CITY OF AUSTIN PUBLIC WORKS

SAFE ROUTES TO SCHOOL

INFRASTRUCTURE REPORT

CITY COUNCIL DISTRICT 9

austin MOTION 2016 MOBILITY BOND

ACKNOWLEDGMENTS

December 2019

This report is made possible through the Austin 2016 Mobility Bond. For more information, please contact:

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The consultant team was led by Toole Design Group with support from Asakura Robinson, Dunaway|UDG, GGE Consulting, and Adisa Communications.

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City Council District 9

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ABOUT THIS PROJECT

PURPOSE / BACKGROUND

In November 2016, Austin voters approved the 2016 Mobility Bond which provided $27.5 million for Safe Routes to School improvements. The funding will be equally allocated for school access-related projects in Austin's ten City Council districts.

To identify projects, the City of Austin hired consultants to evaluate and prioritize improvements to streets, trails, intersections and sidewalks around 137 elementary and middle schools in the City. The City also conducted a robust public engagement effort to inform recommendations, as described later in this report. The project is taking place over two years and was divided into phases based on the school calendar, with two to three council districts in each phase.

- **Phase 1: Fall 2017** – Council Districts 1 and 10, 28 schools
- **Phase 2: Spring 2018** – Council Districts 2, 8 and 9, 40 schools
- **Phase 3: Fall 2018** – Council Districts 3, 5 and 7, 36 schools
- **Phase 4: Spring 2019** – Council Districts 4 and 6, 33 schools

This report explains the process used to develop the recommendations for schools in City Council District 9, and presents a prioritized list of projects. It also presents a map and matrix showing all the recommendations made for each school. Recommended improvements aim to address identified safety or access issues for students walking and biking to school. **Ideas presented in this document are planning-level concepts: many projects will require further feasibility study and engineering evaluation before they can be implemented. In some locations, alternate approaches to address the issue may prove more feasible or more cost effective. Specific infrastructure treatments are defined and explained in the Austin SRTS Engineering Toolkit (Appendix A).**

SCHOOL AUDITS

School audits in District 9 took place the week of March 19, 2018. Audit teams were led by a team of transportation planners and designers, as well as City of Austin staff from the Departments of Public Works and Transportation, and school representatives. School representatives typically included the principal or a designee and 1-2 parent representatives.

Most audits took place in the early morning, with a brief introductory meeting followed by an observation of school arrival. After the school bell rang, the team reconvened to

Walk Audit at Becker Elementary School

Walk Audit at Pease Elementary School

debrief and discuss next steps. Following the summary meeting, the consultants and City staff completed the assessment of walking and biking infrastructure around the school, focusing on a half-mile radius for pedestrian facility recommendations and up to a two-mile radius for bicycle facilities. The recommendations were reviewed by City staff for consistency with other planning efforts prior to prioritization.

PUBLIC ENGAGEMENT

In addition to participating in the school audits, members of the public were invited to provide input via an online map and public open houses. Flyers explaining the project and promoting these opportunities were developed in English and Spanish, distributed to school contacts, and published on the City's website and social media channels.

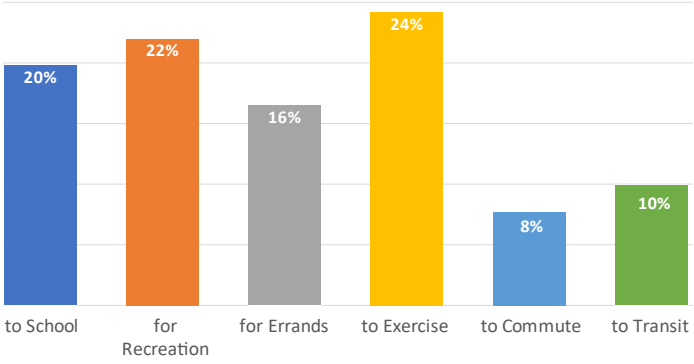
ONLINE INTERACTIVE MAP

The project team used an online interactive map to gather input from the community on the barriers to walking and biking to school. English and Spanish language versions of the online map went live in November 2017. Users could access the maps via links on the City's Safe Routes to School website. Using lines and points, map users were asked to identify barriers, routes their family currently bikes or walks, and difficult routes for biking and walking.

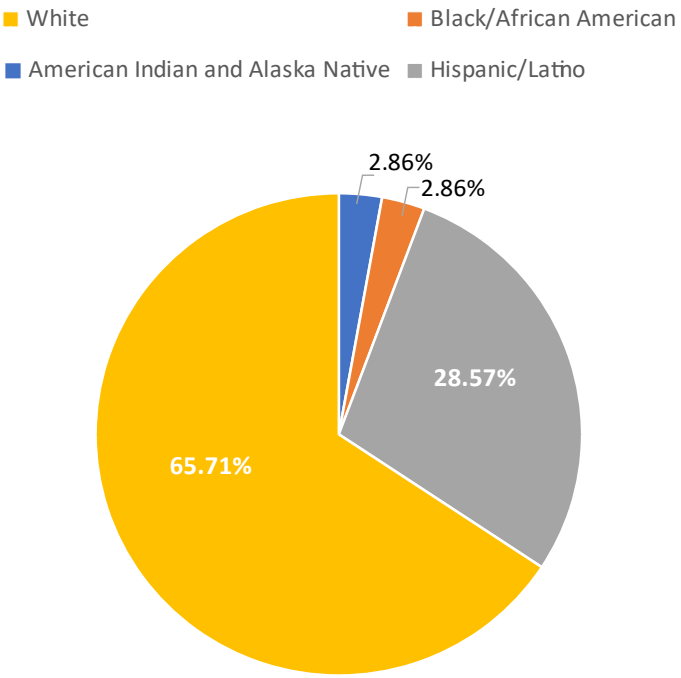
Summary of Responses

Before adding their comments to the map, users were asked to complete a short survey to help understand their background, walking and bicycling habits, and place of residence. The following is a summary of demographic characteristics from respondents from District 9, as well as a map that shows the concentrations of comments made on the map.

Walking Habits

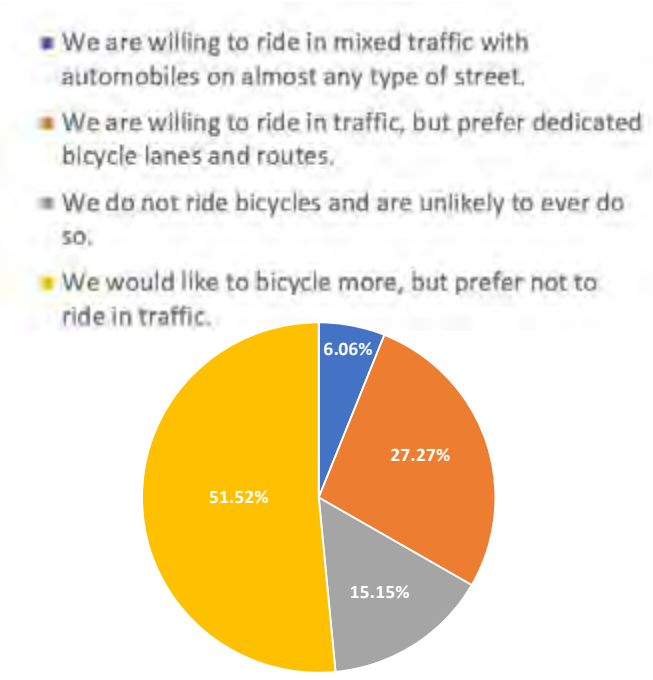


Demographics

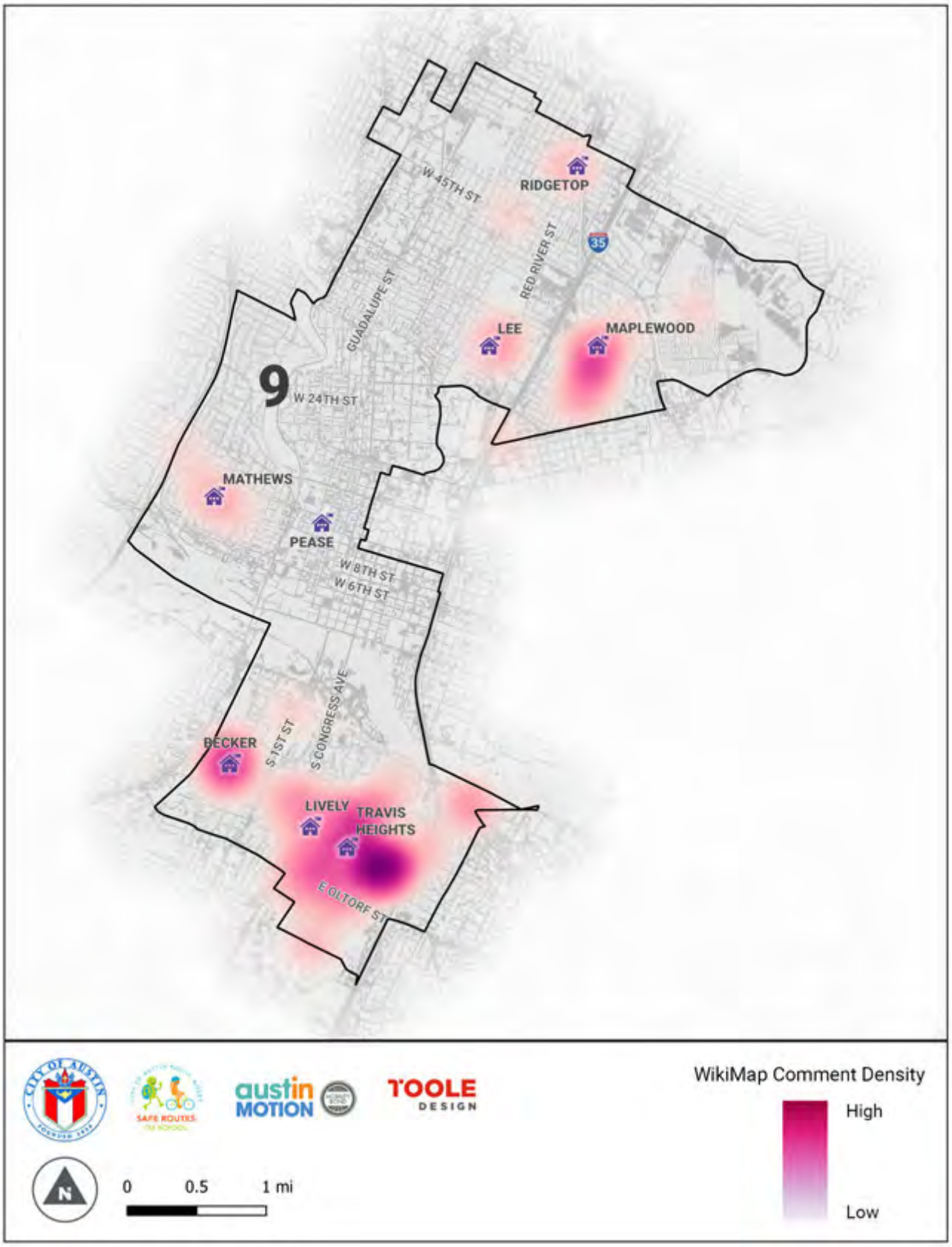


Demographics of Online Map Respondents, District 9

Bicycle Habits



Survey Responses from Online Map Respondents, District 9



Heatmap of Online Map Comments, District 9

OPEN HOUSE

The Open House for District 9 was held at Lively Middle School from 4:00 to 7:00 PM on Thursday, May 3, 2018. The meeting was promoted through various City email listserves, posters at schools, press releases, and the City website. School principals were also informed of the Open House and asked to forward invitations to members of the school community.

At the Open House, tables were set up with maps of each school in District 9, and consultants and city staff were available to discuss concerns and recommendations. Comments received at the Open House were added to the online map and incorporated into the infrastructure recommendations.

PRIORITIZATION

Information from the school audits, online map and open houses was combined to create a list of recommended projects around each school. Then, the projects were scored using a three-step process to create a prioritized list for each council district.

Step 1: Prioritize recommendations based on potential benefit.

To calculate the potential benefit, each project was evaluated on four factors: Stakeholder Input, Safety, Demand and Equity. Using available data, the following scoring system was used to calculate a Benefit Score for each proposed project.

35%: Demand
(Schools within ¼ mile, Potential students served)
+
30%: Safety
(Crash data, Street type, Engineering judgment)
+
20%: Equity
(Free & reduced lunch rate, Poverty rate)
+
15%: Stakeholder Input
(Public comments from Open Houses and WikiMap)
=
100%: Final Benefit Score

Step 2: Adjust for existing conditions.

To further prioritize projects that would create new facilities and close gaps in the existing bicycle and pedestrian networks, the Benefit Score was divided in half for recommendations that improve existing facilities (as opposed to creating new connections/facilities).

Step 3: Calculate cost benefit score.

Planning-level cost estimates for each project were developed based on bid tabulations maintained by the City of Austin. The benefit score was divided by the estimated project cost, and results were sorted into five categories to represent Cost:Benefit - very high, high, med, low, very low.

Cost opinions are order-of-magnitude, planning-level estimates based on local bid tabulations for similar project types. Planning-level cost estimates do not take into

Open House at Lively Middle School

Open House at Lively Middle School

consideration localized specifics of each project such as right-of-way acquisition, significant utility relocation, etc. They are useful for aggregate-level budget planning, but individual project cost estimates will change as projects advance through further study and design.

After further feasibility study and engineering evaluation, final project cost estimates will change before they can be implemented. In some locations, alternate approaches to address the issue may prove more feasible or more cost effective.

PRIORITIZATION SUMMARY

There are a total of 371 recommended projects in City Council District 9 with a total estimated cost of $53 million. (Costs for projects located outside the City are not included in this figure.) The combined costs for all projects in each Overall Benefit category are shown in the table below.

Costs are planning-level estimates that will be refined as projects advance through further study and design. They can be used to evaluate the order-of-magnitude of needs at an aggregate level.

Overall Benefit Category	Combined Project Costs
1 - Very High	$18,400,000
2 - High	$9,400,000
3 - Medium	$8,700,000
4 - Low	$10,900,000
5 - Very Low	$5,600,000
District 9 Total	**$53,000,000**

NEXT STEPS

Both Overall Benefit and Estimated Cost:Benefit will be used to prioritize improvements. However, to use the Safe Routes to School's limited resources most effectively, the program is also considering other factors to determine which projects will move forward as well as project implementation order. These factors include final cost estimates, feasibility, leveraging / cost-sharing opportunities, and more.

Generally, projects will be selected for implementation using the following guiding principles:

1) Implement Projects that have a High/Very High Overall Benefit or a High/Very High Estimated Cost:Benefit,
2) Make meaningful improvements for walking and bicycling near as many schools as possible,
3) For 2016 bond funding, per council direction, balance funding equally per council district,
4) Other available sources of funding will be leveraged to implement additional projects.

The City of Austin has already started examining the feasibility of recommendations and, in some cases, has initiated design/construction for certain projects. Go to AustinTexas.gov/SafeRoutes to learn more and get updates about upcoming Safe Routes to School projects in each City Council District.

CITY COUNCIL DISTRICT 9

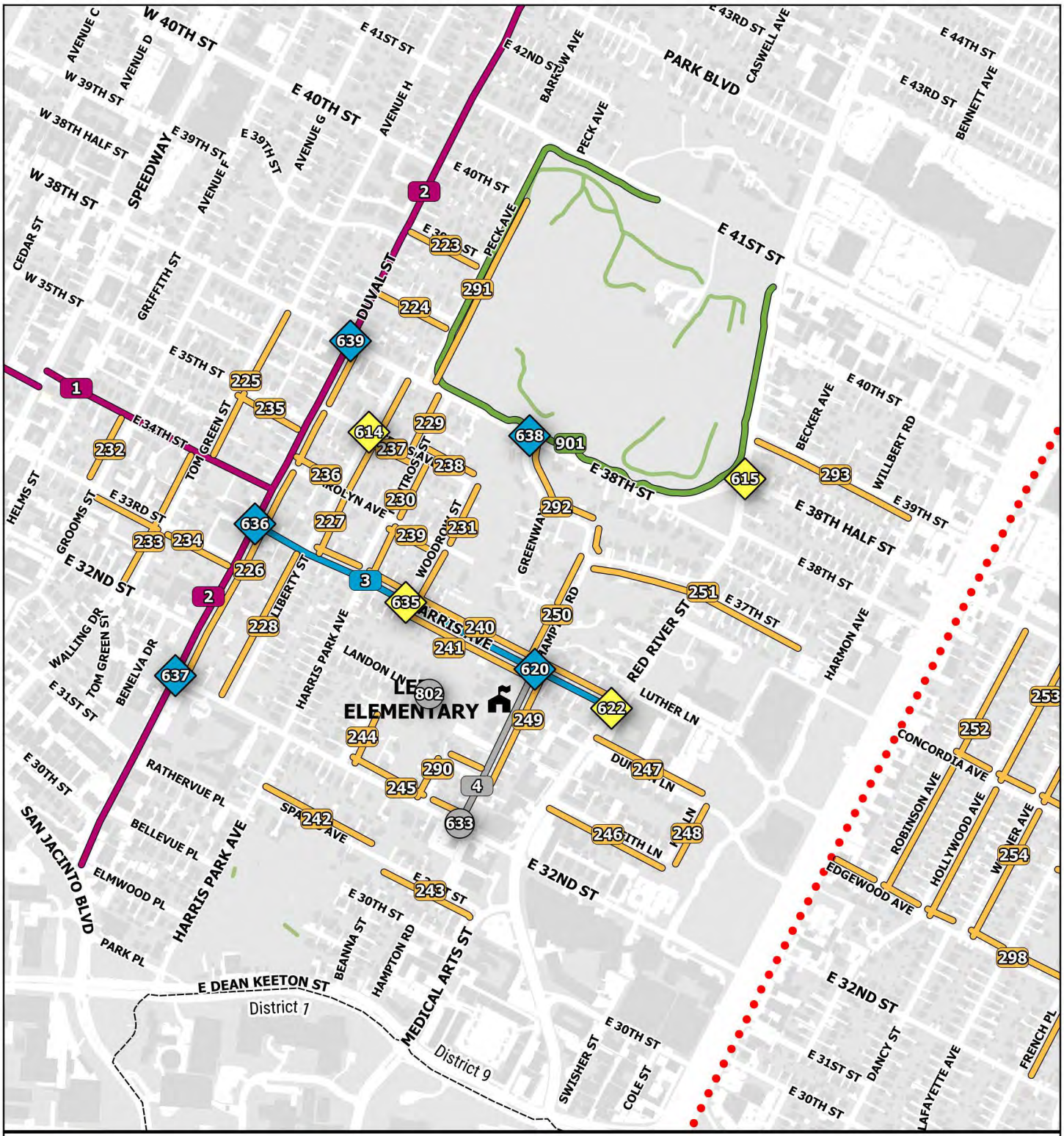
RECOMMENDED SAFE ROUTES TO SCHOOL PROJECTS

The following pages present maps of all recommendations, followed by detailed tables that include the Benefit and Cost: Benefit category for each project. Each recommendation has a unique identification number, which can be cross-referenced between the maps and the tables. The unique project ID is a combination of the school group code (e.g., 1C) and the project number shown on the map (e.g., 001).

Please note: Maps may include project recommendations located in nearby City Council Districts. However, tables within this report only list recommended projects for this district. Go to AustinTexas.gov/SafeRoutesProjects to learn more about citywide project recommendations.

Ideas presented in this document are planning-level concepts: many projects will require further feasibility study and engineering evaluation before they can be implemented. In some locations, alternate approaches to address the issue may prove more feasible or more cost effective.

MAP 2A: LEE ELEMENTARY



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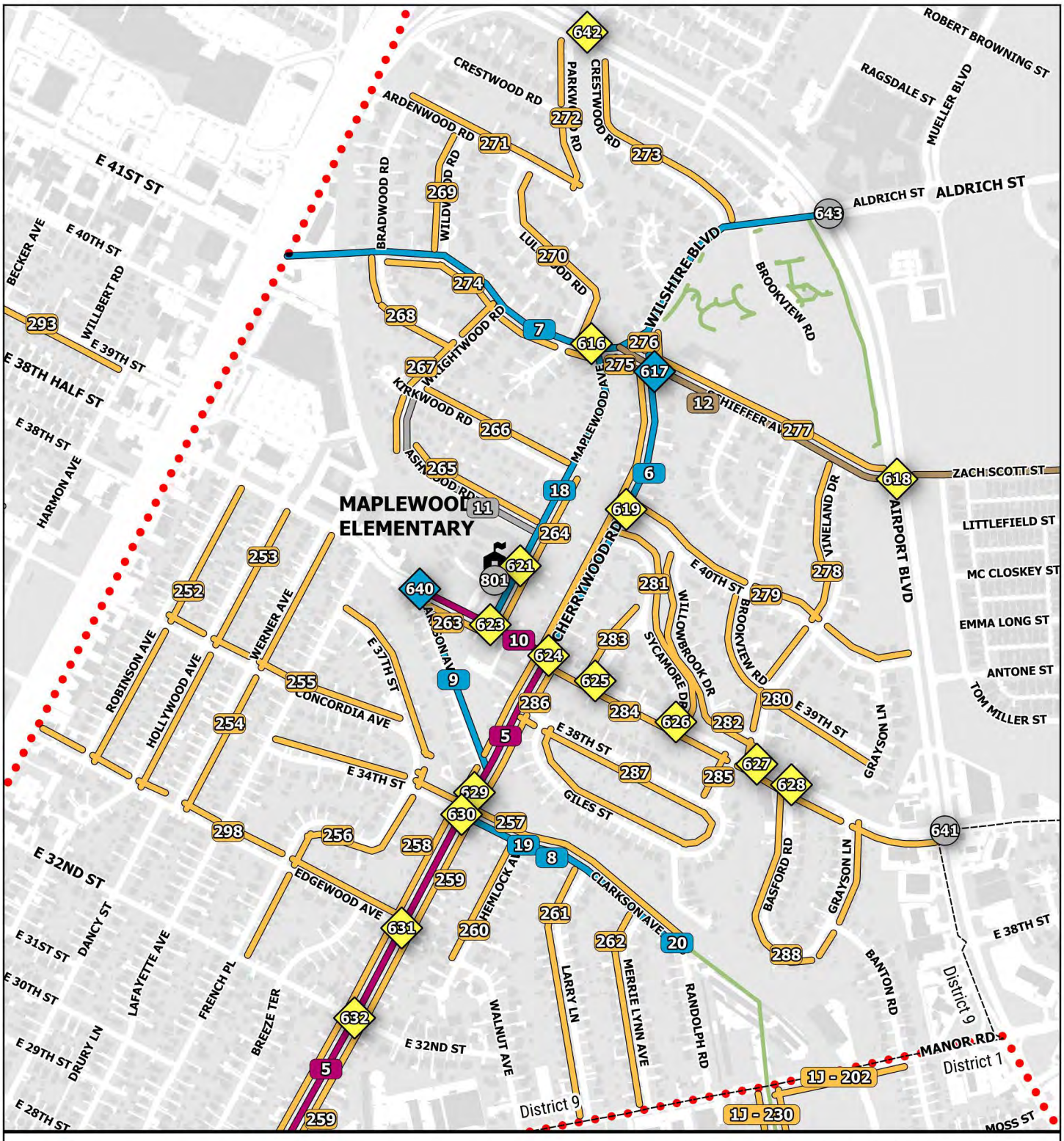
SAFE ROUTES TO SCHOOL

TOOLE DESIGN

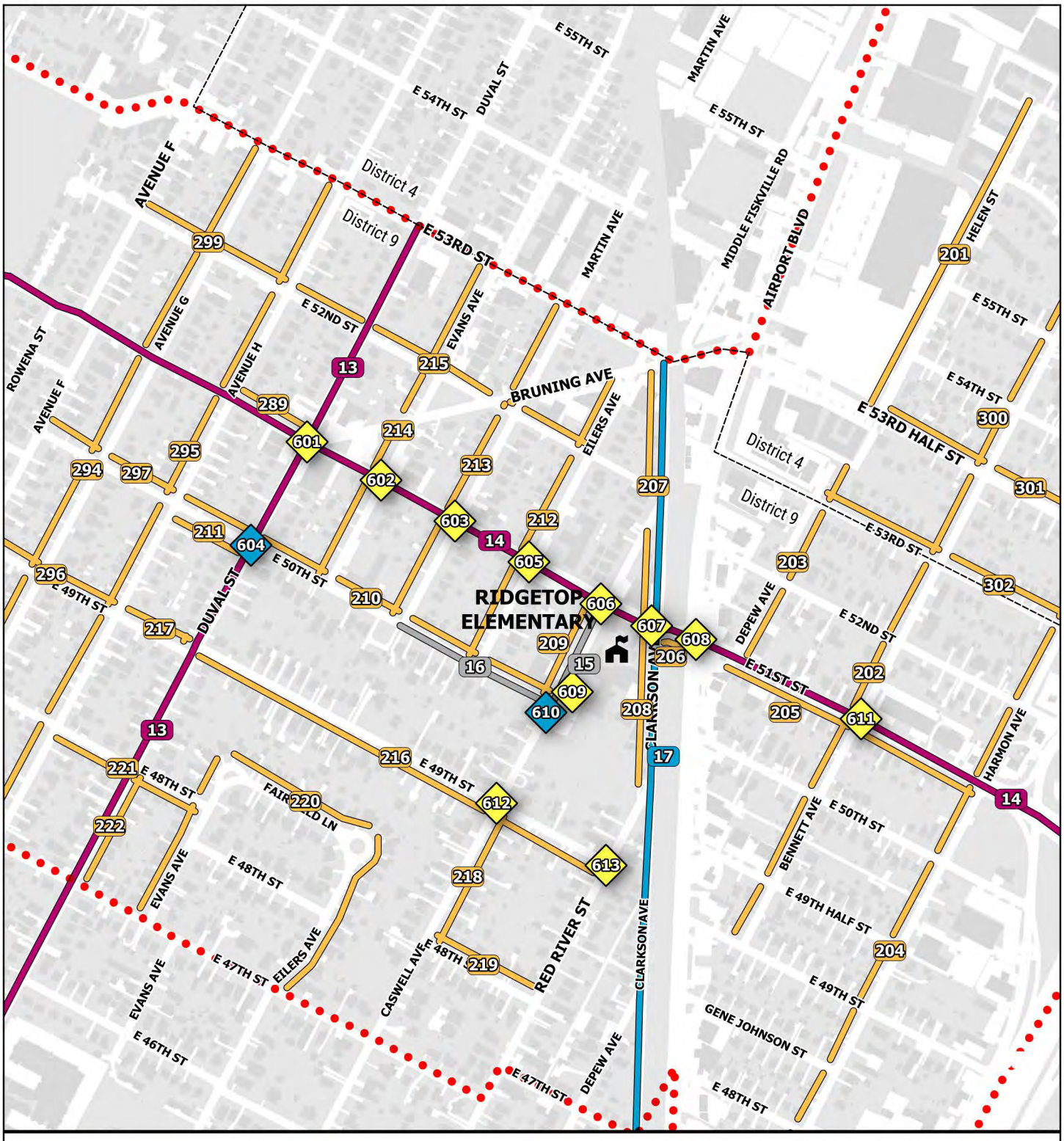
0 700 1400 2100 ft

- Off-Street Trail
- Bike Lane / Buffered Bike Lane / Protected Bike Lane
- Sidepath
- Neighborhood Bikeway / Traffic Calming
- New / Improved Sidewalk
- Other linear recommendation
- Traffic Control / Intersection Reconfiguration
- Ramp / Curb Extension / Crosswalk
- Over / Underpass
- Other Spot Recommendation
- Existing Trail
- School Boundary
- Council District Boundary

MAP 2A: MAPLEWOOD ELEMENTARY



MAP 2A: RIDGETOP ELEMENTARY



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SAFE ROUTES TO SCHOOL

TOOLE DESIGN

0 500 1000 1500 ft

- Off-Street Trail
- Bike Lane / Buffered Bike Lane / Protected Bike Lane
- Sidepath
- Neighborhood Bikeway / Traffic Calming
- New / Improved Sidewalk
- Other linear recommendation
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- Existing Trail
- School Boundary
- Council District Boundary

Project ID * = some or all of project is outside COA	Project w/in 1/2 mi (ped) or 2 mi (bike) and attendance boundary of:	Location	Issue	Recommendation + = parking removal required ~ = private property acquisition required	Overall Benefit Category	Estimated Cost:Benefit Category
2A - 001	LEE, PEASE	W 34TH ST	Desired bike route	Protected Bike Lane - W 34TH ST from GUADALUPE ST to DUVAL ST	3 - Medium	3 - Medium
2A - 002	LEE, PEASE	DUVAL ST	Desired bike route	Protected Bike Lane - DUVAL ST from ELMWOOD PL to E 47TH ST	2 - High	5 - Very Low
2A - 003	LEE, KEALING, PEASE	HARRIS AVE	Desired bike route, School zone sign placement and visibility, School Zone sign placement and visibility	Neighborhood Bikeway - HARRIS AVE from DUVAL ST to RED RIVER ST	1 - Very High	1 - Very High
2A - 004	LEE	HAMPTON RD	Confusing Signage related to parking restrictions	Add signage - HAMPTON RD from E 32ND ST to HARRIS AVE ~	2 - High	1 - Very High
2A - 005	KEALING, MAPLEWOOD, PEASE	CHERRYWOOD RD	Safety of bicycle facility, Safety of Bicycle facility	Protected Bike Lane - CHERRYWOOD RD from MANOR RD to E 38TH HALF ST	1 - Very High	3 - Medium
2A - 006	MAPLEWOOD, KEALING	CHERRYWOOD RD	No bike facility	Neighborhood Bikeway - CHERRYWOOD RD from E 38TH HALF ST to WILSHIRE BLVD	3 - Medium	2 - High
2A - 007	MAPLEWOOD	WILSHIRE BLVD	No bike facility	Neighborhood Bikeway - WILSHIRE BLVD from N IH 35 SVRD NB to AIRPORT BLVD	2 - High	2 - High
2A - 008	KEALING, MAPLEWOOD	E 34TH ST	Desired Bike Route	Neighborhood Bikeway - E 34TH ST from CHERRYWOOD RD to LARRY LN Neighborhood Bikeway - CLARKSON AVE from LARRY LN to RANDOLPH RD	4 - Low	3 - Medium

* Indicates projects located outside or partially outside of the City of Austin limits and may not be eligible for Safe Routes to School funding.

Cost:Benefit rankings are preliminary, high-level estimates to identify cost-effective options to address safety concerns. Preliminary rankings are developed using planning-level costs for projects of this nature. Individual cost estimates will change as projects advance. See pages 4-5 of this report for more information.

Project ID * = some or all of project is outside COA	Project w/in 1/2 mi (ped) or 2 mi (bike) and attendance boundary of:	Location	Issue	Recommendation + = parking removal required ~ = private property acquisition required	Overall Benefit Category	Estimated Cost:Benefit Category
2A - 009	KEALING, MAPLEWOOD	CLARKSON AVE	No bike facility	Neighborhood Bikeway - CLARKSON AVE from CHERRYWOOD RD to E 38TH HALF ST	4 - Low	2 - High
2A - 010	KEALING, MAPLEWOOD	E 38TH HALF ST	Blind spot, No bike facility, Parked parent cars blocking bus stop	Restrict Parking near school exit - E 38TH HALF ST from CLARKSON AVE to MAPLEWOOD AVE Buffered Bike Lane - E 38TH HALF ST from CLARKSON AVE to CHERRYWOOD RD Restrict parking within bus stop zone - E 38TH HALF ST from MAPLEWOOD AVE to CHERRYWOOD RD ~	1 - Very High	2 - High
2A - 011	MAPLEWOOD	WRIGHTWOOD RD	Narrow roadway 30ft, Safety and congestion concerns, Safety concerns of lack of roadway width	Restrict parking to one side along the curve - WRIGHTWOOD RD from ASHWOOD RD to KIRKWOOD RD Designate 130 feet bus pull in- "drop off/pick up" zone ONLY - ASHWOOD RD from WRIGHTWOOD RD to MAPLEWOOD AVE Designate 200 feet of a "drop off/pick up" ONLY lane - MAPLEWOOD AVE from E 38TH HALF ST to ASHWOOD RD ~ +	2 - High	1 - Very High
2A - 012	KEALING, MAPLEWOOD, BERTHA SADLER MEANS	ZACH SCOTT ST	No bike facility	Sidepath - SCHIEFFER AVE from WILSHIRE BLVD to AIRPORT BLVD Sidepath - ZACH SCOTT ST from AIRPORT BLVD to BERKMAN DR	2 - High	5 - Very Low
2A - 013	RIDGETOP	DUVAL ST	Desired bike route	Protected Bike Lane - DUVAL ST from E 47TH ST to E 53RD ST	4 - Low	4 - Low

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2A - 014	RIDGETOP	E 51ST ST	Excessive vehicle speeds, Narrow roadway, No bike facility	Widen pavement width/roadway from Lamar Blvd to I-35. - W 51ST ST from N LAMAR BLVD to E 51ST ST Protected Bike Lane - W 51ST ST from N LAMAR BLVD to I-35 Add School Zone Sign with flashers - E 51ST ST from EILERS AVE to CASWELL AVE Widen pavement width/roadway from Lamar Blvd to I-35. - E 51ST ST from W 51ST ST to I-35 +	1 - Very High	5 - Very Low
2A - 015	RIDGETOP	CASWELL AVE	Excessive vehicle speeds, Heavy congestion	Remove parking; Convert Caswell to one-way northbound. - CASWELL AVE from E 50TH ST to E 51ST ST ~	1 - Very High	1 - Very High
2A - 016	RIDGETOP	E 50TH ST	Excessive vehicle speeds	Add speed cushions - E 50TH ST from MARTIN AVE to CASWELL AVE	3 - Medium	2 - High
2A - 017	RIDGETOP	CLARKSON AVE	No bike facility	Neighborhood Bikeway - CLARKSON AVE from E 47TH ST to E 53RD ST	2 - High	2 - High
2A - 018	KEALING, MAPLEWOOD	MAPLEWOOD AVE	No bike facility	Add neighborhood bikeway - MAPLEWOOD AVE from E 38TH HALF ST to WILSHIRE BLVD	2 - High	2 - High
2A - 019	KEALING, MAPLEWOOD	E 34TH ST	No bike facility	Neighborhood Bikeway - E 34TH ST from CHERRYWOOD RD to CLARKSON AVE	4 - Low	3 - Medium
2A - 020	KEALING, MAPLEWOOD	CLARKSON AVE	No bike facility	Neighborhood Bikeway - CLARKSON AVE from LARRY LN to RANDOLPH RD	5 - Very Low	4 - Low
2A - 202	RIDGETOP	BENNETT AVE	Missing sidewalk	Construct new sidewalk - BENNETT AVE from E 49TH ST to E 53RD HALF ST	4 - Low	5 - Very Low

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2A - 203	RIDGETOP	DEPEW AVE	Missing sidewalk	Construct new sidewalk - DEPEW AVE from Near 900 53RD ST to E 51ST ST	4 - Low	4 - Low
2A - 204	RIDGETOP	HARMON AVE	Missing sidewalk	Construct new sidewalk - HARMON AVE from E 46TH ST to E 53RD HALF ST	5 - Very Low	5 - Very Low
2A - 205	RIDGETOP	E 51ST ST	Missing sidewalk	Construct new sidewalk - E 51ST ST from E 51ST EB TO IH 35 SB RAMP to DEPEW AVE	4 - Low	4 - Low
2A - 206	RIDGETOP	E 51ST ST	Narrow sidewalk	Widen existing sidewalk - E 51ST ST from AIRPORT BLVD to CLARKSON AVE	5 - Very Low	3 - Medium
2A - 207	RIDGETOP	CLARKSON AVE	Missing sidewalk	Construct new sidewalk - CLARKSON AVE from E 51ST ST to CASWELL AVE Construct new sidewalk - CLARKSON AVE from E 52ND ST to E 53RD ST	4 - Low	4 - Low
2A - 208	RIDGETOP	CLARKSON AVE	Poor condition	Repair existing sidewalk - CLARKSON AVE from RED RIVER ST to E 51ST ST	5 - Very Low	4 - Low
2A - 209	RIDGETOP	CASWELL AVE	Narrow sidewalk, Poor condition	Widen existing sidewalk - CASWELL AVE from E 50TH ST to E 51ST ST Repair existing sidewalk - CASWELL AVE from E 50TH ST to E 51ST ST	5 - Very Low	5 - Very Low
2A - 210	RIDGETOP	E 50TH ST	Missing sidewalk	Construct new sidewalk - E 50TH ST from AVENUE H to CASWELL AVE	5 - Very Low	5 - Very Low
2A - 211	RIDGETOP	E 50TH ST	Missing sidewalk	Construct new sidewalk - E 50TH ST from DUVAL ST to AVENUE H	5 - Very Low	4 - Low
2A - 212	RIDGETOP	EILERS AVE	Missing sidewalk	Construct new sidewalk - EILERS AVE from E 50TH ST to BRUNING AVE	5 - Very Low	5 - Very Low
2A - 213	RIDGETOP	MARTIN AVE	Missing sidewalk	Construct new sidewalk - MARTIN AVE from E 50TH ST to E 53RD ST	5 - Very Low	5 - Very Low

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2A - 214	RIDGETOP	EVANS AVE	Missing sidewalk	Construct new sidewalk - EVANS AVE from E 50TH ST to E 53RD ST	5 - Very Low	5 - Very Low
2A - 215	RIDGETOP	E 52ND ST	Missing sidewalk	Construct new sidewalk - E 52ND ST from AVENUE H to EILERS AVE	4 - Low	4 - Low
2A - 216	RIDGETOP	E 49TH ST	Missing sidewalk	Construct new sidewalk - E 49TH ST from RED RIVER ST to DUVAL ST	4 - Low	5 - Very Low
2A - 217	RIDGETOP	DUVAL ST	Missing sidewalk	Construct new sidewalk - E 49TH ST from AVENUE H to DUVAL ST Construct new sidewalk - DUVAL ST from Near 4900 DUVAL ST to Near 4900 DUVAL ST	4 - Low	3 - Medium
2A - 218	RIDGETOP	CASWELL AVE	Missing sidewalk	Construct new sidewalk - CASWELL AVE from E 49TH ST to E 48TH ST	4 - Low	4 - Low
2A - 219	RIDGETOP	E 48TH ST	Missing sidewalk	Construct new sidewalk - E 48TH ST from CASWELL AVE to RED RIVER ST	5 - Very Low	4 - Low
2A - 220	RIDGETOP	EVANS AVE, FAIRFIELD LN, EILERS AVE	Missing sidewalk	Construct new sidewalk - EVANS AVE from E 47TH ST to FAIRFIELD LN Construct new sidewalk - FAIRFIELD LN from EVANS AVE TO EILERS AVE Construct new sidewalk - EILERS AVE from E 47TH ST to FAIRFIELD LN	5 - Very Low	5 - Very Low
2A - 221	RIDGETOP	E 48TH ST	Missing sidewalk	Construct new sidewalk - E 48TH ST from EVANS AVE to AVENUE H	5 - Very Low	5 - Very Low
2A - 222	RIDGETOP	DUVAL ST	Steep buffer grade	Repair existing sidewalk - DUVAL ST from E 48TH ST to E 47TH ST	5 - Very Low	5 - Very Low
2A - 223	LEE	E 39TH ST	Missing sidewalk	Construct new sidewalk - E 39TH ST from PECK AVE to DUVAL ST	4 - Low	3 - Medium
2A - 224	LEE	E 38TH HALF ST	Missing sidewalk	Construct new sidewalk - E 38TH HALF ST from PECK AVE to DUVAL ST	4 - Low	3 - Medium

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2A - 225	LEE	TOM GREEN ST	Missing sidewalk	Construct new sidewalk - TOM GREEN ST from E 38TH ST to E 34TH ST	4 - Low	4 - Low
2A - 226	LEE	DUVAL ST	Poor condition	Repair existing sidewalk - DUVAL ST from E 38TH ST to E 32TH ST	5 - Very Low	5 - Very Low
2A - 227	LEE	LIBERTY ST	Missing sidewalk	Construct new sidewalk - LIBERTY ST from E 38TH ST to HARRIS AVE	4 - Low	5 - Very Low
2A - 228	LEE	LIBERTY ST	Missing sidewalk	Construct new sidewalk - LIBERTY ST from E 32ND ST to HARRIS AVE	4 - Low	4 - Low
2A - 229	LEE	MONTROSE ST	Missing sidewalk, Poor condition	Construct new sidewalk - MONTROSE ST from TEXAS AVE to E 38TH ST Repair existing sidewalk - MONTROSE ST from TEXAS AVE to E 38TH ST	5 - Very Low	4 - Low
2A - 230	LEE	MONTROSE ST	Missing sidewalk	Construct new sidewalk - MONTROSE ST from TEXAS AVE to HARRIS AVE	4 - Low	4 - Low
2A - 231	LEE	WOODROW ST	Missing sidewalk	Construct new sidewalk - WOODROW ST from TEXAS AVE to HARRIS AVE	3 - Medium	3 - Medium
2A - 232	LEE	GROOMS ST	Missing sidewalk	Construct new sidewalk - GROOMS ST from E 33RD ST to E 34TH ST	4 - Low	4 - Low
2A - 233	LEE	TOM GREEN ST	Missing sidewalk	Construct new sidewalk - TOM GREEN ST from E 32ND ST to E 34TH ST	4 - Low	4 - Low
2A - 234	LEE	E 33RD ST	Missing sidewalk	Construct new sidewalk - E 33RD ST from DUVAL ST to GROOMS ST	4 - Low	4 - Low
2A - 235	LEE	E 35TH ST	Missing sidewalk	Construct new sidewalk - E 35TH ST from DUVAL ST to TOM GREEN ST	4 - Low	3 - Medium
2A - 236	LEE	CAROLYN AVE	Missing sidewalk	Construct new sidewalk - CAROLYN AVE from DUVAL ST to LIBERTY ST	4 - Low	3 - Medium
2A - 237	LEE	TEXAS AVE	Missing sidewalk	Construct new sidewalk - TEXAS AVE from MONTROSE ST to LIBERTY ST	4 - Low	3 - Medium

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2A - 238	LEE	TEXAS AVE	Missing sidewalk	Construct new sidewalk - TEXAS AVE from MONTROSE ST to WOODROW ST	4 - Low	3 - Medium
2A - 239	LEE	CAROLYN AVE	Missing sidewalk	Construct new sidewalk - CAROLYN AVE from WOODROW ST to MONTROSE ST	4 - Low	2 - High
2A - 240	LEE	HARRIS AVE	Missing sidewalk	Construct new sidewalk - HARRIS AVE from LIBERTY ST to RED RIVER ST	1 - Very High	3 - Medium
2A - 241	LEE	HARRIS AVE	Poor condition	Repair existing sidewalk - HARRIS AVE from HAMPTON RD to WOODROW ST	4 - Low	4 - Low
2A - 242	LEE	SPARKS AVE	Missing sidewalk	Construct new sidewalk - SPARKS AVE from HARRIS PARK AVE to Near 724 SPARKS AVE	4 - Low	4 - Low
2A - 243	LEE	E 31ST ST	Missing sidewalk	Construct new sidewalk - E 31ST ST from MEDICAL ARTS ST to Near 807 31ST ST	4 - Low	4 - Low
2A - 244	LEE	FAIRFAX WALK	Missing sidewalk	Construct new sidewalk - FAIRFAX WALK from Near 3211 FAIRFAX WALK to E 32ND ST	4 - Low	3 - Medium
2A - 245	LEE	E 32ND ST	Missing sidewalk	Construct new sidewalk - E 32ND ST from FAIRFAX WALK to HAMPTON RD	3 - Medium	3 - Medium
2A - 246	LEE	KEITH LN	Missing sidewalk	Construct new sidewalk - KEITH LN from KIM LN to RED RIVER ST	4 - Low	4 - Low
2A - 247	LEE	DUNCAN LN	Missing sidewalk	Construct new sidewalk - DUNCAN LN from RED RIVER ST to KIM LN	4 - Low	4 - Low
2A - 248	LEE	KIM LN	Missing sidewalk	Construct new sidewalk - KIM LN from DUNCAN LN to KEITH LN	4 - Low	3 - Medium
2A - 249	LEE	HAMPTON RD	Missing sidewalk	Construct new sidewalk - HAMPTON RD from HARRIS AVE to E 32ND HALF ST	2 - High	2 - High
2A - 250	LEE	HAMPTON RD	Missing sidewalk	Construct new sidewalk - HAMPTON RD from HARRIS AVE to E 37TH ST	2 - High	2 - High
2A - 251	LEE	E 37TH ST	Missing sidewalk	Construct new sidewalk - E 37TH ST from Near 921 37TH ST to HAMPTON RD	3 - Medium	4 - Low

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2A - 252	MAPLEWOOD	ROBINSON AVE	Missing sidewalk	Construct new sidewalk - ROBINSON AVE from E 38TH HALF ST to EDGEWOOD AVE	4 - Low	5 - Very Low
2A - 253	MAPLEWOOD	HOLLYWOOD AVE	Missing sidewalk	Construct new sidewalk - HOLLYWOOD AVE from E 38TH HALF ST to EDGEWOOD AVE	4 - Low	5 - Very Low
2A - 254	MAPLEWOOD	WERNER AVE	Missing sidewalk	Construct new sidewalk - WERNER AVE from E 38TH HALF ST to EDGEWOOD AVE	4 - Low	5 - Very Low
2A - 255	MAPLEWOOD	CONCORDIA AVE	Missing sidewalk	Construct new sidewalk - CONCORDIA AVE from ROBINSON AVE to E 37TH ST	4 - Low	4 - Low
2A - 256	MAPLEWOOD	CONCORDIA AVE / FRENCH PL / E 37TH	Missing sidewalk	Construct new sidewalk - FRENCH PL from E 32nd to E 32ND ST Construct new sidewalk - KERN RAMBLE from CONCORDIA AVE to FRENCH PL Construct new sidewalk - E 37TH ST from LAFAYETTE AVE to CONCORDIA AVE	3 - Medium	5 - Very Low
2A - 257	MAPLEWOOD	E 34TH ST / CLARKSON AVE	Missing sidewalk	Construct new sidewalk - E 34TH ST from LAFAYETTE AVE to CHERRYWOOD RD Construct new sidewalk - E 34TH ST from CHERRYWOOD RD to HEMLOCK AVE Construct new sidewalk - CLARKSON AVE from E 34TH ST to RANDOLPH RD	3 - Medium	5 - Very Low

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2A - 258	MAPLEWOOD	CHERRYWOOD RD	Driveway crossings not accessible, Missing sidewalk, Narrow sidewalk, Permanent obstruction (ex. pole/tree), Poor condition	Repair existing sidewalk - CHERRYWOOD RD from MANOR RD to E 40TH ST Fix sidewalk obstructions - CHERRYWOOD RD from MANOR RD to E 40TH ST Widen existing sidewalk - CHERRYWOOD RD from MANOR RD to E 40TH ST Construct new sidewalk - CHERRYWOOD RD from E 38TH HALF ST to SCHIEFFER AVE	2 - High	5 - Very Low
2A - 259	MAPLEWOOD	CHERRYWOOD RD	Missing sidewalk	Construct new sidewalk - CHERRYWOOD RD from E 38 HALF ST MANOR RD	2 - High	5 - Very Low
2A - 260	MAPLEWOOD	HEMLOCK AVE	Missing sidewalk	Construct new sidewalk - HEMLOCK AVE from WALNUT AVE to E 34TH ST	5 - Very Low	4 - Low
2A - 261	MAPLEWOOD	LARRY LN	Missing sidewalk	Construct new sidewalk - LARRY LN from MANOR RD to E 34TH ST	4 - Low	5 - Very Low
2A - 262	MAPLEWOOD	MERRIE LYNN AVE	Missing sidewalk	Construct new sidewalk - MERRIE LYNN AVE from MANOR RD to CLARKSON AVE	5 - Very Low	5 - Very Low
2A - 263	MAPLEWOOD	E 38TH HALF ST	Missing sidewalk	Construct new sidewalk - E 38TH HALF ST from MAPLEWOOD AVE to CLARKSON AVE	3 - Medium	2 - High
2A - 264	MAPLEWOOD	MAPLEWOOD AVE	Missing sidewalk	Construct new sidewalk - MAPLEWOOD AVE from KIRKWOOD RD to E 38TH HALF ST	3 - Medium	3 - Medium
2A - 265	MAPLEWOOD	ASHWOOD RD	Missing sidewalk	Construct new sidewalk - ASHWOOD RD from WRIGHTWOOD RD to MAPLEWOOD AVE	3 - Medium	3 - Medium
2A - 266	MAPLEWOOD	KIRKWOOD RD	Missing sidewalk	Construct new sidewalk - KIRKWOOD RD from WRIGHTWOOD RD to MAPLEWOOD AVE	4 - Low	4 - Low
2A - 267	MAPLEWOOD	WRIGHTWOOD RD	Missing sidewalk	Construct new sidewalk - WRIGHTWOOD RD from ASHWOOD RD to WILSHIRE BLVD	4 - Low	4 - Low
2A - 268	MAPLEWOOD	BRADWOOD RD	Missing sidewalk	Construct new sidewalk - BRADWOOD RD from ASHWOOD RD TO WILSHIRE BLVD	4 - Low	4 - Low

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2A - 269	MAPLEWOOD	WILDWOOD RD	Missing sidewalk	Construct new sidewalk - WILDWOOD RD from WILSHIRE BLVD to ARDENWOOD RD	5 - Very Low	4 - Low
2A - 270	MAPLEWOOD	LULLWOOD RD	Missing sidewalk	Construct new sidewalk - LULLWOOD RD from ARDENWOOD RD to WILSHIRE BLVD	4 - Low	4 - Low
2A - 271	MAPLEWOOD	ARDENWOOD RD	Missing sidewalk	Construct new sidewalk - ARDENWOOD RD from BRADWOOD RD to PARKWOOD RD	4 - Low	5 - Very Low
2A - 272	MAPLEWOOD	PARKWOOD RD	Missing sidewalk	Construct new sidewalk - PARKWOOD RD from ARDENWOOD RD to AIRPORT BLVD	5 - Very Low	4 - Low
2A - 273	MAPLEWOOD	CRESTWOOD RD	Missing sidewalk	Construct new sidewalk - CRESTWOOD RD from AIRPORT BLVD to WILSHIRE BLVD	4 - Low	5 - Very Low
2A - 274	MAPLEWOOD	WILSHIRE BLVD	Missing sidewalk	Construct new sidewalk - WILSHIRE BLVD from BRADWOOD RD to MAPLEWOOD AVE	3 - Medium	4 - Low
2A - 275	MAPLEWOOD	SCHIEFFER AVE	Missing sidewalk	Construct new sidewalk - SCHIEFFER AVE from CHERRYWOOD RD to WILSHIRE BLVD	4 - Low	2 - High
2A - 276	MAPLEWOOD	SCHIEFFER AVE	Missing sidewalk	Construct new sidewalk - SCHIEFFER AVE from WILSHIRE BLVD to CHERRYWOOD RD	4 - Low	2 - High
2A - 277	MAPLEWOOD	SCHIEFFER AVE	Missing sidewalk	Construct new sidewalk - CHERRYWOOD RD from WILSHIRE BLVD to SCHIEFFER AVE Construct new sidewalk - SCHIEFFER AVE from CHERRYWOOD RD to AIRPORT BLVD	3 - Medium	4 - Low
2A - 278	MAPLEWOOD	VINELAND DR	Missing sidewalk	Construct new sidewalk - BROOKVIEW RD from E 38TH HALF ST to E 39TH ST Construct new sidewalk - VINELAND DR from BROOKVIEW RD to SCHIEFFER AVE	3 - Medium	4 - Low
2A - 279	MAPLEWOOD	E 40TH ST	Missing sidewalk	Construct new sidewalk - E 40TH ST from CHERRYWOOD RD to AIRPORT BLVD	3 - Medium	4 - Low

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2A - 280	MAPLEWOOD	E 39TH ST	Missing sidewalk	Construct new sidewalk - BROOKVIEW RD from E 40TH ST to E 39TH ST Construct new sidewalk - E 39TH ST from GRAYSON LN to BROOKVIEW RD	4 - Low	5 - Very Low
2A - 281	MAPLEWOOD	SYCAMORE DR	Missing sidewalk	Construct new sidewalk - SYCAMORE DR from CHERRYWOOD RD to E 38TH HALF ST	5 - Very Low	5 - Very Low
2A - 282	MAPLEWOOD	WILLOWBROOK DR	Missing sidewalk	Construct new sidewalk - WILLOWBROOK DR from BROOKVIEW RD to E 40TH ST	5 - Very Low	5 - Very Low
2A - 283	MAPLEWOOD	HALF PENNY RD	Missing sidewalk	Construct new sidewalk - HALF PENNY RD from E 38TH HALF ST to SYCAMORE DR	5 - Very Low	4 - Low
2A - 284	MAPLEWOOD	E 38TH HALF ST	Missing sidewalk	Construct new sidewalk - E 38TH HALF ST from AIRPORT BLVD to CHERRYWOOD RD	3 - Medium	4 - Low
2A - 285	MAPLEWOOD	VINELAND DR	Missing sidewalk	Construct new sidewalk - VINELAND DR from E 38TH ST to E 38TH HALF ST	4 - Low	3 - Medium
2A - 286	MAPLEWOOD	E 38TH ST	Missing sidewalk	Construct new sidewalk - E 38TH ST from GILES ST to CHERRYWOOD RD	4 - Low	2 - High
2A - 287	MAPLEWOOD	GILES ST	Missing sidewalk	Construct new sidewalk - GILES ST from E 38TH ST to VINELAND DR Construct new sidewalk - E 38TH ST from VINELAND DR to GILES ST Construct new sidewalk - VINELAND DR from GILES ST to E 38TH ST	3 - Medium	5 - Very Low

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2A - 288	MAPLEWOOD	GRAYSON LN	Missing sidewalk	Construct new sidewalk - BASFORD RD from E 38TH HALF ST to GRAYSON LN Construct new sidewalk - GRAYSON LN from E 38TH HALF ST to BASFORD RD	4 - Low	5 - Very Low
2A - 289	RIDGETOP	E 51ST ST	Missing sidewalk	Construct new sidewalk - E 51ST ST from AVENUE H to DUVAL ST	4 - Low	3 - Medium
2A - 290	LEE	E 32ND HALF ST	Missing sidewalk	Construct new sidewalk - BEANNA ST from E 32ND ST to E 32ND HALF ST Construct new sidewalk - E 32ND HALF ST from BEANNA ST to HAMPTON RD	3 - Medium	2 - High
2A - 291	LEE	PECK AVE	Missing sidewalk	Construct new sidewalk - PECK AVE from E 38TH ST to E 40TH ST	4 - Low	4 - Low
2A - 292	LEE	E 37TH ST	Missing sidewalk	Construct new sidewalk - GREENWAY from E 37TH ST to E 38TH ST , Construct new sidewalk - E 37TH ST from HAMPTON RD to GREENWAY , Construct new sidewalk - HAMPTON RD from E 37TH ST to E 37TH ST	3 - Medium	3 - Medium
2A - 293	LEE	E 39TH ST	Missing sidewalk	Construct new sidewalk - E 39TH ST from HARMON AVE to RED RIVER ST	4 - Low	5 - Very Low
2A - 294	RIDGETOP	AVENUE G	Missing sidewalk	Construct new sidewalk - AVENUE G from E 47TH ST to E 53RD ST	5 - Very Low	5 - Very Low
2A - 295	RIDGETOP	AVENUE H	Missing sidewalk	Construct new sidewalk - AVENUE H from E 53RD ST to E 47TH ST	5 - Very Low	5 - Very Low
2A - 296	RIDGETOP	E 49TH ST	Missing sidewalk	Construct new sidewalk - E 49TH ST from AVENUE H to AVENUE F	5 - Very Low	5 - Very Low

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2A - 297	RIDGETOP	E 50TH ST	Missing sidewalk	Construct new sidewalk - E 50TH ST from AVENUE H to AVENUE F	5 - Very Low	4 - Low
2A - 298	MAPLEWOOD	EDGEWOOD AVE	Missing sidewalk	Construct new sidewalk - EDGEWOOD AVE from N IH 35 SVRD NB to DANCY ST , Construct new sidewalk - EDGEWOOD AVE from CHERRYWOOD RD to WERNER AVE	4 - Low	5 - Very Low
2A - 299	RIDGETOP	E 52ND ST	Missing sidewalk	Construct new sidewalk - E 52ND ST from AVENUE F to AVENUE H	5 - Very Low	5 - Very Low
2A - 601	RIDGETOP	BRUNING AVE / DUVAL ST / E 51ST ST	Missing curb ramps,Non-compliant curb ramps,Faded crosswalk markings	Add curb extensions Install 2 curb ramps Repaint crosswalk markings [4] across 51st St. Replace existing curb ramp Tighten curb radii	4 - Low	4 - Low
2A - 602	RIDGETOP	E 51ST ST / EVANS AVE	Non-compliant curb ramps	Replace existing curb ramp	5 - Very Low	4 - Low
2A - 603	RIDGETOP	E 51ST ST / MARTIN AVE	Non-compliant curb ramps	Replace existing curb ramp	5 - Very Low	4 - Low
2A - 604	RIDGETOP	DUVAL ST / E 50TH ST	Non-compliant curb ramps	Install crosswalks Add median refuge island on Duval St Replace existing curb ramp	5 - Very Low	4 - Low

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2A - 605	RIDGETOP	E 51ST ST / EILERS AVE	Non-compliant curb ramps	Add curb extensions Add new signage Replace existing curb ramp	4 - Low	3 - Medium
2A - 606	RIDGETOP	CASWELL AVE / E 51ST ST	Non-compliant curb ramps	Add curb extensions Add new signage Replace existing curb ramp	1 - Very High	2 - High
2A - 607	RIDGETOP	CLARKSON AVE / E 51ST ST	Non-compliant curb ramps,Difficult crossing	Install high visibility crosswalk [1] across Clarkson Ave north leg Install/update pedestrian signal heads Replace existing curb ramp Tighten curb radii	2 - High	2 - High
2A - 608	RIDGETOP	AIRPORT BLVD / E 51ST ST	Difficult crossing,High speed crossing	Increase pedestrian crossing time Install high visibility crosswalk [2] across E 51st St west leg Airport Blvd north leg	2 - High	1 - Very High
2A - 609	RIDGETOP	Midblock - CASWELL AVE	Difficult crossing, Missing curb ramps	Install 1 curb ramp Install high visibility crosswalk [1] across Caswell Avenue	3 - Medium	2 - High
2A - 610	RIDGETOP	CASWELL AVE / E 50TH ST	Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Caswell Ave.	3 - Medium	2 - High
2A - 611	RIDGETOP	BENNETT AVE / E 51ST ST	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Bennett Ave.	4 - Low	3 - Medium
2A - 612	RIDGETOP	CASWELL AVE / E 49TH ST	Missing curb ramps,Difficult crossing	Install 2 curb ramps; Install high visibility crosswalk [1] across E. 49th St.	4 - Low	2 - High

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2A - 613	RIDGETOP	E 49TH ST / RED RIVER ST	Non-compliant curb ramps	Install 1 curb ramp	4 - Low	3 - Medium
2A - 614	LEE	LIBERTY ST / TEXAS AVE	Non-compliant curb ramps	Replace existing curb ramp	5 - Very Low	4 - Low
2A - 615	LEE	E 38TH HALF ST / RED RIVER ST	Non-compliant curb ramps,Faded crosswalk markings,Long crossing distance, Uncomfortable intersection	Create a leading pedestrian interval; Right Turn on Red restriction. Repaint crosswalk markings [4] across Red River and 38th 1/2. Replace existing curb ramp. Tighten curb radii	2 - High	2 - High
2A - 616	MAPLEWOOD	MAPLEWOOD AVE / WILSHIRE BLVD	Difficult crossing	Install high visibility crosswalk [1] across Maplewood	3 - Medium	1 - Very High
2A - 617	MAPLEWOOD	CHERRYWOOD RD / SCHIEFFER AVE	Difficult crossing,Long crossing distance	Install high visibility crosswalk [1] across Cherrywood; Tighten curb radii to T-up intersection	3 - Medium	2 - High

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2A - 618	MAPLEWOOD	AIRPORT BLVD / SCHIEFFER AVE / ZACH SCOTT ST	High speed crossing, Long crossing distance	Install high visibility crosswalk [1] across Airport Blvd Install curb ramps Install pedestrian push button on refuge island Signalization study- provide enough time for peds to cross. Implement bike crossing similar to treatment at Airport and Aldrich. Add bike crossing	2 - High	4 - Low
2A - 619	MAPLEWOOD	CHERRYWOOD RD / E 40TH ST	Difficult crossing,High speed crossing,Poor sightlines	Install high visibility crosswalk [1] across Cherrywood	3 - Medium	1 - Very High
2A - 620	LEE	HAMPTON RD / HARRIS AVE	Hard-to-manage traffic (from the crossguard's perspective)	Install stop sign	1 - Very High	1 - Very High
2A - 621	MAPLEWOOD	Midblock - MAPLEWOOD AVE	High speed crossing	Install raised crosswalk [1] across Maplewood	3 - Medium	2 - High
2A - 622	LEE	HARRIS AVE / RED RIVER ST	High speed crossing,Long crossing distance	Install high visibility crosswalk [1] across Red River Install Rapid Flash Beacon	2 - High	1 - Very High

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2A - 623	MAPLEWOOD	E 38TH HALF ST / MAPLEWOOD AVE	Parking issues	Add curb extensions Install 2 curb extensions on Maplewood ~ +	3 - Medium	2 - High
2A - 624	MAPLEWOOD	CHERRYWOOD RD / E 38TH HALF ST	Non-compliant curb ramps,Faded crosswalk markings	Install 1 curb ramp Repaint crosswalk markings [1] across Cherrywood ~	2 - High	1 - Very High
2A - 625	MAPLEWOOD	E 38TH HALF ST / HALF PENNY RD	Non-compliant curb ramps,Difficult crossing	Install high visibility crosswalk [1] across 38th 1/2 Street Replace existing curb ramp	3 - Medium	2 - High
2A - 626	MAPLEWOOD	E 38TH HALF ST / SYCAMORE DR	Difficult crossing	Install high visibility crosswalk [1] across 38th 1/2 Street	3 - Medium	2 - High
2A - 627	MAPLEWOOD	BROOKVIEW RD / E 38TH HALF ST	Difficult crossing	Install high visibility crosswalk [1] across 38th 1/2 Street	3 - Medium	2 - High
2A - 628	MAPLEWOOD	BASFORD RD / E 38TH HALF ST	Difficult crossing,Long crossing distance,Wide curb radii	Install high visibility crosswalk [1] across 38th 1/2 Street Tighten curb radii	4 - Low	3 - Medium

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2A - 629	MAPLEWOOD	CHERRYWOOD RD / CONCORDIA AVE	Non-compliant curb ramps	Replace existing curb ramp	5 - Very Low	3 - Medium
2A - 630	MAPLEWOOD	CHERRYWOOD RD / E 34TH ST	Non-compliant curb ramps,Difficult crossing,Long crossing distance	Install high visibility crosswalk [1] across Cherrywood Install Rapid Flash Beacon Install RFBB Replace existing curb ramp +	3 - Medium	2 - High
2A - 631	MAPLEWOOD	CHERRYWOOD RD / EDGEWOOD AVE	Non-compliant curb ramps	Replace existing curb ramp	5 - Very Low	4 - Low
2A - 632	MAPLEWOOD	CHERRYWOOD RD / E 32ND ST	Non-compliant curb ramps	Replace existing curb ramp	5 - Very Low	5 - Very Low
2A - 633	LEE	E 32ND ST / HAMPTON RD	Difficult crossing	Add signage	2 - High	1 - Very High
2A - 635	LEE	HARRIS AVE / WOODROW ST	Difficult crossing	Add curb extensions on Harris Install high visibility crosswalk [1] across Harris and Woodrow	2 - High	2 - High
2A - 636	LEE	DUVAL ST / HARRIS AVE	Difficult crossing	Add median refuge island on Duval St	3 - Medium	2 - High

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2A - 637	LEE	DUVAL ST / E 32ND ST	Difficult crossing	Add median refuge island on Duval St Install high visibility crosswalk [1] across Duval St	4 - Low	3 - Medium
2A - 638	LEE	E 38TH ST / GREENWAY	Difficult crossing	Add curb extensions Add median refuge island on 38th Install high visibility crosswalk [1] across 38th and Greenway Install Pedestrian Hybrid Beacon	3 - Medium	4 - Low
2A - 639	LEE	DUVAL ST / E 38TH ST	Difficult crossing	Add median refuge island on E 38th St Intersection reconfiguration	4 - Low	5 - Very Low
2A - 640	MAPLEWOOD	CLARKSON AVE / E 38TH HALF ST	difficult crossing	Add median refuge island on 38 1/2 St	3 - Medium	2 - High
2A - 641	None (nearest school: Maplewood)	AIRPORT BLVD / E 38TH HALF ST	Difficult Crossing	Improve ped signal timing Tighten curb radii	3 - Medium	2 - High
2A - 642	None (nearest school: Maplewood)	AIRPORT BLVD / PARKWOOD RD	Difficult Crossing	Install high visibility crosswalk [1] across Airport Blvd Install Pedestrian Hybrid Beacon	3 - Medium	3 - Medium

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2A - 643	MAPLEWOOD	AIRPORT BLVD / AIRPORT SB LEFT TO ALDRICH / ALDRICH ST / ALDRICH TO SB AIRPORT BLVD	difficult crossing	Improve ped signal timing	4 - Low	2 - High
2A - 801	MAPLEWOOD	Near 3808 MAPLEWOOD AVE	Chaotic circulation and parking situation	Conduct circulation study	5 - Very Low	4 - Low
2A - 802	LEE	Near 719 LANDON LN	Existing bridge is in need of repair	Construct over/underpass, Widen the bridge to 10' and add ramps down to street	3 - Medium	4 - Low
2A - 901	LEE, KEALING	PECK AVE, E 38th ST, RED RIVER ST	unpredictable surface, difficult to use on a bicycle	Construct new trail	2 - High	5 - Very Low

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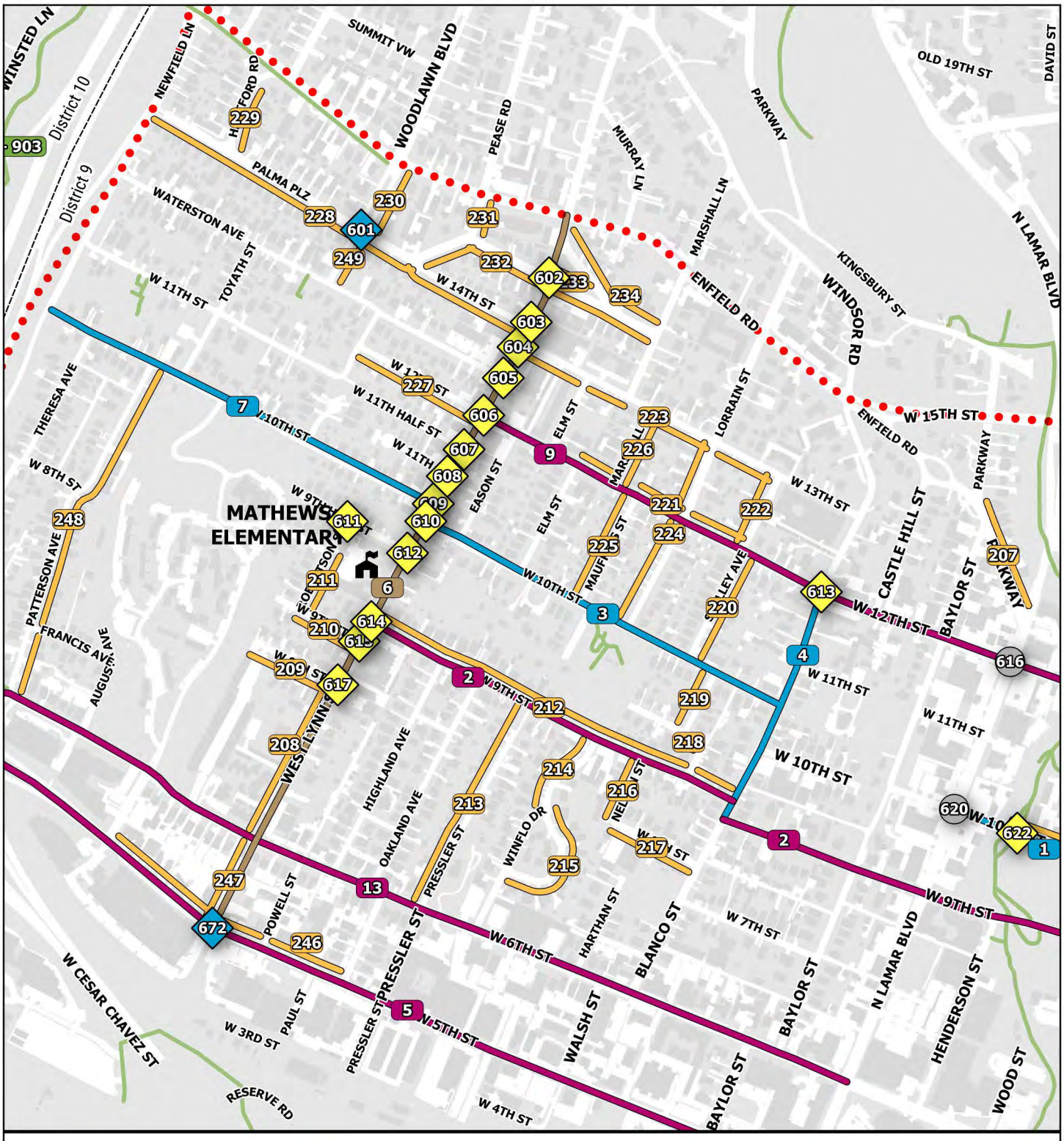
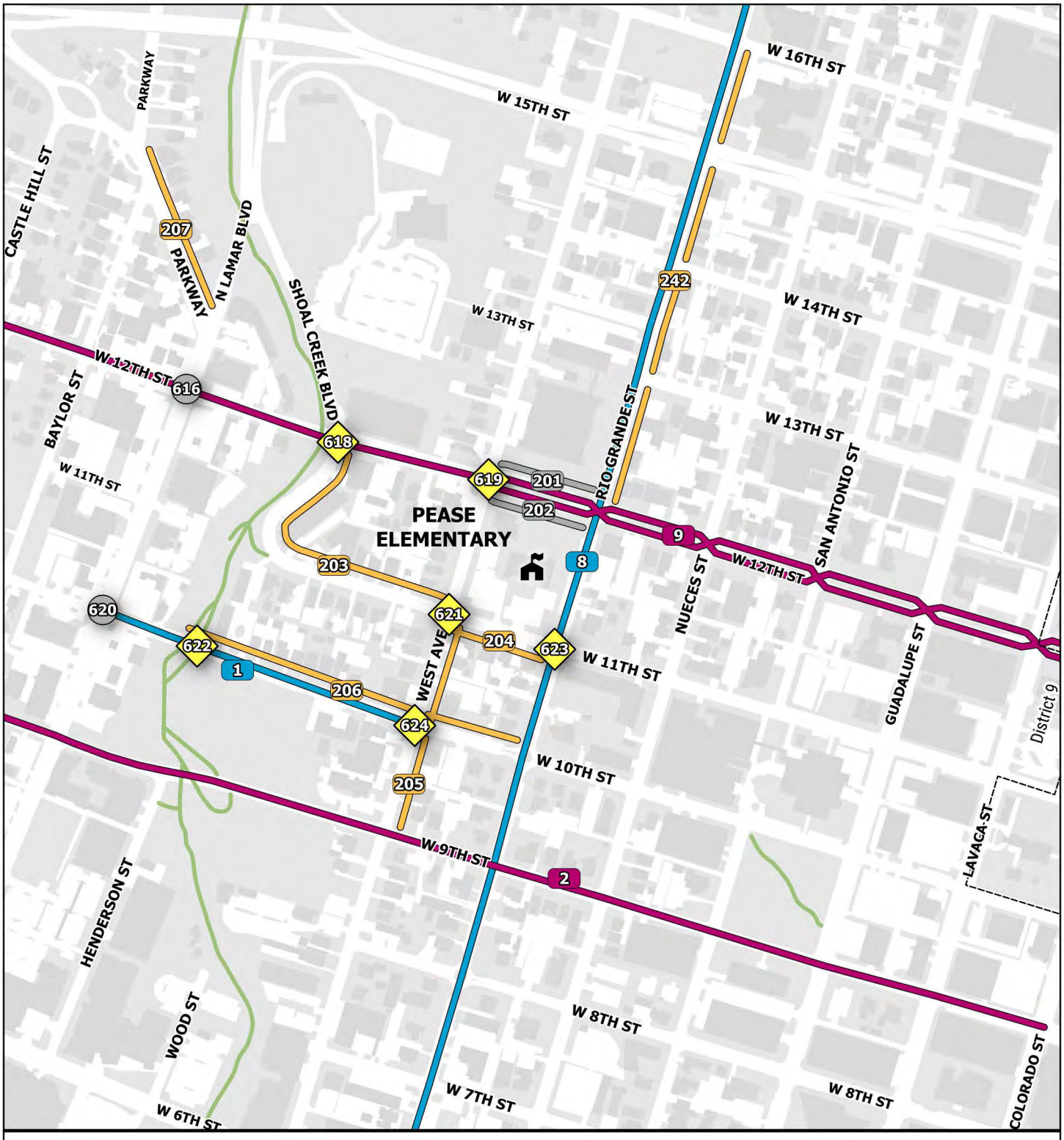
MAP 2B: MATHEWS ELEMENTARY



MAP 2B: PEASE ELEMENTARY



CITY OF AUSTIN austin MOTION 2016 MOBILITY BOND

SAFE ROUTES TO SCHOOL

TOOLE DESIGN

0 400 800 1200 ft

- Off-Street Trail
- Bike Lane / Buffered Bike Lane / Protected Bike Lane
- Sidepath
- Neighborhood Bikeway / Traffic Calming
- New / Improved Sidewalk
- Other linear recommendation
- Traffic Control / Intersection Reconfiguration
- Ramp / Curb Extension / Crosswalk
- Over / Underpass
- Other Spot Recommendation
- Existing Trail
- School Boundary
- Council District Boundary

Project ID * = some or all of project is outside COA	Project w/in 1/2 mi (ped) or 2 mi (bike) and attendance boundary of:	Location	Issue	Recommendation + = parking removal required ~ = private property acquisition required	Overall Benefit Category	Estimated Cost:Benefit Category
2B - 001	O HENRY, MATHEWS, PEASE	W 10TH ST	Desired bike route, No bike facility	Neighborhood Bikeway - W 10TH ST from N LAMAR BLVD to WEST AVE	3 - Medium	2 - High
2B - 002	MATHEWS, O HENRY, PEASE	W 9TH ST	Desired bike route	Neighborhood Bikeway - W 9TH ST from WEST LYNN ST to N LAMAR BLVD Bike Lane - W 9TH ST from N LAMAR BLVD to COLORADO ST	1 - Very High	2 - High
2B - 003	MATHEWS, O HENRY, PEASE	W 10TH ST	Desired bike route	Neighborhood Bikeway - W 10TH ST from WEST LYNN ST to BLANCO ST	2 - High	2 - High
2B - 004	O HENRY, MATHEWS, PEASE	BLANCO ST	Desired bike route	Neighborhood Bikeway - BLANCO ST from W 9TH ST to W 12TH ST	2 - High	2 - High
2B - 005	MATHEWS, O HENRY, PEASE	W 5TH ST	Desired bike route, No bike facility	Protected Bike Lane - W 5TH ST from N LAMAR BLVD to LAKE AUSTIN BLVD	1 - Very High	4 - Low
2B - 006	O HENRY, MATHEWS, PEASE	WEST LYNN ST	Desired bike route	Sidepath - WEST LYNN ST from W 5TH ST to ENFIELD RD	1 - Very High	5 - Very Low
2B - 007	O HENRY, MATHEWS, PEASE	W 10TH ST	Desired bike route	Neighborhood Bikeway - W 10TH ST from N MOPAC NB TO NEWFIELD RAMP to WEST LYNN ST	2 - High	2 - High
2B - 008	MATHEWS, PEASE	RIO GRANDE ST	Desired bike route	Neighborhood Bikeway - RIO GRANDE ST from W 4TH ST to W MARTIN LUTHER KING JR BLVD	1 - Very High	2 - High
2B - 009	O HENRY, MATHEWS, PEASE	W 12TH ST	Desired bike route, No bike facility	Sidepath - W 12TH ST from WEST LYNN ST to N LAMAR BLVD Protected Bike Lane - W 12TH ST from N LAMAR BLVD to COLORADO ST ~ +	1 - Very High	5 - Very Low
2B - 013	MATHEWS, O HENRY, PEASE	W 6TH ST	Desired bike route	Protected Bike Lane - W 6TH ST from N LAMAR BLVD to N MOPAC NB TO 6TH WB RAMP	1 - Very High	4 - Low

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2B - 201	None (nearest school: Pease)	W 12TH ST	No lighting	Add lighting - W 12TH ST from WEST AVE to RIO GRANDE ST	3 - Medium	2 - High
2B - 202	None (nearest school: Pease)	W 12TH ST	No lighting	Add lighting - W 12TH ST from RIO GRANDE ST to WEST AVE	3 - Medium	2 - High
2B - 203	None (nearest school: Pease)	W 11TH ST	Missing sidewalk	Construct new sidewalk - SHOAL CREEK BLVD from W 12TH ST to W 11TH ST Construct new sidewalk - W 11TH ST from SHOAL CREEK BLVD to WEST AVE	4 - Low	4 - Low
2B - 204	None (nearest school: Pease)	W 11TH ST	Missing sidewalk	Construct new sidewalk - W 11TH ST from RIO GRANDE ST to WEST AVE	3 - Medium	2 - High
2B - 205	None (nearest school: Pease)	WEST AVE	Missing sidewalk	Construct new sidewalk - WEST AVE from W 11TH ST to W 9TH ST	3 - Medium	3 - Medium
2B - 206	None (nearest school: Pease)	W 10TH ST	Driveway crossings not accessible, Missing sidewalk	Fix sidewalk obstructions - W 10TH ST from RIO GRANDE ST to WEST AVE Construct new sidewalk - W 10TH ST from WEST AVE to RIO GRANDE ST	3 - Medium	2 - High
2B - 207	None (nearest school: Pease)	PARKWAY	Missing sidewalk	Construct new sidewalk - PARKWAY from ENFIELD RD to N LAMAR BLVD	4 - Low	4 - Low
2B - 208	MATHEWS	WEST LYNN ST	Missing sidewalk	Construct new sidewalk - WEST LYNN ST from W 6TH ST to W 8TH ST	4 - Low	4 - Low
2B - 209	MATHEWS	W 8TH ST	Missing sidewalk	Construct new sidewalk - W 8TH ST from WEST LYNN ST to Near 1614 8TH ST	5 - Very Low	4 - Low
2B - 210	MATHEWS	W 9TH ST	Missing sidewalk	Construct new sidewalk - W 9TH ST from WEST LYNN ST to ROBERTSON ST	4 - Low	3 - Medium
2B - 211	MATHEWS	ROBERTSON ST	Missing sidewalk	Construct new sidewalk - ROBERTSON ST from CONFEDERATE ST to W 9TH ST	4 - Low	3 - Medium

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2B - 212	MATHEWS, PEASE	W 9TH ST	Missing sidewalk, Narrow sidewalk, Poor condition	Widen existing sidewalk - W 9TH ST from WEST LYNN ST to WINFLO DR Construct new sidewalk - W 9TH ST from BLANCO ST to WEST LYNN ST	1 - Very High	4 - Low
2B - 213	MATHEWS	PRESSLER ST	Missing sidewalk	Construct new sidewalk - PRESSLER ST from W 6TH ST to W 9TH ST	5 - Very Low	5 - Very Low
2B - 214	MATHEWS	WINFLO DR	Missing sidewalk	Construct new sidewalk - WINFLO DR from BROWNLEE CIR to W 9TH ST	5 - Very Low	4 - Low
2B - 215	MATHEWS	BROWNLEE CIR	Missing sidewalk	Construct new sidewalk - BROWNLEE CIR from Near 801 WINFLO DR to Near 701 BROWNLEE CIR	4 - Low	4 - Low
2B - 216	MATHEWS	NELSON ST	Missing sidewalk	Construct new sidewalk - NELSON ST from W 8TH ST to W 9TH ST	4 - Low	3 - Medium
2B - 217	MATHEWS, PEASE	W 8TH ST	Missing sidewalk	Construct new sidewalk - W 8TH ST from BLANCO ST to NELSON ST	4 - Low	3 - Medium
2B - 218	MATHEWS, PEASE	W 9TH HALF ST	Missing sidewalk	Construct new sidewalk - W 9TH HALF ST from Near 1204 9TH ST to Near 1301 9TH HALF ST	4 - Low	2 - High
2B - 219	MATHEWS, PEASE	SHELLEY AVE	Missing sidewalk	Construct new sidewalk - SHELLEY AVE from W 9TH HALF ST to W 10TH ST	4 - Low	3 - Medium
2B - 220	MATHEWS, PEASE	SHELLEY AVE	Missing sidewalk	Construct new sidewalk - SHELLEY AVE from W 12TH ST to W 10TH ST	5 - Very Low	4 - Low
2B - 221	MATHEWS, PEASE	W 12TH ST	Missing sidewalk	Construct new sidewalk - W 12TH ST from ELM ST to SHELLEY AVE	4 - Low	4 - Low
2B - 222	MATHEWS, PEASE	SHELLEY AVE	Missing sidewalk	Construct new sidewalk - SHELLEY AVE from W 12TH ST to W 13TH ST	5 - Very Low	4 - Low

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2B - 223	MATHEWS, PEASE	W 13TH ST	Conflict with bicycles, Driveway crossings not accessible, Missing sidewalk, Narrow sidewalk, Poor condition	Construct new sidewalk - W 13TH ST from SHELLEY AVE to WEST LYNN ST	4 - Low	4 - Low
2B - 224	MATHEWS	LORRAIN ST	Missing sidewalk	Construct new sidewalk - LORRAIN ST from W 10TH ST to W 13TH ST	5 - Very Low	5 - Very Low
2B - 225	MATHEWS	MAUFRAIS ST	Missing sidewalk	Construct new sidewalk - MAUFRAIS ST from W 10TH ST to W 12TH ST	5 - Very Low	4 - Low
2B - 226	MATHEWS	MARSHALL LN	Missing sidewalk	Construct new sidewalk - MARSHALL LN from W 13TH ST to W 12TH ST	5 - Very Low	4 - Low
2B - 227	MATHEWS	W 12TH ST	Missing sidewalk	Construct new sidewalk - W 12TH ST from WEST LYNN ST to CHARLOTTE ST	4 - Low	4 - Low
2B - 228	MATHEWS	PALMA PLZ	Missing sidewalk	Construct new sidewalk - PALMA PLZ from NEWFIELD LN to W 14TH ST, Construct new sidewalk - W 14TH ST from PALMA PLZ to WEST LYNN ST	3 - Medium	5 - Very Low
2B - 229	MATHEWS	HARTFORD RD	Missing sidewalk	Construct new sidewalk - HARTFORD RD from Near 1409 HARTFORD RD to PALMA PLZ	5 - Very Low	4 - Low
2B - 230	MATHEWS	WOODLAWN BLVD	Missing sidewalk	Construct new sidewalk - WOODLAWN BLVD from ENFIELD RD to PALMA PLZ	5 - Very Low	4 - Low
2B - 231	MATHEWS	PEASE RD	Missing sidewalk	Construct new sidewalk - PEASE RD from ENFIELD RD to PALMA PLZ	4 - Low	3 - Medium
2B - 232	MATHEWS	PALMA PLZ	Missing sidewalk	Construct new sidewalk - PALMA PLZ from W 14TH ST to WEST LYNN ST	5 - Very Low	5 - Very Low

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2B - 233	MATHEWS	PALMA PLZ	Missing sidewalk	Construct new sidewalk - PALMA PLZ from WEST LYNN ST to PALMA PLZ	5 - Very Low	4 - Low
2B - 234	MATHEWS	PALMA PLZ	Missing sidewalk	Construct new sidewalk - PALMA PLZ from WEST LYNN ST to MARSHALL LN	5 - Very Low	5 - Very Low
2B - 242	None (nearest school: Pease)	RIO GRANDE ST	Poor condition	Repair existing sidewalk - RIO GRANDE ST from W 12TH ST to W 16TH ST	5 - Very Low	5 - Very Low
2B - 246	MATHEWS	W 5TH ST	Missing sidewalk	Construct new sidewalk - W 5TH ST from OAKLAND AVE to CAMPBELL ST	3 - Medium	4 - Low
2B - 247	MATHEWS	WEST LYNN ST	Missing sidewalk	Construct new sidewalk - WEST LYNN ST from W 5TH ST to W 6TH ST	4 - Low	3 - Medium
2B - 248	MATHEWS	PATTERSON AVE	Missing sidewalk	Construct new sidewalk - PATTERSON AVE from W 6TH WB AT N MOPAC TRN to W 10TH ST	4 - Low	5 - Very Low
2B - 249	MATHEWS	WOODLAWN BLVD	Missing sidewalk	Construct new sidewalk - WOODLAWN BLVD from WATERSTON AVE to PALMA PLZ	4 - Low	3 - Medium
2B - 601	MATHEWS	PALMA PLZ / WOODLAWN BLVD	difficult crossing	Install stop sign	4 - Low	2 - High
2B - 602	MATHEWS	PALMA PLZ / WEST LYNN ST	Non-compliant curb ramps,Difficult crossing	Replace existing curb ramps Install high visibility crosswalk [1] across Palma Plaza Replace existing curb ramp Install curb extensions	4 - Low	3 - Medium

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2B - 603	MATHEWS	W 14TH ST / WEST LYNN ST	Non-compliant curb ramps	Replace existing curb ramp	5 - Very Low	4 - Low
2B - 604	MATHEWS	W 13TH ST / WEST LYNN ST	Non-compliant curb ramps,Difficult crossing	Install high visibility crosswalk [1] across W 13th St. Replace existing curb ramp	3 - Medium	2 - High
2B - 605	MATHEWS	WATERSTON AVE / WEST LYNN ST	Non-compliant curb ramps,Difficult crossing,No lighting	Add lighting Install high visibility crosswalk [1] across Waterston Ave. Replace existing curb ramp	4 - Low	2 - High
2B - 606	MATHEWS	W 12TH ST / WEST LYNN ST	Non-compliant curb ramps,No lighting	Add lighting Replace existing curb ramp	3 - Medium	2 - High
2B - 607	MATHEWS	W 11TH HALF ST / WEST LYNN ST	Non-compliant curb ramps,Difficult crossing,No lighting	Add lighting Install high visibility crosswalk [1] across W 11-1/2th St. Replace existing curb ramp	3 - Medium	2 - High
2B - 608	MATHEWS	W 11TH ST / WEST LYNN ST	Non-compliant curb ramps,Difficult crossing	Install high visibility crosswalk [1] across W. 11th St. Replace existing curb ramp	3 - Medium	2 - High

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2B - 609	MATHEWS	W 10TH ST / WEST LYNN ST	Non-compliant curb ramps,Difficult crossing,No lighting	Add lighting Install high visibility crosswalk [1] across W. 10th St. Replace existing curb ramp	2 - High	1 - Very High
2B - 610	MATHEWS	W 10TH ST / WEST LYNN ST	Missing curb ramps,Difficult crossing,No lighting	Add lighting Install 2 curb ramps Install high visibility crosswalk [2] across W. Lynn and 10th	1 - Very High	1 - Very High
2B - 611	MATHEWS	ROBERTSON ST / W 9TH HALF ST	Non-compliant curb ramps	Replace existing curb ramp	5 - Very Low	4 - Low
2B - 612	MATHEWS	W 9TH HALF ST / WEST LYNN ST	Non-compliant curb ramps,High speed crossing,No lighting	Add lighting Install raised crosswalk [1] across West Lynn Replace existing curb ramp	1 - Very High	1 - Very High
2B - 613	MATHEWS, PEASE	BLANCO ST / W 12TH ST / WINDSOR RD	Missing curb ramps	Install 1 curb ramp	4 - Low	2 - High

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2B - 614	MATHEWS	W 9TH ST / WEST LYNN ST	Non-compliant curb ramps,No lighting	Add lighting Replace existing curb ramps Install Rapid Flash Beacon Replace existing curb ramp	1 - Very High	1 - Very High
2B - 615	MATHEWS	W 9TH ST / WEST LYNN ST	Non-compliant curb ramps,Faded crosswalk markings,No lighting	Add lighting Repaint crosswalk markings [1] across W. 9th St. Replace existing curb ramp	4 - Low	2 - High
2B - 616	None (nearest school: Mathews, Pease)	N LAMAR BLVD / W 12TH ST	Non-ADA push buttons	Install/update pedestrian push buttons	3 - Medium	1 - Very High
2B - 617	MATHEWS	W 8TH ST / WEST LYNN ST	Non-compliant curb ramps,Difficult crossing,No lighting	Add lighting Install high visibility crosswalk [1] across W. 8th St. Replace existing curb ramp	4 - Low	3 - Medium
2B - 618	None (nearest school: Mathews, Pease)	SHOAL CREEK BLVD / W 12TH ST	Faded crosswalk markings	Repaint crosswalk markings [4] across Shoal Creek Blvd and 12th	5 - Very Low	4 - Low
2B - 619	None (nearest school: Pease)	W 12TH ST / WEST AVE	Missing curb ramps,Non-ADA push buttons	Add curb extensions Install 1 curb ramp Install/update pedestrian push buttons	2 - High	2 - High
2B - 620	None (nearest school: Mathews, Pease)	N LAMAR BLVD / W 10TH ST	Non-ADA push buttons	Install/update pedestrian push buttons	4 - Low	2 - High

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2B - 621	None (nearest school: Pease)	W 11TH ST / WEST AVE	Missing curb ramps,Long crossing distance	Add curb extensions Install 3 curb ramps Install 4 curb extensions on West and 11th	1 - Very High	2 - High
2B - 622	None (nearest school: Pease)	Midblock - W 10TH ST	Difficult crossing	Add curb extensions Install high visibility crosswalk [1] across 10th Install raised crosswalk [1] across 10th	4 - Low	3 - Medium
2B - 623	None (nearest school: Pease)	RIO GRANDE ST / W 11TH ST	Non-compliant curb ramps	Replace existing curb ramp	5 - Very Low	4 - Low
2B - 624	None (nearest school: Pease)	W 10TH ST / WEST AVE	Missing curb ramps,Difficult crossing,Long crossing distance	Install 3 curb ramps Install 4 curb extensions on West and 10th Install high visibility crosswalk [2] across 10th and West	2 - High	2 - High
2B - 672	MATHEWS	W 5TH ST / WEST LYNN ST	Difficult crossing	Install Pedestrian Hybrid Beacon [1]	3 - Medium	3 - Medium

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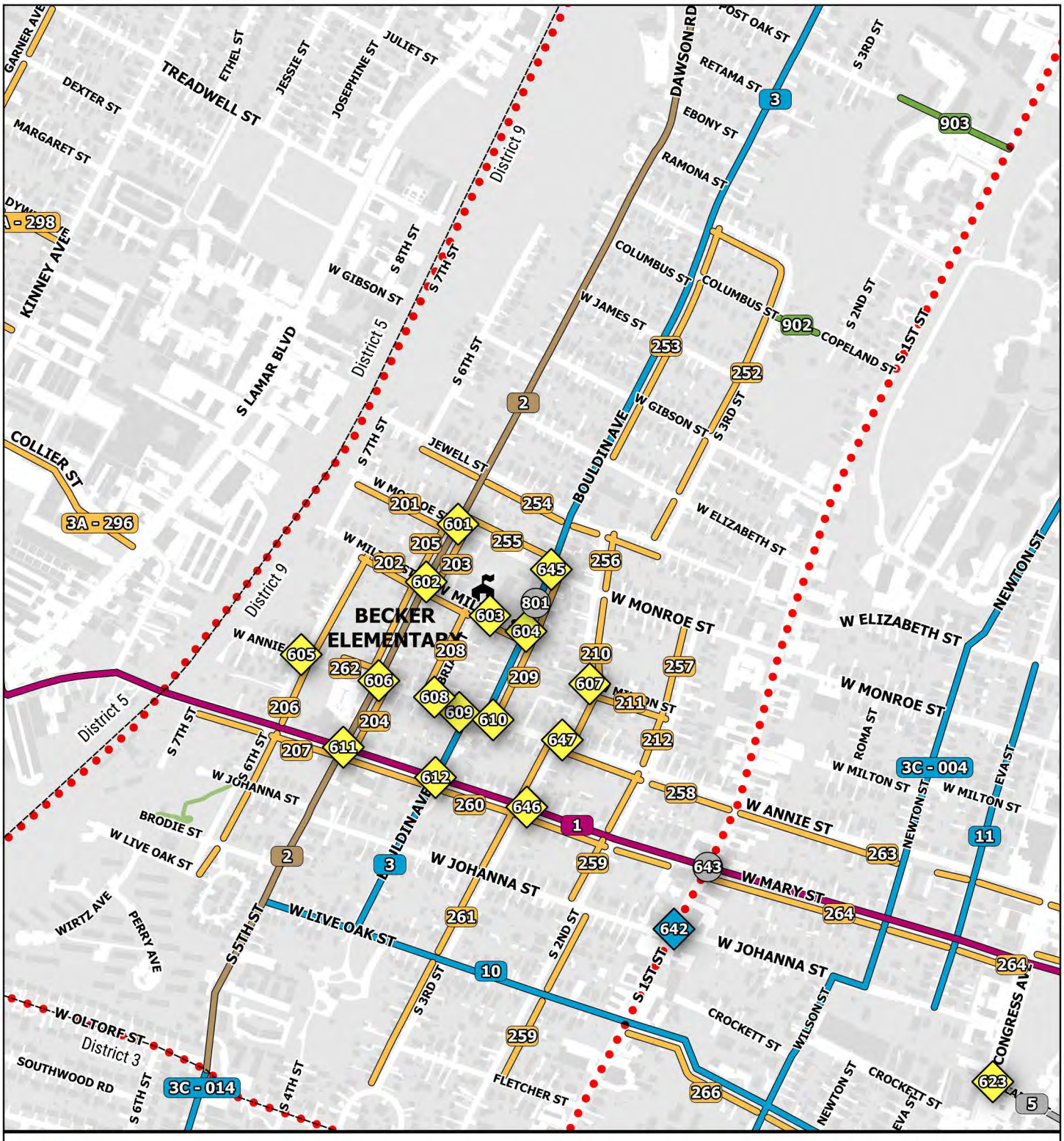
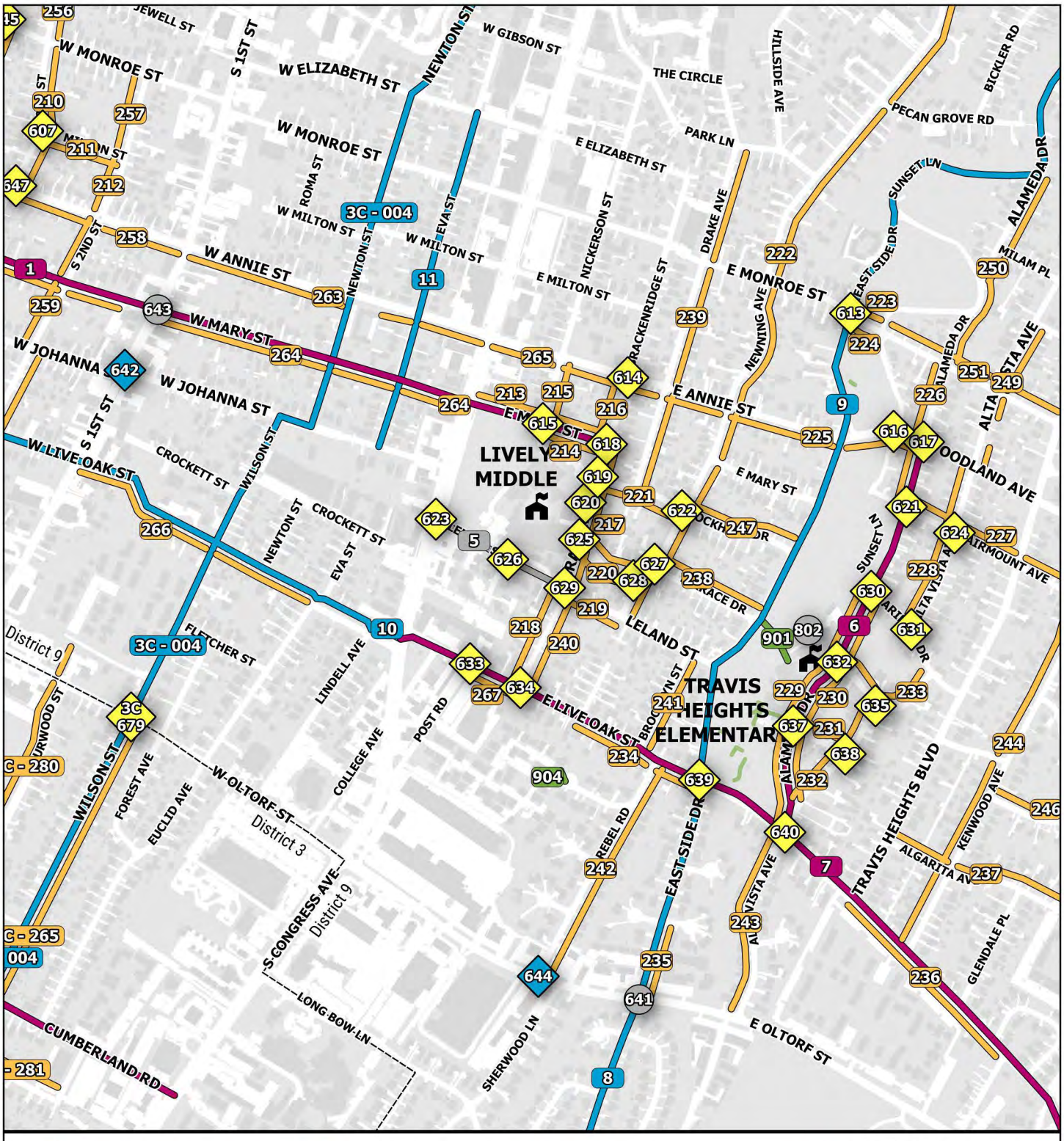
MAP 2C: BECKER ELEMENTARY



MAP 2C: LIVELY MIDDLE



CITY OF AUSTIN
austin MOTION
2016 MOBILITY BOND

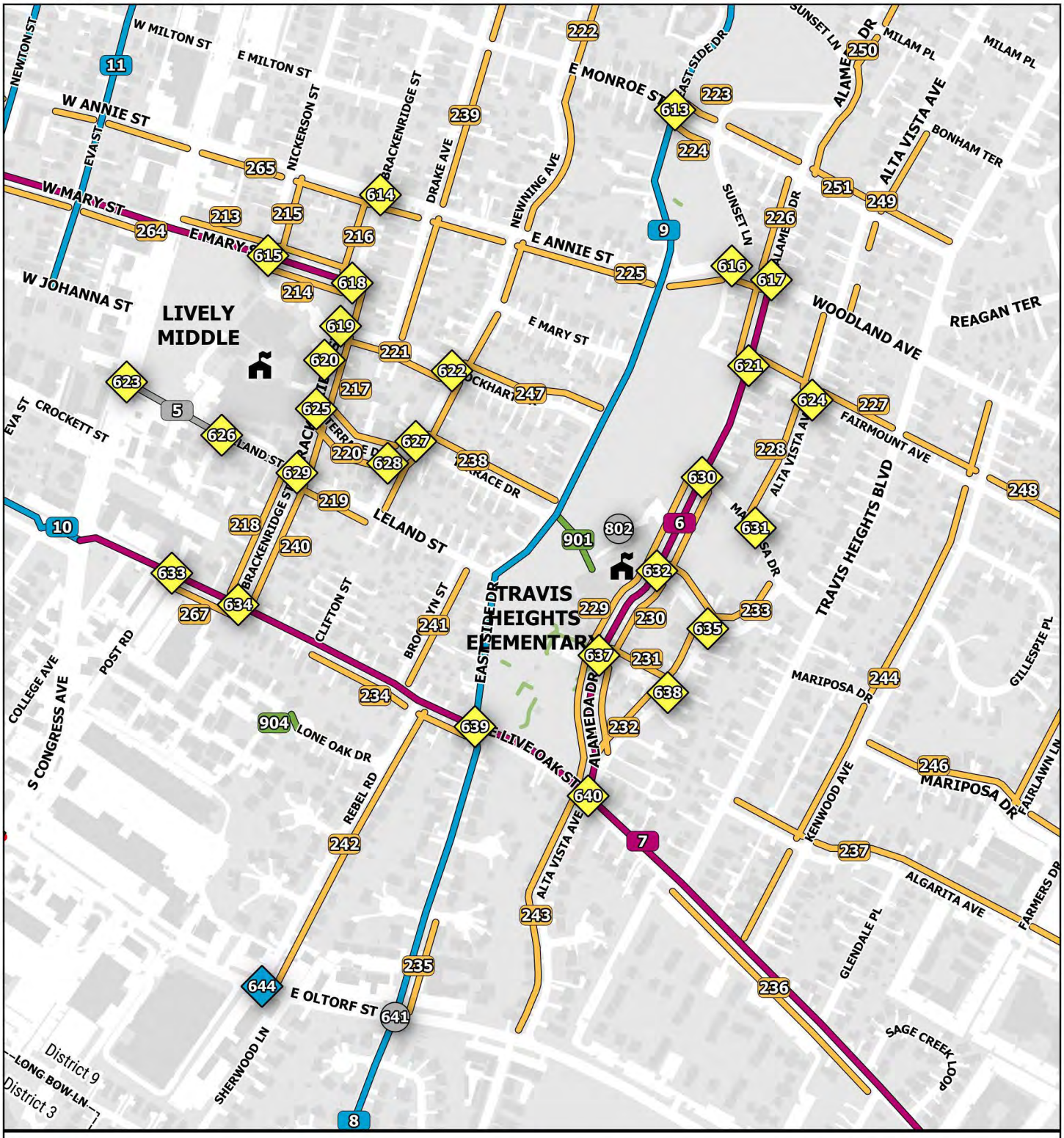
SAFE ROUTES TO SCHOOL

TOOLE DESIGN

0 600 1200 1800 ft

- Off-Street Trail
- Bike Lane / Buffered Bike Lane / Protected Bike Lane
- Sidepath
- Neighborhood Bikeway / Traffic Calming
- New / Improved Sidewalk
- Other linear recommendation
- Traffic Control / Intersection Reconfiguration
- Ramp / Curb Extension / Crosswalk
- Over / Underpass
- Other Spot Recommendation
- Existing Trail
- School Boundary
- Council District Boundary

MAP 2C: TRAVIS HEIGHTS ELEMENTARY



CITY OF AUSTIN
austin MOTION
2016 MOBILITY BOND

SAFE ROUTES TO SCHOOL

TOOLE DESIGN

0 500 1000 1500 ft

- Off-Street Trail
- Bike Lane / Buffered Bike Lane / Protected Bike Lane
- Sidepath
- Neighborhood Bikeway / Traffic Calming
- New / Improved Sidewalk
- Other linear recommendation
- Traffic Control / Intersection Reconfiguration
- Ramp / Curb Extension / Crosswalk
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2C - 001	LIVELY, ZILKER, BECKER, TRAVIS HEIGHTS	W MARY ST	Desired bike route	Protected Bike Lane - W MARY ST from S LAMAR BLVD to S CONGRESS AVE Protected Bike Lane - E MARY ST from W MARY ST to BRACKENRIDGE ST ~ +	1 - Very High	4 - Low
2C - 002	BECKER, LIVELY, PEASE	S 5TH ST	No bike facility, school zone signage	Sidepath - S 5TH ST from W OLTORF ST to DAWSON RD Add School Zone Sign - S 5TH ST from W MILTON ST to W MONROE ST Sidepath - DAWSON RD from RAMONA ST to BARTON SPRINGS RD	1 - Very High	5 - Very Low
2C - 003	BECKER, LIVELY, PEASE	BOULDIN AVE	Desired bike route	Neighborhood Bikeway - W ANNIE ST from Near 1716 BOULDIN AVE to Near 1716 BOULDIN AVE Neighborhood Bikeway - BOULDIN AVE from W LIVE OAK ST to BARTON SPRINGS RD	1 - Very High	3 - Medium
2C - 005	TRAVIS HEIGHTS, LIVELY	LELAND ST	Consider changing to one-way, Consider changing to one-way street	Parking one side - LELAND ST from S CONGRESS AVE to BRACKENRIDGE ST Road diet (changing number of lanes) - LELAND ST from S CONGRESS AVE to BRACKENRIDGE ST	1 - Very High	1 - Very High

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2C - 006	LIVELY, TRAVIS HEIGHTS	ALAMEDA DR	Desired bike route	Lane diet (changing lane widths) - ALAMEDA DR from E LIVE OAK ST to MARIPOSA DR Bike Lane - ALAMEDA DR from E LIVE OAK ST to WOODLAND AVE Parking one side - ALAMEDA DR from E LIVE OAK ST to WOODLAND AVE Road diet (changing number of lanes) - ALAMEDA DR from MARIPOSA DR to WOODLAND AVE ~	1 - Very High	2 - High
2C - 007	TRAVIS HEIGHTS, LIVELY	E LIVE OAK ST	Desired bike route	Protected Bike Lane - E LIVE OAK ST from S CONGRESS to E OLTORF ST ~ +	1 - Very High	3 - Medium
2C - 008	LIVELY, TRAVIS HEIGHTS	EAST SIDE DR	Desired bike route	Neighborhood Bikeway - EAST SIDE DR from ST EDWARDS DR to E LIVE OAK ST	2 - High	2 - High
2C - 009	TRAVIS HEIGHTS, LIVELY, PEASE	EAST SIDE DR	Desired bike route	Neighborhood Bikeway - EAST SIDE DR from E LIVE OAK ST to ALAMEDA DR Neighborhood Bikeway - ALAMEDA DR from EAST SIDE DR to RUTHERFORD PL	1 - Very High	2 - High
2C - 010	BECKER, LIVELY, TRAVIS HEIGHTS	W LIVE OAK ST	No bike facility	Neighborhood Bikeway - W LIVE OAK ST from S 5TH ST to S CONGRESS AVE	1 - Very High	2 - High
2C - 011	TRAVIS HEIGHTS, LIVELY	EVA ST	Excessive vehicle speeds	Add traffic calming - EVA ST from W ELIZABETH ST to W JOHANNA ST	3 - Medium	1 - Very High
2C - 201	BECKER	W MONROE ST	Missing sidewalk	Construct new sidewalk - W MONROE ST from S 5TH ST to S 7TH ST	3 - Medium	3 - Medium

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2C - 202	BECKER	W MILTON ST	Missing sidewalk	Construct new sidewalk - W MILTON ST from BOULDIN AVE to S 6TH ST	1 - Very High	2 - High
2C - 203	BECKER	S 5TH ST	Narrow sidewalk	Widen existing sidewalk - S 5TH ST from W MONROE ST to W MILTON ST	5 - Very Low	4 - Low
2C - 204	BECKER	S 5TH ST	Poor condition	Repair existing sidewalk - S 5TH ST from W ANNIE ST to W MARY ST	5 - Very Low	4 - Low
2C - 205	BECKER	S 5TH ST	Missing sidewalk	Construct new sidewalk - S 5TH ST from W ANNIE ST to W MONROE ST	2 - High	3 - Medium
2C - 206	BECKER	S 6TH ST	Missing sidewalk	Construct new sidewalk - S 6TH ST from W MILTON ST to W LIVE OAK ST	3 - Medium	4 - Low
2C - 207	BECKER	W MARY ST	Missing sidewalk	Construct new sidewalk - W MARY ST from S 5TH ST to S 6TH ST	2 - High	2 - High
2C - 208	BECKER	BRIAR ST	Missing sidewalk	Construct new sidewalk - BRIAR ST from W ANNIE ST to W MILTON ST	3 - Medium	2 - High
2C - 209	BECKER	BOULDIN AVE	Missing sidewalk	Construct new sidewalk - BOULDIN AVE from W MILTON ST to W ANNIE ST Construct new sidewalk - BOULDIN AVE from W MONROE ST to W MILTON ST	2 - High	3 - Medium
2C - 210	BECKER	S 3RD ST	Missing sidewalk	Construct new sidewalk - S 3RD ST from W MONROE ST to W ANNIE ST	4 - Low	3 - Medium
2C - 211	BECKER	W MILTON ST	Missing sidewalk	Construct new sidewalk - W MILTON ST from S 2ND ST to S 3RD ST	4 - Low	3 - Medium
2C - 212	BECKER	S 2ND ST	Missing sidewalk	Construct new sidewalk - S 2ND ST from W ANNIE ST to W MILTON ST	4 - Low	2 - High
2C - 213	TRAVIS HEIGHTS, LIVELY	E MARY ST	Missing sidewalk	Construct new sidewalk - E MARY ST from W MARY ST to BRACKENRIDGE ST	1 - Very High	2 - High
2C - 214	LIVELY, TRAVIS HEIGHTS	E MARY ST	Poor condition	Repair existing sidewalk - E MARY ST from BRACKENRIDGE ST to NICKERSON ST	4 - Low	3 - Medium

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2C - 215	TRAVIS HEIGHTS, LIVELY	NICKERSON ST	Missing sidewalk	Construct new sidewalk - NICKERSON ST from E ANNIE ST to E MARY ST	1 - Very High	1 - Very High
2C - 216	TRAVIS HEIGHTS, LIVELY	BRACKENRIDGE ST	Missing sidewalk	Construct new sidewalk - BRACKENRIDGE ST from E MARY ST to E ANNIE ST	1 - Very High	1 - Very High
2C - 217	LIVELY, TRAVIS HEIGHTS	BRACKENRIDGE ST	Missing sidewalk	Construct new sidewalk - BRACKENRIDGE ST from E MARY ST to LELAND ST	1 - Very High	1 - Very High
2C - 218	LIVELY, TRAVIS HEIGHTS	BRACKENRIDGE ST	Missing sidewalk	Construct new sidewalk - BRACKENRIDGE ST from E LIVE OAK ST to LELAND ST	1 - Very High	1 - Very High
2C - 219	LIVELY, TRAVIS HEIGHTS	LELAND ST	Missing sidewalk	Construct new sidewalk - LELAND ST from NEWNING AVE to BRACKENRIDGE ST	3 - Medium	2 - High
2C - 220	LIVELY, TRAVIS HEIGHTS	TERRACE DR	Missing sidewalk	Construct new sidewalk - TERRACE DR from NEWNING AVE to BRACKENRIDGE ST	1 - Very High	1 - Very High
2C - 221	LIVELY, TRAVIS HEIGHTS	LOCKHART DR	Missing sidewalk	Construct new sidewalk - LOCKHART DR from NEWNING AVE to BRACKENRIDGE ST	1 - Very High	2 - High
2C - 222	TRAVIS HEIGHTS, LIVELY	NEWNING AVE	Missing sidewalk	Construct new sidewalk - NEWNING AVE from LELAND ST to ACADEMY DR	1 - Very High	5 - Very Low
2C - 223	LIVELY, TRAVIS HEIGHTS	E MONROE ST	Poor condition	Repair existing sidewalk - E MONROE ST from EAST SIDE DR to SUNSET LN	5 - Very Low	4 - Low
2C - 224	TRAVIS HEIGHTS, LIVELY	E MONROE ST	Missing sidewalk	Construct new sidewalk - E MONROE ST from SUNSET LN to EAST SIDE DR	3 - Medium	2 - High
2C - 225	LIVELY, TRAVIS HEIGHTS	WOODLAND AVE	Missing sidewalk	Construct new sidewalk - E ANNIE ST from NEWNING AVE to EAST SIDE DR Construct new sidewalk - WOODLAND AVE from ALAMEDA DR to EAST SIDE DR	1 - Very High	2 - High
2C - 226	TRAVIS HEIGHTS, LIVELY	ALAMEDA DR	Driveway crossings not accessible, Missing sidewalk	Construct new sidewalk - ALAMEDA DR from FAIRMOUNT AVE to E MONROE ST	3 - Medium	3 - Medium

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2C - 227	LIVELY, TRAVIS HEIGHTS	FAIRMOUNT AVE	Missing sidewalk	Construct new sidewalk - FAIRMOUNT AVE from ALAMEDA DR to ALTA VISTA AVE	4 - Low	3 - Medium
2C - 228	TRAVIS HEIGHTS, LIVELY	ALTA VISTA AVE	Missing sidewalk	Construct new sidewalk - ALTA VISTA AVE from MARIPOSA DR to WOODLAND AVE	2 - High	3 - Medium
2C - 229	LIVELY, TRAVIS HEIGHTS	ALAMEDA DR	Poor condition	Repair existing sidewalk - ALAMEDA DR from E LIVE OAK ST to ALGARITA AVE Repair existing sidewalk - ALAMEDA DR from ALGARITA AVE to MARIPOSA DR	4 - Low	4 - Low
2C - 230	TRAVIS HEIGHTS, LIVELY	ALAMEDA DR	Missing sidewalk	Construct new sidewalk - ALAMEDA DR from MARIPOSA DR to ALTA VISTA AVE	1 - Very High	3 - Medium
2C - 231	LIVELY, TRAVIS HEIGHTS	ALGARITA AVE	Missing sidewalk	Construct new sidewalk - ALGARITA AVE from ALAMEDA DR to ALTA VISTA AVE	2 - High	1 - Very High
2C - 232	LIVELY, TRAVIS HEIGHTS	ALTA VISTA AVE	Missing sidewalk	Construct new sidewalk - ALTA VISTA AVE from ALAMEDA DR to ROSEDALE TER	3 - Medium	3 - Medium
2C - 233	LIVELY, TRAVIS HEIGHTS	ROSEDALE TER	Missing sidewalk	Construct new sidewalk - ROSEDALE TER from ALAMEDA DR to MARIPOSA DR	2 - High	2 - High
2C - 234	LIVELY, TRAVIS HEIGHTS	E LIVE OAK ST	Missing sidewalk	Construct new sidewalk - E LIVE OAK ST from CLIFTON ST to REBEL RD	2 - High	2 - High
2C - 235	TRAVIS HEIGHTS, LIVELY	EAST SIDE DR	Poor condition	Repair existing sidewalk - EAST SIDE DR from SANDRINGHAM CIR to E OLTORF ST	5 - Very Low	5 - Very Low
2C - 236	LIVELY, TRAVIS HEIGHTS	E LIVE OAK ST	Missing sidewalk	Construct new sidewalk - E LIVE OAK ST from TRAVIS HEIGHTS BLVD to SCHRIBER ST	1 - Very High	2 - High
2C - 237	TRAVIS HEIGHTS, LIVELY	ALGARITA AVE	Missing sidewalk	Construct new sidewalk - ALGARITA AVE from TRAVIS HEIGHTS BLVD to S IH 35 SVRD SB	4 - Low	5 - Very Low
2C - 238	LIVELY, TRAVIS HEIGHTS	TERRACE DR	Missing sidewalk	Construct new sidewalk - TERRACE DR from BRACKENRIDGE ST to EAST SIDE DR	1 - Very High	2 - High

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2C - 239	TRAVIS HEIGHTS, LIVELY	DRAKE AVE	Missing sidewalk	Construct new sidewalk - DRAKE AVE from PARK LN to LOCKHART DR	3 - Medium	4 - Low
2C - 240	LIVELY, TRAVIS HEIGHTS	BRACKENRIDGE ST	Missing sidewalk	Construct new sidewalk - BRACKENRIDGE ST from LELAND ST to E LIVE OAK ST	2 - High	2 - High
2C - 241	TRAVIS HEIGHTS, LIVELY	BROOKLYN ST	Missing sidewalk	Construct new sidewalk - BROOKLYN ST from LELAND ST to E LIVE OAK ST	4 - Low	3 - Medium
2C - 242	LIVELY, TRAVIS HEIGHTS	REBEL RD	Missing sidewalk	Construct new sidewalk - REBEL RD from E OLTORF ST to E LIVE OAK ST	2 - High	3 - Medium
2C - 243	LIVELY, TRAVIS HEIGHTS	ALTA VISTA AVE	Missing sidewalk	Construct new sidewalk - ALTA VISTA AVE from E LIVE OAK ST to E OLTORF ST	3 - Medium	3 - Medium
2C - 244	TRAVIS HEIGHTS	KENWOOD AVE	Missing sidewalk	Construct new sidewalk - KENWOOD AVE from E LIVE OAK ST to WOODLAND AVE	2 - High	4 - Low
2C - 245	TRAVIS HEIGHTS	FAIRLAWN LN	Missing sidewalk	Construct new sidewalk - FAIRLAWN LN from FAIRMOUNT AVE to MARIPOSA DR	4 - Low	4 - Low
2C - 246	TRAVIS HEIGHTS	MARIPOSA DR	Missing sidewalk	Construct new sidewalk - MARIPOSA DR from S IH 35 SVRD SB to KENWOOD AVE	3 - Medium	4 - Low
2C - 247	TRAVIS HEIGHTS, LIVELY	LOCKHART DR	Missing sidewalk	Construct new sidewalk - LOCKHART DR from NEWNING AVE to EAST SIDE DR	4 - Low	3 - Medium
2C - 248	LIVELY, TRAVIS HEIGHTS	FAIRMOUNT AVE	Missing sidewalk	Construct new sidewalk - FAIRMOUNT AVE from ALTA VISTA AVE to FAIRLAWN LN	3 - Medium	4 - Low
2C - 249	TRAVIS HEIGHTS, LIVELY	ALTA VISTA AVE	Missing sidewalk	Construct new sidewalk - ALTA VISTA AVE from Near 1609 ALTA VISTA AVE to WOODLAND AVE , Construct new sidewalk - ALTA VISTA AVE from BONHAM TER to Near 1603 ALTA VISTA AVE	3 - Medium	3 - Medium
2C - 250	LIVELY, TRAVIS HEIGHTS	ALAMEDA DR	Missing sidewalk	Construct new sidewalk - ALAMEDA DR from EAST SIDE DR to E MONROE ST	3 - Medium	4 - Low

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2C - 251	TRAVIS HEIGHTS, LIVELY	E MONROE ST	Missing sidewalk	Construct new sidewalk - E MONROE ST from TRAVIS HEIGHTS BLVD to SUNSET LN	3 - Medium	3 - Medium
2C - 252	BECKER	S 3RD ST	Missing sidewalk	Construct new sidewalk - S 3RD ST from JEWELL ST to CHRISTOPHER ST , Construct new sidewalk - CHRISTOPHER ST from BOULDIN AVE to S 3RD ST	4 - Low	5 - Very Low
2C - 253	BECKER	BOULDIN AVE	Missing sidewalk	Construct new sidewalk - BOULDIN AVE from W ELIZABETH ST to CHRISTOPHER ST	4 - Low	4 - Low
2C - 254	BECKER	JEWELL ST	Missing sidewalk	Construct new sidewalk - JEWELL ST from S 6TH ST to S 3RD ST	4 - Low	4 - Low
2C - 255	BECKER	W MONROE ST	Missing sidewalk	Construct new sidewalk - W MONROE ST from BOULDIN AVE to S 5TH ST	4 - Low	4 - Low
2C - 256	BECKER	S 3RD ST	Missing sidewalk	Construct new sidewalk - S 3RD ST from W MONROE ST to JEWELL ST	4 - Low	3 - Medium
2C - 257	BECKER	S 2ND ST	Missing sidewalk	Construct new sidewalk - S 2ND ST from W MILTON ST to W MONROE ST	4 - Low	4 - Low
2C - 258	BECKER, LIVELY	W ANNIE ST	Missing sidewalk	Construct new sidewalk - W ANNIE ST from S 3RD ST to S 1ST ST	2 - High	3 - Medium
2C - 259	BECKER	S 2ND ST	Missing sidewalk	Construct new sidewalk (east side) - S 2ND ST from JOHANNA ST to FLETCHER ST , Construct new sidewalk (west side) - S 2ND ST from W JOHANNA ST to W ANNIE ST	2 - High	3 - Medium
2C - 260	LIVELY, BECKER	W MARY ST	Missing sidewalk	Construct new sidewalk - W MARY ST from S 6TH ST to S 7TH ST , Construct new sidewalk - W MARY ST from S 5TH ST to Near 603 MARY ST	1 - Very High	4 - Low
2C - 261	BECKER	S 3RD ST	Missing sidewalk	Construct new sidewalk - S 3RD ST from OAK CREST AVE to W ANNIE ST	2 - High	4 - Low

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2C - 262	BECKER	W ANNIE ST	Missing sidewalk	Construct new sidewalk - W ANNIE ST from Near 1008 ANNIE ST to S 5TH ST	4 - Low	2 - High
2C - 263	TRAVIS HEIGHTS, LIVELY	W ANNIE ST	Missing sidewalk	Construct new sidewalk - W ANNIE ST from NEWTON ST to S 1ST ST , Construct new sidewalk - W ANNIE ST from S CONGRESS AVE to Near 205 ANNIE ST	2 - High	3 - Medium
2C - 264	LIVELY, TRAVIS HEIGHTS	W MARY ST	Missing sidewalk	Construct new sidewalk - W MARY ST from S 1ST ST to S CONGRESS AVE	1 - Very High	3 - Medium
2C - 265	TRAVIS HEIGHTS, LIVELY	E ANNIE ST	Missing sidewalk	Construct new sidewalk - E ANNIE ST from S CONGRESS AVE to NEWNING AVE	2 - High	3 - Medium
2C - 266	TRAVIS HEIGHTS, LIVELY	W LIVE OAK ST	Missing sidewalk	Construct new sidewalk - W LIVE OAK ST from BARTLETT ST to S 1ST ST	1 - Very High	3 - Medium
2C - 267	TRAVIS HEIGHTS, LIVELY	E LIVE OAK ST	Missing sidewalk	Construct new sidewalk - E LIVE OAK ST from BRACKENRIDGE ST to POST RD	2 - High	1 - Very High
2C - 601	BECKER	S 5TH ST / W MONROE ST	Missing curb ramps	Install 2 curb ramps	2 - High	1 - Very High
2C - 602	BECKER	S 5TH ST / W MILTON ST	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [2] across 5th Install raised crosswalk [2] across 5th	2 - High	1 - Very High
2C - 603	BECKER	W MILTON ST	Difficult crossing, Mid block	Add curb extensions [2] on Milton St	2 - High	2 - High
2C - 604	BECKER	BOULDIN AVE / W MILTON ST	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Bouldin ~	2 - High	1 - Very High

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2C - 605	BECKER	S 6TH ST / W ANNIE ST	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Annie	3 - Medium	1 - Very High
2C - 606	BECKER	S 5TH ST / W ANNIE ST	High speed crossing,Missing curb ramps	Install 1 curb ramp Install raised crosswalk [1] across 5th	1 - Very High	1 - Very High
2C - 607	BECKER	S 3RD ST / W MILTON ST	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Milton	3 - Medium	2 - High
2C - 608	BECKER	BRIAR ST / W ANNIE ST	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Annie	2 - High	1 - Very High
2C - 609	BECKER	BOULDIN AVE / W ANNIE ST	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Bouldin	2 - High	1 - Very High
2C - 610	BECKER	BOULDIN AVE / W ANNIE ST	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Annie	2 - High	1 - Very High
2C - 611	BECKER	S 5TH ST / W MARY ST	stormwater drainage	fix pooling water at curb ramp on SW corner	2 - High	1 - Very High

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2C - 612	BECKER	BOULDIN AVE / W MARY ST	Difficult crossing,Long crossing distance	Add curb extensions Install 2 curb extensions on W Mary Install high visibility crosswalk [1] across W Mary +	2 - High	2 - High
2C - 613	TRAVIS HEIGHTS, LIVELY	EAST SIDE DR / E MONROE ST	High speed crossing,Wide curb radii	Add curb extensions +	3 - Medium	5 - Very Low
2C - 614	TRAVIS HEIGHTS, LIVELY	BRACKENRIDGE ST / E ANNIE ST	Difficult crossing	Install high visibility crosswalk [1] across E Annie St	3 - Medium	2 - High
2C - 615	TRAVIS HEIGHTS, LIVELY	E MARY ST / NICKERSON ST	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [2] across Mary and Nickerson	1 - Very High	1 - Very High
2C - 616	TRAVIS HEIGHTS, LIVELY	SUNSET LN / WOODLAND AVE	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Sunset	1 - Very High	1 - Very High
2C - 617	LIVELY, TRAVIS HEIGHTS	ALAMEDA DR / WOODLAND AVE	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install raised crosswalk [1] across Woodland	1 - Very High	1 - Very High
2C - 618	TRAVIS HEIGHTS, LIVELY	BRACKENRIDGE ST / E MARY ST	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [2] across Mary and Brackenridge	1 - Very High	1 - Very High

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2C - 619	TRAVIS HEIGHTS, LIVELY	BRACKENRIDGE ST / LOCKHART DR	Difficult crossing,Missing curb ramps	Install 2 curb ramps Install high visibility crosswalk [1] across Lockhart	1 - Very High	1 - Very High
2C - 620	TRAVIS HEIGHTS, LIVELY	Midblock - BRACKENRIDGE ST	Difficult crossing,Missing/non-compliant curb ramps	Install 2 curb ramps Install high visibility crosswalk [1] across Brackenridge ~	1 - Very High	1 - Very High
2C - 621	TRAVIS HEIGHTS, LIVELY	ALAMEDA DR / FAIRMOUNT AVE	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [2] across Alemeda and Fairmount	3 - Medium	2 - High
2C - 622	TRAVIS HEIGHTS, LIVELY	LOCKHART DR / NEWNING AVE	Missing curb ramps,Difficult crossing	Install 3 curb ramps Install high visibility crosswalk [2] across Lockhart and newning	1 - Very High	1 - Very High
2C - 623	TRAVIS HEIGHTS, LIVELY	LELAND ST / S CONGRESS AVE	Wide curb radii,Poor sightlines,Faded crosswalk markings	Add curb extensions Install 2 curb extensions on Leland Install traffic signal Tighten curb radii +	1 - Very High	4 - Low
2C - 624	TRAVIS HEIGHTS, LIVELY	ALTA VISTA AVE / FAIRMOUNT AVE	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Fairmount	2 - High	1 - Very High

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2C - 625	TRAVIS HEIGHTS, LIVELY	BRACKENRIDGE ST / TERRACE DR	Missing curb ramps,Difficult crossing	Install 3 curb ramps Install high visibility crosswalk [2] across Terrace and Brackenridge ~ +	1 - Very High	5 - Very Low
2C - 626	TRAVIS HEIGHTS, LIVELY	LELAND ST / NICKERSON ST	Difficult crossing,Missing curb ramps	Install 2 curb ramps Install high visibility crosswalk [1] across Leland	2 - High	1 - Very High
2C - 627	TRAVIS HEIGHTS, LIVELY	NEWNING AVE / TERRACE DR	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Terrace	2 - High	1 - Very High
2C - 628	TRAVIS HEIGHTS, LIVELY	NEWNING AVE / TERRACE DR	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Newning	1 - Very High	1 - Very High
2C - 629	TRAVIS HEIGHTS, LIVELY	BRACKENRIDGE ST / LELAND ST	Missing curb ramps,Faded crosswalk markings	Install 2 curb ramps Repaint crosswalk markings [4] across Leland and Brackenridge	2 - High	1 - Very High
2C - 630	TRAVIS HEIGHTS, LIVELY	ALAMEDA DR / MARIPOSA DR	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [2] across Alameda and Mariposa +	2 - High	1 - Very High
2C - 631	TRAVIS HEIGHTS, LIVELY	ALTA VISTA AVE / MARIPOSA DR	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Mariposa	2 - High	1 - Very High

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2C - 632	TRAVIS HEIGHTS, LIVELY	ALAMEDA DR / ROSEDALE TER	Missing curb ramps	Install 2 curb ramps	2 - High	1 - Very High
2C - 633	TRAVIS HEIGHTS, LIVELY	E LIVE OAK ST / POST RD	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Live Oak	1 - Very High	1 - Very High
2C - 634	TRAVIS HEIGHTS, LIVELY	BRACKENRIDGE ST / E LIVE OAK ST	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [2] across both	1 - Very High	1 - Very High
2C - 635	TRAVIS HEIGHTS, LIVELY	ALTA VISTA AVE / ROSEDALE TER	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Alta Vista	2 - High	1 - Very High
2C - 637	TRAVIS HEIGHTS, LIVELY	ALAMEDA DR / ALGARITA AVE	Missing curb ramps	Install 2 curb ramps	2 - High	1 - Very High
2C - 638	TRAVIS HEIGHTS, LIVELY	ALGARITA AVE / ALTA VISTA AVE	Missing curb ramps,Difficult crossing	Install 2 curb ramps Install high visibility crosswalk [1] across Algarita	3 - Medium	2 - High
2C - 639	TRAVIS HEIGHTS, LIVELY	EAST SIDE DR / E LIVE OAK ST	Difficult crossing,High speed crossing	Install high visibility crosswalk [1] across East Side Dr south leg +	1 - Very High	5 - Very Low

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2C - 640	TRAVIS HEIGHTS, LIVELY	ALAMEDA DR / ALTA VISTA AVE / E LIVE OAK ST	Missing curb ramps	Install 4 curb ramps	1 - Very High	1 - Very High
2C - 641	TRAVIS HEIGHTS, LIVELY	EAST SIDE DR / E OLTORF ST	Non-ADA push buttons	Install/update pedestrian push buttons	5 - Very Low	3 - Medium
2C - 642	BECKER, LIVELY	S 1ST ST / W JOHANNA ST	No pedestrian signals	Install Pedestrian Hybrid Beacon	2 - High	3 - Medium
2C - 643	BECKER, LIVELY	S 1ST ST / W MARY ST	Poor signal timing	Update signal timing	2 - High	1 - Very High
2C - 644	TRAVIS HEIGHTS, LIVELY	E OLTORF ST / REBEL RD	No pedestrian signals	Install Pedestrian Hybrid Beacon	2 - High	3 - Medium
2C - 645	BECKER	BOULDIN AVE / W MONROE ST	Difficult crossing	Install raised crosswalk	2 - High	2 - High
2C - 646	BECKER	S 3RD ST / W MARY ST	Difficult crossing	Add new curb ramp [1] , Install high visibility crosswalk [4] across all legs , Replace existing curb ramp [2]	2 - High	1 - Very High
2C - 647	BECKER	S 3RD ST / W ANNIE ST	Difficult crossing	Add new curb ramp [2] , Install high visibility crosswalk [4] across all legs , Replace existing curb ramp [2]	2 - High	1 - Very High

* Indicates projects located outside or partially outside of the City of Austin limits and may not be eligible for Safe Routes to School funding.

Cost:Benefit rankings are preliminary, high-level estimates to identify cost-effective options to address safety concerns. Preliminary rankings are developed using planning-level costs for projects of this nature. Individual cost estimates will change as projects advance. See pages 4-5 of this report for more information.

Project ID * = some or all of project is outside COA	Project w/in 1/2 mi (ped) or 2 mi (bike) and attendance boundary of:	Location	Issue	Recommendation + = parking removal required ~ = private property acquisition required	Overall Benefit Category	Estimated Cost:Benefit Category
2C - 801	BECKER	Near 1607 BOULDIN AVE	No bike parking	Add bike parking	5 - Very Low	4 - Low
2C - 802	TRAVIS HEIGHTS, LIVELY	Near 1909 SUNSET LN	No bike parking	Add bike parking	5 - Very Low	5 - Very Low
2C - 901	LIVELY, TRAVIS HEIGHTS	From East Side Dr to School	No trail connection, Students approaching the school from the south along the west side of Monterey Oaks are currently required to cross the driveway to reach a sidewalk/path that leads to the school.	Construct new Trail Construct path along the desire line that connects sidewalk on Monterey Oaks to those on school grounds and avoids conflict with vehicles entering/exiting the school parking lot	1 - Very High	2 - High
2C - 902	BECKER, LIVELY	2nd to 3rd along columbus street alignment	No trail connection	Construct new trail Construct over/underpass	3 - Medium	3 - Medium
2C - 903	LIVELY, BECKER	From Post Oak St to 1st ST	No trail connection	Construct new trail	3 - Medium	4 - Low

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Project ID * = some or all of project is outside COA	Project w/in 1/2 mi (ped) or 2 mi (bike) and attendance boundary of:	Location	Issue	Recommendation + = parking removal required ~ = private property acquisition required	Overall Benefit Category	Estimated Cost:Benefit Category
2C - 904	TRAVIS HEIGHTS, LIVELY	Near 313 LONE OAK DR	No trail connection	Add gate	3 - Medium	1 - Very High
3C - 004	TRAVIS HEIGHTS, DAWSON, LIVELY, UPHAUS	WILSON ST	Desired bike route, Excessive vehicle speeds, No bike facility	Add speed cushions - BRINWOOD AVE from HAVANA ST to EL PASO ST , Add speed cushions - EL PASO ST from WILSON ST to BRINWOOD AVE , Add speed cushions - WILSON ST from EL PASO ST to W JOHANNA ST , Add speed cushions - W JOHANNA ST from WILSON ST to NEWTON ST , Add speed cushions - NEWTON ST from W JOHANNA ST to NELLIE ST , Add speed cushions - NELLIE ST from S CONGRESS AVE to NEWTON ST , Add neighborhood bikeway - BRINWOOD AVE from LA VISTA ST to EL PASO ST , Add neighborhood bikeway - EL PASO ST from WILSON ST to BRINWOOD AVE , Add neighborhood bikeway - WILSON ST from W JOHANNA ST to EL PASO ST , Add neighborhood bikeway - W JOHANNA ST from WILSON ST to NEWTON ST , Add neighborhood bikeway - NEWTON ST from W JOHANNA ST to NELLIE ST , Add neighborhood bikeway - NELLIE ST from S CONGRESS AVE to NEWTON ST	1 - Very High	3 - Medium

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Project ID * = some or all of project is outside COA	Project w/in 1/2 mi (ped) or 2 mi (bike) and attendance boundary of:	Location	Issue	Recommendation + = parking removal required ~ = private property acquisition required	Overall Benefit Category	Estimated Cost:Benefit Category
3C - 679	LIVELY	WILSON ST / W OLTORF ST	Missing curb ramps,Long crossing distance	Install 2 curb ramps Install Pedestrian Hybrid Beacon	1 - Very High	2 - High

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Project ID * = some or all of project is outside COA	Project w/in 1/2 mi (ped) or 2 mi (bike) and attendance boundary of:	Location	Issue	Recommendation + = parking removal required ~ = private property acquisition required	Overall Benefit Category	Estimated Cost:Benefit Category
4B - 206	BLANTON	E 51ST ST	Missing sidewalk	Construct new sidewalk - E 51ST ST from 2001 E 51ST to BERKMAN DR	4 - Low	5 - Very Low
4B - 701	None (nearest school: Blanton)	BERKMAN DR / E 51ST ST	Difficult crossing	Add Leading Pedestrian Interval (LPI)	5 - Very Low	4 - Low
4B - 903	BLANTON, BERTHA SADLER MEANS	Near 4912 MANOR RD	No trail connection	Construct new shared use path	3 - Medium	5 - Very Low

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Cost:Benefit rankings are preliminary, high-level estimates to identify cost-effective options to address safety concerns. Preliminary rankings are developed using planning-level costs for projects of this nature. Individual cost estimates will change as projects advance. See pages 4-5 of this report for more information.

CITY OF AUSTIN PUBLIC WORKS

SAFE ROUTES TO SCHOOL

APPENDIX A: ENGINEERING TOOLKIT

CITY OF AUSTIN PUBLIC WORKS
SAFE ROUTES TO SCHOOL

ENGINEERING TOOLKIT

INTRODUCTION

This Toolkit was developed in support of the City of Austin Safe Routes to School (SRTS). It presents the most common engineering treatments used to improve pedestrian and bicyclist safety, with a focus on supporting healthy, safe, and active travel to school. The Toolkit can be used by consultants, City staff, and the public in ongoing discussions about traffic safety and school access.

While this Toolkit represents common engineering solutions that can be used, it is not an exhaustive list of every design solution that may be applicable in a school environment. Solutions to specific local challenges must be evaluated by City staff through field work and, when appropriate, engineering studies and/or public engagement. All projects will be designed using applicable City, State and Federal design manuals and guidelines.

CITY OF AUSTIN PUBLIC WORKS
SAFE ROUTES TO SCHOOL

ENGINEERING TOOLKIT

The Toolkit is organized into four sections: Crossing Treatments, Street Treatments, Traffic Calming and Other. The page number for each treatment in the Toolkit is shown below.

CROSSING TREATMENTS

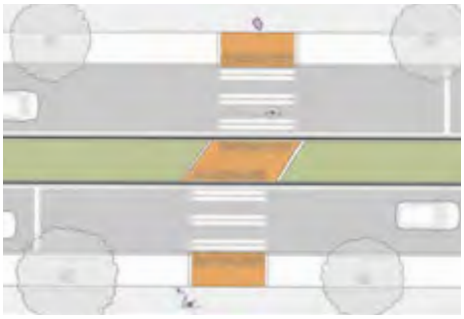
STREET TREATMENTS

TRAFFIC CALMING

OTHER

REFUGE ISLANDS

Refuge islands (also called pedestrian refuges or center islands) are delineated or raised areas in the middle of the street at intersections or mid-block crossings that provide a designated place for people walking and biking to wait for an opportunity to cross the other half of the street.



Typical crossing island

Landscaping beautifies the refuge island

Refuge islands also help people on bicycles cross the street

What is the purpose of a refuge island?

- Makes the crossing more visible to people driving.
- Allows people to cross the street in two stages, making it easier to find gaps in traffic by only having to cross one direction of travel at a time.
- Reduces the amount of time a person crossing the street is exposed to traffic by providing a designated place to wait in the middle of the crossing.
- Makes the street easier to cross for kids, older adults, people with disabilities, and others who may need more time to cross or have more difficulty judging gaps in traffic.
- Reduces speeding as drivers approach the crossing through visual narrowing of the travel lane.

How does COA decide where to install a refuge island?

- Refuge islands may be an effective crossing treatment in situations where it is difficult to cross the street due to long crossing distances or few gaps in traffic.
- There must be adequate width (6-ft minimum) in the middle of the road to install the refuge island. Generally, streets with a two-way center turn lane or few or no left turns by people driving provide opportunities to install a refuge island.
- We also consider including additional safety improvements like crossing beacons along with the refuge island to make the crossing even more visible to people driving. Any added vegetation should be low-lying as to not affect sight distance.
- At crossings frequently used by people on bikes, such as Neighborhood Bikeway crossings, we consider creating individual crossings that separate people biking and people walking.

How much does a refuge island cost?

$$-$$$: A small asphalt or concrete refuge island can be fairly inexpensive, typically in the range of $10K to $20K to install. Lower cost materials such as flexible posts can also be used to delineate the refuge island in certain situations. Larger projects that include landscaping and drainage structures can increase construction and maintenance costs.

How long does it take to install a refuge island?

1-2 years or less: A simple project can be designed in six months and constructed easily by City crews. More time is required to design larger refuge islands or refuge islands at busy intersections. COA may use contractors to install these types of projects instead of City crews, which can add more time.

References and Resources

Pedestrian Crossing Guidelines for Texas

Pedestrian Safety Guide and Countermeasure Selection System (PEDSAFE): Refuge islands

NACTO Urban Bikeway Design Guide: Median Refuge Island

FHWA Proven Safety Countermeasures: Medians and Pedestrian Refuge islands

Example in Austin

Mueller Boulevard and Aldrich Street

CURB EXTENSIONS

Curb extensions are created by extending the curb line into the roadway at a corner or mid-block. They shorten the distance for people walking across the street and improve visibility between people walking and driving. By visually and physically narrowing the roadway, curb extensions also help reduce speeding.

Mid-block curb extension

Easy-to-install materials such as paint, turtle bumps, and flex posts may be used to create curb extensions

Curb extensions may provide space for landscaping

What is the purpose of a curb extension?

- Improves safety by reducing the distance and time required to cross the street.
- Improves visibility between people driving and people walking across the street.
- Provides additional space in constrained locations for installing curb ramps.
- Improves safety at corners by slowing turning motorists through a tighter turning radius.
- Prevents people from parking too close to a crosswalk or from blocking a curb ramp or crosswalk.
- Provides space for seating, public art, bike racks, rain gardens or other public amenities.

How does COA decide where to install a curb extension?

- We consider installing curb extensions at locations that would benefit from improved visibility between people walking and driving, such as at school crosswalks.
- Curb extensions can be installed:
  - at most locations with a legal crosswalk, whether marked or unmarked, provided there is adequate width,
  - on streets with all day on-street parking, and
  - at locations where they do not extend into travel lanes or bike lanes. Before considering installing a curb extension, we check the Austin Bicycle Master Plan to make sure that a new curb extension would not prevent installation of a bike lane in the future.

How much does a curb extension cost?

$$-$$$: Curb extensions typically involve roadway and sidewalk removal and may require replacement / relocation of stormwater drainage inlets. Installing curb extensions as part of larger capital projects such as street repaving, or when using low cost materials such as paint and pre-fabricated platforms (a.k.a. turtle bumps), costs can be reduced.

How long does it take to install a curb extension?

1-2 years: Typically design is completed in 6-12 months and construction is completed by a contractor the following year.

References and Resources

Austin Street Design Guide (DRAFT)
Pedestrian Crossing Guidelines for Texas
Pedestrian Safety Guide and Countermeasure Selection System: Curb Extensions
NACTO Urban Street Design Guide: Curb Extensions
AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities, 2015

Examples in Austin

Aldrich Street and McBee Street
6th Street and Waller Street

CURB RAMPS

Curb ramps are sloped areas located at intersection corners and crossings that connect the street to the sidewalk. They create a barrier-free environment for everyone when crossing streets that have curbs and sidewalks.

Curbs limit universal accessibility and are barriers for transitioning from the sidewalk to the street

A sidewalk retrofitted with a curb ramp and a tactile warning strip

Each corner should have two curb ramps, one for each crossing

What is the purpose of a curb ramp?

- Provides a comfortable transition from the street to the sidewalk for all people, including people with disabilities, kids on bikes, and caretakers pushing strollers.

How does COA decide where to install a new curb ramp?

- To the extent that resources are available, new curb ramp installations are coordinated with sidewalk rehabilitation and applicable street alterations. In addition to street maintenance resurfacing projects performed by Public Works, many other City Departments resurface the streets, which also requires coordinated curb ramp installations.
- We use the City's Sidewalk Master Plan and ADA Transition Plan to select and prioritize curb ramp retrofits. Schools are included as a major component in the Sidewalk Master Plan prioritization model.
- Residents can request curb ramps through the city's 3-1-1 system.

How much does a new curb ramp cost?

$-$$: The Federal Americans with Disabilities Act (ADA) lays out very specific requirements for how curb ramps must be constructed, including level landings and gentle grades. Curb ramps built by COA are built per City Standards, which comply with ADA. When standards are not applicable, curb ramps are field-engineered to follow ADA requirements.

How long does it take to install a curb ramp?

Varies: If a curb ramp is a small scale, stand-alone project, it can be completed within several months. If it is part of a larger resurfacing or reconstruction project, it can take a year or more.

Additional information

The City of Austin has a curb ramp program that routinely installs or upgrades curb ramps throughout the city. Residents can request curb ramps through the city's 3-1-1 system.

References and Resources

2016 Sidewalk Master Plan & ADA Transition Plan

United States Access Board Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG)

MARKED CROSSWALKS

Crosswalks exist at every intersection, whether marked or unmarked. Marked crosswalks are used to raise driver awareness of people crossing the street and to direct people who are walking to the best place to cross the street.

Marked crosswalk at an intersection

Raised crosswalks slow down people driving

Advanced stop bars increase visibility of people crossing the street

Raised Crosswalks

Benefits:

- **Raised crosswalks keep the crosswalk at the same height as the sidewalk.**
- **They act as a speed table and slow people driving as they approach the crosswalk.**
- **They also make people walking more visible to people driving.**

Design Considerations:

- **Raised crosswalks may require modifications to stormwater drainage structures in the street, increasing construction costs.**
- **COA ensures that emergency vehicles and buses aren't affected by a raised crosswalk.**

Example in Austin

Simond Avenue and Aldrich Street

Raised Intersections

- **Raised intersections slow people driving and encourage them to yield to people walking across the street.**
- **Raised intersections can be installed in neighborhood intersections to make the public space more comfortable and inviting for people to walk and bike.**

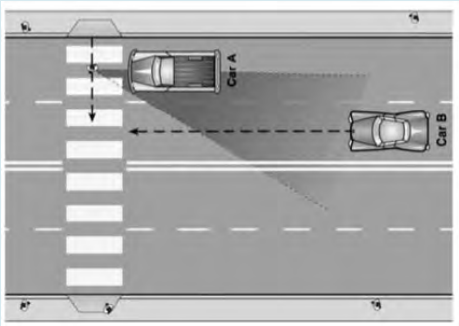
What is the purpose of a marked crosswalk?

- Direct school kids who are walking to the best place to cross the street.
- Indicate the walking route to school.
- People driving are made more aware of where to expect school kids to cross the street.

How does COA decide where to mark a crosswalk?

- Crosswalks will always be marked at signals or PHBs, and at intersections in the Central Business District.
- Crosswalks will typically be marked at stop-controlled locations if there is high vehicular volume, and will be marked if feasible at uncontrolled locations if they satisfy the criteria outlined on this page.
- We consider the following factors when deciding whether to mark a crosswalk at uncontrolled locations:
  - Average hourly traffic over 300 vehicles per hour in any hour
  - Adequate stopping or sight distance
  - More than 20 pedestrian crossings in any one hour of the day, or more than 10 children or elderly persons in any one hour
  - There is no existing marked crosswalk with 300-ft of the location in question
  - The crosswalk is located on a trail, shared-use path, designated safe route to school, or provides direct access to a transit stop, or other pedestrian destinations
  - The crosswalk is located on a High or Very High score on the Pedestrian Safety Priority Network, as determined by the Pedestrian Safety Action Plan
  - Presence of curb ramps
  - Presence of lighting

MARKED CROSSWALKS



Multiple Threat

A multiple threat is a situation where a driver in one lane (car A) stops for a person crossing the street, but the driver in the next lane (car B) doesn't see the person and doesn't stop. If we mark a crosswalk on streets with multiple traffic lanes or high traffic volumes, we consider installing additional safety improvements like crossing beacons, pedestrian signals, refuge islands, curb extensions, or advanced stop lines to minimize the multiple threat.

- Other things we consider include:
  - The total distance a person walking would have to cross. If there is more than one lane of traffic in each direction, then we consider adding additional features to supplement the crosswalk and minimize the potential multiple threat. These treatments could include elements like crossing beacons, pedestrian signals, refuge islands, curb extensions, or advanced stop lines.
  - Volume and speed of people driving. If the street is very busy and speeds are high, then we consider adding additional features to supplement the marked crosswalk.
- If we mark a new crosswalk, we may also install crosswalk signs. If it's a crosswalk mostly used by kids, then we make it a school crosswalk with school crosswalk signs. Otherwise, we use regular crosswalk signs. Flexible in-street bollards may also be used to draw additional attention to the crossing.
- We use a very durable, reflective material to mark crosswalks. Over time, the crosswalk markings may need to be refreshed. We prioritize crosswalk maintenance based on the condition of all the crosswalks in the city. If you're concerned about the condition of a crosswalk, submit a 3-1-1 request.

How long does it take to install a marked crosswalk?

Varies. In some cases, it can take 1-2 months or less to install a new marked crosswalk. If we need to install new curb ramps or other safety improvements in addition to the marked crosswalk, then it can take 1-2 years or longer to complete the work.

How much does a new marked crosswalk cost?

$: If a potential new marked crosswalk location does not require any additional safety treatments, then marking the crosswalk is relatively inexpensive and straightforward.

$$: If we need to install other safety improvements, the cost can be higher.

References and Resources

Pedestrian Crossing Guidelines for Texas

Pedestrian Safety Guide and Countermeasure Selection System: Marked Crosswalks and Enhancements

Pedestrian Safety Guide and Countermeasure Selection System: Raised Pedestrian Crossings

City of Austin Crossing Guidelines and Crossing Decision Tree

RECTANGULAR RAPID FLASHING BEACONS

Rectangular Rapid Flashing Beacons (RRFB) are pedestrian-activated flashing lights on the side of the street that make a crosswalk more visible to people driving and alert them to the presence of a person trying to cross the street.

RRFB with passive detection

RRFB with push button at a school crosswalk

RRFB at a neighborhood bikeway crossing

What is the purpose of a RRFB?

- Makes the presence of a person trying to cross the street known to people driving, since they only flash when someone pushes the button or activates an automatic sensor.
- Studies have shown that people driving are more likely to stop for people trying to cross the street when they activate a rectangular rapid flashing beacon. The highly visible flash of RRFBs is very eye-catching to motorists.

When would COA install a RRFB?

- The Federal Highway Administration (FHWA) provides warrants and guidance for the installation of RRFBs. For more information, see https://mutcd.fhwa.dot.gov/resources/interim_approval/ialistreq.htm#ia11
- COA considers the volume and speed of traffic on the street as well as the total distance a person walking or biking has to cross.
- RRFBs can be installed at crosswalks that have other safety improvements, like a crossing island.

How much does a RRFB cost?

$$: RRFBs are a relatively inexpensive way to improve safety for people crossing the street. The cost to install RRFBs can increase if the crossing doesn't already have a marked crosswalk with curb ramps that meet Federal Americans with Disabilities Act requirements.

How long does it take to install a RRFB?

Varies. If the existing crossing already has marked crosswalks and curb ramps that meet ADA requirements, RRFB can be installed in a few months. If other improvements are needed at the location, it may take 1-2 years.

References and Resources

Interim Approval for Optional Use of RRFBs (FHWA)

Pedestrian Safety Guide and Countermeasure Selection System: RRFB

FHWA Intersection Safety Technologies

PEDESTRIAN HYBRID BEACONS

Pedestrian Hybrid Beacons (PHB) are pedestrian-activated traffic control devices which help pedestrians safely cross major roadways where there is no traffic signal. PHBs are also known as High Intensity Activated Crosswalks, or HAWK signals.

Pedestrian hybrid beacon

Pedestrian hybrid beacon on a divided roadway

Pedestrian hybrid beacon on a downtown street

What is the purpose of a PHB?

- Makes the presence of a person trying to cross the street known to people driving, since the beacon is only activated when someone pushes the button.
- The beacon consists of two red lights above a single yellow light. The beacon head is "dark," or unilluminated, until a pedestrian activates the device. The pedestrian pushes a button that activates the beacon. After displaying brief flashing and then steady yellow intervals, the device displays a steady red indication to drivers and a "WALK" indication to pedestrians, allowing them to cross while traffic is stopped.
- The solid red signal face on a PHB has the same meaning as and should be treated like a traffic signal showing a red light. Once the red light starts flashing it should be treated like a stop sign, where the driver is to stop and make sure it is clear before proceeding.

When does COA install a PHB?

- The City follows the Texas Manual on Uniform Traffic Control Devices guidelines and warrants when studying a location for a PHB.
- We use data to understand the volume and speed of people driving on the street as well as the number of traffic lanes a person has to cross.
- We consider the safety history of the crossing in addition to environmental and community issues at a given location.
- PHB must be located more than 300-ft from existing signals.
- PHB should be reserved for roads with at least three travel lanes.
- PHB can be installed at crosswalks that have other safety improvements, like a crossing island.

How much does a PHB cost?

$$$$: Relatively expensive due to electrical components that often require temporarily removing sidewalk to access underground electrical lines and the reconstruction of any sidewalk removed during construction. The cost can range from $75,000 to $150,000.

How long does it take to install a PHB?

1-2 years: Traffic studies and signal design must be completed before installation can begin

References and Resources

City of Austin: Pedestrian Hybrid Beacons

Pedestrian Safety Guide and Countermeasure Selection System: Pedestrian Hybrid Beacon

FHWA Intersection Safety Technologies

Texas Manual on Uniform Traffic Control Devices: Chapter 4

Examples in Austin

Guadalupe Street and 31st Street

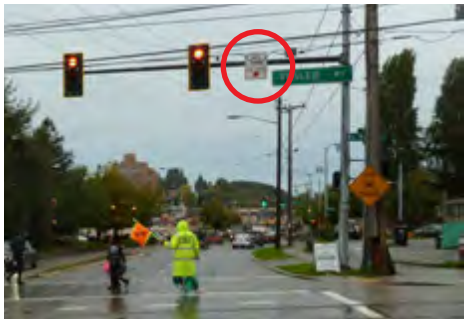
Mairo Street and S 1st Street

TRAFFIC SIGNALS

Traffic signals coordinate the flow of traffic at intersections, including people driving, walking, and biking.

Bicycle signal detection

Reflective back plate makes the signal more visible



"No Turn on Red" sign

What is the purpose of a traffic signal?

- Controls the flow of traffic and provides coordinated movement of people driving, walking, and biking.
- Provides a safer, more comfortable environment for people walking and biking to cross the street or streets with high traffic volumes or speeds. People driving have to completely stop at red signals when it's the pedestrian's or bicyclist's turn to cross the street.
- When there is a steady stream of traffic, it can be difficult for people walking or biking to find a gap in traffic to cross the street. Traffic signals create gaps in traffic that allow people biking or walking to cross the street.

How does COA decide where to install a traffic signal?

- We use the Texas Manual on Uniform Traffic Control Devices (TMUTCD) to determine if the safety and traffic flow at an intersection would be improved by installing a new traffic signal. The TMUTCD outlines minimum thresholds for vehicle and pedestrian traffic and collisions that should be considered before installing a traffic signal.
- We conduct a traffic engineering study to determine if a location meets the TMUTCD thresholds, further analyze traffic patterns, and conclude whether a new signal would improve safety or the flow of traffic.
- At some intersections near schools, we can adjust the signal timing and flashing pattern during school arrival and dismissal hours to create fewer conflicts between people walking and people driving.
- Providing a dedicated phase for people to cross the street followed by a separate phase for left turning vehicles reduces potential conflicts between pedestrians and motorists. By prohibiting left turns during the WALK phase, pedestrians in the crosswalk do not have to worry about turning motorists yielding to them.
- At some intersections, including some locations in downtown, people driving aren't allowed to make a right turn when the traffic signal is red. This design makes it safer for people walking across the street by reducing the number of potential conflicts with people turning right on red.
- Traffic signals are more convenient for people walking when the WALK sign is displayed automatically when it's their turn to cross the street, a strategy referred to as automatic recall. Signals in areas of Austin with high pedestrian volumes are programed to show the walk signal automatically. In situations with very low pedestrian volumes, this design may not be appropriate, so many traffic signals have push buttons for people to activate the WALK phase.
- At intersections that are frequently used by people on bikes, COA has installed equipment to detect when a bicyclist is present. This equipment tells the signal to give the bicyclist a green light. This detection can be in the pavement or on the signal pole/arm. COA has recently installed bike signals at 12 intersections throughout the city.

TRAFFIC SIGNALS

How much does a traffic signal cost?

$$$$: Installing a new traffic signal is a very costly safety improvement. When possible, we try to find more cost-effective safety improvements that achieve the same safety objectives so that we achieve more with limited city resources.

How long does it take to install a traffic signal?

2-4 years: We construct a limited number of new signals per year because they are so costly. They take a long time to design and construct because they are complex systems.

4+ years: If the new signal is on a state route, then the City coordinates with the Texas Department of Transportation, which adds time to the process.

Pedestrian Countdown Signals and Leading Pedestrian Intervals (LPI)

A pedestrian countdown signal shows the number of seconds remaining before the WALK phase is over. This feature helps people walking know how much time they have remaining to cross the street and can help reduce the number of people in the crosswalk near the end of the WALK phase. It's safest for people walking to be out of the crosswalk when the signal turns green for people driving in the opposite direction.

A Leading Pedestrian Interval (LPI) gives people walking the WALK indication 3-5 seconds before people driving in the same direction get a green signal. Because people walking are already in the crosswalk when people driving begin to turn left or right, people driving are more likely to yield to people walking.

What is the purpose of an LPI?

- The LPI signal timing technique allows pedestrians to establish themselves in the intersection in front of turning vehicles, increasing visibility between all modes.

How does COA decide where to implement an LPI?

- The LPI can be used at intersections with high volumes of pedestrians and conflicting turning vehicles and at locations with a large population of elderly or school children who tend to walk more slowly.
- The LPI should be at least three seconds to allow pedestrians to cross at least one lane of traffic to establish their position ahead of turning traffic.

How much do LPIs cost?

$: An LPI is typically added where there is already a signal, so the cost is minimal.

How long does it take to install an LPI?

A few months. An LPI is typically added where there is already a signal, so this reflects the time to redesign the signal cycle and time for a technician to adjust it at the control center or in the field.

With a Leading Pedestrian Interval, motorists have a red signal for the first 3-5 seconds of the WALK phase.

References and Resources

City of Austin: Traffic Signals

Texas Manual on Uniform Traffic Control Devices, Part 4

Pedestrian Safety Guide and Countermeasure Selection System: **Traffic Signals**

Federal Highway Administration Proven Safety Countermeasures

Bike Signal Examples in Austin

4th Street and Red River Street

Rio Grande Street and W 24th Street

North Lamar Boulevard and Morrow Street

STOP SIGNS

Stop signs are a traffic control device used at intersections with three or more approaches, and where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law.

Stop sign with stop line at an all-way stop

Stop sign oriented to traffic crossing a neighborhood bikeway

Stop sign at intersection between a neighborhood street and a busier street

What is the purpose of a stop sign?

- Controls traffic movements between people driving, walking, and biking by assigning right of way at an intersection.
- May be used to control one direction of traffic while allowing the other direction to flow freely or can be used to control all directions of traffic.

How does COA decide where to install a stop sign?

- We use the Texas Manual on Uniform Traffic Control Devices (TMUTCD) to determine if the safety of an intersection would be improved by controlling one or more directions of traffic with a stop sign. The TMUTCD outlines certain minimum thresholds of motorist, pedestrian, and bicyclist traffic and collisions that should be considered before installing a stop sign.
- If the volumes of people driving, walking, and biking at each direction of the intersection are approximately equal and meet the minimum thresholds, we will consider installing stop signs for all directions of travel.
- If the volumes of people driving, walking, and biking from each direction are unequal, the street with the lower volume of people traveling should be stop-controlled unless there are reasons to provide an advantage to one direction of travel (e.g. neighborhood bikeways).
- Other things we consider include:
  - direction of school walking routes,
  - visibility and sight distance on different sides of the intersection, and
  - providing advantage to one direction of travel over another, e.g. neighborhood bikeway or major trail connection.
- Stop signs may be accompanied by stop lines, which indicate to people driving where to stop their car before the intersection.

How much does a stop sign cost?

$: Stops signs are a relatively low-cost and effective way of controlling traffic at intersections.

How long does it take to install a stop sign?

<1 year: If we determine that an intersection should have one or more new stop signs, they can be installed relatively quickly.

References and Resources

Texas Manual for Uniform Traffic Control Devices
AASHTO Guide for the Development of Bicycle Facilities

SIDEWALKS

Sidewalks are the building blocks of the pedestrian network. There are currently more than 2,400 miles of sidewalks in Austin, yet many areas in the city do not have sidewalks at all. Sidewalks provide the greatest benefit to people when they are wide enough for two people to walk side-by-side, maintained in good condition with few bumps or cracks, kept clear of debris and overgrowing plants, and built with curbs.

Severe cracking creates uneven and hazardous walking surfaces

New sidewalk remains level across driveway

Alternative sidewalk design

What is the purpose of a sidewalk?

- Improves safety and comfort of people walking by separating pedestrians from people moving faster on bikes or in cars.
- Provides a dedicated space away from car traffic for children to walk, play, and learn to ride a bike.

How does COA decide where to build a new sidewalk?

- The City's Sidewalk Master Plan and ADA Transition Plan Update provides an objective mechanism for prioritizing new sidewalk construction and existing sidewalk repair and rehabilitation projects.
- Developers often have to build new sidewalks or repair existing sidewalks with new development.
- Sidewalk prioritization is determined by the following criteria:
  - Where people need and want to walk, not only today but in the future
  - Equity factors, like where people with lower incomes or low-car households live
  - Whether adjacent streets provide comfortable, continuous sidewalks
  - The number of students served
- We prioritize providing a sidewalk on at least one side of residential streets. School routes may be locations where sidewalks should be installed on both sides of residential streets to provide for direct access from homes to school, as well as to areas used for off-site drop-off and pick-up.
- Along existing sidewalks, we look for opportunities to remove barriers such as light poles or other obstructions, aiming to maintain a 4-ft clear zone. We also look for opportunities to limit or narrow driveways (a.k.a. curb cuts), which can create conflicts between people walking and people driving.

How much does a new sidewalk cost?

$$-$$$$: Building new sidewalks can be an expensive and challenging engineering project. We often must coordinate with nearby property owners. In addition, driveways connecting to private property may need to be redesigned and rebuilt, encroachments of private property onto public property removed, and new stormwater infrastructure constructed.

How long does it take to get a new sidewalk installed?

1-2 Years: Design and outreach must be completed before construction can begin.

Additional Information

When building conventional sidewalks is not feasible, other strategies may be considered for creating safer walking routes to school, such as Shared Streets, reallocating road space to create dedicated walking space, and alternative surfacing materials.

References and Resources

2016 Sidewalk Master Plan & ADA Transition Plan Update

United States Access Board Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG)

LIGHTING

Lighting is an essential element in street design. It is used to increase visibility and safety for people walking, biking, and driving at night and during dawn/twilight hours. Guidelines for placement, size, and wattage of lighting is a key element of creating pedestrian-friendly streets.

Well-lit crossing at night

Pedestrian scale lighting along a shared use path

Cobra style lights illuminate the street, but not the pedestrian realm

What is the purpose of lighting?

- Increases visibility and feelings of safety on a street, at an intersection/crosswalk, in a neighborhood, or along a trail.
- Creates a welcoming public realm and promotes active transportation options at nightime and winter when daylight hours are shorter.
- Highlights certain locations and elements in a neighborhood as focal points or landmarks which provides wayfinding support.
- Can have a traffic calming effect when pedestrian scale lighting is used.

How does COA decide where to install a lighting element?

- COA follows lighting recommendations included in the Illuminating Engineering Society Of North America, Roadway Lighting. Any applications are to meet or exceed these recommendations.
- We aim to create uniformity of lighting on the street by using lower fixture heights and greater fixture density.
- We place lighting fixtures in a way that minimizes clutter and takes other streetscape elements into consideration. To acheive these goals COA has identified the following guidelines:
  - Pedestrian lighting is placed at a 12-ft mounting height
  - Placed at 88-ft on center from each other
  - We use subject lighting, which is directional and can be aimed at important crossings (such as primary school crossings)
- In addition to these guidelines, lighting should be studied on a case by case basis starting with a photometric analysis, and designed to match the character of the surrounding area.

How much does lighting cost?

$$: Lighting costs can vary depending on the type of fixtures and poles. COA specifies the types of fixtures to be used along public streets and bike paths.

How long does it take to install lighting?

Few months to 1 year: This can vary depending on whether the installation is part of a larger streetscape project.

BIKE FACILITIES

Bike facilities are routes or road design features made for people on bikes. On-street bike facilities include bike lanes, buffered bike lanes, protected bike lanes, and intersection treatments such as protected intersection designs or green pavement markings.

Protected two-way bike lane

Bike markings

Bike box

What is the purpose of a bike facility?

- Encourages more people to feel comfortable riding a bike to different locations, including to school.
- Provides safety and predictability by separating people biking from people driving.
- Makes biking a viable transportation option with many benefits including avoiding traffic congestion, reducing parking costs, decreasing the time spent commuting, and helping reduce emissions that contribute to climate change.
- Providing safe and comfortable ways for children to bicycle to school is important because it extends the distance that a child can realistically arrive to school using active transportation. While a typical walk-shed is only 1/2 mile around a school, a bike-shed can be up to 2 miles or more, depending on the student's age.

How does COA decide where to install a bike facility?

- The Austin Bicycle Master Plan and implementation planning prioritizes the locations where bikeways are built every year. Current funding levels, traffic and safety data, and leveraging opportunities are all considered to decide when and where bike facilities are built.
- The Austin Bicycle Master Plan's main network recommendations are based on a street's speed, volume, and connectivity. The bicycle plan also recommends bicycle facility connections to local destinations, including schools, that are outside of the main network but important due to both the traffic intensity during pick-up and drop-off and safety needs of kids.
- Bike lanes that are more separated from car traffic, like protected bike lanes with additional intersection treatments, are more appropriate and comfortable for kids biking to school.

How much does a bike facility cost?

$-$$$$: The cost of a bike facility depends on the type. Simpler projects cost much less than protected bike lanes.

How long does it take to install a bike facility?

Varies: Installing a bike facility depends significantly on the length of the route and scope of the project. Timelines typically range from eight months to a year for the planning, design, and construction phases, but can take longer, especially if there are changes to parking and a public process must be initiated. In addition, many projects include a data collection period up to one year after installation to evaluate the performance of the facility.

Examples in Austin

Berkman Drive

4th Street and Red River Street

References and Resources

City of Austin Bicycle Master Plan

NACTO Urban Bikeway Design Guide

AASHTO Guide for the Development of Bicycle Facilities, 2012

BIKESAFE Bicycle Countermeasure Selection System

NCHRP Guidelines for Analysis of Investments in Bicycle Facilities

BIKE LANES

A bike lane is defined as a portion of the roadway that has been designated by striping, signage, and pavement markings for exclusive use by bicyclists.

What is the purpose of a bike lane?

- Enable bicyclists to ride at their preferred speed without interference from traffic.
- Facilitate more predictable behavior and interactions between bicyclists and motorists.

How does COA decide where to install a bike lane?

- The installation of a bike lane requires an analysis of traffic volumes and speeds, as well as motorist behaviors.
- Bike lanes are typically found on both sides of a two-way street and one side of a one-way street.
- Bike lanes typically run in the same direction as traffic; sometimes they are installed in a "contra-flow" direction on low-traffic one-way corridors when it is necessary to maintain bicycle connectivity.
- Bike lanes should facilitate access to schools, public transportation, shopping centers, parks, and residential areas.
- Bike lanes are best suited for roadways with:
  - Speeds less than 30 mph and traffic volumes of 3,000 – 9,999 vehicles per day, or
  - Speeds of 31-40 mph and traffic volumes less than 3,000 vehicles per day. At higher speeds and volumes, protected bicycle lanes are preferred.
- On streets with constrained street widths or right-of-ways bicycle lanes may be installed outside of these recommendations
- In Austin, the minimum bike lane width is 5-ft. The preferred bike lane width is wider and can be 6-ft to 8-ft. If there is space to provide a bicycle lane greater than 7-ft, consider a buffered bicycle lane or a protected bicycle lane.
- Other factors affecting the placement of a bike lane include on-street parking, parking frequency, delivery activity, multiple travel lanes, transit service, and route continuity such as completing gaps in off-street urban trails.
- We also consider buffered bike lanes in locations where greater separation is desired between people driving and biking. Buffers consist of diagonal pavement markings that are at least 2-ft wide, located between the travel lane and bike lane.

How much do bike lanes cost?

$: Implementation of bike lanes can take place as part of roadway restriping projects. Roadway repaving is typically not required unless current conditions do not allow for easy bicycling.

How long do they take to install?

>1 year: Installation of bike lanes requires analysis of existing traffic conditions and identification of how the bike lane will augment and improve the existing or future bicycle network. Design of bike lanes typically takes 6 months to a year, followed by implementation.

PROTECTED BIKE LANES

A protected bike lane is an exclusive bicycle facility that provides a greater level of separation and comfort for bike riders, compared to a conventional bike lane. A protected bike lane includes physical, vertical separation from motor vehicle traffic. This physical separation may be in the form of a flex post, bollard, or curb. In situations where on-street parking is allowed, separated bike lanes are sometimes located on the curb side of parking.

What is the purpose of a protected bike lane?

- Provide a higher level of comfort and safety for users due to the physical separation.
- Attract users of all ages and abilities.
- Data from surveys suggest that if the City of Austin were able to implement an all ages and abilities bicycle network with facilities such as separated bike lanes, then 55 to 60% of the population say they would feel safe enough to bicycle on the roadways.

How does COA decide where to implement a protected bike lane?

- Protected bike lanes require more on-street right-of-way width than conventional bike lanes
- Protected bike lanes are generally recommended for roadways with:
  - Average daily traffic volumes of 10,000+
  - 41-50 mph and average daily traffic volumes of 3,000-9,999+
  - Over 50 mph and average daily traffic volumes of less than 3,000
- Protected bike lanes may be considered below these threshold levels as a treatment along bicycle routes to school since young children may need more separation than adults to feel comfortable bicycling on the street.
- Other factors affecting the placement of a protected bike lane include curbside activity, on-street double parking, parking frequency, delivery activity, multiple travel lanes, transit service, and route continuity such as completing gaps in off-street urban trails.
- Generally, the preferred clear width of a one-way protected bike lane is 7-ft, not including the width of physical separation. For a two-way facility, the typical clear width is 10-ft.

How much does a protected bike lane cost?

$$-$$$: Costs can vary. Protected bike lanes can be implemented as part of routine resurfacing projects using low-cost materials, or as part of reconstruction projects using curbing and grade separation.

How long does a protected bike lane take to install?

1-3 years. Like conventional bike lanes, separated bike lanes require traffic analysis and identification of any spatial constraints. Depending on the separation type and material chosen, design of separated bike lanes can take 6 to 18 months, followed by implementation.

NEIGHBORHOOD BIKEWAYS

Neighborhood Bikeways are streets that have slow speeds and low volumes of people driving, in order for people of all ages and abilities to feel comfortable biking on the street.

Residential streets are great for Neighborhood Bikeways

Neighborhood Bikeway

Intersection design is an important consideration at arterial street crossings

What is the purpose of a Neighborhood Bikeway?

- Encourages more people to walk and bike by keeping car volumes and speeds low and by providing high quality crossing treatments at busy streets.
- Provides safer, more comfortable routes to school for kids on foot or on bikes.
- Provides better connections for all ages and abilities to bike to other places in their neighborhood, like parks, libraries, and community centers.

How does COA decide where to install a Neighborhood Bikeway?

- The Austin Bicycle Master Plan prioritizes the general location where Neighborhood Bikeways are built. Current funding levels, traffic and safety data, and leveraging opportunities are all considered when deciding where Neighborhood Bikeways are implemented.
- Some elements we consider when selecting a specific route include:
  - Residential streets that connect people to neighborhood destinations such as schools, parks, shops and restaurants, among others,
  - Streets with low volumes of people driving and slow speeds. An ideal street for a Neighborhood Bikeway has fewer than 1,500 cars per day and speeds close to 20 MPH,
  - Relatively flat streets that are comfortable for people to walk or bike,
  - How to make the most of existing infrastructure to help people cross busy streets, such as traffic signals at busy intersections, and
  - New safety improvements at intersections of busy streets, such as refuge islands and crossing beacons.
- Typical elements of a Neighborhood Bikeway may include:
  - Speed limit of 20 MPH,
  - Signs and pavement markings to help people find their way,
  - Some combination of curb extensions, crossing beacons, crosswalks, refuge islands, or traffic signals at busy intersections,
  - Traffic diversion or channelization,
  - Right of way priority.

NEIGHBORHOOD BIKEWAYS

Refuge islands help Neighborhood Bikeway users cross busier streets

Signage and pavement markings help direct Neighborhood Bikeway users to destinations

How much does a Neighborhood Bikeway cost?

$-$$$: The cost to build a new Neighborhood Bikeway can vary based on how much work needs to be done to make crossings of busy streets safer.

How long does it take to install a Neighborhood Bikeway?

>1 year: Once a new Neighborhood Bikeway project has been funded, it can take one to two years to install. During the early phases of a Neighborhood Bikeway project, we collect and analyze traffic data to understand existing conditions. We gather public feedback through community outreach, which helps us select the most promising route. Once a route is chosen, the design phase and some pre-construction work may occur. Every Neighborhood Bikeway design is unique depending on local characteristics.

References and Resources

Austin Bicycle Master Plan
Local Area Traffic Management Program
NACTO Urban Bikeway Design Guide

SCHOOL ZONES

School Zones are designated on the immediate blocks around a school with reduced speed limits and pedestrian crossing signage to facilitate safer crossings for children walking and biking to school.

Trained crossing guards improve school zone safety


School crossing sign


In road signage reinforces pedestrian priority at school crossings

What is the purpose of a school zone?

- The best way to achieve a safe and low-stress school zone is through the uniform application of policies, practices, and standards developed through engineering judgement or studies.

What treatments define a school zone?

- Flashing school zone signs are used to reduce speed limits during school arrival and dismissal hours.
- School crossing signs should be used on key crossings located within the school zone. Other enhanced crossing treatments may be appropriate, depending on the volumes of pedestrian and motor vehicle traffic.
- Signs may include School Crossing, Speed Limit, School Bus Stop.
- Beacons may be used to supplement signage.

What other treatments should also be considered to improve safety in a school zone?

- Adequate sidewalks and crosswalk markings.
- Crossing guards with proper equipment and training.
- Traffic control devices including pedestrian activated signals.

How does COA decide where to implement a school zone?

- The beginning point of a reduced school speed limit zone should be at least 200-ft in advance of the school grounds, a school crossing, or other school related activities; however, this 200-ft distance should be increased if the reduced school speed limit is 30 mph or higher.
- Signage and pavement markings are not frequently used on neighborhood streets, though we consider the speed of traffic and anticipated number of students walking along the route. This also applies if the approach is a state highway or major arterial.
- Additional information on school zone signage and markings can be found in Part 7 of the TMUTCD.

How much do school zone improvements cost?

$: Pavement markings and signage are relatively inexpensive. Costs increase if sidewalk construction, road alterations, and traffic signals are also needed.

References and Resources

Texas MUTCD Traffic Control for School Areas
New Jersey School Zone Design Guide
Arizona Traffic Safety for School Zones Manual

DYNAMIC SPEED DISPLAY DEVICES

Dynamic Speed Display Devices (DSDD), also known as speed feedback signs, use radar to detect and display the speed of people driving. These signs help slow down people driving by reminding them of their speed compared to the posted speed limit.

Speed feedback sign displays a driver's speed compared to the speed limit

Solar-powered speed radar sign

Speed feedback signs may also flash a "slow down" message

What is the purpose of a dynamic speed display device?

- Raises awareness of the speed a person is driving and encourages them to slow down if they are driving above the speed limit.

How does COA decide where to install a dynamic speed display device?

- The city uses the following criteria when installing a DSDD:
  - The street must be owned and maintained by the City of Austin,
  - The street must provide access to abutting residential properties and/or places of community interest such as parks, libraries, community centers, educational institutions, etc.
  - The street must be a residential street or a minor collector street with no more than one moving lane of traffic in each direction,
  - The street must have a speed limit of 35 miles per hour or less, and
  - The DSDD cannot be installed in a school zone.

How much does a dynamic speed display device sign cost?

$-$$: Both portable and fixed-location DSDD units are available. Portable units are typically placed at a location on a roadway for a relatively short time period and then relocated to a different location. Fixed-location units are used for the long-term display of vehicle speeds at a given location.

How long does it take to install a dynamic speed display device?

The Austin Transportation Department has a Rotating DSDD Pilot Program with six portable DSDD units. Each DSDD unit is left in place for four weeks at a time, during which it collects real-time data on vehicular speeds and volumes. The locations for DSDD are determined on a first-come, first-serve basis based on citizen requests.

References and Resources

ATD Rotating DSDD Pilot Program

Example in Austin

Guadalupe Street and 23rd Street

LANE RECONFIGURATION

On multi-lane streets, a lane reconfiguration can improve safety for all roadway users. Modification of on-street parking can also give flexibility to constrained streets. Depending on the needs of the street, which are determined by careful analysis and a strong public process, general purpose lanes, parking or turn lanes may be repurposed for other uses such as wider sidewalks, street trees, bike lanes, or more efficient transit.

Street before lane reconfiguration

Street after lane reconfiguration

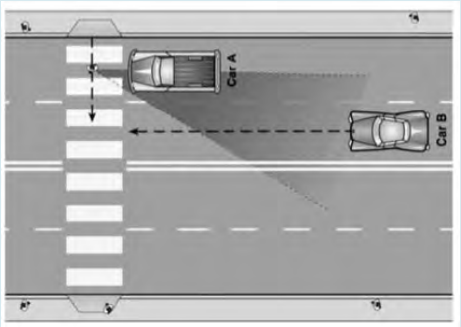
Street after lane reconfiguration

What is the purpose of a lane reconfiguration?

- Makes it easier and safer for people to cross busy streets by reducing the number of traffic lanes a person has to cross. When people cross streets with more than one lane in each direction they encounter a 'multiple threat.'
- Reallocate space on the street to widen sidewalks, plant street trees, add curb extensions, or install protected bike lanes.
- Slows people driving, which makes the street safer for everyone. When there's one lane in each direction, a person driving can only go as fast as the person in front of them.
- Makes it safer for people driving to make a left turn when a center turn lane is added, and a single lane of traffic helps manage drivers cutting in and out of lanes, which helps reduce collisions.
- Narrowing the width of travel lanes can also slow people driving and create space on the street to make it safer and more comfortable for people walking and biking.

How does COA decide where to do a lane reconfiguration?

- When a street is being resurfaced or reconstructed, there is an opportunity to change the configuration of lanes on the street. COA evaluates traffic conditions and crash records to identify whether a road or lane diet is needed and if parking can be modified.
- Streets that are good candidates for lane reconfigurations typically have lower volumes than would be expected for a street with the existing configuration. A lane reconfiguration may be considered for streets with under 25,000 vehicles per day.
- For all lane reconfiguration projects, the flow of traffic is carefully analyzed to make sure a lane reduction wouldn't cause back-ups at traffic signals, and public process is conducted to discuss tradeoffs with the public.
- For parking lane reconfigurations, parking use and supply is carefully studied and inform the proposed designs that are vetted through a public process before moving forward.



Multiple Threat

A multiple threat is a situation where a driver in one lane (car A) stops for a person crossing the street, but the driver in the next lane (car B) doesn't see the person and doesn't stop. If we mark a crosswalk across more than two lanes of traffic, we consider installing additional safety improvements like crossing beacons, pedestrian signals, refuge islands, curb extensions, or advanced stop lines to minimize the multiple threat.

LANE RECONFIGURATION

A three-lane to two-lane reconfiguration

Lane reconfiguration

Center turn lane narrowed to provide space for bike lanes

How much does a lane reconfiguration cost?

$-$$$$: The cost of a lane reconfiguration is highly variable; it may involve removing the lane lines from the street and repainting new lane lines, which is often done at night or on weekends to minimize traffic disruptions. When a lane reduction is done as part of a larger project to resurface or reconstruct a street, it can be accomplished for relatively low costs.

How long does it take to do a lane reduction?

>1 year: We generally host one or two open houses to gather community input and influence design decisions in the first year, and construction typically follows the year after.

References and Resources

Austin Street Design Guide (DRAFT)

Redesigning the Street: A Report on Right Sizing Projects in Austin, TX 1999-2014

Pedestrian Safety Guide and Countermeasure Selection System: Lane Reduction (Road Diet)

FHWA Proven Safety Countermeasures: Road Diet (Roadway Reconfiguration

Examples in Austin

Duval Road from West Cow Path to Aspendale

Shoal Creek Blvd from Steck to 183

51st Street from Berkman to Manor

SPEED CUSHIONS

Speed cushions are traffic calming features that encourage people driving to slow down. Speed cushions are raised areas that extend across the street with wheel cutouts to allow large vehicles, like buses or emergency vehicles, to pass through unaffected.

Speed cushion

Speed cushions allow for larger vehicles such as fire trucks to pass through unimpeded

Speed cushions installed on hills may include a cut for downhill bicyclists

What is the purpose of speed cushions?

- Slow people driving to make streets safer and more comfortable for people walking and biking.
- Speed cushions are usually installed on neighborhood streets.

How does COA decide where to install speed cushions?

- Any request for speed cushions has to go through the Local Area Traffic Management (LATM) program which is a request-based program that installs speed mitigating devices, such as speed cushions, on neighborhood streets.
- ATD ranks requests based on speed data, neighborhood support, and geometric and environmental factors.
- Once accepted into the program, the request competes for funding with all other LATM requests.
- Speed cushions may also be funded through SRTS if identified in the SRTS Infrastructure Plan.

How much does a speed cushion cost?

$: Speed humps and cushions are a low-cost way to slow people driving.

How long does it take to install a speed cushion?

1-2 years: Priority streets with high speeds are usually identified one year and construction happens the next year.

References and Resources

Local Area Traffic Management Program

Examples can be found throughout Austin

TRAFFIC CIRCLES

Traffic circles guide motor vehicles through an intersection in one direction around a central island. They are usually installed at intersections of neighborhood streets. Traffic circles are very effective at slowing people driving and reducing collisions. When installed in a series along a corridor, they are even more effective at reducing motor vehicle speeds along the length of the corridor.

The horizontal deflection of chicanes and traffic circles force drivers to slow down

Traffic circles create more comfortable conditions for people walking and biking

Traffic circle at a school crossing

What is the purpose of a traffic circle?

- Slows people driving and reduces the likelihood of collisions to make neighborhood streets safer and more comfortable for people walking, biking, and driving.
- Provides an opportunity to beautify a neighborhood street by adding trees, plants, and flowers.

How does COA decide where to install a traffic circle?

- COA is currently working with the Austin Fire Department to address their concerns about neighborhood traffic circles. The use of this treatment will be carefully reviewed.
- COA uses data to understand the volume and speeds of people driving on a street and how many collisions have happened at that location in recent years.
- We may consider installing a traffic circle at intersections that have had five or more collisions in the past three years.
- Before we design and construct a traffic circle, we identify neighbors who will volunteer to maintain the plants in the traffic circle.

How much does a traffic circle cost?

$$-$$$: Traffic circles are lower in cost to install if no other curbline changes in the intersection are needed. If curbs must be adjusted, and there are changes to drainage structures and curb ramps, the cost will be higher.

How long does it take to install a traffic circle?

1-2 years: Priority intersections are usually identified one year and construction happens the next year.

References and Resources

Local Area Traffic Management Program

Examples can be found throughout Austin

Rio Grande Street and 8th Street

Rainey Street and River Street

URBAN TRAILS

Urban trails, also known as a shared or multi-use paths, create active transportation corridors that provide expanded travel choices. Urban trails can be built independent from the road network or alongside a roadway where traffic volumes and speeds are too high, or where there is not sufficient space for bicycle lanes in the existing street space.

Urban trail in Alexandria, VA

Urban trail in San Antonio, TX

Lance Armstrong Bikeway, Austin, TX

What is the purpose of an urban trail?

- Serves both transportation and recreation users,
- Can accommodate two-way pedestrian and bicycle use,
- May include connections to the on-street bicycle and sidewalk network
- Should be aesthetically appealing and feel safe to use, and
- May provide opportunities for economic development along the trail corridor.

How does COA decide where to install an urban trail?

- Prioritization criteria based on proximity to destinations, residential populations, connectivity, and community support all contribute to the trail-siting process.
- We look for potential integration of trails in proposed development projects, as well as outreach and education opportunities for local bicycle, pedestrian, and environmental advocacy groups.
- We recommend a 12 ft-wide hard surface path, but may need to narrow the trail under constrained circumstances. In areas where a higher volume of both pedestrians and bicyclists are anticipated, we consider providing separate facilities or a wider path (up to 18-ft) with designated space for each mode.
- **Sometimes, we will work with private property owners to install a new gate between a neighborhood/apartment complex and a public street, particularly if that connection would shorten the route for people walking to school or similar destinations. This new connection eliminates a barrier and serves as a type of urban trail, linking homes with public streets, sidewalks, and local destinations.**

How much does an urban trail cost?

$$$: Costs for urban trails vary, but are typically among the most expensive types of bicycle and pedestrian facilities. Components of urban trail design and construction include:

- Right-of-way
- Surface material
- Lighting
- Landscaping
- Terrain grading
- Retaining walls
- Pavement markings
- Fencing/rails
- Multi-use bridges
- Maps and signage
- Trail furniture

How long does it take to install an urban trail?

Varies. Planning, public input, design, engineering, and construction are all components of the installation process. Many urban trails will take 5 to 10 years to be fully implemented. However, shorter segments that close gaps in the network or eliminate barriers can often be installed in a shorter timeframe.

References and Resources

City of Austin Bicycle Master Plan
Austin Urban Trails Master Plan
NACTO Urban Bikeway Design Guide

BICYCLE PARKING

Bicycle parking can be a single rack or a group of racks and can be installed on school grounds, on the sidewalk, or in the street.

Bike racks on the sidewalk

Bike corral

Covered bike parking

What is the purpose of bicycle parking near schools?

- Gives students and school staff a place to secure their bike during the day while they're at school.
- Encourages students and school staff to ride their bikes to school.
- When located near the main entrance, bike parking makes it inviting for people who get to school by bike.
- Sends the message that the school encourages bicycling.

How does COA decide where to install bike parking?

- We want to make sure that every school has enough bike parking to meet the day-to-day needs of students and staff.
- When deciding where to install bike racks, COA considers locations where the racks are:
  - noticeable immediately when arriving at school,
  - visible from nearby windows and the street to make sure bikes are secure,
  - sheltered from the elements, and
  - publicly accessible.
- We install bike racks that allow one or both wheels to be locked to prevent bikes from falling down and that can fit different types and sizes of bicycles, like small children's bikes or long family bikes.

How much does bike parking cost?

$: Bike parking is relatively inexpensive.

Bike corrals

Sometimes the best place to install bike parking is on the street. A bike corral can be installed in place of on-street parking and can provide parking for 6 to 12 bikes in place of one car.

A corral can also be placed in locations where parking isn't allowed, like 30 feet from an intersection or marked crosswalk. This helps make the crosswalk safer by ensuring no one parks their car illegally and blocks visibility of the crosswalk or intersection, while also adding parking spaces for people on bikes.

How long does it take to install bike parking?

< 1 year: We can generally install new bike parking at a school in less than one year.

Examples in Austin

Highland Park Elementary School

Adam L Chapa Sr Street at E Cesar Chavez Street

References and Resources

Austin Bicycle Master Plan

Safe Routes to School National Partnership

Association of Pedestrian and Bicycle Professionals: Bicycle Parking Guidelines

CITY OF AUSTIN PUBLIC WORKS

SAFE ROUTES
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