



FORT COLLINS, COLORADO

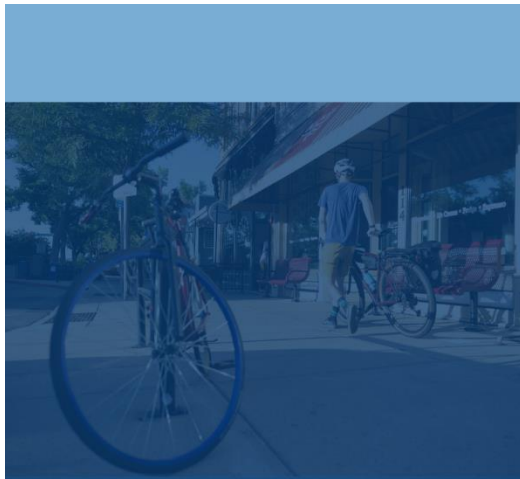
TRANSPORTATION CAPITAL PROJECT PRIORITIZATION STUDY

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TRANSPORTATION CAPITAL PROJECT PRIORITIZATION STUDY

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EXECUTIVE SUMMARY

This report outlines the process of the Transportation Capital Project Prioritization Study (TCPPS) for the City of Fort Collins (City). TCPPS was performed in the light of on-going efforts by the City to make informed, data-driven decisions on expenditures for transportation capital projects. Its primary focus is to find opportunities to improve traffic safety and congestion on the arterial network, while collaborating with parallel efforts such as the Active Modes Plan (AMP) and the Vision Zero Action Plan (Vision Zero). TCPPS was conducted in three phases: Data Collection and Initial Screening, Project Selection, and Concept Development.

Phase 1: Data Collection and Screening involved the collection and analysis of data to identify high-priority intersections and roadway segments. The analysis included reviewing traffic congestion and safety at all arterial streets and segments in the city. This process identified a ranked list sorted by delay and annual crashes at each intersection and segment, giving the team a variety of arterial intersections and segments that could be assembled into projects to carry forward.

Phase 2: Project Selection began with assembling a series of projects using the list of identified intersections and segments in Phase 1 along with improvements identified in parallel plans such as the AMP. Potential projects were selected based on their feasibility, potential impact, and ability to collaborate with other plans. Four quantitative and five qualitative criteria were developed in coordination with the AMP team and applied to the identified projects. This phase resulted in a draft list of ranked projects. The top 15 projects were then selected to move into the next phase.

Phase 3: Concept Development involved the development of conceptual designs, high-level cost estimation, and environmental screening for each of the top 15 projects. Project scoring was then refined, and a final ranked list of recommended projects was developed.

Subsequent to this study, the City will use the projects and outcomes to program the capital improvement plan. Implementation of the projects will depend on, among other factors, funding availability and opportunities to collaborate with other projects. These are two factors that are central to the Budgeting for Outcomes (BFO) process which is used by the City to select where to spend city budget. The BFO process aligns projects with the City's goals and occurs every two years, with projects submitted to City Council for recommendation and selection.

The TCPPS process has been a collaborative effort between the project team and the City. The goal of the study was to identify and prioritize projects that align with the City's goals and provide the greatest opportunity for improving safety, reducing congestion, and enhancing multimodal comfort. The final list of recommended projects represents a strategic approach to addressing the City's most pressing transportation needs.

1. PURPOSE & BACKGROUND

The City of Fort Collins selected Olsson to complete the Transportation Capital Project Prioritization Study (TCPPS). This study focused on arterial roadway and intersection improvements based on selected criteria that balances the need for safety and congestion improvements with the priorities of the community.

1.1 Study Background & Purpose

The City of Fort Collins conducted an Arterial Intersection Prioritization Study (AIPS) in 2010 and updated the study in 2016. The results of these efforts guided the selection of intersection improvement projects for pursuing grant funding, design, and construction. Most of the highest priority projects from the AIPS have been completed. This current study seeks to provide the next round of project identification and prioritization to guide capital project investment over the near-term planning horizon.

The City's Community Capital Improvement Program (CCIP) sales tax includes dedicated funding for arterial intersection improvements. There are additional funding sources available for corridor improvements within City limits and within the GMA. These funds are often used to leverage Federal and State grants. Additionally, the City's Budgeting for Outcomes (BFO) budget process has historically been used to help fund large transportation capital projects.

This Transportation Capital Project Prioritization Study (TCPPS) was initiated by the City of Fort Collins to identify arterial roadway and intersection improvements both within the city limits, and within the Growth Management Area (GMA). The analysis summarized in this report includes a compilation of data for arterial intersections and corridors, assessment of existing conditions for various quantitative and qualitative considerations, identification of potential improvement projects to address transportation system deficiencies, and prioritization of project needs based on feedback from the community.

This study represents a broad evaluation of arterial roadway and intersection needs within the City and GMA and includes criteria that overlap with other City efforts, such as multimodal (bicycle, pedestrian, and transit) considerations. This study is supplemental to other key citywide efforts focused specifically on these priorities, such as the Fort Collins Bicycle Master Plan (2014), Fort Collins Pedestrian Plan (2011), Fort Collins Transit Master Plan (2019), Active Modes Plan (2022), and Vision Zero Action Plan (2023). The intent of this study is to supplement and/or implement the guidance of these efforts at the arterial intersection and roadway level.

1.2 Study Framework

This study represents a three-phase, data-driven approach to project identification and prioritization. Phase 1 consists of a high-level screening of arterial intersections and arterial corridors based on key factors of safety and capacity. These locations are analyzed based on the potential to improve safety and congestion through improvements such as intersection geometric and roadway construction, signal timing adjustments, signal modifications or replacements, re-striping, or other treatments.

The top ranked locations for potential improvements were identified and specific project improvements were developed at these locations. These projects were then evaluated and prioritized in Phase 2 based on quantitative criteria and qualitative criteria. The criteria were established in coordination with City staff and aligned with the Active Modes Plan (AMP). Each project was then scored and ranked based on the priorities of the City. This phase resulted in a prioritized list of top-tier projects that were carried forward Phase 3.

Table 1 - TCPPS and Active Modes Alignment

	TCPPS	Active Modes Plan
Quantitative Criteria	Crash Reduction Reduction in annual crashes (crashes/year)	Safety & Comfort Citywide High-Injury Network; Bicycle or Pedestrian Level of Traffic Stress; Pedestrian distance to low-stress crossing opportunities
	Peak Hour Delay Reduction Amount of delay reduction (seconds)	Access Number of nearby Transfort stations or stops
	Equity Proximity to disadvantaged tracts as defined by the Fort Collins Health Equity Index (unitless)	Health & Equity Fort Collins Health Equity Index
	Growth Expected traffic growth from NFRMPO (%)	Network Connectivity Number of connections to existing or proposed bicycle/trail network
Qualitative Criteria	Cost Estimated project cost (present day dollars)	Cost Estimated project cost
	Readiness Availability of funding, railroad or utility impacts, right of way impacts and environmental impacts	Readiness Additional study or analysis needed
	Multimodal Benefit Supports proposed bike/ped/frequent transit projects shown in the AMP	Multimodal Benefit Coincides with proposed bike/ped/frequent transit projects
	Synergy Supports other currently funded or programmed public or private projects	Synergy Addresses the potential to support other currently funded or programmed public or private projects
	Community Addresses community needs and interests based on public input and identified community activity centers, open spaces, etc.	No comparable metric

Phase 3 takes the top-tier projects and further defines each project's specific improvements and cost. Conceptual designs were prepared that show the recommended improvement, impacts, and conceptual cost estimate. This information will be used by the City to aid in preparing the Ten-Year Transportation Improvement Plan and identifying funding opportunities.

1.3 Public Involvement

The local community and stakeholders were engaged throughout the entire study to gain an understanding of the issues and challenges facing the transportation network in Fort Collins. Input from the overall effort was used to not only identify location where improvements were needed but to also understand the desires of the public to inform creation and weighting of the prioritization criteria. A public involvement strategy consisting of a series of online and in person engagement opportunities, including the following outlets, was conducted:

- Webpage
- Social Media
- Press Releases
- Newsletters
- Community Partners Email Blasts
- In Person & Virtual Open Houses
- Public Surveys
- Transportation Board Presentations

The complete public involvement plan and engagement results can be found in **Appendix A – Public Engagement Summary**. The information gathered was incorporated into each phase of the study and used to guide the study, to ensure that the detailed engineering results produced aligned with the real-world observations and needs of the community.

1.4 GIS Tool

Concurrent to the TCPPS, Olsson developed a GIS-based tool to assist the City of Fort Collins in a data-driven approach to maintaining the capital projects list. A Screening Tool was developed that houses the city-wide congestion and safety data as well as other relevant data used to perform the Phase 1 screening. These will be managed in a spreadsheet-based tool that inventories and scores projects. Future efforts beyond this study are being contemplated that would develop a Management Tool that houses the capital project list from all city departments with associated tags and filters. These tools should be updated with new information, such as that related to congestion and safety. As the City continues to grow and develop, projects can be reprioritized as needs shift and funding becomes available. This section provides a description of these tools. Additionally, user guides for each tool are included in **Appendix B**.

1.4.1. Screening Tool

The screening tool was created with the intent of housing all the information needed to conduct the Phase 1 effort of this study. It contains GIS layers showing current and notable features within Fort Collins. The Screening Tool is an online GIS Web Application that can be found here: [Fort Collins TCPPS Phase I Screening Tool \(arcgis.com\)](#). This tool contains the data layers that were used in TCPPS to identify top locations that would benefit from improvements, shown in **Table 2**.

Table 2 - Screening Tool Layers

Congestion	
AM LOS	PM LOS
Midday LOS	
Safety	
LOSS	Excess Crash Cost
Excess Crash Costs Trends	
Active Modes	
Master Street Plan	Multi Use Trail
Bus Routes	Planned Trail
Bicycle Network	Pedestrian Priority Areas
Public Engagement Results (by mode)	
Driving Issues	Biking Issues
Walking Issues	Transit Issues
Community	
Poudre School District - Schools	Elementary School Attendance Zones
Community Activity Center	Middle School Attendance Zones
Hospitals	High School Attendance Zones
Structure Plan – Land Use	
Planning Area	
Adjacent Planning Areas	Fort Collins City Limits
Fort Collins Growth Management Area	
Equity	
Health Equity Index	

Each of these data layers can be updated in future years to identify new potential projects. Instructions for updating this Additional information regarding the Screening Tool can be found in **Appendix B – GIS Users Manual**.

1.4.2. Management Tool

Like the Screening Tool, the Management Tool was created to support the study process as the City of Fort Collins shepherds the capital projects list moving forward. The Management Tool is structured as an Excel spreadsheet with filters to sort all the capital and operational projects, as well as corridor studies identified in TCPSPS. Each project includes relevant information to assist in sorting and filtering, as outlined in **Table 3**.

Table 3 - Management Tool Filters

Field		Description
Project Name		Name of the project
Project Category	Capital, Corridor Study, Operational	
Project Type		Intersection Improvements, Corridor Improvements, Road Diet, New Construction
Project Description		A brief summary of the proposed improvements
Quantitative Criteria Scores & Weighting		Crash Reduction, Delay Reduction, Health Equity, Traffic Growth
Qualitative Criteria Scores & Weighting	Readiness, Cost, Multimodal Benefit, Synergy, Community (Benefit)	
Score	Total Project Score	

Each recommended project is accompanied by a summary sheet that provides essential project details, such as detailed scoring criteria, scope elements, budget, anticipated schedule, and anticipated impacts. The project team has explored the feasibility of migrating the tabular data to a GIS platform. Such a transition would enable dynamic filtering and sorting of projects, as well as the storage of data and visual representation of project locations on a map. Future iterations of the Management Tool could incorporate this functionality to assess capital projects.

2. PHASE 1 - DATA COLLECTION & SCREENING

The project study area and intersections included in this analysis are shown on **Figure 1**. The intersections chosen for the study include signalized arterial intersections, unsignalized arterial-to-arterial intersections and arterial segments. An initial, high-level screening of arterial intersections and corridors was conducted based on a data-driven evaluation of safety and congestion conditions within the City and GMA. The following safety and congestion sections describe the methodology utilized for both categories. To accurately plan within the context of future conditions of the TCPSPS study area, the new and proposed streets which are part of known significant and upcoming developments were also included in the screening. The largest development in the planning horizon is the Montava Master Planned Community. Montava is an

860-acre mixed use master planned community located in northeast Fort Collins on agricultural land adjacent to the Anheuser-Busch facility.

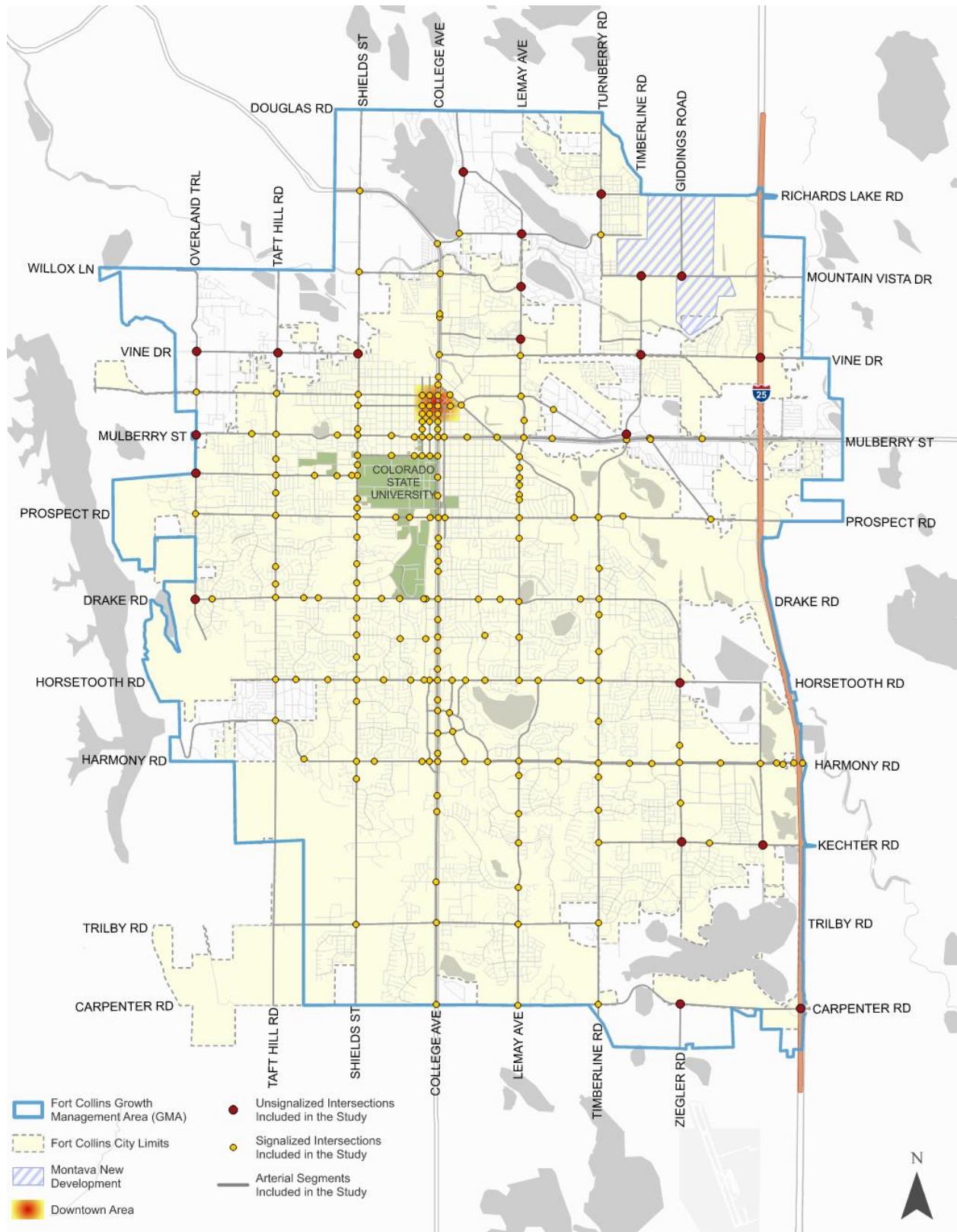


Figure 1 – Study Area

2.1 Screening Analysis

2.1.1. Intersection Congestion

Intersection capacity was evaluated for all signalized intersections using the Highway Capacity Manual (HCM) delay methodology (with Synchro capacity modeling software) for existing AM, mid-day, and PM weekday peak hours. HCM delay is represented in average delay per second for individual movements (turns), intersection approaches, and for each overall signalized intersection. A “Level of Service” (LOS) letter grade A through F is assigned to the average delay values with LOS A representing near free flow conditions, and LOS F representing congested conditions shown in **Table 4**. Typically, LOS D or better is considered acceptable at an arterial intersection during peak hour conditions.

Table 4 - Level of Service Criteria

Level-of-Service	Average Control Delay (seconds)	
	Signalized	Unsignalized
A	≤ 10	≤ 10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

Source: Highway Capacity Manual (HCM 6th Ed.)

Table 4-2 of the LCUASS defines LOS standards for Fort Collins, outlining various LOS thresholds required to satisfy Adequate Community Facilities (ACF) standards for signalized and unsignalized intersections. This standard requires signalized arterial intersections to operate at LOS D or better overall and LOS E or better for any leg or movement. Unsignalized arterial intersections must operate at LOS E or better (LOS D in some cases) and may operate LOS for any leg or movement. Roundabouts must operate at LOS E for any movement, leg, and overall. These standards were used to guide determinations of when an intersection is considered to operate at an unacceptable level.

2.1.2. Intersection Crashes

The safety analysis performed for the TCPPS study area included an intersection-by-intersection review of excess crash costs, the intersection Level of Safety Service (LOSS), and excess crash cost trends. Crash data was provided by the City of Fort Collins. The results of the excess crash cost and LOSS analysis was also provided by way of *Fort Collins Annual Roadway Safety Review* (City of Fort Collins 2021). This memorandum summarizes a statistical analysis of crashes at intersections; examining the crash frequency, patterns, and severity.

Excess Crash Costs

Three years of crash data from 2018 to 2020 throughout the study area were quantified by the City in terms of potential crash reductions by using the excess crash costs methodology from the American Association of State Highway Transportation Officials (AASHTO) Highway Safety Manual (HSM). This methodology compares the actual crashes accounted for at each intersection in the crash history dataset with the number of crashes predicted to likely occur within the model, based on general information such as roadway type, intersection control, and annual average daily traffic (AADT). This methodology standardizes the estimation of the economic and societal costs of crashes in a consistent and reliable way to highlight intersections that are quantitatively performing poorer than expected in terms of safety. This data can be used to determine the intersections with the most potential for crash reduction and to provide preliminary insight into crash patterns and potential issues at intersections.

Level of Safety Service (LOSS)

The LOSS is a methodology pioneered by the Colorado Department of Transportation (CDOT) to identify locations with potential for safety improvements. The LOSS uses quantitative methods to compare crash frequencies and severities against Safety Performance Functions (SPFs) and is the reported with qualitative descriptors to characterize the potential crash reduction of a roadway. The LOSS is categorized between LOSS 1 to LOSS 4 in which LOSS 4 has the highest potential for crash reduction and improved safety. While similar in function to the excess crash cost methodology, the LOSS methodology is specifically calibrated to Colorado's public roadways.

Excess Crash Cost Trends

The excess crash cost trends compare excess crash costs of the 2018 through 2020 dataset with an additional three-year dataset from the years 2015 to 2017 to determine whether the safety of each intersection is trending in a positive or negative direction. The TCPSPS methodology prioritizes addressing intersections with a negative trajectory as these have the highest potential for safety improvements.

After these metrics were assessed across the TCPSPS study area, City of Fort Collins staff and TCPSPS project staff excluded intersections from the rankings which were either trending positively, having no excess crash costs, intersections which have been improved recently or are currently undergoing construction, and intersections which are to be included in larger corridor projects.

2.2 Screening Results

The results of the Phase 1 congestion and safety screening for the top intersections and corridors are described in detail below. In each table, the locations have been sorted by performance in descending order, with intersections or corridors that have the worst delay and safety ratings at the top, and those with the more acceptable delay and safety ratings at the bottom.

2.2.1. Intersection Congestion Screening

The top twenty congested arterial intersections based on the average overall delay (per second) are shown in **Table 5**. These intersections have unacceptable overall LOS as described in LCUASS which follow the delay standards put forth in the ACF. As these are all signalized intersections, the list reflects locations with overall intersection delay greater than 55 seconds (LOS E) at any peak hour or individual approaches greater than 80 seconds (LOS F) for any peak hour. Those with both overall intersection and approach delay that exceed ACF standards are considered strong candidates to include in projects for Phase 2.

Table 5 - Top Twenty Congested Intersections

Intersection	Overall Intersection			Worst Approach		
	Delay (sec)	LOS	Peak Hour	Delay (sec)	LOS	Peak Hour / Approach
Timberline & Willow Springs/Kechter	261.7	F	Midday	566	F	Midday / West
McClelland/Max BRT & Drake	200.1	F	PM	315	F	PM / East
Taft & Mulberry	184.8	F	Midday	360	F	Midday / West
College (US 287) & Harmony	65.8	E	PM	90	F	PM / North
Shields & Elizabeth/Moby Lot (Eliz)	62.4	E	PM	97	F	PM / East
College (US 287) & Drake	60.3	E	PM	97	F	Midday / East
College (US 287) & Trilby	58.7	E	PM	82	F	Midday / East
Lemay & Drake	56.9	E	PM	95	F	PM / East
Shields & Prospect	53.2	D	PM	109	F	PM / West
Timberline & Harmony	53	D	PM	99	F	PM / South
Timberline & Mulberry	47.8	D	PM	102	F	AM / North
Timberline & Drake	46.9	D	PM	90	F	AM / West
Lemay & Harmony	42.5	D	PM	84	F	PM / South
Lemay & Riverside	40.7	D	PM	92	F	PM / North
Taft & Harmony	40	D	PM	83	F	AM / North
Hogan/JFK & Harmony	37.5	D	PM	102	F	PM / South
Riverside & Prospect	34.2	C	PM	94	F	PM / South
Shields & Raintree/Centre	31.1	C	PM	151	F	AM / West
Link Lane & Mulberry (State 14)	28.7	C	PM	114	F	PM / North
Shields & Swallow	24	C	PM	88	F	PM / West

2.2.2. Safety Screening

Intersection Safety Screening

Table 6 provides the top intersections with the highest potential for safety mitigation determined by the City of Fort Collins in the *Roadway Safety in the City 2019 Annual Report*. These intersections are ranked by excess expected crash costs as described in **Section 2.1.2**. The top 25 locations were reported as these were identified in Annual Crash Report is the highest priority locations. Intersections that have both excess and increasing crash costs and LOSS 4 were given high priority to move to projects in Phase 2.

Table 6 - Top Twenty-Five Intersection Safety Rankings

North-South Street	East-West Street	Excess Expected Crash Value (\$)	LOSS Total Crashes	LOSS Fatality / Injury Crashes	Δ Crash Cost ⁽¹⁾
College Ave	Trilby Rd	\$673,877	LOSS 4	LOSS 4	-\$24,614
Boardwalk Dr	Harmony Rd	\$524,469	LOSS 4	LOSS 4	\$412,317
College Av	Harmony Rd	\$456,046	LOSS 3	LOSS 3	\$546,967
Shields St	Horsetooth Rd	\$326,204	LOSS 3	LOSS 3	\$386,382
College Av	Mulberry St	\$309,376	LOSS 4	LOSS 3	\$449,517
College Av	Vine	\$293,951	LOSS 3	LOSS 4	\$116,369
Timberline Rd	Custer	\$191,575	LOSS 4	LOSS 4	\$184,565
Shields St	Trilby Rd	\$177,210	LOSS 4	LOSS 4	\$122,793
Shields St	Plum	\$169,343	LOSS 3	LOSS 3	\$45,670
Mcclelland	Horsetooth	\$163,920	LOSS 4	LOSS 4	\$54,859
Remington	Mulberry St	\$158,113	LOSS 3	LOSS 4	-\$43,039
Taft Hill Rd	Mulberry St	\$150,931	LOSS 3	LOSS 3	\$93,264
Shields St	Harmony Rd	\$142,966	LOSS 3	LOSS 3	\$67,677
College Av	Willox	\$130,010	LOSS 3	LOSS 3	\$247,018
Taft Hill Rd	Prospect Rd	\$127,015	LOSS 3	LOSS 3	\$20,452
Lemay	Horsetooth (East)	\$115,523	LOSS 3	LOSS 3	\$121,127
Heatheridge	Prospect	\$104,694	LOSS 4	LOSS 4	\$122,097
Lemay	Carpenter	\$101,682	LOSS 3	LOSS 3	\$102,539
JFK	Boardwalk	\$100,645	LOSS 3	LOSS 4	\$119,628
College Av	Kensington	\$99,672	LOSS 3	LOSS 3	-\$14,934
Mason	Mulberry	\$79,567	LOSS 3	LOSS 3	-\$6,684
Taft Hill	Clearview	\$78,218	LOSS 3	LOSS 4	-\$28,289
Stover (East Int.)	Prospect	\$75,178	LOSS 4	LOSS 4	\$45,860
College Av	Cherry	\$72,914	LOSS 3	LOSS 3	\$86,460
Overland	Elizabeth	\$63,090	LOSS 3	LOSS 3	\$101,346

(1) Crash trends comparing 2015 - 2017 vs. 2018 - 2020 as the difference in crash cost

Corridor Safety Candidates

Table 7 provides a summary of crash rates along roadway segments for crashes that were not assigned to intersections. These include mid-block crashes related to turning movements and crashes that occurred at driveway access points, in addition to other non-intersection related crashes. A higher ranking indicates a higher crash rate. Crash rates are expressed as crashes per million entering vehicles (MEV) in order to normalize the crash data with roadway volumes and segment lengths. This data was assessed in conjunction with the arterial intersection safety and congestion analysis to identify potential projects that may overlap between the two data sets (intersection and roadway segment). Roadway segments that had either a discernable crash pattern or could be included with other intersection or corridor projects were identified as strong candidates to include in projects to move into Phase 2.

Table 7 - Top 25 Roadway Segment Crash Rankings

Rank	Roadway Segment	Segment ID(s)	Extents	Crash Rate
1	W. Mountain Ave.	6932, 6934	Howes to College	1306.0
2	Jefferson St.	6271, 6272	College to Mountain	1068.7
3	E. Mountain Ave.	6574	Matthews to Riverside	916.3
4	N. College Ave.	3707, 5408	Mountain to Jefferson	874.8
5	S. College Ave.	47, 48	Olive to Mountain	738.8
6	E. Troutman Pkwy.	1424	College to JKF	732.1
7	W. Troutman Pkwy.	3724	Mason to College	707.1
8	Boardwalk Dr.	5519	College to Whalers Way	651.7
9	S. Taft Hill Rd.	5508	Trilby to Brixton	449.3
10	W. Elizabeth St.	2673	Hillcrest to S. Taft	433.4
11	S. Mason St.	1427, 598	Boardwalk to Horsetooth	423.2
12	W. Elizabeth St.	1882, 2647	Constitution to Shields	397.9
13	S. Mason St.	4118	Harmony to College	390.6
14	N. College Ave.	5410	Vine to Suniga	370.5
15	S. College Ave.	3385, 3387	Laurel to Mulberry	368.8
16	W. Prospect Rd.	4158	Center to Bay	351.1
17	W. Drake Rd.	700375823, 2945	Meadowlark to College	306.9
18	E. Willox Ln.	935	College to Blue Spruce	286.3
19	S. Taft Hill Rd.	5491	Drake to Valley Forge	284.7
20	S. College Ave.	2939, 2940, 2950, 2958, 2959, 4571, 5516, 5517, 5518	Prospect to Drake	218.1
21	E. Prospect Rd.	6239	Lemay to Yount	256.0
22	S. Lemay Ave.	7902	Prospect to Stuart	245.2
23	E Harmony Rd.	5532	Timberline to Snow Mesa	229.7
24	S. College Ave.	1412	Horsetooth to Bockman	226.5
25	N. Lemay Ave	4308	Lincoln to Buckingham	209.7

2.2.3. Road Diet Screening

Road diets are frequently considered when a corridor has excess capacity and a high frequency of crashes, high incidence of speeding or would benefit from additional multimodal facilities. Such preliminary planning-level analyses have been performed for this project to identify potential road diet candidates along arterial corridor segments within the study area.

The corridor segment capacity analysis used the latest traffic count data, along with 2040 growth rates, from the North Front Range Metropolitan Planning Organization (NFRMPO) travel demand model. These volumes were compared against assumed traffic volume thresholds shown in **Table 8 and 9**. Volume thresholds are defined as the maximum traffic volume at a roadway’s ultimate capacity – assumed to be LOS E. Volume thresholds vary for different roadway types based on multiple geometric and operational factors, including roadway surface, number of lanes, lane width, presence of turn lanes, and access condition.

Table 8 - Two Way Urban Arterial Street Segment Capacities

Total Number Of Through Lanes	Median Type	Turn Lanes	Access Condition			
			Minimal	Light (Residential)	Moderate (Mixed Zoning)	Heavy
2	Undivided	Gravel	2,000	-	-	-
		Without Left Turn Lanes	13,400	12,800	12,400	11,600
		With Left Turn Lanes	15,600	15,000	14,000	13,600
2	Divided	Without Left Turn Lanes	14,400	13,800	13,400	12,600
		With Left Turn Lanes	17,800	17,000	15,600	15,400
3	TWLTL	With Left Turn Lanes	17,600	17,000	15,400	15,400
4	Undivided	Without Left Turn Lanes	27,000	26,000	26,000	24,400
		With Left Turn Lanes	33,600	32,400	32,200	30,200
5	TWLTL	With Left Turn Lanes	35,600	34,400	34,200	32,200
4	Divided	Without Left Turn Lanes	30,000	29,000	29,000	26,000
		With Left Turn Lanes	39,400	38,000	37,000	36,000
		With Left and Right Turn Lanes	41,800	40,200	39,200	38,200
6	Divided	Without Left Turn Lanes	45,200	46,000	43,600	41,600
		With Left Turn Lanes	59,200	57,200	55,800	54,400
		With Left and Right Turn Lanes	62,600	60,400	60,400	57,600
8	Divided	Without Left Turn Lanes	78,800	76,200	74,400	72,600
		With Left Turn Lanes	83,400	80,600	80,600	76,800

Table 9 - One Way Urban Arterial Street Segment Capacities

Outside CBD		Inside CBD	
Number of Lanes	Capacity (vpd)	Number of Lanes	Capacity (vpd)
1	7,200	1	7,700
2	14,600	2	15,600
3	22,400	3	23,400
4	29,800	4	31,300

Note: These tables represent ultimate capacity used in travel demand modeling. They represent the threshold for when a facility is expected to cross from LOS D to LOS E. These should be used as a planning level guidance only and be checked against demand and capacity of each facility being studied

Each arterial corridor segment within the study area with more than one lane per direction was evaluated as a potential road diet candidate. The existing and projected 2040 traffic volumes for each corridor segment were compared to the planning level capacities shown in Tables 5a and 5b to determine the ultimate volume to capacity (v/c) ratio. A segment with v/c ratio approaching 1.0 (approximately <0.85) was used to identify potential road diet candidates. Additionally, locations were screened for those within the top 25 crash segments or were included in the AMP, noting that some locations do have volumes exceeding the capacity guidelines above and will need to be confirmed in preliminary design. A summary of potential road diet segments is outlined in **Table 10**.

Table 10 - Potential Road Diet Candidates

Corridor	Extents	ADT		Assumed Segment Capacity	Top 15 Crash Segment	Included in AMP ¹	Notes
		Current (Year)	Future (2045)				
Drake Rd	Overland Trail to Taft Hill Rd	13,900 (2019)	18,000	17,000		X	Verify capacity near S. Taft Hill
JFK Pkwy	Harmony Rd to Horsetooth Rd	6,800 (2019)	10,100	15,400		X	
Jefferson Street	Mountain Ave to College Ave	9,300 (2018)	8,900	11,700	X	X	
Riverside Ave	Lemay Ave to Prospect Rd	14,800 (2018)	17,800	15,400			Verify overall capacity
Shields St	Mulberry St to Mountain Ave	11,900 (2018)	14,500	15,400		X	
Troutman Pkwy	Mason St to Boardwalk Dr	5,600 (2019)	8,300	15,400	X		
Ziegler Rd	Rock Creek Dr to Harmony Rd	12,000 (2018)	17,800	17,000		X	

1. In draft version of the AMP currently under review by City of Fort Collins.

In urban settings, delay tends to be experienced at intersections. Therefore, segment capacities were used as a measure for screening of road diet candidates. Detailed intersection analyses will be carried out during Phase 2 to verify feasibility of the lane reconfigurations.

2.3 Top Locations

The high-level safety and congestion analysis conducted in Phase 1 produced a list of corridors and intersections throughout the study area that provided opportunity to improve operations. In this process, data was assessed to identify which roadways and intersections presented the highest needs in terms of delay, traffic operations, and safety or those that provide the greatest opportunity to improve the multimodal network or combine with other identified needs. Specific reasons for selecting segments for congestion or safety needs are discussed in the preceding sections. From this analysis, priority intersections and corridors were identified to funnel into Phase 2, to develop into projects.

3. PHASE 2 - PROJECT SELECTION

The highest-ranking (lowest performing) intersections and roadway segments identified in Phase 1 were reviewed in more detail to determine potential projects that would provide the greatest opportunity for feasible, impactful projects. Top locations from the lists of intersections with congestion or safety issues (**Tables 4 and 5**, respectively), top crash segments (**Table 6**), and road diet candidates (**Table 9**) were selected and assembled into projects. This process was largely collaboration within the project team and the City of Fort Collins to identify locations that have an identified need, do not have a previously programmed project, and can address multiple proximate issues. For example, an intersection with safety or congestion issues may be coupled with an adjacent street segment with safety issues to create a project.

To aid in selection of top projects, a series of quantitative criteria were developed and applied to the identified projects. These criteria were developed in coordination with the City of Fort Collins and aligned with the AMP to best achieve the current goals of the city. These criteria are explained in detail in the following sections.

Each project was evaluated against the Quantitative and Qualitative Criteria, resulting in a score for each criterion. Individual criterion scores were then combined to create a total score for each project, and projects were ranked in order based on these scores. From this ranking the top 15 projects were identified to move into the next phase.

3.1 Project Identification

The priority intersections and segments identified in Phase 1 were further studied to identify improvements that would address safety, congestion, multimodal comfort, multimodal network

and future traffic growth. Each project was summarized into the following Project Types and Project Categories. These projects are illustrated in **Figure 2**.

Roundabouts were considered for project solutions, however, due to the amount capital investment, there would not be a commensurate safety benefit as compared to other project types.

<u>Project Type</u>	<u>Project Category</u>
- Intersection improvements	- Capital
- Corridor improvements	- Studies
- Road diets	- Operational
- New construction	

Identified projects that are recommended for additional study to determine potential solutions have been categorized as studies. These projects have also been separated from the prioritization process and are listed in **Table 11**.

Table 11 - Study Recommendation List

Project Name	Project Location	Type	Description
College Avenue Corridor Improvements	Olive to Cherry	Corridor Improvements	Planning Project: Safety improvements through downtown (TBD), include Cherry Ave
Harmony Corridor	Boardwalk to Mason	Corridor Improvements	Corridor Study: to review access control, safety and multimodal improvements
Mountain Avenue Corridor Improvements	Mason to Jefferson	Corridor Improvements	Roadway and multimodal Improvements being planned as separate project
Riverside Avenue	Lemay to Prospect	Road Diet	Road diet of existing roadway to accommodate two-way cycle track. Recommend additional study to evaluate traffic effects from corridor.

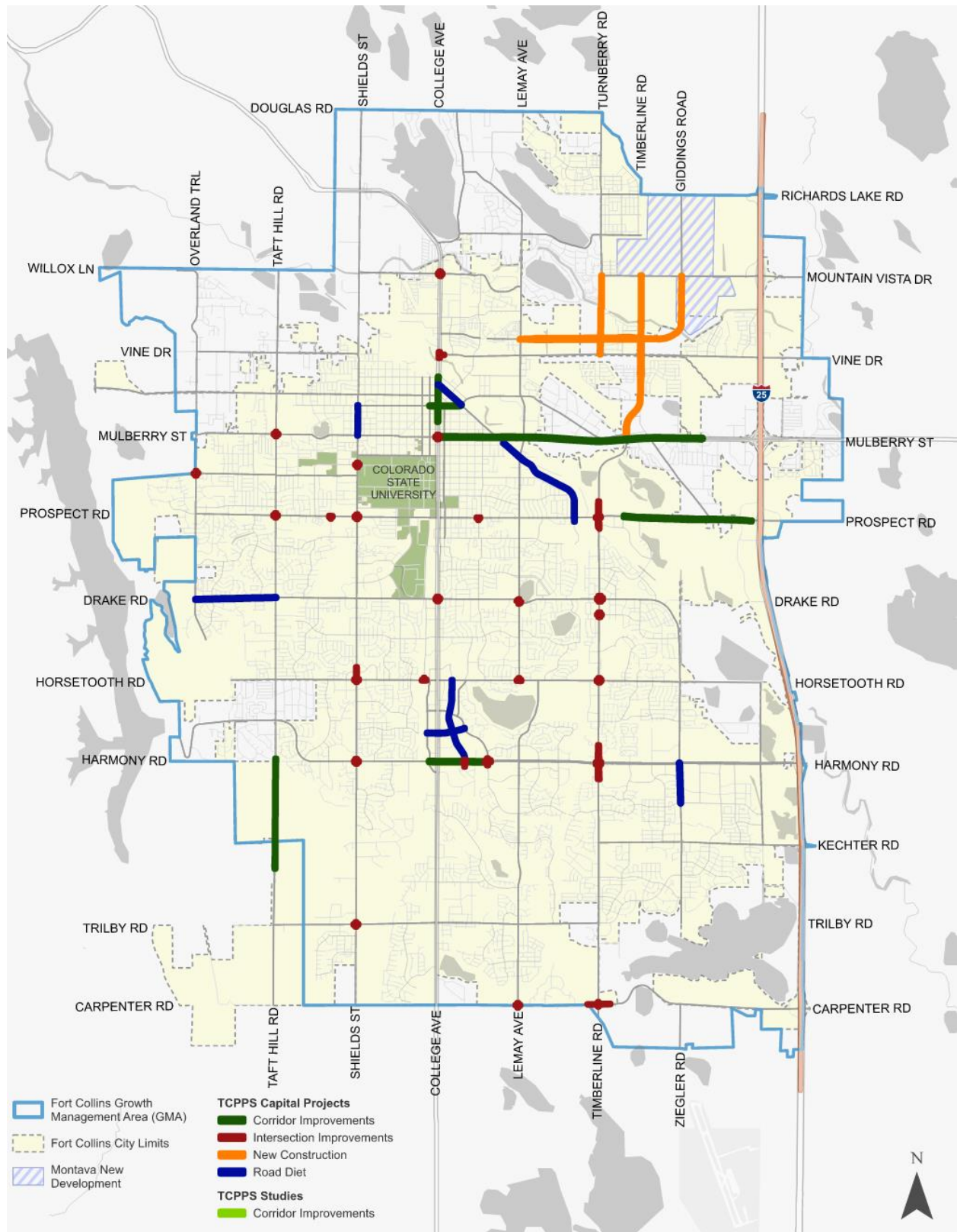


Figure 2 - Identified Projects Map

Note that identified solutions to issues at many locations, particularly intersections, were relatively simple to implement and were thus categorized as Operational projects. These projects were separated from the potential capital project list and provided to Fort Collins Traffic Operations team for implementation independent of development and execution of the capital improvement plan. A list of the operational projects is shown in **Table 12**.

Table 12 - Operational Project Recommendations List

Project Name	Type	Description
College & Mulberry	Intersection Improvements	Signal Retiming: Add LPIs all directions (active only w/ped call)
College & Vine	Intersection Improvements	Signal Modification: Restrict WB RTOR, add WB overlap signal head
College & Willox	Intersection Improvements	Signal Retiming: Consider protected left-turn NB/SB during peak hours
Lemay & Carpenter	Intersection Improvements	Signal Modification: Add SB flashing yellow arrow and SB protected-permissive phasing (consider increasing cycle length)
Lemay & Horsetooth	Intersection Improvements	Signal Modification: Replace far-side right-turn overlap signal; install new near-side right-turn overlap signal
McClelland & Horsetooth	Intersection Improvements	No project identified.
Shields & Harmony	Intersection Improvements	Signal Timing/Phasing: Protect-only EB/WB left-turns, add WB RT overlap phase.
Shields & Trilby	Intersection Improvements	Signal Modifications: Add EB & WB flashing yellow arrow left-turn heads and protected/permissive left-turn operation
Stover & Prospect	Intersection Improvements	Signing: Add overhead school crossing signs on existing signal mast arms.
Taft Hill & Mulberry	Intersection Improvements	Signal Timing: Extend eastbound and westbound all-red time from 1.5 to 2 sec.
Taft Hill & Prospect	Intersection Improvements	Signal Modifications: Add 2nd overhead signal heads (over each through lane), SB, NB and EB; add SB flashing yellow arrow left-turn head with protect-only operation by peak hour
Timberline & Custer	Intersection Improvements	Signing and Marking: Provide additional signing and marking to deconflict right-turns w/bicyclists
Timberline & Drake	Intersection Improvements	Signal Modification: Add EB and WB RT overlap signals/phases

3.2 Quantitative Scoring Criteria

Capital projects and studies progressed in the quantitative scoring. Additionally, new construction projects, identified by a judgment-based selection from new segments planned in the Montava area, were included for scoring. Studies will not be considered for overall project prioritization; however, this information will be used to prioritize these projects in the future and will be included in the Management Tool. Additional congestion and safety calculations were completed as a part of the quantitative scoring shown in **Appendix C**.

Crash Reduction

This criterion is a measure of the potential annual crash reduction from the recommended improvements. Crash reduction factors associated with the proposed improvements were selected from the CMF Clearinghouse to identify the potential annual crash reduction. Scoring descriptions are shown in **Table 13**. Note that separate scoring was developed for New Construction projects.

Table 13 - Crash Reduction Per Year Score

New Construction		Road Diets, Intersection and Corridor Improvements	
Measurement	Score	Measurement	Score
Low - Minimal apparent safety benefit	1	0 - 4 annual crash reduction	1
-	-	>4 - 8 annual crash reduction	2
Medium - Provides some benefit at existing intersections	3	>8 - 12 annual crash reduction	3
-	-	>12 - 16 annual crash reduction	4
High - Provides clear safety benefit to all modes of travel, particularly at intersections	5	>16 annual crash reduction	5

Peak Hour Delay Reduction

Level of Service (LOS) is a quantitative measure used to describe how much delay a driver experiences during individual turning movements and at intersections. LOS is calculated as an average delay per second for these specific movements during peak hours of traffic throughout the day. The Peak Hour Delay Reduction evaluation measure focuses on the average seconds of delay reduced across all peak hours of the day as a result of recommended roadway improvements. Individual intersections and non-intersection road segments are provided a score depending on how many average seconds of delay have been reduced. Scoring descriptions are shown in **Table 14**.

Table 14 - Peak Hour Delay Reduction Score

New Construction		Road Diets, Intersection and Corridor Improvements	
Measurement	Score	Measurement	Score
Low - Minimal apparent peak hour delay reduction	1	< 2 seconds	1
-	2	>2 - 4 seconds	2
Medium - Provides some delay reduction	3	>4 - 6 seconds	3
-	4	>6 - 8 seconds	4
High - Provides high delay reduction	5	>8 seconds	5

Equity

This criterion acknowledges the importance of considering how a project affects health and equity of the community. Fort Collins has developed a Health Equity Index (HEI) using census data specific to factors like age, disability, and access to a vehicle that affect an individual’s ability to access and use the transportation network. The HEI most vulnerable communities. Scoring is based on the values provided within this HEI. Scoring descriptions are shown in **Table 15**.

Table 15 - Equity Score

Measurement	Score
0 – 50	1
51 – 60	2
61 – 75	3
76 – 90	4
91 – 100	5

Growth

This criterion represents the expected growth in traffic annually as determined by travel demand modeling performed by the North Front Range Metropolitan Planning Organization (NFRMPO). A project’s relation to the growth score addresses the relative urgency to construct the project in time to meet future traffic demand. Scoring descriptions are shown in **Table 16**.

Table 16 - Annual Growth Score

Measurement	Score
< 2%	1
-	-
>2% - 4%	3
-	-
> 4%	5

3.3 Qualitative Scoring Criteria

Following the quantitative scoring, the capital projects and studies progressed in qualitative scoring. The qualitative scoring criteria were developed to provide a way to capture benefits and impacts to the community that are difficult to apply quantitative measure but nonetheless critical to consider to meet the values of Fort Collins. The best available information is used throughout the qualitative scoring process to facilitate initial project prioritization recommendations. These criteria are later updated as additional information through Phase 3.

Cost

This criterion is based on the total cost estimate for each project. The total conceptual cost includes high level estimates of construction, utilities, Right-of-Way, design fees, and construction administration costs based on the engineering judgement. Scoring descriptions are shown in **Table 17 – Cost Score**

Table 17 - Cost Score

Measurement	Score
\$0 - \$1,000,000	5
>\$1,000,000 - \$5,000,000	4
>\$5,000,000 - \$10,000,000	3
>\$10,000,000 - \$20,000,000	2
> \$20,000,000	1

Synergy

This criterion addresses the potential to support other currently funded or programmed public or private projects. This does not include compatibility with other master plans. A higher score represents a project with more direct benefit for another identified public infrastructure project or private development project and the more likely it is able to support one or both of the existing projects. Scoring descriptions are shown **Table 18**.

Table 18 - Synergy Score

Measurement	Score
Does not provide benefit to another public or private project.	1
-	-
May provide an approximate benefit to another public or private project.	3
-	-
Provides a direct benefit to another public or private project.	5

Readiness

This criterion involves an evaluation of overall complexity that may contribute to additional effort by the City of Fort Collins or the engineering teams prior to the project being ready for final design and construction. The risk to the project schedule was assigned to each of the sub criterion to determine this score, including likelihood of funding, need for right-of-way acquisition, impact to rail or utilities as well as utility relocation by others, and potential environmental impacts. Due to the potential for schedule risks to overlap, the highest schedule risk is used to rank each project. Scoring descriptions are shown in **Table 19**.

Table 19 - Readiness Score

Sub Criterion	Measurement	Risk to Schedule (Months)
Right of Way Impact	None - No ROW or Easements are identified	0
	Minor - Only a few parcels need ROW or easements (ex: Intersection Improvement)	9
	Major - More than 5 parcels will need ROW of easements (ex: corridor improvement)	18
Railroad or Utility Impact	Low - No or minimal impact to utilities (ex: striping project)	6
	Medium - Some utilities may be impacted (ex: moving curb)	12
	High - Extensive utility impacted anticipated (ex: corridor widening project)	18
Environmental Impact	Low - No or minimal environmental resources are impacted (ex: striping project)	2
	Medium - Some environmental resources are impacted (ex: moving curb)	12
	High - Extensive environmental resources impacted (ex: new location corridor improvement)	24
Availability of Funding Impact	Programmed - Project is in progress and funding has been secured.	4
	Sources Identified - Projects that have options of potential funding.	18
	None - Project is on hold due to other issues.	36

Measurement	Score
0 – 12 months	5
>12 – 24 months	3
> 24 months	1

Multimodal Benefit

The multimodal benefit criterion considers a project’s relative benefit to the multimodal network, such as addressing connectivity or improving comfort, and evaluates how well the project will reduce dependency on single-occupancy vehicles and create safe options for people to ride, walk, and take transit. Increased ability of a project to support this mode shift additionally helps to implement goals of the Climate Action Plan. The scoring for this measure is based on a qualitative analysis of how the project contributes to the overall multimodal network. This scoring for this criterion combines input from other Fort Collins plans including the AMP and Transit Master Plan. A direct benefit signifies that AMP recommendations are accomplished with the project, while an indirect benefit signifies that AMP recommendations can be partially completed to setup for the future. A project with a transit benefit has an existing or proposed transit facility within the project limits. Scoring descriptions are shown in **Table 20**.

Table 20 - Multimodal Benefit Score

AMP Benefit	Transit Plan Benefit	Score
None	No	1
None	Yes	2
Indirect	No	2
Indirect	Yes	3
Direct	No	4
Direct	Yes	5

Community

The Community criterion considers how well implementation of the project addresses community needs and interests. Scoring is based on whether the project will address feedback received from public engagement surveys, as well as the proximity and connectivity of the project to identified Community Activity Centers. Public engagement results and Community Activity Center locations are noted in the Screening Tool. Scoring descriptions are shown in **Table 21**.

Table 21 - Community Score

Number of Public Comments	Benefit to Community Activity Center	Score
0 comments	No	1
	Yes	2
1 – 5 comments	No	3
	Yes	3
> 6 comments	No	4
	Yes	5

3.4 City Plans

As part of the City's Long-Range Planning efforts, the city has developed and adopted the Vision Zero Action Plan and Active Modes Plan to establish a safer transportation network for all users.

3.4.1. Vision Zero Action Plan Alignment

The City of Fort Collins has embraced the Vision Zero approach to transportation safety, reaffirming its commitment to creating streets where no one is at risk of losing their life or sustaining serious injuries. In April 2023, the Vision Zero Action Plan was adopted. Through coordination during the TCPSS, the project recommendations align with the high injury network and the recommended treatment types outlined in the Vision Zero Action Plan. Approximately half of the project recommendations are along the high injury network.

3.4.2. Active Modes Plan Alignment

The Active Modes Plan was adopted in December 2022. The project teams from both the Active Modes Plan (AMP) and TCPSS collaborated to align criteria and project recommendations throughout the TCPSS process. The project locations selected within the TCPSS process incorporate recommendations from the Active Modes Plan, aligning with the City's vision for the future. Specific recommendations include the addition of separated bicycle lanes, protected intersections, access management, updated pedestrian crossings, leading pedestrian intervals (LPIs), medians, recommended signal improvements, refuge islands, road diets, and lane narrowing.

3.5 Phase 2 Results

The total score for each project is calculated by applying a weighting scheme to each scoring criterion and summing the values. The weighting scheme primarily emphasizes improving safety and enhancing multimodal features at each project location, with a secondary focus on projects that are "ready" for construction, benefit multiple departments within Fort Collins, and provide equitable solutions across the area. While other criteria, such as delay, growth, cost and community, remain important, they are not the primary factors for prioritizing projects at this stage. The weighting scheme used is outlined in **Table 22**.

Table 22 -Weighting Scheme

Delay	Safety	Health Equity	Growth	Cost	Readiness	Multimodal Benefit	Synergy	Community
1	4	2	1	1	3	4	3	1

The top 15 projects that have been recommended to move into Phase 3 for continued development and prioritization refinement as shown in **Table 23**.

Table 23 - Initial Project Recommendation List

Project Name	Project Type	Score	Project Status	Rank
E Troutman Parkway & JFK Parkway Corridor Improvements	Road Diet	78	Active	1
S Shields Street & W Prospect Road Intersection Improvements	Intersection Improvements	77	Active	2
S Overland Trl & W Elizabeth St Intersection Improvements	Intersection Improvements	75	In Progress	-
S Shields Street & W Horsetooth Road Intersection Improvements	Intersection Improvements	74	Active	3
N Timberline Road Overpass at E Vine Drive	New Construction	74	Active	4
Jefferson Street Corridor Improvements	Road Diet	72	In Progress	-
Boardwalk Drive & Harmony Road Signal Improvements	Intersection Improvements	71	Active	5
Drake Road Corridor Improvement	Road Diet	69	Active	6
S Shields Street & W Plum Street Intersection Improvements	Intersection Improvements	67	Delayed	-
Lemay Avenue & Drake Road Intersection Improvements	Intersection Improvements	67	Active	7
N Timberline Road - Segment 1 - Roadway Improvements	New Construction	67	Active	8
Heatheridge Road & W Prospect Road Intersection Improvements	Intersection Improvements	66	Active	9
N Timberline Road - Segment 2 Roadway Improvements	New Construction	66	Active	10
College Avenue & Drake Road Intersection Improvements	Intersection Improvements	66	In Progress	-
Shields Street Corridor Improvements	Road Diet	58	Active	11
Suniga Road Roadway Improvements	New Construction	58	Active	12
E Prospect Rd Corridor Improvements	Corridor Improvements	58	Active	13
S Timberline Road & E Harmony Road Intersection Improvements	Intersection Improvements	57	Active	14
E Harmony Road & JFK Parkway/Hogan Drive Intersection Improvements	Intersection Improvements	55	Active	15
S Timberline Road & E Horsetooth Road Intersection Improvements	Intersection Improvements	55	Inactive	-
Ziegler Road Diet	Road Diet	55	Delayed	-
Giddings Road	New Construction	54	Inactive	-
S Timberline Road & E Prospect Road	Intersection Improvements	51	Inactive	-
Turnberry Road	New Construction	50	Inactive	-
Timberline Road & Carpenter Road (County Road 392) Intersection Improvements	Intersection Improvements	50	Inactive	-
Taft Hill Road Corridor Improvements	Corridor Improvements	46	Inactive	-

Active = Recommended for Phase 3 Conceptual Design

In Progress = Initial designs in progress

Delayed = Not Recommended for further study due to external factors

Inactive = Not recommended for conceptual design at this time

4. PHASE 3 – CONCEPT DEVELOPMENT

The recommended list of projects developed in Phase 2 were carried into Phase 3 for conceptual design development, high-level cost estimation, and environmental screening. These projects, as shown in **Table 24**, are the most likely candidates for implementation to the capital projects program as funding is identified.

Table 24 – Conceptual Project List

Project ID	Project Name	Scope	Project Type
A	E Troutman Parkway & JFK Parkway Corridor Improvements	Implement a road diet on Troutman Pkwy and JFK Pkwy to add separated bike lanes.	Road Diet
B	S Shields Street & W Prospect Road Intersection Improvements	Implement protected intersections at Shields St and Prospect Rd, as well as at Stuart St, along with the addition of separated bike lanes on Shields St.	Intersection Improvements
C	S Shields Street & W Horsetooth Road Intersection Improvements	Add protected intersection at Shields St and Horsetooth Rd. Extend southbound left-turn lane, add separate bike lanes on Shields St.	Intersection Improvements
D	Drake Road Corridor Improvement	Implement a road diet on Drake Rd from Overland Trail to Taft Hill Rd to add separated bike lanes.	Road Diet
E	Lemay Avenue & Drake Road Intersection Improvements	Reconfigure intersection slip lanes for multimodal safety, and lane diet on Drake Rd to accommodate side paths.	Intersection Improvements
F	N Timberline Road - Segment 1 - Roadway Improvements	Widen Timberline Rd from Lincoln Ave to Vine Dr to a four-lane divided facility with separated bike lanes.	New Construction
G	N Timberline Road - Segment 2 Roadway Improvements	Widen Timberline Rd from Vine Dr to Mountain Vista to a four-lane divided facility with separated bike lanes.	New Construction
H	Heatheridge Road & W Prospect Road Intersection Improvements	Replace existing HAWK with full, three-leg traffic signal and improve pedestrian crossings.	Intersection Improvements
I	Shields Street Corridor Improvements	Implement a road diet on Shields St from Mulberry Ave to Mountain Ave to add separated bike lanes.	Road Diet
J	N Timberline Road Overpass at E Vine Drive	Grade separation of Timberline Rd over Vine Drive with multimodal connections.	New Construction
K	Boardwalk Drive & Harmony Road Signal Improvements	Signal/mast arm improvements.	Intersection Improvements
L	E Harmony Road & JFK Parkway/Hogan Drive Intersection Improvements	Signal improvements on JFK Pkwy with widening on Hogan Dr to improve lane alignment.	Intersection Improvements
M	Suniga Road Roadway Improvements	Extend Suniga Rd from Lemay Ave to Timberline Rd.	New Construction
N	E Prospect Rd Corridor Improvements	Widen Prospect Rd to a four-lane median divided facility with off street bike facilities.	Corridor Improvements
O	S Timberline Road & E Harmony Road Intersection Improvements	Add 3 rd NB and SB through lanes with separated bike lanes on Timberline Rd. Add protected intersection at Timberline Rd and Harmony Rd	Intersection Improvements

4.1 Concept Design

Conceptual designs have been prepared for the projects listed in **Table 24**. These designs, drawn using aerial imagery as basemaps, show proposed solutions that align with the project goals. The designs use existing parcel lines and achieve a feasible solution that balances impacts and costs. All projects primarily focus on implementing safe solutions for all modes of travel, with an additional emphasis on enhancing bicycle and pedestrian infrastructure. The following section provides a summary of the goals and general focus for each project type. **Appendix D** includes conceptual design figures.

4.1.1. Road Diets

Three of the conceptual designs fall under the road diet category. The general scope of this project type was to reduce the number of lanes on the existing 4 or 5 lane roadway sections to 3 lanes while incorporating separated bicycle facilities. The primary focus of these improvements is to provide a low cost implementation by utilizing flexible delineators and other protective measures to achieve the road diet and positive separation for bicyclists along the facility. These projects involve no right-of-way (ROW) acquisition, minimal easements and utility impacts. Limited concrete work may be necessary at certain locations along the corridor. Given the existing pavement width, concrete and temporary treatments to narrow the typical section at targeted locations were included to effectively reduce vehicle speeds using design elements.

For future considerations, streetscape-style projects can be explored, incorporating design elements such as sidewalk-grade bike lanes, raised medians, roundabouts, and other features as part of a final or future solution. It is important to make efforts in the current design to identify the future typical section and any constraints to align the temporary and future corridors.

4.1.2. Intersection Improvements

Many of the recommendations focused on intersection improvements, which can be further categorized into two types: simpler signal upgrades and more complex geometric changes. Signal upgrade projects primarily involve modifying the existing phasing, extending mast arms, or upgrading cabinets to enhance safety at the intersection. These projects typically require minor to no right-of-way (ROW) acquisition, have minimal impacts on utilities, and pose lower environmental concerns.

Another category of intersection improvements includes geometric modifications. These projects aim to incorporate elements from TCPPS and the Active Modes Plan, such as protected intersections, sidewalk-grade bike lanes, or separated bike lanes, while also improving safety and signal operation at the intersection. These projects generally require minor to medium right-of-way (ROW), have medium utility impacts, and pose lower environmental concerns, primarily due to their location within urban environments.

As the intersection projects progress to the next phase, it is recommended to conduct further studies on signal operational improvements to ensure a balance between safety for all users and congestion management. Additionally, it is advised to reassess the role of medians in terms of access control and safety, particularly on 5-lane sections, and explore potential enhancements in these areas.

4.1.3. Corridor Improvements

For this current round of prioritization, one project is classified as a Corridor Improvement. The Prospect Road Corridor project aims to enhance the transportation infrastructure by adding off-street bicycle facilities and restriping the existing facility to accommodate four lanes.

During the planning of this project, a significant natural area on the corridor has been taken into consideration. Strategic locations along the corridor have been identified to minimize impacts while incorporating the off-street bike facility. Efforts are being made to ensure that the project design considers the preservation and conservation of the natural area.

4.1.4. New Construction

The new construction project type includes projects that are either entirely located in undeveloped areas, involve grade separations, or encompass significant widening from the existing cross section. These projects incorporate recommendations from the Master Street Plan and AMP, such as the inclusion of separated bike facilities or side paths, as well as the identification of suitable locations for roundabouts or protected intersections.

For this project type, it is assumed that right-of-way (ROW) dedication and/or Transportation Capital Expansion Fee (TCEF) contributions from adjacent developments are necessary to ensure the project's viability from a cost-benefit perspective. Since these projects involve capacity additions, it is recommended to conduct a thorough study of long-term traffic forecasts prior to the next phase of design to confirm the appropriate typical section. Initial ROW requirements and cost estimates were generated using LCUASS typical sections. Further study of the typical section is advised before the next phase to optimize multimodal benefits within the corridors.

4.2 Cost Estimation

High-level cost estimates have been prepared for each recommended project, encompassing construction, right of way, utility relocation, engineering fees, and construction administration costs. These estimates are derived from historical city cost data, providing a reliable basis for understanding the projected expenses associated with each project.

As mentioned in the previous section, certain projects may require contributions from the Transportation Capital Expansion Fee (TCEF) or right-of-way (ROW) dedication to ensure their economic feasibility. This information is summarized on the project summary sheets for each individual project in **Appendix D**.

4.3 Environmental Study

Olsson completed a desktop review of publicly available datasets to identify potential environmental resources within expected project boundaries of individual projects. The objective of the review was to evaluate each project for impacts to environmental features and possible environmental risks. The desktop review was completed by investigating publicly available datasets, which depict the potential locations of a variety of environmental resources. The datasets were compiled in a geographic information system (GIS), and map figures are included in **Appendix E**. The following publicly available resources were used to complete the desktop review:

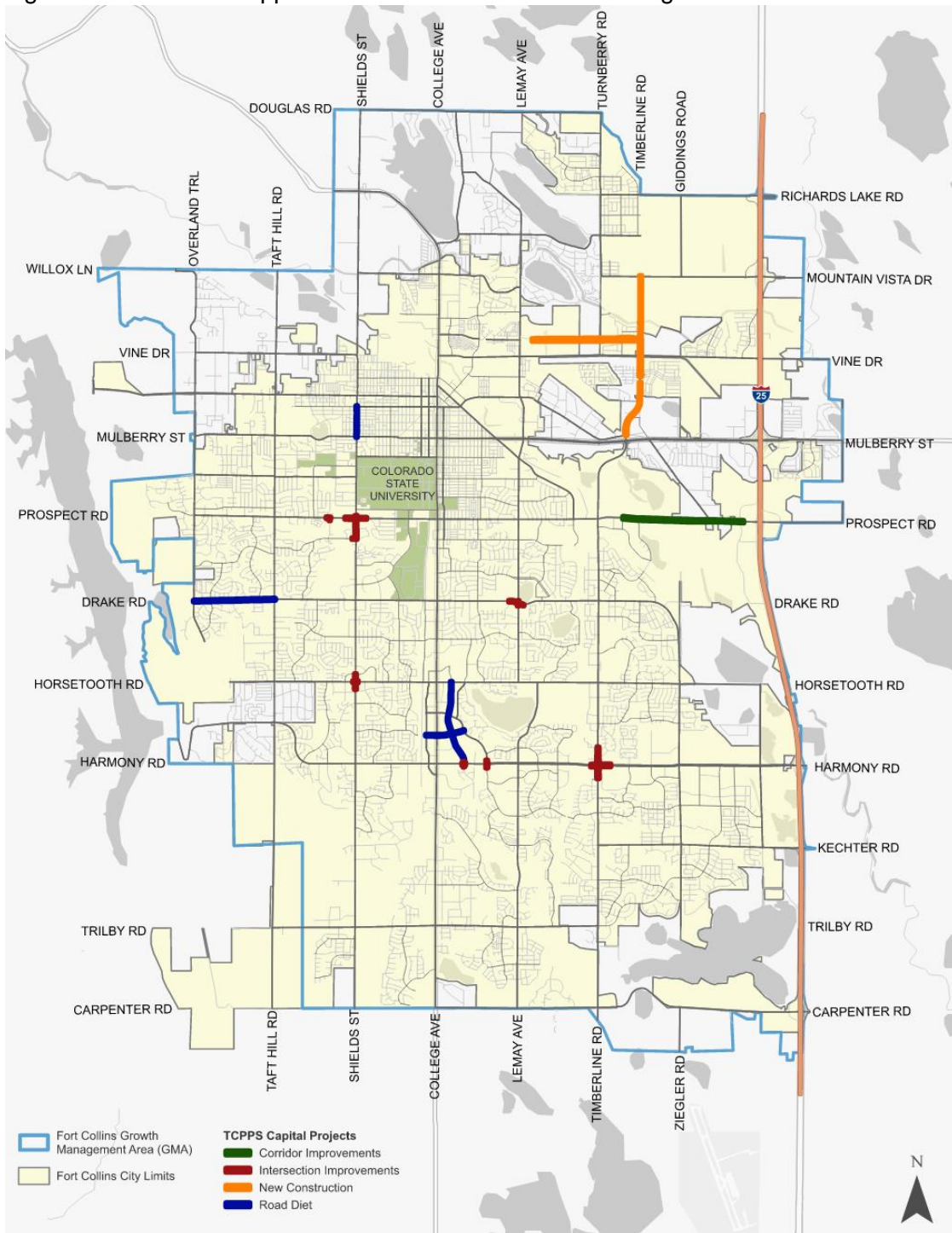
- Soil Survey Geographic (SSURGO) Database (USDA Natural Resources Conservation Service [NRCS] 2018)
- Colorado Parks and Wildlife (CPW). 2022. Non-Disclosure Agreement Nest Data
- USGS 2022 National Hydrography Dataset (NHD). U.S. Dept. of the Interior, U.S. Geological Survey
- National Wetlands Inventory (NWI), Version 2 (U.S. Fish and Wildlife Service [USFWS] 2020)
- Colorado Parks and Wildlife (CPW) and Colorado Oil and Gas Conservation Commission (COGCC) SB 181 High Priority Habitat (HPH) (2022)
- U.S. Geological Survey (USGS) Gap Analysis Project (GAP) 2022, Protected Areas Database of the United States (PAD-US) Version 3.0
- City of Fort Collins Natural Areas 2022
- National Flood Hazard Layer (NFHL) Larimer County, FEMA Floodplain 2022

Based on the desktop review of these resources, individual projects have been categorized according to perceived environmental impacts and need for further analysis, as described below. Three categories were used to summarize the environmental risk based on this initial desktop review. The Low-Risk category indicates no environmental features were observed within the project impact area. The Medium-Risk category indicates that wildlife resources or a raptor nesting boundary was observed intersecting with the project area of impact, but no wetlands or other water resources including potentially jurisdictional Waters of the United States (WOTUS) were observed within the project area. The High-Risk category indicates that wetlands or other water resources including potentially jurisdictional Waters of the United States (WOTUS) were observed within the project area and may include other observed environmental features within the project area.

Field visits should be conducted for individual projects where one or more environmental factors potentially impact the site has been observed. The need for an additional Environmental Database Report (EDR) was determined based on the level of anticipated surface impacts for an individual project, where those projects with substantial new surface impacts were determined to need an EDR.

4.4 Project Summary Sheets

The subsequent pages provide a summary of each project, including its description, goals, scores, and current as well as future project considerations. Detailed scores and considerations are found **Appendix F**. The project team collaborated closely with the City to ensure that each project aligns with its goals and identified opportunities for both the current design and future enhancements.



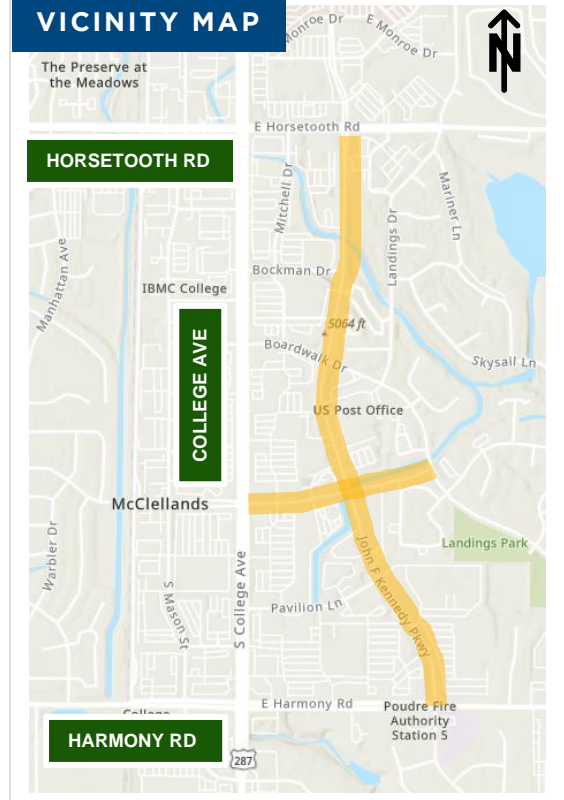
PROJECT A | E Troutman Parkway & JFK Parkway Corridor Improvements

Location: Troutman Pkwy from S College Ave to Boardwalk Dr & JFK Pkwy from Harmony Rd to E Horsetooth Rd

Project Type: Road Diet

Project Description: Restripe Troutman Pkwy. and JFK Pkwy. to add separated bike lanes and remove one travel lane in each direction. Potential access restrictions near College Ave. Consider RRFB on north side at Pavilion Ln. and JFK Pkwy. Signal modifications concurrent to lane realignment at JFK Parkway at Troutman Pkwy, Boardwalk Dr, and Horsetooth Rd Intersections.

Goals: Improve safety and provide a parallel bike route to College Ave. by adding dedicated/protected bicycle facilities. Reduce speeds through geometric improvements. Temporary, short-term improvements to provide low-cost solutions.



Total Cost: \$2,518,000
Construction Cost: \$2,098,000
Design & CEI Cost: \$420,000
ROW & Utility Cost: N/A

FINAL DESIGN CONSIDERATIONS

- Evaluate access control and raised medians
- Evaluate traffic calming measures at intersections to promote speed reduction
- Evaluate typical section widths
- Evaluate temporary measures to prevent right hooks
- Consider two stage crossing for cyclist left turns

FUTURE DESIGN CONSIDERATIONS

- Evaluate final streetscape typical section; including raised and landscaped medians, separated bike lanes.
- Consider intersection reconfiguration including roundabouts or protected intersections.
- Evaluate long term access control

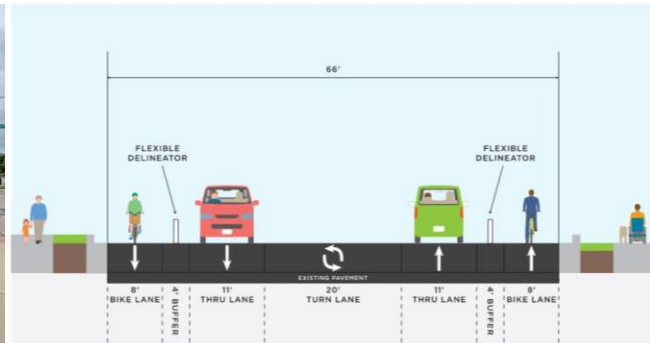
TOTAL SCORE = 81

CRITERIA TIER 1		CRITERIA TIER 2	
Delay	1	Cost	4
Safety	5	Readiness	3
Equity	4	Multimodal	5
Growth	1	Synergy	5
		Community	3

MAINTENANCE & OPERATIONS

- Increased snow maintenance operations and specialized equipment needed for street grade separated bike lanes
- Long term maintenance and replacement costs of flexible delineators

PROJECT IMAGES



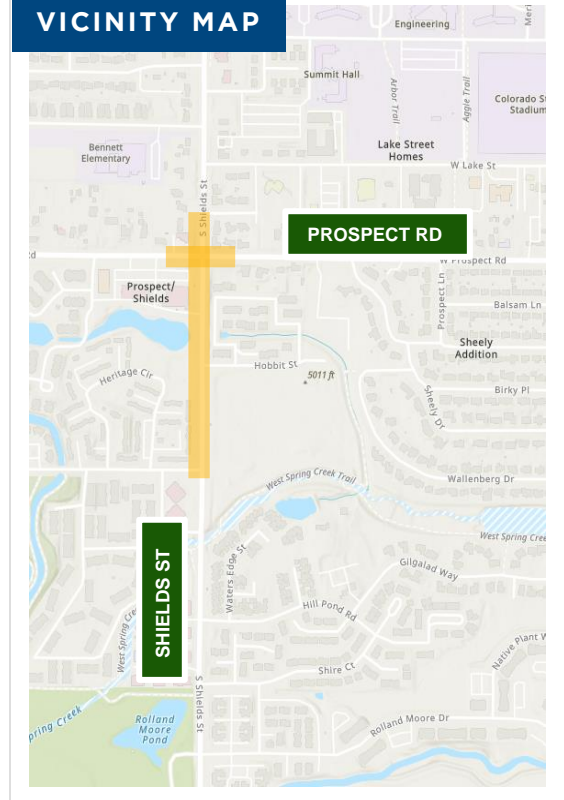
PROJECT B | S Shields Street & W Prospect Road Improvements

Location: Shields St from W Stuart St to W Prospect Rd

Project Type: Intersection Improvements

Project Description: Protected intersection at Shields St and Prospect Rd with added WB right turn lane. Evaluate to convert to single left turn lanes eastbound and westbound on Prospect Rd. Consider signal rebuild and FYA implementation. Protected intersection at Stuart St and Shields St. Shields St from Stuart St to Prospect Rd add separated bike lanes by lane diet.

Goals: Improve safety along arterials and at intersections for multimodal users.



FINAL DESIGN CONSIDERATIONS

- Evaluate full signal rebuild with longer mast arms for FYA implementation
- Evaluate raised crossings at driveways
- Right-in/right-out with tight radii
- Evaluate turning vehicles and island sizing

FUTURE DESIGN CONSIDERATIONS

- Shields St/Prospect Rd typical section; evaluate road/lane diet potential
- If a road diet is feasible, consider additional raised medians, access control and roundabouts.
- Consider near side signals

Total Cost: \$8,680,000
Construction Cost: \$7,066,000
Design & CEI Cost: \$1,414,000
ROW & Utility Cost: \$200,000

TOTAL SCORE = 84

CRITERIA TIER 1		CRITERIA TIER 2	
Delay	3	Cost	3
Safety	5	Readiness	3
Equity	5	Multimodal	5
Growth	1	Synergy	5
		Community	3

MAINTENANCE & OPERATIONS

- Separate snow maintenance beyond plowing for protected intersection
- Evaluation of snow removal practices at complex intersections

PROJECT IMAGES



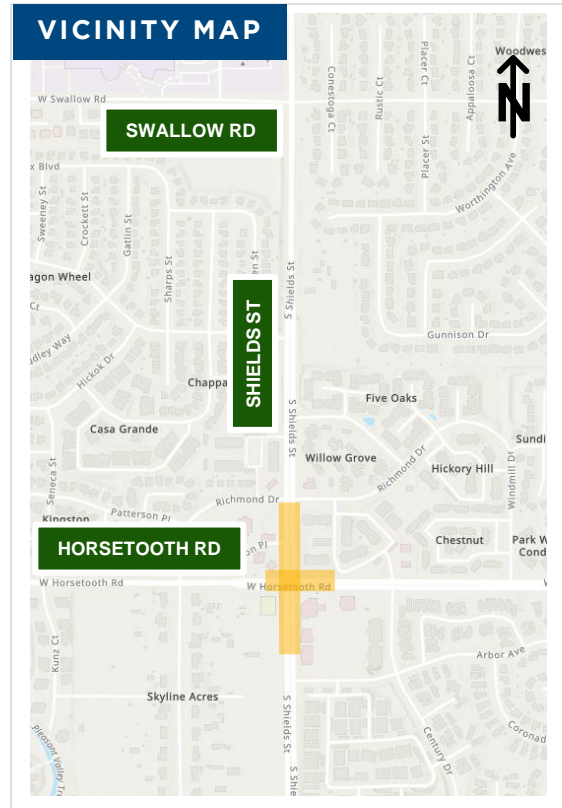
PROJECT C | S Shields St & W Horsetooth Rd Intersection Improvements

Location: Shields St and Horsetooth Rd Intersection

Project Type: Intersection Improvement

Project Description: Protected intersection at Shields St and Horsetooth Rd with accommodation for future protected bike lanes on Shields St. Add protected-only SB left phase. Extend SB left turn lane storage. Access control at Richmond Dr. Add separate bike lanes on Shields St from Horsetooth Rd to Richmond Dr.

Goals: Improve safety along arterials and at intersections for multimodal users.



FINAL DESIGN CONSIDERATIONS

- Evaluate the need for right turn lanes at private access near intersection
- At grade bike and pedestrian crossings
- Evaluate turning vehicles and island sizing

FUTURE DESIGN CONSIDERATIONS

- Shields St typical section; evaluate road/lane diet potential
- If a road diet is feasible, consider additional raised medians, access control and roundabouts.
- Consider near side signals

Total Cost: \$3,746,000
Construction Cost: \$3,038,000
Design & CEI Cost: \$608,000
ROW & Utility Cost: \$100,000

TOTAL SCORE = 64

CRITERIA TIER 1		CRITERIA TIER 2	
Delay	1	Cost	4
Safety	5	Readiness	3
Equity	2	Multimodal	5
Growth	1	Synergy	1
		Community	2

MAINTENANCE & OPERATIONS

- Increased snow maintenance operations and specialized equipment needed for street grade separated bike lanes
- Evaluation of snow removal practices at complex intersections
- Long term maintenance and replacement costs of flexible delineators

PROJECT IMAGES



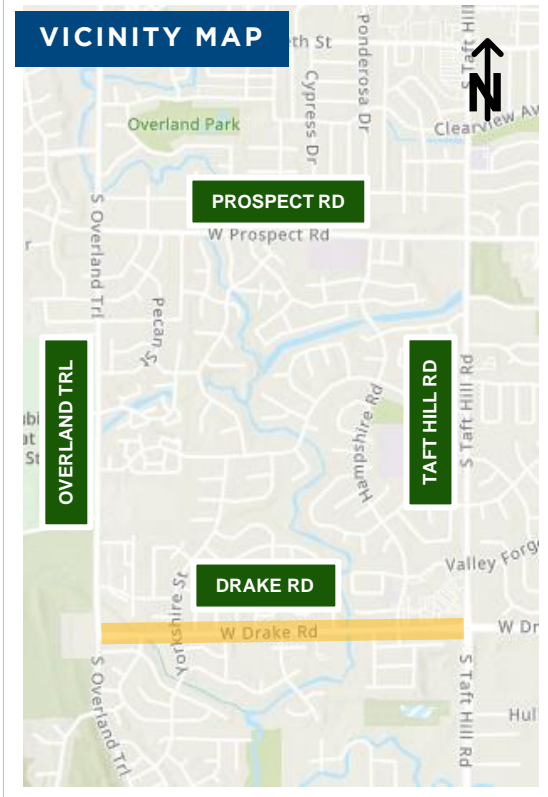
PROJECT D | Drake Road Corridor Improvement

Location: Drake Rd from Overland Trl to Taft Hill Rd

Project Type: Road Diet

Project Description: Restripe Drake Road to add separated bike lanes and remove one travel lane in each direction. Signal modifications concurrent to lane realignment at Yorkshire.

Goals: Improve safety by adding dedicated/protected bicycle facilities. Reduce speeds through geometric improvements. Temporary, short-term improvements to provide low-cost solutions.



FINAL DESIGN CONSIDERATIONS

- Evaluate access control and raised median
- Evaluate traffic calming measures at intersections to promote speed reduction
- Evaluate typical section widths
- Evaluate temporary measures to prevent right hooks
- Consider two stages crossing for cyclist left turns

FUTURE DESIGN CONSIDERATIONS

- Evaluate final streetscape typical section; including raised medians, separated bike lanes.
- Consider upgraded intersections and roundabouts
- Evaluate improvements at Overland Trl to further improve bike safety

Total Cost: \$2,115,000
Construction Cost: \$1,761,000
Design & CEI Cost: \$354,000
ROW & Utility Cost: N/A

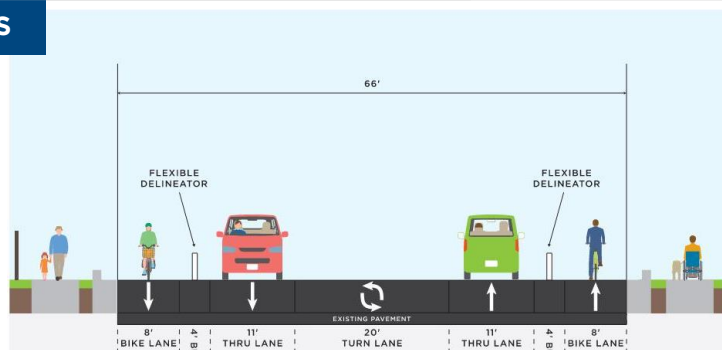
TOTAL SCORE = 72

CRITERIA TIER 1		CRITERIA TIER 2	
Delay	1	Cost	4
Safety	4	Readiness	3
Equity	3	Multimodal	4
Growth	1	Synergy	5
		Community	4

MAINTENANCE & OPERATIONS

- Increased snow maintenance operations and specialized equipment needed for street grade separated bike lanes
- Long term maintenance and replacement costs of flexible delineators

PROJECT IMAGES



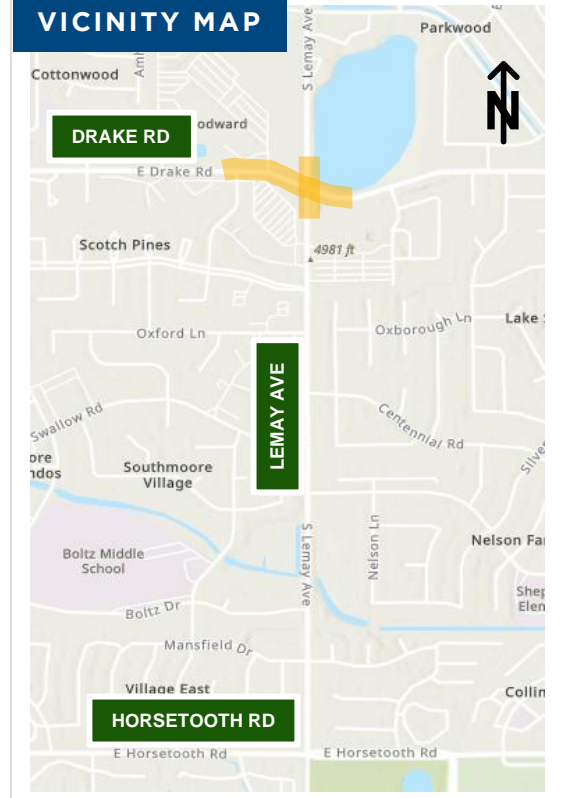
PROJECT E | Lemay Avenue & Drake Road Intersection Improvements

Location: Lemay Ave and Drake Rd Intersection

Project Type: Intersection Improvement

Project Description: Narrow existing lanes on Drake Rd to incorporate sidepaths and increase EB and WB intersection sight distance. Add SB right turn lane with overlap phase; add WB right turn lane overlap phase. Evaluate access control on Drake Road. Redesign existing right turn channelized lanes to improve bike ped safety.

Goals: Improve safety by adding geometric intersection improvements and sidepaths.



Total Cost: \$4,850,000
Construction Cost: \$3,756,000
Design & CEI Cost: \$755,000
ROW & Utility Cost: 342,000

FINAL DESIGN CONSIDERATIONS

- Consider full signal rebuild
- Evaluate installation of queue detection system for WB right turn lane to mitigate rear end crashes
- Coordinate with future SB Right Turn Lane Project on Lemay Ave

FUTURE DESIGN CONSIDERATIONS

- Evaluate Drake Road typical section; evaluate road diet
- If a road diet is feasible, consider raised medians, access control and alternative intersection types.

TOTAL SCORE = 77

CRITERIA TIER 1		CRITERIA TIER 2	
Delay	3	Cost	4
Safety	4	Readiness	3
Equity	3	Multimodal	5
Growth	1	Synergy	5
		Community	3

MAINTENANCE & OPERATIONS

- Increased snow maintenance operations for sidepaths

PROJECT IMAGES



PROJECT F | N Timberline Road - Segment 1 - Roadway Improvements

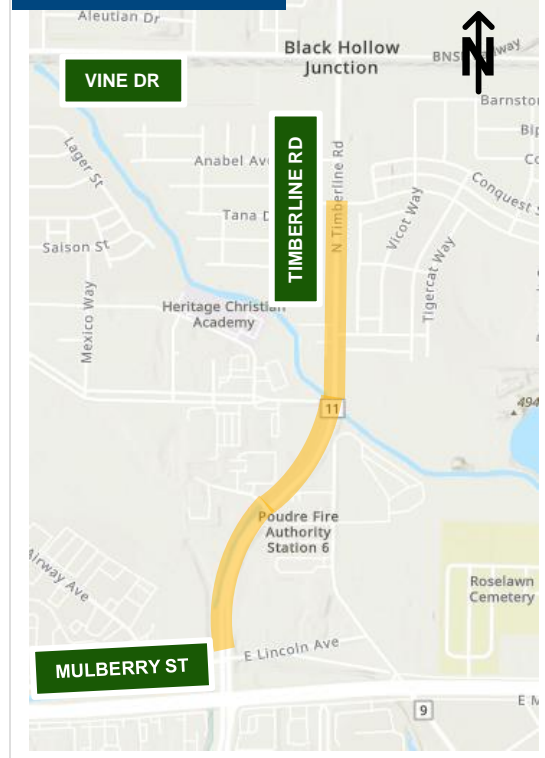
Location: Timberline Rd from E Lincoln Ave to Sykes Dr

Project Type: New Construction

Project Description: Widen Timberline Rd from Lincoln Ave to Sykes Dr to a 4-lane divided facility with separated bike lanes.

Goals: Widen roadway to accommodate future development. Improve multimodal connectivity.

VICINITY MAP



FINAL DESIGN CONSIDERATIONS

- Evaluate typical section widths
- Identify locations to install bulb-outs (minor intersections) to reduce crossing distance
- Verify typical section lane widths, buffer bike lane and sidewalk widths.
- Review traffic model to verify future lanes needed.
- Coordinate with future adjacent projects.

FUTURE DESIGN CONSIDERATIONS

- Evaluate LCUASS standard section for compliance with recommendations of AMP

Total Cost: \$12,264,000
Construction Cost: \$8,933,000
Design & CEI Cost: \$1,519,000
ROW & Utility Cost: \$1,812,000

TOTAL SCORE = 70

CRITERIA TIER 1		CRITERIA TIER 2	
Delay	5	Cost	2
Safety	3	Readiness	3
Equity	5	Multimodal	4
Growth	3	Synergy	3
		Community	4

MAINTENANCE & OPERATIONS

- Increased snow maintenance operations for widened/median divided roadway and separated sidewalk and bike facilities.

PROJECT IMAGES



PROJECT G | N Timberline Road - Segment 2 Roadway Improvements

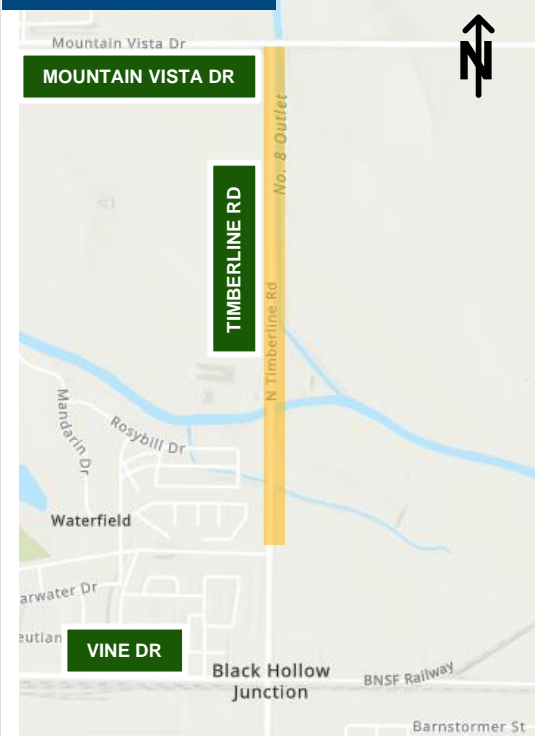
Location: Timberline Rd from Suniga Rd to Mountain Vista Dr

Project Type: New Construction/Widening

Project Description: Widen Timberline Rd from Suniga Rd to Mountain Vista Dr to a 4 lane divided facility with separated bike lanes.

Goals: Widen roadway to accommodate future development. Improve multimodal connectivity.

VICINITY MAP



Total Cost: \$12,452,000
Construction Cost: \$8,933,000
Design & CEI Cost: \$1,519,000
ROW & Utility Cost: 2,000,000

TOTAL SCORE = 69

CRITERIA TIER 1		CRITERIA TIER 2	
Delay	3	Cost	2
Safety	3	Readiness	3
Equity	3	Multimodal	5
Growth	5	Synergy	3
		Community	3

FINAL DESIGN CONSIDERATIONS

- Evaluate typical section widths
- Identify locations for bulb-outs (minor intersections) to reduce crossing distance
- Verify typical section lane widths, buffer bike lane and sidewalk widths.
- Review traffic model to verify future lanes needed.
- Coordinate with future adjacent projects.

FUTURE DESIGN CONSIDERATIONS

- Evaluate LCUASS standard

MAINTENANCE & OPERATIONS

- Increased snow maintenance operations for widened/median divided roadway and separated sidewalk and bike facilities.

PROJECT IMAGES



PROJECT H | Heatheridge Rd & W Prospect Rd Intersection Improvements

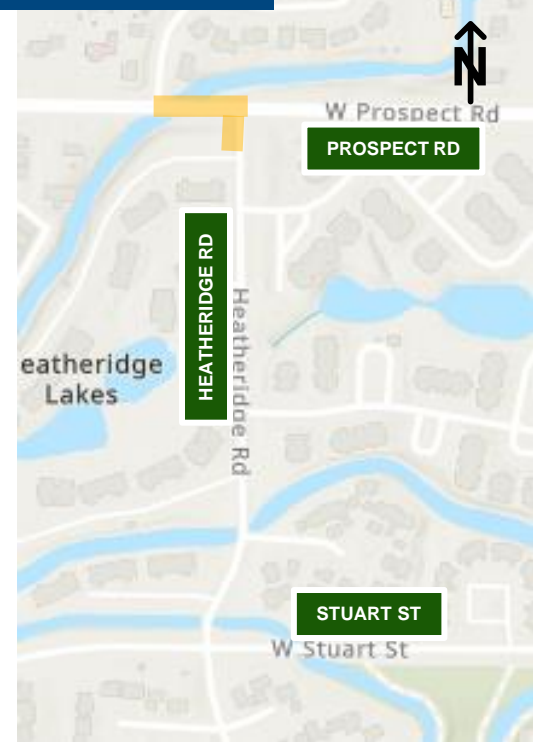
Location: Heatheridge Rd and Prospect Rd Intersection

Project Type: Intersection Improvements

Project Description: Replace existing HAWK with full three-leg traffic signal. Add advance crossing signs, raised median/pedestrian refuge on west leg for speed mitigation and added protection for pedestrians.

Goals: Improve intersection safety for pedestrians and cyclists, specifically for children crossing in platoons to school.

VICINITY MAP



FINAL DESIGN CONSIDERATIONS

- Push button considerations
- Evaluate traffic lane assignment needs on Heatheridge Roads to make room for protected bike facility
- Evaluate bus stop location
- Consider LPI/LBIs.
- Consider intersection curb extensions to reduce crossing distance

FUTURE DESIGN CONSIDERATIONS

- Evaluate Prospect Road typical section; evaluate road diet
- If a road diet is feasible, consider raised medians, access control and alternative intersection types.
- Coordinate with Network Level Traffic Study

Total Cost: \$1,519,000
Construction Cost: \$1,212,000
Design & CEI Cost: \$243,000
ROW & Utility Cost: \$63,500

TOTAL SCORE = 69

TIER 1		TIER 2	
Delay	1	Cost	4
Safety	2	Readiness	3
Equity	4	Multimodal	5
Growth	1	Synergy	5
		Community	3

MAINTENANCE & OPERATIONS

- No change

PROJECT IMAGES



PROJECT I | Shields Street Corridor Improvements

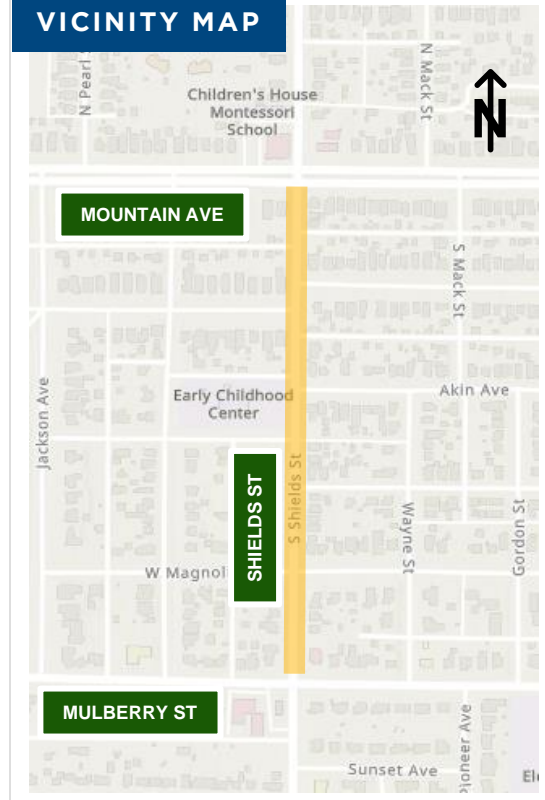
Location: Shields St from Mulberry St to Mountain Ave

Project Type: Road Diet

Project Description: Restripe Shields St to add separated bike lanes with reduced lane configuration. Modify operations to increase separation for pedestrians; consider phase separation or exclusive pedestrian phase at Mulberry St.

Goals: Improve safety by adding dedicated/protected bicycle facilities. Reduce speeds through geometric improvements. Temporary, short-term improvements to provide low-cost solutions.

VICINITY MAP



Total Cost: \$460,000
Construction Cost: \$382,000
Design & CEI Cost: \$78,000
ROW & Utility Cost: N/A

FINAL DESIGN CONSIDERATIONS

- Evaluate access control and raised medians
- Evaluate traffic calming measures
- Evaluate temporary measures to prevent right hooks
- Consider two stages crossing for cyclist left turns
- Evaluate temporary protection types to keep access to driveways

FUTURE DESIGN CONSIDERATIONS

- Evaluate final streetscape typical section; including raised medians, separated bike lanes.
- Consider protected intersections and roundabouts
- Evaluate long term access control
- Consider Network Level Traffic Study

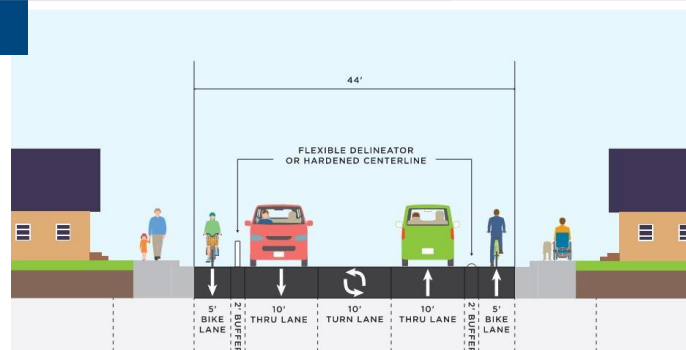
TOTAL SCORE = 46

CRITERIA TIER 1		CRITERIA TIER 2	
Delay	1	Cost	5
Safety	1	Readiness	3
Equity	1	Multimodal	4
Growth	1	Synergy	1
		Community	5

MAINTENANCE & OPERATIONS

- Increased snow maintenance operations and specialized equipment needed for street grade separated bike lanes
- Long term maintenance and replacement costs of flexible delineators

PROJECT IMAGES



PROJECT J | N Timberline Road Overpass at E Vine Drive

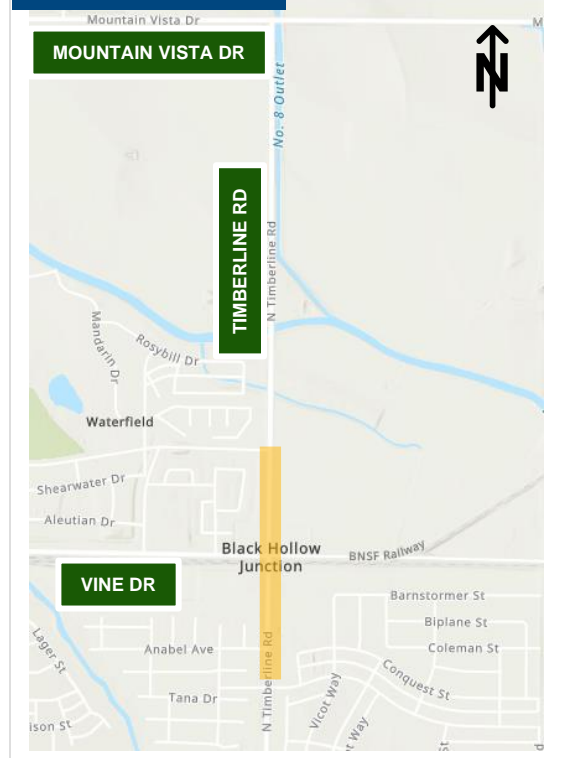
Location: Sykes Dr to E Suniga Rd

Project Type: New Construction – Grade Separation

Project Description: Grade separate Timberline Rd over Vine St. Provide bicycle and pedestrian accommodations from Timberline Rd to Vine Dr.

Goals: Eliminate at grade rail crossing. Improve safety, and traffic operations on Timberline Rd. Improve multimodal connectivity.

VICINITY MAP



Total Cost: \$56,927,000
Construction Cost: \$39,789,000
Design & CEI Cost: \$5,174,000
ROW & Utility Cost: \$10,963,250

TOTAL SCORES = 76

CRITERIA TIER 1		CRITERIA TIER 2	
Delay	5	Cost	1
Safety	5	Readiness	3
Equity	5	Multimodal	4
Growth	3	Synergy	3
		Community	3

FINAL DESIGN CONSIDERATIONS

- Rail coordination
- Evaluate typical section widths
- Coordinate potential future trail crossing
- Evaluate bicycle and pedestrian crossing from Vine Dr to Timberline Rd
- Close at grade crossing
- Maintain access to businesses on Timberline Rd
- Coordinate with adjacent projects

FUTURE DESIGN CONSIDERATIONS

- None

MAINTENANCE & OPERATIONS

- Maintenance and inspection of structure
- Increased snow maintenance operations for widened/median divided roadway and trail connections.

PROJECT IMAGES



PROJECT K | Boardwalk Drive & Harmony Road Signal Improvements

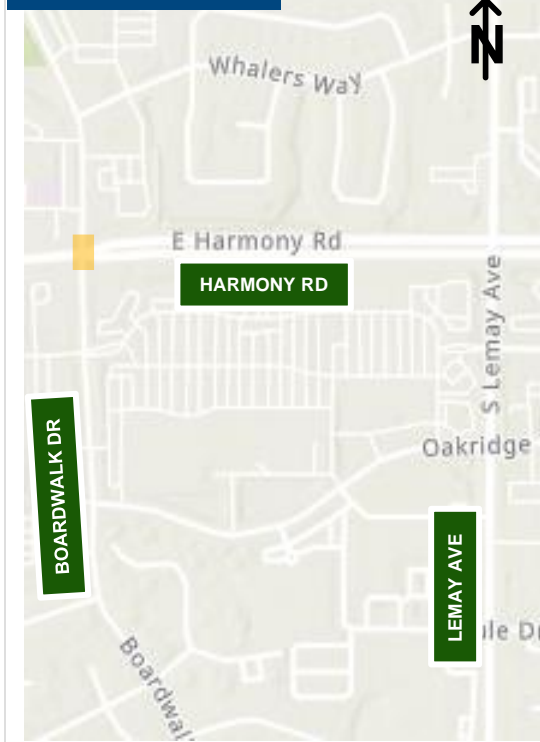
Location: Boardwalk Dr & Harmony Rd Intersection

Project Type: Intersection Improvements

Project Description: Add longer NB mast arm to improve NB signal head alignment. Add left side of pole heads and upgrade all LT to FYA; Ped Button Accessibility; Retiming. Add leading pedestrian interval and lagging right turns. Upgrade existing cabinet. Add additional paint bicycle marking and consider restripe EB approach to have a buffered bike lane.

Goals: Improve safety at intersection by upgrades to existing signal infrastructure. Improve safety for bicycles and pedestrians.

VICINITY MAP



FINAL DESIGN CONSIDERATIONS

- Coordinate with separated bike lanes on Harmony Road

FUTURE DESIGN CONSIDERATIONS

- None

Total Cost: \$616,000
Construction Cost: \$535,000
Design & CEI Cost: \$81,000
ROW & Utility Cost: \$0

TOTAL SCORE = 62

TIER 1		TIER 2	
Delay	1	Cost	5
Safety	3	Readiness	3
Equity	4	Multimodal	2
Growth	1	Synergy	5
		Community	3

MAINTENANCE & OPERATIONS

- No change

PROJECT IMAGES



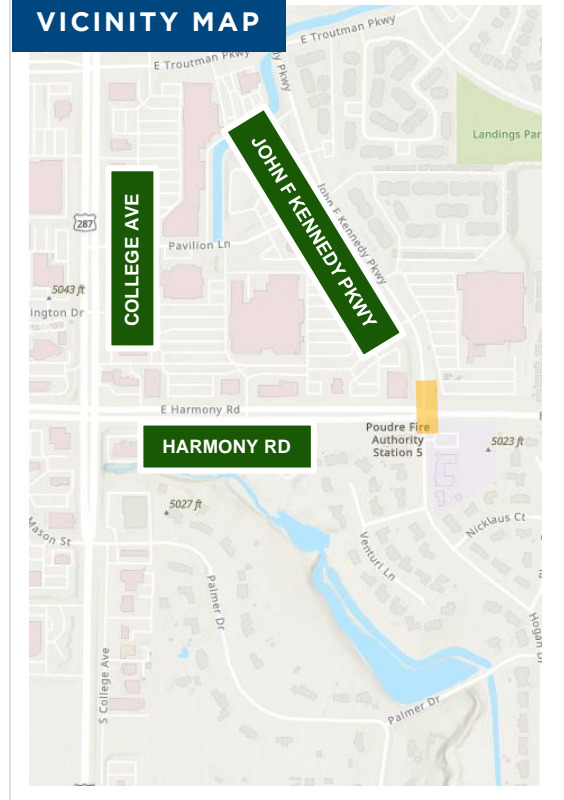
PROJECT L | E Harmony Rd & JFK Pkwy/Hogan Dr Intersection Improvements

Location: Harmony Rd and JFK Pkwy Intersection

Project Type: Intersection Improvements

Project Description: Remove NB/SB split phase by shifting SB dual LT east (1 NB departure lane). Add WB RT overlap. Align lanes on the south leg by widening to the east. Add separated bike lanes on the north leg.

Goals: Improve safety at intersection by upgrades to existing signal infrastructure. Improve safety for bicycles and pedestrians.



Total Cost: \$670,000
Construction Cost: \$551,000
Design & CEI Cost: \$111,000
ROW & Utility Cost: \$8,000

TOTAL SCORE = 47

CRITERIA TIER 1		CRITERIA TIER 2	
Delay	4	Cost	5
Safety	1	Readiness	3
Equity	4	Multimodal	3
Growth	1	Synergy	1
		Community	1

FINAL DESIGN CONSIDERATIONS

- Evaluate lane assignments on the north leg of the intersection

FUTURE DESIGN CONSIDERATIONS

- None

MAINTENANCE & OPERATIONS

- No change

PROJECT IMAGES



PROJECT M | Suniga Road Roadway Improvements

Location: Suniga Rd from Lemay Ave to Timberline Rd

Project Type: New Construction

Project Description: Extend Suniga Rd from Lemay Ave to Timberline Rd with a 4-lane median divided section

Goals: Extend roadway to accommodate future development and improve multimodal connectivity.



Total Cost: \$31,341,000
Construction Cost: \$25,932,000
Design & CEI Cost: \$4,409,000
ROW & Utility Cost: \$1,000,000

FINAL DESIGN CONSIDERATIONS

- Floodplain coordination
- Coordinate with potential future trail crossings
- Evaluate typical section for multimodal elements
- Verify lane configuration based on revised traffic analysis

FUTURE DESIGN CONSIDERATIONS

- Consider alternative intersection types in future build

MAINTENANCE & OPERATIONS

- New snow maintenance operations for new median divided roadway

TOTAL SCORE = 46			
CRITERIA TIER 1		CRITERIA TIER 2	
Delay	5	Cost	1
Safety	1	Readiness	3
Equity	3	Multimodal	3
Growth	5	Synergy	1
		Community	1

PROJECT IMAGES



PROJECT N | E Prospect Rd Corridor Improvements

Location: Prospect Rd from Sharp Pointe to I-25

Project Type: Corridor Improvements

Project Description: Widen Prospect Rd to a 4-lane median divided facility with active modes/transit elements. Provide sidepaths for active modes.

Goals: Expand vehicular capacity and improve multimodal connectivity.



FINAL DESIGN CONSIDERATIONS

- Natural area coordination
- Coordination with Parks Department
- Minimization of impacts to environment

FUTURE DESIGN CONSIDERATIONS

- None

Total Cost: \$17,009,0000
Construction Cost: \$12,196,000
Design & CEI Cost: \$2,440,000
ROW & Utility Cost: \$2,373,000

TOTAL SCORE = 68

CRITERIA TIER 1		CRITERIA TIER 2	
Delay	5	Cost	1
Safety	2	Readiness	3
Equity	5	Multimodal	3
Growth	5	Synergy	5
		Community	3

MAINTENANCE & OPERATIONS

- Increased snow maintenance operations for widened roadway and sidepaths

PROJECT IMAGES



PROJECT O | S Timberline Rd & E Harmony Rd Intersection Improvements

Location: Timberline Rd and Harmony Rd Intersection

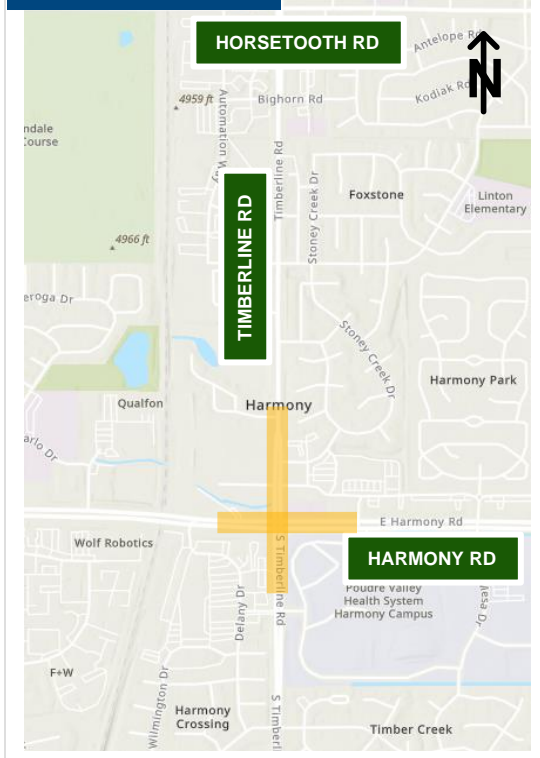
Project Type: Intersection Improvements

Project Description: Add 3rd NB & SB through lanes and separated bike lanes on Timberline Road with reduced lane widths. Protected Intersection at Timberline Road and Harmony Road. Prohibit right turn on red and show flashing arrow for right turns.

Goals: Improve safety along arterials and at intersections for multimodal users.

Note: Lane configuration should be evaluated in next phase and may affect scoring and rank

VICINITY MAP



FINAL DESIGN CONSIDERATIONS

- Evaluate ultimate lane configuration of Timberline Rd (4 lanes vs 6 lanes)
- Consider sidewalk grade separated bike lanes.
- Consider speed cameras

FUTURE DESIGN CONSIDERATIONS

- None

Total Cost: \$8,163,000
Construction Cost: \$6,330,000
Design & CEI Cost: \$1,267,000
ROW & Utility Cost: \$565,500

TOTAL SCORE = 55

CRITERIA TIER 1		CRITERIA TIER 2	
Delay	2	Cost	3
Safety	1	Readiness	3
Equity	5	Multimodal	5
Growth	1	Synergy	1
		Community	3

MAINTENANCE & OPERATIONS

- Evaluation of snow removal practices at complex intersections for at street grade separated bike lanes

PROJECT IMAGES



5. IMPLEMENTATION

5.1 Final Revised Scores & Recommendations

After the completion of Phase 3, the conceptual designs, cost estimates and environmental screening for each of the recommended projects was used to update the scores to reflect the most current information. The revised project scoring summary is shown below in **Table 25**. These scores are intended to reflect the priority of project relative to each other and is not intended to be a prescriptive order in which projects shall be executed. Certainly, as funding becomes available or opportunities to collaborate with other work within public right-of-way, projects may be executed independent of the ranking below.

Project ID	Project Name	Project Limits	Project Type	Cost	Score	Rank
B	S Shields Street & W Prospect Road Intersection Improvements	W Stuart St to W Prospect Rd	Intersection Improvements	\$8,680,000	84	1
A	E Troutman Parkway & JFK Parkway Corridor Improvements	S College Ave to Boardwalk Dr & Harmony Rd to E Horsetooth Rd	Road Diet	\$2,518,000	81	2
E	Lemay Avenue & Drake Road Intersection Improvements	-	Intersection Improvements	\$4,850,000	77	3
J	N Timberline Road Overpass at E Vine Drive	Sykes Dr to E Suniga Rd	New Construction	\$55,927,000	76	4
D	Drake Road Corridor Improvement	Overland Trl to Taft Hill Rd	Road Diet	\$2,115,000	72	5
F	N Timberline Road - Segment 1 - Roadway Improvements	E Lincoln Ave to Sykes Dr	New Construction	\$12,264,000	70	6
G	N Timberline Road - Segment 2 Roadway Improvements	Suniga Dr to Mountain Vista	New Construction	\$12,452,000	69	7
H	Heatheridge Road & W Prospect Road Intersection Improvements	-	Intersection Improvements	\$1,519,000	69	7
N	E Prospect Rd Corridor Improvements	Sharp Pointe to I-25	Corridor Improvements	\$17,009,000	68	8
C	S Shields Street & W Horsetooth Road Intersection Improvements	-	Intersection Improvements	\$3,746,000	64	9
K	Boardwalk Drive & Harmony Road Signal Improvements	-	Intersection Improvements	\$616,000	62	10
O	S Timberline Road & E Harmony Road Intersection Improvements	-	Intersection Improvements	\$8,163,000	55	11
L	E Harmony Road & JFK Parkway/Hogan Drive Intersection Improvements	-	Intersection Improvements	\$670,000	47	12
I	Shields Street Corridor Improvements	Mulberry St to Mountain Ave	Road Diet	\$460,000	46	13
M	Suniga Road Roadway Improvements	Lemay Rd to Timberline Rd	New Construction	\$31,341,000	46	13

5.2 Funding

Capital projects are selected and funded through the Budgeting for Outcomes (BFO) process. Through the BFO process, projects apply for funding with the City and have a larger chance of success if the project aligns with the City’s goals. Currently projects that score high in this process improve safety, promote mode shift in alignment with the climate action plan, or collaborate with projects from department. Additionally, projects that can bring outside funding from partners or State or Federal funding are view as highly favorable to implement. The BFO process occurs every 2 years, in which projects are submitted to City Council for recommendation and selection.

Many capital projects are funded by outside grants, and given the recommended improvements in TCPPS, there will be several opportunities to bring outside funding to the table for consideration in the BFO process. If projects qualify for grants, the BFO traditionally will approve the matching amount off-cycle. The following is a list of grants that are most relevant to transportation capital projects and should be pursued. They are categorized by the source of the funding pool.

5.2.1. Federal

These are available from budget allocated to various transportation related administration (FWHA, FRA, etc) are administered either through the North Front Range MPO or directly with the federal agency. It should be noted that these funds bring with them various requirements and administrative duties beyond that of a locally funded project and should be pursued strategically such that the size and scope of the project is large enough to realize economy of scale and therefore absorb the additional cost to administer the project.

Funding	Description	Most Recent Annual Program Budget	Eligible or Representative Activities	Most Recent NOFO Date
RCE	Improve safety at roadway or pathway at-grade rail crossings, especially by elimination thereof	\$ 573,264,000	Planning; Construction; Equipment and Materials; Technology Demonstrations and Deployment; Climate and Sustainability; Accessibility; Security	7/12/22
INFRA	Planning and construction of “Nationally Significant Freight & Highway Projects” to improve safety, efficiency, and reliability ^{1,2}	\$ 1,500,000,000	Planning; Construction	3/22/22
MEGA	Large projects difficult to fund by other means ²	\$ 1,000,000,000	Planning; Construction; Operations and Maintenance; Accessibility	3/23/22
RAISE	Local or regionally significant projects that improve safety, mobility, and quality of life. Projects are secondarily considered based on readiness and economic benefit.	\$ 2,300,000,000	Planning; Construction	11/30/22

Funding	Description	Most Recent Annual Program Budget	Eligible or Representative Activities	Most Recent NOFO Date
SS4A	A discretionary grant to improve safety for all users, especially active modes. The grant also favors projects that address equity needs with low-cost, systemic strategies.	\$ 1,000,000,000	Planning; Construction; Equipment and Materials; Operations and Maintenance; Technology Demonstrations and Deployment; Technical Assistance, Workforce Development, and Training/Education; Accessibility	3/30/23
RCP	Pilot program to reducing barriers between communities caused by large highway or rail projects ²	\$ 198,000,000	Planning; Construction; Technical Assistance, Workforce Development, and Training/Education; Accessibility	6/30/222
SMART	Funding for demonstration projects that apply new technology or systems to improve transportation safety and efficiency	\$ 100,000,000	Planning; Construction; Equipment and Materials; Operations and Maintenance; Technology Demonstrations and Deployment; Technical Assistance, Workforce Development, and Training/Education	9/19/22
HSIP	Long-standing grant funding source to reduce fatalities and serious injuries on all streets. ²	\$ 3,110,000,000	Intersection safety improvements; multimodal roundabouts; construction and improvement of railway-highway safety features; traffic calming measures; traffic control devices for pedestrians and bicycles; improvements that separate vehicles and active users; pedestrian security features	-
CMAQ	Primarily used for projects the improve air quality, especially for areas in nonattainment.	\$ 2,639,000,000	Shared Micro-mobility; purchase of diesel replacements or zero emission vehicles; modernization of lock and dam or marine highway corridor; infrastructure that would reduce emissions from nonroad vehicles	-
STBG	Highly flexible source of general funding for transportation projects.	\$ 14,394,000,000	Planning; Construction; Operations and Maintenance; Accessibility	-

1. Application is through Multimodal Projects Discretionary Program (MPDG)

2. Requires Benefit-Cost Analysis (BCA)

In addition to longstanding sources like Surface Transportation Block Grant (STBG) and Highway Safety Improvement Program (HSIP), several new grant opportunities have risen from the Bipartisan Infrastructure Law (BIL). This legislation focuses on, among other things, funding projects that advance safety and equity. Funding opportunities from the BIL are listed above with eligible activities and required local match amounts. The USDOT has created a landing page for information related to the BIL which can be found at [USDOT Navigator](#).

5.2.2. State

Colorado is fortunate to have financial support for transportation projects specifically funded through state government. Senate Bill 2021_260 appropriated funds from the American Recovery Plan Act (ARPA) to specifically fund projects for the state's transportation network. Additionally, CDOT administers several grants supported by other federal or state sources. Below is a list of programs that stem from that funding sources.

- [Revitalizing Main Street \(RMS\)](#)
- [Transportation Alternatives \(TAP\)](#)
- [Multimodal Operations Fund \(MMOF\)](#)
- [Safe Routes to School](#)

5.2.3. Local

The City of Fort Collins also administers several funding sources for transportation capital projects. These have risen from the City's vision to fund and build a world-class transportation system.

[Transportation Capital Expansion Fee \(TCEF\)](#)

This program, which is funded by fees collected from new development or redevelopment is used to support transportation projects to expand the system in response to additional trips associated with development. Several projects in northeast Fort Collins, including the new segments along Timberline Road and Suniga Road, are candidates to receive funding from this source.

[Community Capital Improvement Program \(CCIP\)](#)

Funded by a voter-approved quarter-cent sales tax, the CCIP supports several infrastructure projects including arterial intersection construction and bike and pedestrian infrastructure. This has been a primary source for arterial street projects. Note that these funds are currently programmed for projects; however, it is set to expire in 2025 at which point the next round of projects can be identified and sourced from, among other lists, the TCPPS project list.