FINAL

February 2021

Transportation Master Plan

FREDERICK
COLORADO

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Town of Frederick Transportation Master Plan
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LIST OF ACRONYMS AND ABBREVIATIONS

AADT	average annual daily traffic
ACP	Access Control Plan
ADA	Americans with Disabilities Act
BID	Business Improvement District
BUILD	Better Utilizing Investments to Leverage Development
CBE	Colorado Bridge Enterprise
CDOT	Colorado Department of Transportation
CIP	Capital Improvements Plan
CMAQ	Congestion Mitigation and Air Quality
CPW	Colorado Parks & Wildlife
CR	County Road
CTF	Conservation Trust Fund
DOLA	Department of Local Affairs
DRCOG	Denver Regional Council of Governments
E.	east
EIAF	Energy/Mineral Impact Assessment Fund
FASTER	Funding Advancements for Surface Transportation and Economic Recovery Act of 2009
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GIS	geographic information system
GOCO	Great Outdoors Colorado
H+T	Housing and Transportation
HSIP	Highway Safety Improvement Program
HUTF	highway user tax funds
I	Interstate
INFRA	Infrastructure for Building America
LEHD	Longitudinal Employer-Household Dynamics

MMOF	Multimodal Options Fund
MPO	metropolitan planning organization
NHPP	National Highway Performance Program
NHS	National Highway System
OHV	off-highway vehicle
PAC	project advisory committee
PDO	property damage only
PEL	Planning and Environmental Linkages
POST	Parks, Open Space, and Trails
PPP	Public-Private Partnership
RAQC	Regional Air Quality Council
ROW	right of way
RTA	Regional Transit Authority
RTD	Regional Transportation District - Denver
RTP	Recreational Trails Program
SH	State Highway
SRTS	Safe Routes to School
STIP	Statewide Transportation Improvement Program
STBG	Surface Transportation Block Grant Program
SVVSD	St. Vrain Valley School District
TAP	Transportation Alternative Program
TDM	travel demand management
TIP	Transportation Improvement Program
TPR	Transportation Planning Region
TMP	Transportation Master Plan
URA	Urban Renewal Authority
U.S.	United States
US DOT	United States Department of Transportation
V/C	volume to capacity ratio
W.	West

INTRODUCTION

Frederick is a family friendly community with an ideal location north of the Denver metropolitan area in the area known as the Carbon Valley. Residents enjoy a small-town feel, a historic downtown, and hundreds of acres of parks and preserved open space. The Town is proud of its heritage, open space, and the quality of life it provides.

The town is well served by its location along the Interstate (I)-25 corridor, which provides a north-south route along Colorado's Front Range. State Highways (SH) 119 and 52 border Frederick to the north and south, respectively, and provide east-west routes and quick access to I-25.

With its proximity and accessibility to the Denver area and other cities to the west and the north, a significant percentage of Frederick residents commute to their jobs outside the community.

In recent years, its prime location combined with the appeal of Frederick's quality of life has resulted in a high rate of population growth and land development. Industrial, commercial, and residential neighborhoods are all expanding, and formerly rural land uses are changing. As a result, the demands on the town's transportation infrastructure are increasing.

Purpose

This inaugural Town of Frederick Transportation Master Plan (TMP) identifies the strengths and challenges of the Town's existing transportation network and through a public discussion sets the vision for the next 10-20 years. This TMP establishes a framework to guide the Town's transportation-related decisions by documenting community goals and a range of investment strategies adaptable to future funding.

Transportation Master Plan Approach

As Frederick developed its initial TMP, it was important to understand and evaluate the following:

- How do people move about between their daily activities, such as work, school, recreation, and community services?
- What are the primary roadways and how is the network performing now? Will the system accommodate continued growth?
- What do the residents want for their community?
- How does the Town's existing network connect to and fit within the existing regional network?
- How can a small town with limited resources accomplish significant goals over the long-term?

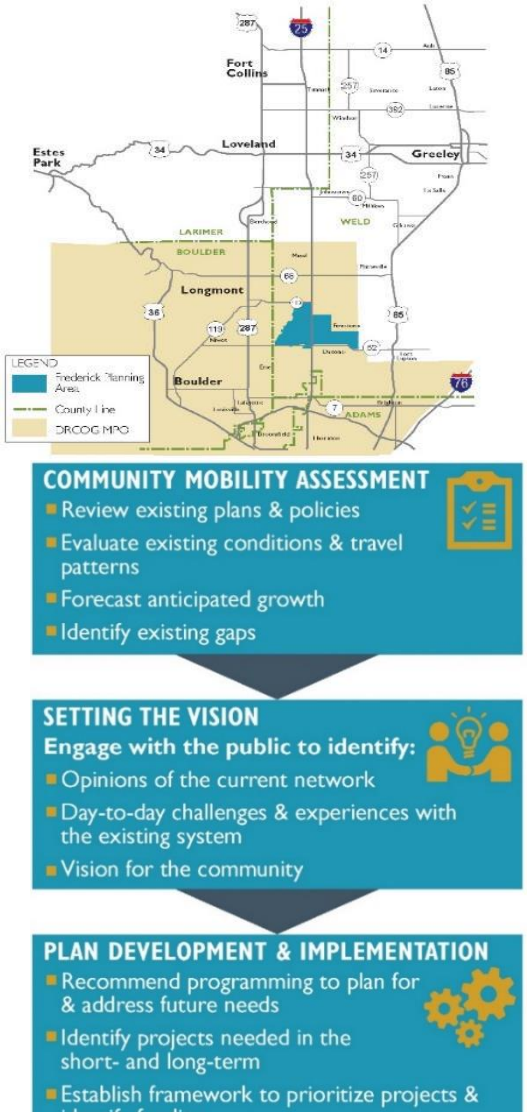


Figure 1. TMP Process

The chapters in this TMP detail the results of the assessment of existing conditions, vision setting with the public, and plan development.

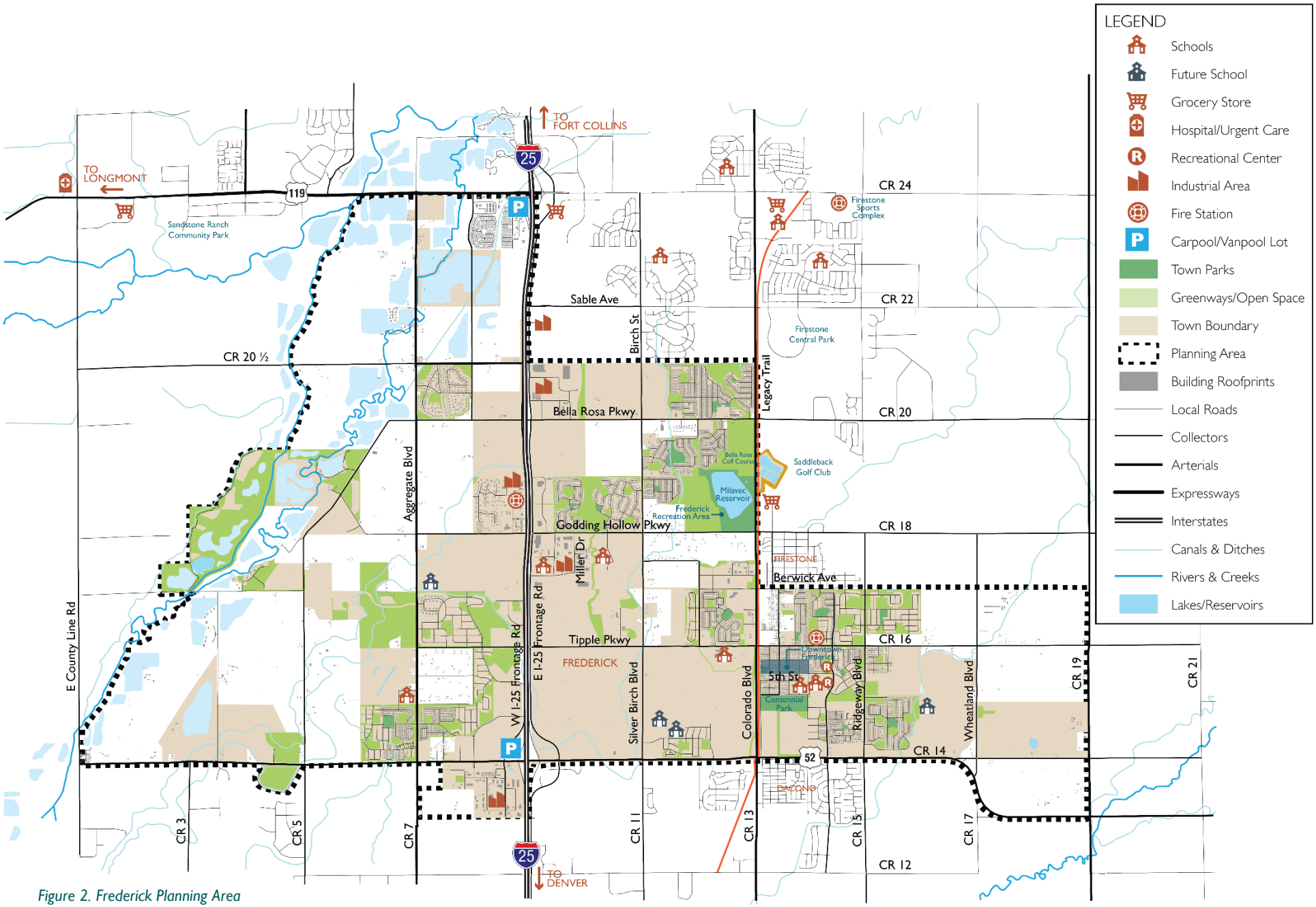


Figure 2. Frederick Planning Area

COMMUNITY MOBILITY ASSESSMENT

Frederick's transportation system includes visually obvious assets such as roadways, trails, sidewalks, and traffic control equipment. Less obvious to the public are elements such as planning documents, regional studies, maintenance plans, and other data and tools that Town staff use to inform the transportation-related decision-making process. Roadway condition, roadway capacity, projected growth, community character, economic development, and regional transit opportunities, also affect travel demand and must be considered in planning efforts.

A community mobility assessment inventories the existing transportation system and identifies gaps in the network and deficiencies in system performance that negatively impact community goals. The following pages illustrate existing roadway, safety, active transportation, and parking characteristics. The full State of the System Report is in Appendix A.

Figure 2 shows the boundaries of the Frederick planning area. The planning area spans south to north from SH 52 to SH 119, and from E. County Line Road on the west side to County Road (CR) 19 on the east.

The planning area extends beyond the municipal boundary (shaded in tan) and includes areas that may be considered in the future for annexation and development.

In the southwest corner of the planning area, west of Aggregate Boulevard and south of Bella Rosa Parkway, there is overlap with the Erie, Colorado, planning boundary.

Relevant Plans & Studies

The following planning documents and studies are significantly relevant to Frederick's transportation planning process.

- **Frederick Comprehensive Plan, 2015.** The comprehensive plan includes transportation goals and recommendations. This TMP supports the Comprehensive Plan and further develops the vision, goals, process, and projects needed for a safe and efficient transportation system.
- **Parks, Open Space, and Trails (POST) Master Plan, 2011.** Frederick's Transportation Master Plan provides the overarching transportation policies. The POST Master Plan is currently being updated with detailed recommended projects for on-street, off-street, trail facilities, and connections to improve the active transportation network.
- **CO 52 Planning and Environmental Linkages (PEL) and Access Control Plan (ACP), 2020-2021.** The Colorado Department of Transportation (CDOT) is currently conducting a PEL and ACP for the 41.6-mile corridor from SH 119 in Boulder Country to SH 79 in Weld County. With approximately 9 miles of SH 52 serving as the south boundary of Frederick and its planning area, the Town's input to CDOT regarding desired transportation features such as medians, safe bicycle and pedestrian (bike/ped) crossings, separate and parallel shared use path, and access control is critical.
- **Carbon Valley Transit Service Feasibility Study, 2011.** The study documented transit options and conclusions that transit service may require a regional partnered approach along with land use changes to enhance transit feasibility.

Additional plans relevant to Frederick's transportation system and a brief description of the applicability of each to the Town of Frederick is provided in the State of the System Report.

Community Demographics and Mobility Trends

Frederick is a growing community with neighborhood developments, parks and open space acreage, agricultural land, light industrial and commercial developments, and St. Vrain Valley School District (SVVSD) schools located on both the east and west sides of I-25. The downtown district, approximately two miles east of I-25, continues to serve as the civic and cultural core of town.

U.S. Census Quick Facts reports that 62.1 percent of Frederick's population is 18- to 64-year-old adults, also considered working adults. Children younger than 18 years old make up 28.8 percent, with the remaining 9 percent being seniors over the of 65.

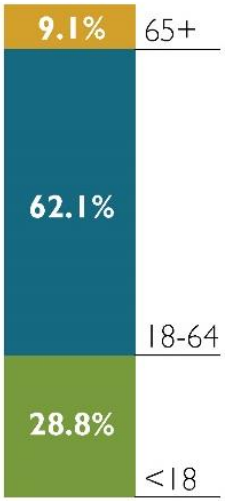


Figure 3. Percent of Population by Age

The Town's website identifies 30 companies as major employers, providing an opportunity for some residents to work in the town in which they reside. However, Longitudinal Employer-Household Dynamics (LEHD) data from the U.S. Census indicate most residents work outside the Frederick boundaries.

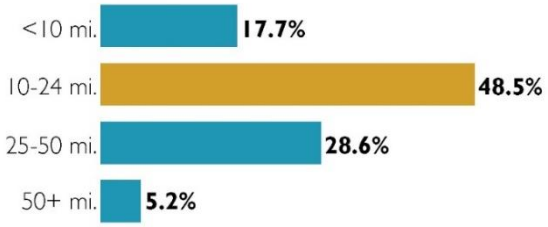
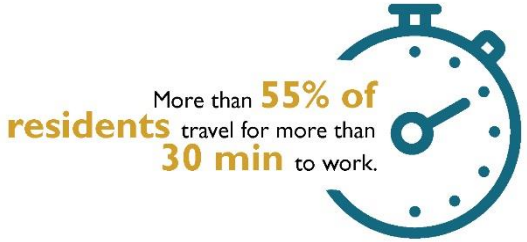


Figure 4. Frederick Residents' Commute by Distance

The top employers of Frederick residents are in Denver, Boulder, and Longmont. Less than 20 percent of Frederick residents work within a 10-mile commuting distance.

People who work in Frederick but live elsewhere travel from nearby locations: the top three cities are Longmont, Loveland, and Thornton.



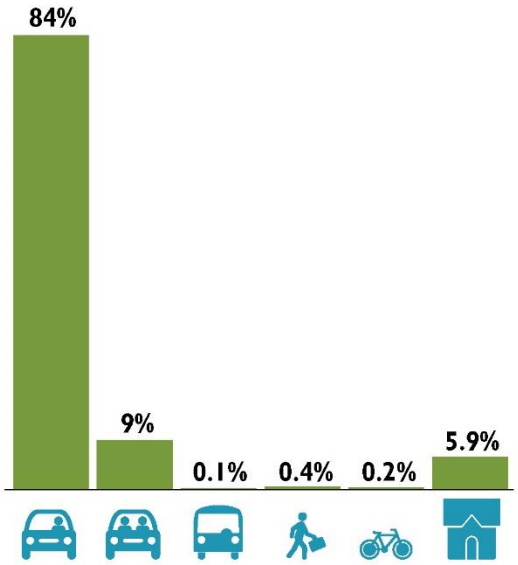


Figure 5. Frederick Residents' Commute by Mode

More than half of the population travel more than 30 minutes to get to work. Figure 5 shows 84 percent drive alone to their job and approximately 9 percent carpool. Nearly 6 percent work from home in typical circumstances prior to the Covid-19 pandemic. Less than one percent use transit, walk, or ride a bike to get to work.

The low number of transit users is attributed to Frederick's lack of convenient access to regional transit.

Housing and transportation costs are typically a household's most significant expenses. For a town or neighborhood to be considered affordable, the Center for Neighborhood Technology's H+T® Affordability Index has established a benchmark of 45 percent of household income.

Figure 6 shows that as a percent of household income, Frederick rates an H+T index of 59 percent, the sum of 32 percent of income needed for housing and 27 percent for transportation-related costs. The H+T Affordability data also reports there are 2.18 autos per household in Frederick, further indicating Frederick is a car-centric community.

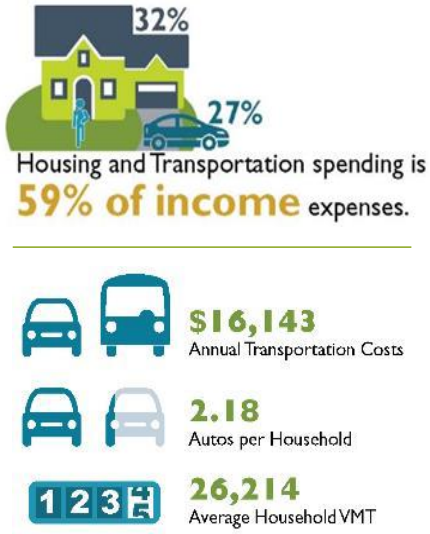


Figure 6. Frederick Residents' Transportation-related Cost Data from the Center for Neighborhood Technology's H+T Affordability Index

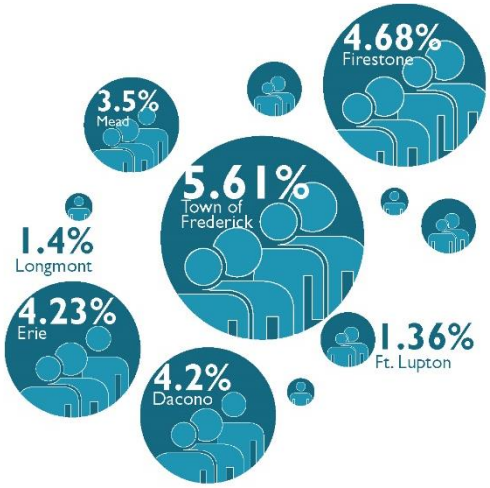


Figure 7. Frederick's Recent Population Growth Relative to Nearby Communities

In recent years, the development pace of Frederick outpaced the growth of most, if not all, of the nearby communities. Frederick has experienced steady population growth, averaging 5.6 percent annually over the last eight years, according to U.S. Census data.

Growth is expected to continue as the Town's appealing traits, including proximity to I-25 and nearby cities, will not change.

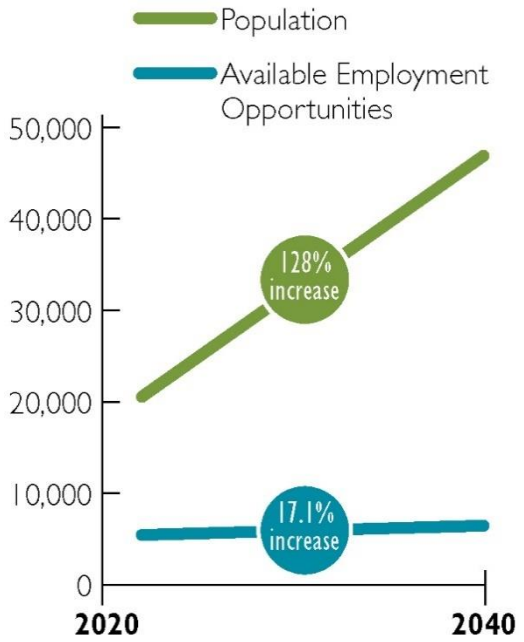


Figure 8. Projected Rate of Population Growth and Employment Opportunities

Growth projections of both employment and population within the Town of Frederick will increase the demand on all aspects of the Town transportation network. Regional connections will be critical to provide access to the larger economy as projected population growth significantly exceeds in-town jobs growth, as shown in Figure 8.

Existing Roadway Network & Vehicular Traffic Capacity Assessment

Roadway Network

One of Frederick's roadway network strengths is its well-maintained arterial grid. The parallel network of north-south and east-west corridors serves the town well. One challenge, however, is the disconnect of the east-west corridors due to I-25.

Functional classification is a hierarchy of roadway categories based on their intended ability to move traffic and provide access. Higher-level roadways generally provide greater mobility and fewer access points.

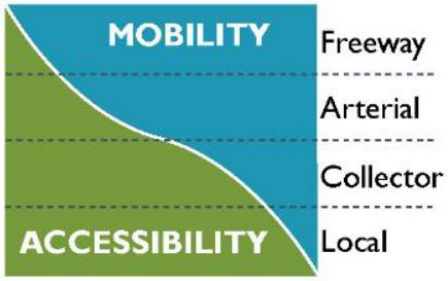


Figure 9 shows the functional classification of Frederick's key corridors, which are generally along Weld County section lines.

Frederick's designated major arterials are three north-south corridors -- Aggregate Boulevard, Silver Birch Boulevard, Colorado Boulevard – and Bella Rosa Parkway, an east-west corridor. Minor arterials include Tipple Parkway and Godding Hollow Parkway. Additional corridors significant to Frederick residents are managed by CDOT and include SH 52, SH 119, and the I-25 frontage roads.

Currently all Frederick corridors consist of two through lanes, one in each direction. Turn lanes are present at select intersections.

Figure 9 also shows that traffic controls include 15 traffic signals at intersections along SH 52, SH 119, and Colorado Boulevard. Eight intersections are controlled via 4-way stop. The Town has two roundabouts, one along Aggregate Boulevard and one at Colorado Boulevard and Fifth Street.

The Master Streets Inventory in Appendix D provides additional details regarding contextual data, design standards, speed limits, and truck routes, as well as existing bike and pedestrian facilities for priority corridors.

Figure 10 shows the Average Annual Daily Traffic (AADT) volumes obtained by the Denver Regional Council of Governments (DRCOG).

Traffic counts were recorded between August 2010 and 2018 as a part of regular count programs. As expected, the highest AADT is near the I-25 access points. Other significant locations include the AADT on SH 119 and SH 52, two major east-west corridors within the planning area bounds.

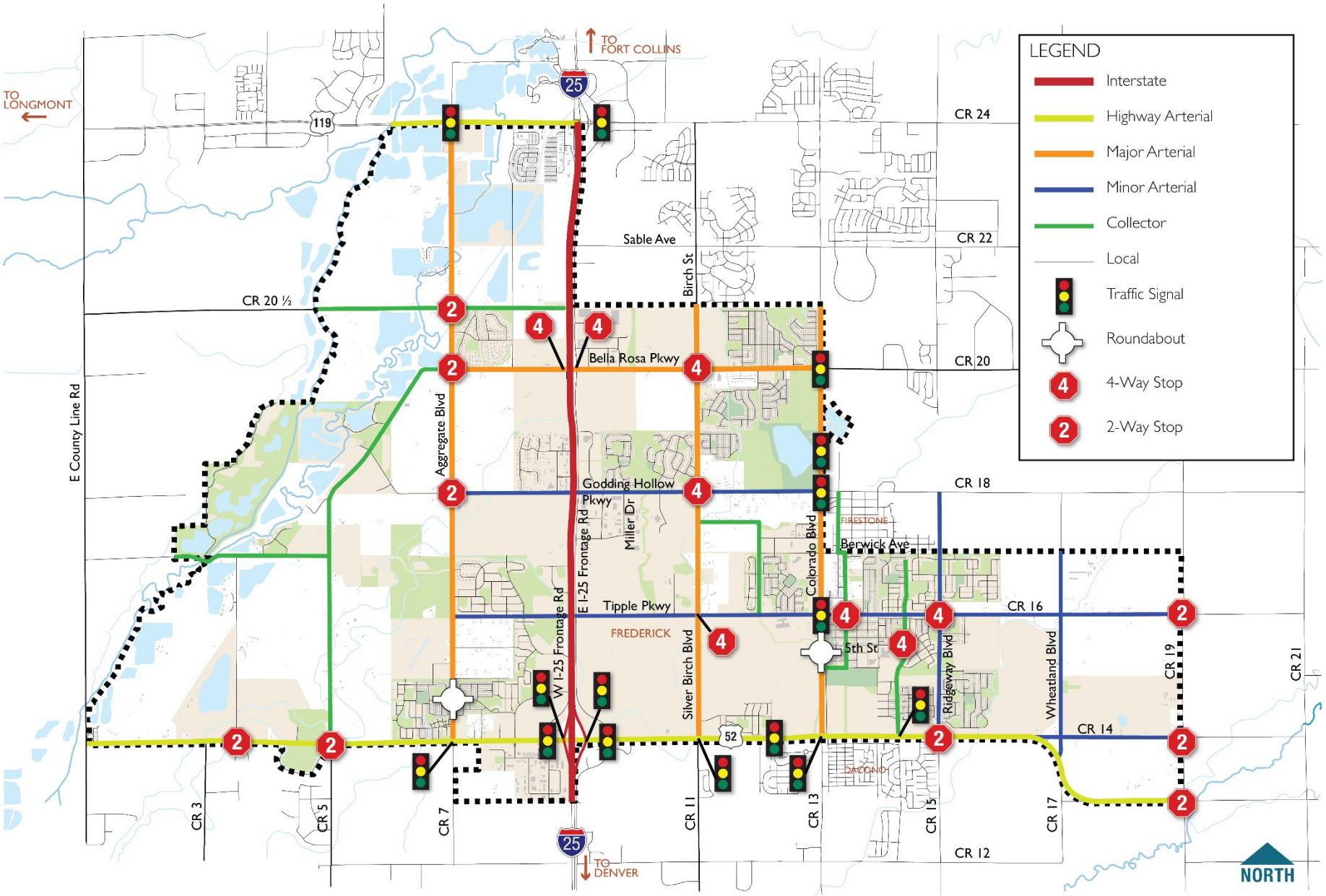


Figure 9. Roadway Network: Functional Classification and Intersection Controls

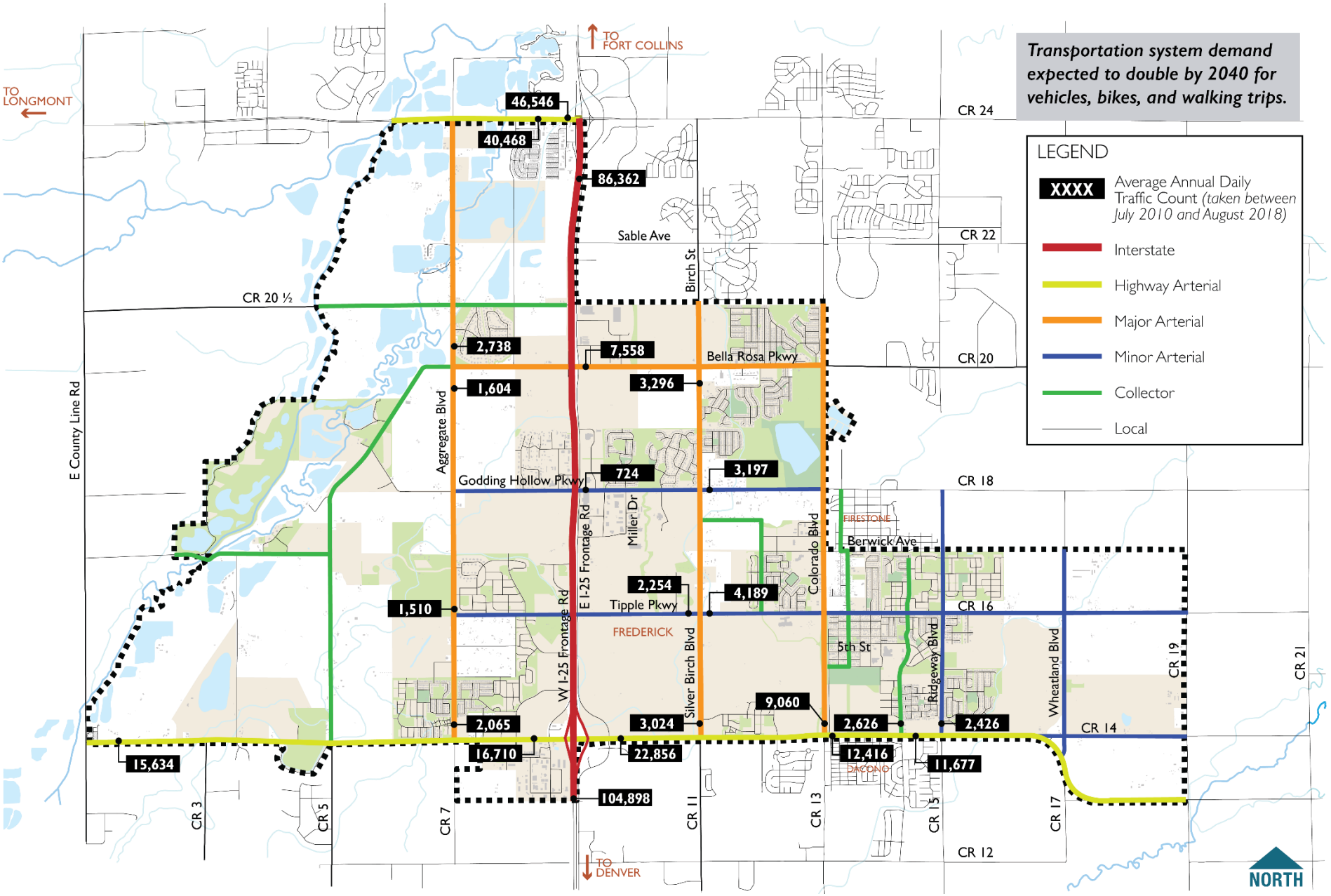


Figure 10. Roadway Network: AADT

Volume to Capacity Analysis

Traffic modeling analysis forecasts how today's network will handle projected 2040 traffic volumes on a daily basis and during peak hours. Figure 11 shows the 2020 and the 2040 daily volume to capacity (V/C) ratios resulting from the land use and growth estimates and the future baseline roadway network. Figure 12 shows the 2020 and 2040 peak hour V/C ratios.

The model volumes were post-processed using the NCHRP 765 methodology. This method compares the existing year model to available traffic counts and applies the relative difference to the forecasted 2040 traffic volume.

Travel demand forecasting is based on demographic data sets, which include household and employment estimates and forecasts. The next 20 years of residential and employment growth will increase traffic volumes and influence travel patterns in the Town of Frederick. The regional model accounts for anticipated growth not only within the Town of Frederick, but also the entire region. The model also accounts for DRCOG transportation projects that are expected to be funded and built by 2040.

Figure 11 (top) illustrates the 2020 roadway network daily V/C, with congestion along SH 52 and SH 119. At the daily level, the arterial network appears to be handling traffic volumes well.

Figure 11 (bottom) shows the 2040 roadway network daily V/C follows similar trends to the 2020 roadway network. The demand on the roadway network is higher, leading to higher congestion, but the network appears to be able to handle the daily traffic volumes well.

V/C Ratio	Condition and Need for Capacity-Related Improvements
< 0.80	acceptable v/c ratio (need for improvement unlikely)
0.80 to 1.00	nearing congestion zone (consider need for improvements)
>1.00	potentially congested (evaluate for improvements)

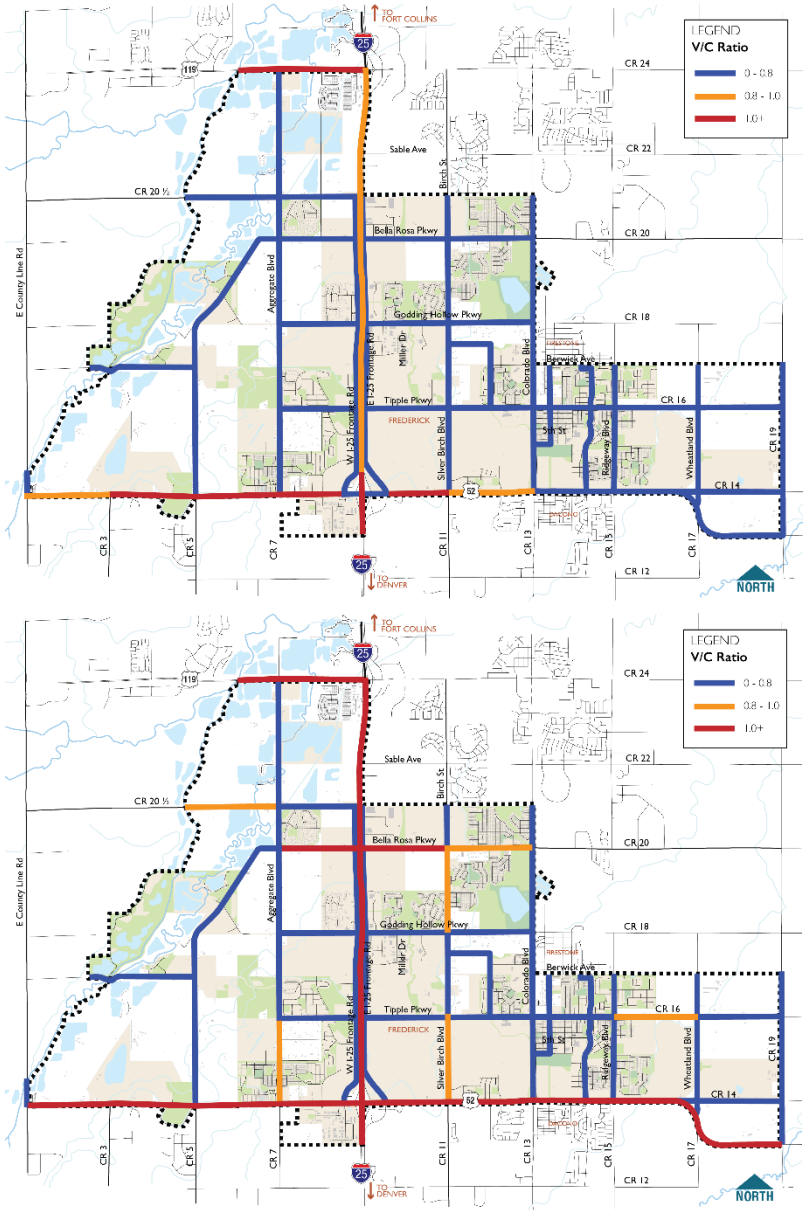


Figure 11. Roadway Network: Traffic Volume (2020, top, and 2040 Daily V/C)

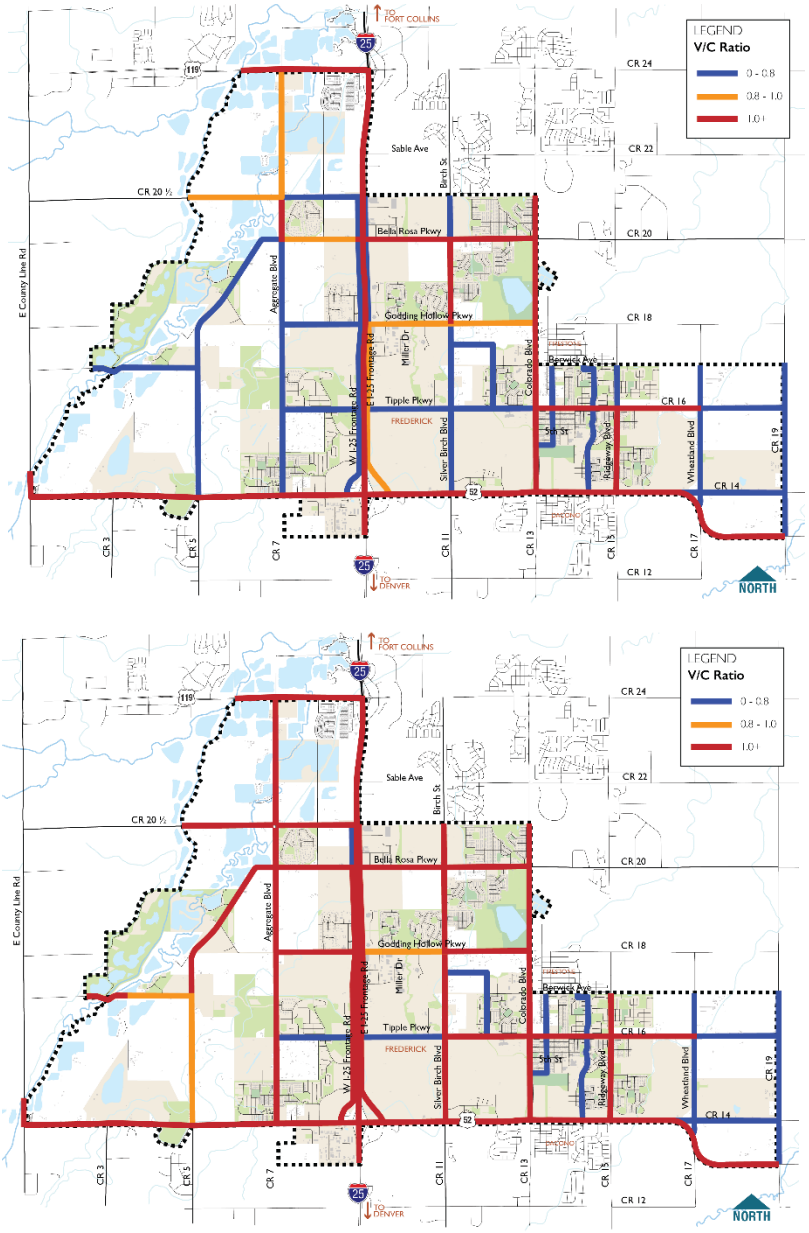


Figure 12. Roadway Network: Traffic Volume (2020, top, and 2040 Peak Hour V/C)

Figure 12 (top) shows that the 2020 peak hour V/C varies significantly from the daily levels shown on the prior page and that multiple areas suffer from capacity issues during the AM and PM peak hours of travel.

Figure 12 (bottom) shows the forecast 2040 peak hour V/C and illustrates that the roadway network is significant over capacity due to the increased demand on the roadway network during the peak travel times in a future condition.

The comparison of peak hour to daily V/C ratios provides information on the relative increase in congestion during peak travel times. The decision to implement capacity improvements should consider daily and peak hour congestion as well as other traffic related metrics including traffic volumes, delay, and safety.

Designing for peak hour congestion may require improvements that are not fiscally or land use appropriate. Peak hour traffic is significantly impacting the capabilities of the network during key travel times and selected capacity related improvements may be necessary. Choices ranging from least to most impactful include strategies to distribute peak hour traffic, intersection improvements (especially those with no turn lanes or non-signalized control), or the addition of new travel lanes. This choice illustrates Frederick's desire to right-size roadways.

The existing roadway segments that are currently overcapacity include SH 52 from east planning area to west of Colorado Boulevard, SH 119 from east planning area to I-25, and I-25 south of SH 52.

Forecast 2040 traffic indicates the same segments exhibiting increased stress (worse off), but there will be multiple new segments that are slightly over capacity or overcapacity in the future. The main segments are SH 52, SH 119, and I-25 as well as Bella Rosa Parkway from Colorado Boulevard to Bull Rush Road and various segments north/south of these roadways.

By 2040, most of the north-south moving roads are over capacity at the peak hour level. These roads include Aggregate Boulevard, Silver Birch Boulevard, Colorado Boulevard, and Ridgeway Boulevard along with the I-25 E. and W. Frontage Roads.

Safety

Vehicle crash information from the Weld County Sheriff's Department identifies the location, frequency, and severity of crashes in Frederick.

From 2014 to 2019, there were a total of 1,426 crashes in Frederick, averaging 238 crashes, 92 injury crashes, and zero fatalities per year. More than half of the total crashes occurred at the top 10 locations, as shown in Figure 13 and listed in Table 1.

Of the total number of crashes, 547 were injury crashes. The top 10 locations account for nearly half of the injury crashes.

The top two locations are at the intersections of SH 52 and the I-25 southbound and northbound off-ramps, respectively. These two locations account for nearly a third of the crashes that have occurred in the past six years. The third location is the intersection of E. I-25 Frontage Road and SH 52. This intersection had the highest amount of injury crashes.

The driver-related contributing factors most often cited were following too closely, careless driving, and 11 varieties of failure to yield (e.g., when turning left or at an intersection).

Table 1. Top Ten Crash Locations, 2014-2019

Location within Frederick	Total	Property Damage Only (PDO)	Injury	Fatal
SH 52 & I-25 Southbound On-ramp	445	433	12	0
SH 52 & I-25 Northbound Off-ramp	130	79	51	0
East I-25 Frontage Road & SH 52	117	35	82	0
Colorado Boulevard & Tipple Parkway	75	65	10	0
SH 52 & Silver Birch Boulevard	62	28	34	0
Colorado Boulevard & Godding Hollow Parkway	36	18	18	0
Tipple Parkway & Silver Birch Boulevard	31	27	4	0
SH 52 & Puritan Way	27	15	12	0
Silver Birch Boulevard & Bella Rosa Parkway	21	14	7	0
Bella Rosa Parkway & Aggregate Boulevard	20	18	2	0

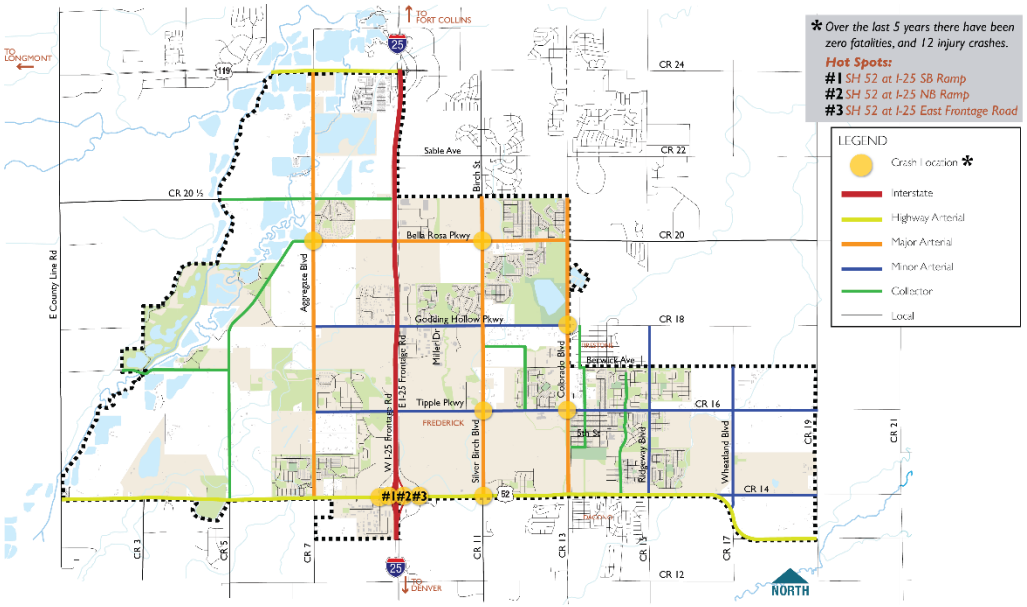


Figure 13. Top Ten Locations for Intersection-Related Crashes, 2014-2019

Bicycle & Pedestrian Network Analysis

Frederick's bicycle and pedestrian network serves the vital purpose of helping people reach their destination on bike or on foot and contributes to a healthy lifestyle and the environment. Trails and sidewalks provide connectivity from homes to schools, workplaces, markets, and other public places. There is strong community support for a well-connected active transportation network.

Figure 14 shows the downtown area and some neighborhoods have good sidewalk coverage. Along Colorado Boulevard, the Legacy Trail provides a complete north-south spine for the pedestrian network and is the only trail connecting Firestone, Frederick, and Dacono.

Frederick has been intentional about planning for pedestrian improvements.

- The Town's design standards specify the addition of sidewalks whenever new roadways are created.
- The Comprehensive Plan recommends closing critical sidewalk gaps and notes the Town's policy of upgrading aging sidewalk infrastructure with Americans with Disabilities Act (ADA)-compliant sidewalks.
- The POST plan recommends sidewalks be constructed to provide access as each new park is built.

The sidewalk network is further enhanced by the town's trail network, shown in red in Figure 14. There are approximately 35 miles of trails. The POST Plan documents approximately 50 miles of trail system improvements and an additional 20 miles of development-driven trail improvements. Like the sidewalk network, the trail network has isolated assets that lack connectivity.

Approximately 18 miles of Frederick's trail and sidewalk network is also classified as bicycle network because it is designated for shared use. The bicycle network comprises various types of facilities:

- local paths that provide access to parks and open spaces (approximately one mile of paved, shared-use paths)
- unpaved and off-street facilities (approximately 1.5 miles through various parts of Frederick; trails adjacent to the Carbon Valley Gymnastic Center and through Parkview Estates)
- paved and off-street facilities (trails that surround the Rinn Valley Ranch Neighborhood, Milavec Reservoir trail and adjacent to Raspberry Hill Neighborhood). These off-street facilities equate to almost 3.75 miles
- shared use paths (approximately 11.5 miles of network spanning various neighborhoods including the Savannah, Wyndham Hill, Raspberry and Eagle Valley neighborhoods. The largest portion of this category is the Legacy Trail.)

Although the bicycle network is expansive, it is not consistently connected. Bicycle facilities are primarily off-street and on-street bike facilities are rare.

Again, the highlight of the system is the Legacy Trail and the connecting trails that provide access to various neighborhoods. As shown in purple in Figure 14, other segments of the bicycle network provide access to specific neighborhoods but are not connected to the rest of the bicycle network, and there are gaps between the east and west sides of town.

Frederick is also intentional about planning for bike facilities.

- Design standards include bike facilities.
- The Comprehensive Plan notes gaps within the pedestrian network and highlights the three-mile stretch of SH 52 between Colorado Boulevard and Aggregate Boulevard. The addition of this sidewalk would provide continuity between the Legacy Trail, Downtown Frederick, and residential areas on the west side of I-25.
- The 2011 POST Plan has a comprehensive list of more than 60 miles of planned trail improvements and connections. Connecting a few existing trails to Milavec Reservoir, the Legacy Trail, and neighborhoods in and surrounding downtown Frederick would provide a bicycle network that connects all existing parts of Frederick located east of I-25. The biggest issue with the bicycle, sidewalk, and trails network is the gap between the east and west sides of Frederick.

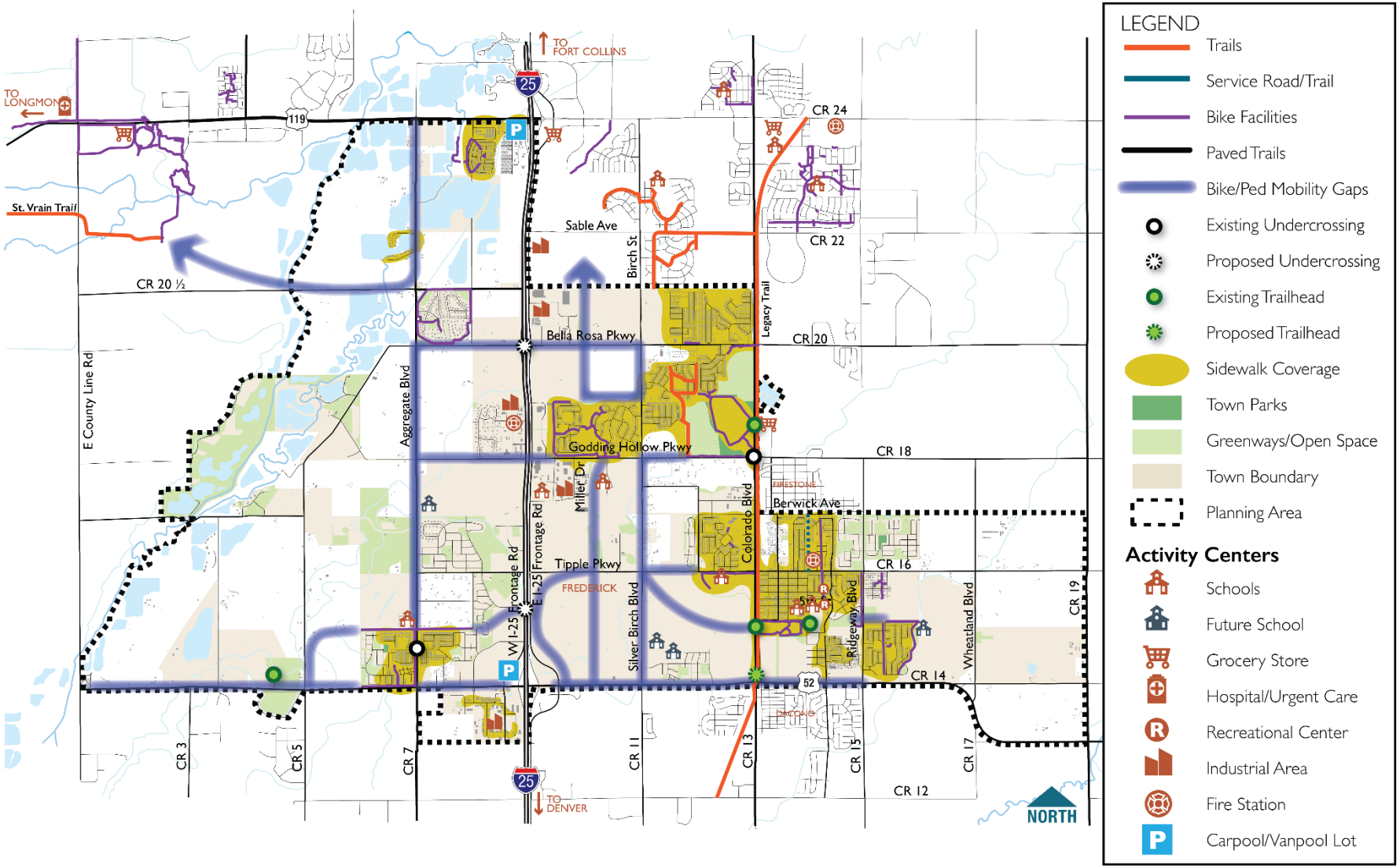


Figure 14. Existing Bicycle and Pedestrian Network

Parking

Section 2.8 of the Frederick Land Use Code details requirements for motor vehicle and bicycle parking. On-street parking in Downtown Frederick is designed to promote a pedestrian scale and encourage a perception of safety.

Frederick residents who travel along the I-25 corridor can choose from two free commuter parking lots, one north of town and one along the south boundary, SH 52.

- The southeast corner of I-25 and SH 119 has 102 parking spaces (5 handicap spaces)
- The northwest corner of I-25 and SH 52 has 94 parking spaces (4 handicap spaces)

Town Policies & Transportation Programs

In addition to previously mentioned planning documents, the Town's existing codes and established processes work together to guide the development and protection of the transportation system:

Land Use Code
The Land Use Code establishes the regulations and standards governing the use and development of land within the Town of Frederick.

Land Use Code, Article 2.
Community Design Principles & Development Standards

Section 2.7. Streets.
1. **Intent. The intent of the street standards is to establish a safe, efficient, attractive transportation system that promotes all modes of transportation and is sensitive to the environment…**

Section 2.9. Sidewalks, walkways, multi-use pathways, and trails.
1. **Intent. The intent of the standards for sidewalks, walkways, multi-use pathways, and trails is to assure a safe, convenient, and attractive pedestrian/bicycle system that minimizes conflicts between** vehicles**, bicycles, and pedestrians.**

Design Standards & Construction Specifications
Section 500, Street Improvements, provides the detailed specifications applicable to all street, alley, sidewalk, and bikeway systems. The standard establishes minimum right-of-way widths and cross-sections and notes that additional width may be needed to accommodate context-specific needs such as turn lanes, utilities, and bicycle or pedestrian facilities.

Development Review Process
The development review process is outlined in the Land Use Code. The process provides Town Staff the opportunity to ensure planned developments comply with the design standards (or seek a modification, waiver, or variance).

Right-of-Way (ROW) Permit Process
To protect and preserve ROW, the Right-of-Way Permit Process requires a review process for any work to be done within the Town's ROW.

Truck Routes & Oversize/Overweight Vehicle Permit Process
As established in the Municipal Code, the Board of Trustees has restricted truck travel to designated routes. Trucks or other vehicles exceeding 26,000 pounds or other stated dimensions must obtain an Oversize/Overweight Vehicle permit.

Street Maintenance Plan
The Town uses a Pavement Management System to manage its nearly 100 miles of public streets. The system, which includes software, engineering judgment, pavement inventory and condition, and maps, equips the Town Engineering Department and Public Works with essential information to inform maintenance strategies and budget planning. This strategy emphasizes the effectiveness of a strong preventative maintenance program that minimizes or eliminates the need for roadway reconstruction, which is typically more expensive.

SETTING THE VISION

Public Engagement

Public engagement is a vital part of many projects and the benefits are well documented, including better outcomes for all involved by addressing concerns, building community ownership in the final product, and paving the way for easier project implementation. This is Frederick's first-ever TMP and thus, it was essential to engage with the community and stakeholders early and often throughout the planning process. These engagement milestones helped establish common expectations about what a TMP is and how it will help shape the future of the community; community and stakeholder input throughout the project also ensured that the TMP was shaped by the community.

What We Did

Early in the planning process, the project team adopted an engagement plan that focused on in-person engagement activities including stakeholder interviews, pop-up events, and open-house meetings. In December 2019, the project team started implementing this engagement plan. However, in April 2020 all engagement opportunities pivoted to virtual platforms in response to social distancing guidelines associated with COVID-19.

Project Website

The project website, https://www.frederickco.gov/808/Transportation-Master-Plan, served as the primary portal of information for members of the public looking to learn more about the TMP, to stay informed of upcoming input opportunities and project milestones, and to provide feedback. Launched in December 2019, all printed materials and social media posts directed the public to the website to take the surveys, review survey results, and review project documents.

Social Media and Newsletter

The majority of engagement opportunities occurred virtually for this project and thus it was critical that the project team successfully updated the community about upcoming project milestones and input opportunities. A variety of tools were used to generate excitement and engagement for this project including Facebook, Instagram, Next Door, a write-up in utility mailers, and the Frederick Building on What Matters newsletter (March and May 2020). Complete newsletters can be found in Appendix B.

Figure 15. Town staff promoted the TMP public engagement through the Town's social media accounts.

Stakeholder Interviews

Over the course of a few days in January 2020, the project team conducted in-person, small group stakeholder interviews. A total of seven stakeholder groups were interviewed, for a total of approximately 30 people. Stakeholders represented:

- schools
- Town departments
- advocacy organizations
- developers
- oil and gas
- residents
- local businesses
- collaborating government agencies

Each interview was guided by a set of questions. However, each conversation was unique, and stakeholders could talk about items that were of most importance to them.

Figure 16. Common words that emerged from stakeholder interviews.

A list of key themes emerged when feedback from each stakeholder interview was consolidated.

- **Local Mobility:**
  The ability to move around within Frederick

- **Regional Connectivity:**
  The connectedness of Frederick's transportation network to the larger region

- **Travel Demand:**
  The need of the community to use transportation infrastructure to get to key destinations.

- **Community Character:**
  The traits, look, and feel of Frederick

- **Policies and Programming:**
  The tools, resources, and systems to help manage the Town's transportation system.

Project Advisory Committee (PAC)

A PAC was formed to support the development of the TMP by providing input on project milestones, acting as wise counsel, and helping to promote the effort within the larger community. The ten-member PAC consisted of citizens and Town staff. The PAC met five times during the planning process:

- January 22, 2020 (in-person): Introductions and Project Orientation
- April 15, 2020 (virtual): Community Survey Results, Draft State of the System Report, and Vision Setting
- May 20, 2020 (virtual): Workshop to Identify Priority Strategies
- September 23, 2020 (virtual): Review and Provide Input on Project List
- November 18, 2020 (virtual): Review Draft Transportation Master Plan

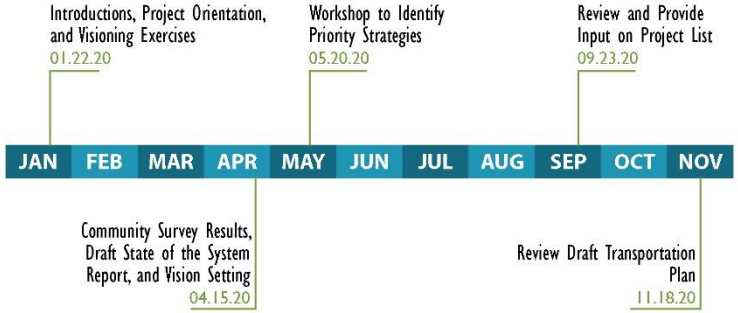


Figure 17. Timeline of PAC Meetings

Figure 18. Interactive Mentimeter exercises enhanced the PAC meetings.

On-line Community Surveys

Due to COVID-19, on-line surveys were the primary tool used to gather community feedback. Each survey was hosted on the project website and social media posts were used to generate community awareness and participation.

Survey #1: Using the themes developed from the stakeholder interviews and refined with the PAC, the first survey launched on May 1, 2020, and contained a series of questions to better understand the community's transportation patterns and vision for enhanced mobility. The survey closed on May 18, 2020, and approximately 350 people completed the survey.

The results were summarized into the following infographic and posted on the project website, complete survey results can be found in Appendix B.

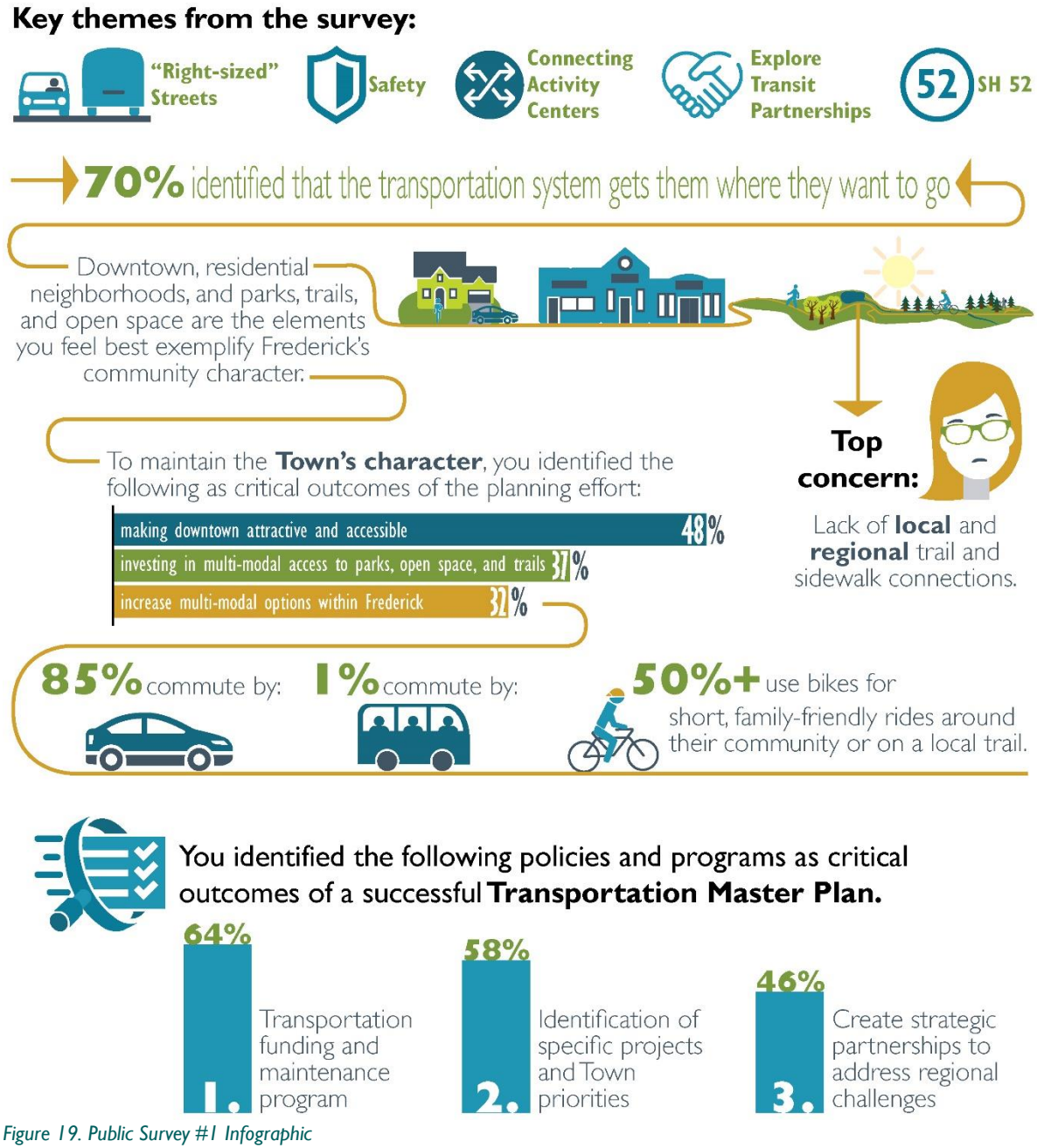


Figure 19. Public Survey #1 Infographic

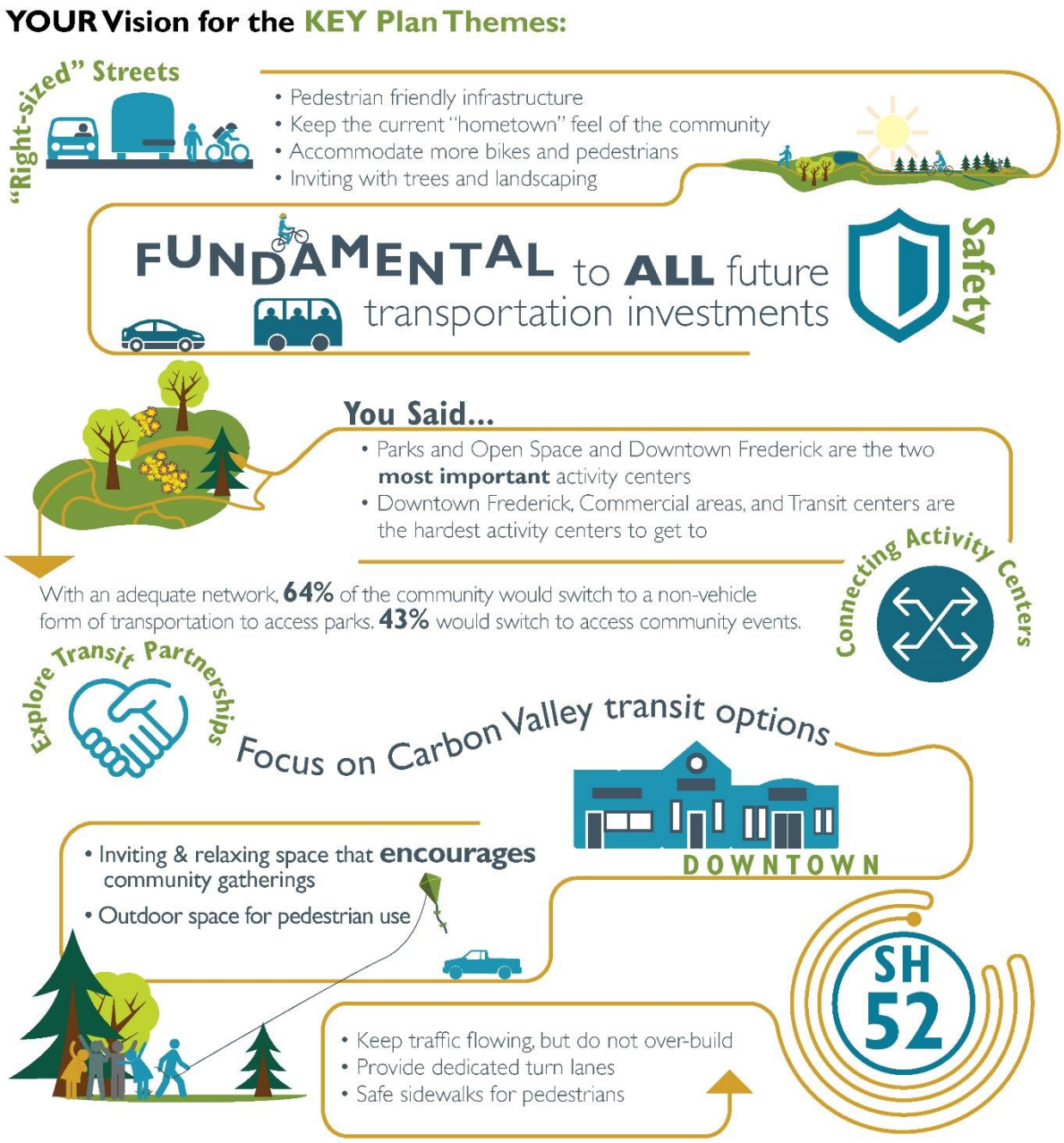


Figure 20. Public Survey #2 Infographic

Survey #2: The second survey dove deeper into the key themes identified by the community in the first survey; this was an opportunity for the community to craft a future vision for Frederick's transportation system. The survey was launched on June 30, 2020 and closed on July 13, 2020. Approximately 250 people completed the second survey.

The results were summarized into the following infographic and posted on the project website, complete survey results can be found in Appendix B.

Mayor and Board of Trustees

The project team presented to the Mayor and Board of Trustees twice during the planning process. On July 21, 2020, the team first presented to the Board of Trustees about the TMP's origin and goals, the public engagement effort, the draft State of the System Report, and an initial list of priority transit strategies. On December 1, 2020, the team presented the draft Transportation Master Plan to the Board of Trustees for feedback. The plan was adopted in February 2021.

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TMP DEVELOPMENT AND IMPLEMENTATION

This TMP formalizes the Town's transportation objectives in a guiding document and establishes a framework to identify and prioritize actions to be taken to meet Frederick's mobility goals. These actions or transportation solutions include infrastructure projects for the roadway, active transportation (bike and pedestrian, and transit networks and other location specific projects that enhance the functionality of the transportation system in support of community goals.

Transportation solutions also include other actions of planning, process, or policy generally considered to be non-capital expenditures, that support or inform various mobility investments through regular programs. Establishing a robust program to support implementation of transportation projects and decision making prior to additional significant investments in infrastructure will serve the Town well in mapping out a logical, data-driven, and defensible approach to the long-term needs of the community. With this first TMP for the Town, it is recommended that a transportation program include and prioritize the following non-infrastructure investments.

Transportation Solutions: Programs

Roadway Network

Develop a Connected Roadway Network Strategy
A connected roadway network provides route alternatives, increases travel efficiency, improves multimodal alternatives, and alleviates demand on the main arterials.

A three-step approach to the roadway network consists of the following:

1. Implement intersection improvements. Tiered priorities were developed based on traffic volumes, turn lane configuration, and safety analysis (Appendix C, Technical Data)
2. Construct proposed roadway connections (collectors). A preliminary list was provided in the Comprehensive Plan. Routes will be finalized and constructed as development occurs.
3. Widen existing arterials. Following steps 1 and 2, further travel demand analysis or implementation of other programs, such as Complete Streets or I-25 Parallel Arterials, will confirm the prioritization of arterial roadway widenings and add travel capacity and/or functionality such as bike lanes.

Update Design Guide to Align with Goals
Updated street design guidelines will address the multimodal needs of the community and incorporate Right-sized Streets, Complete Streets, and Truck Route Policy Update.

Establish System of Ongoing Counts for All Modes
An ongoing system of vehicle counts informs decisions about infrastructure use and needs.

Complete Annual Crash Report
An annual review of crash data can provide insight regarding specific locations and opportunities for public safety awareness campaigns.

Develop a Travel Demand Management (TDM) Toolkit
An ongoing effort to continue developing options for alternative transportation modes, involve employers with work-based solutions, and establish public awareness campaigns.

Long-term Consideration: Pavement Plan – All County Roads
An ongoing strategy to pave all county roads.

Active Transportation Network

Update Bikeway Design Guide and Selection Policy to Align with Goals
Updated bikeway design guidelines will consider traffic volumes and speeds along with the needs and comfort levels of bicyclist users (from Highly Confident to Interested but Concerned) and explore context-based solutions beyond a single stripe, such as buffered, delineated, or separated bike facilities

Establish System of Ongoing Counts for All Modes
An ongoing system of bicycle and pedestrian counts informs decisions about bicycle/pedestrian infrastructure use and needs and provides insightful information often requested in grant applications.

Incorporate Planned On-Street Bicycle Facilities into Street Maintenance Projects
Repaving operations provide an opportunity to restripe segments of roadway and begin filling in network gaps.

ADA Compliance
Conduct an ADA compliance inventory and schedule improvements.

Transit Network

Establish Working Group(s) to Explore Transit Services
The establishment of connections to regional transit services was identified as a priority for the Town. It was also established by public input that the most likely solutions would require cooperation with other agencies likely including other Carbon Valley communities.

This plan recommends that the Town establish a sanctioned Transit Working Group of staff and community volunteers to advance the discussions and decisions necessary to identify potential solutions.

Policies & Programming

Long-term Dedicated Funding Strategy
A long-term funding strategy for transportation related investments is critical to implementing any of the strategies or solutions identified in this plan. Current funding levels are not sufficient or predictable enough to develop a program of improvements. This initial Transportation Master Plan identifies three potential investment strategies that illustrate the range of funding that may be required.

Based on the identified long-term funding strategy, the Town should develop a 5-Year Capital Improvements Plan (CIP), which identifies a near term program of fiscally constrained projects, and review it annually to adjust funding as necessary, re-evaluate new opportunities and conditions, and add new outyear projects.

Project Development/Funding Toolbox
The Town should develop a comprehensive toolbox and calendar of events for pursuing a range of funding opportunities. This plan includes documentation of potential sources. Each source has specific requirements of timing and application process that should be documented and reviewed regularly for potential action.

Maintain Up-to-date GIS Data Systems
Up-to-date GIS data provides accurate maps and data needed for reports, planning, and funding applications.

Wayfinding Program Framework
Design for both roadway and active transportation network

Impact Fee Ordinance
Current impact fees may not reflect community goals, transportation objectives, and current economics.

Land Development Code Change Recommendations
Evaluate and update, as needed, land development codes to address smart growth planning and multimodal emphasis

Align Developer Requirements to TMP
A policy to require developers adhere to the requirements and Master Streets Plan identified within this TMP and adopted by the Board of Trustees.

Form Strategic Partnerships (Related Topic))
- Law Enforcement (Safety/Crash Data Analysis and Public Safety Campaigns)
- DRCOG & Southwestern Weld County Subregional Forum (Transportation Improvement Program [TIP])
- Carbon Valley Working Group (Transit Opportunities)
- Downtown Frederick Business Improvement District (BID)
- Economic Development (Transportation support of catalyst projects and other economic development efforts to increase the

number of jobs available within town, thus reducing the need for residents to travel outside of town for employment purposes)

- SVVSD Schools in Frederick (Safe Routes to School [SRTS])

Transportation Solutions: Projects

The TMP includes specific recommendations for infrastructure investment based on analysis informed by the public process. The recommended project lists on the following pages were evaluated with the following criteria:

- Technical Analysis provides a data-driven and justifiable approach.
    - Intersections: Tiered priorities based on volume, turn lane, and safety analysis.
    - Roadways: Priorities based on functional classification, volumes, travel demand, need of reconstruction or widening to meet standard cross-section
    - On-street Active Transportation Facilities: Tiered priorities based on POST Plan, Priority Corridors Plan, traffic volumes, proximity to key activity centers, and safety trends
    - Off-street Active Transportation Facilities: Tiered priorities based on POST Plan
- Timeline provides a relative indication of short-, mid-, or long-term based on immediacy of the needs identified, the benefits and impacts of implementation, and an awareness of programming costs over the 20-year planning horizon of this Transportation Master Plan. Actual implementation timing will depend on the funding strategy implemented by the Town and that strategy's priorities.

Short	Long	Timeframe	Justification
●		0 to 7 years	Higher priority based on current needs, Easier to implement, or Key first step
●	●	5 to 12 years	Medium priority based on current needs or Phased implementation that follows an earlier step
●	●	●10 to 20 years	Lower priority based on current needs, Phased implementation that follows an earlier step, or Anticipated future need

- Funding Strategies addresses the likelihood of partnering to share costs and the ability of the Town to fund compared to recent funding levels.

Cost Sharing Partner

● - Not likely

● - Possible, or Opportunity to Win Grant Funding

● - Yes, Definitely

Cost Approach

$ - Could fund with current funding process

$$ - Could fund with an increase or multi-year approach to current funding process

$$$ - Could fund with funding partner or new/additional funding source

- Other Goals Supported recognizes a project provides multiple benefits to the Town as indicated through goals and priorities identified through public and stakeholder participation.

Intersection projects support traffic management and safety improvements for vehicular and multimodal users. Priority intersections are shown in Table 2.

Table 2. Intersection Projects

Project	Timeline			Cost Sharing Partner	Relative Cost
Intersection Improvements. Tiered priorities based on volume, turn lane, and safety analysis.	**Short**		**Long**		
Colorado Boulevard & Tipple Parkway	●			●	$$
Colorado Boulevard & Bella Rosa Parkway	●			●	$$
Silver Birch Boulevard & Bella Rosa Parkway	●			●	$$
Arterial Intersections along SH 52	●			●	$
Silver Birch Boulevard & Godding Hollow	●	●		●	$$
Silver Birch Boulevard & Tipple Parkway	●	●		●	$$
Aggregate Boulevard & Bella Rosa Parkway	●	●		●	$$
I-25 E Frontage Road & Tipple Parkway	●	●		●	$
I-25 E and W. Frontage Roads & Bella Rosa Parkway	●	●		●	$
Ridgeway Boulevard & Tipple Parkway	●	●	●	●	$$
Aggregate Boulevard & Tipple Parkway	●	●	●	●	$$
Aggregate Boulevard & SH 119	●	●	●	●	$

Roadway projects will build a network of alternative routes and add multimodal functionality. Table 3 shows three roadway project categories as well as priority segments likely to be addressed first.

Table 3. Roadway Projects

Project	Timeline			Cost Sharing Partner	Relative Cost
Parallel Roadway Network. Construct collectors to provide alternative routes and alleviate traffic volumes on primary arterials. Timed with adjacent development.	**Ongoing**			●	$$
Roadways in Need of Reconstruction or Widening to Meet Demand or Standard Cross-Section	**Short**		**Long**		
Colorado Boulevard (SH 52 to Bella Rosa)	●	●		●	$$
Tipple Parkway (E. Frontage Road to Ridgeway)	●	●		●	$$
Bella Rosa Parkway (Colorado to Aggregate)	●	●		●	$$
Silver Birch Boulevard (SH 52 to Bella Rosa)	●	●	●	●	$$
Aggregate Boulevard (SH 52 to SH 119)	●	●	●	●	$$
Ridgeway Boulevard (SH 52 to McClure)	●	●	●	●	$$
Pave Remaining Gravel County Roads	●	●	●	●	$$$

The complete list of intersection and roadway projects is provided in Appendix E, Detailed Projects List. Figure 21 illustrates the functional classification of the Town's ultimate roadway network.

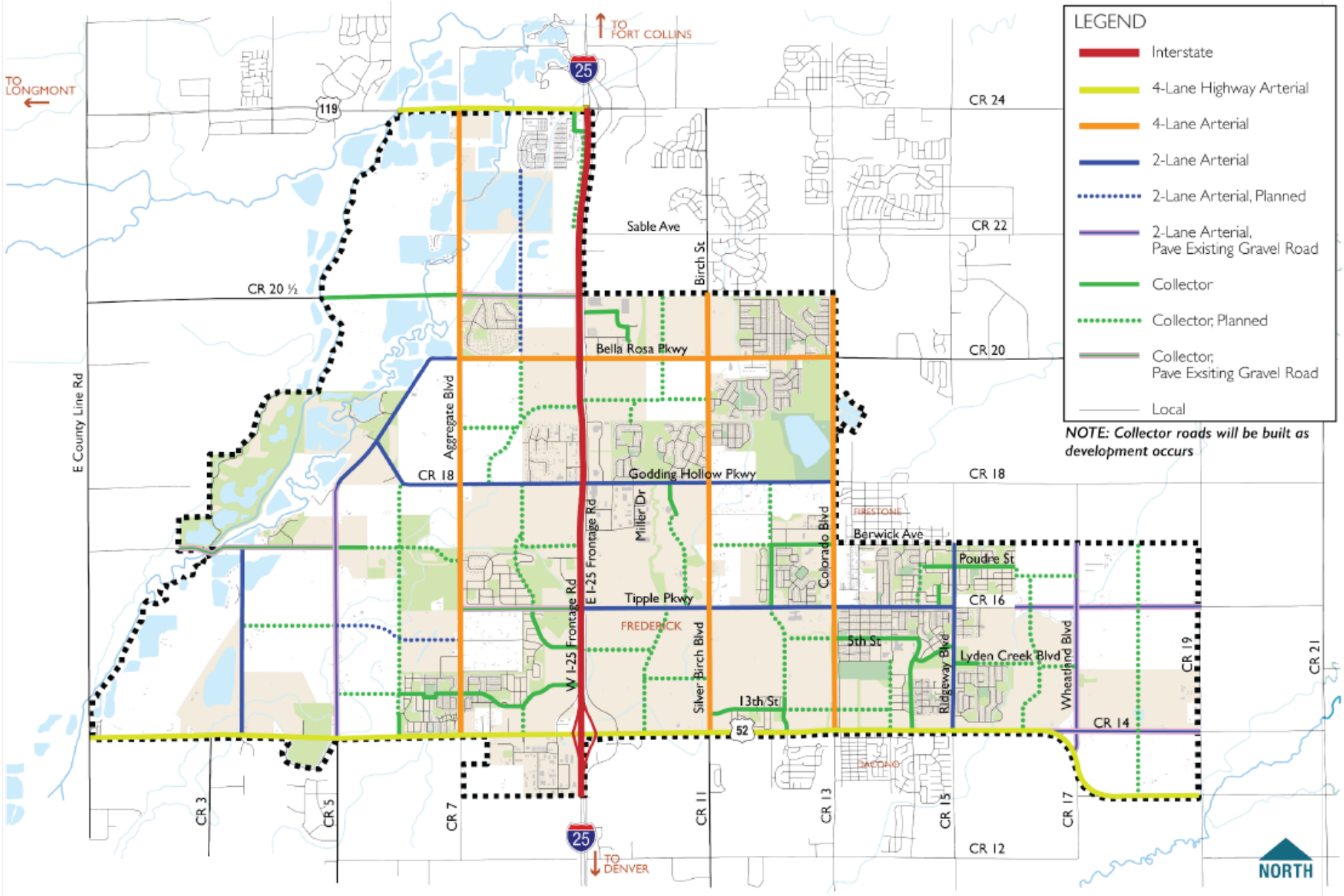

Figure 21. Master Streets Plan

Infrastructure Improvements: SH 52

Frederick's engagement with CDOT and the PEL study on SH 52 is a key opportunity to develop solutions that work for Frederick. This TMP recommends specific improvements be included in any SH-52 Corridor Improvement Plans.

The roadway section of SH-52 adjacent to the Town of Frederick should include landscaped medians. These medians are critical to

- mitigate the increase in speeds as the road is widened
- provide pedestrian refuge for crossings
- provide opportunities for gateway/wayfinding signage and monumentation

Signalized mid-block or grade-separated pedestrian crossings should be considered to provide safe routes to school across SH-52.

The addition of a shared use path along the three-mile stretch of SH 52 between Colorado Boulevard and Aggregate Boulevard is required to provide the desired connectivity between the Legacy Trail, Downtown Frederick, and residential areas on the west side of I-25.

Improvements to the I-25 / SH-52 Interchange should include a separated bike and pedestrian connection not immediately adjacent to traffic. A bridge platform that accommodates the shared use path, ramp crossings, and enhanced crossings of the frontage roads are required to make the shared use path comfortable and accessible for a wide range of users.

Any access control or limitation should be coordinated with the Town of Frederick.

Table 4. SH 52 Projects

Project	Timeline	Cost Sharing Partner	Cost	Other Town Goals Supported
SH 52	Short Long			
Medians/Speed Mitigation	●	●	$$$	Safety Mobility Multimodal Regional Connections East-West Connectivity
Bike and Pedestrian Crossings	●	●	$$$	
Separated Bike/Pedestrian Connection Across I-25	●	●	$$$	
Separated Multi-Use Path	●	●	$$$	
Preserve Critical Access Points	●	●	$$$	

Infrastructure Improvements: I-25

Wayfinding and visibility of Frederick from I-25 is limited and competes with nearby communities.

Though I-25 intersects Frederick, the current network offers only two access points: SH 119 and SH 52. A third road, Bella Rosa Parkway, offers an additional I-25 crossing via an underpass. The limited number of crossings creates competition for these roadways as people access I-25 and travel across town and beyond to reach communities to the west.

Short- and mid-term considerations to explore with CDOT:

- Improvements to Bella Rosa Parkway/ Frontage Road intersections: Bike and pedestrian improvements along the length of Bella Rosa Parkway including under I-25.
- W. Frontage Road: Construct approximately 0.5 mile roadway to fill the gap on the north end

Long-term considerations to explore with CDOT:

- A separated bicycle and pedestrian crossing at SH 52 would provide distance between trail users and vehicle traffic.

Additional I-25 interchange:

- Benefits:
  - Alleviate congestion at SH 52 and SH 119 interchanges
  - Provide additional access point for emergency vehicles
  - Offers economic development opportunities and additional access point for town
- Negatives:
  - Typically requires large footprint
  - Typical interchange businesses might not be a good fit with adjacent land uses
  - Makes crossings more challenging for active transportation modes

Frontage Road Devolution:

- If CDOT is moving toward a policy of devolving the frontage roads, there may be an opportunity to negotiate improvement costs prior to assigning the frontage roads to Frederick's jurisdiction.

Improvements: Active Transportation Network

In the short term, small fixes in the gaps will provide big wins for the Town of Frederick. Ongoing construction of sidewalks and trails will continue to improve connectivity, mobility, and accessibility. Developers will assist by continually improving connectivity as new neighborhoods are built. ADA compliant sidewalks and crossings will improve mobility options for the affected segment of the population, which actually improves conditions for all ages. Consult the POST Plan, currently being revised, for the most up-to-date planned trail network.

The addition of east-west bike facilities will improve multimodal access to all parts of Frederick. A shared-use path along SH 52 would fill a sidewalk and bicycle network gap along the Town's south boundary, and adding bike facilities along Bella Rosa Parkway will provide an east-west connection under I-25 at a second location, three miles north of SH 52.

Table 5. Active Transportation Network Projects

Project	Timeline	Cost Sharing Partner	Relative Cost	Other Town Goals Supported
Construct On-Street Facilities. Tiered priorities based on POST Plan, Priority Corridors Plan, Complete Streets Policy, traffic volumes, proximity to key activity centers, and safety trends.				
Downtown Frederick (On-Street Markings)	●	●	$	Safety, Mobility, Multimodal
Bella Rosa Parkway (Colorado to Aggregate)	●	●	$$	Connect East and West Sides of Frederick Safety, Mobility, Multimodal
Godding Hollow Parkway (E. Frontage Road to Colorado)	● ●	●	$$	Safety Mobility Multimodal
Silver Birch Boulevard (SH 52 to Bella Rosa)	●	●	$$	
Tipple Parkway (E. Frontage Road to Colorado)	●	●	$$	
Aggregate Boulevard (SH 52 to SH 119)	●	●	$$	Safety Multimodal Mobility Connectors to St. Vrain Trail and Longmont
CR 20 ½ (W. Frontage Road to County Line Road)	● ● ●	●	$$	
Construct Off-street Trails, Sidewalks, and Connections to Fill Key Active Transportation Network Gaps. Tiered priorities based on POST Plan, proximity to key activity centers, and safety trends.				
Prioritized List in Coordination with POST Plan	●	●	$	Corridor Protection Travel Demand
ADA Compliance	●	●	$	Safety, Mobility
Separated I-25 Bike/Ped Facility along SH 52	● ● ●	●	$$$	East/West Connection, Multimodal, Safety
Multimodal Access to CDOT's SH 119 Transit Center	● ●	●	$	Multimodal, Mobility, Safety

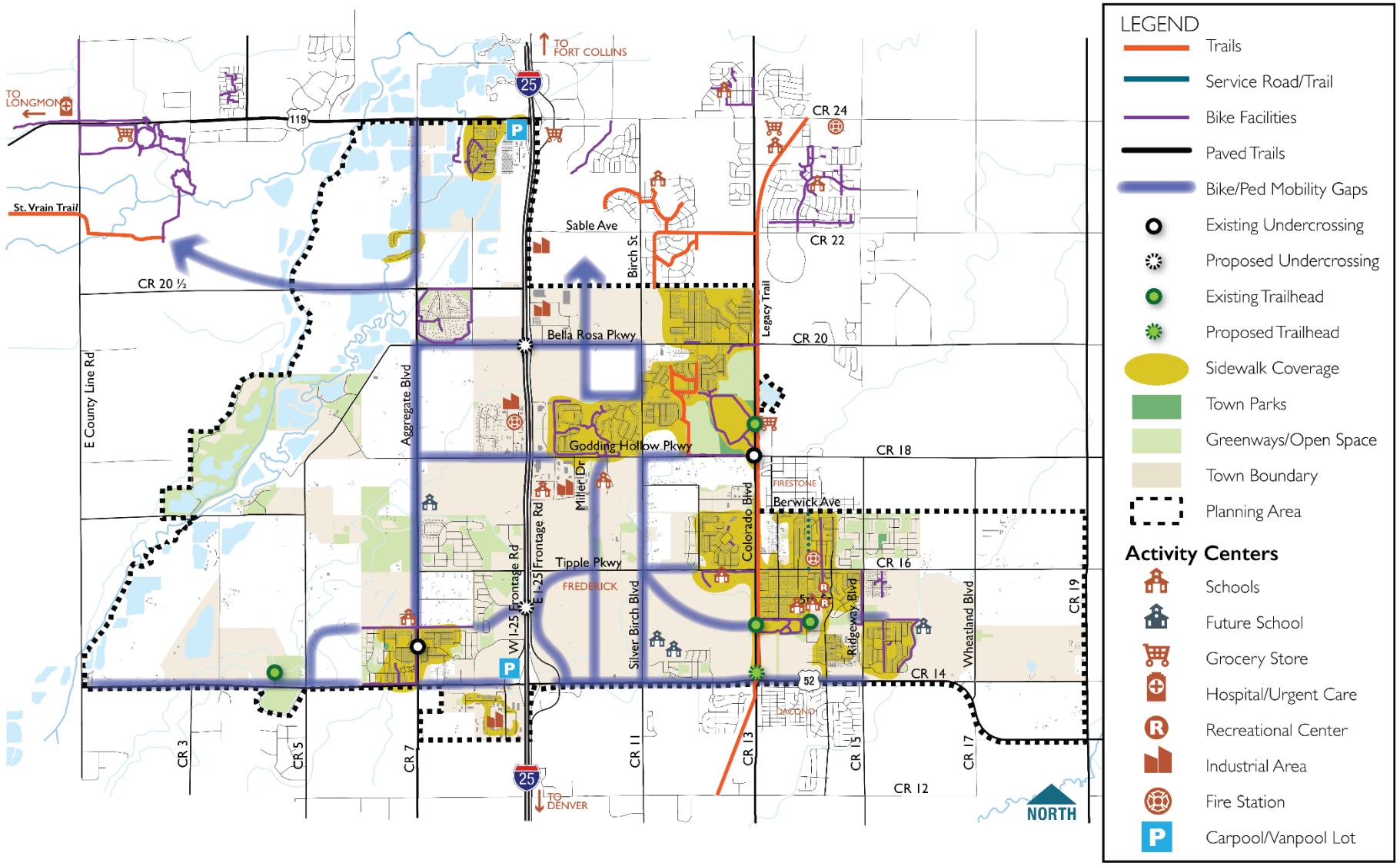

Figure 22. Active Transportation Network

Improvements: Transit Network

There is a general consensus and strong desire for improved transit options for residents. Transit connections are currently available, but the locations are inconvenient. Services are needed to get residents to transit access points.

To identify strategies to position the Town of Frederick for enhanced transit service, future bus service/routes in the Town, and human services transportation, recommendations include the following:

- Form a Tri-Town working group to explore feasibility of a coordinated effort that would offer the following services:
  - Transit to nearby communities (e.g., Longmont and Boulder)
  - Transit to connect to regional transit hubs (e.g., RTD Park-n-ride lots, N-line's north terminus, SH 119 Transit Center)
  - Services for older adults and people living with disabilities
  - Mobility and Micromobility Hubs

An additional long-term consideration is the Front Range Commuter Rail. The Town should stay informed and active on this topic.

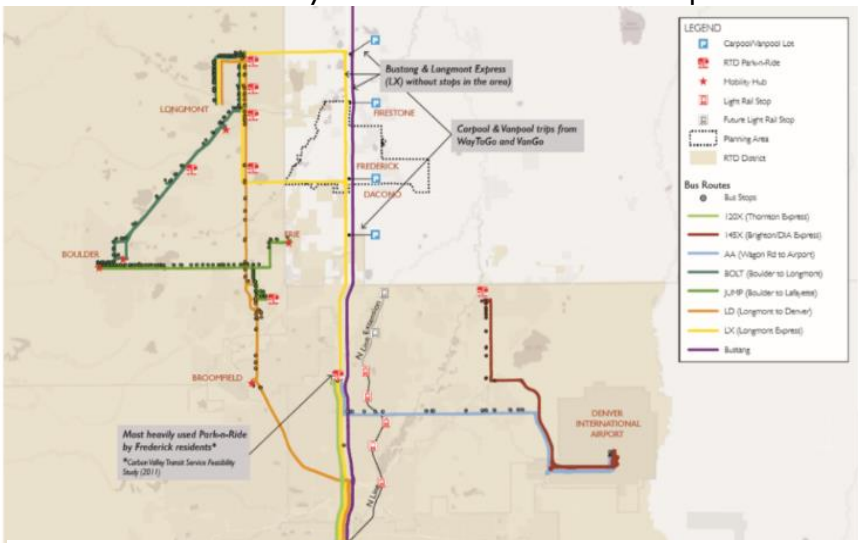

Figure 23. Existing Regional Transit Network

Table 6. Transit Projects

Project	Timeline		Cost Sharing Partner	Relative Cost	Other Town Goals Supported
Local	**Short**	**Long**			
Establish Shuttle Service to Community Events	●		●	$$	Safety, Mobility, Multimodal
Establish Shuttle Service to Park-and-Ride Lots and SH 119 Transit Center	●		●	$$	Safety Multimodal
Establish Older Adult and Paratransit Services	●		●	$$$	Safety Mobility
Carbon Valley & Regional Connections					
Create Carbon Valley Transit System to Connect Tri-Town Residents to Longmont, Boulder, Erie	●	●	●	$$$	Multimodal, Connectivity
Create Carbon Valley Transit System to Connect Tri-Town Residents to RTD's Existing Territory	●	●	●	$$$	Multimodal, Connectivity

Improvements: Downtown Frederick

The public surveys identified Downtown Frederick as one of the most important activity centers in town and showed strong support for developing an inviting and relaxing space that encourages community gatherings.

Improvements to the active transportation network will make downtown more accessible.

Table 7. Downtown Frederick Projects

Project	Timeline	Cost Sharing Partner	Relative Cost	Other Town Goals Supported
Downtown Features	**Short Long**			
Establish Bike and Pedestrian Focused Corridors	●	●	$	Safety Mobility Multimodal
Walkability Improvements	●	●	$	
Pedestrian Gateway to Downtown	●	●	$$	
Event Street Improvements	● ●	●	$	Safety, Multimodal, Placemaking
Downtown "civic center" Enhancements	● ●	●	$$	Multimodal
Parking				
Establish Events Parking	●	●	NC	
Construct Long-term Parking Solution (Consider Mixed-Use and/or Adaptable Structure Design)	● ● ●	●	$$	Multimodal

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Implementation Framework

Transportation Infrastructure Framework

This 2020 TMP is a first for the Town of Frederick. The Town has historically invested in capital transportation projects identified by staff as mission critical and funded from general fund monies. The TMP process has helped facilitate a conversation in the community on the desired functionality and future vision for transportation that will require a more significant annual investment to achieve the desired functionality of the transportation system within the planning horizon. Consequently, a primary recommendation of the plan is for the Town to develop a transportation funding strategy.

Any strategy likely requires political will and the approval of voters. As this undertaking has not been initiated, its outcome is highly variable. The "ask" that will earn the required support of political leaders and voters must also be determined. For this reason, the TMP presents three alternative programs or investment strategies that will achieve varying levels of completion. The three strategies are identified as:

Strategy 1 – Improve What We Have

Strategy 2 – Enhance the Core

Strategy 3 – Invest in the Future

Figure 24 shows a conceptual projection of investment strategy expanded by two, four, and ten times current funding. Regardless of the Town's eventual level of investment, the establishment of new programs and continued development of existing programs provides valuable structure and data-driven support to inform the decision-making process needed to prioritize transportation infrastructure projects for years to come.

On the pages ahead, variations among the three investment strategies are identified for intersection and roadway improvements; the active transportation network, both on-street and off-street facilities;

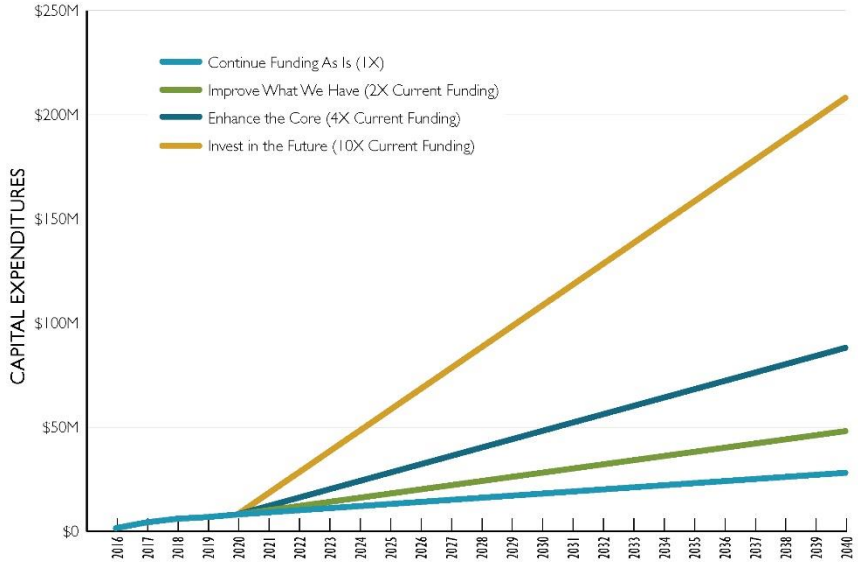

Figure 24. Conceptual Projection of Capital Expenditures

Downtown Frederick, a key activity center; and the unique challenges of I-25. SH 52 is another consideration requiring special attention.

SH 52 is a special case with the indefinite outcome of the CDOT PEL study and what improvements CDOT will fund. Frederick may need to contribute funding for improvements within the Town's planning area. The TMP recommends inclusion of the following into any of the three investment level strategies:

- Town concurrence on Access Control Plan
- Landscaped medians to mitigate travel speeds
- Frederick specific wayfinding
- Multi-use path (more likely to be used than attached sidewalks)
- An I-25 interchange that specifically facilitates and separates bikes and pedestrians from immediate adjacency to SH 52 traffic

Strategy 1 – Improve What We Have

Figure 25 illustrates investments possible at a level near or doubled recent funding levels. The emphasis would be to focus on implementing key actions that will have 'big payoff' for the Town.

Focus

Intersections: Improve intersection operations

Roadway: No added capacity (lanes). Improve the multimodal network with spot completion of street-related bike and pedestrian facilities.

Active Transportation Network (On-street Facilities): Improve multimodal network with intersection improvements that facilitate bike and pedestrian connections. Fill sidewalk gaps. Identify signing and striping improvements that can facilitate on street bike use.

Active Transportation Network (Off-street Facilities): Build the highest priority trails/paths. Lower priority trails remain unpaved.

Activity Centers/Special Considerations:

- **Downtown:** Minor street character improvements such as pedestrian lighting, crosswalk enhancements, restriping to create bike and pedestrian corridor connections.
- **I-25:** Improvements to existing frontage road intersection at Bella Rosa, Town gateway signing

Actions

- Partner with CDOT to advocate for Frederick's vision along SH 52 with acknowledgement the Town may need to cost share on particular features.
- Begin an intersection improvements strategy at prioritized locations
- Construct bicycle/pedestrian connections to fill key gaps in the active transportation network
- Continue to fund studies
- Continue to pursue additional funding sources

NOTES:

1) *Development-driven roads will be per Figure 21. Master Streets Plan and as development occurs.*
2) *SH 52 Widening to 4 Lanes subject to CDOT decisions following completion of PEL/ACP.*

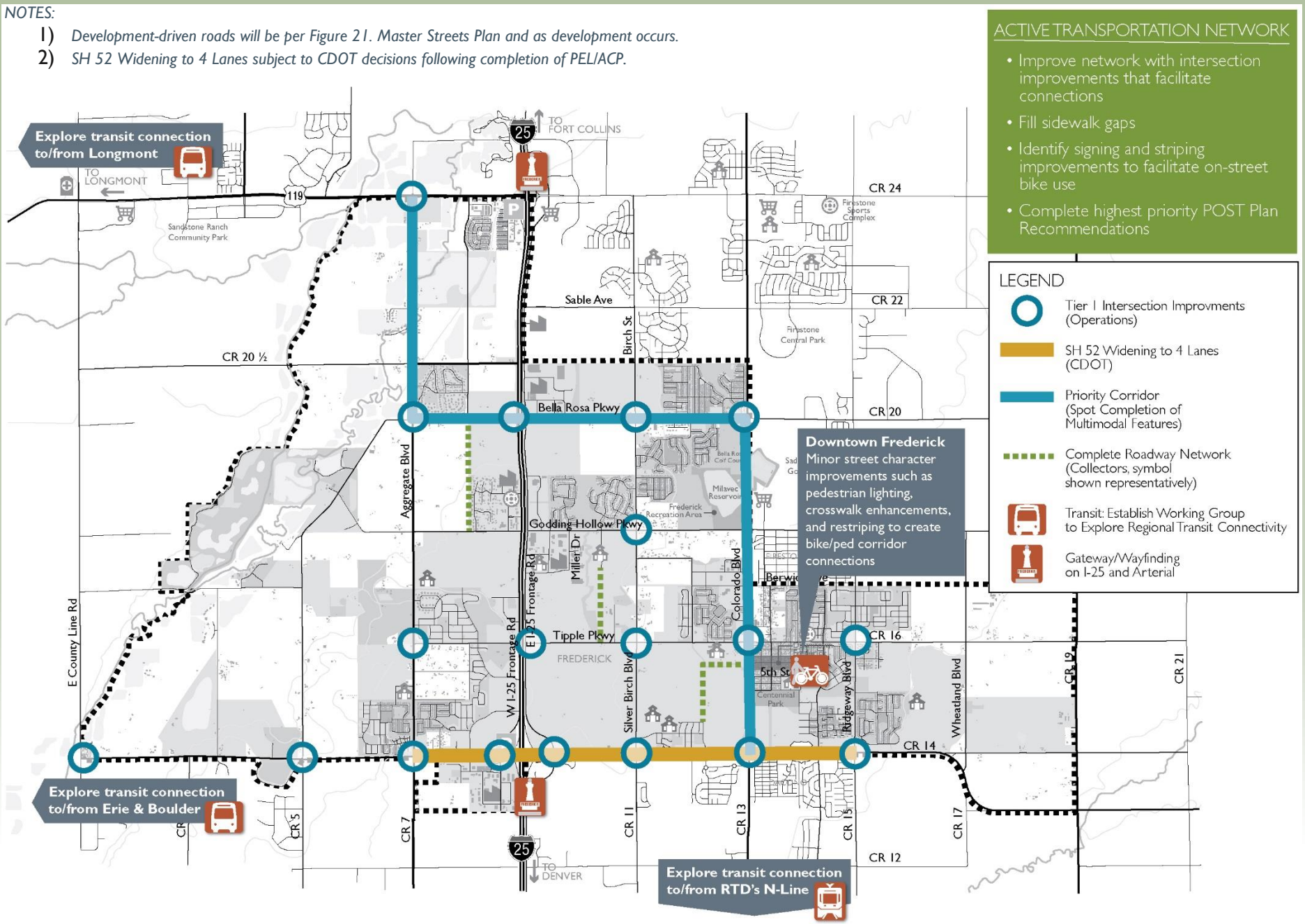

Figure 25. Alternative 1 – Improve What We Have

Strategy 2 – Enhance the Core

Figure 26 represents a significant increase in transportation investments, one that enhances the core infrastructure. This increase in funding levels would be achieved by successfully pursuing grant funding or cost-sharing with partners such as CDOT for SH 52 improvements.

Focus

Intersections: Improve intersections, to include widening if a high priority corridor, such as Bella Rosa Parkway and Colorado Boulevard

Roadway: Focus on two core priority corridors, Bella Rosa Parkway and Colorado Boulevard, with multimodal sections and additional travel lanes

Active Transportation Network (On-street Facilities): Add on-street bike/ped improvements during road widening of high priority corridors, namely Bella Rosa Parkway and Colorado Boulevard

Active Transportation Network (Off-street Facilities): Focus on downtown connections and a 20-year buildout of POST plan recommendations

Activity Centers/Special Considerations:

- **Downtown:** Improvements to create a festival street with event lighting, variable traffic control, and bike and pedestrian connections to remote parking
- **I-25:** Improve Bella Rosa crossing to be bike and pedestrian friendly, establish I-25 gateway and wayfinding to Downtown.

Actions

- Complete intersection improvements along Bella Rosa Parkway and Colorado Boulevard
- Construct improvements along Bella Rosa Parkway and Colorado Boulevard that add travel capacity and functionalities such as on-street bike lanes
- Begin adding multimodal features along Aggregate Boulevard to connect Bella Rosa Parkway to St. Vrain State Park and greenway trail to Longmont
- Improve east-west connectivity with the addition of on-street bicycle facilities Bella Rosa Parkway
- Pave remaining gravel county roads over the long-term

NOTES:

1) *Development-driven roads will be per Figure 21. Master Streets Plan and as development occurs.*
2) *SH 52 Widening to 4 Lanes subject to CDOT decisions following completion of PEL/ACP.*

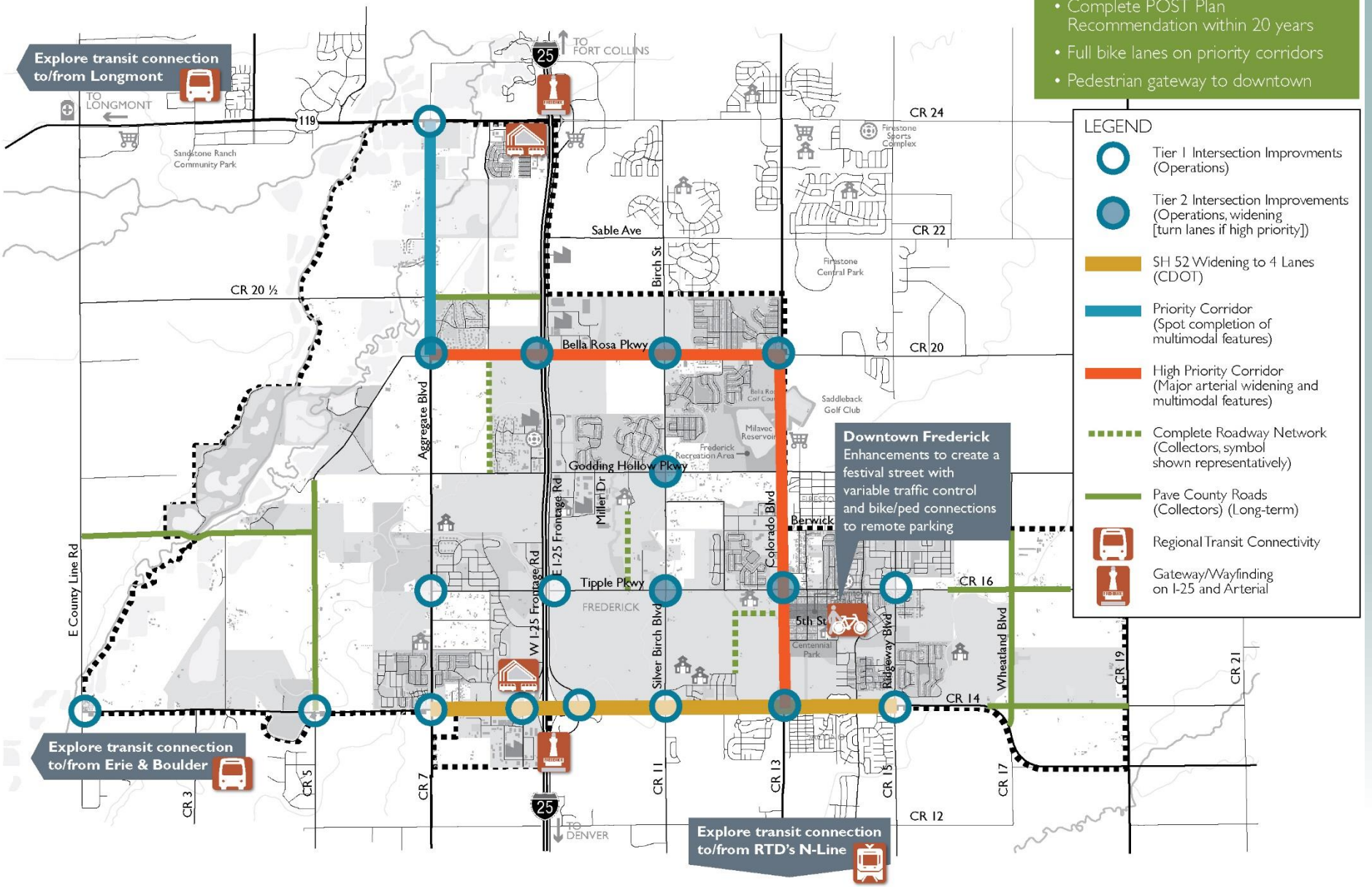

Figure 26. Alternative 2 – Enhance the Core

Strategy 3 – Invest in the Future

Figure 27 models transportation investments significantly greater than recent funding levels, where additional funding is achieved by successful pursuit of federal, state, and grant funding, by cost-sharing with partners, such as CDOT for SH 52 improvements, and by cost-sharing with neighboring communities through newly established funding mechanisms.

Focus

Intersections: Improve the intersection and the roadway. Address challenging intersections such as Silver Birch & Tipple (with the drainage ditch)

Roadway: Capacity and multimodal section on priority corridors – Colorado, Bella Rosa, Aggregate, Tipple, Godding Hollow, and Silver Birch

Active Transportation Network (On-street Facilities): Add full bike lanes to priority corridors at time of widening

Active Transportation Network (Off-street Facilities): Build POST plan recommendations within 10 years. All paths are paved.

Activity Centers/Special Considerations:

- **Downtown:** Street character and walkability improvements to create a downtown district, pedestrian scale wayfinding, enhance parking with multimodal hub (bike share, bike parking and lockers, shuttle stop, etc.)
- **I-25:** Coordinate and partner with CDOT to improve frontage roads and access to I-25, SH 119 transit hub, and potential new interchange or crossing.

Actions

- Widen priority corridors to add travel capacity or functionality such as bike lanes, as needed. Priority corridors include Aggregate Boulevard, Tipple Parkway, Godding Hollow Parkway, and Silver Birch Boulevard
- Complete bicycle and pedestrian facilities along Aggregate Boulevard to connect the SH 52 facilities to the St. Vrain State Park and greenway trail to Longmont
- Explore transit solutions with the establishment of a working group with residents of Frederick and adjacent communities
- Construct a multi-level mixed-use parking structure in Downtown Frederick
- Pave remaining gravel county roads in the mid- and long-term

NOTES:

1) *Development-driven roads will be per Figure 21. Master Streets Plan and as development occurs.*
2) *SH 52 Widening to 4 Lanes subject to CDOT decisions following completion of PEL/ACP.*

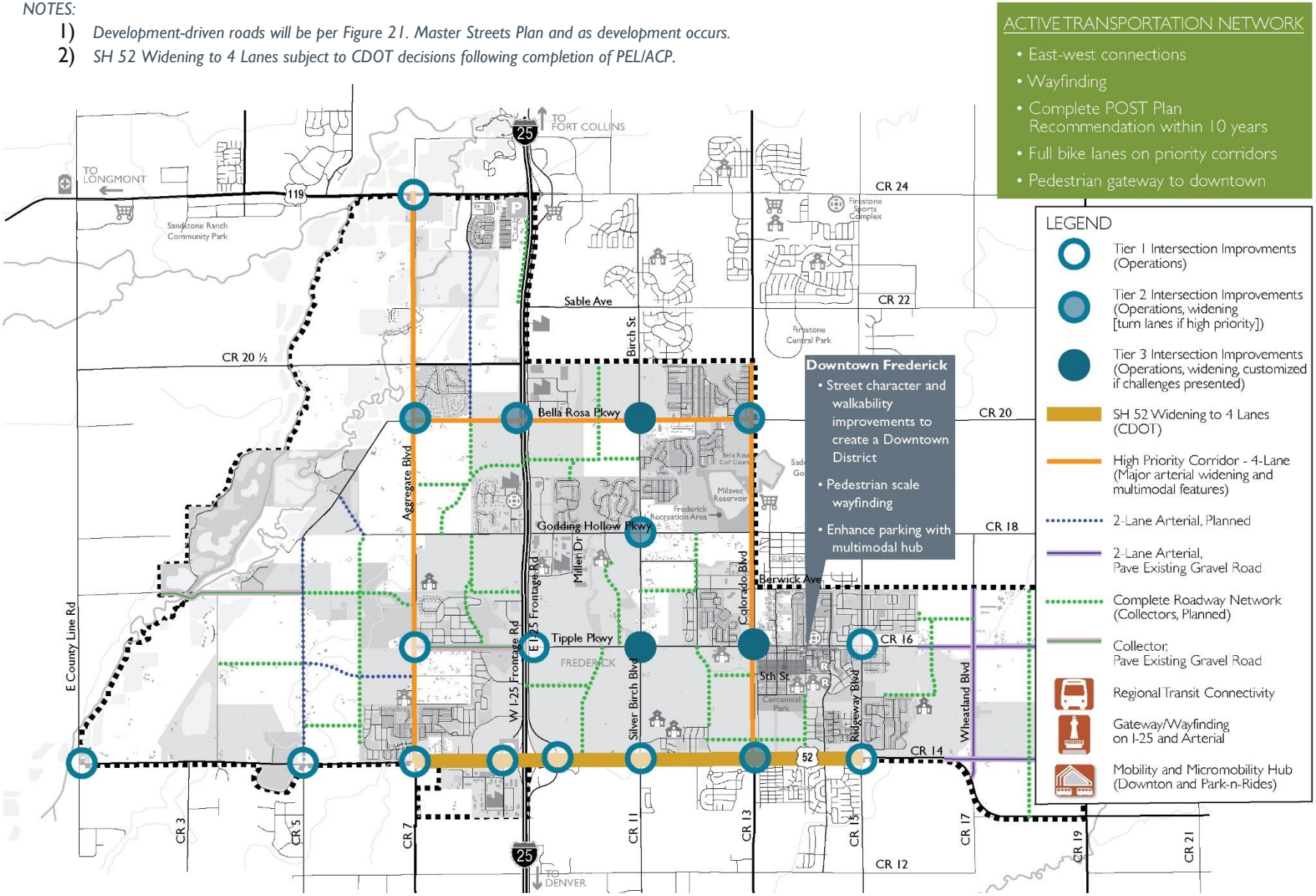

Figure 27. Alternative 3 – Invest in the Future

Funding Resources

Frederick's annual budget process includes consideration, selection, and prioritization of project recommendations submitted by the Town's department managers. The process begins in mid-summer and continues into early fall, when the Board of Trustees adopts the budget for the upcoming fiscal year, which aligns with the calendar year.

Table 8 shows the Town of Frederick's fund categories, along with revenue sources, that support budget allocation toward transportation-related projects.

Development of a long-term funding strategy will be critical for the Town to implement the level of transportation investment desired for the years ahead. The PAC recognized the importance of this action.

Frederick's continued development of planning and programming infrastructure will provide a level of readiness that supports the pursuit of viable funding mechanisms such as additional assessments, financing districts.

Table 8. Existing Town of Frederick Funds with Applicability to Transportation

Fund Revenue Source	Applicability to Transportation Projects
General Fund Taxes and fees, licenses and permits, fines and forfeitures, earnings on investment, grants, and contributions	Planning, Engineering, Facility Maintenance, Public Works
Street and Alley Fund Primarily Weld County: vehicle taxes and road and bridge tax State of Colorado: Highway User Tax Funds (HUTF) Local: residential trash collection services and road impact fees	Widening arterials, improving intersections, installing traffic signal controls, and other transportation improvements
Open Space Fund 0.5 percent sales tax, impact fees, grants	Trail improvements/extensions
Park Improvement Fund Grants, impact fees, intergovernmental, miscellaneous	Trail development and maintenance
Proprietary Fund: Storm Water Fund Customer receipts, impact fees	Indirect: Storm water infrastructure
Conservation Trust Fund State lottery proceeds via DOLA	Public Works, Planning

Traditional funding mechanisms available to small towns include typical tax- and fee-based strategies. Table 9 shows the advantages and disadvantages of each, as well as the pros and cons of federal/state funding and bond programs.

The Tri-Towns could pursue a "regional" tax-based approach to increase transportation funding for the Carbon Valley, an approach the PAC members deemed most likely to be supported by the community of three choices presented.

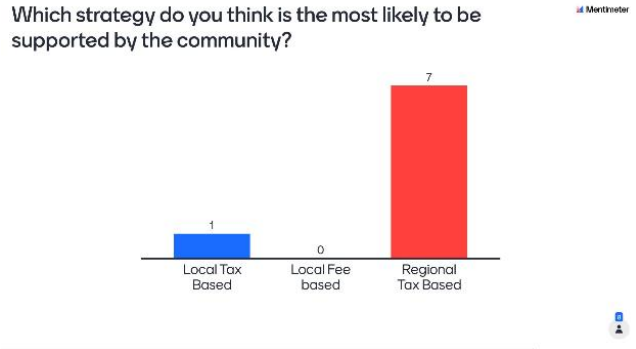

Table 9. Advantages and Disadvantages of Traditional Funding Sources for Municipalities

Funding Source	Advantages	Disadvantages
Traditional Tax-Based • Town Sales Tax • Regional Sales Tax • Property Tax	• Healthy economy = healthy sales tax revenue • Predictable (property tax)	• Unhealthy economy = unhealthy sales tax revenue • Limited (property tax)
Traditional Fee-Based • Vehicle Registration Fees • Transportation Impact Fees • User Fees • Parking Fees	• Relatively stable and predictable	• Decreases with build-out/downturns
Federal/State Funding and Grants	• Additional potential source	• Typically require a local match • Competitive • Federal requirements typically increase project cost
Bond Programs	• Projects can proceed before Town able to pay "cash"	• Uses "debt" model of financing • Voter approval required

Table 10. Partnered Funding Strategies to Explore

Funding Strategy or Opportunity	Advantages	Disadvantages
Carbon Valley Transit Partnership	• Benefits the residents of all three communities • Reduces the cost for each individual community	• Heavy lift to form partnership
Regional Transportation Authority	• Provides "Strength in Numbers" as communities form a transportation funding district to increase revenue and ability to accomplish goals • When done well, works very well and supported by public	• Heavy lift to negotiate agreements • Voter approval needed
Public Private Partnership (PPP)	• Partnering with private entities stretches the public dollar by sharing the capital and operating expenses AND revenue	• Opportunity based only

In addition to the existing road impact fees, which are set annually for all development types, the Town should regularly assess the rate and nature of existing fees with a connection to transportation infrastructure, such as:

- Transportation impact fees and development exactions specific to transportation-related variances
- Street maintenance fees (establish a fee paid by resident's utility bills)
- Oversize and Overweight Vehicles
- Oil and Gas Rig Transportation Permits

Colorado State Statute Title 32 supports the establishment of special districts that serve a public use and promote the health, safety, prosperity, security, and general welfare of the inhabitants of the district. In addition to metropolitan districts that are somewhat aligned to specific neighborhoods, Frederick has eight Urban Renewal Authority (URA) districts. General or local improvement districts are typically financed via the assessment of a special incremental tax.

The Town should consider establishing a Downtown BID to forward funding of specific transportation goals.

Partnered funding strategies are beneficial to small towns and worth exploring. Table 10 shows advantages and disadvantages of some partnered funding strategies.

State and Federal Funding

DRCOG is the Denver area metropolitan planning organization (MPO) that oversees the collaboration of planning efforts of participating member counties and municipalities. Frederick is one of approximately 50 DRCOG members.

As designated by state statue, DRCOG allocates federal transportation funds via the TIP. Across the region, transportation needs outweigh funding, and DRCOG's *Metro Vision* (May 2019) provides the overall vision for the region's transportation system: essentially,

- well-connected and serving all modes of travel
- safe, reliable, and well-maintained.

DRCOG and participating members collaborate to ensure a widespread distribution of limited funding. Frederick is in the Southwest Weld County subregional forum and, currently, must begin the prioritization and allocation process within that group.

Every other year, the TIP is updated to identify projects to be funded over a rolling four-year horizon. The "main" call for projects happens every four years. The current 2020-2023 TIP was adopted in mid-2019. Adoption of the 2022-2025 TIP is anticipated for April 2021, with no call for projects. The 2024-2027 TIP call for projects is planned for summer/fall 2022 with adoption anticipated in April 2023.

The 2024-2027 TIP call for projects is planned for summer/fall 2022 with adoption anticipated in April 2023.

In Colorado, the Statewide Transportation Improvement Program (STIP) combines the state-funded projects list for the entire state with the TIP from each MPO, which represents federal funding (primarily) of transportation projects in the state's urban areas.

State transportation funds are generally allocated by CDOT; however, DRCOG occasionally distributes state transportation funds as well.

In addition to funding specific, approved projects as identified in each 4-year TIP, DRCOG "sets aside", or reserves, limited funds to be awarded periodically for non-TIP projects between TIP approval cycle years. The current 2023-2023 cycle includes the following 2020-2023 TIP Set-Asides:

- Community Mobility Planning and Implementation: funds small area planning and small infrastructure projects. The next call is expected in Summer 2021 for fiscal years 2022 and 2023.
- TDM Services: funds projects to reduce single-occupant vehicle travel and reduce traffic congestion.
- Regional Transportation Operations and Technology: funds projects related to safety, efficiency, dependability, and cost-effective of the regional transportation system. The next call is anticipated to occur in Summer 2022.

Whenever there is a call to apply for project funding, the sponsor eligibility requirements are stated and typically require a pledge to provide local matching funds, often 20 percent.

Opportunities to submit applications for funding can appear with limited advance notice and short application windows.

The ability of a small town to successfully implement and manage the support programs identified in this TMP improves the Town's readiness and ability to prepare competitive applications.

Photo, right: The Town's active Instagram account announcing construction underway following the successful application of a Safe Routes to School grant.

Project eligibility requirements will be identified and will affect the applicant's ability to rank well on a scoring matrix, which it typically provided in advance. Past DRCOG applications have included project eligibility requirements such as:

- cost estimate between minimum and maximum funding amounts
- specific project types, such as planning, infrastructure design or construction, TDM, bicycle or pedestrian facilities, or transit
- readiness to begin and finish project within a stated timeline
- quantitative data that was collected over a period of time to support project justifications, such as:
  - vehicle, bicycle, or pedestrian counts
  - crash data
  - pavement condition
- GIS mapping of transportation assets, environmental constraints, or census data such vulnerable populations
- concurrence by a transportation partner, e.g., CDOT if a project is within CDOT ROW
- consistency with DRCOG's Metro Vision objectives and focus areas
- ability to prove the project has been previously identified in a planning document

Tables 11 through 14 identify state, federal, DRCOG, and private transportation-related grant opportunities. Source links are provided in Appendix F.

Table 11. Transportation-Related Grant Opportunities (State)

Grant Source	Agency	Applicability to Transportation	Requirements / Deadline
State of Colorado			
Colorado Main Street Program	DOLA	• Pedestrian-oriented streets; Inviting atmosphere (include parking areas, street furniture, signs, sidewalks, lights, landscaping) • Mini grants: planning, training, physical improvements • Resources / assistance for main streets	Tier system: Affiliation > Candidate Mini-grant deadline for following fiscal year (April 1 / November 1)
Conservation Trust Fund (CTF)	DOLA	• Acquisition of New Conservation Site: Property for Parks and Open Space. Development of New Conservation Site: Development and Construction of Paths and Trails, Parking Lots, Landscaping. • Capital Improvements to Public Sites: ADA compliance on eligible facilities,	Annual Deadlines: March 31 Status CTF and spending report (previous year) Dec. 31 Certification of eligibility
State of Colorado HUTF		• The HUTF is a statutorily defined, state-collected, and locally shared revenue (state motor fuel tax, vehicle registration fees, driver's license fees, fines) that is distributed monthly among the state, counties, and municipalities. • Each municipality receives a share of the municipal portion of the HUTF based on a formula that factors its number of vehicles registered (~80%) and the center line miles of streets (~20%).	State law requires that municipalities annually submit two reports: Certification of Condition and Mileage Report (due March 1) and the Annual Receipts and Expenditures Report (due June 30)
FASTER Safety Program (Funding Advancements for Surface Transportation and Economic Recovery Act of 2009)	CDOT	• FASTER established the Road Safety Fund to support the construction, reconstruction, or maintenance of safety projects. • $80 million per year are allocated based on a statutory formula: 60% to CDOT, 22% to counties, and 18% to municipalities.	-
FASTER Bridge Enterprise	CDOT	• The purpose of the CBE is to finance, repair, reconstruct and replace designated bridges. • Revenues from the bridge safety surcharge fee are estimated to generate approximately $100 million in annual funding.	-
FASTER Transit Grants Program	CDOT	• Transit. $15 million annually ($10M for statewide, interregional, and regional; $5M for local transit projects)	Annual: One call for admin/ops/planning, one call for capital.

Table 11. Transportation-Related Grant Opportunities (State)

Grant Source	Agency	Applicability to Transportation	Requirements / Deadline
State of Colorado			
		• Bus stops, bike parking, transit maintenance facilities, vehicle replacements, multimodal transportation centers, and planning and capital projects.	
Great Outdoors Colorado (GOCO) Grants from Colorado Lottery proceeds	Independent Board	• Several different grants for conservation and access to recreation • Land Conservation grants for public access • Conservation Service Corps Grants to employ conservation service corps crews on projects like building trails • Community Impact Grants to develop and revitalize parks, trails	Conservation Services corps: September 2021 Resilient communities: Proposals due February 2021 for a decision March 2021
Multimodal Options Fund (MMOF) Senate Bill 18-01 (SB 1)	CDOT	• Capital, construction, operations, and planning. • TDM programs; multimodal mobility projects enabled by new technology; multimodal transportation studies; bicycle/pedestrian projects; capital or operating costs for fixed route and on-demand transit • Minimum project size: Transit ($25,000), Infrastructure ($150,000), Planning (no limit)	Administered by CDOT 50/50 match required Project selections are made by MPO/TPR
Transportation Alternative Program (TAP) Grants	CDOT	• Design and construction of pedestrian and bicycle facilities, environmental mitigation of transportation activities, scenic activities, and preservation of historic transportation facilities.	Annual. The call for projects will cover fiscal years 2021 through 2023 (October-December)
The Colorado State Recreational Trails Grant Program	Colorado Parks & Wildlife (CPW)	• CPW administers grants for trail-related projects on an annual basis. Local, county, and state governments, federal agencies, special recreation districts, and non-profit organizations with management responsibilities over public lands may apply Non-motorized trails grant application • Non-motorized trails grant / OHV grant	Non-motorized trail: Three-tiered process Aug-Oct 2021 OHV: December
Colorado the Beautiful	CPW	• It funds projects through large trail construction grants and regional trails planning grants.	June-August
Safe Routes to School (SRTS)	US DOT / CDOT	• Minimum grant award: $100,000 for infrastructure (max of $750,000) • Bike/Pedestrian sidewalks, trails, and paths within two miles of a school	Local share is 20% Aug-Nov 2020

Improvements to the intersections of Bella Rosa Parkway and the East and West I-25 Frontage Roads could present a cost-sharing opportunity between the Town and CDOT.

Table 12. Transportation-Related Grant Opportunities (Federal)

Grant Source	Agency	Applicability to Transportation	Requirements / Deadline
Federal			
Energy/Mineral Impact Assessment Fund (EIAF) State severance tax on energy and mineral production paid to the federal government	DOLA	• The purpose of the grant is to assist political subdivisions that are socially and/or economically impacted by the development, processing, or energy conversion of minerals and mineral fuels. • Planning, Engineering, Design Studies, Capital Projects • Road, Bridge, and Street Improvements (especially when connected to industry activity) • Paving or drainage projects connected to energy/mineral industry • Curb, gutter, culverts if coordinated with a road/street improvement	Match 50/50 Two applications in Fiscal Year 2021. • Tier I < $200k in September 2020 • Tier II $200k-$1M in February 2021
Energy/Mineral Impact Assessment Fund, University Technical Assistance Program	DOLA	• Technical design assistance for rural communities • Partnership between Colorado Center for Community Development and DOLA. • 75% of projects are implemented	Partnership
Federal Transit Administration (FTA) **Section 5304**	FTA	• Wide variety of transit-related planning activities: technical assistance, planning, research, demonstration projects, special studies, training • NOT capital or operating expenses	Annual
FTA **Section 5310**	FTA	• Mobility for seniors and individuals with disabilities	Match 80/20 (capital) 50/50 operating assist Annual
FTA **Section 5311**	FTA	• Rural transit: administrative, operating, and capital assistance to transportation provides in rural areas (less than 50,000 population).	Match 80/20 Annual (subrecipient)
Surface Transportation Block Grant Program (STBG)	FHWA	• The grant provides flexible funding that may be used by States and localities for projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects	Projects must be identified in STIP/TIP, coordination with MPO
Recreational Trails Program (RTP)	FHWA	• The Recreational Trails Program (RTP) provides funds to the States to develop and maintain recreational trails and trail-related facilities for both nonmotorized and motorized recreational trail uses.	Aug-Oct 2020
Highway Safety Improvement Program (HSIP)	CDOT	• Projects with potential for crash reduction. *(HSIP Grant mentioned in Frederick's 2019 Street and Alley Fund)*	Annual January 2020 was most recent due date
National Highway Performance Program (NHPP) FAST Act	FHWA	• The National Highway Performance Program provides funding for construction and maintenance projects located on the newly expanded National Highway System (NHS) – which includes the entire Interstate system and all other highways classified as principal arterials.	
Congestion and Mitigation and Air Quality (CMAQ)	FHWA	• The CMAQ funds are directed towards projects, programs, and operational strategies that provide residents with transportation options, make the most effective use of existing facilities, and lead to lower pollution levels • help states and metro regions meet federal air quality standards	
BUILD grant program	US DOT	• Better Utilizing Investments to Leverage Development, or BUILD Transportation Discretionary Grant program. • Targets 30% of its funding to rural areas	Preparing Benefit-Cost Analysis is needed April - May (expected)
INFRA grant program	US DOT	• The Infrastructure for Building America (INFRA) grant program targets highways, bridges and other transportation infrastructure using innovative approaches and partnerships with the private sector	January - February (expected)

Table 13. Transportation-Related Grant Opportunities (DRCOG)

Grant Source	Agency	Applicability to Transportation	Requirements / Deadline
DRCOG			
Transportation Improvement Program (TIP)	DRCOG / CDOT/ Local Jurisdictions	• The Denver region implements the fiscally constrained short-range transportation plan through DRCOG's TIP. The TIP identifies all current federally funded transportation projects to be completed in the Denver region over a four-year period • DRCOG administers an ITS funding pool and the Traffic Signal System Improvement Program	(October - September)
2020-2023 TIP Set-Asides: Community Mobility Panning and Implementation	DRCOG	• Small area planning and small infrastructure projects that contribute to the implementation of key outcomes within Metro Vision and the Metro Vision Regional Transportation Plan • Community Mobility Planning and Implementation	Summer 2021
Way to Go (TDM)	DRCOG	• Transportation demand management, or TDM, refers to activities that help people use the transportation system more efficiently while reducing traffic congestion, vehicle emissions and fuel consumption.	October
Regional Transportation Operations and Technology	DRCOG / CDOT / RTD	• The objective of the Regional Transportation Operations and Technology Set-Aside is to improve the safety, efficiency, dependability, and cost-effectiveness of our regional transportation system	Summer 2022
Air Quality Improvements	DRCOG / RAQC	• Our mission is to develop and propose effective and cost-efficient air quality planning initiatives with input from local government agencies, the private sector, stakeholder groups, and citizens of the Denver metropolitan area	-
Human Service Transportation	DRCOG / CDOT	• It funds transit capital, operating, and mobility management projects to improve service and mobility options for vulnerable populations by funding underfunded/underserved trips and rolling stock expansion	Summer 2020 was the latest call for projects

Table 14. Transportation-Related Grant Opportunities (Private)

Grant Source	Agency	Applicability to Transportation	Requirements / Deadline
Private (Not an Exhaustive List)			
Private Grants: National Association of Realtors		• Placemaking Grant available to REALTOR® associations. Temporary parklets, pop-up parks, pedestrian plazas, bike lanes.	
Private Grants: The Colorado Health Foundation		• Enhancements to existing infrastructure … to promote health equity	Varies by opportunity but generally Feb. 15, June 15, and Oct. 15
Private Grants: AARP Community Challenge		• Since 2017, annual quick-action grants available to local governments to create vibrant public places and deliver transportation and mobility options that increase connectivity, walkability, bike-ability, wayfinding, access to transportation and roadway improvements.	Next application window expected to be open February and March 2021,

References

Active Transportation and Multimodal Networks

Bikeway Selection Guide, U.S. Department of Transportation, Federal Highway Administration, February 2019.

Incorporating On-Road Bicycle Networks into Resurfacing Projects, FHWA-HEP-16-025, Federal Highway Administration, December 2015. https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/resurfacing/

Small Town and Rural Multimodal Networks, U.S. Department of Transportation, Federal Highway Administration, December 2016.

Urban Bikeway Design Guide, National Association of City Transportation Official, Second Edition, 2014.

CDOT

CO 52 Planning and Environmental Linkages (PEL) & Access Control Plan (ACP), https://www.codot.gov/projects/co52-pel-acp

DRCOG

Metro Vision, https://metrovision.drcog.org/

Roadway Networks

Intersection Safety Strategies, U.S. Department of Transportation, Federal Highway Administration, https://safety.fhwa.dot.gov/intersection/conventional/signalized/

Traffic Calming ePrimer, U.S. Department of Transportation, Federal Highway Administration, https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm

Traffic Calming Fact Sheets, May 2018 Update, ITE, https://www.ite.org/technical-resources/traffic-calming/traffic-calming-measures/

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