



INFRASTRUCTURE REPORT CITY COUNCIL DISTRICT 2





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.

Information contained in this document is for planning purposes and should not be used for final design of any project. All results, recommendations, concept drawings, cost opinions, and commentary contained herein are based on limited data and information and on existing conditions that are subject to change. Further analysis and engineering design are necessary prior to implementing any of the recommendations contained herein.



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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 2, 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 2 took place the week of February 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 Houston Elementary



Walk Audit at Langford Elementary

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

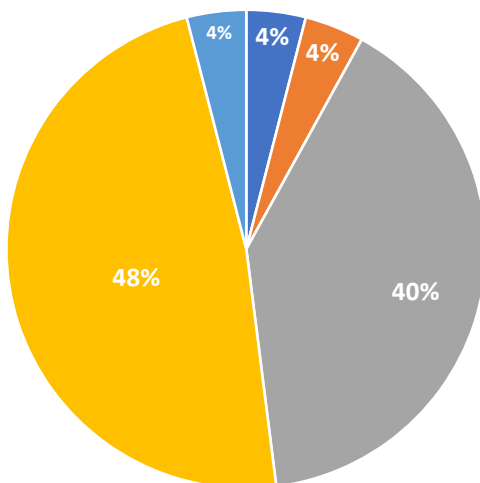
In addition to participating in the school audits, members of the public were invited to provide input via an online map and public open houses. Flyers explaining the project and promoting these opportunities were developed in English and Spanish, distributed to school contacts, and published on the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

Demographics

- White
- Black/African American
- American Indian and Alaska Native
- Hispanic/Latho
- Other

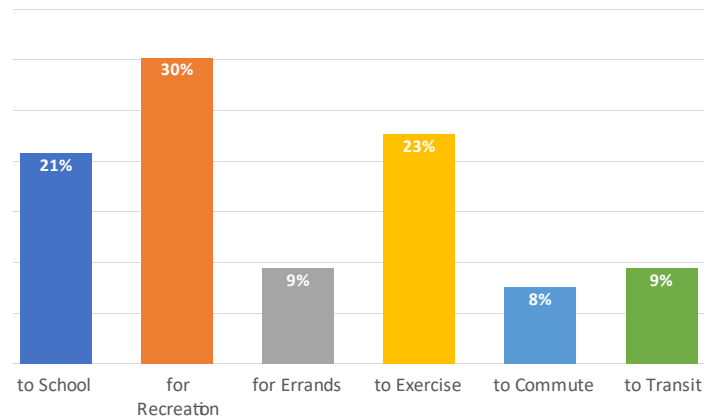


Demographics of Online Map Respondents, District 2

Summary of Responses

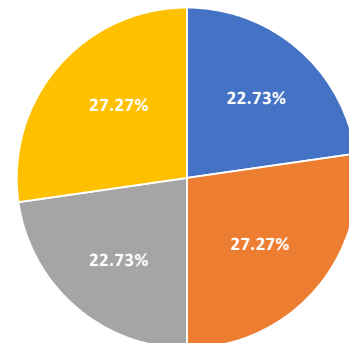
Before adding their comments to the map, users were asked to complete a short survey to help understand their background, walking and bicycling habits, and place of residence. The following is a summary of demographic characteristics from respondents from District 2, as well as a map that shows the concentrations of comments made on the map.

Walking Habits

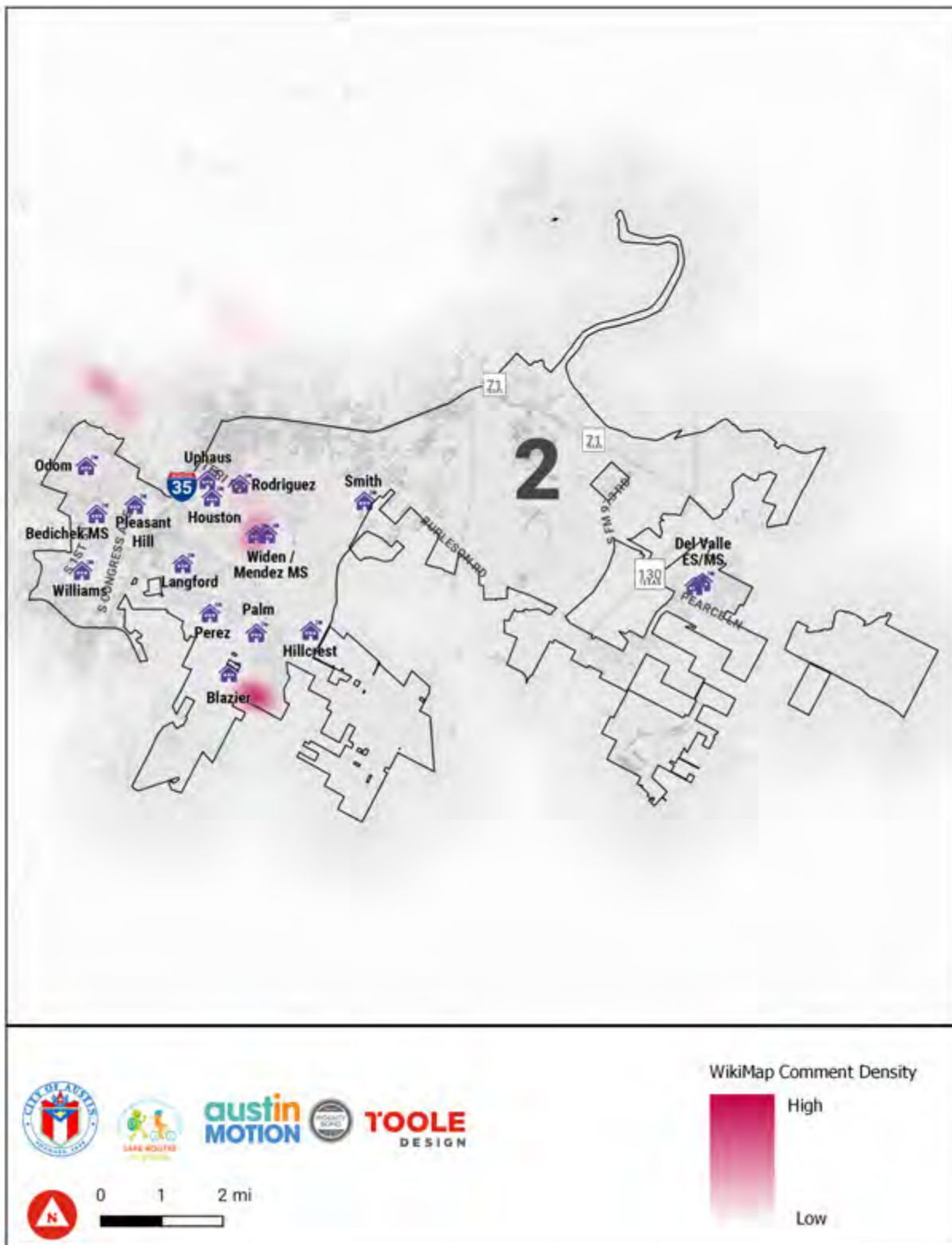


Bicycle Habits

- We are willing to ride in mixed traffic with automobiles on almost any type of street.
- We are willing to ride in traffic, but prefer dedicated bicycle lanes and routes.
- We do not ride bicycles and are unlikely to ever do so.
- We would like to bicycle more, but prefer not to ride in traffic.



Survey Responses from Online Map Respondents, District 2



Heatmap of Online Map Comments, District 2

OPEN HOUSE

The Open House for District 2 was held at Mendez Middle School from 4:00 to 7:00 PM on Wednesday, May 2, 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 2, 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.

$$\begin{aligned}
 & \mathbf{35\%: Demand} \\
 & \text{(Schools within } \frac{1}{4} \text{ mile, Potential students served)} \\
 & \quad + \\
 & \mathbf{30\%: Safety} \\
 & \text{(Crash data, Street type, Engineering judgment)} \\
 & \quad + \\
 & \mathbf{20\%: Equity} \\
 & \text{(Free & reduced lunch rate, Poverty rate)} \\
 & \quad + \\
 & \mathbf{15\%: Stakeholder Input} \\
 & \text{(Public comments from Open Houses and WikiMap)} \\
 & \quad = \\
 & \mathbf{100\%: Final Benefit Score}
 \end{aligned}$$

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 Mendez Middle School



Wiki Maps Station at the Mendez Middle School Open House

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 425 recommended projects in City Council District 2 with a total estimated cost of \$97.1 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	\$70,700,000
2 - High	\$14,300,000
3 - Medium	\$8,500,000
4 - Low	\$2,800,000
5 - Very Low	\$800,000
District 2 Total	\$97,100,000

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.

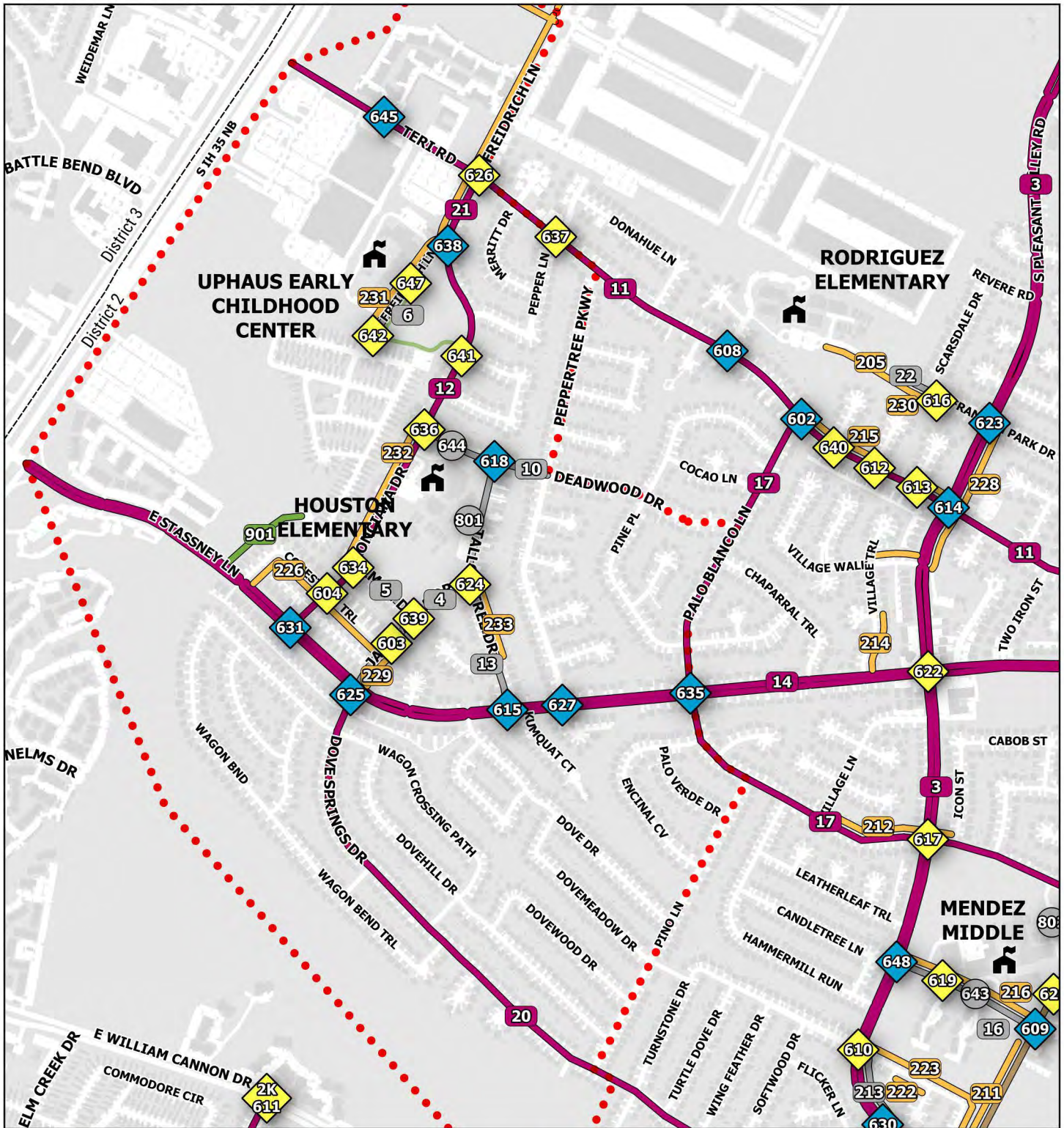


CITY COUNCIL DISTRICT 2 RECOMMENDED SAFE ROUTES TO SCHOOL PROJECTS

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.






CITY OF AUSTIN
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MOTION
2016 MOBILITY BOND

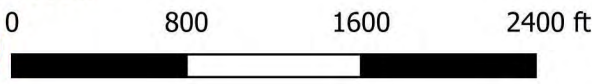
<ul style="list-style-type: none"> — Off-Street Trail — Bike Lane / Buffered Bike Lane / Protected Bike Lane — Sidepath — Neighborhood Bikeway / Traffic Calming — New / Improved Sidewalk — Other linear recommendation 	<ul style="list-style-type: none"> ◆ Traffic Control / Intersection Reconfiguration ◆ Ramp / Curb Extension / Crosswalk ■ Over / Underpass ● Other Spot Recommendation — Existing Trail · · · School Boundary - - - Council District Boundary
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TOOLE
DESIGN

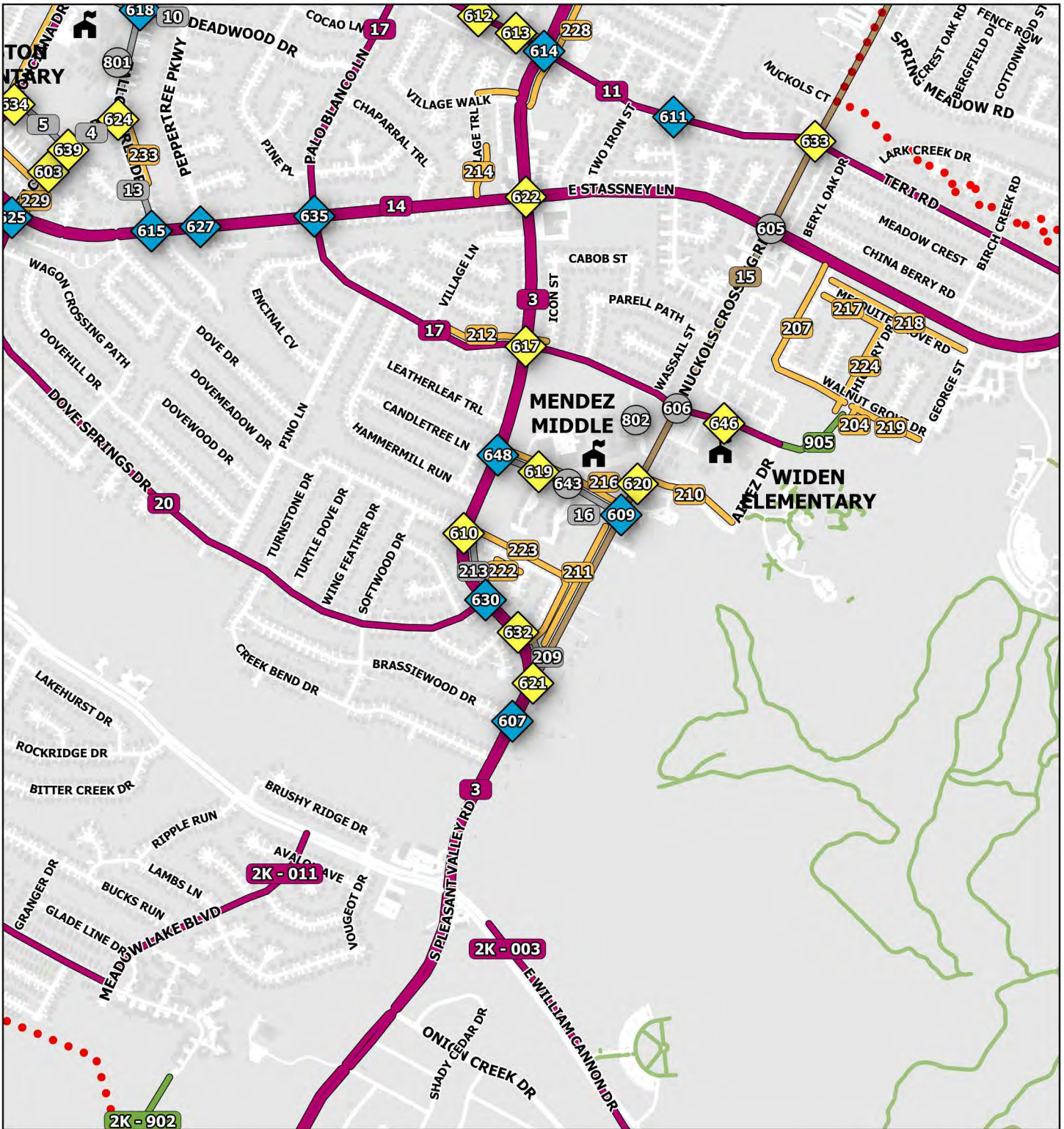


- Off-Street Trail
- Bike Lane / Buffered Bike Lane / Protected Bike Lane
- Sidewalk
- Neighborhood Bikeway / Traffic Calming
- New / Improved Sidewalk
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- Ramp / Curb Extension / Crosswalk
- Over / Underpass
- Other Spot Recommendation
- Existing Trail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

Note: Although this school falls outside of the City of Austin, it was included in the study because a significant portion of its student population is located within City limits. Bond funds will only be spent on projects within the City of Austin.

SCHOOL GROUP 2D

MAP 2D: MENDEZ MIDDLE

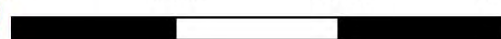


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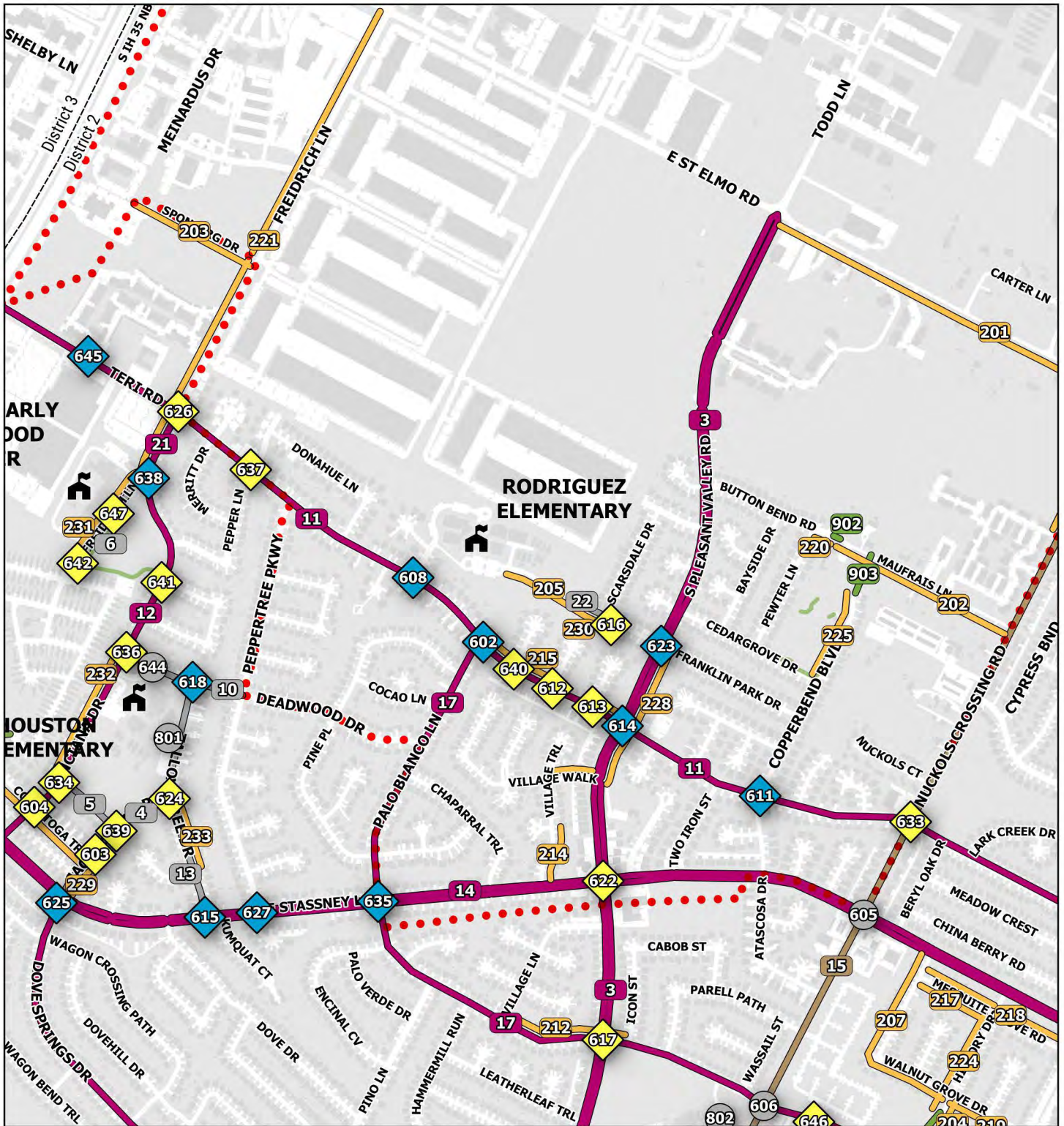
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 DESIGN



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

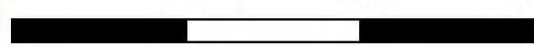


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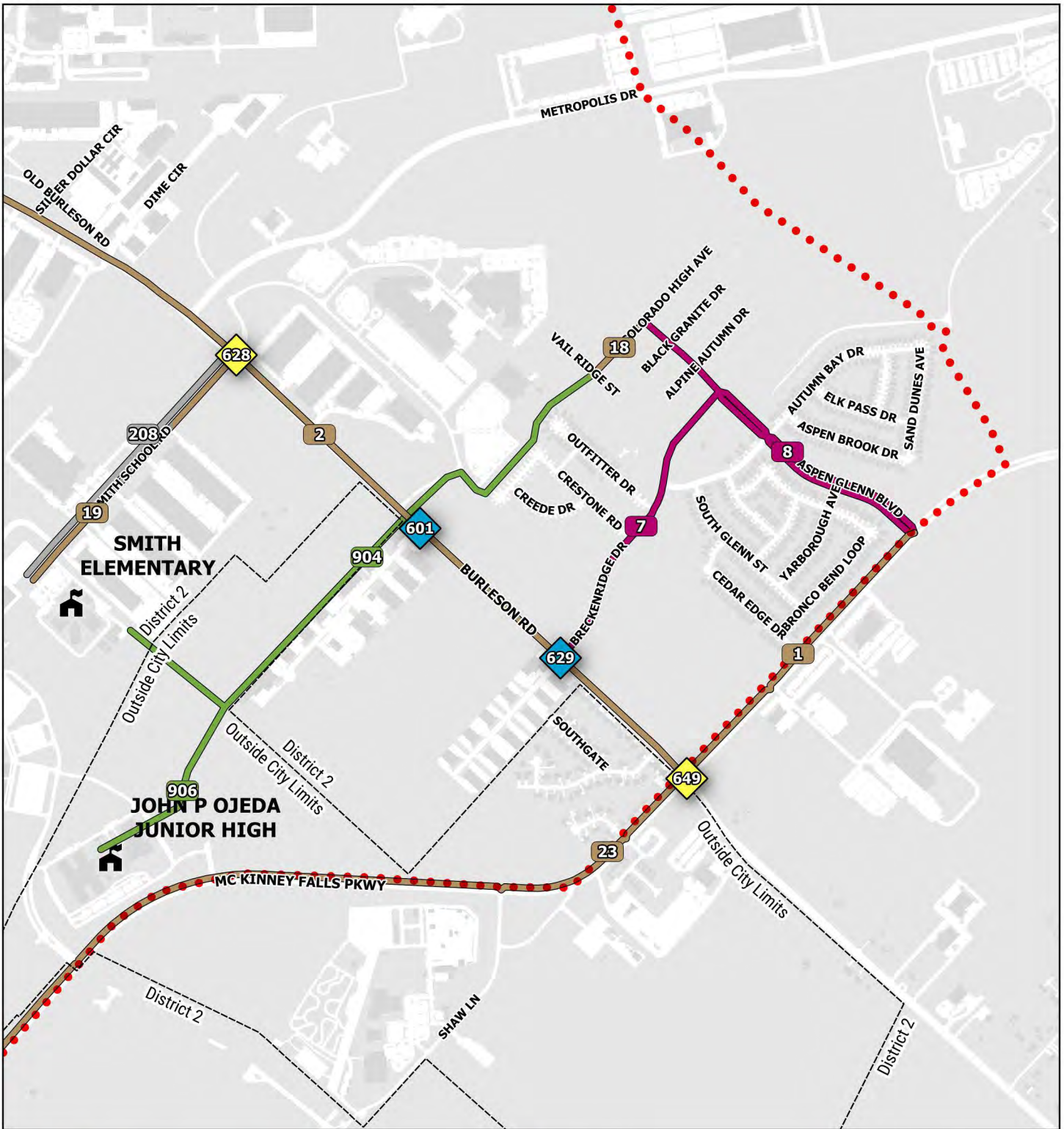
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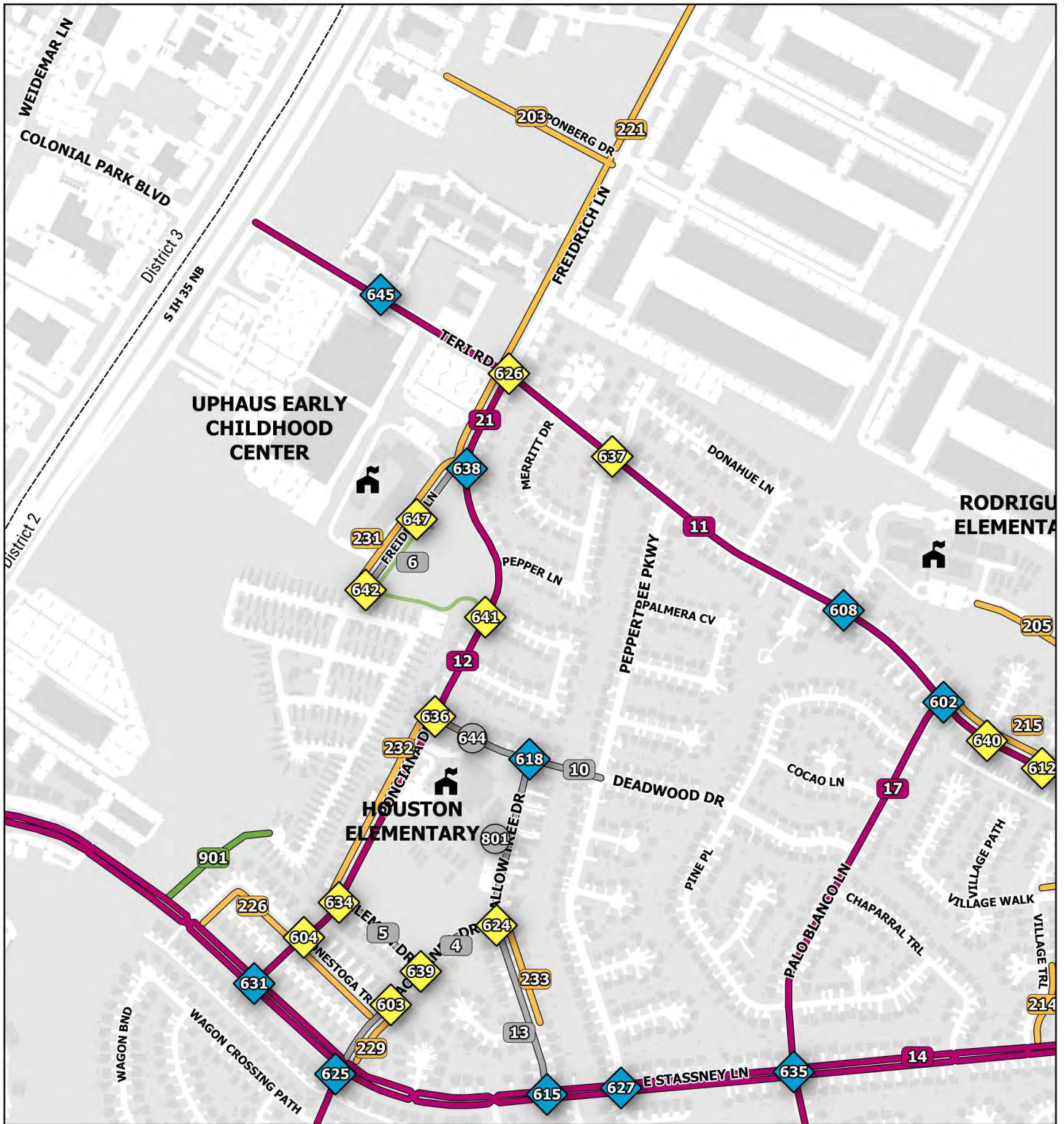
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TOOLE
DESIGN



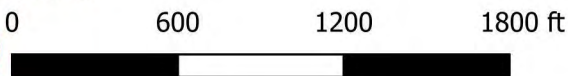
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- Off-Street Trail
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- New / Improved Sidewalk
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- ◆ Ramp / Curb Extension / Crosswalk
- Over / Underpass
- Other Spot Recommendation
- Existing Trail
- ⋯ School Boundary
- Council District Boundary

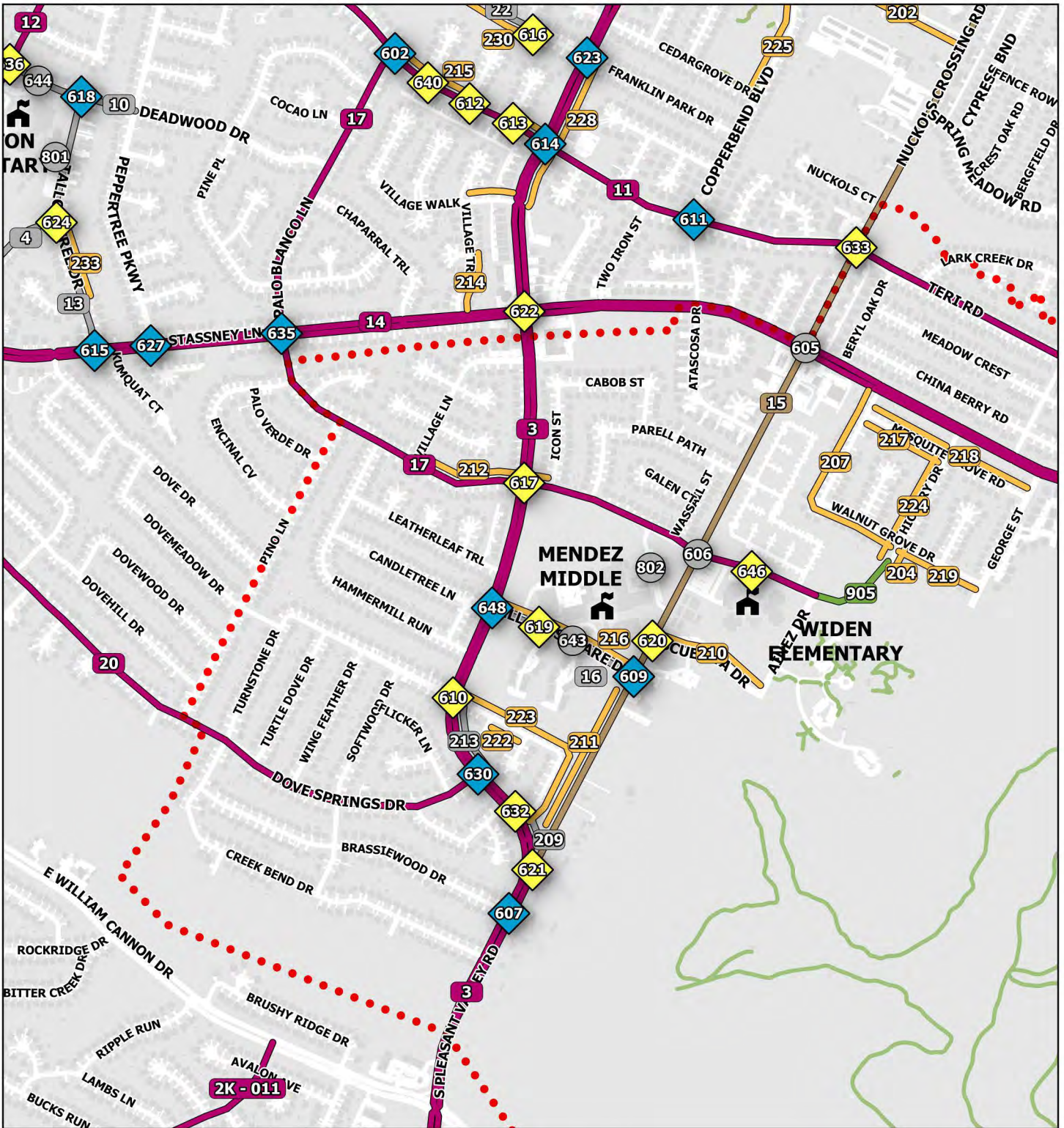


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 2016 MOBILITY BOND

TOOLE
 DESIGN



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Project ID	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
2D - 001	JOHN P OJEDA	MC KINNEY FALLS PKWY	Desired bike route, Excessive vehicle speeds, No bike facility, Wide ROW	Sidepath - MC KINNEY FALLS PKWY from ASPEN GLENN BLVD to BURLESON RD	3 - Medium	5 - Very Low
2D - 002	JOHN P OJEDA, SMITH	BURLESON RD	Desired bike route, Excessive vehicle speeds, No bike facility, Wide ROW	Sidepath - BURLESON RD from MONTOPOLIS DR to MC KINNEY FALLS PKWY, Add median - BURLESON RD from MONTOPOLIS DR to BREKENRIDGE DR	1 - Very High	5 - Very Low
2D - 003	MENDEZ, PEREZ, RODRIGUEZ, WIDEN, UPHAUS	S PLEASANT VALLEY RD	No bike facility	Protected Bike Lane - S PLEASANT VALLEY RD from E ST ELMO RD to ONION CREEK DR	1 - Very High	5 - Very Low
2D - 004	HOUSTON, UPHAUS	JACARANDA DR	Excessive vehicle speeds	Add speed cushions - JACARANDA DR from E STASSNEY LN to TALLOW TREE DR	1 - Very High	1 - Very High
2D - 005	HOUSTON, UPHAUS	LEMON DR	Excessive vehicle speeds	Add speed cushions - LEMON DR from PONCIANA DR to JACARANDA DR	1 - Very High	1 - Very High
2D - 006	HOUSTON, UPHAUS	FREIDRICH LN	Excessive vehicle speeds, Other, Wide ROW	Add traffic calming, Add signage/markings. Raised crosswalks in front of school and entrance to Paisano	1 - Very High	1 - Very High
2D - 007	SMITH, JOHN P OJEDA	BRECKENRIDGE DR	Desired bike route, Excessive vehicle speeds, No bike facility, Wide ROW	Protected Bike Lane - BRECKENRIDGE DR from BURLESON RD to ASPEN GLENN BLVD ~	2 - High	3 - Medium
2D - 008	JOHN P OJEDA, SMITH	ASPEN GLENN BLVD	Excessive vehicle speeds, No bike facility, Wide ROW	Buffered Bike Lane - ASPEN GLENN BLVD from COLORADO HIGH AVE to MC KINNEY FALLS PKWY	2 - High	4 - Low

* 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	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
2D - 010	HOUSTON, UPHAUS	DEADWOOD DR	Excessive vehicle speeds	Add speed cushions - DEADWOOD DR from PONCIANA DR to PEPPERTREE PKWY	1 - Very High	1 - Very High
2D - 011	WIDEN, HOUSTON, GALINDO, MENDEZ, RODRIGUEZ, UPHAUS	TERI RD	Excessive vehicle speeds, No bike facility, school zone signs not visible & location may not be ideal	Reassess location of school zone sign and potentially remove redundant signage - TERI RD from PEPPER LN to PEPPERTREE PKWY, Add speed cushions - TERI RD from S IH 35 SVRD NB to NUCKOLS CROSSING RD, Buffered Bike Lane - TERI RD from S IH 35 SVRD NB to CHINA BERRY RD ~	1 - Very High	5 - Very Low
2D - 012	HOUSTON, MENDEZ, UPHAUS	PONCIANA DR	Desired bike route, Excessive vehicle speeds	Add speed cushions - PONCIANA DR from E STASSNEY LN to FREIDRICH LN, Protected Bike Lane - PONCIANA DR from E STASSNEY LN to FREIDRICH LN, Upgrade existing protected bike lane to concrete barrier curb per COA - PONCIANA DR from PONCIANA LOOP to FREIDRICH LN	1 - Very High	2 - High
2D - 013	HOUSTON, UPHAUS	TALLOW TREE DR	Confusing school signage, Excessive vehicle speeds	Add School Zone Sign with flashers - TALLOW TREE DR from E STASSNEY LN to DEADWOOD DR, Add speed cushions - TALLOW TREE DR from E STASSNEY LN to DEADWOOD DR	1 - Very High	1 - Very High
2D - 014	BEDICHEK, RODRIGUEZ, PLEASANT HILL, MENDEZ, PEREZ, WIDEN, HOUSTON, UPHAUS	E STASSNEY LN	No bike facility, Wide ROW	Road diet, Add center turn lane - E STASSNEY LN from PONCIANA DR to TALLOW TREE DR, Lane diet (changing lane widths) - E STASSNEY LN from PONCIANA DR to TALLOW TREE DR, Protected Bike Lane - E STASSNEY LN from Near 5901 STASSNEY LN to S IH 35 SVRD NB	1 - Very High	5 - Very Low
2D - 015	WIDEN, MENDEZ, RODRIGUEZ, UPHAUS	NUCKOLS CROSSING RD	Desired bike route	Sidepath - NUCKOLS CROSSING RD from S PLEASANT VALLEY RD to VIEWPOINT DR	1 - Very High	5 - Very Low

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2D - 016	MENDEZ, WIDEN	VILLAGE SQUARE DR	Excessive vehicle speeds, Wide ROW	Add speed cushions - VILLAGE SQUARE DR from S PLEASANT VALLEY RD to NUCKOLS CROSSING RD	1 - Very High	1 - Very High
2D - 017	WIDEN, MENDEZ, RODRIGUEZ, UPHAUS	PALO BLANCO LN	No bike facility, Restricted one way street signs not obeyed	Protected Bike Lane - PALO BLANCO LN from TERI RD to AINEZ DR	1 - Very High	3 - Medium
2D - 018	SMITH, JOHN P OJEDA	COLORADO HIGH AVE	Excessive vehicle speeds, No bike facility, Wide ROW	Sidepath - COLORADO HIGH AVE from VAIL RIDGE ST to ASPEN GLENN BLVD	2 - High	5 - Very Low
2D - 019	JOHN P OJEDA, SMITH	SMITH SCHOOL RD	Desired bike route, No bike facility, Wide ROW	Sidepath - SMITH SCHOOL RD from near 4209 SMITH SCHOOL RD to BURLESON RD	1 - Very High	4 - Low
2D - 020	MENDEZ, HOUSTON, WIDEN, UPHAUS	DOVE SPRINGS DR	No bike facility	Protected Bike Lane - DOVE SPRINGS DR from JACARANDA DR to S PLEASANT VALLEY RD ~	1 - Very High	1 - Very High
2D - 021	HOUSTON, MENDEZ, UPHAUS	FREIDRICH LN	Desired bike route, Excessive vehicle speeds	Protected Bike Lane - FREIDRICH LN from FREIDRICH LN to TERI RD, Upgrade existing protected bike lane to concrete barrier curb per COA - FREIDRICH LN from FREIDRICH LN to TERI RD, Add speed cushions - FREIDRICH LN from FREIDRICH LN to TERI RD	1 - Very High	1 - Very High
2D - 022	RODRIGUEZ	FRANKLIN PARK DR	Excessive vehicle speeds	Add signage/markings, speed limit and no u-turn signs	1 - Very High	1 - Very High
2D - 023*	HILLCREST, JOHN P OJEDA	MC KINNEY FALLS PKWY	No bike facility	Add sidepath - MC KINNEY FALLS PKWY from E WILLIAM CANNON DR to BURLESON RD	1 - Very High	5 - Very Low

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2D - 201	None (nearest school: Rodriguez)	E ST ELMO RD	Missing sidewalk	Construct new sidewalk - E ST ELMO RD from GREGG WARD LN to S PLEASANT VALLEY RD, Construct new sidewalk - E ST ELMO RD from NUCKOLS CROSSING RD to GREGG WARD LN, Construct new sidewalk - NUCKOLS CROSSING RD from VIEWPOINT DR to E ST ELMO RD	2 - High	3 - Medium
2D - 202	RODRIGUEZ	MAUFRAIS LN	Missing sidewalk, Poor condition	Construct new sidewalk - MAUFRAIS LN from NUCKOLS CROSSING RD to near PEWTER LANE	2 - High	1 - Very High
2D - 203	None (nearest school: Rodriguez, Uphaus)	SPONBERG DR	Missing sidewalk	Construct new sidewalk - SPONBERG DR from FREIDRICH LN to MEINARDUS DR	3 - Medium	5 - Very Low
2D - 204	MENDEZ, WIDEN	HICKORY DR	Missing sidewalk	Construct new sidewalk - HICKORY DR from WALNUT GROVE DR to Near 5466 WALNUT GROVE DR	2 - High	3 - Medium
2D - 205	RODRIGUEZ	FRANKLIN PARK DR	Missing sidewalk	Construct new sidewalk - FRANKLIN PARK DR from Near S Pleasant Valley Road to Rodriguez drive loop	1 - Very High	1 - Very High
2D - 207	MENDEZ, WIDEN	WALNUT GROVE DR	Missing sidewalk	Construct new sidewalk - WALNUT GROVE DR from WALNUT GROVE CT to E STASSNEY LN	3 - Medium	3 - Medium
2D - 208	JOHN P OJEDA, SMITH	SMITH SCHOOL RD	No lighting	Add lighting - SMITH SCHOOL RD from near 4209 SMITH SCHOOL ROAD to BURLESON RD	2 - High	3 - Medium
2D - 209	WIDEN, MENDEZ	S PLEASANT VALLEY RD	Temporary obstruction (ex. vegetation)	Fix sidewalk obstructions - S PLEASANT VALLEY RD from TURNSTONE DR to NUCKOLS CROSSING RD	5 - Very Low	5 - Very Low
2D - 210	MENDEZ, WIDEN	ESCUELITA DR	Steep buffer grade	Repair existing sidewalk - ESCUELITA DR from NUCKOLS CROSSING RD to AINEZ DR	4 - Low	3 - Medium

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2D - 211	MENDEZ, WIDEN	NUCKOLS CROSSING RD	Poor condition, Temporary obstruction (ex. vegetation)	Fix sidewalk obstructions - NUCKOLS CROSSING RD from Near 5124 TURNSTONE DR to Near 5907 DROWSY WILLOW TRL, Repair existing sidewalk - NUCKOLS CROSSING RD from Near 5124 TURNSTONE DR to Near 5907 DROWSY WILLOW TRL	4 - Low	3 - Medium
2D - 212	WIDEN, MENDEZ	PALO BLANCO LN	Missing sidewalk, Permanent obstruction (ex. pole/tree)	Construct new sidewalk - PALO BLANCO LN from VILLAGE LN to S PLEASANT VALLEY RD, Fix sidewalk obstructions - PALO BLANCO LN from S PLEASANT VALLEY RD to ICON ST	2 - High	1 - Very High
2D - 213	MENDEZ, WIDEN	S PLEASANT VALLEY RD	Permanent obstruction (ex. pole/tree)	Fix sidewalk obstructions - S PLEASANT VALLEY RD from TURNSTONE DR to DOVE SPRINGS DR	4 - Low	5 - Very Low
2D - 214	MENDEZ, RODRIGUEZ	VILLAGE TRL	Missing sidewalk	Construct new sidewalk - VILLAGE TRL from VILLAGE TRAIL CIR to E STASSNEY LN	2 - High	2 - High
2D - 215	RODRIGUEZ	TERI RD	No lighting, Permanent obstruction (ex. pole/tree), Poor condition	Add lighting - TERI RD from PALO BLANCO LN to MICHELLE CT, Repair existing sidewalk - TERI RD from MICHELLE CT to ALLYSON CT, Fix sidewalk obstructions - TERI RD from JOSHUA CT to S PLEASANT VALLEY RD	1 - Very High	2 - High
2D - 216	WIDEN, MENDEZ	VILLAGE SQUARE DR	Poor condition	Repair existing sidewalk - VILLAGE SQUARE DR from S PLEASANT VALLEY RD to NUCKOLS CROSSING RD	4 - Low	4 - Low
2D - 217	MENDEZ, WIDEN	MESQUITE GROVE RD	Missing sidewalk	Construct new sidewalk - MESQUITE GROVE RD from HICKORY DR to WALNUT GROVE DR	4 - Low	2 - High
2D - 218	MENDEZ, WIDEN	MESQUITE GROVE RD	Missing sidewalk	Construct new sidewalk - MESQUITE GROVE RD from WALNUT GROVE DR to GEORGE ST	3 - Medium	2 - High

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2D - 219	WIDEN, MENDEZ	WALNUT GROVE DR	Missing sidewalk	Construct new sidewalk - WALNUT GROVE DR from HICKORY DR to WALNUT GROVE CT, Construct new sidewalk - WALNUT GROVE DR from BLACKJACK CV to HICKORY DR, Construct new sidewalk - WALNUT GROVE DR from HICKORY DR to GEORGE ST	3 - Medium	4 - Low
2D - 220	RODRIGUEZ	BUTTON BEND RD	Missing sidewalk	Construct new sidewalk - BUTTON BEND RD from Near 4701 PEWTER LN to PEWTER LN	3 - Medium	3 - Medium
2D - 221	RODRIGUEZ, HOUSTON, UPHAUS	FREIDRICH LN	Missing sidewalk	Construct new sidewalk - FREIDRICH LN from PONCIANA DR to E ST ELMO RD	1 - Very High	1 - Very High
2D - 222	MENDEZ, WIDEN	TURNSTONE DR	Missing sidewalk	Construct new sidewalk - TURNSTONE DR from TURNSTONE CT to COOING CT	2 - High	3 - Medium
2D - 223	MENDEZ, WIDEN	TURNSTONE DR	Missing sidewalk	Construct new sidewalk - TURNSTONE DR from S PLEASANT VALLEY RD to COOING CT, Construct new sidewalk - TURNSTONE DR from COOING CT to TURNSTONE CT, Construct new sidewalk - TURNSTONE DR from TURNSTONE CT to S PLEASANT VALLEY RD	2 - High	2 - High
2D - 224	WIDEN, MENDEZ	HICKORY DR	Missing sidewalk	Construct new sidewalk - HICKORY DR from Near 5462 WALNUT GROVE DR to MESQUITE GROVE RD	2 - High	2 - High
2D - 225	RODRIGUEZ	COPPERBEND BLVD	Missing sidewalk	Construct new sidewalk - COPPERBEND BLVD from CEDARGROVE DR to near MAUFRAIS LN	1 - Very High	1 - Very High
2D - 226	HOUSTON, UPHAUS	CONESTOGA TRL	Missing sidewalk	Construct new sidewalk - CONESTOGA TRL from JACARANDA DR to E STASSNEY LN	2 - High	3 - Medium
2D - 228	RODRIGUEZ	S PLEASANT VALLEY RD	Missing sidewalk, No lighting	Add lighting - S PLEASANT VALLEY RD from VILLAGE WALK to TERI RD, Construct new sidewalk - S PLEASANT VALLEY RD from FRANKLIN PARK DR to TERI RD	1 - Very High	1 - Very High

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2D - 229	HOUSTON	JACARANDA DR	Poor condition, Steep buffer grade, Temporary obstruction (ex. vegetation)	Repair existing sidewalk - JACARANDA DR from CONESTOGA TRL to E STASSNEY LN, Fix sidewalk obstructions - JACARANDA DR from CONESTOGA TRL to E STASSNEY LN	4 - Low	4 - Low
2D - 230	RODRIGUEZ	FRANKLIN PARK DR	Missing sidewalk	Construct new sidewalk - FRANKLIN PARK DR from SCARSDALE DR to Near 4409 FRANKLIN PARK DR	1 - Very High	1 - Very High
2D - 231	HOUSTON, UPHAUS	FREIDRICH LN	Missing sidewalk	Construct new sidewalk - FREIDRICH LN from PONCIANA LOOP EXTENSION to FREIDRICH LN	1 - Very High	2 - High
2D - 232	HOUSTON, UPHAUS	CORRAL LN	Missing/damaged sidewalk	Fix sidewalk obstructions - CORRAL LN from PONCIANA DR to DEADWOOD DR; Repair existing sidewalk - CORRAL LN from PONCIANA DR to DEADWOOD DR; Construct new sidewalk - TORRINGTON LN from FREIDRICH LN to TERI RD	1 - Very High	2 - High
2D - 233	HOUSTON, UPHAUS	LAKE SHORE DR	Damaged sidewalk	Repair existing sidewalk - LAKE SHORE DR from TALLOW TREE DR to TALLOW CT	4 - Low	4 - Low
2D - 601	None (nearest school: Smith, Ojeda)	BURLESON RD / FELTER LN	Difficult crossing	Install Pedestrian Hybrid Beacon	2 - High	3 - Medium
2D - 602	RODRIGUEZ	PALO BLANCO LN / TERI RD	Missing curb ramps, Non-compliant curb ramps, No pedestrian signals, High speed crossing	Add median refuge island on Teri Rd, Install 1 curb ramp, Install high visibility crosswalk, Install Rapid Flash Beacon, Install Rapid Rectangular Flashing Beacon, Replace existing curb ramp	1 - Very High	1 - Very High

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2D - 603	HOUSTON, UPHAUS	CONESTOGA TRL / JACARANDA DR	Non-compliant curb ramps	Replace existing curb ramp	4 - Low	2 - High
2D - 604	HOUSTON, UPHAUS	CONESTOGA TRL / PONCIANA DR	Non-compliant curb ramps	Replace existing curb ramp	4 - Low	3 - Medium
2D - 605	MENDEZ, WIDEN	E STASSNEY LN / NUCKOLS CROSSING RD	Non-ADA push buttons, Long crossing distance	Evaluate signal timing at Nuckols Crossing/Stassney intersection to improve pedestrian priority/safety, Install/update pedestrian push buttons, Tighten curb radii	1 - Very High	2 - High
2D - 606	MENDEZ, WIDEN	NUCKOLS CROSSING RD / PALO BLANCO LN	Non-compliant curb ramps, No lighting, Poor drainage; time restricted one-way signs ignored	Add lighting, Regrade so that water drains into the inlet; post additional signs prohibiting EB through traffic on Palo Blanco in AM	1 - Very High	1 - Very High
2D - 607	MENDEZ, WIDEN	BRASSIEWOOD DR / S PLEASANT VALLEY RD	Difficult crossing	Add median refuge island on Pleasant Valley Road +	1 - Very High	1 - Very High

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2D - 608	RODRIGUEZ, UPHAUS	SPRUCE LN / TERI RD	Non-compliant curb ramps,High speed crossing,No lighting	Add curb extensions, Add lighting, Add median refuge island on Teri Rd, Install Pedestrian Hybrid Beacon, Replace existing curb ramp	1 - Very High	2 - High
2D - 609	MENDEZ, WIDEN	NUCKOLS CROSSING RD / VILLAGE SQUARE DR	Difficult crossing; can't install an RRFB due to Fire Department proximity	Install stop sign	1 - Very High	1 - Very High
2D - 610	MENDEZ, WIDEN	S PLEASANT VALLEY RD / TURNSTONE DR	Non-compliant curb ramps,Difficult crossing,No lighting	Add lighting, Install high visibility crosswalk, Replace existing curb ramp, Tighten curb radii	1 - Very High	1 - Very High
2D - 611	MENDEZ	COPPERBEN D BLVD / TERI RD	Difficult crossing,High speed crossing,Long crossing distance	Add median refuge island on Teri Road, Install high visibility crosswalk, Install Rapid Flash Beacon +	1 - Very High	1 - Very High
2D - 612	RODRIGUEZ	ALLYSON CT / TERI RD	Non-compliant curb ramps	Replace existing curb ramp	4 - Low	2 - High
2D - 613	RODRIGUEZ	JOSHUA CT / TERI RD	Non-compliant curb ramps	Replace existing curb ramp	4 - Low	2 - High

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2D - 614	RODRIGUEZ	S PLEASANT VALLEY RD / TERI RD	High speed crossing, Long crossing distance, Non-compliant curb ramps	Install neighborhood traffic circle, Intersection reconfiguration, Replace existing curb ramp	1 - Very High	5 - Very Low
2D - 615	HOUSTON	E STASSNEY LN / TALLOW TREE DR	High speed crossing, Long crossing distance	Add median refuge island on Stassney +	1 - Very High	1 - Very High
2D - 616	RODRIGUEZ	FRANKLIN PARK DR / SCARSDALE DR	Non-compliant curb ramps, Difficult crossing	Install high visibility crosswalk, Replace existing curb ramp	1 - Very High	1 - Very High
2D - 617	MENDEZ, WIDEN	PALO BLANCO LN / S PLEASANT VALLEY RD	Non-compliant curb ramps, Faded crosswalk markings, No lighting	Add lighting, Repaint crosswalk markings, Replace existing curb ramp	1 - Very High	1 - Very High
2D - 618	HOUSTON, UPHAUS	DEADWOOD DR / TALLOW TREE DR	Difficult crossing, Long crossing distance	Add curb extensions, Install 2 curb ramps, Install high visibility crosswalk, Install stop sign +	1 - Very High	1 - Very High

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2D - 619	MELENDEZ, WIDEN	HIDDEN VALLEY TRL / VILLAGE SQUARE DR	Difficult crossing	Add curb extensions, Install high visibility crosswalk ~ +	1 - Very High	1 - Very High
2D - 620	MELENDEZ, WIDEN	ESCUELITA DR / NUCKOLS CROSSING RD	Difficult crossing	Install high visibility crosswalk, Install Rapid Flash Beacon	1 - Very High	1 - Very High

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2D - 621	MENDEZ, WIDEN	NUCKOLS CROSSING RD / S PLEASANT VALLEY RD	Difficult crossing, No pedestrian signals, High speed crossing, Long crossing distance, Wide curb radii, light on nuckols to turn left on pleasant valley only has a left turn yield therefore many drivers are driving on streets close to the school in order to avoid this left turn causing more congestions close to the school; also a vegetation management issue with overgrown bamboo	Add lighting, Eliminate slip lane, Install high visibility crosswalk, Install/update pedestrian push buttons, Remove invasive bamboo, Replace existing curb ramps +	1 - Very High	2 - High

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2D - 622	MENDEZ, RODRIGUEZ	E STASSNEY LN / S PLEASANT VALLEY RD	Non-compliant curb ramps,Non-ADA push buttons,Long crossing distance	Install/update pedestrian push buttons, Replace existing curb ramp	1 - Very High	1 - Very High
2D - 623	RODRIGUEZ	FRANKLIN PARK DR / S PLEASANT VALLEY RD	Non-compliant curb ramps,No pedestrian signals,High speed crossing,No lighting	Add lighting, Add median refuge island on Pleasant valley, Install Rapid Flash Beacon, Install Rapid Rectangular Flashing Beacon, Replace existing curb ramp	1 - Very High	1 - Very High
2D - 624	HOUSTON, UPHAUS	JACARANDA DR / TALLOW TREE DR	Non-compliant curb ramps,High speed crossing,Long crossing distance	Add curb extensions, Replace existing curb ramp +	1 - Very High	1 - Very High
2D - 625	HOUSTON	DOVE SPRINGS DR / E STASSNEY LN / JACARANDA DR	Non-compliant curb ramps,High speed crossing,Long crossing distance	Add leading pedestrian interval, Add median refuge island on Stassney, Replace existing curb ramp	1 - Very High	1 - Very High
2D - 626	RODRIGUEZ, UPHAUS	FREIDRICH LN / FREIDRICH LN / TERI RD	Non-compliant curb ramps,High speed crossing	Add leading pedestrian interval, Replace existing curb ramp	4 - Low	2 - High

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2D - 627	HOUSTON	E STASSNEY LN / PEPPERTREE PKWY	High speed crossing, Long crossing distance	Add median refuge island on Stassney	1 - Very High	1 - Very High
2D - 628	SMITH	BURLESON RD / SMITH SCHOOL RD	Missing curb ramps, High speed crossing, Long crossing distance	Add lighting, Install high visibility crosswalk +	1 - Very High	1 - Very High
2D - 629	None (nearest school: Smith, Ojeda)	BRECKENRIDGE DR / BURLESON RD	Missing curb ramps, Difficult crossing, Non-ADA push buttons, No pedestrian signals, High speed crossing, Long crossing distance, No lighting	Add lighting, Add median refuge island on Burleson, Install 2 curb ramps, Install high visibility crosswalk, Install Pedestrian Hybrid Beacon	2 - High	3 - Medium
2D - 630	MENDEZ, WIDEN	DOVE SPRINGS DR / S PLEASANT VALLEY RD	Difficult crossing, Long crossing distance	Add median refuge island on Pleasant Valley Road, Install high visibility crosswalk +	2 - High	1 - Very High

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2D - 631	HOUSTON, UPHAUS	E STASSNEY LN / PONCIANA DR	Missing curb ramps,Difficult crossing,No pedestrian signals,High speed crossing,Long crossing distance	Add median refuge island on Stassney, Install 2 curb ramps, Install high visibility crosswalk, Install Rapid Rectangular Flashing Beacon	1 - Very High	1 - Very High
2D - 632	MENDEZ, WIDEN	S PLEASANT VALLEY RD / TURNSTONE DR	Non-compliant curb ramps,Difficult crossing	Install high visibility crosswalk, Replace existing curb ramp, Tighten curb radii	2 - High	2 - High
2D - 633	WIDEN	NUCKOLS CROSSING RD / TERI RD	Non-compliant curb ramps,Faded crosswalk markings,Wide curb radii,No lighting	Add lighting, Repaint crosswalk markings, Replace existing curb ramp, Tighten curb radii	1 - Very High	1 - Very High
2D - 634	HOUSTON, UPHAUS	LEMON DR / PONCIANA DR	High speed crossing,Long crossing distance	Add curb extensions	1 - Very High	1 - Very High

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2D - 635	HOUSTON	E STASSNEY LN / PALO BLANCO LN	High speed crossing, Long crossing distance, no leading interval on ped signals	Add median refuge island on Stassney, add pedestrian leading interval	1 - Very High	1 - Very High
2D - 636	HOUSTON, UPHAUS	DEADWOOD DR / PONCIANA DR	Non-compliant curb ramps, High speed crossing, Long crossing distance	Add curb extensions +	1 - Very High	1 - Very High
2D - 637	RODRIGUEZ, UPHAUS	PEPPER LN / TERI RD	Difficult crossing, No pedestrian signals, Long crossing distance	Add curb extensions, Install high visibility crosswalk, Install Rapid Rectangular Flashing Beacon	1 - Very High	1 - Very High
2D - 638	HOUSTON, UPHAUS	FREIDRICH LN / FREIDRICH LN / PONCIANA DR	Difficult crossing, Poor sightlines, adjust location of curb ramp	Install 2 curb ramps, Install high visibility crosswalk, Install stop sign +	1 - Very High	1 - Very High
2D - 639	HOUSTON, UPHAUS	JACARANDA DR / LEMON DR	High speed crossing, Long crossing distance	Add curb extensions +	1 - Very High	1 - Very High
2D - 640	RODRIGUEZ	MICHELLE CT / TERI RD	Non-compliant curb ramps	Replace existing curb ramp	4 - Low	2 - High

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2D - 641	HOUSTON, UPHAUS	Midblock - PONCIANA DR	Difficult intersection	Install crosswalk	1 - Very High	1 - Very High
2D - 642	HOUSTON, UPHAUS	Midblock - FREIDRICH LN	Difficult intersection	Install raised crosswalk ~	1 - Very High	1 - Very High
2D - 643	MENDEZ, WIDEN	Midblock - VILLAGE SQUARE DR	Limited visibility	Bulb out to eliminate parking at drop off exit; or no parking signs and no parking zone painting of curb; eliminate left turn out of drop off area ~	1 - Very High	1 - Very High
2D - 644	HOUSTON, UPHAUS	Midblock - DEADWOOD DR	Limited visibility	Restrict left turn from school parking lot. Right turn only.	1 - Very High	1 - Very High
2D - 645	HOUSTON, UPHAUS	Midblock - TERI RD	Difficult intersection	Add median refuge island; Install 2 curb ramps; Install high visibility crosswalk; Install Rapid Flash Beacon +	1 - Very High	1 - Very High
2D - 646	MENDEZ, WIDEN	Midblock - PALO BLANCO LN	Difficult intersection; Missing curb ramps	Install 2 curb ramps; Install raised crosswalk +	1 - Very High	1 - Very High
2D - 647	HOUSTON, UPHAUS	Midblock - FREIDRICH LN	Difficult intersection; Missing curb ramps	Add curb extensions; Install raised crosswalk ~ +	1 - Very High	1 - Very High

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2D - 648	MENDEZ, WIDEN	S PLEASANT VALLEY RD / VILLAGE SQUARE DR	Difficult crossing	Install Pedestrian Hybrid Beacon [1]	1 - Very High	2 - High
2D - 649	None (nearest school: Ojeda)	BURLESON RD / MC KINNEY FALLS PKWY	Non-compliant curb ramps	Replace existing curb ramp [4]	4 - Low	3 - Medium
2D - 801	HOUSTON, UPHAUS	Near 5413 TALLOW TREE DR	Unofficial drop off occurring that creates chaotic pedestrian patterns	Propose to use this as a 2nd designated drop off/pick up; this area is already used as a drop off/pick up zone but not official	1 - Very High	1 - Very High
2D - 802	MENDEZ, WIDEN	Near 5767 PALO BLANCO LN	Unofficial drop off occurring that creates chaotic pedestrian patterns	Establish 2nd drop-off/pick-up zone ~	1 - Very High	1 - Very High
2D - 901	HOUSTON, MENDEZ, UPHAUS	From E Stassney Ln to Mobile Home Community	No trail connection	Construct new trail	1 - Very High	4 - Low

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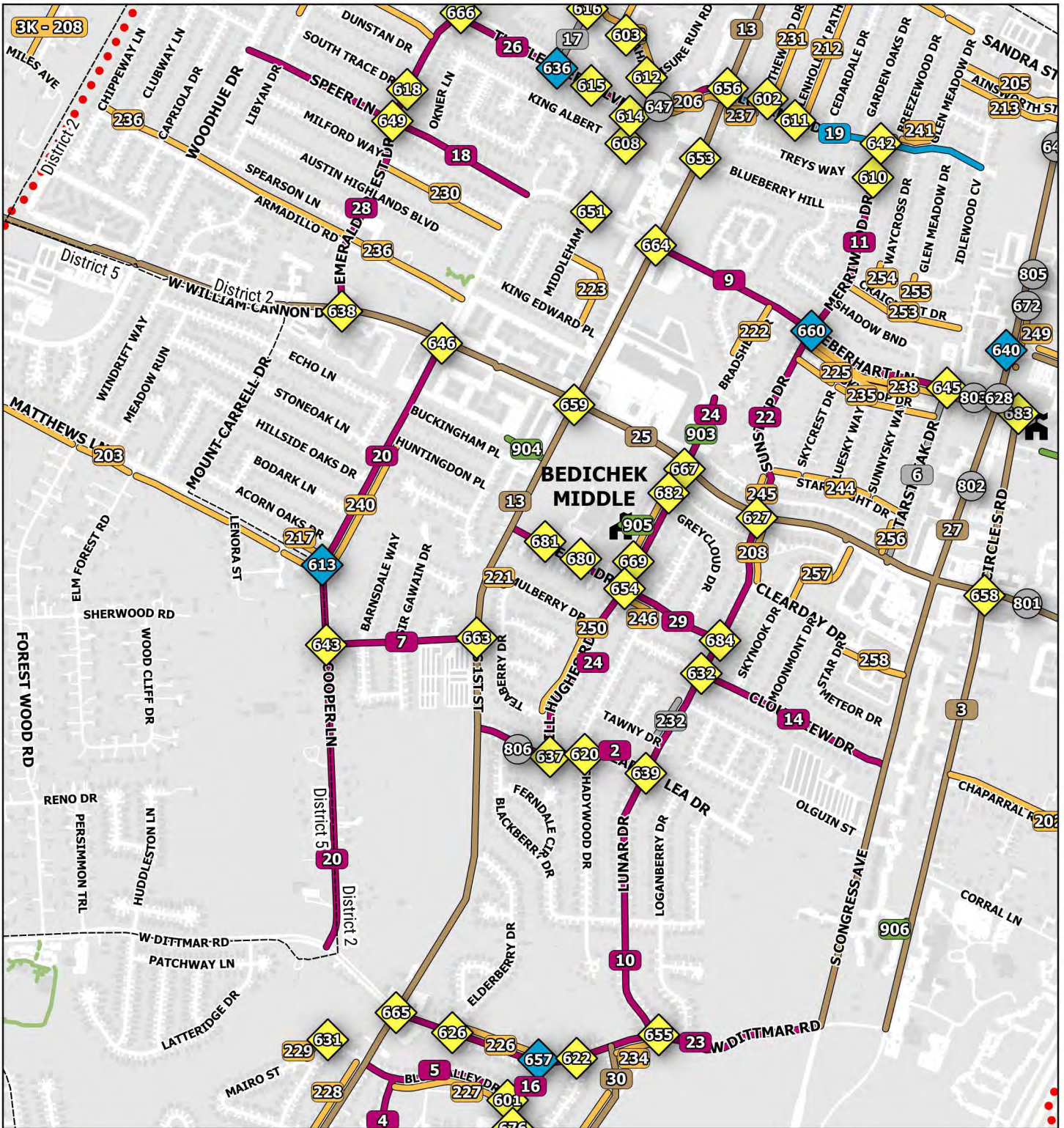
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2D - 902	MENDEZ, RODRIGUEZ	Connection between Button Bend Rd and Maufrais Ln	No trail connection	Construct new trail	1 - Very High	1 - Very High
2D - 903	MENDEZ, RODRIGUEZ	From Copperbend Blvd to Maurafis Ln	No trail connection	Construct new trail	1 - Very High	2 - High
2D - 904*	SMITH, JOHN P OJEDA	From School sidewalk to Colorado High Ave	No trail connection	Construct new trail	1 - Very High	5 - Very Low
2D - 905	WIDEN, MENDEZ	From Hickory Drive to Ainez Drive	Lack of connectivity	Construct new shared use path	1 - Very High	4 - Low
2D - 906*	SMITH, JOHN P OJEDA	Near 4908 MC KINNEY FALLS PKWY	No trail connection	Construct new shared use path	3 - Medium	5 - Very Low

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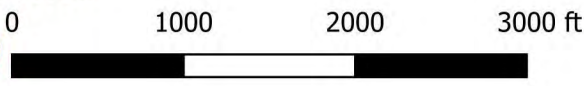
SCHOOL GROUP 2E

MAP 2E: BEDICHEK MIDDLE

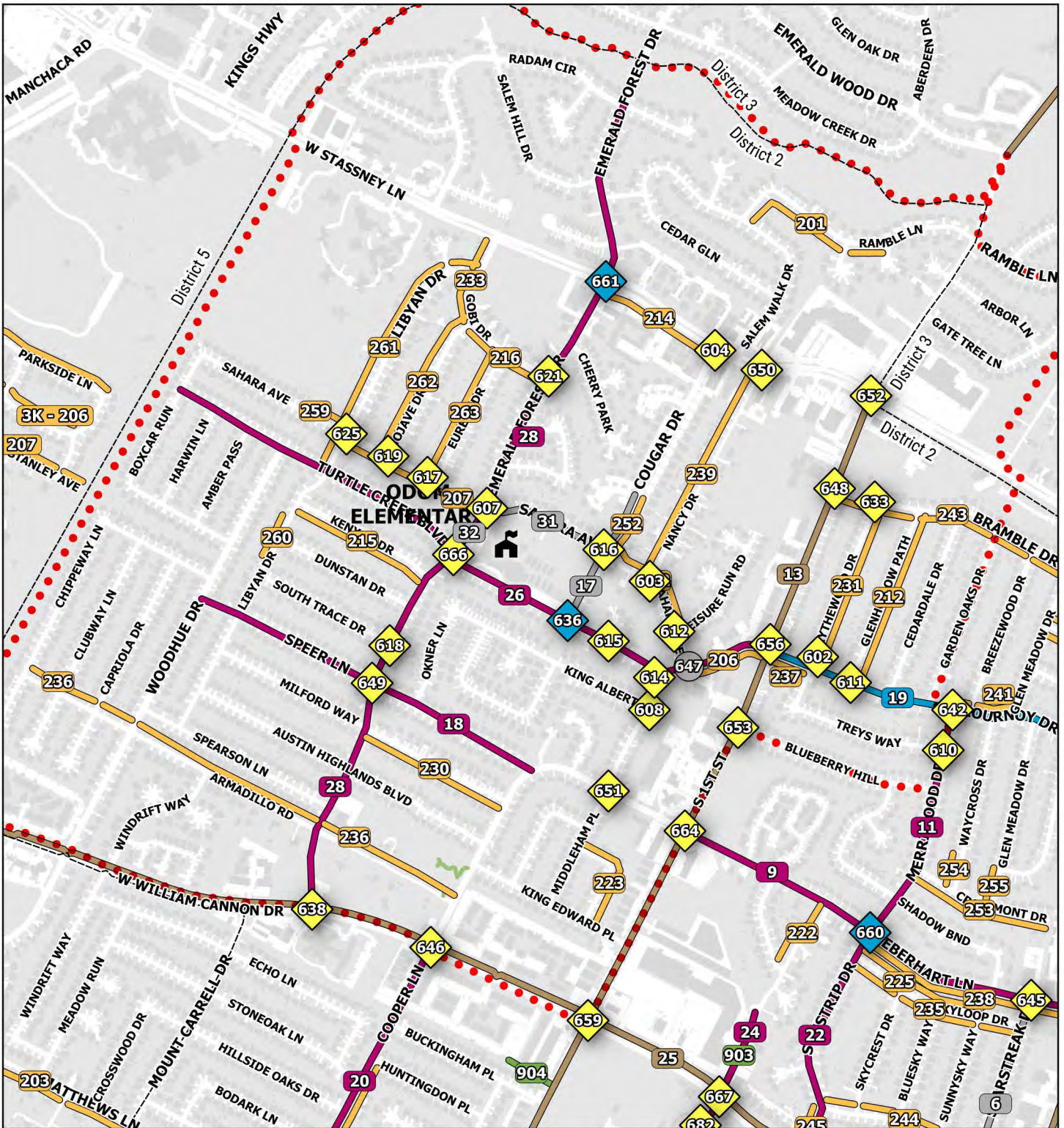


CITY OF AUSTIN
austin
MOTION
 2016 MOBILITY BOND

TOOLE
 DESIGN



- 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



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austin
MOTION
 2016 MOBILITY BOND

TOOLE
 DESIGN



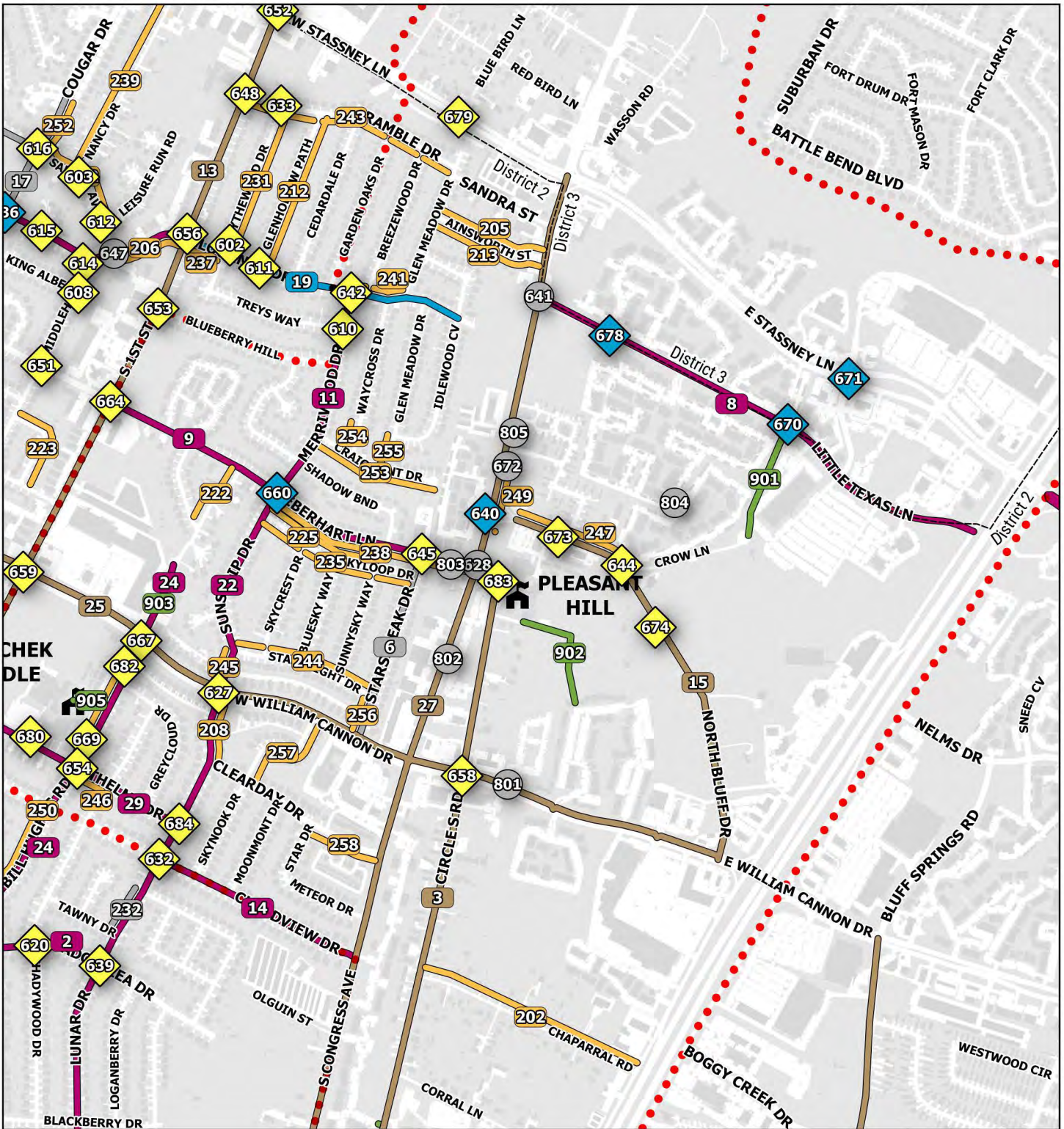
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SCHOOL GROUP 2E

MAP 2E: PLEASANT HILL ELEMENTARY



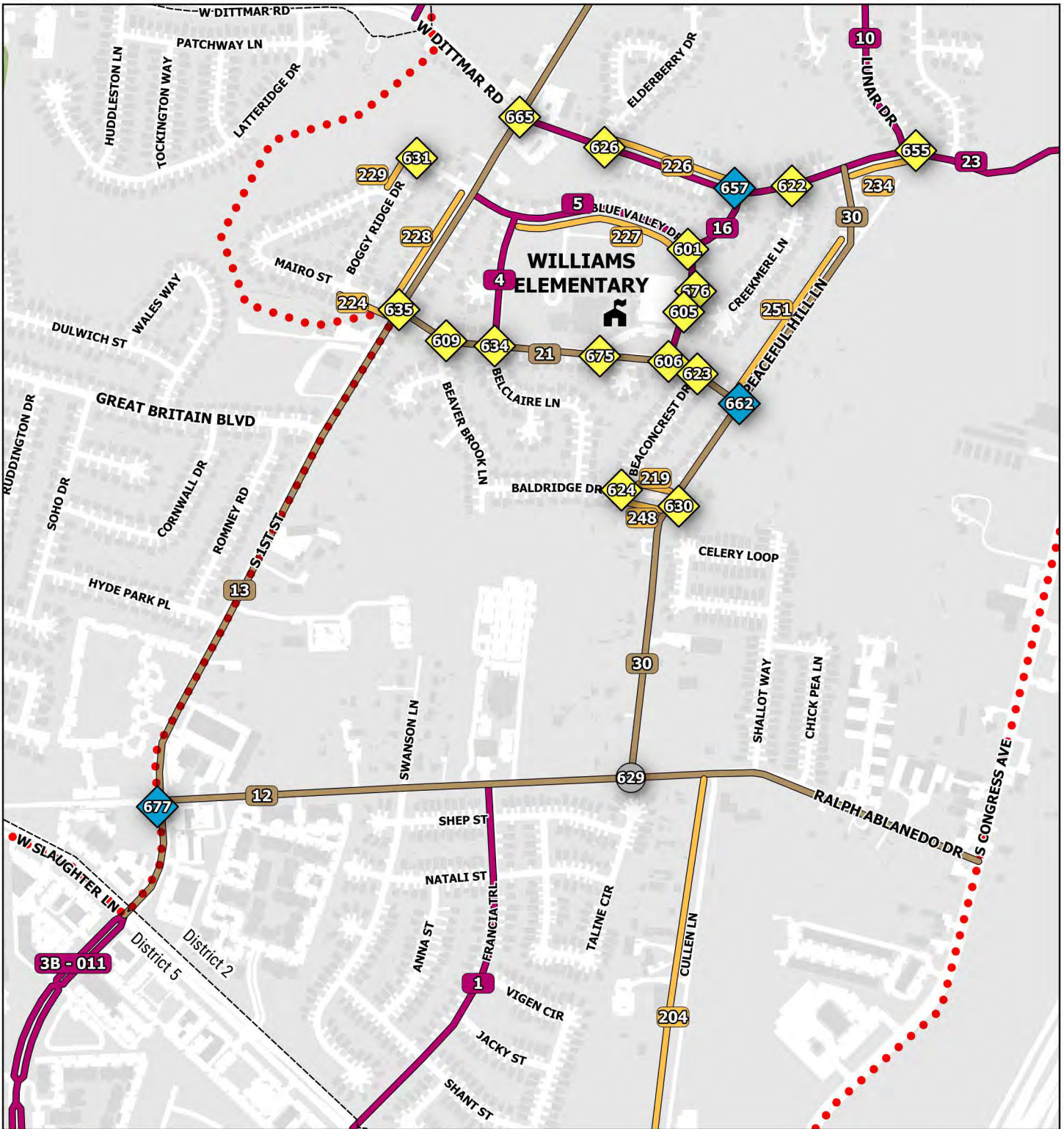



TOOLE
DESIGN

<ul style="list-style-type: none"> — Off-Street Trail — Bike Lane / Buffered Bike Lane / Protected Bike Lane — Sidepath — Neighborhood Bikeway / Traffic Calming — New / Improved Sidewalk — Other linear recommendation 	<ul style="list-style-type: none"> ◆ Traffic Control / Intersection Reconfiguration ◆ Ramp / Curb Extension / Crosswalk ■ Over / Underpass ● Other Spot Recommendation — Existing Trail ⋯ School Boundary - - - Council District Boundary
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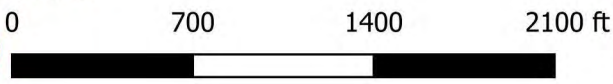
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2E - 001	WILLIAMS, BEDICHEK	FRANCIA TRL	No bike facility, Wide ROW	Protected Bike Lane - FRANCIA TRL from W SLAUGHTER LN to RALPH ABLANEDO DR ~	1 - Very High	2 - High
2E - 002	BEDICHEK, WILLIAMS	MEADOW LEA DR	No bike facility, Wide ROW	Bike Lane - MEADOW LEA DR from S 1ST ST to LUNAR DR	3 - Medium	3 - Medium
2E - 003	BEDICHEK, PLEASANT HILL, UPHAUS	CIRCLE S RD	Desired bike route, Excessive vehicle speeds, No bike facility	Sidepath - CIRCLE S RD from E DITTMAR RD to S CONGRESS AVE, Add speed cushions - CIRCLE S RD from E WILLIAM CANNON DR to S CONGRESS AVE +	1 - Very High	5 - Very Low
2E - 004	BEDICHEK, WILLIAMS	BELCLAIRE LN	No bike facility, Wide ROW	Bike Lane - BELCLAIRE LN from MAIRO ST to BLUE VALLEY DR	2 - High	1 - Very High
2E - 005	WILLIAMS, BEDICHEK	BLUE VALLEY DR	No bike facility, Wide ROW	Bike Lane - BLUE VALLEY DR from S 1ST ST to MAIRO ST	1 - Very High	2 - High
2E - 006	PLEASANT HILL, BEDICHEK	STARSTREAK DR	Excessive vehicle speeds	Add speed cushions - STARSTREAK DR from W WILLIAM CANNON DR to EBERHART LN	2 - High	1 - Very High
2E - 007	WILLIAMS, BEDICHEK	PRINCE VALIANT DR	No bike facility, Wide ROW	Protected Bike Lane - PRINCE VALIANT DR from COOPER LN to S 1ST ST ~	2 - High	2 - High
2E - 008	BEDICHEK, PLEASANT HILL, UPHAUS	LITTLE TEXAS LN	Desired bike route	Protected Bike Lane - LITTLE TEXAS LN from S CONGRESS AVE to S IH 35 SVRD SB	2 - High	4 - Low
2E - 009	BEDICHEK, PLEASANT HILL, UPHAUS	EBERHART LN	Desired bike route	Protected Bike Lane - EBERHART LN from S 1ST ST to S CONGRESS AVE	1 - Very High	3 - Medium
2E - 010	PLEASANT HILL, BEDICHEK, WILLIAMS, UPHAUS	LUNAR DR	Excessive vehicle speeds, No bike facility, Wide ROW	Bike Lane - LUNAR DR from W DITTMAR RD to SUNSTRIP DR	1 - Very High	3 - Medium
2E - 011	PLEASANT HILL, BEDICHEK, UPHAUS	MERRIWOOD DR	Desired bike route, No bike facility, Wide ROW	Bike Lane - MERRIWOOD DR from EBERHART LN to FLOURNOY DR	1 - Very High	2 - High

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2E - 012	WILLIAMS, BEDICHEK	RALPH ABLANEDO DR	No bike facility	Sidepath - RALPH ABLANEDO DR from S 1ST ST to S CONGRESS AVE	1 - Very High	5 - Very Low
2E - 013	ODOM, WILLIAMS, BEDICHEK, UPHAUS	S 1ST ST	Excessive vehicle speeds, No bike facility	Sidepath - S 1ST ST from W SLAUGHTER LN to W STASSNEY LN	1 - Very High	5 - Very Low
2E - 014	PLEASANT HILL, BEDICHEK, UPHAUS	CLOUDVIEW DR	No bike facility	Neighborhood Bikeway - CLOUDVIEW DR from LUNAR DR to S CONGRESS AVE, Add climbing bike lane on N side of Street - CLOUDVIEW DR from LUNAR DR to S CONGRESS AVE ~	2 - High	1 - Very High
2E - 015	BEDICHEK, PLEASANT HILL, UPHAUS	NORTH BLUFF DR	Excessive vehicle speeds, No bike facility	Sidepath - NORTH BLUFF DR from S CONGRESS AVE to near 705 N BLUFF DRIVE +	1 - Very High	5 - Very Low
2E - 016	WILLIAMS, BEDICHEK	COLDSTREA M DR	No bike facility, Wide ROW	Bike Lane - COLDSTREAM DR from BLUE VALLEY DR to W DITTMAR RD	1 - Very High	1 - Very High
2E - 017	ODOM	COUGAR DR	Excessive vehicle speeds, Wide ROW	Add speed cushions - COUGAR DR from TURTLE CREEK BLVD to AIROSO CV	1 - Very High	1 - Very High
2E - 018	ODOM, BEDICHEK, UPHAUS	SPEER LN	Parking in bike lane	Add advisory bike lane - SPEER LN from WOODHUE DR to LIBYAN DR, Add advisory bike lanes - SPEER LN from LIBYAN DR to COOPER LN	2 - High	2 - High
2E - 019	ODOM, BEDICHEK, PLEASANT HILL, UPHAUS	FLOURNOY DR	Desired bike route, No bike facility	Add speed cushions - FLOURNOY DR from TURTLE CREEK BLVD to IDLEWOOD CV, Neighborhood Bikeway - FLOURNOY DR from TURTLE CREEK BLVD to IDLEWOOD CV	1 - Very High	2 - High

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2E - 020	BEDICHEK, WILLIAMS	COOPER LN	No bike facility, Poor pavement conditions, Wide ROW	Sidepath - COOPER LN from W DITTMAR RD to MATTHEWS LN, Protected Bike Lane - COOPER LN from W WILLIAM CANNON DR to MATTHEWS LN~ +	1 - Very High	5 - Very Low
2E - 021	BEDICHEK, WILLIAMS	MAIRO ST	Excessive vehicle speeds, No bike facility, Wide ROW	Add speed cushions - MAIRO ST from S 1ST ST to PEACEFUL HILL LN, Sidepath - MAIRO ST from S 1ST ST to VERRADO PATH	1 - Very High	5 - Very Low
2E - 022	BEDICHEK, PLEASANT HILL, UPHAUS	SUNSTRIP DR	Excessive vehicle speeds, No bike facility, Wide ROW	Buffered Bike Lane - SUNSTRIP DR from W WILLIAM CANNON DR to EBERHART LN, Add speed cushions - SUNSTRIP DR from W WILLIAM CANNON DR to EBERHART LN	1 - Very High	2 - High
2E - 023	BEDICHEK, WILLIAMS	W DITTMAR RD	Desired bike route, Excessive vehicle speeds, No bike facility, Wide ROW	Protected Bike Lane - W DITTMAR RD from S 1ST ST to LUNAR DR, Sidepath - W DITTMAR RD from LUNAR DR to E DITTMAR RD ~ +	1 - Very High	5 - Very Low
2E - 024	BEDICHEK, PLEASANT HILL, WILLIAMS, UPHAUS	BILL HUGHES RD	Excessive vehicle speeds, No bike facility, Wide ROW	Protected Bike Lane - BILL HUGHES RD from MEADOW LEA DR to THELMA DR, Sidepath - BILL HUGHES RD from THELMA DR to W WILLIAM CANNON DR ~ +	1 - Very High	4 - Low
2E - 025	CUNNINGHAM, PLEASANT HILL, BEDICHEK, UPHAUS	W WILLIAM CANNON DR	Excessive vehicle speeds, minimum separation from vehicles, No bike facility, No shade	Sidepath - W WILLIAM CANNON DR from NORTH BLUFF DR to CANNONLEAGUE DR, Add shade trees in planting strip - W WILLIAM CANNON DR from NORTH BLUFF DR to CANNONLEAGUE DR	1 - Very High	5 - Very Low

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2E - 026	BEDICHEK, ODOM, UPHAUS	TURTLE CREEK BLVD	Excessive vehicle speeds, No bike facility	Neighborhood Bikeway - TURTLE CREEK BLVD from BOXCAR RUN to EMERALD FOREST DR, Add speed cushions - TURTLE CREEK BLVD from EMERALD FOREST DR to S 1ST ST, Protected Bike Lane - TURTLE CREEK BLVD from EMERALD FOREST DR to FLOURNOY DR ~	1 - Very High	3 - Medium
2E - 027	BEDICHEK, WILLIAMS, PLEASANT HILL, UPHAUS	S CONGRESS AVE	Desired bike route, Excessive vehicle speeds, Wide ROW	Sidepath - S CONGRESS AVE from W DITTMAR RD to E STASSNEY LN, Add School Zone Sign with flashers - S CONGRESS AVE from NORTH BLUFF DR to LITTLE TEXAS LN, Add Dynamic Speed Display Device - S CONGRESS AVE from NORTH BLUFF DR to LITTLE TEXAS LN	1 - Very High	5 - Very Low
2E - 028	ODOM, BEDICHEK, UPHAUS	EMERALD FOREST DR	Desired bike route, Excessive vehicle speeds	Add speed cushions - EMERALD FOREST DR from W WILLIAM CANNON DR to W STASSNEY LN, Buffered Bike Lane - EMERALD FOREST DR from W WILLIAM CANNON DR to RADAM CIR	1 - Very High	4 - Low
2E - 029	BEDICHEK, PLEASANT HILL, UPHAUS	THELMA DR	No bike facility, Wide ROW	Sidepath - THELMA DR from S 1ST ST to BILL HUGHES RD, Protected Bike Lane - THELMA DR from BILL HUGHES RD to LUNAR DR	1 - Very High	5 - Very Low
2E - 030	WILLIAMS, BEDICHEK	PEACEFUL HILL LN	Desired bike route, No bike facility	Sidepath - PEACEFUL HILL LN from RALPH ABLANEDO DR to W DITTMAR RD	1 - Very High	5 - Very Low
2E - 031	ODOM	SAHARA AVE	Excessive vehicle speeds, Wide ROW	Add speed cushions - SAHARA AVE from EMERALD FOREST DR to COUGAR DR	1 - Very High	1 - Very High
2E - 032	ODOM	EMERALD FOREST DR	Excessive vehicle speeds	Study speed reduction - EMERALD FOREST DR from CHERRY LOOP to KENYON DR	4 - Low	3 - Medium
2E - 201	None (nearest school: Williams)	RAMBLE LN	Missing sidewalk	Construct new sidewalk - RAMBLE LN from LISHILL CV to SALEM WALK DR	3 - Medium	5 - Very Low

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2E - 202	None (nearest school: Bedichek, Pleasant Hill)	CHAPARRAL RD	Missing sidewalk	Construct new sidewalk - CHAPARRAL RD from CIRCLE S RD to S IH 35 SVRD SB	3 - Medium	3 - Medium
2E - 204	WILLIAMS	CULLEN LN	Missing sidewalk	Construct new sidewalk - CULLEN LN from W SLAUGHTER LN to RALPH ABLANEDO DR	3 - Medium	3 - Medium
2E - 205	PLEASANT HILL	AINSWORTH ST	Missing sidewalk	Construct new sidewalk - AINSWORTH ST from GLEN MEADOW DR to S CONGRESS AVE	2 - High	2 - High
2E - 206	ODOM	TURTLE CREEK BLVD	Missing sidewalk	Construct new sidewalk - TURTLE CREEK BLVD from FLOURNOY DR to SAHARA AVE	2 - High	4 - Low
2E - 207	ODOM	SAHARA AVE	Missing sidewalk	Construct new sidewalk - SAHARA AVE from MOJAVE DR to EMERALD FOREST DR	2 - High	4 - Low
2E - 208	BEDICHEK, PLEASANT HILL	LUNAR DR	Missing sidewalk	Construct new sidewalk - LUNAR DR from W WILLIAM CANNON DR to CLEARDAY DR	3 - Medium	2 - High
2E - 212	ODOM	GLENHOLLO W PATH	Missing sidewalk	Construct new sidewalk - GLENHOLLOW PATH from BRAMBLE DR to FLOURNOY DR	4 - Low	4 - Low
2E - 213	PLEASANT HILL	AINSWORTH ST	Missing sidewalk	Construct new sidewalk - AINSWORTH ST from S CONGRESS AVE to GLEN MEADOW DR	2 - High	2 - High
2E - 214	ODOM	W STASSNEY LN	Poor condition	Repair existing sidewalk - W STASSNEY LN from COUGAR DR to EMERALD FOREST DR	5 - Very Low	4 - Low
2E - 215	ODOM	KENYON DR	Missing sidewalk	Construct new sidewalk - KENYON DR from EMERALD FOREST DR to LIBYAN DR	3 - Medium	5 - Very Low
2E - 216	ODOM	GOBI DR	Missing sidewalk	Construct new sidewalk - GOBI DR from EMERALD FOREST DR to MOJAVE DR	3 - Medium	2 - High
2E - 217	BEDICHEK	MATTHEWS LN	Missing sidewalk	Construct new sidewalk - MATTHEWS LN from DEE ST to COOPER LN	3 - Medium	5 - Very Low

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2E - 219	WILLIAMS	BALDRIDGE DR	Poor condition	Repair existing sidewalk - BALDRIDGE DR from BEACONCREST DR to PEACEFUL HILL LN	5 - Very Low	4 - Low
2E - 221	BEDICHEK	MULBERRY DR	Missing sidewalk	Construct new sidewalk - MULBERRY DR from TEABERRY DR to S 1ST ST	4 - Low	3 - Medium
2E - 222	BEDICHEK, PLEASANT HILL	BRADSHER DR	Missing sidewalk	Construct new sidewalk - BRADSHER DR from SOUTH MEADOWS BLVD to EBERHART LN	2 - High	3 - Medium
2E - 223	ODOM, BEDICHEK	PEVENSEY DR	Missing sidewalk	Construct new sidewalk - PEVENSEY DR from MIDDLEHAM PL to KING EDWARD PL	2 - High	3 - Medium
2E - 224	WILLIAMS	MAIRO ST	Missing sidewalk	Construct new sidewalk - MAIRO ST from S 1ST ST to BOGGY RIDGE DR	3 - Medium	4 - Low
2E - 225	BEDICHEK, PLEASANT HILL	SKYLOOP DR	Missing sidewalk	Construct new sidewalk - SKYLOOP DR from SUNSTRIP DR to SUNNYSKY WAY	3 - Medium	3 - Medium
2E - 226	WILLIAMS	W DITTMAR RD	Missing sidewalk	Construct new sidewalk - W DITTMAR RD from ELDERBERRY DR to COLDSTREAM DR	2 - High	1 - Very High
2E - 227	WILLIAMS	BLUE VALLEY DR	Missing sidewalk	Construct new sidewalk - BLUE VALLEY DR from COLDSTREAM DR to BELCLAIRE LN	2 - High	3 - Medium
2E - 228	WILLIAMS	S 1ST ST	Missing sidewalk	Construct new sidewalk - S 1ST ST from MAIRO ST to BLUE VALLEY DR	2 - High	3 - Medium
2E - 229	WILLIAMS	BOGGY RIDGE DR	Poor condition	Repair existing sidewalk - BOGGY RIDGE DR from MAIRO ST to BLUE VALLEY DR	5 - Very Low	4 - Low
2E - 230	ODOM, BEDICHEK	MILFORD WAY	Missing sidewalk	Construct new sidewalk - MILFORD WAY from COOPER LN to EMERALD FOREST DR	4 - Low	3 - Medium
2E - 231	ODOM	BLYTHEWOOD DR	Missing sidewalk	Construct new sidewalk - BLYTHEWOOD DR from BRAMBLE DR to FLOURNOY DR	3 - Medium	2 - High
2E - 232	BEDICHEK	LUNAR DR	Narrow sidewalk, Temporary obstruction (ex. vegetation)	Fix sidewalk obstructions - LUNAR DR from TAWNY DR to WISHING WELL DR	5 - Very Low	5 - Very Low

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2E - 233	ODOM	GOBI DR	Missing sidewalk	Construct new sidewalk - GOBI DR from MOJAVE DR to W STASSNEY LN	3 - Medium	2 - High
2E - 234	WILLIAMS	W DITTMAR RD	Narrow sidewalk	Widen existing sidewalk - W DITTMAR RD from LUNAR DR to PEACEFUL HILL LN	4 - Low	5 - Very Low
2E - 235	PLEASANT HILL, BEDICHEK	SKYLOOP DR	Missing sidewalk	Construct new sidewalk - SKYLOOP DR from STARSTREAK DR to SUNSTRIP DR	3 - Medium	4 - Low
2E - 236	ODOM, BEDICHEK	ARMADILLO RD	Missing sidewalk	Construct new sidewalk - ARMADILLO RD from CHIPPEWAY LN to COOPER LN	2 - High	3 - Medium
2E - 237	ODOM	FLOURNOY DR	Missing sidewalk	Construct new sidewalk - FLOURNOY DR from BLYTHEWOOD DR to S 1ST ST	2 - High	2 - High
2E - 238	PLEASANT HILL, BEDICHEK	EBERHART LN	Missing sidewalk	Construct new sidewalk - EBERHART LN from SUNSTRIP DR to S CONGRESS AVE	2 - High	2 - High
2E - 239	ODOM	NANCY DR	Missing sidewalk	Construct new sidewalk - NANCY DR from SAHARA AVE to CYNTHIA DR, Construct new sidewalk - NANCY DR from CYNTHIA DR to W STASSNEY LN	2 - High	3 - Medium
2E - 240	BEDICHEK	COOPER LN	Missing sidewalk	Construct new sidewalk - COOPER LN from MATTHEWS LN to HUNTINGDON PL	1 - Very High	2 - High
2E - 241	PLEASANT HILL	FLOURNOY DR	Missing sidewalk	Construct new sidewalk - FLOURNOY DR from MERRIWOOD DR to GLEN MEADOW DR	2 - High	1 - Very High
2E - 242	ODOM	SAHARA AVE	Missing sidewalk, Poor condition	Construct new sidewalk - SAHARA AVE from COUGAR DR to NANCY DR, Repair existing sidewalk - SAHARA AVE from NANCY DR to LEISURE RUN RD	2 - High	1 - Very High
2E - 243	ODOM	BRAMBLE DR	Missing sidewalk	Construct new sidewalk - BRAMBLE DR from GLEN MEADOW DR to S 1ST ST	2 - High	3 - Medium
2E - 244	BEDICHEK, PLEASANT HILL	STARBRIGHT DR	Missing sidewalk	Construct new sidewalk - STARBRIGHT DR from SUNSTRIP DR to STARSTREAK DR	2 - High	1 - Very High

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2E - 245	PLEASANT HILL, BEDICHEK	SUNSTRIP DR	Missing sidewalk	Construct new sidewalk - SUNSTRIP DR from W WILLIAM CANNON DR to STARBRIGHT DR	2 - High	1 - Very High
2E - 246	BEDICHEK	THELMA DR	Missing sidewalk	Construct new sidewalk - THELMA DR from SHADYWOOD DR to BILL HUGHES RD	2 - High	2 - High
2E - 247	PLEASANT HILL	NORTH BLUFF DR	Narrow sidewalk, Sidewalk level with roadway	Widen existing sidewalk - NORTH BLUFF DR from Near 200 NORTH BLUFF DR to CROW LN, Add curb and gutter - NORTH BLUFF DR from Near 200 NORTH BLUFF DR to CROW LN	4 - Low	4 - Low
2E - 248	WILLIAMS	BALDRIDGE DR	Poor condition	Repair existing sidewalk - BALDRIDGE DR from PEACEFUL HILL LN to BEACONCREST DR	5 - Very Low	4 - Low
2E - 249	PLEASANT HILL	S CONGRESS AVE	Buffer disappears in front of twin motors, Driveway crossings not accessible, Missing sidewalk, Poor condition	Construct new sidewalk - S CONGRESS AVE from Near 6303 CONGRESS AVE to Near 6303 CONGRESS AVE, Continue buffer - S CONGRESS AVE Near 6303 CONGRESS AVE	2 - High	3 - Medium
2E - 250	BEDICHEK	BILL HUGHES RD	Missing sidewalk, Narrow sidewalk, Temporary obstruction (ex. vegetation)	Fix sidewalk obstructions - BILL HUGHES RD from TEABERRY DR to MULBERRY DR, Construct new sidewalk - BILL HUGHES RD from THELMA DR to GREYCLOUD DR	1 - Very High	2 - High
2E - 251	WILLIAMS	PEACEFUL HILL LN	Poor condition	Repair existing sidewalk - PEACEFUL HILL LN from VERRADO PATH to BYRDHILL LN	4 - Low	4 - Low
2E - 252	ODOM	COUGAR DR	Missing sidewalk	Construct new sidewalk - COUGAR DR from AIROSO CV to SAHARA AVE	2 - High	2 - High
2E - 253	PLEASANT HILL	CRAIGMONT DR	Missing sidewalk	Construct new sidewalk - CRAIGMONT DR from Near 201 CRAIGMONT DR to MERRIWOOD DR	2 - High	3 - Medium

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2E - 254	PLEASANT HILL	WAYCROSS DR	Missing sidewalk	Construct new sidewalk - WAYCROSS DR from CRAIGMONT DR to Near 6204 WAYCROSS DR	4 - Low	3 - Medium
2E - 255	PLEASANT HILL	GLEN MEADOW DR	Missing sidewalk	Construct new sidewalk - GLEN MEADOW DR from IDLEWOOD CV to CRAIGMONT DR	4 - Low	3 - Medium
2E - 256	BEDICHEK, PLEASANT HILL	STARSTREAK DR	Missing sidewalk	Construct new sidewalk - STARSTREAK DR from STARBRIGHT DR to W WILLIAM CANNON DR	3 - Medium	2 - High
2E - 257	PLEASANT HILL, BEDICHEK	SKYNOOK DR	Missing sidewalk	Construct new sidewalk - SKYNOOK DR from W WILLIAM CANNON DR to CLEARDAY DR	4 - Low	4 - Low
2E - 258	BEDICHEK, PLEASANT HILL	CLEARDAY DR	Missing sidewalk	Construct new sidewalk - CLEARDAY DR from STAR DR to S CONGRESS AVE	4 - Low	3 - Medium
2E - 259	ODOM	SAHARA AVE	Missing sidewalk	Construct new sidewalk - SAHARA AVE from Near 1400 SAHARA AVE to LIBYAN DR	4 - Low	3 - Medium
2E - 260	ODOM	LIBYAN DR	Missing sidewalk	Construct new sidewalk - LIBYAN DR from Near 6210 LIBYAN DR to Near 6304 LIBYAN DR	3 - Medium	2 - High
2E - 261	ODOM	LIBYAN DR	Missing sidewalk	Construct new sidewalk - LIBYAN DR from TURTLE CREEK BLVD to GOBI DR	3 - Medium	4 - Low
2E - 262	ODOM	MOJAVE DR	Missing sidewalk	Construct new sidewalk - MOJAVE DR from SAHARA AVE to GOBI DR	4 - Low	4 - Low
2E - 263	ODOM	EUREKA DR	Missing sidewalk	Construct new sidewalk - EUREKA DR from GOBI DR to SAHARA AVE	3 - Medium	4 - Low
2E - 601	WILLIAMS	BLUE VALLEY DR / COLDSTREAM DR	Missing curb ramps, Wide curb radii	Add curb extensions, Install 1 curb ramp, Tighten curb radii	2 - High	1 - Very High

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2E - 602	ODOM	BLYTHEWO OD DR / FLOURNOY DR	Missing curb ramps,Wide curb radii	Install 2 curb ramps, Tighten curb radii	2 - High	2 - High
2E - 603	ODOM	NANCY DR / SAHARA AVE	Missing curb ramps,Wide curb radii	Install 2 curb ramps, Tighten curb radii	2 - High	1 - Very High
2E - 604	ODOM	COUGAR DR / W STASSNEY LN	Non-compliant curb ramps,Difficult crossing	Install high visibility crosswalk, Replace existing curb ramp	2 - High	1 - Very High
2E - 605	WILLIAMS	BLUE VALLEY DR / CREEKMERE LN	Wide curb radii	Replace existing curb ramp, Tighten curb radii	2 - High	1 - Very High
2E - 606	WILLIAMS	BLUE VALLEY DR / MAIRO ST	Missing curb ramps	Add curb extensions, Install 1 curb ramp	1 - Very High	1 - Very High
2E - 607	ODOM	EMERALD FOREST DR / SAHARA AVE	Difficult crossing	Install high visibility crosswalk	1 - Very High	1 - Very High
2E - 608	ODOM	KING ALBERT / MIDDLEHA M PL	Missing curb ramps	Install 2 curb ramps	2 - High	1 - Very High

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2E - 609	WILLIAMS	BEAVER BROOK LN / MAIRO ST	Non-compliant curb ramps	Replace existing curb ramp	5 - Very Low	3 - Medium
2E - 610	PLEASANT HILL	MERRIWOOD DR / TREYS WAY	Missing curb ramps	Install 2 curb ramps	2 - High	1 - Very High
2E - 611	ODOM	FLOURNOY DR / GLENHOLLO W PATH	Missing curb ramps, Wide curb radii	Install 2 curb ramps, Tighten curb radii	3 - Medium	2 - High
2E - 612	ODOM	LEISURE RUN RD / SAHARA AVE	Missing curb ramps, Wide curb radii	Install 2 curb ramps, Tighten curb radii	2 - High	1 - Very High
2E - 613	BEDICHEK	COOPER LN / MATTHEWS LN	Wide curb radii	Eliminate slip lane, Install high visibility crosswalk, Intersection reconfiguration	2 - High	4 - Low
2E - 614	ODOM	MIDDLEHAM PL / TURTLE CREEK BLVD	Missing curb ramps, Wide curb radii	Install 2 curb ramps, Tighten curb radii	2 - High	1 - Very High
2E - 615	ODOM	ESTATES CV / TURTLE CREEK BLVD	Missing curb ramps, Wide curb radii	Install 2 curb ramps, Tighten curb radii	2 - High	1 - Very High

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2E - 616	ODOM	COUGAR DR / SAHARA AVE	Missing curb ramps, non compliant drainage	Install 1 curb ramp, Replace existing curb ramp	1 - Very High	1 - Very High
2E - 617	ODOM	EUREKA DR / SAHARA AVE	Missing curb ramps	Install 2 curb ramps	2 - High	1 - Very High
2E - 618	ODOM	EMERALD FOREST DR / SOUTH TRACE DR	Missing curb ramps	Install 2 curb ramps	2 - High	1 - Very High
2E - 619	ODOM	MOJAVE DR / SAHARA AVE	Missing curb ramps	Install 2 curb ramps	3 - Medium	1 - Very High
2E - 620	BEDICHEK	MEADOW LEA DR / SHADYWOOD DR	Missing curb ramps	Install 4 curb ramps	2 - High	1 - Very High
2E - 621	ODOM	EMERALD FOREST DR / GOBI DR	Missing curb ramps, Non-compliant curb ramps	Install 1 curb ramp, Replace existing curb ramp	2 - High	1 - Very High
2E - 622	WILLIAMS	CREEKMERE LN / W DITTMAR RD	Missing curb ramps	Install 2 curb ramps	2 - High	1 - Very High

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2E - 623	WILLIAMS	BEACONCRE ST DR / MAIRO ST	Missing curb ramps	Install 2 curb ramps	1 - Very High	1 - Very High
2E - 624	WILLIAMS	BALDRIDGE DR / BEACONCRE ST DR	Missing curb ramps	Install 2 curb ramps	1 - Very High	1 - Very High
2E - 625	ODOM	LIBYAN DR / SAHARA AVE	Missing curb ramps	Install 2 curb ramps	2 - High	1 - Very High
2E - 626	WILLIAMS	ELDERBERRY DR / W DITTMAR RD	Non-compliant curb ramps	Replace existing curb ramp	5 - Very Low	3 - Medium
2E - 627	BEDICHEK, PLEASANT HILL	LUNAR DR / SUNSTRIP DR / W WILLIAM CANNON DR	Difficult crossing, High speed crossing, Long crossing distance	Install high visibility crosswalk, Install Pedestrian Hybrid Beacon	1 - Very High	2 - High
2E - 628	PLEASANT HILL	CIRCLE S RD / EBERHART LN / S CONGRESS AVE	High speed crossing, Vehicles blocking crosswalk	Install/update pedestrian signal heads	1 - Very High	1 - Very High

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2E - 629	WILLIAMS	PEACEFUL HILL LN / RALPH ABLANEDO DR	High speed crossing	Add flashers to existing pedestrian crossing signs	1 - Very High	1 - Very High
2E - 630	WILLIAMS	BALDRIDGE DR / PEACEFUL HILL LN	Non-compliant curb ramps, Overgrown vegetation	Maintain sidewalk/curb ramp, Replace existing curb ramp	4 - Low	2 - High
2E - 631	WILLIAMS	BLUE VALLEY DR / BOGGY RIDGE DR	Non-compliant curb ramps	Replace existing curb ramp	5 - Very Low	4 - Low
2E - 632	BEDICHEK	CLOUDVIEW DR / LUNAR DR	Non-compliant curb ramps, High speed crossing, Long crossing distance	Add curb extensions, Install high visibility crosswalk, Replace existing curb ramp +	3 - Medium	2 - High
2E - 633	ODOM	BLYTHEWOOD DR / BRAMBLE DR	Missing curb ramps	Install 2 curb ramps	3 - Medium	2 - High
2E - 634	WILLIAMS	BELCLAIRE LN / MAIRO ST	Non-compliant curb ramps, Long crossing distance	Add curb extensions, Replace existing curb ramp	2 - High	1 - Very High
2E - 635	WILLIAMS	MAIRO ST / S 1ST ST	Non-compliant curb ramps, PHB timing	Replace existing curb ramp, Retime PHB to stay solid red until countdown has finished	4 - Low	3 - Medium

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2E - 636	ODOM	COUGAR DR / TURTLE CREEK BLVD	High speed crossing	Add curb extensions, Install stop sign ~ +	1 - Very High	1 - Very High
2E - 637	BEDICHEK	BILL HUGHES RD / MEADOW LEA DR	Missing curb ramps,Difficult crossing	Install 1 curb ramp, Install high visibility crosswalk	3 - Medium	2 - High
2E - 638	None (nearest school: Odom, Bedichek)	EMERALD FOREST DR / W WILLIAM CANNON DR	Missing curb ramps,Non-compliant curb ramps,Faded crosswalk markings,Non-ADA push buttons,High speed crossing,Long crossing distance	Install 1 curb ramp, Install/update pedestrian push buttons, Repaint crosswalk markings, Replace existing curb ramp	3 - Medium	2 - High
2E - 639	BEDICHEK	LUNAR DR / MEADOW LEA DR	Missing curb ramps	Install 4 curb ramps	3 - Medium	1 - Very High

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2E - 640	PLEASANT HILL	NORTH BLUFF DR / S CONGRESS AVE	High speed crossing, Poor sightlines, Non-compliant curb ramps, Difficult crossing, Long crossing distance, Wide curb radii, No lighting	Add leading pedestrian interval, Add lighting, Eliminate slip lane, Install high visibility crosswalk, Replace existing curb ramp, Tighten curb radii +	2 - High	5 - Very Low
2E - 641	PLEASANT HILL	LITTLE TEXAS LN / S CONGRESS AVE	High speed crossing, Long crossing distance, No lighting	Add exclusive pedestrian phase or LPI at S. Congress and Little Texas, Add lighting	3 - Medium	1 - Very High
2E - 642	PLEASANT HILL	FLOURNOY DR / MERRIWOOD DR	Missing curb ramps, Difficult crossing	Install 2 curb ramps, Install high visibility crosswalk	2 - High	1 - Very High
2E - 643	BEDICHEK	COOPER LN / PRINCE VALIANT DR	Difficult crossing	Add lighting, Install high visibility crosswalk	2 - High	1 - Very High
2E - 644	PLEASANT HILL	CROW LN / NORTH BLUFF DR	Non-compliant curb ramps, Difficult crossing	Install high visibility crosswalk, Replace existing curb ramp	2 - High	1 - Very High

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2E - 645	PLEASANT HILL	EBERHART LN / STARSTREAK DR	Non-compliant curb ramps,Difficult crossing,Wide curb radii	Install high visibility crosswalk, Tighten curb radii +	2 - High	2 - High
2E - 646	BEDICHEK	COOPER LN / W WILLIAM CANNON DR	Non-compliant curb ramps,Faded crosswalk markings,Non-ADA push buttons,High speed crossing,Long crossing distance	Install/update pedestrian push buttons, Repaint crosswalk markings, Replace existing curb ramp	1 - Very High	1 - Very High
2E - 647	ODOM	SAHARA AVE / TURTLE CREEK BLVD	Poor sightlines,Wide curb radii	Add "Look both ways for bikes" signs, Tighten curb radii +	2 - High	2 - High
2E - 648	ODOM	BRAMBLE DR / S 1ST ST	Non-compliant curb ramps,Difficult crossing	Install high visibility crosswalk, Replace existing curb ramp	1 - Very High	1 - Very High
2E - 649	ODOM	EMERALD FOREST DR / SPEER LN	Missing curb ramps,Difficult crossing	Install 4 curb ramps, Install high visibility crosswalk	2 - High	1 - Very High

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2E - 650	ODOM	NANCY DR / W STASSNEY LN	Missing curb ramps, Difficult crossing	Install 2 curb ramps, Install high visibility crosswalk	1 - Very High	1 - Very High
2E - 651	ODOM, BEDICHEK	EBERHART LN / MIDDLEHAM PL	Difficult crossing	Install high visibility crosswalk	2 - High	1 - Very High
2E - 652	ODOM	S 1ST ST / W STASSNEY LN	Non-compliant curb ramps, Faded crosswalk markings, Non-ADA push buttons	Install high visibility crosswalk, Install/update pedestrian push buttons, Replace existing curb ramp	1 - Very High	1 - Very High
2E - 653	ODOM	BLUEBERRY HILL / S 1ST ST	Non-compliant curb ramps, Wide curb radii	Replace existing curb ramp, Tighten curb radii	1 - Very High	1 - Very High
2E - 654	BEDICHEK	BILL HUGHES RD / THELMA DR	Non-compliant curb ramps	Add curb extensions, Replace existing curb ramp	1 - Very High	1 - Very High

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2E - 655	WILLIAMS	LUNAR DR / W DITTMAR RD	Long crossing distance, High speed crossing, Non-compliant curb ramps, Missing curb ramps, Difficult crossing	Add curb extensions, Install 2 curb ramps, Install high visibility crosswalk, Replace existing curb ramp +	2 - High	1 - Very High
2E - 656	ODOM	FLOURNOY DR / S 1ST ST / TURTLE CREEK BLVD	Faded crosswalk markings, Non-ADA push buttons, High speed crossing	Install/update pedestrian push buttons, Repaint crosswalk markings	1 - Very High	1 - Very High
2E - 657	WILLIAMS	COLDSTREAM DR / W DITTMAR RD	Non-compliant curb ramps, Poor sightlines, High speed crossing, Long crossing distance	Install stop sign, Replace existing curb ramp, Tighten curb radii ~	1 - Very High	1 - Very High
2E - 658	PLEASANT HILL	CIRCLE S RD / E WILLIAM CANNON DR / W WILLIAM CANNON DR	Non-compliant curb ramps, Faded crosswalk markings, Non-ADA push buttons	Install high visibility crosswalk, Install/update pedestrian push buttons, Replace existing curb ramp	1 - Very High	1 - Very High

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2E - 659	BEDICHEK	S 1ST ST / W WILLIAM CANNON DR	Non-compliant curb ramps,Non-ADA push buttons,Long crossing distance,High speed crossing	Install/update pedestrian push buttons, Replace existing curb ramp	1 - Very High	1 - Very High
2E - 660	PLEASANT HILL, BEDICHEK	EBERHART LN / MERRIWOOD DR / SUNSTRIP DR	Non-compliant curb ramps,Difficult crossing, Along proposed 2-way SBL	Install high visibility crosswalk, Install stop sign, Replace existing curb ramp	1 - Very High	1 - Very High
2E - 661	ODOM	EMERALD FOREST DR / W STASSNEY LN	Non-compliant curb ramps,Faded crosswalk markings,Non-ADA push buttons,High speed crossing,Long crossing distance	Add median refuge island on W Stassney Ln, Install high visibility crosswalk, Replace existing curb ramp	1 - Very High	1 - Very High
2E - 662	WILLIAMS	MAIRO ST / PEACEFUL HILL LN / VERRADO PATH	Difficult crossing,Missing curb ramps,Non-compliant curb ramps,High speed crossing	Add curb extensions, Install 1 curb ramp, Install high visibility crosswalk, Install stop sign, Replace existing curb ramp	1 - Very High	1 - Very High

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2E - 663	BEDICHEK	PRINCE VALIANT DR / S 1ST ST	High speed crossing, Long crossing distance	Install 1 curb ramp, Install high visibility crosswalk, Install Pedestrian Hybrid Beacon, Replace existing curb ramp	1 - Very High	2 - High
2E - 664	BEDICHEK, ODOM	EBERHART LN / S 1ST ST	Non-compliant curb ramps, Faded crosswalk markings, Non-ADA push buttons, High speed crossing, No lighting	Add lighting, Install high visibility crosswalk, Install/update pedestrian push buttons, Replace existing curb ramp	1 - Very High	1 - Very High
2E - 665	WILLIAMS	S 1ST ST / W DITTMAR RD	Non-compliant curb ramps, Non-ADA push buttons, Wide curb radii	Add crossing guard during school hours, Evaluate pedestrian signal timing, Install/update pedestrian push buttons, Replace existing curb ramp, Tighten curb radii	1 - Very High	1 - Very High
2E - 666	ODOM	EMERALD FOREST DR / TURTLE CREEK BLVD	Non-compliant curb ramps, Difficult crossing, High speed crossing	Eliminate slip lane, Install high visibility crosswalk, Replace existing curb ramp +	1 - Very High	2 - High

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2E - 667	BEDICHEK	BILL HUGHES RD / W WILLIAM CANNON DR	Missing curb ramps, Non-ADA push buttons, High speed crossing, Long crossing distance, Long pedestrian delay	Ensure signals are responsive to push button activation, Install/update pedestrian push buttons, Replace existing curb ramp	1 - Very High	1 - Very High
2E - 669	BEDICHEK	Midblock - BILL HUGHES RD	Long/fast speeds at crossing, missing curb ramps	Install 2 curb ramps; Tighten curb radii	1 - Very High	1 - Very High
2E - 670	PLEASANT HILL	Midblock - LITTLE TEXAS LN	Difficult intersection; Missing curb ramps	Add median refuge island; Install curb ramp 1 corner; Install high visibility crosswalk	3 - Medium	2 - High
2E - 671	None (nearest school: Widen, Mendez)	Midblock - E STASSNEY LN	Difficult intersection; Missing curb ramps	Add median refuge island; Install high visibility crosswalk; Install Pedestrian Hybrid Beacon; Replace existing curb ramp +	3 - Medium	3 - Medium
2E - 672	PLEASANT HILL	Midblock - S CONGRESS AVE	Long/fast speeds at crossing	Tighten curb radii	2 - High	1 - Very High
2E - 673	PLEASANT HILL	Midblock - NORTH BLUFF DR	Difficult intersection	Install raised crosswalk	1 - Very High	1 - Very High

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2E - 674	PLEASANT HILL	Midblock - NORTH BLUFF DR	Difficult intersection; Missing curb ramps	Install 2 curb ramps; Install crosswalk	3 - Medium	2 - High
2E - 675	WILLIAMS	Midblock - MAIRO ST	Difficult intersection; Missing curb ramps	Install 2 curb ramps; Install raised crosswalk	2 - High	1 - Very High
2E - 676	WILLIAMS	Midblock - BLUE VALLEY DR	Difficult intersection; Missing curb ramps	Replace existing curb ramp; Tighten curb radii	2 - High	1 - Very High
2E - 677	None (nearest school: Williams)	Midblock - S 1ST ST	Difficult intersection; Missing curb ramps	Add median refuge island; Install curb ramp 1 corner; Install high visibility crosswalk; Install/update pedestrian push buttons; Install/update pedestrian signal heads	3 - Medium	2 - High
2E - 678	PLEASANT HILL	Midblock - LITTLE TEXAS LN	Difficult intersection; Missing curb ramps	Add median refuge island; Install high visibility crosswalk	3 - Medium	2 - High
2E - 679	None (nearest school: Bedichek)	Midblock - W STASSNEY LN	Difficult intersection; Missing curb ramps	Install high visibility crosswalk; Install Pedestrian Hybrid Beacon	3 - Medium	3 - Medium
2E - 680	BEDICHEK	Midblock - THELMA DR	Difficult intersection; Missing curb ramps	Install 2 curb ramps; Install high visibility crosswalk	1 - Very High	1 - Very High

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2E - 681	BEDICHEK	Midblock - THELMA DR	Difficult intersection; Missing curb ramps	Install 2 curb ramps; Install high visibility crosswalk	1 - Very High	1 - Very High
2E - 682	BEDICHEK	Midblock - BILL HUGHES RD	Difficult intersection; Missing curb ramps	Install 2 curb ramps; Tighten curb radii	1 - Very High	1 - Very High
2E - 683	PLEASANT HILL	Midblock - CIRCLE S RD	Difficult intersection; Missing curb ramps	Install 1 curb ramp; Install high visibility crosswalk	1 - Very High	1 - Very High
2E - 684	BEDICHEK	LUNAR DR / THELMA DR	Difficult crossing	Add curb extensions	4 - Low	2 - High
2E - 801	PLEASANT HILL	Near 304 WILLIAM CANNON DR	School zone is too short; Vehicle speeding observed	Move school zone to 350-ft east of S Circle intersection	1 - Very High	1 - Very High
2E - 802	PLEASANT HILL	Near 6501 CONGRESS AVE	School zone is too short; Vehicle speeding observed	Evaluate speed zone signage placement	3 - Medium	2 - High
2E - 803	PLEASANT HILL	Near 6400 CONGRESS AVE	Signage hard to see	Reconfigure signage to be facing eastbound traffic; consider adjusting distance from intersection	4 - Low	2 - High
2E - 804	PLEASANT HILL	Near 6216 CROW LN	Lack of connectivity	Construct new trail; Add gate between apartment complexes	4 - Low	3 - Medium

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2E - 805	PLEASANT HILL	Near 6201 CONGRESS AVE	Signage hard to see	Add LED lighting to school zone signs	3 - Medium	1 - Very High
2E - 806	BEDICHEK	Near 513 MEADOW LEA DR	Missing sidewalk	Construct new sidewalk	3 - Medium	5 - Very Low
2E - 901	BEDICHEK, PLEASANT HILL	From Crow Ln to Little Texas Ln	No trail connection	Construct new trail	2 - High	5 - Very Low
2E - 902	PLEASANT HILL, BEDICHEK	From School sidewalk to back of Willow Brook	No trail connection	Construct new trail	1 - Very High	4 - Low
2E - 903	PLEASANT HILL, BEDICHEK	From Bradsher Dr (Trail) and then Along Bill Hughes Rd (Sidepath)	No trail connection	Construct new trail / Sidepath	1 - Very High	3 - Medium
2E - 904	WILLIAMS, BEDICHEK	Along shopping center driveway off of S 1st St	No trail connection	Construct new trail	1 - Very High	2 - High

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2E - 905	PLEASANT HILL, BEDICHEK	Near 6805 BILL HUGHES RD	Lack of connectivity	Construct new trail	1 - Very High	2 - High
2E - 906	PLEASANT HILL, BEDICHEK	Near 7213 CIRCLE SOUTH RD	Lack of connectivity	Construct new trail	2 - High	1 - Very High

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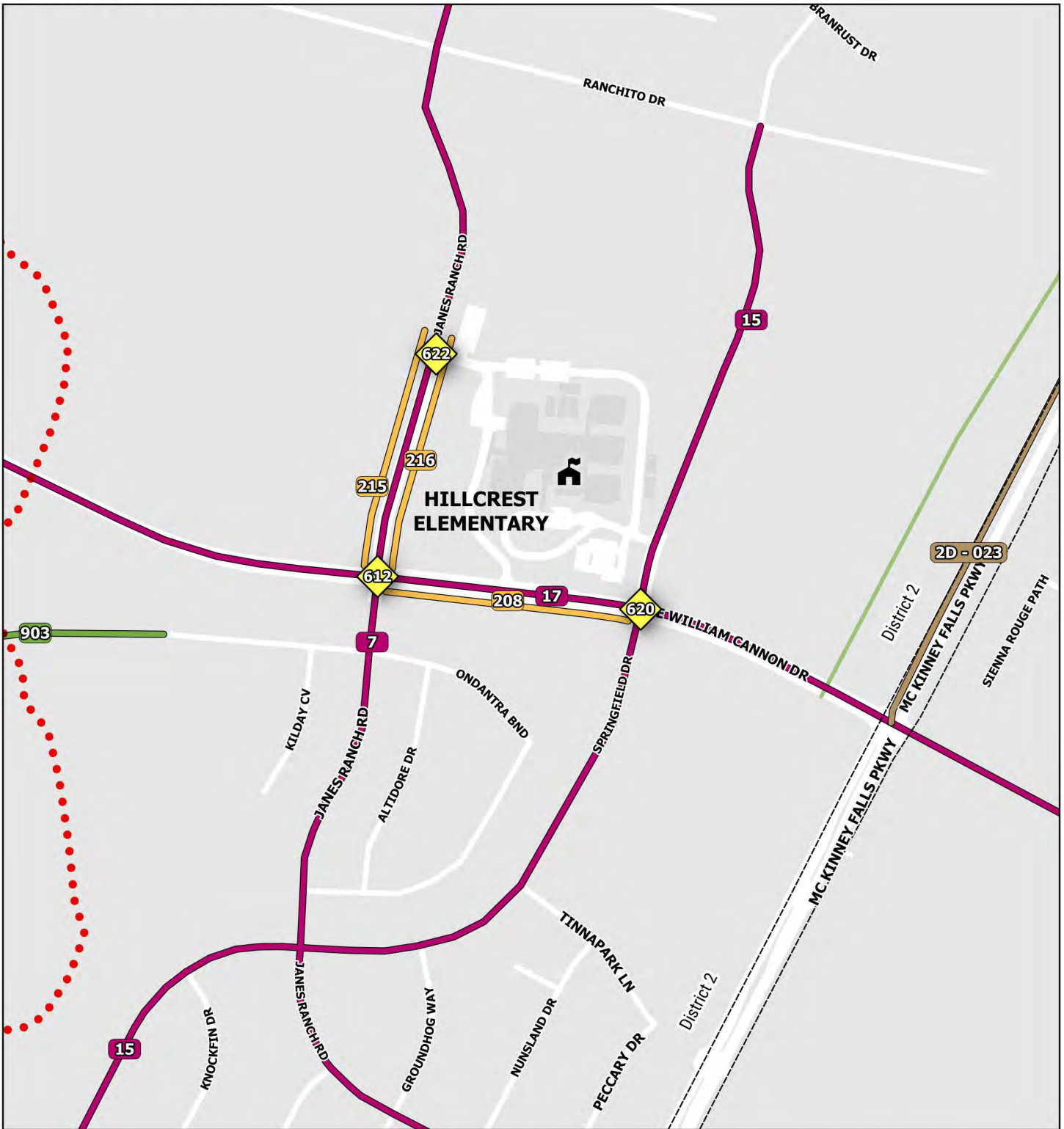
austin

MOTION

2016 MOBILITY BOND

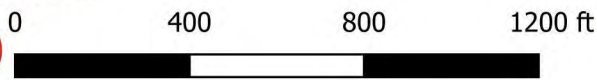
Off-Street Trail	Traffic Control / Intersection Reconfiguration
Bike Lane / Buffered Bike Lane / Protected Bike Lane	Ramp / Curb Extension / Crosswalk
Sidewalk	Over / Underpass
Neighborhood Bikeway / Traffic Calming	Other Spot Recommendation
New / Improved Sidewalk	Existing Trail
Other linear recommendation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

0 800 1600 2400 ft

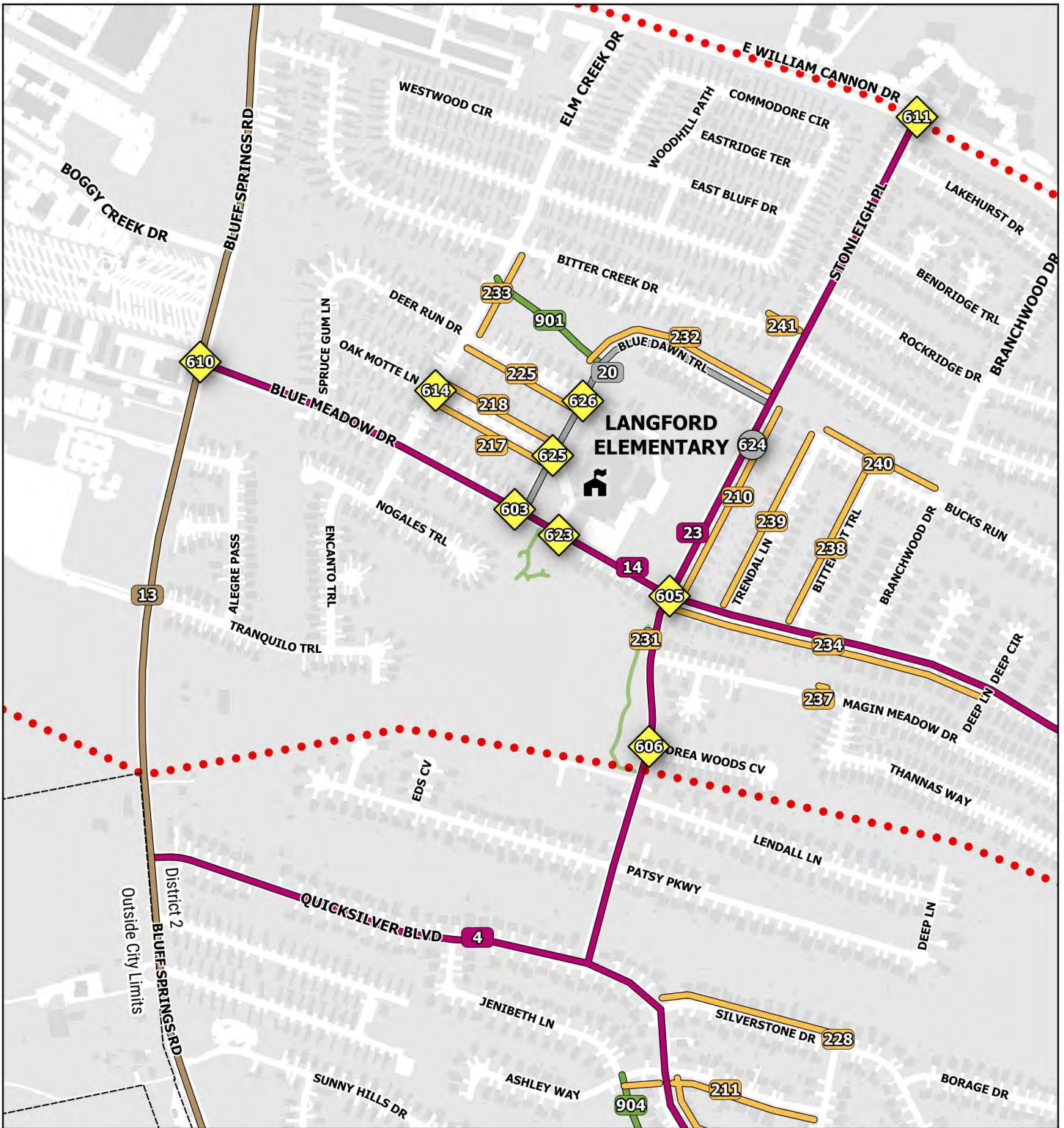


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MOTION
2016 MOBILITY BOND

TOOLE
DESIGN



- 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



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MOTION
 2016 MOBILITY BOND

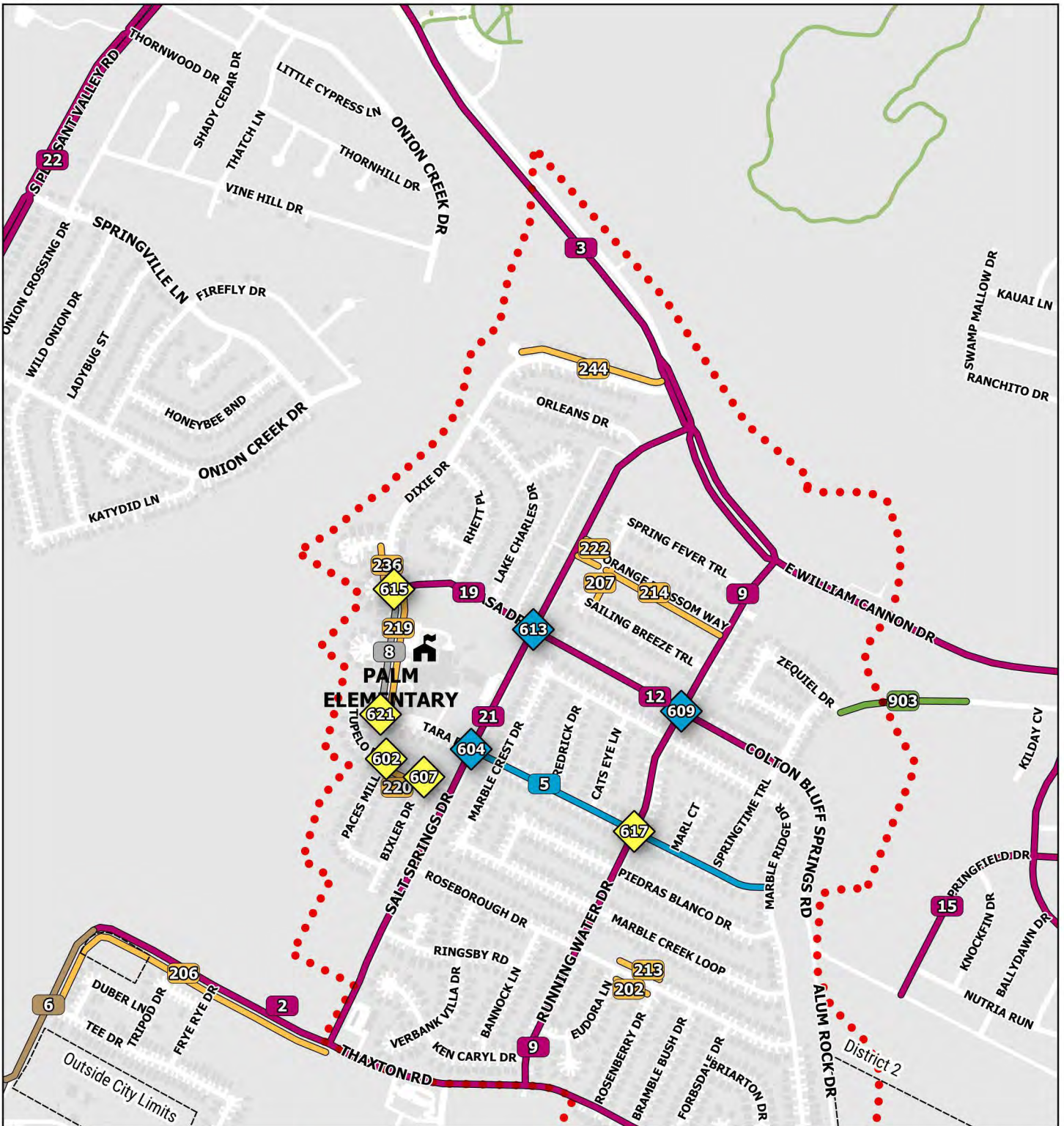
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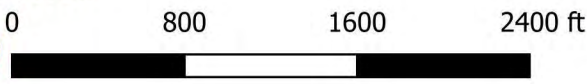


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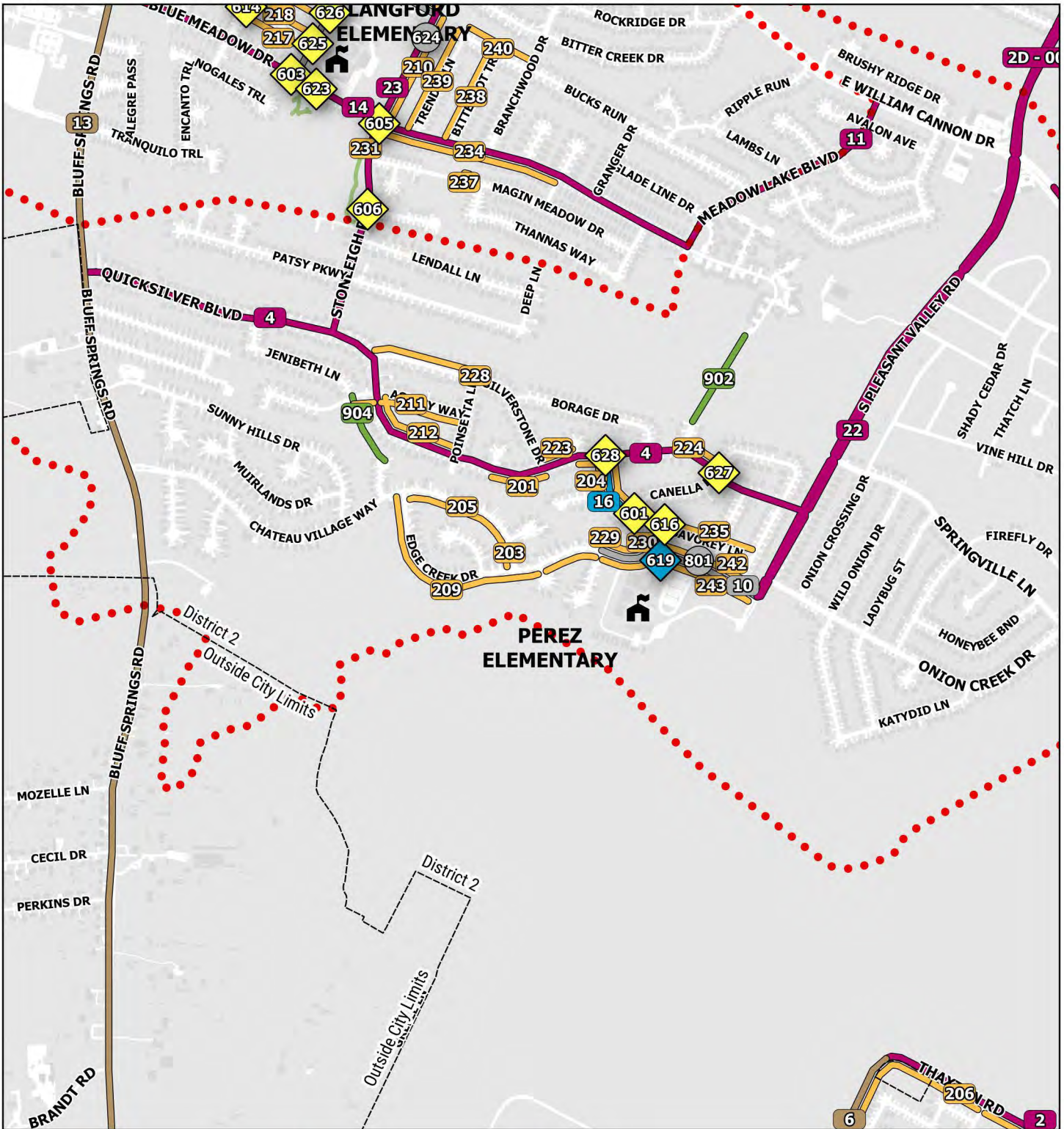
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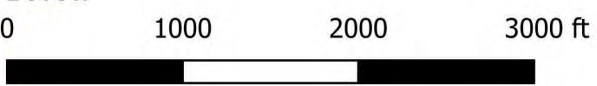
SCHOOL GROUP 2K

MAP 2K: PEREZ ELEMENTARY



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2K - 001*	BLAZIER	E SLAUGHTER LN	Desired bike route, Excessive vehicle speeds, No bike lane signage	Sidepath - E SLAUGHTER LN from BLUFF SPRINGS RD to VERTEX BLVD, Sidepath - VERTEX BLVD from E SLAUGHTER LN to BAYTHORNE DR	1 - Very High	5 - Very Low
2K - 002*	PALM, HILLCREST, BLAZIER	THAXTON RD	No bike facility	Protected Bike Lane - THAXTON RD from NUCKOLS CROSSING RD to MC KINNEY FALLS PKWY	2 - High	5 - Very Low
2K - 003	PALM, PEREZ, MENDEZ, UPHAUS	E WILLIAM CANNON DR	Desired bike route	Protected Bike Lane - E WILLIAM CANNON DR from S Pleasant Valley Rd to Lombard Ln; Add School pavement markings and School Zone Sign with flashers on E WILLIAM CANNON DR	3 - Medium	5 - Very Low
2K - 004*	PEREZ, UPHAUS	QUICKSILVER BLVD	No bike facility	Protected Bike Lane - QUICKSILVER BLVD from BLUFF SPRINGS RD to S PLEASANT VALLEY RD ~	1 - Very High	4 - Low
2K - 005	PALM	TARA DR	Desired bike route, No bike facility, Wide ROW	Neighborhood Bikeway - TARA DR from SALT SPRINGS DR to MARBLE RIDGE DR	1 - Very High	1 - Very High
2K - 006	BLAZIER	NUCKOLS CROSSING RD	No bike facility	Sidepath - NUCKOLS CROSSING RD from VERTEX BLVD to THAXTON RD	2 - High	5 - Very Low
2K - 007*	JOHN P OJEDA, HILLCREST	JANES RANCH RD	No bike facility	Protected Bike Lane - JANES RANCH RD from MC KINNEY FALLS PKWY to RANCHITO DR, Bike Lane - JANES RANCH RD from RANCHITO DR to BRANRUST DR ~	1 - Very High	3 - Medium
2K - 008	PALM	DIXIE DR	Excessive vehicle speeds, Wide ROW	Add speed cushions - DIXIE DR from TARA DR to ASA DR	1 - Very High	1 - Very High

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2K - 009	PALM	RUNNING WATER DR	Desired bike route, No bike facility	Buffered Bike Lane - RUNNING WATER DR from THAXTON RD to E WILLIAM CANNON DR ~	1 - Very High	4 - Low
2K - 010	PEREZ	EDGE CREEK DR	Excessive vehicle speeds, Lack of School Zone Signage	Add School Zone Sign with flashers - EDGE CREEK DR from HIDDEN BROOK CT to TEAL TRL, Add speed cushions - EDGE CREEK DR from HIDDEN BROOK CT to S PLEASANT VALLEY RD	1 - Very High	1 - Very High
2K - 011	PEREZ, MENDEZ, UPHAUS	MEADOW LAKE BLVD	No bike facility	Protected Bike Lane - MEADOW LAKE BLVD from BLUE MEADOW DR to AVALON AVE, Bike Lane - MEADOW LAKE BLVD from AVALON AVE to E WILLIAM CANNON DR ~	1 - Very High	2 - High
2K - 012	PALM	COLTON BLUFF SPRINGS RD	Desired bike route, No bike facility	Protected Bike Lane - COLTON BLUFF SPRINGS RD from ASA DR to SPRINGTIME TRL	2 - High	2 - High
2K - 013*	BLAZIER, LANGFORD, PEREZ, MENDEZ, UPHAUS	BLUFF SPRINGS RD	Desired bike route, Excessive vehicle speeds, No bike facility, No bike lane signage, Wide ROW	Sidepath - BLUFF SPRINGS RD from E WILLIAM CANNON DR to E SLAUGHTER LN	1 - Very High	5 - Very Low
2K - 014	LANGFORD, MENDEZ, UPHAUS	BLUE MEADOW DR	Desired bike route, Excessive vehicle speeds, No bike facility, Wide ROW	Protected Bike Lane - BLUE MEADOW DR from BLUFF SPRINGS RD to MISTY SLOPE LN ~	1 - Very High	3 - Medium

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2K - 015	HILLCREST, JOHN P OJEDA	SPRINGFIELD DR	Excessive vehicle speeds, Lack of School Zone Signage, No bike facility	Protected Bike Lane - SPRINGFIELD DR from COLTON BLUFF SPRINGS RD to RANCHITO DR, Add School Zone Sign with flashers - SPRINGFIELD DR from E WILLIAM CANNON DR to RANCHITO DR	1 - Very High	4 - Low
2K - 016	PEREZ, UPHAUS	SAVOREY LN	Desired bike route, No bike facility, No school zone signage	Add School pavement markings - SAVOREY LN from SAGUARO RD to CANELLA DR, Add School Zone Sign with flashers - SAVOREY LN from SAGUARO RD to CANELLA DR, Neighborhood Bikeway - SAVOREY LN from QUICKSILVER BLVD to TEAL TRL	1 - Very High	1 - Very High
2K - 017*	PALM, HILLCREST	E WILLIAM CANNON DR	Desired bike route	Protected Bike Lane - E WILLIAM CANNON DR from Near 7716 WILLIAM CANNON DR to Near 6401 WILLIAM CANNON DR; Add School Zone Sign with flashers - E WILLIAM CANNON DR; Add School Zone Pavement Markings	1 - Very High	4 - Low
2K - 018	BLAZIER	VERTEX BLVD	No school zone signage	Add speed cushions - VERTEX BLVD from BAYTHORNE DR to NUCKOLS CROSSING RD, Add School pavement markings - VERTEX BLVD from BAYTHORNE DR to NUCKOLS CROSSING RD, Add School Zone Sign with flashers - VERTEX BLVD from BAYTHORNE DR to NUCKOLS CROSSING RD	2 - High	1 - Very High
2K - 019	PALM	ASA DR	Desired bike route, No bike facility	Protected Bike Lane - ASA DR from DIXIE DR to COLTON BLUFF SPRINGS RD	1 - Very High	2 - High
2K - 020	LANGFORD	BLUE DAWN TRL	Excessive vehicle speeds	Add speed cushions - BLUE DAWN TRL from BLUE MEADOW DR to STONLEIGH PL	1 - Very High	1 - Very High

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2K - 021	PALM	SALT SPRINGS DR	Desired bike route, Excessive vehicle speeds, School zone flasher obscured by tree	Protected Bike Lane - SALT SPRINGS DR from THAXTON RD to E WILLIAM CANNON DR, Add Dynamic Speed Display Device - SALT SPRINGS DR from ROSEBOROUGH DR to ORANGE BLOSSOM WAY	1 - Very High	4 - Low
2K - 022	MENDEZ, PEREZ, UPHAUS	S PLEASANT VALLEY RD	No bike facility, Speeding drivers do not adhere to standard (non-flashing) school-zone signage in median.	Add School Zone Sign with flashers - S PLEASANT VALLEY RD from SPRINGVILLE LN to QUICKSILVER BLVD, Protected Bike Lane - S PLEASANT VALLEY RD from ONION CREEK DR to EDGE CREEK DR	1 - Very High	4 - Low
2K - 023	PEREZ, MENDEZ, LANGFORD, UPHAUS	STONLEIGH PL	Desired bike route, Excessive vehicle speeds, No bike facility, Wide ROW	Modify fence entry to widen and allow bicycles - STONLEIGH PL from BLUE MEADOW DR to BLUE DAWN TRL, Protected Bike Lane - STONLEIGH PL from QUICKSILVER BLVD to E WILLIAM CANNON DR ~	1 - Very High	3 - Medium
2K - 024	BLAZIER	BAYTHORNE DR	No bike facility	Protected Bike Lane - BAYTHORNE DR from IPSWICH BAY DR to CAPITOL VIEW DR ~	1 - Very High	2 - High
2K - 201	PEREZ	QUICKSILVER BLVD	Poor condition	Repair existing sidewalk - QUICKSILVER BLVD from SILVERSTONE DR to VINCA CIR, Fix sidewalk obstructions - QUICKSILVER BLVD from SILVERSTONE DR to VINCA CIR	5 - Very Low	4 - Low
2K - 202	PALM	ROSEBOROUGH DR	Missing sidewalk	Construct new sidewalk - ROSEBOROUGH DR from ROSEBERRY DR to EUDORA LN	4 - Low	2 - High
2K - 203	PEREZ	CHATEAU VILLAGE WAY	Missing sidewalk	Construct new sidewalk - CHATEAU VILLAGE WAY from EDGE CREEK DR to HOLLY OAK CIR	3 - Medium	2 - High

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2K - 204	PEREZ	SAVOREY LN	Poor condition	Repair existing sidewalk - SAVOREY LN from SAGUARO RD to QUICKSILVER BLVD	5 - Very Low	4 - Low
2K - 205	PEREZ	CHATEAU VILLAGE WAY	Missing sidewalk	Construct new sidewalk - CHATEAU VILLAGE WAY from HOLLY OAK CIR to EDGE CREEK DR	1 - Very High	2 - High
2K - 206*	BLAZIER	THAXTON RD	Missing sidewalk	Construct new sidewalk - NUCKOLS CROSSING RD from THAXTON RD to TEE DR, Construct new sidewalk - THAXTON RD from SALT SPRINGS DR TONUCKOLS CROSSING RD	3 - Medium	5 - Very Low
2K - 207	PALM	GREEN GRASS TRL	Missing sidewalk	Construct new sidewalk - GREEN GRASS TRL from ORANGE BLOSSOM WAY to SAILING BREEZE TRL	4 - Low	3 - Medium
2K - 208	HILLCREST	E WILLIAM CANNON DR	Missing sidewalk	Construct new sidewalk - E WILLIAM CANNON DR from SPRINGFIELD DR to JANES RANCH RD	3 - Medium	3 - Medium
2K - 209	PEREZ	EDGE CREEK DR	Missing sidewalk	Construct new sidewalk - EDGE CREEK DR from CHATEAU VILLAGE WAY to TEAL TRL	2 - High	4 - Low
2K - 210	LANGFORD	STONLEIGH PL	Poor condition	Repair existing sidewalk - STONLEIGH PL from BLUE DAWN TRL to BLUE MEADOW DR	4 - Low	4 - Low
2K - 211	PEREZ	ASHLEY WAY	Missing sidewalk	Construct new sidewalk - ASHLEY WAY from POINSETTA LN to JENIBETH LN	4 - Low	4 - Low
2K - 212	PEREZ	QUICKSILVER BLVD	Missing sidewalk	Construct new sidewalk - QUICKSILVER BLVD from ASHLEY WAY to POINSETTA LN	4 - Low	4 - Low
2K - 213	PALM	ROSEBOROUGH DR	Missing sidewalk	Construct new sidewalk - ROSEBOROUGH DR from EUDORA LN to ROSEBERRY DR	4 - Low	2 - High
2K - 214	PALM	ORANGE BLOSSOM WAY	Missing sidewalk	Construct new sidewalk - ORANGE BLOSSOM WAY from RUNNING WATER DR to SALT SPRINGS DR	4 - Low	4 - Low

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2K - 215	HILLCREST	JANES RANCH RD	Missing sidewalk	Construct new sidewalk - JANES RANCH RD from E WILLIAM CANNON DR to Near 7011 JANES RANCH RD	3 - Medium	3 - Medium
2K - 216	HILLCREST	JANES RANCH RD	Narrow sidewalk	Widen existing sidewalk - JANES RANCH RD from Near 7011 JANES RANCH RD to E WILLIAM CANNON DR	5 - Very Low	4 - Low
2K - 217	LANGFORD	OAK MOTTE LN	Missing sidewalk, Poor condition	Fix sidewalk obstructions - OAK MOTTE LN from BLUE DAWN TRL to ELM CREEK DR, Construct new sidewalk - OAK MOTTE LN from BLUE DAWN TRL to ELM CREEK DR	2 - High	2 - High
2K - 218	LANGFORD	OAK MOTTE LN	Driveway crossings not accessible, Missing sidewalk, Permanent obstruction (ex. pole/tree), Poor condition	Repair existing sidewalk - OAK MOTTE LN from ELM CREEK DR to BLUE DAWN TRL, Construct new sidewalk - OAK MOTTE LN from ELM CREEK DR to BLUE DAWN TRL, Fix sidewalk obstructions - OAK MOTTE LN from ELM CREEK DR to BLUE DAWN TRL	2 - High	2 - High
2K - 219	PALM	DIXIE DR	Narrow sidewalk, Permanent obstruction (ex. pole/tree), Poor condition	Widen existing sidewalk - DIXIE DR from ASA DR to TARA DR, Fix sidewalk obstructions - DIXIE DR from ASA DR to ADA CT, Repair existing sidewalk - DIXIE DR from ASA DR to ADA CT	4 - Low	4 - Low
2K - 220	PALM	TUPELO DR	Missing sidewalk	Construct new sidewalk - TUPELO DR from BIXLER DR to PACES MILL LN	4 - Low	2 - High
2K - 222	PALM	ORANGE BLOSSOM WAY	Missing sidewalk	Construct new sidewalk - ORANGE BLOSSOM WAY from SALT SPRINGS DR to GREEN GRASS TRL	3 - Medium	2 - High

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2K - 223	PEREZ	QUICKSILVER BLVD	Poor condition	Repair existing sidewalk - QUICKSILVER BLVD from SILVERSTONE DR to QUICKSILVER CIR	5 - Very Low	4 - Low
2K - 224	PEREZ	QUICKSILVER BLVD	Missing sidewalk, Poor condition	Repair existing sidewalk - QUICKSILVER BLVD from SAVOREY LN to QUICKSILVER CIR, Construct new sidewalk - QUICKSILVER BLVD from MEADOW LAKE BLVD to CANELLA DR	2 - High	2 - High
2K - 225	LANGFORD	DEER RUN DR	Driveway crossings not accessible, Missing sidewalk, Narrow sidewalk, Permanent obstruction (ex. pole/tree), Poor condition	Repair existing sidewalk - DEER RUN DR from BLUE DAWN TRL to ELM CREEK DR, Fix sidewalk obstructions - DEER RUN DR from BLUE DAWN TRL to ELM CREEK DR, Construct new sidewalk - DEER RUN DR from BLUE DAWN TRL to ELM CREEK DR	1 - Very High	2 - High
2K - 228	PEREZ, RODRIGUEZ	VILLAGE WALK	Missing sidewalk	Construct new sidewalk - SILVERSTONE DR from QUICKSILVER BLVD to POINSETTA LN, Construct new sidewalk - VILLAGE WALK from VILLAGE TRL to S PLEASANT VALLEY RD	1 - Very High	3 - Medium
2K - 229	PEREZ	EDGE CREEK DR	Missing sidewalk	Construct new sidewalk - EDGE CREEK DR from HIDDEN BROOK CT to TEAL TRL	1 - Very High	1 - Very High
2K - 230	PEREZ	TEAL TRL	Narrow sidewalk	Widen existing sidewalk - TEAL TRL from EDGE CREEK DR to SAVOREY LN	4 - Low	3 - Medium
2K - 231	LANGFORD	S STONELEIGH PL	Missing sidewalk	Construct new sidewalk - S STONELEIGH PL at Kendra Page Neighborhood Park	2 - High	1 - Very High
2K - 232	LANGFORD	BLUE DAWN TRL	Missing sidewalk	Construct new sidewalk - BLUE DAWN TRL from STONLEIGH PL to just north of DEER RUN DR	2 - High	3 - Medium

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2K - 233	LANGFORD	ELM CREEK DR	Missing sidewalk	Construct new sidewalk - ELM CREEK DR from BITTER CREEK DR to DEER RUN DR	1 - Very High	1 - Very High
2K - 234	LANGFORD	BLUE MEADOW DR	Missing sidewalk	Construct new sidewalk - BLUE MEADOW DR from STONLEIGH PL to DEEP CIR	1 - Very High	3 - Medium
2K - 235	PEREZ	SAVOREY LN	Missing sidewalk	Construct new sidewalk - SAVOREY LN from CANELLA DR to QUICKSILVER BLVD	2 - High	3 - Medium
2K - 236	PALM	DIXIE DR	Permanent obstruction (ex. pole/tree), Poor condition	Fix sidewalk obstructions - DIXIE DR from ASA DR to CONTI CT , Repair existing sidewalk - DIXIE DR from ASA DR to CONTI CT	5 - Very Low	4 - Low
2K - 237	LANGFORD	MAGIN MEADOW DR	Missing sidewalk	Construct new sidewalk - MAGIN MEADOW DR from Near 2518 MAGIN MEADOW DR to Near 2520 MAGIN MEADOW DR	3 - Medium	1 - Very High
2K - 238	LANGFORD	BITTERROOT TRL	Missing sidewalk	Construct new sidewalk - BITTERROOT TRL from BLUE MEADOW DR to BUCKS RUN	3 - Medium	3 - Medium
2K - 239	LANGFORD	TRENDAL LN	Missing sidewalk	Construct new sidewalk - TRENDAL LN from BLUE MEADOW DR to BUCKS RUN	2 - High	3 - Medium
2K - 240	LANGFORD	BUCKS RUN	Missing sidewalk	Construct new sidewalk - BUCKS RUN from TRENDAL LN to BRANCHWOOD DR	2 - High	2 - High
2K - 241	LANGFORD	BITTER CREEK DR	Missing sidewalk	Construct new sidewalk - BITTER CREEK DR from STONLEIGH PL to Near 2216 BITTER CREEK DR	3 - Medium	2 - High
2K - 242	PEREZ	EDGE CREEK DR	Missing sidewalk	Construct new sidewalk - EDGE CREEK DR from S PLEASANT VALLEY RD to TEAL TRL	2 - High	2 - High
2K - 243	PEREZ	EDGE CREEK DR	Missing sidewalk	Construct new sidewalk - EDGE CREEK DR from S PLEASANT VALLEY RD to TEAL TRL	2 - High	2 - High
2K - 244	PALM	DIXIE DR	Missing sidewalk	Construct new sidewalk - DIXIE DR from E WILLIAM CANNON DR to FOY CIR	4 - Low	4 - Low

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2K - 601	PEREZ	CANELLA DR / SAVOREY LN	Missing curb ramps, Difficult crossing	Install 1 curb ramp, Install high visibility crosswalk +	2 - High	1 - Very High
2K - 602	PALM	PACES MILL LN / TUPELO DR	Missing curb ramps	Install 1 curb ramp +	3 - Medium	1 - Very High
2K - 603	LANGFORD	BLUE DAWN TRL / BLUE MEADOW DR	Non-compliant curb ramps, High speed crossing	Replace existing curb ramp	4 - Low	2 - High
2K - 604	PALM	SALT SPRINGS DR / TARA DR	Long crossing distance, High speed crossing	Add median refuge island on Salt Springs Dr, Install high visibility crosswalk	1 - Very High	1 - Very High
2K - 605	LANGFORD	BLUE MEADOW DR / STONLEIGH PL	Missing curb ramps, Non-compliant curb ramps	Install 2 curb ramps, Replace existing curb ramp	1 - Very High	1 - Very High
2K - 606	LANGFORD	ANDREA WOODS CV / STONLEIGH PL	Difficult crossing	Install high visibility crosswalk	2 - High	1 - Very High
2K - 607	PALM	BIXLER DR / TUPELO DR	Missing curb ramps	Install 1 curb ramp	2 - High	1 - Very High

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2K - 608	BLAZIER	BAYTHORNE DR / VERTEX BLVD	Difficult crossing	Install high visibility crosswalk [1]	2 - High	1 - Very High
2K - 609	PALM	COLTON BLUFF SPRINGS RD / RUNNING WATER DR	Difficult crossing	Add median refuge island on Colton Bluff Springs Rd, Install high visibility crosswalk	3 - Medium	2 - High
2K - 610	LANGFORD	BLUE MEADOW DR / BLUFF SPRINGS RD	Difficult crossing, Missing curb ramps, High speed crossing, Long crossing distance	Install 1 curb ramp, Install high visibility crosswalk, Replace existing curb ramp	2 - High	1 - Very High
2K - 611	None (nearest school: Langford)	E WILLIAM CANNON DR / STONLEIGH PL	High speed crossing, Long crossing distance, Missing curb ramps, Non-compliant curb ramps	Install 4 curb ramps, Install high visibility crosswalk, Repaint crosswalk markings, Replace existing curb ramp	2 - High	1 - Very High
2K - 612	HILLCREST	E WILLIAM CANNON DR / JANES RANCH RD	Difficult crossing, No pedestrian signals	Install high visibility crosswalk, Install Rapid Flash Beacon	2 - High	1 - Very High

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2K - 613	PALM	ASA DR / COLTON BLUFF SPRINGS RD / SALT SPRINGS DR	Non-compliant curb ramps, Difficult crossing, High speed crossing, Long crossing distance	Add median refuge island on Salt Springs Dr, Install high visibility crosswalk, Replace existing curb ramp	1 - Very High	1 - Very High
2K - 614	LANGFORD	ELM CREEK DR / OAK MOTTE LN	Missing curb ramps, Difficult crossing, High speed crossing, Long crossing distance	Add curb extensions, Install 4 curb ramps, Install high visibility crosswalk	2 - High	2 - High
2K - 615	PALM	ASA DR / DIXIE DR	Long crossing distance, Non-compliant curb ramps	Add curb extensions, Install high visibility crosswalk, Repaint crosswalk markings +	1 - Very High	1 - Very High
2K - 616	PEREZ	SAVOREY LN / TEAL TRL	Non-compliant curb ramps, Difficult crossing, Poor sightlines	Install high visibility crosswalk, Replace existing curb ramp, Restrict parking adjacent to intersection ~	2 - High	1 - Very High
2K - 617	PALM	RUNNING WATER DR / TARA DR	Difficult crossing	Install high visibility crosswalk, Install neighborhood traffic circle	3 - Medium	2 - High
2K - 618	BLAZIER	CHARLES MERLE DR / VERTEX BLVD	Difficult crossing	Add lighting, Install high visibility crosswalk	2 - High	1 - Very High

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2K - 619	PEREZ	EDGE CREEK DR / TEAL TRL	Poor sightlines, Long crossing distance, Wide curb radii, Intersection reconfiguration needed. Cars block crosswalk when stopping for stop sign and only one leg is controlled.	Add shelter for MS students, Install high visibility crosswalk, Install stop sign, Intersection reconfiguration, Tighten curb radii +	1 - Very High	5 - Very Low
2K - 620	HILLCREST	E WILLIAM CANNON DR / SPRINGFIELD DR	No pedestrian signals, Difficult crossing	Install high visibility crosswalk, Install Rapid Flash Beacon	1 - Very High	1 - Very High
2K - 621	PALM	DIXIE DR / TARA DR	Missing curb ramps, Long crossing distance	Add curb extensions, Install 1 curb ramp, Install high visibility crosswalk +	2 - High	1 - Very High
2K - 622	HILLCREST	Midblock - JANES RANCH RD	Difficult intersection; Missing curb ramps	Install 2 curb ramps; Install high visibility crosswalk +	2 - High	1 - Very High
2K - 623	LANGFORD	Midblock - BLUE MEADOW DR	Difficult intersection; Missing curb ramps	Add curb extensions; Install raised crosswalk +	1 - Very High	1 - Very High

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Project ID	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
2K - 624	LANGFORD	Midblock - STONLEIGH PL	Long crossing distance at mid-block location	Add curb extensions; Add high-visibility crosswalk	1 - Very High	1 - Very High
2K - 625	LANGFORD	BLUE DAWN TRL / OAK MOTTE LN	Difficult crossing	Add curb extensions	1 - Very High	1 - Very High
2K - 626	LANGFORD	BLUE DAWN TRL / DEER RUN DR	Difficult crossing	Add curb extensions	1 - Very High	1 - Very High
2K - 627	PEREZ	CANELLA DR / QUICKSILVER BLVD	Difficult crossing	Install high visibility crosswalk [3] across Canella Dr & Quicksilver Blvd , Replace existing curb ramp [4]	2 - High	1 - Very High
2K - 628	PEREZ	QUICKSILVER BLVD / SAVOREY LN	Difficult crossing	Install high visibility crosswalk [2] across Savorey Ln & Quicksilver Blvd , Replace existing curb ramp [3]	2 - High	1 - Very High
2K - 801	PEREZ	Near 5101 SAVOREY LN	Pooling water / drainage issues	review drainage and possible rain garden	2 - High	2 - High
2K - 901	LANGFORD, MENDEZ	From Blue Dawn Tr to Elm Creek Dr	No trail connection	Construct new trail	1 - Very High	4 - Low

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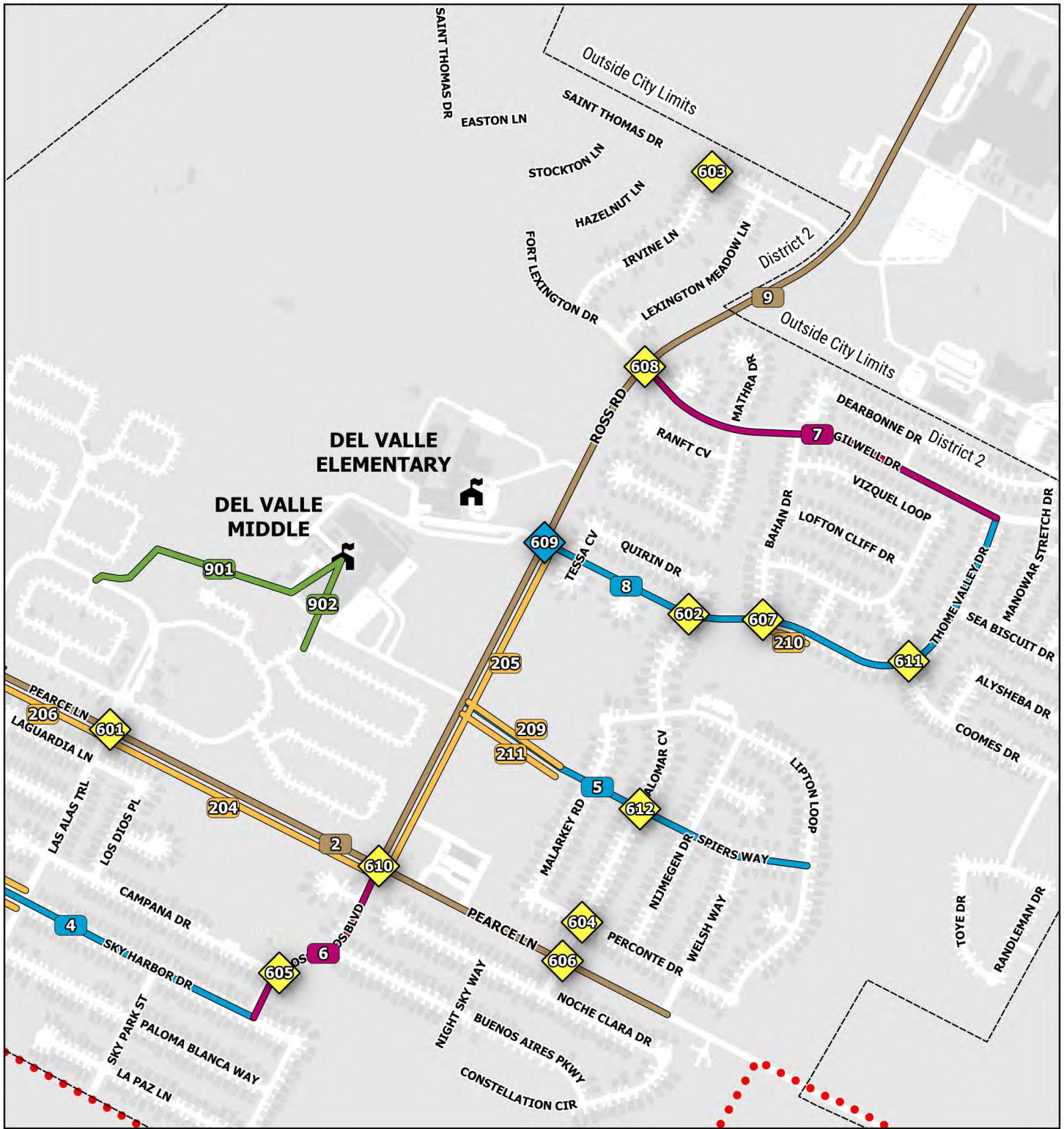
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Project ID	Project w/in 1/2 mi (ped) or 2 mi (bike) and attendance boundary of:	Location	Issue	Recommendation + parking removal required private property acquisition required	Overall Benefit Category	Estimated Cost:Benefit Category
2K - 902	PEREZ, MENDEZ	From Misty Slope Ln to Quicksilver Blvd	No trail connection	Construct new trail	1 - Very High	4 - Low
2K - 903	PALM, HILLCREST	From Zequiell Dr to Ondantra Bend	No trail connection	Construct new trail	3 - Medium	5 - Very Low
2K - 904	PEREZ	Near 4405 QUICKSILVER BLVD	Lack of connectivity	Construct new trail	3 - Medium	4 - Low
2K - 905	BLAZIER	Near 8749 VERTEX BLVD	No trail connection	Construct new shared use path	2 - High	5 - Very Low

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CITY OF AUSTIN
austin
MOTION
2016 MOBILITY BOND

TOOLE
DESIGN



- 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	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
2L - 001*	DEL VALLE ES, DEL VALLE MS	PEARCE LN	Desired bike route, Excessive vehicle speeds	Sidepath - PEARCE LN from S SH 130 SVRD NB to ROSS RD	2 - High	5 - Very Low
2L - 002	DEL VALLE ES, DEL VALLE MS	PEARCE LN	Desired bike route	Add lighting - PEARCE LN from PASEO NUEVO CIR to ROSS RD , Add sidepath - PEARCE LN from WELSH WAY to Near 12301 PEARCE LN	2 - High	5 - Very Low
2L - 003*	DEL VALLE ES, DEL VALLE MS	ROSS RD	No bike facility, Wide ROW	Sidepath - ROSS RD from SKY HARBOR DR to PEARCE LN	4 - Low	5 - Very Low
2L - 004*	DEL VALLE ES, DEL VALLE MS	SKY HARBOR DR	Desired bike route, No bike facility, Wide ROW	Neighborhood Bikeway - SKY HARBOR DR from ROSS RD to LOS CIELOS BLVD	2 - High	2 - High
2L - 005	DEL VALLE ES, DEL VALLE MS	SPIERS WAY	No bike facility	Add speed cushions - SPIERS WAY from ROSS RD to LIPTON LOOP, Neighborhood Bikeway - SPIERS WAY from ROSS RD to LIPTON LOOP	1 - Very High	1 - Very High
2L - 006	DEL VALLE ES, DEL VALLE MS	LOS CIELOS BLVD	Desired bike route, No bike facility, Wide ROW	Protected Bike Lane - LOS CIELOS BLVD from SKY HARBOR DR to PEARCE LN ~	2 - High	2 - High
2L - 007	DEL VALLE ES, DEL VALLE MS	GILWELL DR	Desired bike route, No bike facility, Wide ROW	Protected Bike Lane - GILWELL DR from ROSS RD to THOME VALLEY DR	1 - Very High	2 - High
2L - 008	DEL VALLE ES, DEL VALLE MS	THOME VALLEY DR	Excessive vehicle speeds, No bike facility	Neighborhood Bikeway - THOME VALLEY DR from ROSS RD to GILWELL DR, Add speed cushions - THOME VALLEY DR from ROSS RD to GILWELL DR	1 - Very High	2 - High

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Project ID	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
2L - 009*	DEL VALLE ES, DEL VALLE MS	ROSS RD	Desired bike route, Excessive vehicle speeds, No bike facility	Add lighting - ROSS RD from LOS CIELOS BLVD to THOME VALLEY DR , Add School Zone Sign with flashers - ROSS RD from PEARCE LN to E SH 71 WB , Add sidepath - ROSS RD from PEARCE LN to E SH 71 WB , Add School pavement markings - ROSS RD from PEARCE LN to E SH 71 WB	1 - Very High	5 - Very Low
2L - 204	DEL VALLE ES, DEL VALLE MS	PEARCE LN	Missing sidewalk, No lighting	Add lighting - PEARCE LN from ROSS RD to PASEO NUEVO CIR, Construct new sidewalk - PEARCE LN from ROSS RD to LAS ALAS TRL	2 - High	4 - Low
2L - 205	DEL VALLE ES, DEL VALLE MS	ROSS RD	Missing sidewalk, No lighting	Construct new sidewalk - ROSS RD from THOME VALLEY DR to PEARCE LN	1 - Very High	4 - Low
2L - 206	DEL VALLE ES, DEL VALLE MS	PEARCE LN	Missing sidewalk, No lighting	Add lighting - PEARCE LN from PASEO NUEVO CIR to ROSS RD, Construct new sidewalk - PEARCE LN from PASEO NUEVO CIR to ROSS RD	3 - Medium	3 - Medium
2L - 209	DEL VALLE ES, DEL VALLE MS	SPIERS WAY	Missing sidewalk	Construct new sidewalk - SPIERS WAY from near MALARKEY RD to ROSS RD	3 - Medium	3 - Medium
2L - 210	DEL VALLE ES, DEL VALLE MS	THOME VALLEY DR	Poor condition	Repair existing sidewalk - THOME VALLEY DR from FRYMAN HILL DR to BAHAN DR	5 - Very Low	4 - Low
2L - 211	DEL VALLE ES, DEL VALLE MS	SPIERS WAY	Missing sidewalk	Construct new sidewalk - SPIERS WAY from near MALARKEY RD to ROSS RD	3 - Medium	3 - Medium
2L - 212*	DEL VALLE MS	SKY HARBOR DR	Missing sidewalk, Permanent obstruction (ex. pole/tree)	Construct new sidewalk - SKY HARBOR DR from ROSS RD to LAS ALAS TRL	2 - High	3 - Medium

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Project ID	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
2L - 213*	DEL VALLE MS	SKY HARBOR DR	Missing sidewalk	Construct new sidewalk - SKY HARBOR DR from LAS ALAS TRL to ROSS RD	2 - High	3 - Medium
2L - 601	DEL VALLE ES, DEL VALLE MS	LAS ALAS TRL / PASEO NUEVO CIR / PEARCE LN	Difficult crossing	Install high visibility crosswalk, Install Pedestrian Hybrid Beacon	1 - Very High	2 - High
2L - 602	DEL VALLE ES, DEL VALLE MS	ALOMAR CV / THOME VALLEY DR	Difficult crossing, High speed crossing, Long crossing distance	Add curb extensions, Install high visibility crosswalk, Repaint crosswalk markings +	1 - Very High	1 - Very High
2L - 603	DEL VALLE MS	IRVINE LN / SAINT THOMAS DR	Difficult crossing	Install high visibility crosswalk	3 - Medium	2 - High
2L - 604	DEL VALLE ES, DEL VALLE MS	ALOMAR CV / PERCONTE DR	Difficult crossing	Install high visibility crosswalk	3 - Medium	1 - Very High
2L - 605	DEL VALLE MS	CAMPANA DR / LOS CIELOS BLVD	Difficult crossing	Install high visibility crosswalk	3 - Medium	1 - Very High

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Project ID	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
2L - 606	DEL VALLE ES, DEL VALLE MS	ALOMAR CV / PEARCE LN	Missing curb ramps,Difficult crossing,High speed crossing,Long crossing distance	Install high visibility crosswalk, Install Pedestrian Hybrid Beacon	2 - High	3 - Medium
2L - 607	DEL VALLE ES, DEL VALLE MS	BAHAN DR / THOME VALLEY DR	Difficult crossing,No lighting,Wide curb radii	Install high visibility crosswalk	2 - High	1 - Very High
2L - 608	DEL VALLE ES, DEL VALLE MS	FORT LEXINGTON DR / GILWELL DR / ROSS RD	Missing curb ramps,Difficult crossing,Wide curb radii	Install 4 curb ramps, Install high visibility crosswalk +	1 - Very High	1 - Very High
2L - 609	DEL VALLE ES, DEL VALLE MS	ROSS RD / THOME VALLEY DR	Non-compliant curb ramps,Faded crosswalk markings,High speed crossing,No lighting	Add lighting, Adjust school driveway, Replace existing curb ramp	1 - Very High	1 - Very High
2L - 610	DEL VALLE ES, DEL VALLE MS	LOS CIELOS BLVD / PEARCE LN / ROSS RD	Difficult crossing, High speed crossing	Add curb extensions [2] , Add lighting	2 - High	2 - High

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2L - 611	DEL VALLE MS	COOMES DR / THOME VALLEY DR	Difficult crossing, Long crossing distance	Add lighting, Install high visibility crosswalk	2 - High	1 - Very High
2L - 612	DEL VALLE ES, DEL VALLE MS	ALOMAR CV / SPIERS WAY	Difficult crossing	Install high visibility crosswalk	2 - High	1 - Very High
2L - 901	DEL VALLE ES, DEL VALLE MS	MARENGO PL	Lack of connectivity	Construct new trail	1 - Very High	5 - Very Low
2L - 902	DEL VALLE ES, DEL VALLE MS	Near 12520 CLAREMONT CIR	Lack of connectivity	Construct new trail	1 - Very High	3 - Medium

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APPENDIX A: ENGINEERING TOOLKIT



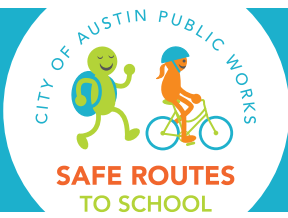
ENGINEERING TOOLKIT

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.





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

4 Refuge Islands



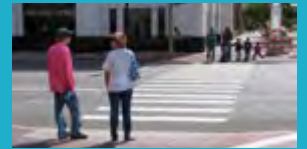
5 Curb Extensions



6 Curb Ramps



7 Marked Crosswalks



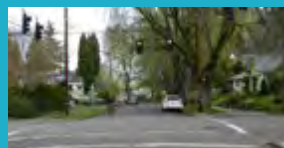
9 Rectangular Rapid Flashing Beacons



10 Pedestrian Hybrid Beacons



11 Traffic Signals

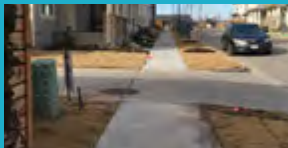


13 Stop Signs



STREET TREATMENTS

14 Sidewalks



15 Lighting



16 Bike Facilities



21 School Zones



22 Dynamic Speed Display Devices



23 Lane Reconfiguration



TRAFFIC CALMING

25 Speed Cushions



26 Traffic Circles



OTHER

27 Urban Trails



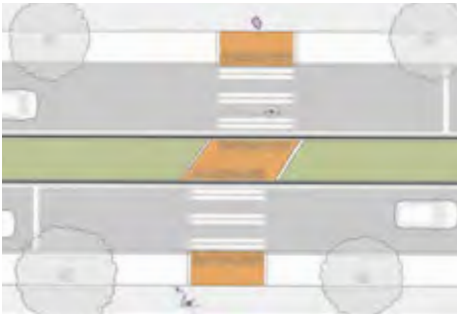
28 Bicycle Parking



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

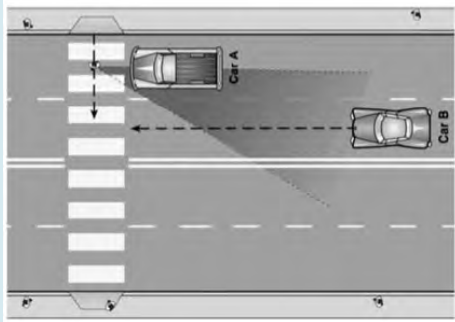
- Raised intersections slow people driving and encourage them to yield to people walking across the street.
- Raised intersections can be installed in neighborhood intersections to make the public space more comfortable and inviting for people to walk and bike.

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 within 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



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



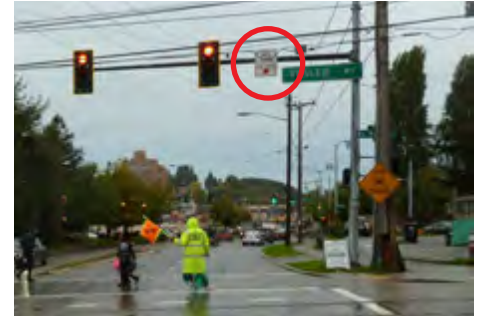
Traffic signals coordinate the flow of traffic at intersections, including people driving, walking, and biking.



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 programmed 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.

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 nighttime 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 achieve 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



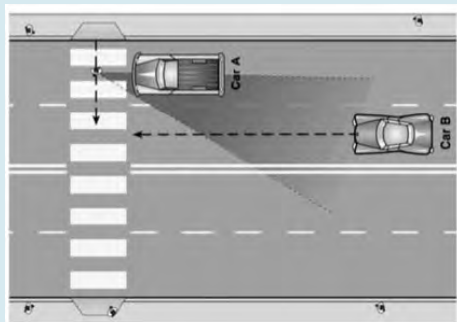
Street after lane reconfiguration

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



NACTO

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 curblines 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](#)



SAFE ROUTES
TO SCHOOL

austintexas.gov/saferoutes