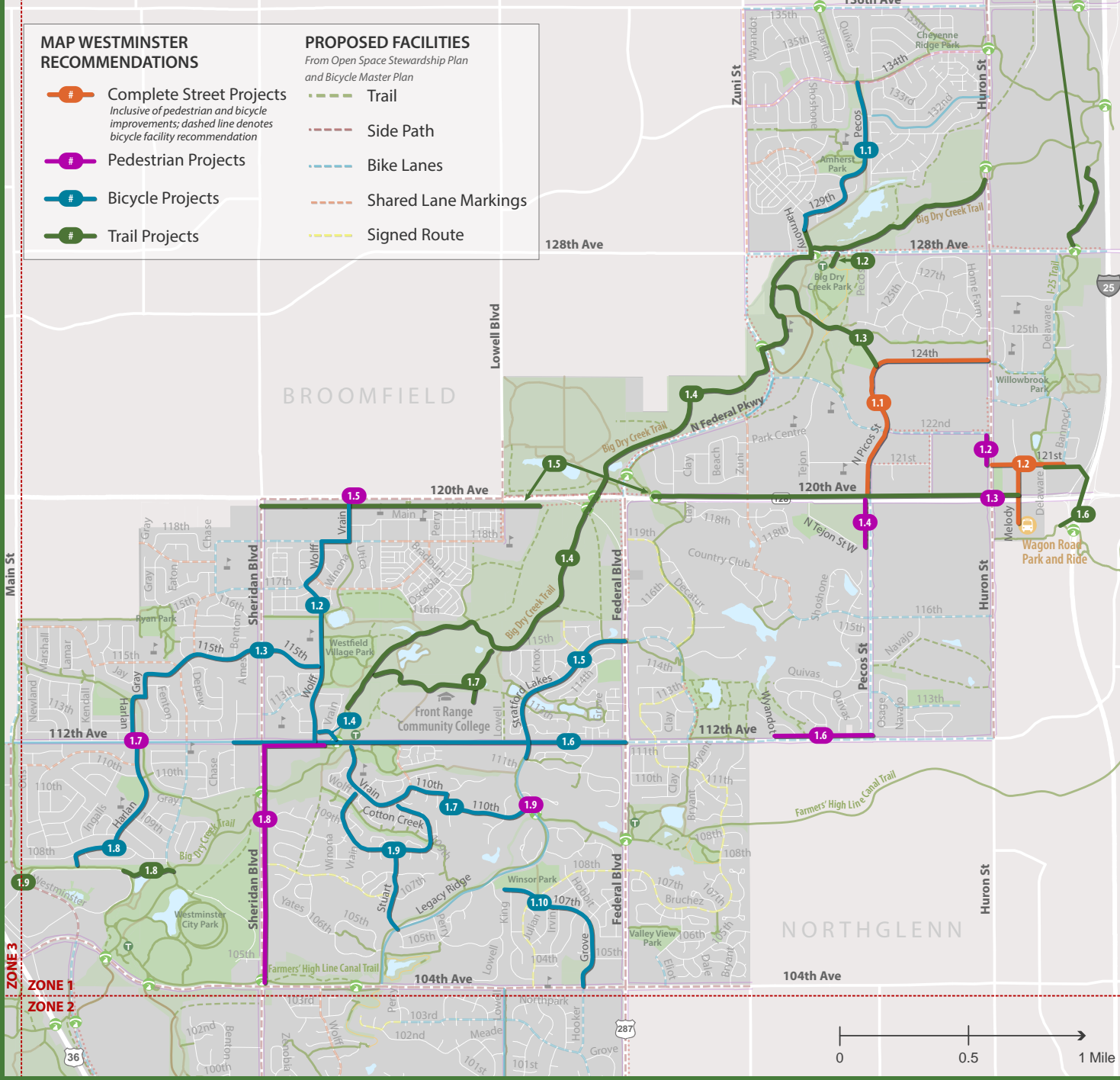
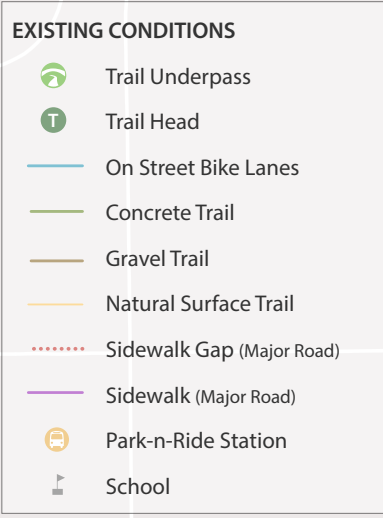
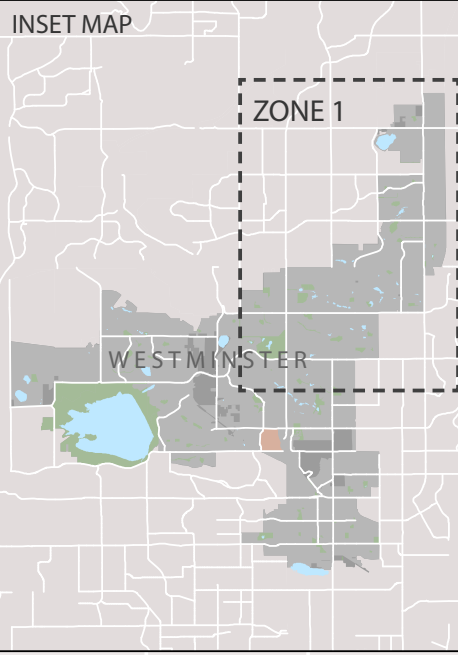


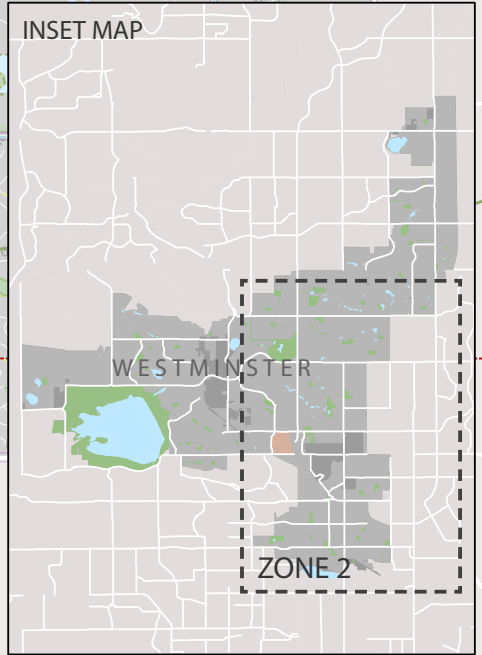
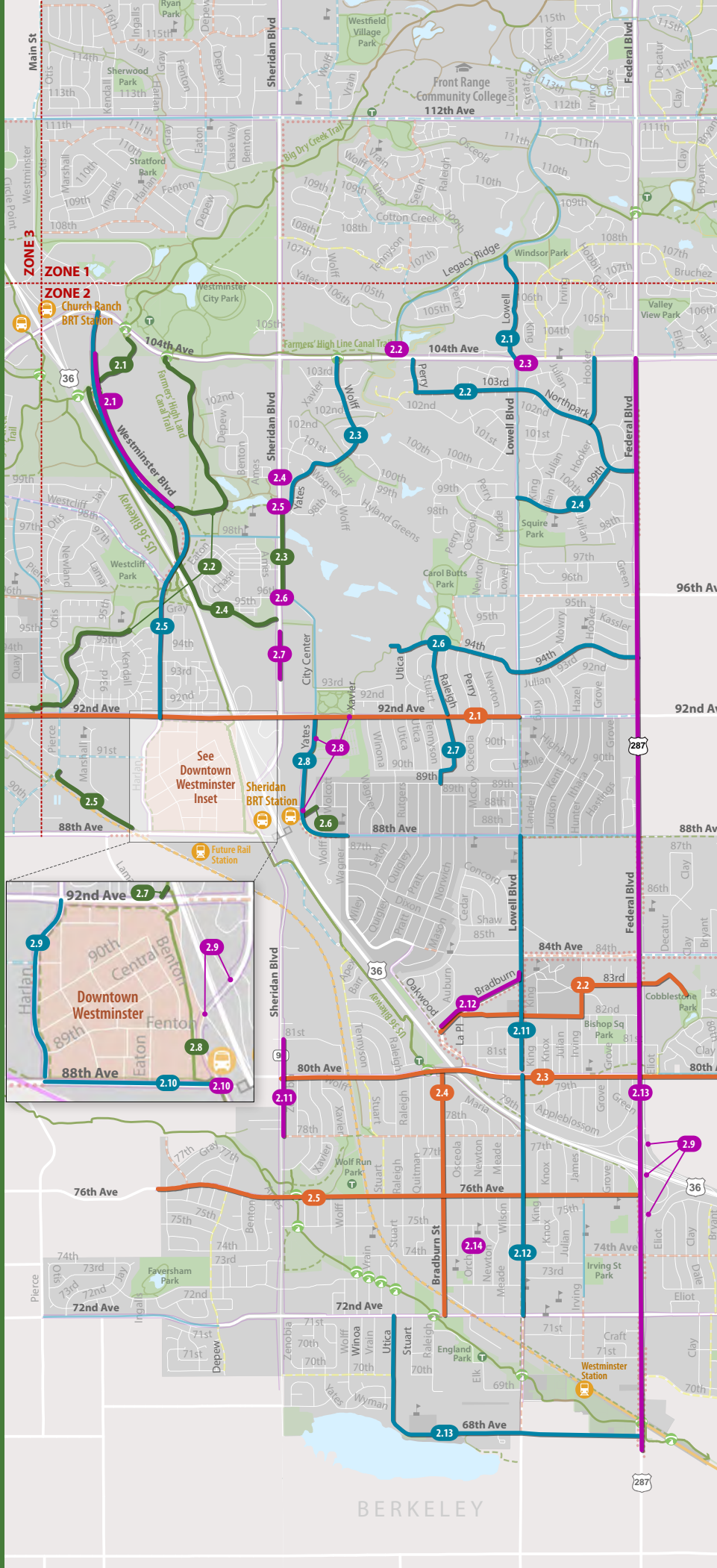


APPENDIX A:

PROJECT RECOMMENDATION TABLES



MAP 4.3: ZONE 2 RECOMMENDATIONS



MAP WESTMINSTER RECOMMENDATIONS

- Complete Street Projects
Inclusive of pedestrian and bicycle improvements; dashed line denotes bicycle facility recommendation
- Pedestrian Projects
- Bicycle Projects
- Trail Projects

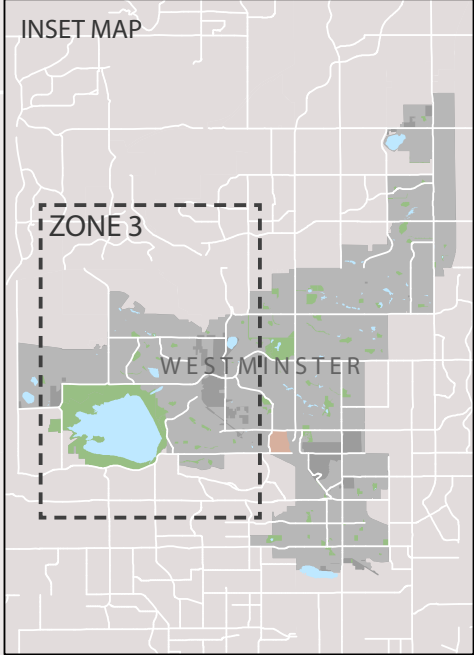
PROPOSED FACILITIES

- From Open Space Stewardship Plan and Bicycle Master Plan*
- Trail
 - Side Path
 - Bike Lanes
 - Shared Lane Markings
 - Signed Route

EXISTING CONDITIONS

- Trail Underpass
- Trail Head
- On Street Bike Lanes
- Concrete Trail
- Gravel Trail
- Natural Surface Trail
- Sidewalk Gap (Major Road)
- Sidewalk (Major Road)
- Park-n-Ride Station
- RTD B Line/Station
- School



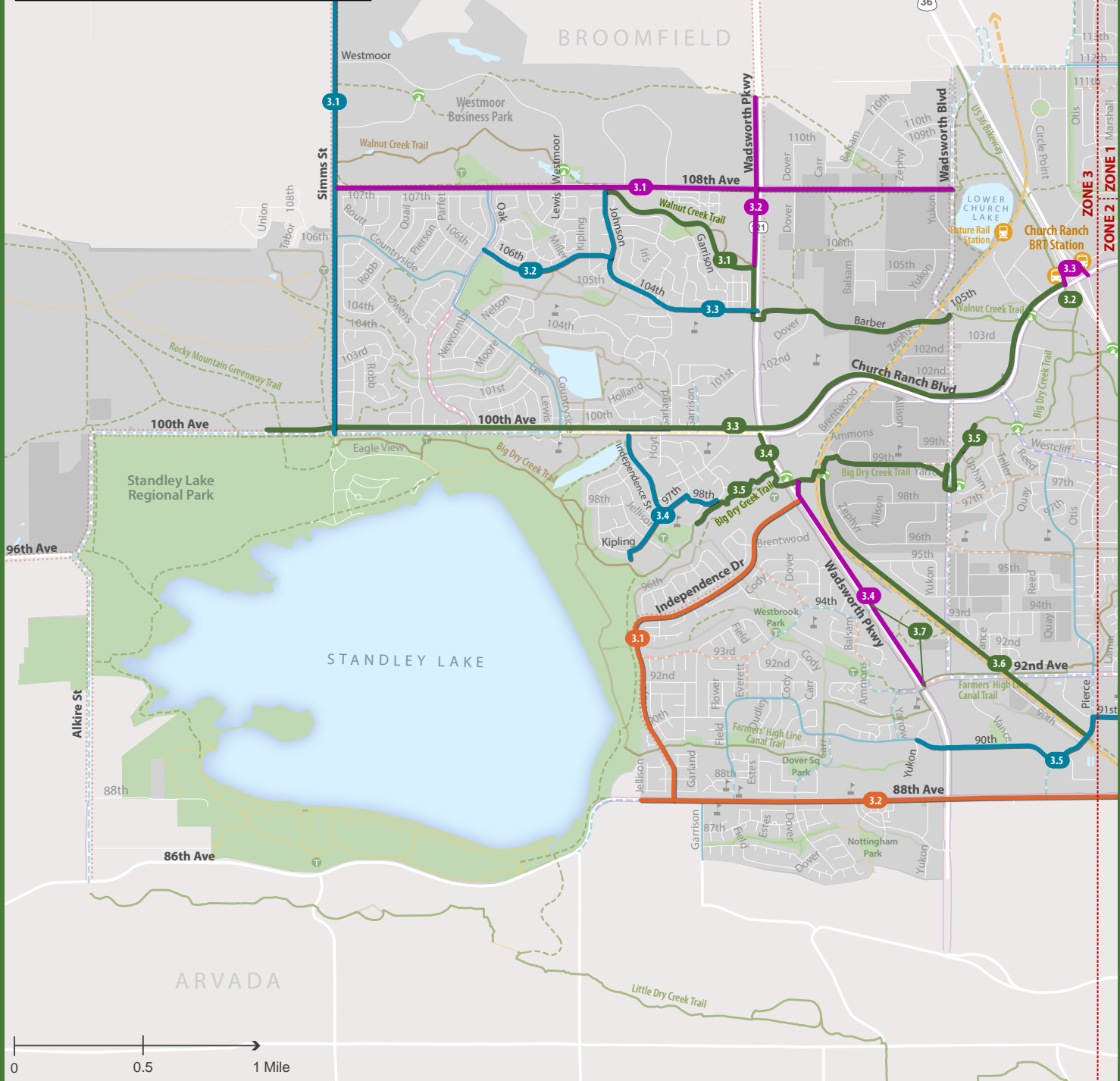


EXISTING CONDITIONS

- Trail Underpass
- Trail Head
- On Street Bike Lanes
- Concrete Trail
- Gravel Trail
- Natural Surface Trail
- Sidewalk Gap (Major Road)
- Sidewalk (Major Road)
- Park-n-Ride Station
- RTD B Line/Station (Proposed)
- School

MAP WESTMINSTER RECOMMENDATIONS

- Complete Street Projects
Inclusive of pedestrian and bicycle improvements; dashed line denotes bicycle facility recommendation
 - Pedestrian Projects
 - Bicycle Projects
 - Trail Projects
- PROPOSED FACILITIES**
From Open Space Stewardship Plan and Bicycle Master Plan
- Trail
 - Side Path
 - Bike Lanes
 - Shared Lane Markings
 - Signed Route



Zone 1 Project Recommendations



Trail Projects									
Trail projects recommended may include new shared-use paths (SUP), widening of existing sidewalks (W) to accommodate pedestrians and bicycles, or upgrading (U) existing trail surfaces from gravel to concrete. (Note: Upgrading trail surface material to concrete and widening sidewalks requires removal and replacement of existing trail/sidewalk; all upgrade and widening projects to are to result in 10' wide concrete shared-use path or sidepath unless otherwise noted).									
#	Project Name	Project Description	From Extent	To Extent	Estimated Improvement Length (Feet)*	Project Notes for Improvement	Total Prioritization Score	Cost Low	Cost High
1.1	I-25 Trail Connections	Construct new shared-use path connecting Huron St to existing I-25 trail (underway, scheduled for completion in 2017); from this point, construct new shared-use path south to existing I-25 trail; construct new shared-use path north from 128th Ave to existing I-25 Trail (underway, scheduled for completion in 2018).	I-25 Trail	Huron St	7612	The northern gap is scheduled to be completed in 2017; the southern gap is scheduled to be completed in 2018.	5	\$915,000	\$1,219,000
1.2	Big Dry Creek Park Trail Connection	Construct concrete trail from Big Dry Creek Trail south to 128th Ave. At 128th Ave and park entrance, install wirespan traffic light to provide safe crossing to park. South of the intersection, on east side of driveway, install 8' to 10' sidepath connecting to existing trail southbound.	128th Ave	Big Dry Creek Park sidewalk	316	--	10	\$89,000	\$101,000
1.3	Big Dry Creek Trail Connection East	To connect the Big Dry Creek Trail to 124th Ave, upgrade trail surface material from gravel to concrete, and construct new shared-use path connection leading to 124th Ave.	West of Big Dry Creek Park	124th Ave	2035	--	5	\$264,000	\$344,000
1.4	Big Dry Creek Trail Upgrade	Upgrade trail surface material of portions of Big Dry Creek between Huron St and 112th Avenue from gravel to concrete.	Huron St	112th Ave	19768	--	10	\$2,374,000	\$3,166,000
1.5	120th Ave East/West Path Upgrades	Add pedestrian refuge islands on Lowell Blvd, Bradburn Dr, and Vrain St where existing trail crosses these roads east/west. Add raised crossings at (2) driveway in/out. From Federal to Melody, widen existing sidewalk on north side of 120th Ave to 10' sidepath; conduct a complete streets assessment of land use along the corridor. Collaborate with City/County of Broomfield to assess feasibility of potentially using drainage ditch to under Sheridan Blvd at 120th Ave to create trail underpass.	Federal Blvd; Melody	Sheridan Blvd	8269	Use existing tree lawn on north side of 120th Ave to install sidepath. Installation of sidepath may require relocation of utilities and removal of trees.	12.5	\$1,314,000	\$1,655,000
1.6	I-25 to Farmers High Line Canal Trail Connection	Installed shared use path connecting the I-25 Trail south to the Farmers High Line Canal Trail. Use ditch to route trail from Delaware St east to I-25. Path would require construction of underpasses (two total) at I-25 southbound off-and-on ramps. Project would also require assessing the feasibility of constructing a path on the west side of I-25 under the 120th Ave overpass. Construction of path in this location would require assessing clear zones, and the erection of a vertical barrier between the path and roadway.	121st Ave	Farmers High Line Canal Trail	2055	To assess feasibility of underpasses, survey of all utilities, evaluate right-of-way, and evaluate stormwater existing conditions and proposed solutions, and assess traffic impacts during construction.	2.5	\$1,330,000	\$1,412,000
1.7	FRCC Trail Connection	Conduct a study identifying hierarchy of trails and upgrades to Front Range Community College (FRCC). Based upon study results, upgrade trail surface material from gravel to concrete and widen paths as necessary along the major routes leading east and south from Big Dry Creek Trail to FRCC	Big Dry Creek Trail	FRCC parking lot	3909	--	7.5	\$470,000	\$627,000
1.8	Promenade Dr Sidepath Connector*	Upgrade trail surface material of existing trail to from gravel to concrete, and install new shared-use path connection linking the Big Dry Creek Trail to the sidepath along Promenade Dr.	Promenade Dr	Big Dry Creek Trail	1252	Project will require construction of culvert to bridge over drainage ditch to connect to existing Promenade Dr sidepath.	7.5	\$118,500	
1.9	Church Ranch Park-N-Ride Underpass Connection	Assess the feasibility of constructing an underpass under Westminster Blvd at Promenade Dr to provide safer access to the Church Ranch Park-N-Ride	Intersection		248	To assess feasibility of underpass, survey of all utilities, evaluate right-of-way, and evaluate stormwater existing conditions and proposed solutions, and assess expected traffic impacts during construction.	7.5	\$800,000	\$1,000,000

*Pilot Project - Opinion of Probable Cost Prepared

Zone 1 Project Recommendations



Pedestrian Projects									
<i>Note: Widening (W) sidewalks requires removal and replacement of existing sidewalk.</i>									
#	Project Name	Project Description	From Extent	To Extent	Estimated Improvement Length (Feet)	Project Notes for Improvements	Total Prioritization Score	Cost Low	Cost High
1.1	Huron St Lexington Neighborhood Path Connection	Install sidewalk connection from existing sidewalk east of Huron St to the Lexington Neighborhood path.	Intersection	--	187	Two options exist A) Construct sidewalk west from existing sidewalk to existing crosswalk. This alignment will require removal of bushes and trees. B) Construct sidewalk directly north from existing sidewalk. Install culvert over ditch to bridge ditch.	7.5	\$15,000	\$19,000
1.2	Huron St Sidewalk Connection	Construct sidewalk on west side of Huron St between 121st Avenue and 122nd Avenue to close existing sidewalk gap	122nd St	121st St	466	Use existing tree lawn to route sidewalk	15	\$28,000	\$38,000
1.3	120th Ave and Huron St Intersection Access Study	Conduct intersection access study at 120th Ave and Huron St to assess installation of raised crosswalks at slip lanes, pedestrian refuge islands, or potentially closing slip lanes to reduce crossing distance. Also, assess signal timing to provide adequate time for pedestrian to cross intersection.	Intersection	--	672	--	10	Study	
1.4	Pecos St Sidewalk Connection	Construct buffer separated sidewalk on west side of Pecos St between 120th Avenue and North Tejon St W to close existing sidewalk gap	120th Ave	North Tejon St W	871	Use existing tree lawn to route sidewalk	10	\$53,000	\$70,000
1.5	120th Ave and Vrain St Bus Stop Connection	Install sidewalk connecting to bus stop on south side of 120th Ave west to Vrain St.	Vrain St	Bus Stop east of Vrain St	234	Project will require relocation of guardrail and reconstruction of retaining wall.	12.5	\$19,000	\$24,000
1.6	112th Ave Sidewalk Improvements	Widen sidewalk on north side of 112th Ave to 8 ft.	Wyandot St	Pecos St	2025	Project will require moving curb line south where right turn bays are present, and either narrowing or removing these turn bays; Utilities may need to be relocated and trees may need to be removed.	17.5	\$264,000	\$325,000
1.7	112th Crossing Improvements	Install pedestrian refuge island at 112th Ave and Harlan St at existing west side crosswalk that runs north/south across 112th Ave.	Intersection	--	75	--	20	\$13,000	\$18,000
1.8	Sheridan Blvd/112th Sidewalk Improvements	Install new segments of sidewalk in three sections: 1) south side of 112th Ave from Sheridan Blvd east to existing sidewalk; 2) east side of sheridan blvd from 112th Avenue to north of Big Dry Creek trail; 3) east side of Sheridan Blvd from 104th Ave north to existing sidewalk.	See Description	--	5065	Use existing tree lawn on south side of 112th/east side of Sheridan to install sidewalk. ROW acquisition may be required to install sidewalk here.	17.5	\$305,000	\$407,000
1.9	Legacy Ridge at 110th Ave At-Grade Crossing	Install raised crosswalk south of 110th Ave across legacy ridge at existing crosswalk location.	Intersection	--	58	--	15	\$5,000	\$10,000

Zone 1 Project Recommendations



Bicycle Projects
Bicycle facilities recommended may include conventional 5' striped bike lanes (BL); buffered bike lanes (BBL), which consist of bike lanes with striped buffers; neighborhood greenways, which are shared-use neighborhood streets, which are low-volume and low-speed, and prioritize the movement of bicyclists and pedestrians through signage and pavement markings, and separated bike lanes (SBL), which include bike lanes, separated from travel lanes by flexible posts or physical barriers, such as curbs or other vertical barriers. Signage in the table below refers to the installation of bicycle wayfinding signage. Signage along neighborhood greenways could be unique from other bicycle signage to help better identify the network.

#	Project Name	Project Description	From Extent	To Extent	Estimated Improvement Length (Feet)	Project Notes for Improvements	Total Prioritization Score	Cost Low	Cost High
1.1	Weather Stone Neighborhood Greenway	Install shared lane markings and signage from on Pecos St from 134th Ave to 130th Pkwy and on 130th Pkwy from Pecos St to Harmony Dr/Big Dry Creek Trail.	134th Ave	Big Dry Creek Trail	4094	--	15	\$10,000	\$21,000
1.2	Westfield Neighborhood Greenway	Install bike lanes on Vrain St from 120th Ave to 118th Place and on 118th Place from Vrain St to Wolff St; Install shared lane markings and signage on Wolff St from 118th Place to 112th Ave.	120th Ave	112th Ave	6107	--	15	\$14,000	\$42,000
1.3	115th Ave Neighborhood Greenway	Install shared lane markings and signage on Harlan St from 112th Ave north; install shared lane markings on Gray St from trail north to 114th Pl, and on 114th Pl/115th Ave from Gray St to Sheridan Blvd; install bike lanes on 115th Ave from Sheridan Blvd to Wolff St; install traffic signal at Sheridan Blvd and 115th Ave.	Harlan St	Wolff St	5024	--	17.5	\$13,000	\$36,000
1.4	Vrain St to Big Dry Creek Trail Connection	Install shared lane markings and signage; from Vrain to 112th, replace existing sidewalk with 10' shared-use path.	Wolff St	112th Ave	511	--	12.5	\$23,000	\$31,000
1.5	Stratford Lakes / King St Bike Lanes	Install bike lanes on Stratford Lakes / King St between 112th Ave and Federal Blvd.	111th Ave	Federal Blvd	3926	Restrict parking to one side of the street to install 5' bike lanes	10	\$7,000	\$46,000
1.6	112th Ave Bike Lanes	Install bike lanes on 112th Ave from existing bike lanes west of Sheridan Blvd east to Federal Blvd.	East of Sheridan Blvd	Federal Blvd	8456	Narrow travel lanes to minimums to install bike lanes within existing cross-section; Alternatively, Study potential 7/6-to-5/3 lane conversion to install wider bike lanes; Special consideration needed at driveways and intersections. Maximum AADT for segment is 15,000 vpd.	15	\$15,000	\$99,000
1.7	Sheridan Green Bikeway Improvements	Install bike lanes on Vrain St and Stuart St to 112th Avenue. Install shared lane markings on 111th Avenue from Vrain to 110th. Continue markings on 110th to Legacy Ridge Pkwy.	112th Ave	Legacy Ridge Pkwy	5425	--	15	\$12,000	\$44,000
1.8	Harlan St/108th Ave Bikeway Improvements	Install shared lane markings and signage on Lamar St from end of street north to 108th Ave, and on 108th Ave from Lamart St to Harlan St; install bike lanes on Harlan St from 108th Ave to 112th Ave.	112th Ave	Promenade Dr Sidepath	3619	For Harlan bike lanes, either restripe road to lane minimums to install 5' bike lanes, or restrict parking to one side of the road	15	\$8,000	\$35,000
1.9	Cotton Creek Dr Bike Lanes	Install bike lanes on Cotton Creek Dr from Vrain St to Stuart St. Install bike lanes on Tennyson St from Cotton Creek Dr to Legacy Ridge Pkwy.	Vrain St	Legacy Ridge Pkwy	6259	Along Cotton Creek Dr, restrict parking to one side of the street. Conduct parking study to determine the side of the street where parking should be retained. Along Tennyson St, restrict parking both sides of street to install bike lanes. Where raised medians are present, discontinue bike lanes and install shared lane markings in the center of the travel lane.	12.5	\$12,000	\$74,000
1.10	107th Ave Bike Lanes	Install bike lanes on 107th Avenue from Windsor Park to Grove St. Continue the bike lanes on Grove St to 104th Avenue.	Windsor Park	104th Pl	3586	Installation of bike facilities along corridor would require restricting parking to one side of the street or installing lane minimums (10' TL, 7' PL and 5' BL).	10	\$7,000	\$42,000

Zone 1 Project Recommendations



Complete Street Projects

Recommended Complete Street projects require further study with the intention of enabling safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation. Improvements may include new sidewalks (SW), buffered bike lanes (BBL), separated bike lanes (SBL), or intersection improvements.

#	Project Name	Project Description	From Extent	To Extent	Estimated Improvement Length (Feet)	Project Notes for Improvements	Total Prioritization Score	Cost Low	Cost High
1.1	124th Ave/N Pecos Complete Street Improvements	Install sidewalks where none exist on the north section of 124th Avenue/Pecos St from Huron St to 120th Ave. Reduce the number of travel lanes, install buffered bike lanes, and assess crossing improvements to provide safer access to Mountain Range High School and Silver Hills Middle School.	Huron St	120th Ave	5484	124th Notes: Conduct 5-to-3 lane conversion; install north/west sidewalk in existing tree lawn. Pecos Notes: Conduct 5-to-3 lane conversion; Using excess pavement width - extend west side curb line east to accommodate wider sidewalk and buffer where width is constrained. Maximum AADT for segment is 5,400 vpd.	7.5		Study
1.2	121st Ave and Melody Dr Complete Street Improvements	Study should analyze the following elements on 121st Ave and Melody Dr: Install bike lane on 121st Ave from Huron St to Bannock St; install two-way separated bike lane on west side of Melody St from 121st Ave to Wagon Rd Park-N-Ride; crossing Improvements at Melody St and 120th Ave (pedestrian refuge islands and reducing curb radius should be considered); conduct a complete streets assessment of land use. Note: This project is along designated bus route.	See Description	--	2815	121st Notes: Either restripe road to lane minimums to install 5' bike lanes, or restrict parking to one side of the road; Melody Notes: Stripe lane minimums to accommodate west side SBL	10		Study

Zone 2 Recommendations



Trail Projects									
Trail projects recommended may include new shared-use paths (SUP), widening of existing sidewalks (W) to accommodate pedestrians and bicycles, or upgrading (U) existing trail surfaces from gravel to concrete. (Note: Upgrading trail surface material to concrete and widening sidewalks requires removal and replacement of existing trail/sidewalk; all upgrade and widening projects to are to result in 10' wide concrete shared-use path or sidepath unless otherwise noted).									
#	Project Name	Project Description	From Extent	To Extent	Estimated Improvement Length (Feet)	Project Notes for Improvement	Total Prioritization Score	Cost Low	Cost High
2.1	Big Dry Creek Trail	Upgrade trail surface material from gravel to concrete from 104th Ave to Westminster Blvd.	104th Ave	Westminster Blvd	1,357	--	5	\$163,000	\$218,000
2.2	Farmers' High Land Canal Trail Upgrades	Upgrade trail surface from gravel to concrete from 104th Avenue to Westminster Blvd and from Westminster Blvd to 92nd Ave.	104th Ave to Westminster Blvd	Adams Elementary School to 92nd Ave	8,808	--	2.5	\$1,410,000	\$1,762,000
2.3	Sheridan Blvd Sidewalk Upgrade	Upgrade eastside sidewalk to 10' sidepath between 98th Ave and City Center Dr.	98th Ave	City Center Dr	1,884	Use existing tree lawn on west side of Sheridan Blvd to install sidepath.	12.5	\$302,000	\$377,000
2.4	Farmers' High Line Canal Trail Westminster Blvd Connection	Where the Big Dry Creek Trail crosses under Westminster Blvd, construct a new shared use path connection southbound on the west side of Westminster Blvd. Where Westminster Blvd crosses US36, construct shared use path under Westminster Blvd ramp, and continue trail to Niver Canal. Route the path on the north side of Niver Canal, east to Sheridan Blvd. At Sheridan Blvd, install HAWK beacon and construct pedestrian refuge in median to facilitate path crossing. Install crosswalk and trail crossing signage. Coordinate signals on Sheridan.	Westminster Blvd	Sheridan Blvd	7,381	Construction of trail between active rail line and ditch will require installation of a 5' high barrier. FHWA recommends a minimum setback of 25' from the center of the active rail line, but the exact setback width will be determined during trail alignment and feasibility analysis.	10	\$1,274,000	\$1,575,000
2.5	Allen Ditch Trail	Construct sidewalk from existing sidewalk on the east side of Pierce St south to rail line. Construct shared use path on north side of Allen Ditch east between Pierce Street and Harlan Street, providing direct access to Downtown Westminster.	Pierce Ave	88th Ave	2,404	Construction of trail between active rail line and ditch will require installation of a 5' high minimum barrier. FHWA recommends a minimum setback of 25' from the center of the active rail line, but the exact setback width will be determined during trail alignment and feasibility analysis. Preliminary analysis indicates that this setback can be maintained for the majority of the corridor.	10	\$279,000	\$373,000
2.6	88th Pl Trail Connection	Work with neighborhood and developer to establish a shared use path from RTD Sheridan Station to subdivision.	88th Pl	Sheridan Station	351	--	10	\$43,000	\$57,000
2.7	92nd Ave Connection	Construct new shared-use path connecting sidewalk on north side of 92nd Ave to the US 36 Bikeway.	Underpass	--	353	Construction of path will require grading	12.5	\$57,000	\$71,000
2.8	Sheridan Station Underpass**	Construction of one underpass for pedestrian and bicyclist access underneath Sheridan Blvd, connecting Downtown Westminster to Sheridan Station.	Underpass	--	197	--	10	\$6,845,000	

**Cost prepared for 2016 TIGER Grant Application

Zone 2 Recommendations



Pedestrian Projects									
<i>Note: Widening (W) sidewalks requires removal and replacement of existing sidewalk.</i>									
#	Project Name	Project Description	From Extent	To Extent	Estimated Improvement Length (Feet)	Project Notes for Improvement	Total Prioritization Score	Cost Low	Cost High
2.1	Westminster Blvd Sidewalk Improvements	Install 8ft sidewalk on the east side of Westminster Blvd south from existing sidewalk to trail.	Big Dry Creek Trail	Farmer's High Line Canal Trail	3,657	--	7.5	\$476,000	\$586,000
2.2	104th Ave at Legacy Ridge Pkwy	Intersection, wayfinding, and striping improvements at 104th Ave and Legacy Ridge Pkwy.	Intersection	--	262	--	12.5	Study	
2.3	104th Ave at Lowell Blvd	Install north/south crosswalk, curb ramps and pedestrian countdown signal on the east side of intersection of 104th Ave and Lowell Blvd.	Intersection	--	92	--	17.5	\$18,000	\$22,000
2.4	100th Ave at Sheridan Blvd	Extend existing raised median south and construct pedestrian refuge island at intersection of 100th Ave and Sheridan Blvd, providing pedestrian refuge for the existing east/west crosswalk. Reconstruct west side curb line to create a smaller turn radius, and install two curb cuts at this landing. Install HAWK beacon to facilitate crossing.	Intersection	--	96	Installation of HAWK should be coordinated with pedestrian project 2.5, as HAWK may only be desirable in one location.	12.5	\$94,000	\$99,000
2.5	98th Ave at Sheridan Blvd	Install pedestrian refuge island, crosswalk, and HAWK Beacon across Sheridan Blvd at 98th Ave. Coordinate signals.	Intersection	--	100	Construct pedestrian cut-through at existing raised median; Project will require construction of new curb-cuts on west side of Sheridan. Installation of HAWK should be coordinated with pedestrian project 2.2, as HAWK may only be desirable in one location.	17.5	\$97,000	\$102,000
2.6	City Center Dr at Sheridan Blvd	Remove continuous right hand turn at City Center Dr. Extend curb line southwest to shorten crossing distance.	Intersection	--	292	--	10	\$15,000	\$25,000
2.7	Westfield / City Center Access Management	Assess consolidating driveways on the east and west side of Sheridan Blvd.	South of Niver Canal	Driveway North of 92nd Ave	2,210	--	10	Study	
2.8	Public Access to City Services Improvements*	Install crosswalk and HAWK beacon north/south across 92nd Ave at Xavier St; Install crosswalk and RRFB east/west across Yates at 91st Ave. Also adjust median radius to provide pedestrian refuge; to the south, install pedestrian refuge island, crosswalk, and RRFB to US 36 Parking Garage east/west across Yates St where path approaches Yates St; Install crosswalk north/south across garage driveway. Construct bus stop access to sidewalk.	Intersection	--	--	--	12.5	\$529,500	
2.9	US 36 Ramps Crossing Improvements**	Make pedestrian enhancements to the US 36 on-and-off ramps where Church Ranch Blvd, Sheridan Blvd, and Federal Blvd cross the ramps (nine ramp crossings total)	Intersection	--	--	--	12.5	\$455,000	
2.10	Sheridan Station Crossing Improvement***	Make pedestrian access improvements to intersection consistent with the 2016 HSIP Application.	Intersection	--	--	--	15	\$138,600	
2.11	Sheridan Blvd Access Management	Assess consolidating driveways on east side of Sheridan Blvd from 81st Ave to 78th Ave.	81st Ave	78th Ave	2,129	--	10	Study	
2.12	Bradburn Sidewalk	Install new sidewalk on north side of Bradburn Dr from Lowell Blvd to La Place Ct; widen existing sidewalk from La Place Ct to Oakwood St to 5' minimum; connect sidewalk to existing sidewalk north of Bradburn on the west side of Lowell Blvd.	Oakwood St	Lowell Blvd	2,230	Reconstruction of sidewalk may require adjustment of curbline from La Pl Ct to Oakwood	7.5	\$146,000	\$191,000
2.13	Federal Blvd Pedestrian Access Study	Conduct pedestrian access study along the Federal Blvd corridor to improve pedestrian conditions along the corridor, including both linear sidewalk conditions, access management and intersection crossings.	104th Ave	68th Ave	24,015	--	10	Study	
2.14	South Westminster Safe Routes to School	Conduct Safe Routes to School Plan in South Westminster to improve connectivity from neighborhoods to schools.	Study	--	--	--	15	Study	

*Pilot Project - Opinion of Probable Cost Prepared

**Pilot Project - Opinion of Probable Cost Prepared. Costs prepared for 2017 HSIP Application ramp projects included in overall project cost.

***Cost prepared for 2017 HSIP Application.

Zone 2 Recommendations



Bicycle Projects
 Bicycle facilities recommended may include conventional 5' striped bike lanes (BL); buffered bike lanes (BBL), which consist of bike lanes with striped buffers; neighborhood greenways, which are shared-use neighborhood streets, which are low-volume and low-speed, and prioritize the movement of bicyclists and pedestrians through signage and pavement markings, and separated bike lanes (SBL), which include bike lanes, separated from travel lanes by flexible posts or physical barriers, such as curbs or other vertical barriers. Signage in the table below refers to the installation of bicycle wayfinding signage. Signage along neighborhood greenways could be unique from other bicycle signage to help better identify the network.

#	Project Name	Project Description	From Extent	To Extent	Estimated Improvement Length (Feet)	Project Notes for Improvements	Total Prioritization Score	Cost Low	Cost High
2.1	Lowell Ct Bikeway Connector	Install shared lane markings and signage between Legacy Ridge Pkwy and the end of Lowell Ct; upgrade north/south connector sidewalk to 10' shared-use path from Lowell Ct south to 104th Ave.	Legacy Ridge Pkwy	104th Dr	2,446	--	12.5	\$28,000	\$41,000
2.2	Perry/Northpark Bike Lane	Install bike lanes from 104th Ave to Federal Blvd on Perry St, 103rd Ave and Northpark Ave, and buffered bike lanes on Hooker St from Northpark to 104th Ave.	104th Ave	Federal Blvd	7,849	For the east/west facility on Perry, 103rd and Northpark, restrict parking both sides of street to install bike lanes. Parking is currently restricted on Hooker St. Install buffered bike lanes on Hooker St from Northpark Ave to 104th Ave (12' travel lanes, 6' bike lane and 3' buffer).	12.5	\$16,000	\$106,000
2.3	Highland Green Neighborhood Greenway	Install shared lane markings and signage on Wolff St from 104th Ave to Yates St, on Yates St from Wolff St to 98th Ave, and on 98th Ave from Yates St to Sheridan Blvd. Alternatively, install bike lanes on Wolff St.	104th Ave	Sheridan Blvd	4,548	Installation of bike lanes on Wolff St would require striping lane minimums (10' travel lanes and 7' parking lane) or a parking restriction. Installation of bike lanes on Yates St would require parking restriction both side of road.	12.5	\$11,000	\$23,000
2.4	99th Ave Neighborhood Greenway	Install shared lane markings and signage between Northpark Dr and Lowell Blvd. Alternatively, install bike lanes along this portion of the 99th Ave.	Northpark Dr	Lowell Blvd	2,516	Installation of bike lanes on 99th Ave would require striping lane minimums (10' travel lanes and 7' parking lane) or a parking restriction.	12.5	\$6,000	\$13,000
2.5	Westminster Blvd	Install bike lanes from 104th Ave to Farmer's High Line Canal Trail, buffered bike lanes from Farmer's High Line Canal Trail to 94th Ave, and bike lanes from 94th Ave to 92nd Ave.	104th Ave	92nd Ave	9,894	From Farmer's High Line Canal Trail (FHLCT) to 94th Ave, convert outside lane into buffered bike lane, from 94th Ave to 92nd Ave, turn lanes will need to be removed, and north of FHLCT, roadway will need to be widened. Maximum AADT for segment is 7,400 vpd.	17.5	\$23,000	\$162,000
2.6	Sunset Ridge Neighborhood Greenway	Install shared lane markings and signage on 94th Ave from Utica St to Perry St, and on 94th Ave from Lowell Blvd to Federal Blvd; Install bike lanes on 94th Ave from Perry St to Lowell Blvd; Install shared lane markings and signage on Raleigh St from 92nd Ave to 94th Ave; Construct new shared-use path connection from the west end of 94th Ave to the Carol Butts Park trails and the Hyland trail to the west.	Carol Butts Park	Federal Blvd	7,634	On 94th Ave, restrict parking from Perry St to Lowell Blvd to install bikes lanes; shared-use path construction will require coordination with Golf Course	17.5	\$53,000	\$96,000
2.7	Northridge Manor Bikeway	Install shared lane markings and signage on Raleigh St from 92nd Ave to Oakwood St, and on Oakwood St from Raleigh St to 89th Way.	92nd Ave	89th Way	1,556	--	15	\$4,000	\$8,000
2.8	Yates St Bike Lanes	Install buffered bike lanes from 92nd Ave to 88th Ave.	92nd Ave	88th Ave	3,514	Narrow travel lanes to minimums to install bike lanes within existing cross-section; Assess converting outside lane into wide buffered bike lanes. Maximum AADT for segment is 9,300 vpd.	20	\$10,000	\$75,000
2.9	Harlan Ave	Install buffered bike lanes between 92nd Ave and 88th Ave.	92nd Ave	88th Ave	2,730	Convert outside lane into buffered bike lanes; Special consideration needed at driveways. Maximum AADT for segment is 7,900 vpd.	15	\$8,000	\$58,000
2.10	88th Ave Bikeway	Install protected bikeway or multi-use trail on south end of new downtown from Harlan St to Sheridan Blvd.	Harlan St	Sheridan Blvd	2,703	Narrow travel lanes to minimums to install separated bike lanes within existing cross-section; Alternatively, assess potential lane reduction to install more separated facility; Special consideration needed at driveways	10	See Downtown Mobility Plan Estimate	
2.11	Lowell Blvd Bike Lane	Install bike lanes on Lowell Blvd between 88th Ave and 80th Ave.	88th Ave	80th Ave	5,274	From 88th Ave to Shaw St, restrict on-street parking, from Shaw to 82nd, widen roadway, and from 82 Ave to 80 Ave restrict on-street parking	10	\$152,193	\$252,109
2.12	Lowell Blvd Shared Lanes	Install shared lane markings and signage on Lowell Blvd between 80th Ave and 72nd Ave.	80th Ave	72nd Ave	5,293	--	17.5	\$7,000	\$16,000
2.13	Utica/68th Bikeway	Install shared lane markings and signage on Utica St from 72nd Ave to Federal Blvd.	72nd Ave	Federal Blvd	7,497	--	17.5	\$9,000	\$23,000

Zone 2 Recommendations

Complete Street Projects

Recommended Complete Street projects require further study with the intention of enabling safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation. Improvements may include new sidewalks (SW), buffered bike lanes (BBL), separated bike lanes (SBL), or intersection improvements.

#	Project Name	Project Description	From Extent	To Extent	Estimated Improvement Length (Feet)	Project Notes for Improvements	Total Prioritization Score	Cost Low	Cost High
2.1	E 92 Avenue Bicycle Infrastructure Assessment	Study should analyze the the pedestrian and bicycle infrastructure between Sheridan Blvd and Federal Blvd. Specifically, the study should analyze narrowing travel lane widths to accommodate wider sidewalks and the installation of dedicated bikeway facilities. This project is along a dedicated bus route.	Wadsworth Blvd	Lowell Blvd	14,010	Narrow travel lanes to minimums to install bike lanes within existing cross-section; Alternatively, assess potential lane reduction to install buffered bike lanes; Special consideration needed at driveways, intersections, and where raised median are present. Maximum AADT for segment is 32,000 vpd.	15		Study
2.2	Oakwood St to Cobblestone Park Connection	Study should analyze the following elements on Oakwood St: Install shared lane markings and signage from Oakwood St to La Place Ct, and on 82nd/83rd Ave from Lowell Blvd to Federal Blvd; construct shared-use path from La Pl Ct to Lowell Blvd and from Federal Blvd to Cobblestone Park. At Federal Blvd and 83rd Ave, study should assess the feasibility of installing an underpass.	Oakwood St	Cobblestone Park	6,338	Special consideration needed at roadways crossings along bikeway	5		Study
2.3	80th Ave Complete Street Improvements	Study should analyze the following elements on 80th Ave: Widen sidewalks and install bike lanes along 80th Ave between Sheridan Blvd and Zuni St. Note: This project is along designated bus route.	Sheridan Blvd	Zuni St	10,643	Conduct 4-to-3 lane conversion; use excess pavement width to move curb lines and accommodate wider sidewalks. Maximum AADT for segment is 11,000 vpd.	15		Study
2.4	Bradburn St Complete Street Improvements	Study should analyze the following elements on Bradburn St: Add crosswalks, stop/yield bars, at intersecting streets on east side of Bradburn (six total). Install shared lane markings and signage along Bradburn St from 80th Ave to 72nd Ave. Note: This project is along designated bus route.	80th Ave	72nd Ave	5,286	Assess stop signs along corridor to give priority to bikeway.	15		Study
2.5	76th Ave Complete Street Improvements	Study should analyze the following elements on 76th Ave: Widen sidewalks; install bike lanes along 76th Ave from city boundary to Federal Blvd.	City Boundary West	Federal Blvd	10,570	Parking will need to be restricted to one side of the road from city border east to Sheridan Blvd. From Sheridan Blvd to Stuart St turn bays will need to be removed. From Stuart St to Federal Blvd, restrict parking to one side. Conduct parking study to determine which side of the street parking should be available on. Maximum AADT for segment is 4,100 vpd.	10		Study

Zone 3 Recommendations



Trail Projects									
<i>Trail projects recommended may include new shared-use paths (SUP), widening of existing sidewalks (W) to accommodate pedestrians and bicycles, or upgrading (U) existing trail surfaces from gravel to concrete. (Note: Upgrading trail surface material to concrete and widening sidewalks requires removal and replacement of existing trail/sidewalk; all upgrade and widening projects to are to result in 10' wide concrete shared-use path or sidepath unless otherwise noted).</i>									
#	Project Name	Project Description	From Extent	To Extent	Estimated Improvement Length (Feet)*	Project Notes for Improvements	Total Prioritization Score	Cost Low	Cost High
3.1	Westmoor Dr to Walnut Creek Trail Connection	Upgrade Walnut Creek Trail surface material to concrete (Johnson St to Wadsworth Pkwy); install sidepath from Walnut Creek Trail south to existing sidewalk; Assess using tunnel on south side of Wadsworth Pkwy and 104th Ave to install trail underpass; install shared-use path from Wadsworth Pkwy east to existing Walnut Creek Trail; use tunnel under Dover St to install trail underpass; construct tunnel under railroad separate from roadway underpass; install RRFB and crosswalk at 105th Ave and Wadsworth Blvd.	Westmoor Dr	Walnut Creek Trail	9,192	On 108th Ave from Lewis St to Johnson St, use existing wide tree lawn to install sidepath. Project will require assessing feasibility of using existing drainage ditch tunnels as trail underpasses. Project will require assessing feasibility of constructing tunnel under railroad. 2018 CIP project will study drainage and trail alignments from Church Ranch at Reed to Wadsworth Pkwy. With engineering, PRL, and Urban Drainage working together.	12.5	\$2,424,000	\$2,971,000
3.2	Church Ranch Station Underpass**	Construction of three bikeway underpasses: below the US 36 Church Ranch Blvd off-ramp, below Church Ranch Blvd that spans US 36, and below the US 36 Church Ranch Blvd on-ramp. Project will also include the construction of 535 ft of shared-use path, resulting in a grade-separated crossing of Church Ranch Blvd.	Underpass	--		See 2016 TIGER Grant Application for project details.	10	\$1,242,000	
3.3	100th Ave Sidepath Construction	Reconstruct existing north side sidewalks on 100th Ave to 10' minimum or 12' maximum from Church Ranch Station to Rocky Mountain Greenway Trailhead.	See Description	--	19,322	Installation of shared use path will require removal of trees/bushes, and potentially relocation of utilities and bus stops	10	\$3,040,000	\$3,813,000
3.4	Wadsworth Pkwy Trail Connection/Big Dry Creek Trail Improvement	Upgrade sidewalk to 10' sidepath on Wadsworth Pkwy from 100th Ave to Big Dry Creek Trail; install raised crosswalk at shopping center exit.	100th Ave	Big Dry Creek Trail	860	Use existing wide tree lawn to install sidepath.	10	\$109,000	\$148,000
3.5	Big Dry Creek Trail Upgrades	Upgrade trail surface material to concrete (two sections: from Westbrook Park to Wadsworth Pkwy and east of Wadsworth Blvd). Collaborate with Jefferson Academy to construct a new 10 foot wide trail within the 99th Ave ROW between Yarrow St to BNSF Railroad. Realign 99th Ave to the north to create width for trail.	See Description	--	4,647	--	5	\$632,000	\$818,000
3.6	Railroad Trail Study	Assess feasibility of installing shared use path along rail corridor from Big Dry Creek Trail to Pierce St.	Big Dry Creek Trail	Pierce St	8,301	Requires coordination with railroad owner.	5	\$1,329,000	\$1,661,000
3.7	Wadsworth Pkwy Crossing Improvements	Assess feasibility of installing grade-separated crossing at 92nd Ave and 94th Ave at Wadsworth Pkwy.	Intersection	--	343	--	10	\$2,400,000	\$2,800,000

**Cost prepared for 2016 TIGER Grant Application

Pedestrian Projects									
<i>Note: Widening (W) sidewalks requires removal and replacement of existing sidewalk.</i>									
#	Project Name	Project Description	From Extent	To Extent	Estimated Improvement Length (Feet)	Project Notes for Improvements	Total Prioritization Score	Cost Low	Cost High
3.1	108th Ave Sidewalk Improvements	Install and/or replace existing narrow sidewalks with 8 foot wide sidewalks on both sides of 108th Ave from Simms St to Wadsworth Blvd.	Simms St	Wadsworth Blvd	22,382	Installation of sidewalk along 108th Ave will require relocation of fence and potentially removal of trees and grading. Between 107th Pl to the east end of development, an 8' sidewalk exists on the south side of the road. This section of the sidewalk will not be replaced. Between Dover St and Wadsworth Blvd, utilities exist of both sides of the road. Utilities will either need to be relocated, or property aquired, to install sidewalk in these vicinity.	10	\$2,499,000	\$3,169,000
3.2	Wadsworth Pkwy Sidewalk Connections North	Install 8 foot wide buffered sidewalk on west side of Wadsworth Pkwy from City Limit south to existing sidewalk north of 104th Ave. On the east side of Wadsworth Pkwy, install 8' buffered sidewalk from 108th Ave south to existing sidewalk north of 104th Ave.			6,135	--	12.5	\$731,000	\$915,000
3.3	Church Ranch BRT Station Access Improvements*	Construct two new 8' sidewalks connecting BRT Stations south to Church Ranch Blvd on both sides of US 36.	Church Ranch BRT Stations	Church Ranch Blvd	480	Installation of eastside sidewalk may require grading; westside sidewalk will require removal of trees and potentially require grading.	10	\$731,500	
3.4	Wadsworth Pkwy Bus Stop Connections	Install sidewalk connections to bus stops on the east side of Wadsworth Pkwy along RTD Bus Route 76. At Independence Dr, assess moving crosswalk alignment north so that crosswalk passes through raised median and install sidewalk and curb ramp to Independence Dr. At 94th Ave and 92nd Ave, assess moving Wadsworth Pkwy crosswalk/median alignments so crosswalks pass through raised median on Wadsworth Pkwy.	Big Dry Creek Trail	92nd Ave	757	Project will require coordination with CDOT for funding and implementation.	17.5	\$94,000	\$118,000

*Pilot Project - Opinion of Probable Cost Prepared

Zone 3 Recommendations



Bicycle Projects
 Bicycle facilities recommended may include conventional 5' striped bike lanes (BL); buffered bike lanes (BBL), which consist of bike lanes with striped buffers; neighborhood greenways, which are shared-use neighborhood streets, which are low-volume and low-speed, and prioritize the movement of bicyclists and pedestrians through signage and pavement markings, and separated bike lanes (SBL), which include bike lanes, separated from travel lanes by flexible posts or physical barriers, such as curbs or other vertical barriers. Signage in the table below refers to the installation of bicycle wayfinding signage. Signage along neighborhood greenways could be unique from other bicycle signage to help better identify the network.

#	Project Name	Project Description	From Extent	To Extent	Estimated Improvement Length (Feet)	Project Notes for Improvements	Total Prioritization Score	Cost Low	Cost High
3.1	Simms St Complete Street Improvements	Install bike lanes from 100th Ave north to Broomfield city boundary. Install sidewalks east and west sides of Simms St from 100th Ave north to Broomfield city boundary where sidewalks currently do not exist. At 107th and Simms, construct bulbouts to reduce crossing distance, and install crosswalks at all approaches; install RRFB at east/west crosswalks across Simms. Install traffic signals at 100th Ave and Simms St.	Northern City Limit	100th Ave	22,668	Conduct 4-to-3 lane conversion; between 108th and Countryside road remove TWLTL; road narrows north of 108th Ave and will require widening. Maximum AADT for segment is 7,300 vpd.	7.5	\$794,000	\$1,146,000
3.2	106th Ave Bike Lanes	Install bike lanes and signage on 106th Ave from Oak St to Johnson St.	Oak St	Johnson St	2,946	Installation of bike lanes requires that parking be restricted on both sides of the roadway.	7.5	\$6,000	\$35,000
3.3	Johnson St/104th Ave Bike Lanes	Install bike lanes on Johnson St, between 108th Ave and 104th Ave and on 104th Ave between Johnson St and Wadsworth Pkwy, to provide bikeway connection between Westmoor Business Park and the future Walnut Creek Trail extension to the east.	108th Ave	Wadsworth Pkwy	6,050	Restrict parking both sides of street to install bike lanes	10	\$11,000	\$71,000
3.4	Independence St/97th Ave Bikeway Improvements	Install bike lanes on Independence St from 100th Ave to 97th Ave; Install shared lane markings and signage on Kipling St from Kipling Way to 97th Ave, on 97th Ave from Kipling St to 98th Ave, and on 98th Ave from 97th Ave to Big Dry Creek Trail.	100th Ave	Big Dry Creek Trail	4,593	Restrict parking to one side of street to install bike lanes	10	\$11,000	\$37,000
3.5	90th/Pierce/91st Bikeway Improvements	Install bike lanes from Yukon St to Pierce St; implement access management from Wadsworth Blvd to Pierce St; Install signal at 90th Ave and Pierce St; improve railroad crossing.	Existing Bike Lanes 90th Ave	Harlan St	6,419	Wadsworth Pkwy to Pierce - convert outside lane into buffered bike lane; Pierce 90th to 92nd - narrow lanes to install bike lanes; 91st Pierce to Harlan - restrict parking to one side	20	\$11,000	\$75,000

Complete Street Projects
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#	Project Name	Project Description	From Extent	To Extent	Estimated Improvement Length (Feet)	Project Notes for Improvements	Total Prioritization Score	Cost Low	Cost High
3.1	Independence Dr Complete Street Improvements	Study should analyze the following elements on Independence Dr from 88th Ave to Wadsworth Pkwy: Remove left turn bays/median and install bike lanes; install raised crossing and RRFB at Nile Canal Trail crossing; install RRFB at Farmer's High Line Canal Trail crossing; longer term - install north/west side sidewalk from Nile Canal Trail to Wadsworth Pkwy.	88th Ave	Wadsworth Pkwy	8,802	Remove left turn bays; stripe (2) 5' bike lanes and (2) 11' TL; long term, use excess road space to install north/west side sidewalks. Maximum AADT for segment is 5,300 vpd.	12.5	Study	
3.2	88th Ave Complete Streets Improvements	This project is a continuation of Zone 2 Bike Project 2.10. This study should analyze making complete streets improvements along 88th Ave from Harlan St west to City Limit. Study will take into consideration Downtown Westminster Mobility Study recommendations, and should be coordinated with Arvada to continue extend the existing bike lanes in Arvada east into Westminster.	Harlan St	City Limit	10,436	Maximum AADT for segment is 17,000 vpd	10	Study	