental Agreement	Regional Transportation Authority	New Special District
Project Planning	Preliminary project investigation. Preservation of ROW.	Entity with authority over transportation planning along the alignment will formally adopt the plan. Entity will adopt resolution to acquire property by eminent domain or purchase property on the open market. Entity will appropriate “seed money” to fund planning studies.	Informal coordination between the stakeholders of a potential project is sufficient to begin the planning activities. Individual project partners can preserve right-of-way independently and contribute to the business justification through a stakeholder engagement process.
Project Development	Refine scope of a project to make it viable. Complete environmental reviews. Pursue financial planning – funding and coordination of financial plan; designation of funding sources; pursue grants. Preliminary engineering – funding and coordination of engineering and design work. Seek industry feedback to evaluate project delivery methods and project cost. Enter into third party agreements and right-of-way acquisition – coordination of early project work.	Project partners may enter into agreement to define project scope, roles and responsibilities, funding, and property. Project sponsor will complete environmental review, adopt financial plan, and pursue federal funds. Project partners will appropriate funds. A project partner will enter into contracts to provide design and engineering services. Project partners will engage in stakeholder outreach.	To begin project development with FTA, there must be a project sponsor responsible for defining the project scope, preparing a financial plan, and leading environmental reviews. A project sponsor must identify a formal decision making structure based on established legal authority to implement the project. This organizational structure can be exercised through the authority of a single entity. In more complex projects, an independent organization created for the purpose of delivering the project may be more feasible.

	Intergovernmental Agreement	Regional Transportation Authority	New Special District
Project Implementation	Design and construction. Financial close. Inspection and acceptance of new facilities and rolling stock.	Entity will issue solicitation for design and construction services. Entity will enter into funding and financing agreements. Entity will enter into and administer contracts. Entity will accept ownership of property and new facilities. Entity will hire staff or consultants to manage the project.	One entity can execute the procurement for design and construction contractor, coordinating decisions about project design and construction with project partners through an IGA. If the project has multiple funding sources or other complexities, coordination with funding can be accomplished through an IGA. As the project becomes more complex, requiring more decisions or risk sharing, an IGA may be too limited and an independent organization created for the purpose of delivering the project may be more feasible.
Operations and Maintenance	Provide transit service within the designated service area per service standards documented in grant. Maintain facilities and vehicles; asset management and replacement.	Entity may enter into contracts to deliver service. Entity may create new department or separate entity to operate service. Entity will appropriate funds.	Transit service could be provided by an existing transit provider, new private provider, CDOT, or within authority of local jurisdiction through an IGA, such as current practice in the region. Having a single transit entity may have some advantages, such as a dedicated source of funds, dedicated transit experts, more efficient decision making for day-to-day operations.

Evolution of Governance Structures for Regional Needs

The approach to governance is not static, and no one solution may be applicable for the length of a project. Figure 6-12 depicts the potential evolution of governance structures as project and transit service operations mature.

Figure 6-12. Evolution of Governance Options



Governance Evaluation – Alignments

The three Foundational Projects could evolve differently. Therefore, the likely governance needs for each were evaluated individually.

Decisions regarding governance must consider whether the three Foundational Projects will be delivered separately or as a single project. For each of the three priority alignments, two potential governance options were considered: (1) proof of concept and (2) all-phases project delivery, representing the two "ends of the spectrum" of complexity.

- **Proof of concept**: Minimal infrastructure investments; get transit service running to prove a viable need; attract funding for additional improvements.
- **All-phases project delivery**: Planning and development for new standalone service that includes design/build/operate transit infrastructure, vehicles, and operations/maintenance.

Loveland to Greeley (US 34)

This alignment was recommended as part of the low investment scenario for the 2045 RTE. Table 6-24 describes the structure of an IGA to deliver this alignment.

Table 6-24. IGA Structure Loveland to Greeley (US 34)

Strategy	Practicable IGA Structure
Proof of Concept	Identifies sponsor entity (City or County) willing to operate service – advantage to COLT/GET who have structure established to receive formula funds. Other jurisdictions would have to agree to allow service provider to operate in their jurisdiction; would require evaluation to determine if existing service provider has authority to operate outside its jurisdiction. If this makes it prohibitive for COLT/GET to operate the service, then Loveland, Greeley, Weld County, Larimer County could agree to contract with a private operator. One entity would still need to hold the contract.

Strategy	Practicable IGA Structure
	Describes service parameters: route, frequency, ridership standards; allocates authority or process for modifications to service parameters. Identifies operations budget and funding sources; project partners commit to appropriate funds to provide funding by determined formula. Identifies capital investments required along with schedule, budget; project partners commit to delivery responsibility or to appropriate funds to provide to delivery entity. Allocates responsibility for known risks through insurance, liability, and other assignment of responsibilities. Describes decision-making process and metrics for evaluation of proof of concept and evaluation of thresholds to implement a regional approach.
All-Phases Project Delivery	Similar to above but would be driven by funding requirements to meet up-front capital costs and to ensure long-term funding to operate service justifying more significant up-front capital costs. May include a more permanent decision-making body such as a governing board with articles and bylaws that describe the authority of the board and how the board can make decisions.

Windsor to Loveland (WCR 17/US 34)

This alignment was recommended as part of the high investment scenario in the 2045 RTE. There is a potential to expand service to Severance and Berthoud. Table 6-25 describes the structure of an IGA to deliver this alignment.

Table 6-25. IGA Structure Windsor to Loveland (WCR 17/US 34)

Strategy	Practicable IGA Structure
Proof of Concept	Identifies sponsor entity (City or County) willing to operate service – advantage to COLT because it is the only entity with an established structure to receive formula funds. Other jurisdictions would have to agree to allow service provider to operate in their jurisdiction; would require evaluation to determine if existing service provider has authority to operate outside its jurisdiction. If this makes it prohibitive for COLT to operate the service, then Loveland, Greeley, Weld County, Larimer County could either agree to contract with a private operator. One entity would still need to hold the contract. Describes service parameters: route, frequency, ridership standards; allocates authority or process for modifications to service parameters. Identifies operations budget and funding sources; project partners commit to appropriate funds to provide funding by determined formula. Identifies capital investments required along with schedule, budget; project partners commit to delivery responsibility or to appropriate funds to provide to delivery entity. Allocates responsibility for known risks through insurance, liability, and other assignment of responsibilities. Describes decision making process and metrics for evaluation of proof of concept and evaluation of thresholds to implement a regional approach.
All-Phases Project Delivery	Similar to above but would be driven by funding requirements to meet up-front capital costs and to ensure long-term funding to operate service justifying more significant up-front capital costs.

Strategy	Practicable IGA Structure
	May include a more permanent decision making body such as a governing board with articles and bylaws that describe the authority of the board and how the board can make decisions.

Greeley to Fort Collins (Great Western)

This regional rail alignment was recommended as part of the full buildout scenario for the 2045 RTE. Table 6-26 describes the structure of an IGA to deliver this alignment.

Table 6-26. IGA Structure Greeley to Fort Collins (Great Western)

Strategy	Practicable IGA Structure
Proof of Concept	Because of the difficulty in establishing a rail corridor, a proof of concept would be based on more frequent service of the Poudre Express. Either a new IGA or amendment to the existing IGA would describe the service parameters and funding for more frequent service of the Poudre express, as well as a decision making process and structure to evaluate metrics and determine when the begin and complete activities for project development of a rail corridor.
All-Phases Project Delivery	Identifies owner of the rail right-of-way and established operator of the rail service. Owner of rail ROW would obtain permission to construct and operate at the rail stations. Owner of railway would accept associated risks. Owner of railway could accept funding from other project partners.

Governance Recommendations

Based on feedback from the GFPAC, the recommended governance options focused on maximizing the use of IGAs. IGAs can cover a range of potential funding and operational agreements. The IGA structures set the stage for partnerships to pursue and receive funding at the local, state, and federal levels. Using GFPAC input, governance analysis, and alignment evaluation, the project team narrowed the recommendations to three different variations of the IGA structure. The three governance recommendations are:

Option 1. Simple IGA.

Option 2. Complex IGA.

Option 3. Independent entity created by IGA.

Simple IGA

A simple IGA may be an option for a proof-of-concept strategy in which the intent is to increase the frequency of bus service along the alignment.

A single lead entity would drive the project and make all the decisions (and carry all the risk) with financial contributions from other project partners. Ideally, the lead entity would be one of the cities at the terminus of the alignment that already has a transit provider (GET, Transfort, COLT). The IGA could specify particular parameters or triggers about the nature of the service delivery, such as frequency, route, hours of service, etc., in

which funding is withdrawn as a consequence. The IGA would be similar to the existing IGAs in the North Front Range.

A simple IGA would work in a scenario with minimal infrastructure improvements where the primary financial investment is for operations and maintenance. The utility of a simple IGA would be lost as the project scope gets more complex. Some likely thresholds in which the simple IGA is no longer feasible are:

- Implementation requires the participation and coordination of too many entities with conflicting goals or risk profiles.
- Making decisions informally and executing an annual IGA becomes too time-consuming, complicated, or inconsistent.
- Administration and operational costs of delivering service are hard to quantify; local funding contributions are not aligned with how those costs are valued.

Complex IGA for Capital Investments

A complex IGA may be an option once the project scope becomes more complicated (more capital improvements, for example), leading to increased decisions by the project partners or a need to share responsibilities and risks between the partners.

The IGA would set up a board-like structure with shared decision-making by representatives from the impacted project partners. The “board” would organize regular meetings and have a voting structure; the IGA would specify whether and what decisions are binding between the parties. The IGA would not create a separate entity with its own independent legal authorities, such as to receive and pay funds, purchase and own property, enter into contracts, or hire employees. The project would still act formally through one of the project partners, and the IGA would be the legal “tie” between them.

This approach would be better if the project includes adding infrastructure, or multiple parties interested in weighing in on service delivery (frequency, for example), or potentially if there is a partnership agreement with CDOT. However, there would be limitations. The partnership would be supported by project partner staff and would be dependent on the actions of the governing boards of all of the project partners to take actions required under the IGA. Some likely thresholds in which the complex IGA is no longer feasible are:

- A single dedicated, dependable source of funding is needed.
- To get a reasonable project cost, there needs to be a single delivery lead for contracting and financing beyond the capacity of one individual project partner.
- All local project partners are not able to ensure their governing bodies can make timely, consistent commitments to implement the project.

Independent Entity Created by IGA

A separate legal entity created by an IGA between the project partners may be the only option to implement rail service for the Greeley to Fort Collins (Great Western) alignment.

The level of complexity to implement rail service and ensure there is sufficient support from the community would require an independent legal entity that has its own authority to acquire right-of-way or contract with the railroad owner. The liability and risks of such an action likely would not be taken by one lead project partner but rather would need to be held by an independent entity.

The independent entity would be created by an IGA between the parties. The IGA would establish a governance structure, such as a board with defined members, voting rights, and definitions on the authority of the entity created. The authority of the entity would be defined by Colorado law.

In addition, even if premium transit service is delivered through one of the other governance options, a regional approach may be more beneficial as services mature. Some of those thresholds may be as follows:

- A cohesive regional approach is essential for successful transit service (e.g., coordinated local connections, consistent fare system, regional branding).
- Federal or state entities require a certain organizational approach to provide grant funds.
- There is an established interest in building a network with feeder service and local service as part of a regional network plan beyond the initial three alignments.
- Improvements essential to the project cost are seen as shared costs, and there is a greater return by doing things as a region.
- Funding requires a vote of the people who want to ensure their interests are adequately represented in the entity responsible for delivery.

Governance Conclusions

A governance structure is needed because no one project partner can act independently to implement any of the Foundational Projects, which cross multiple jurisdictions.

The NFRMPO was created to manage regional transportation planning; it makes sense that the NFRMPO lead the planning efforts to define the project scope for each Foundational Project.

The region has had success with simple IGAs to deliver regional bus service (FLEX, Poudre Express); this is a good foundation from which to build. It makes sense that an IGA of some form is the first option to deliver a proof-of-concept service that may be necessary to demonstrate the need for regional transit service and build support for a regional approach.

As the project scopes are more defined and the needs for project development become more complex – for funding, financing, contracting, property acquisition, risk sharing, etc. – the project partners will need to consider a more complex governance structure. A governance structure in which the project partners can make efficient and consistent decisions will be key to success, particularly in obtaining federal and state funding.

6.7 Funding and Financing

This section provides an overview of the funding and financing research conducted for LINKNoCo. A mixture of federal, state, and local funding and financing options were researched and evaluated. These options included traditional federal funding, such as the FTA Capital Investment Grant (CIG) program, U.S Department of Transportation's (USDOT) Rebuild American Infrastructure with Sustainability and Equity (RAISE) program, state funding from CDOT, as well as other local funding streams that could be established through an RTA or an IGA. The research also incorporated the federal funding opportunities from the Bipartisan Infrastructure Law (BIL).

The research is presented by funding source in a matrix that summarizes the menu of funding and financing options. The analysis also presents considerations for NFRMPO before pursuing specific funding options. Additional details on the funding analysis can be found in Appendix K.

Criteria Methodology

The project team surveyed relevant federal, state, and local funding and financing options, analyzing each for applicability to the governance options according to the criteria outlined in Table 6-27. In addition to the criteria, the following was evaluated to further refine the funding and financing options to determine the most promising funding and financing options:

- Relative magnitude, stability, and potential future growth of funding/financing options.
- Long-term and near-term historic funding trends.

Table 6-27. Funding and Financing Criteria Information

Criteria	Criteria Description
Funding Source	Name of the funding source.
Source Type	Indicates if it's a funding option (i.e., grants) or a financing mechanism (i.e., loan).
Funding Type	Designates if the source is competitive, discretionary, or not applicable (financing mechanism).
Agency	The lead agency that manages/sponsors the funding or financing source.
Current NFRMPO funding	Indicates if the funding or financing source is used by NFRMPO currently.
Funding Description	A short description of funding source .
Funding Availability	Indicates the amount of funding or financing available for use.
Application Timeline	Indicates when the application process opens/closes.
Match Requirements	Indicates any federal/local match requirements.
Eligible Applicants	Indicates potential eligible primary applicants.

Criteria	Criteria Description
Eligible Projects	Indicates the types of projects eligible for funding.
Eligible Project Elements	Indicates the project elements eligible for funding (e.g., construction, planning, design, operations, etc.).
Eligible Modes of Projects	Indicates the modes of projects eligible for funding (e.g., highways, bridges, tunnels, etc.).
Source	Provides a URL to the funding/financing source's website.
Contact	Provides a contact to reach out to for more information about the funding/financing source.

Funding and Financing for Governance Structures

The three potential governance options, as recommended in the Governance section, are:

Option 1. Simple IGA.

Option 2. Complex IGA.

Option 3. Independent entity created by IGA.

The potential funding and financing options for each of the governance options are described in more detail in the following sections.

Simple/Complex IGA

A simple IGA is similar to how the existing IGAs are now and would work in a scenario with minimal infrastructure improvements and capital investments (all financial investment is operations and maintenance). Ideally, the lead entity for this governance structure would be either one of the cities or counties at the end-of-line.

A complex IGA approach would be better if the project includes adding infrastructure or if multiple parties have an interest in weighing in on service delivery (frequency, as an example), or potentially if they are to bring in CDOT or set up a more regional transit system.

Of the menu of funding and financing options available, Table 6-28 presents the most promising opportunities for both simple and complex IGAs.

Table 6-28. Simple/Complex IGA: Key Funding Options

Federal	FTA – Capital Investments Grants (CIG) Small Starts
	USDOT – Local and Regional Project Assistance (RAISE)
	USDOT – National Infrastructure Project Assistance (MEGA)
	USDOT – Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program
	USDOT – Advanced Transportation Technology and Innovation (ATTAIN)

State	Multimodal Transportation and Mitigation Options Fund (MMOF)
	FASTER Transit Grants Program (S.B. 09-108)
	Front Range Passenger Rail District Opportunities
Local	Local Funding (Potential)
	Developer Improvements

Independent Entity Created by IGA

A separate legal entity created by an IGA between the project partners is a likely option to implement rail service and to ensure there is sufficient support from the community. This structure would be needed for the acquisition of right-of-way or for contracting with the right-of-way owner.

Of the menu of funding and financing options available, the most promising opportunities for the independent entity created by IGA are listed in Table 6-29.

Table 6-29. Independent Entity Created by IGA: Key Funding Options

Federal	FRA – Consolidated Rail Infrastructure and Safety Improvements (CRISI)
	FRA – Railroad Crossing Elimination Grant Program
	FTA – CIG New Starts
	USDOT – Grants/Nationally Significant Multimodal Freight and Highway Projects (INFRA)
	USDOT – RAISE and MEGA
	Other IIJA Grant Opportunities
State	Front Range Passenger Rail District Opportunities
Local	Local Funding (Potential)
	Developer Improvements

Key Considerations for Funding/Financing Options

The eligibility requirements for the funding options above are extensive, and eligibility for funding will vary depending on the final definition of the alignments and the selected alignment and governance option. The existing funding programs could potentially provide a meaningful share of funding for a project. However, these options are insufficient to provide the significant contributions required to fund the capital for the program or any operating costs not paid from farebox revenues. Full funding of a project will likely require the approval of a new local funding program. If new funding programs were developed at the local level, these funding streams could be paired with other existing funding options identified above.

As part of future planning and project development, a value capture analysis would be appropriate. Value capture refers to an approach that can be used to help pay for an infrastructure project's capital or maintenance costs by monetizing the development benefits that the infrastructure project creates and channeling them into a project fund.

The most common revenue tools available for value capture tend to fall into three general categories: tax-increment financing (TIF), special tax assessments, and development-impact-based fees. Each of these general categories has a different type of tax/fee structure, each resulting in a unique financial profile in terms of revenue stream stability, predictability, growth over time, and overall risk and return.

The funding and financing options identified should be further refined based on the project scope, delivery timeline, and other key factors. While there are several funding and financing options that a project could potentially pursue as a multijurisdictional group or with a primary lead applicant, it is important to note that some of the funding or financing options should be pursued after considering key factors.

Some of the key considerations for evaluating suitable funding and financing options are:

- **Match Requirements.** Several of the funding options require a certain level of matching funds. If the project sponsor is unable to provide the match requirement, it may be unfeasible to pursue the identified funding option.
- **Project Shovel-Ready.** Many funding and financing options favor shovel-ready projects. The project sponsor should pursue a funding option when the project (scope, delivery timeline, etc.) is clearly defined.
- **Governance Option.** There are some funding and financing options pursuable by multijurisdictional groups (IGA) or by a primary lead applicant. As such, a clear governance structure is needed that allows for as many opportunities to pursue funding and financing options as possible.
- **Nature of the Funding Option.** Some funding options are discretionary and highly competitive, and the project sponsor cannot rely on that funding stream. Other options, such as loans/financing mechanisms, may require pledged revenue, which may involve voter approval.
- **Application Timeline.** Each funding and financing option varies on the application/apportionment timeline. There are funding options that may take substantial lead time before they can be applied towards a project (i.e., local funding agreed upon by each jurisdiction under an IGA). As such, the application timelines of identified funding and financing options should be closely monitored, and a strategy should be in place in advance of the funding needs.

6.8 Forward Momentum – Next Steps

The opportunity exists now to build on the momentum generated through LINKNoCo's collaborative effort. Residents, employers/employees, and decision-makers within the North Front Range can proactively shape the region's mobility future and transform the way people move by advancing priority alignments. LINKNoCo presents a logical but bold plan to continue developing a true regional transit network and realizing the vision of the NFRMPO's RTE. LINKNoCo's recommendations serve as a guide to coordinate the key next-step actions for the Loveland to Greeley (US 34), Windsor to Loveland (WCR 17/US 34), and Greeley to Fort Collins (Great Western) transit connections. While some services can be implemented faster than others, it is important to remember that

advancing these three Foundational Projects is just the start. The goal is to build on their successes and continue to construct a complete transit and multimodal network throughout the NFRMPO area. Accomplishing this will take time, but the returns on these incremental investments have the potential to improve regional mobility for decades to come.

Maintaining the momentum of LINKNoCo will require multiple next steps. Figure 6-13 illustrates the major actions and next steps.

Figure 6-13. Forward Momentum