

KEEPING OUR KIDS AND COMMUNITIES SAFE



A SAFE ROUTES TO SCHOOL ACTION PLAN FOR PASADENA, TX

October 2018



ACKNOWLEDGMENTS

Numerous stakeholders collaborated on the development of the Pasadena Safe Routes to School Plan.

The diversity and energy of the collaborators contributed to the strength and comprehensiveness of the plan. A small strategy group met quarterly to shepherd the process and stay accountable for deliverables. The Healthy Living Matters - Pasadena Community Task Force met monthly and provided feedback and generated ideas for the plan.

The stakeholders on the Pasadena Safe Routes to School Team include:

Harris County Public Health

- Office of Policy and Planning
- Nutrition and Chronic Disease Prevention Division
- Environmental Public Health Division
- Built Environment Unit

Healthy Living Matters Collaborative

- Healthy Living Matters-Pasadena Community Task Force

City of Pasadena

- Planning Department
- Engineering Department
- Parks and Recreation Department
- Police Department

Pasadena Vibrant Community

Pasadena Independent School District



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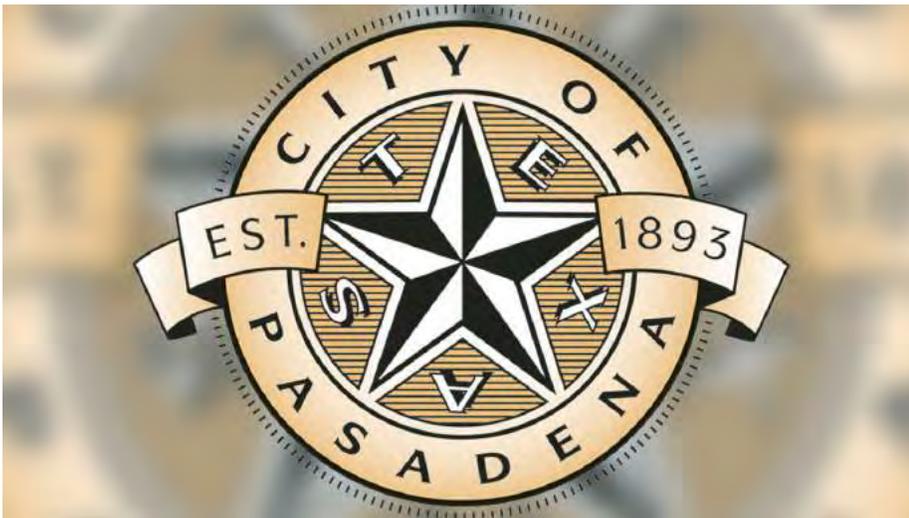
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INTRODUCTION



Pasadena, Texas is an urban community located 20 miles southeast of downtown Houston and has a total population of 149,043¹. Pasadena Independent School District (Pasadena ISD) provides education for the majority of school-aged children living within the city of Pasadena, serving approximately 55,000 students in 67 schools².

According to the 2010 Health of Houston/Harris County Survey, 65% of children ages 12 and over in the Pasadena/South Houston area are overweight or obese, which is the highest rate in Harris County. Walking and bicycling to school are opportunities for students to incorporate physical activity into their daily routines, helping them lead active, healthy lives.



Studies also show that physical activity has positive effects on attention, memory, and academic performance. Children who walk or bicycle to school arrive ready to learn, have increased focus and problem-solving, and perform better on tests³.

The Pasadena Safe Routes to School (SRTS) initiative aims to create safe, convenient, and fun opportunities for children to bicycle and walk to and from school. The overall goal is to increase the number of children actively commuting to schools, increase kids' safety, and reverse the nationwide trend toward childhood obesity and inactivity. The Pasadena SRTS Plan provides recommendations to improve safety and increase active transportation at 15 priority schools in Pasadena ISD.

- 1 2010 Demographic Profile. https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkmk
- 2 <https://www1.pasadenaisd.org/about>
- 3 CDC. Health and Academic Achievement. https://www.cdc.gov/healthyyouth/health_and_academics/pdf/health-academic-achievement.pdf



WHY SAFE ROUTES TO SCHOOL?



Safe Routes to School (SRTS) is a program to improve the well-being of children by improving walking and bicycling conditions on the route to school and enabling and encouraging children to walk and bike these routes. SRTS is an evidence-based strategy endorsed by the Centers for Disease Control and Prevention (CDC) proven to impact health within 5 years (CDC HI-5 Intervention)⁴.

The Pasadena SRTS program aims to create safe, convenient, and fun opportunities for children to bicycle and walk to and from school within the Pasadena Independent School District (Pasadena ISD) catchment area. The Pasadena SRTS plan was designed to achieve the following outcomes:

- Increase the number of children walking and biking to school
- Increase physical activity in children
- Increase the number of safe street segments in school zones
- Foster safer neighborhoods
- Increase teachers, parents, students, and community members' knowledge about and support for SRTS
- Decrease the likelihood of pedestrian fatalities and injuries
- Ultimately reduce childhood obesity in the long term

This plan's recommendations are categorized by the "Six E's of SRTS planning," detailed on page 12



1. 2010 Demographic Profile.
2. <https://www1.pasadenaisd.org/about>
3. CDC. Health and Academic Achievement. https://www.cdc.gov/healthyyouth/health_and_academics/pdf/health-academic-achievement.pdf
4. <https://www.cdc.gov/policy/hst/hi5/saferoutes/index.html>

Engineering recommendations and strategies are some of the most vital and visually apparent changes that occur with implementation of a SRTS plan. It is important to ensure that all suggested routes to schools are safe places to walk and bicycle before encouraging parents and students to actively transport themselves to school.

Sidewalks play an important role in the community, contributing to health, decreased crime, and quality of life, just to name a few benefits. Additionally, within the context of the plan, sidewalks play a vital role in the transportation system within cities and even more specifically within school districts.

Sidewalks and other walkable areas can decrease crime



Walkable areas mean an increase in pedestrian activity, which translates to more eyes and ears on the ground in deterring would-be criminal activity.⁵

Incorporating crime prevention in the environmental design can address potential crime issues.⁶

Sidewalks can increase property values



Since the 2008 recession, property values have exceeded pre-recession levels for walkable central business district (CBD) areas and walkable suburban areas.⁷

Neighborhoods that invest in better pedestrian and cyclist infrastructure have higher property values and increased sales tax revenues.⁸

The economy also benefits from walkable areas.



More and more companies (such as Amazon, Twitter, and HP) are seeking areas with walkable spaces for their employees.

Local businesses benefit from increased pedestrian traffic.^{9, 10}

Designing, engineering, and construction of walking/biking facilities creates more jobs per dollar than any other form of transportation infrastructure construction (17 jobs per \$1 million spent).

An added perk: sidewalk maintenance costs may be tax-deductible.

Designated bike lanes offer various benefits:



Supports and encourages bicycling as a means of transportation,¹⁰ Helps define road space for bikes and for cars,¹⁰

Promotes a more orderly flow of traffic,¹⁰

Provide an added buffer for pedestrians between sidewalks and thru traffic (important for young children walking, biking, or playing on curbside sidewalks), and¹⁰

Has a "traffic calming" effect - roads that appear narrow result in slower vehicular speeds.¹³

5. <http://www.pedestrians.org/retrofit.htm>

6. https://www.railstotrails.org/resourcehandler.ashx?name=urban-pathways-to-healthy-neighborhoods-personal-safety&id=5038&fileName=Urban%20Pathways%20to%20Healthy%20Neighborhoods_Safety_Letter.pdf

7. <https://urbanland.uli.org/sustainability/houston-economic-case-walkability/>

8. https://saferoutespnw.files.wordpress.com/2014/03/economic-benefits-of-complete-streets_pnw1.pdf

9. http://webapp1.dlib.indiana.edu/virtual_disk_library/index.cgi/6568961/FID3812/Smart_Growth_Shareware%20Data/Media/files/econbenefitswalkablecomm.pdf

10. https://saferoutespnw.files.wordpress.com/2014/03/economic-benefits-of-complete-streets_pnw1.pdf

11. <https://www.railstotrails.org/resourcehandler.ashx?name=investing-in-trails-cost-effective-improvements-for-everyone&id=3629&fileName=Economic%20Impacts%20of%20Trails.pdf>

12. <https://www.aarp.org/content/dam/aarp/livable-communities/documents-2014/Livability%20Fact%20Sheets/Sidewalks-Fact-Sheet.pdf>

13. <http://www.redmond.gov/Transportation/GettingAroundRedmond/Bicycling/21GoodReasonsToMarkBikeLanes/>

Incomplete sidewalks pose many dangers and aren't encouraging to those who want to walk



Lack of sidewalks and safe places to bike are a primary reason people give when asked why they don't walk or bicycle more.¹⁴

A recent report found that about one third of Americans live in communities without sidewalks; if they had sidewalks, it would mean another 2.8 million adults walking.¹⁵

A recent review of studies comparing highly vs. poorly walkable neighborhoods found residents of the highly walkable neighborhoods reported twice more walking trips per week than the latter.¹⁶

In U.S. cities with populations >250,000, each additional mile of bike lanes per square mile was associated with a 1% increase in bicycle commutes.¹⁷

Children benefit from established sidewalks, designated bike and walking paths



More children are likely to walk or bike to school when sidewalks or footpaths are present, when there are safe street crossings, and when reduced vehicle speed are enforced in school zones.¹⁸

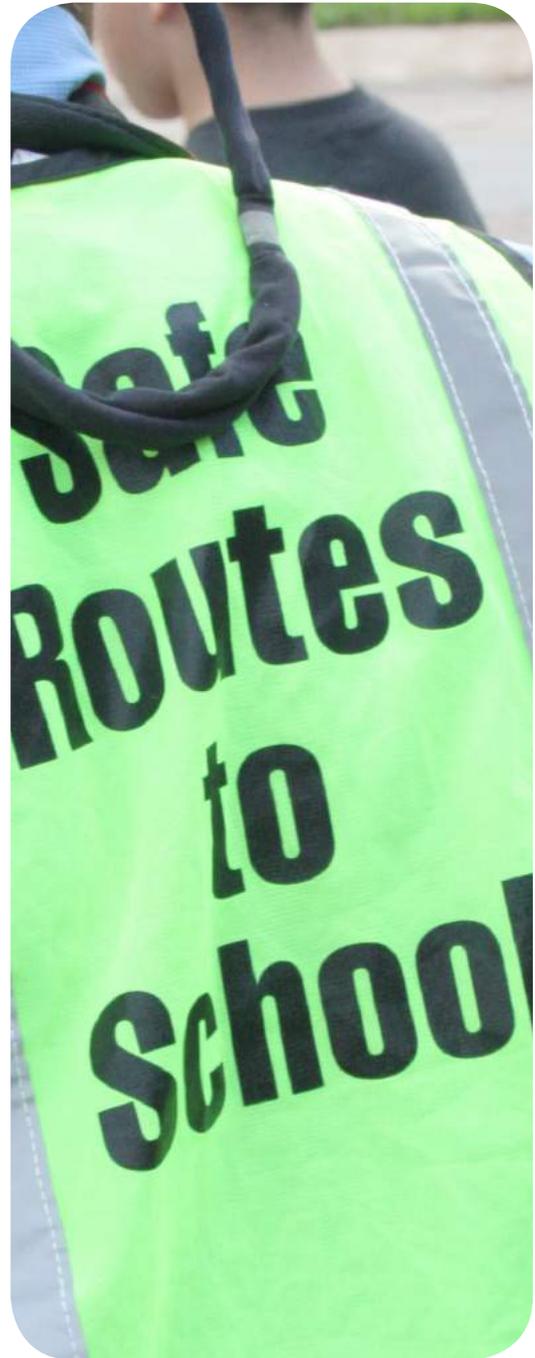
School districts also benefit when they invest in walking and cycling paths¹⁹



As funding decreases, school districts scramble to make adjustments in their budgets.

School districts often bus children who live within walking distance from their schools due to inadequate infrastructure (e.g., poor sidewalks, no established path).

In conclusion, implementation of comprehensive SRTS programs increases student physical activity through active transportation to and from school. The time spent in active transportation helps students achieve the recommended 60 minutes per day of physical activity.



14. Wilbur Smith Associates. (2007, May). Public Attitude Survey of Bicycle and Pedestrian Planning. Bellevue, Washington

15. Bureau of Transportation Statistics (2004, December). Sidewalks Promote Walking. Issue Brief 12.

16. Saelens, B., Sallis, J., & Frank, L. (2003). "Environmental Correlates of Walking and Cycling: Findings From the Transportation, Urban Design, and Planning." *Literatures. Annals of Behavioral Medicine*, 25(2). pp 80-91.

17. <http://old.smartgrowthamerica.org/documents/cs/factsheets/cs-modeshift.pdf>

18. Ewing, R., Schroener, W. & Greene, W. (2004). "School Location and Student Travel: Analysis of Factors Affecting Mode Choice." *Transportation Research Record: Journal of the Transportation Research Board*, (1895). TRB, pp. 55-63.

19. <http://saferoutespartnership.org/sites/default/files/pdf/SRTS-policy-report-fact-sheet.pdf>

THE 6 E'S OF SAFE ROUTES TO SCHOOL



THE 6 E'S ARE NATIONALLY RECOGNIZED WAYS TO IMPLEMENT SRTS PROGRAMS, PROJECTS, AND FUNDING AND INCLUDE: EVALUATION, ENGINEERING, EDUCATION, ENCOURAGEMENT, ENFORCEMENT, AND EQUITY.²⁰

Evaluation

Before a SRTS program begins, it is important to conduct an evaluation of the current environment around a school to know what exactly needs to be improved, and guide the development of appropriate solutions. Evaluations also provide a baseline measurement for walking, bicycling, and driving behaviors to gauge the effect of later interventions.²¹ Conducting evaluations can help a community understand what it can and cannot do and help establish realistic goals and deadlines.²² Evaluation efforts and audits will highlight any physical and environmental barriers to safe access to schools.

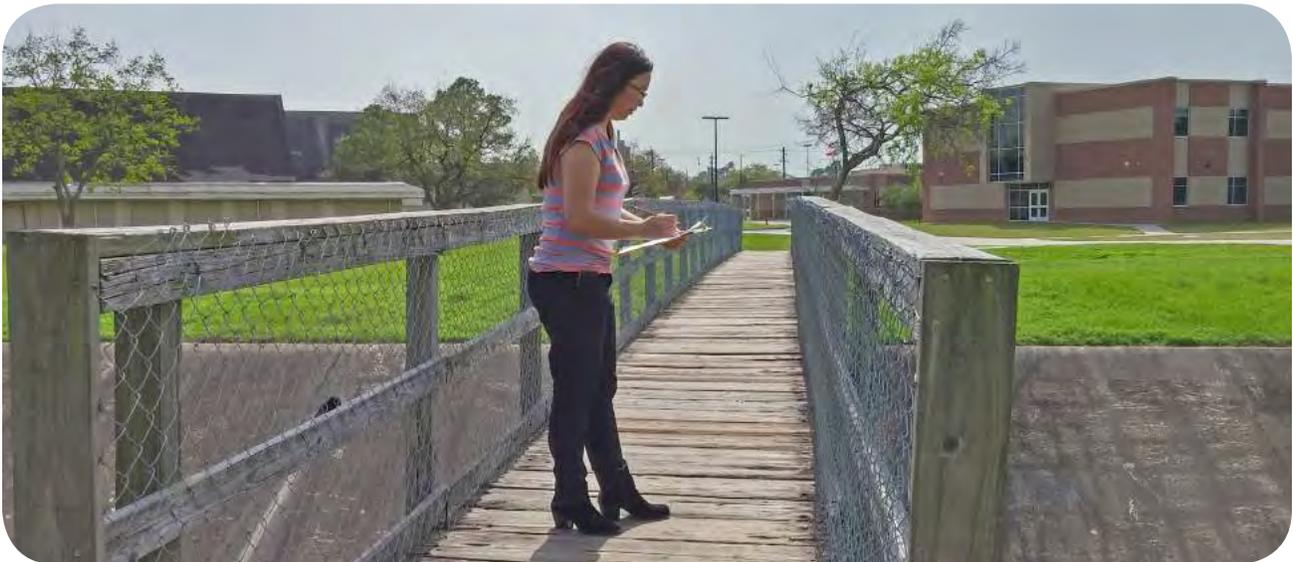
Education

Educating the community about proper pedestrian, cycling, and traffic safety is an important way to change the current behaviors of a community. When considering educational programs, it is important to identify who will be receiving the information, what will the information contain, what is the best way for the information to be delivered, and when will the information be shared with the community.²⁴

Engineering

Engineering efforts should be developed in a manner that addresses any barriers/issues in an appropriate way (e.g., low-cost methods for simple additions like signs). There are certain guiding principles that can enhance the power of engineering:

- Considering the infrastructure in place at the school and outside the school is important as it facilitates (or even hinders) children from safely walking and cycling to and from school.
- Keeping in mind children with disabilities is important when creating more accessible infrastructure.
- Improving the infrastructure should prioritize efforts that can be done cheaply and quickly, such as paint and signage. Low-effort projects can build and maintain the momentum of creating a safer space for children in a community. These projects should be done concurrently with long-term, time intensive projects (e.g., sidewalk construction) to drum up continuing interest in the community.



20. <https://www.saferoutespartnership.org/healthy-communities/101/6Es>

21. Ibid.

22. <http://guide.saferoutesinfo.org/evaluation/index.cfm>

23. http://guide.saferoutesinfo.org/engineering/guiding_principles_for_applying_srts_engineering_solutions.cfm

24. <http://guide.saferoutesinfo.org/education/index.cfm>

Encouragement

Encouragement keeps the community excited and creates interest for walking and cycling.²⁵ Often paired with the education component, encouragement strategies are often a low-cost, effective way to get children, parents, and community stakeholders to buy-in to the program. Common encouragement strategies include:

- Walk/Bike to School Days: The entire school is invited to participate in these events instead of taking the bus or personal vehicle. Everyone gathers at a designated starting point and walks/bikes together to the school.
- Walking School Buses/Bicycle Trains: Groups of students are led by adults through pre-planned routes to school. They can be a formal, structured event (which may require more intensive planning), or they can be a casual, loosely structured event (e.g., parents taking turns each week).

Enforcement

Enforcement strategies aim to deter unsafe traffic behaviors from both pedestrians and drivers, and to enforce traffic safety laws to ensure safe road usage.²⁶ It is often paired with education, encouragement, and engineering efforts to maximize success. Enforcement works best when a network of community members (e.g., parents, crossing guards, teachers) work with law enforcement officers to promote safety awareness, safety education, and (if needed) enforcing traffic laws via ticketing. Community efforts include neighborhood speed watch programs, adult crossing guards, and peer safety patrols (e.g., children who are chosen to participate in promoting traffic safety).²⁷

Equity

Equity, the final E, is expected to be woven into the previous 5 components. In order to ensure the safety and well-being of all community members, steps must be taken in each component and their respective strategies to ensure they incorporate equal access to safe walking and cycling for all individuals.²⁸



25. <http://guide.saferoutesinfo.org/encouragement/index.cfm>

26. <http://guide.saferoutesinfo.org/enforcement/index.cfm>

27. http://guide.saferoutesinfo.org/enforcement/safety_patrol.cfm

28. <https://www.saferoutespartnership.org/healthy-communities/101/6Es>

10. CH Hillman et al., "The Effect of Acute Treadmill Walking on Cognitive Control and Academic Achievement in Preadolescent Children," *Neuroscience* 159, no. 3 (2009): doi:10.1016/j.neuroscience.2009.01.057.

DISTRICT OVERVIEW

While Pasadena Independent School District (Pasadena ISD) began as a one-room schoolhouse in 1898, today it is a large urban district employing 7,650 employees and serving approximately 55,000 students in 67 schools (6 High Schools, 11 Middle Schools, 10 Intermediate Schools, 36 Elementary Schools, and 4 Alternative Schools). Ninety-two percent of the district's youth are students of color, and almost 30% are Limited English Proficient. Nearly 80% of district students qualify for free or reduced lunch, and 58% are considered academically at-risk.

Pasadena ISD is molding today's learners into tomorrow's leaders. The district has championed innovative educational learning initiatives supported by advanced programs and technology driven resources that foster student success. Through positive community and business support, the district provides a menu of post-secondary, technical and specialized opportunities that prepare students for higher education and adaptable workplace environments. Many Pasadena ISD alumni make Pasadena their home after graduation, working and raising their families in the community.

The mission of Pasadena ISD is to empower students to become accomplished, self-directed, collaborative, lifelong learners, who boldly contribute to an increasingly complex and evolving world by engaging them in positive relationships, rigorous curriculum, and innovative meaningful experiences.



HISTORY OF SAFE ROUTES TO SCHOOL EFFORTS IN PASADENA

Since 2014, Harris County Public Health (HCPH) has convened a group of local stakeholders to focus on preventing childhood obesity. This group, the Healthy Living Matters (HLM)-Pasadena Community Task Force, has worked to advance policy, systems and environmental change around healthy eating and active living in Pasadena. The primary focus of the active living component has been Safe Routes to School and for over four years HCPH and partners have worked closely with Pasadena ISD to create opportunities to increase the number of children walking and biking to school. More specifically:



EVALUATION:

Built environment assessment in 2012-2013 to discover barriers to walking/biking around two elementary schools (Gardens and Kruse).

Assessment of the schools to identify bike rack needs.



ENGINEERING:

Purchase and installation of bike racks for 8 schools (6 elementary, 1 middle, and 1 intermediate).

Identification and replacement of pedestrian bridge for Gardens Elementary.



ENCOURAGEMENT:

Hosting Walk and Bike to School Day events in partnership with four elementary schools (Richey, Red Bluff, Sparks, and Gardens).



EQUITY:

Identifying priority schools that are located in the north Pasadena area. This area has obesity disparities: 75% of north Pasadena residents are Hispanic, 18% are linguistically isolated, and 40% of adults age 25+ are not HS graduates. Over 1/3 of north Pasadena census tracts have poverty levels at/above 30%.



EDUCATION:

Community workshop on conducting walk audits and the importance of walkability.

Stakeholder workshop on planning for economic and fiscal health, with an emphasis on investing in walkable communities.

Participation in community health events distributing bike helmets and information on bike safety.



ENFORCEMENT:

Partnering with Pasadena Police Department to ensure safety during walk/bike events and educate residents on ordinances related to safety (e.g. not obstructing sidewalks with vehicles).



In 2017 Harris County Public Health received the Our Great Region, Excellence Award from the Houston-Galveston Area Council for its coordination of the Pasadena Safe Routes to School Initiative. This work was selected due to its strong partnerships, clear vision, and its efforts to address the lack of safe, active transportation options in that community.

PRIORITY SCHOOLS & TRAVEL ENVIRONMENT



PRIORITY SCHOOLS

Due to the size of the district, not all of the schools could be included in the initial iteration of the [Pasadena SRTS Plan](#). The schools that were included in the plan were separated into two tiers. **Tier 1 includes seven elementary schools**, selected based on the following criteria:

- No/limited bus service
- Location within a neighborhood
- High free/reduced lunch rate, and
- Readiness by school administration to participate in walk/bike to school events.

THE TIER 1 SCHOOLS ARE:

- Gardens Elementary
- Parks Elementary
- Pomeroy Elementary
- Red Bluff Elementary
- Richey Elementary
- South Shaver Elementary
- Sparks Elementary

Tier 2 schools had similar criteria and were located somewhat proximally to the Tier 1 schools. However, they were not given the 4th grade parent perception survey or audited with the Environmental Scan Tool. Tier 1 schools have recommendations in all six areas, whereas tier 2 schools do not necessarily have engineering or enforcement recommendations. Nevertheless, the environmental changes made could impact the school zones in tier 2 schools.

THE TIER 2 SCHOOLS ARE:

- Bailey Elementary
- Burnett Elementary
- Frazier Elementary
- LF Smith Elementary
- Mae Smyth Elementary
- Matthys Elementary
- Meador Elementary
- South Houston Elementary

As additional resources become available and greater interest is shown from additional schools, more schools will be added to subsequent versions of the plan.



TRAVEL ENVIRONMENT

Through the assessment and input process during the 2017-2018 school year, the Pasadena SRTS team has identified the following barriers to walking and bicycling to school:

- There are no shared or designated bicycle lanes
- Sidewalk improvements are needed
- Incomplete sidewalk network
- Unsafe crossings/intersections

Further, through data available from the Texas Department of Transportation, the total pedestrian and bicycle injury incidences within the past 5 years are detailed below.

- **2012 – 2016: 28 TOTAL INCIDENCES**

- Bicycle: 11
- Pedestrian: 17



INPUT PROCESS & KEY FINDINGS



The Pasadena SRTS working group and strategy committee worked to include all pertinent stakeholders and residents in the development of the SRTS Plan. To accomplish this we completed the following activities described in detail below.²⁹

PARENTS

- **Parent Perception Survey:** In December 2017 the seven tier 1 elementary schools distributed a student travel and parent perception survey tool, created and validated by the National Center for Safe Routes to School. The survey was given to parents of all 4th grade students. The purpose of the survey was to understand parental attitudes and issues that influence how students travel to and from school. A total of 816 surveys were distributed and 216 surveys were returned, yielding a 26% response rate across all 7 schools. The executive summary of the survey results may be found in the appendix.
- **Walk and Bike to School Events:** Since 2017, parents have been engaged before and after each event to seek input about factors that affect neighborhood safety and safe access to schools. Key findings are included in the box below.



Red Bluff Bike to School Event - 2018

Key Findings: There is a concern regarding speed in neighborhood streets and there is a desire to calm traffic through the use of speed humps, stop signs, or other traffic calming measures. Concerns also exist related to stray animals and fear of being attacked while walking or bicycling.

PUBLIC

Since 2017, the Pasadena SRTS team solicited public input at various community events. Some examples include:

- **Healthy Living Matters – Pasadena Community Task Force Meetings:** These meetings occur monthly with representation from community members and agency representatives. Since 2017, each meeting includes a SRTS agenda item where input is sought from the whole group and specifically from the PLAY working group.
- **Health Fairs:** Since 2017, Healthy Living Matters has attended various community health fairs and conducts brief surveys asking community members about barriers to walking or biking in their neighborhoods.
- **Child Health Town Hall:** A town hall was hosted by a partner agency in April 2018. A presentation on SRTS was done and input was sought in regards to neighborhood conditions that affect walking and biking. Over 75 community members were in attendance.



Key Findings: Community members expressed various reasons for not allowing their child to walk or bike to school (alone, with friends, or with adult). The primary ones being the distance and safety concerns, such as neighborhood crime.

29. <https://cris.dot.state.tx.us/public/Query/app/public/welcome>



HLM team members with Councilmember Felipe Villarreal

ELECTED OFFICIALS

- A former city council member has been participating in the HLM-Pasadena Community Task Force meetings and weighing in on decisions related to Safe Routes to School.
- Various city council members have been involved during the Bike and Walk to School Day events, participating as walk/bike volunteers or greeters at the end of the route.
- A city council member was instrumental in obtaining a donation from the City for the purchase of bikes for kids during our first Bike to School Day event at Red Bluff Elementary.
- The current mayor attended an Optimist Club meeting where awards were given out to the police officers who have been heavily involved in our SRTS efforts and the SRTS team was acknowledged.

SCHOOL DISTRICT

- **School Health Advisory Council (SHAC) Meetings:** Pasadena SRTS Team members attended various SHAC meetings to inform the SRTS plan and seek input.
- **Physical Education (PE) Teachers:** In February 2018, the Pasadena SRTS Team hosted a training on SRTS for all the PE Teachers in the district. The training provided information on SRTS and also provided an opportunity to seek input from the teachers about what they are seeing at their campuses that could affect walking or biking to school.
- **Principals:** An interview guide was created to receive feedback and input from principals at each of the 7 Tier 1 schools (located in appendix). The interviews were conducted in May and June of 2018. Overall, while principals were generally supportive of SRTS, they acknowledged that most parents prefer to drive their child to and from school. Principals viewed safety (hazardous sidewalks and streets, neighborhood) as the top barrier for children walking to school. There were staff in various roles cited to be potential champions of SRTS on each campus.
- **School Board Meeting:** In June 2018, Pasadena SRTS Team members presented to the Pasadena ISD School Board about the plan and sought input about the school-specific recommendations.

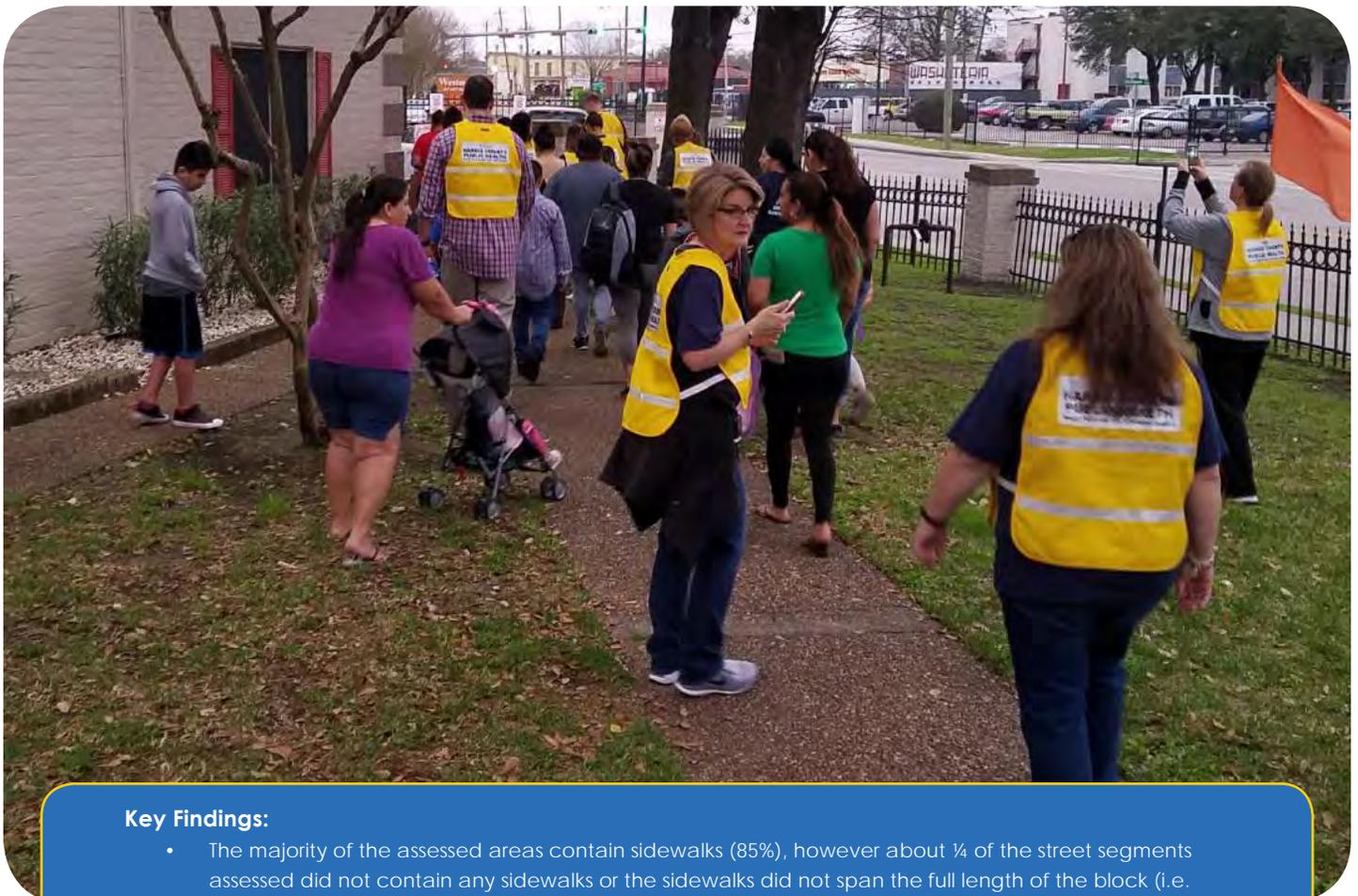


Key Findings: The overall consensus from the school district was that they supported walking and bicycling as long as all students were doing so in a safe manner. Interviews with principals provided the following insight:

- Safety concerns (speeding traffic, need for crossing guards, lack of sidewalks and crosswalks, driver behavior - not following school zone speeds, stopping), especially for young children (under grade 3)
- Walking is more common than bicycling
- Teachers and staff tend to help dismiss walkers at end of day (each school has own structured process)
- There are no school initiatives to support walking and biking, but some are open to it
- Barriers to riding bikes: theft, no locks, no helmets

ENVIRONMENTAL ASSESSMENT

In the fall of 2017 the Harris County Public Health (HCPH) Built Environment (BE) Unit conducted an assessment of the walking environment around the 7 priority schools using HCPH's Environmental Scan Tool (EST). The use of this tool provided the SRTS team the ability to collect information on the built environment and infrastructure that supports (or hinders) walking and biking in the community. Further details and methodology of the EST assessment are located within the appendix. The EST yielded recommendations that are discussed below in the "Strategies" section. The results and engineering specific recommendations were shared and reviewed by the City of Pasadena Planning and Public Works and Engineering Departments and Harris County Engineering prior to completion of this plan.



Key Findings:

- The majority of the assessed areas contain sidewalks (85%), however about ¼ of the street segments assessed did not contain any sidewalks or the sidewalks did not span the full length of the block (i.e. incomplete).
- About 14% of the sidewalks assessed were rated to be in need of repairs, either from significantly overgrown landscaping or due to the structural integrity of the sidewalk itself (major cracks).
- Over 90% of the sidewalks were estimated to be less than 4ft wide presenting both comfort and accessibility issues for pedestrians and those who may have mobility issues (wheelchairs).
- Lastly, 42% of street segments were rated not safe and accessible due to the lack of sidewalks themselves, sidewalk condition and width, the presence of sidewalk obstructions, sidewalk cross-slope, and the absence of ADA ramps.

STRATEGIES & ACTION PLAN



The Pasadena SRTS team has identified strategies within each of the 6 E's (Engineering, Education, Enforcement, Encouragement, Evaluation, and Equity) to address the cited barriers to active transportation to school and to achieve our goals.

ENGINEERING

OBJECTIVE 1: Implement ENGINEERING strategies to address barriers to active transportation to school and to achieve our goals by September 29, 2023.			
OUTCOME MEASURES:			
<ul style="list-style-type: none"> Increased number of places that improve community design by connecting safe and accessible places for physical activity. Increased number of children with safe and accessible routes to school. 			
ACTIVITIES	PROCESS MEASURES	KEY PARTNERS	COMPLETION DATE
1. Provide list of engineering recommendations to City of Pasadena, Pasadena ISD, and Harris County Engineering Department for the areas around the Tier 1 priority schools. Recommendations include: <ul style="list-style-type: none"> Install lighting <ul style="list-style-type: none"> Road oriented lighting in segments without any lighting Explore pedestrian-scaled lighting immediately surrounding schools Take steps to complete sidewalk network <ul style="list-style-type: none"> Ensure continuity of existing sidewalks Remove sidewalk obstructions and maintain deteriorated sidewalks Install and update ADA curb ramps at crosswalks Install signalized pedestrian crossings at major roads and near schools 	# of partners provided with the recommendations # of identified partner next steps	<ul style="list-style-type: none"> SRTS Team City of Pasadena Pasadena ISD Harris County Engineering Department 	7/31/2018
2. Provide presentations to City of Pasadena and Pasadena ISD about the recommendations.	# of presentations	<ul style="list-style-type: none"> SRTS Team City of Pasadena Pasadena ISD 	As needed
3. Explore the feasibility of protected or shared bike lanes; implement Tactical Urbanism projects to pilot test bike infrastructure projects.	# of tactical urbanism projects % increase of individuals who walk/bike because of tactical urbanism projects	<ul style="list-style-type: none"> SRTS Team City of Pasadena Harris County Engineering Department 	9/29/2020
4. Identify long-term funding strategies for community design improvements.	# of strategies # partners who receive strategies	SRTS Team	Ongoing



EDUCATION

OBJECTIVE 2: Implement EDUCATION strategies to address barriers to active transportation to school and to achieve our goals by September 29, 2023.

OUTCOME MEASURES:

- Increased number of educational opportunities about SRTS for students, parents, teachers, community members and community stakeholders.
- Increased number of individuals knowledgeable in SRTS and/or the benefits of and barriers to active transportation.

ACTIVITIES	PROCESS MEASURES	KEY PARTNERS	COMPLETION DATE
1. Children: <ul style="list-style-type: none"> • Host bike rodeos once a year at schools and Recreation Centers • Conduct a distracted walking training • Provide pedestrian safety education in PE class (also structured skills practice) 	# of events # of children participating in events # of schools providing SRTS education opportunities	<ul style="list-style-type: none"> • SRTS Team • Pasadena ISD • Texas Children's Hospital • Pasadena Police Department 	9/29/2019 9/29/2020 9/29/2021 9/29/2022 9/29/2023
2. Parents: <ul style="list-style-type: none"> • Develop targeted media stories • Host training on how to talk to kids about pedestrian safety at SHAC or PTO/PTA meetings • Provide informational materials to parents during Walk/Bike to School Day events 	# of media stories and reach of outlets # of presentations # of individuals provided with informational materials	<ul style="list-style-type: none"> • SRTS Team • PISD • Texas Children's Hospital • PTO/PTA 	9/29/2019 9/29/2020 9/29/2021 9/29/2022 9/29/2023
3. Teachers/School Staff: <ul style="list-style-type: none"> • Offer train-the-trainer on SRTS to build internal capacity • Provided training and technical assistance to PE teachers and key staff on a yearly basis • Present updates on SRTS plan/efforts at SHAC and School Board meetings, when possible 	# training opportunities # of trained staff % of attendees reporting increased knowledge in SRTS and/or benefits of and barriers to active transportation	<ul style="list-style-type: none"> • SRTS Team • PISD 	9/29/2019 9/29/2020 9/29/2021 9/29/2022 9/29/2023
4. Community Members: <ul style="list-style-type: none"> • Host a SRTS forum or town hall for community members • Promote Walk/Bike months to the community via HLM social media/newsletters/partner communication channels 	# of attendees at forum/town hall # of social media followers, newsletter subscribers # of media stories related to SRTS	<ul style="list-style-type: none"> • SRTS Team • HLM 	9/29/2019 9/29/2020 9/29/2021 9/29/2022 9/29/2023
5. Community Stakeholders: <ul style="list-style-type: none"> • Present on SRTS at at least one HLM-Pasadena meeting per year • Present on SRTS at at least one stakeholder meeting per year (e.g. Pasadena Chamber of Commerce, Optimist Club) 	# of presentations # of presentation attendees % of attendees reporting increased knowledge in SRTS and/or benefits of and barriers to active transportation	<ul style="list-style-type: none"> • SRTS Team • HLM 	9/29/2019 9/29/2020 9/29/2021 9/29/2022 9/29/2023
6. Work with the communications departments for City of Pasadena and PISD to create and disseminate SRTS messages.	# of messages and reach of outlets	<ul style="list-style-type: none"> • SRTS Team • City of Pasadena • PISD 	Ongoing

ENFORCEMENT

OBJECTIVE 3: Implement ENFORCEMENT strategies to address barriers to active transportation to school and to achieve our goals by September 29, 2023.

OUTCOME MEASURES:

- Increased number of partners committed to enforcement activities to help ensure SRTS.
- Increased number of SRTS events with police/safety officer presence.

ACTIVITIES	PROCESS MEASURES	KEY PARTNERS	COMPLETION DATE
1. Meet with the following organizations on a yearly basis to develop a list of enforcement activities/strategies: <ul style="list-style-type: none"> • Code enforcement • Pasadena ISD Police Department • City of Pasadena Police Department 	# of engaged partners # of strategies/activities identified	SRTS Team	9/29/2019 9/29/2020 9/29/2021 9/29/2022 9/29/2023
2. Maintain police department awareness of/engagement in Walk and Bike to School event dates to support safety/code enforcement. 3. Maintain crossing guard awareness of/engagement in Walk and Bike to School event dates to support safe crossings.	# of media stories and reach of outlets # of presentations # of individuals provided with informational materials	SRTS Team	Ongoing



ENCOURAGEMENT

OBJECTIVE 4: Implement ENCOURAGEMENT strategies to address barriers to active transportation to school and to achieve our goals by September 29, 2023.

OUTCOME MEASURES:
 Increased number of opportunities to encourage students to walk/bike to school.
 Increased number of students who participate in engagement opportunities.

ACTIVITIES	PROCESS MEASURES	KEY PARTNERS	COMPLETION DATE
1. Work with Tier 1 schools to host an initial Walk to School or Bike to School Day event with support from Healthy Living Matters and PISD Coordinated School Health	# of schools hosting W2S day events # of children/parents participating in W2S day events % of students/parents responding that they would participate again	<ul style="list-style-type: none"> SRTS Team PISD HLM 	9/29/2019 9/29/2020 9/29/2021 9/29/2022 9/29/2023
2. Encourage each Tier 1 school to host subsequent Walk to School or Bike to School Day event on their own (1 per year) <ul style="list-style-type: none"> Develop commitment form for schools and have each complete Provide schools with resources/tools needed for successful event (SRTS kits) 	# of schools hosting W2S day events # of children/parents participating in W2S day events % of students/parents responding that they would participate again	<ul style="list-style-type: none"> SRTS Team PISD HLM 	9/29/2019 9/29/2020 9/29/2021 9/29/2022 9/29/2023
3. Develop a plan for each Tier 1 school to sustain walking/biking to school	# of school plans	SRTS Team	9/29/2019 9/29/2020 9/29/2021 9/29/2022 9/29/2023
4. School district to monitor progress and evaluate success. Reports to be shared at SHAC meetings and with school board.	Yearly evaluation report	SRTS Team	9/29/2019 9/29/2020 9/29/2021 9/29/2022 9/29/2023
5. Provide recognition to the SRTS schools/ champions (yearly) <ul style="list-style-type: none"> Develop recognition criteria and methods Develop sustainability plan for recognition 	# of recognition nominations # of recognized schools/ champions # recognition methods	<ul style="list-style-type: none"> SRTS Team PISD HLM 	
6. Develop tools/techniques schools can use to encourage parents/students to walk/bike outside of event dates (eg. stickers, pedometers, activity challenges, etc.)	# of tools/techniques identified or developed # of schools sharing tools/ techniques # parents/students receiving tools/techniques % of parents/students reporting increase in walking/biking to school	<ul style="list-style-type: none"> SRTS Team PISD HLM 	Ongoing



EVALUATION

OBJECTIVE 5: Implement EVALUATION strategies to address barriers to active transportation to school and to achieve our goals by September 29, 2023.

OUTCOME MEASURES:

- Increased number of opportunities to evaluate the success of SRTS plan/efforts.
- Increased number of children who regularly walk or bike to/from school.
- Increased common knowledge about student transportation patterns and trajectory.

ACTIVITIES	PROCESS MEASURES	KEY PARTNERS	COMPLETION DATE
1. Continue to collect student transportation data yearly, and compare across years.	Student transportation data reports	PISD	9/29/2019 9/29/2020 9/29/2021 9/29/2022 9/29/2023
2. Share longitudinal data on a yearly basis with SHAC.	# presentations to SHAC # of decisions made based of presentation of data # of attendees at SHAC meeting	<ul style="list-style-type: none"> • SRTS Team • PISD 	9/29/2019 9/29/2020 9/29/2021 9/29/2022 9/29/2023
3. Collect parent perception surveys and enter data into National Safe Routes database every three years.	# of schools administering parent perception surveys # of parents completing the survey % of parents reporting improved conditions/ reduced barriers for walking/biking to school	<ul style="list-style-type: none"> • SRTS Team • PISD 	9/29/2020 9/29/2023
4. Collect principal and facilities management interviews to assess ongoing support for SRTS at the campus level every three years.	# of principals/facilities personnel surveyed % of respondents reporting support for SRTS	<ul style="list-style-type: none"> • SRTS Team • PISD 	9/29/2020 9/29/2023
5. Monitor sidewalk and infrastructure projects and pedestrian and bicycle crashes around the prioritized schools every five years.	Five-year assessment report	<ul style="list-style-type: none"> • SRTS Team • HCPH BE Unit 	9/29/2022



NEXT STEPS AND FUNDING

Executing the strategies contained within this plan require time, funding, and resources from each of the partner agencies.

There are multiple funding sources that the Pasadena SRTS team could utilize and/or apply for to fund strategies within this plan. Near term efforts include: 1) The City will use its annual sidewalk maintenance budget to replace and repair sidewalks where possible; 2) The City will incorporate pedestrian and bicycle improvements in its Capital Improvement Plan (CIP) projects where possible; and 3) The City will explore additional funding sources such as Community Development Block Grants (CDBG) and Houston-Galveston Area Council (H-GAC) transportation funds.

The Pasadena SRTS team will continue working together to engage the Healthy Living Matters - Pasadena Community Task Force on outreach, publicity, and community engagement. Pasadena ISD, via the Coordinated School Health department, is committed to executing strategies related to parents, teachers, and students. Efforts are ongoing to identify other sources of funding, including the CDC REACH grant.

The Pasadena SRTS core group has enjoyed working together and sharing resources to help as many kids as possible have access to safe routes to school. Our group is dedicated to supporting the implementation of the Pasadena SRTS plan as it comes into fruition.

APPENDIX

The assessment of the walking environment around the 7 priority schools was conducted in fall of 2017 using HCPH's **Environmental Scan Tool (EST)** developed by the **Built Environment (BE) Unit**. The EST was adapted from validated, paper-based walkability audits and developed into an online platform to collect data on pedestrian, bicycle, and road infrastructure. The tool enables the ability to collect detailed information on sidewalk availability, sidewalk condition, bicycle infrastructure, and use GPS coordinates to map street elements and traffic control devices such as pedestrian crossing signals, school zones, ADA ramps, etc.

METHODS

Using ArcGIS Network Analyst, the BE Unit mapped an assessment area within a half mile walk from each priority school. Streets were broken down into individual segments and given a unique identifying number. Volunteers and HCPH staff were paired up and assigned an assessment area, and assessments were conducted on foot. In total, 372 street segments were assessed by approximately 15 HCPH staff and volunteers. It took an average of about 3 hours to assess the entire area around a school.

RESULTS

In total, 85% of the entire assessment area contained sidewalks on at least one side. While a street segment may contain a sidewalk, the continuity of a sidewalk was measured (i.e., does the sidewalk span the entire length of the block?) and only 8% of those sidewalks were incomplete. In total, 23% of the assessment area represented an incomplete sidewalk network, either because of the lack of sidewalks or incomplete sidewalks. Pomeroy Elementary contained sidewalks on every street segment assessed, while Parks Elementary and South Shaver Elementary had the highest percentage of street segments missing sidewalks, 30% and 26% respectively (See appendix). Sidewalk condition was examined, and while about 86% of sidewalks were in good or somewhat good condition, 14% were in need of repairs (i.e. rated 'many bumps/cracks/unkept landscaping'). These segments contained significant overgrowth of landscaping or significant cracks that prevented a safe use of the sidewalk for people of all abilities. Majority (76%) of the sidewalks were estimated to be 3-4ft in width, while about 18% of sidewalks were estimated to be less than 3ft wide. Additionally, about a quarter (25%) of sidewalks were right at the edge of the roadway and 66% were less than 5ft from the roadway, presenting an issue of comfort when walking along those streets.

Overall, 42% of street segments were rated not safe and accessible due to the lack of sidewalks themselves, sidewalk condition and width, the presence of sidewalk obstructions, sidewalk cross-slope, and the absence of ADA ramps.

The image shows a screenshot of the 'Pedestrian & Bicycle Environmental Scan' form. The form is organized into several columns and rows of questions and data entry fields. Key sections include:

- Header:** Survey ID, Date, Time, Speed limit (mph/zone), Name of Surveyor (First & Last), Connect to Survey, All Address, Accessibility (ADA) Score, Total Score, and a note: 'Data generated from 0M, 0L, 0, 1, 2, 3, 4, 5, 10, 15, 16, 18, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100'.
- Section 1: Sidewalk:** Questions about sidewalk availability on all sides, one side, or none, and whether it is a utility easement.
- Section 2: Street Slope:** Questions about the slope of the sidewalk (Flat, Slight, Steep).
- Section 3: Bicycle Facilities:** Questions about bicycle lanes, including 'Dedicated' marking, 'Shared' bicycle lane, and 'Bike boulevards'.
- Section 4: Sidewalk Condition:** Questions about sidewalk material (Asphalt, Concrete, Gravel, etc.), width (Less than 3ft, 3ft to 4ft, 4ft to 5ft, 5ft or more), and whether it is right at the edge of the roadway or less than 5ft from the roadway.
- Section 5: Sidewalk Obstructions:** Questions about obstructions like trees, bushes, utility poles, etc.
- Section 6: Sidewalk Cross-slope:** Questions about the cross-slope of the sidewalk.
- Section 7: Sidewalk ADA:** Questions about ADA ramps and other accessibility features.
- Section 8: Street Lighting:** Questions about segment lighting and whether there are shade providing trees.
- Section 9: Crossing Aids:** Questions about crossing signals, pedestrian signals, and ADA ramps.
- Section 10: Bus Stops:** Questions about bus stop shelter, bench, and other features.
- Section 11: Additional Notes:** A large text area for any other observations.

In examining the comfort of the walking environment, about a quarter (25%) of sidewalks were right at the edge of the roadway and 66% were less than 5 feet from the roadway. About 15% of the segments contained moderate to heavy litter and/or graffiti and about 30% of the segments did not contain any lighting, representing a safety issue when walking in low-light or no-light conditions. Higher traffic speeds on collector and thoroughfare roads and speeding in neighborhood roads may also reduce pedestrian comfort, especially on those narrow sidewalks that are close to the road.

In an effort to examine pedestrian infrastructure at crosswalks and intersections, in total 27 of the 63 crosswalks that were mapped contained pedestrian signals. Crosswalks on major thoroughfares or near schools that do not have pedestrian signals present a safety issue as drivers may not be aware of pedestrians trying to cross without supporting signage and/or visibility of the crosswalk may be low.

RECOMMENDATIONS

for City of Pasadena

It is important to note that while the City of Pasadena will likely be involved in implementing a number of the recommendations below, other important stakeholders will also be a part of the planning and decision-making around future pedestrian infrastructure projects, such as Harris County Precinct 2, Harris County Engineering Department, Pasadena ISD, individual schools, City Council members, and others. The recommendations are intended to potentially improve the quality of life for all Pasadena residents, and the SRTS Strategy Team recognizes the City will not be solely responsible for implementing all recommendations included in this plan; that it will need to be a collaborative effort. Additionally, more detailed engineering and traffic analyses may be needed to refine some recommendations.

The City of Pasadena sidewalk ordinance requires a 4 feet minimum width for sidewalks and approximately 1 foot off the property line, within the city right-of-way. Because a significant portion of the sidewalks assessed were estimated to be less than 4 feet wide, the City will need to rebuild sidewalks to current standards. According to Governor's Highway Safety Association, 80% of pedestrian fatalities in Texas occur in dark conditions, highlighting the importance of improving lighting conditions³⁰ on those streets without lighting. Lastly, a majority of the sidewalks contained ADA ramps, but there were a number of intersections missing ramps which present a barrier for pedestrians with mobility issues and parents with small children in strollers.

Due to the absence and condition of the sidewalks within the street segments assessed, the lack of lighting in 1/3 of the assessment area, and issues of pedestrian comfort the below actions are recommended for the City of Pasadena, overall:

1. Install lighting

1. *Road oriented lighting in segments without any lighting*
2. *Explore pedestrian-scaled lighting immediately surrounding schools*

2. Take steps to complete sidewalk network

1. *Remove sidewalk obstructions and maintain deteriorated sidewalks*
2. *Ensure continuity of existing sidewalks*
3. *Install and update ADA curb ramps at crosswalks*
4. *Revise city sidewalk ordinances to require sidewalks on both sides of the street*

3. Install signalized pedestrian crossings at major roads and near schools

4. Identify opportunities to incorporate bicycle facilities in future constructions projects and/or utilize Tactical Urbanism strategies to pilot test bicycle infrastructure projects

5. Incorporate where possible traffic calming measures to slow traffic on **Richey St., Harris Ave., Red Bluff Rd., Burke Rd., Shaver St., and Southmore Ave.** near schools and residents

6. Update and implement the city-wide hike and bike/trails plan in coordination with Harris County and City of Houston

7. Develop a priority system to address code enforcement issues, including but not limited to parking over sidewalks and debris on sidewalks

8. Provide community education around code enforcement and promote the local 311 "Action Line"

30. https://www.ghsa.org/sites/default/files/2018-03/pedestrians_18.pdf

RECOMMENDATIONS BY SCHOOL

Below are recommendations for each school listed by highest priority to lowest priority based upon community support and feedback and the potential impact on improving pedestrian safety. Street segments that are missing sidewalks or are in need of repair are listed for each school assessment area. Supporting maps from the environmental assessment can be reviewed in subsequent pages in the appendix.

GARDENS ELEMENTARY

1) Improve intersection at Thomas Ave. and Scott St.

- Install stop signs on Thomas Ave. to create a 4-way stop
- Regrade sidewalk cross slope on Scott St.
- Restripe crosswalk with Continental or Ladder style to improve visibility (Appendix C)
- Install ADA curb ramps with truncated dome tactile strip at the bottom of the curb ramp with contrasting color
- Regrade ADA ramp incline to comply with 2010 ADA Standards for Accessible Design



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2) Improve accessibility to Gardens Park and pedestrian bridge over Little Vince Bayou on Scott St.

- Provide paved connection from sidewalk on Scott St. to pedestrian bridge over Little Vince Bayou
- Install additional sidewalks on Northside of Scott St. from Lawrence Ave to Harrop Ave.
- Install ADA curb ramps with truncated dome tactile strip at the bottom of the curb ramp with contrasting color
- Paint pedestrian crosswalk with Ladder design across Scott St. (Appendix C)
- Install "Pedestrian Crossing" signage on roadside



GARDENS ELEMENTARY (CONTINUED)

3) Connect crosswalk on Williams St. to ADA ramp and sidewalk near Jackson Intermediate School and St. Peter's Episcopal Church.



4) Re-stripe crosswalk on Thomas Ave between Williams St. and Little Vince Bayou

- Explore option of a raised crosswalk to help reduce traffic speeds (See Appendix)

5) Install Speed humps on Scott St. between Thomas Ave. and Alvin St.



6) Improve visibility of crosswalk at Harris Ave. and Williams St:

- Re-stripe with Continental or Ladder design (See Appendix)
- Add "Pedestrian Crossing" signage to improve visibility

The below street segments are lacking sidewalks on both sides:

- Westfall Ave. between Pasadena Blvd. and Witter St.
- Herbert Dr. between Pasadena Blvd. and Witter St.
- Beverly Dr. between Pasadena Blvd. and Witter St.
- Ann St. between Beverly Dr. and Southmore Ave.
- Francis Dr.
- Wheeler St. between Davis St. and Strawberry Rd.
- Gore St.
- Lorraine Ct.

To ensure sidewalks are on both sides of the street, install additional sidewalks on:

- Strawberry Rd. between Harris Ave. and Jenkins Rd.
- Jenkins Rd. between Strawberry Rd. and Davis St.
- Davis St. between Francis Dr.
- Witter St. between Elm Ave. and Harris Ave.
- Willow Ave. between Pasadena Blvd. and Witter St.
- Live Oak Ave. between Pasadena Blvd. and Witter St.
- Maple Ave. between Pasadena Blvd. and Witter St.
- Harris Ave. between Witter St. and Wafer St.
- Wafer St. between Harris Ave. and Hamon Dr.

The below sidewalks were rated to be in poor condition (many bumps/cracks/overgrown landscaping) and are in need of repair or improvements:

- Scott St. between Thomas Ave. and Glenn Ave.
- Alvin St. between Lawrence Ave. and Thomas Ave.
- Harris St. between Lorraine Ct. and Strawberry Rd.
- Harris Ave. between Pasadena Blvd. and Witter St.
- Pasadena Blvd. between Thomas Ave. and Cruse Dr.

PARKS ELEMENTARY

1) Install signalized mid-block crossing on Red Bluff Rd. in between Deepwater and Orrel St. (See Appendix)

- Install Pedestrian Hybrid Beacon Signal
- Re-stripe crosswalk and "PEDESTRIAN XING" marks on pavement
- Install ADA curb ramps with truncated dome tactile strip at the bottom of the curb ramp with contrasting color
- Install additional "pedestrian crossing" signage on roadside and overhead crossing
- Option to include pedestrian refuge



2) Upgrade existing crosswalk on Red Bluff Rd. in between Sunrise Meadows Ln. and San Jacinto Intermediate School

- Upgrade to Pedestrian Hybrid Beacon Signal (See Appendix A)
- Install ADA curb ramps with truncated dome tactile strip at the bottom of the curb ramp with contrasting color
- Paint "SCHOOL XING" pavement markings on Red Bluff Rd. to enhance driver awareness
- Install additional "pedestrian crossing" signage on roadside and overhead crossing



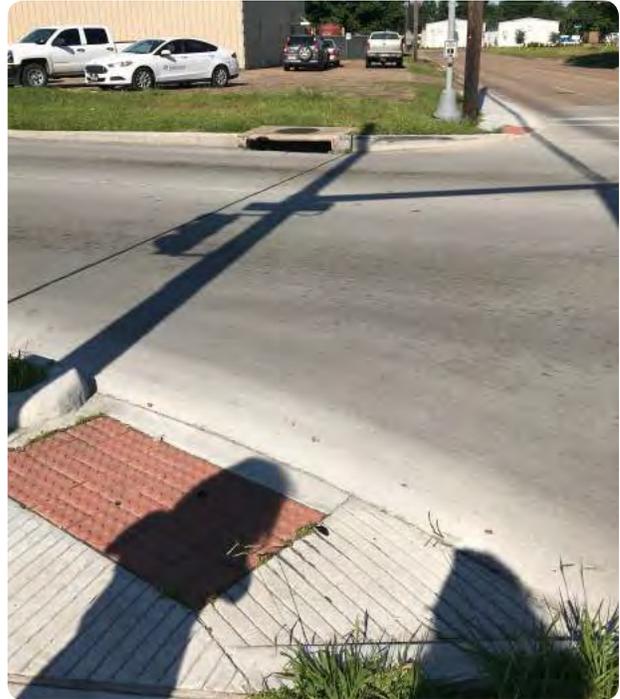
PARKS ELEMENTARY (CONTINUED)

3) Complete sidewalk network from intersection of South St. and San Augustine Ave.

- Recent improvements have been made to the intersection with ADA ramps and pedestrian signals but is lacking sidewalk connections to existing sidewalks and destinations
- Additionally, intersection is lacking pedestrian signal head and ADA accessible ramp on Southside of intersection across South St.

4) Improve intersection at San Augustine Ave. and Red Bluff Rd.

- Restripe crosswalk with Continental or Ladder design to improve visibility (Appendix C)
- Install additional "Pedestrian Crossing" signage on Red Bluff Rd to improve driver awareness



5) Install speed humps on:

- San Augustine Ave. between Jasmine Dr. and Magnolia Dr.

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The below street segments are lacking sidewalks on both sides

- Redfield Dr. between Orrel Dr. and Suiter Way
- Sophie Ann Dr. between Orrel Dr. and Redfield Dr.
- Bluefield Dr. between Redfield Dr. and Wynd Ave.
- Wynd Ave. between Sophie Ann Dr. and Redfield Dr.
- South St. between San Augustine Ave. and E. Southmore Ave.

To ensure sidewalks are on both sides of the street, install additional sidewalks on:

- San Augustine Ave. between Preston Ave. and Red Bluff Rd.
- Orrel Dr. between Redfield Dr. and Suiter Way
- Truxton Dr. between Orrel Dr. and Glenmore Dr.
- Glenmore Dr. between Truxton Dr. and Guthrie Dr.

The below sidewalks were rated to be in poor condition (many bumps/cracks/overgrown landscaping) and are in need of repair or improvements:

- San Augustine Ave. between South St. and Preston Ave.
- Orrel Dr. between Truxton Dr. and Redfield Dr.

POMEROY ELEMENTARY

1) Improve intersection at Burke Rd. and Jenkins Rd.

- Install “Pedestrian Crossing” signage on roadside
- Restripe crosswalk with Continental or Ladder design to improve visibility (Appendix C)
- Update ADA curb ramps with truncated dome tactile strip at the bottom of the curb ramp with contrasting color on Northside of intersection
- Add pedestrian signal on Northside of intersection and painted crosswalk
- Add pedestrian refuge on Northside of intersection



2) Improve crosswalk visibility on Jenkins Rd.

- Paint “SCHOOL XING” pavement markings on Jenkins Rd. to enhance driver awareness
- Re-paint existing Ladder-style crosswalk to improve visibility
- Upgrade Pedestrian Crossing sign to include push-button activated flashing beacon (See Appendix B)
- Update ADA curb ramp on Southside of crosswalk to include truncated dome tactile strip as bottom of curb ramp with contrasting color



3) Install speedhumps on Jenkins Rd. between Burke Rd. and Kerry Dr.

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To ensure sidewalks are on both sides of the street, install additional sidewalks on:

- Kay Ave. between Michael Dr. and Kerry Dr.
- Patrick St. loop
- Bearle St. between Coleman Ave. and Red Bluff Rd.

The below sidewalks were rated to be in poor condition (many bumps/cracks/overgrown landscaping) and are in of repair or improvements:

- Theresa St. between Patrick St. and Old Burke Rd.
- Bearle St. between Coleman Ave. and Red Bluff Rd.

RED BLUFF ELEMENTARY

It is currently planned to rebuild Red Bluff Elementary with tentative start in 2019. During this time, it is suggested that the city and school district take into consideration the recommendations below. Currently, there is no sidewalk on Red Bluff Rd. in front of the school property, but, according to site plans, there are plans to install sidewalks during the renovation. It is recommended that this sidewalk have 5ft or greater setback from the roadway and be 5ft in width.

1) Improve intersection at Red Bluff Rd. and Bearle St.

- ADA curb ramps with truncated dome tactile strip at the bottom of the curb ramp with contrasting color
- Re-stripe crosswalk with Continental or Ladder design to improve visibility (Appendix C)



2) Install signalized Pedestrian Crossing on Red Bluff Rd. at Community Dr. (See Appendix A)

- Install Pedestrian Hybrid Beacon Signal
- Paint Ladder crosswalk and "SCHOOL XING" marks on pavement
- Install ADA curb ramps with truncated dome tactile strip at the bottom of the curb ramp with contrasting color
- Install additional "pedestrian crossing" signage on roadside and overhead crossing



3) Improve intersection at Red Bluff Rd. and Thomas Ave.

- Install pedestrian signals at all crosswalks
- Update ADA curb ramps with truncated dome tactile strip at the bottom of the curb ramp with contrasting color at all corners
- Re-stripe crosswalk with Continental design to improve visibility (Appendix C)



4) Install School Zone Signs on Marshall, Normand, and Raymond Streets

5) Install speed humps on:

- Thomas Ave. between Red Bluff Rd. and Bearle St.
- Thomas Ave. between Bearl St. and James St.
- Bearle St. between Red Bluff Rd. and Thomas Ave.

RED BLUFF ELEMENTARY (CONTINUED)

The below street segments are lacking sidewalks on both sides:

- Red Bluff Rd. between Taylor Ave. and Thomas Ave.
- Red Bluff Rd. between Bearle St. and Burke Rd.
- Thomas Ave. between Red Bluff Rd. and Tilden Dr.
- Harrop Ave. between Pendelton St. and Red Bluff Rd.
- Delta St. between Bearle St. and Ingersol Ave.
- Don St. between Camille St. and Burke R.
- Morningside Ln. between Windsor Ln. and Alastair Dr.

To ensure sidewalks are on both sides of the street, install additional sidewalks on:

- Tilden Dr. between Alastair Dr. and Pomona Dr.
- Alastair Dr. between Huntington Dr. and Rosemead Dr.
- Delta between Huntington Dr. and Norman St.
- Thomas Ave. between Tilden Dr. and Alastair Dr.
- James St. between Thomas Ave. and Burke Rd
- Camille St. between Red Bluff Rd. and Alastair Dr.
- Bearle St. between Coleman Ave. and Red Bluff Rd.
- Red Bluff Rd. between Bearle St. and Harrop Ave.
- Red Bluff Rd. between Taylor Ave. and Thomas Ave.
- Windsor Lane between Burke Rd. and Morningside Ln.
- Red Bluff Court

The below sidewalks were rated to be in poor condition (many bumps/cracks/overgrown landscaping) and are in need of repair or improvements:

- Red Bluff Rd. between Harrop Ave. and Community dr.
- Pendelton St. between Lawrence Ave. and Harrop Ave.
- Bearle St. between Coleman Ave. and Red Bluff Rd.
- Bearle St. between Thomas Ave. and Rosemead Dr.
- Rosemead Dr. between Bearle St. and Alastair Dr.
- Thomas Ave. between James St. and Delta St.
- Marshall St. between Bearle St. and Alastair Dr.
- Norman St. between Bearle St. and Alastair Dr.
- James St. between Thomas Ave and Marshall St.
- Alastair Dr. between Thomas Ave. and Marshall St.

RICHEY ELEMENTARY

1) Improve visibility of signalized Pedestrian Crossing on Richey St. (See Appendix A)

- Install Pedestrian Hybrid Beacon Signal
- Re-stripe crosswalk and "SCHOOL XING" marks on pavement
- ADA curb ramps with truncated dome tactile strip at the bottom of the curb ramp with contrasting color
- Install additional "Pedestrian Crossing" signage on roadside and overhead crossing
- Install median on Richey St. to slow traffic
- Improve visibility of traffic signals with use of signage and physical support structure



2) Install crosswalk on W. Thomas Ave. west of school driveway

- Install "Pedestrian Crossing" signage
- Re-stripe crosswalk on pavement with Ladder design (Appendix C)
- Install ADA curb ramps with truncated dome tactile strip at the bottom of the curb ramp with contrasting color
- Explore option of raised crossing to assist with reducing traffic speeds (See Appendix)

3) Install speed humps or raised crossing on W. Thomas Ave. between Richey St. and Mobile Dr.

The below street segments lack sidewalks on both sides:

- Hamilton Ln. off W. Jackson Ave.
- Trichelle St. between Ross and W. Thomas Ave.
- Ross St. between Trichelle St. and Finrock St.
- Vermillion St. between W. Thomas Ave. and W. Jackson Ave.
- Lakin Ave. between Richey St. and Trichelle St.

To ensure sidewalks are on both sides of the street, install additional sidewalks on:

- W. Jackson Ave. between Richey St. and Trichelle St.
- Finrock St. between Ross and W. Jackson Ave
- W. Thomas Ave. between Scarborough Ln. and Trichelle St.

The below sidewalks were rated to be in poor condition (many bumps/cracks/overgrown landscaping) and are in need of repair or improvements:

- W. Thomas Ave. between Trichelle St. and Mobile Dr.
- Imber St. between Finrock St. and Cactus St.
- Nell St. between Susan St. and W. Thomas Ave
- W. Thomas Ave between Scarborough Ln. and Vermillion Dr.
- Richey St. between Savannah Ave. and Picalune
- Picalune between Palmetto Dr. and Richey St.
- W. Harris Ave. between Mobile Dr. and Richey St.

SOUTH SHAVER ELEMENTARY

1) Improve the condition of the intersection at Shaver St. and West Ave.

- Add pedestrian signals to all available crossings – currently only pedestrian signals are on south side of intersection to cross Shaver St.
- Install ADA curb ramps with truncated dome tactile strip at the bottom of the curb ramp with contrasting color
- Re-stripe crosswalk with Continental design to improve visibility
- Add sidewalks on both sides of Shaver St. between West Ave to Lamar Dr.



2) Intersection of Allendale Rd. and Shaver St.

- Add sidewalk on east side of Shaver St. between Allendale Rd. to Garner Rd.
- Connect ADA curb ramp to sidewalk on Shaver St between Allendale Rd. and Garner Rd. Remove pedestrian signal head off of ADA ramp (see photo below)
- Update ADA curb ramps with truncated dome tactile strip at the bottom of the curb ramp with contrasting color
- Re-stripe crosswalk
- Add pedestrian signals on Northside of Shaver in intersection
- Consolidate driveways on Shaver St. between Allendale Rd. and Garner R.



3) Move midblock crosswalk on Shaver St. between Allendale Rd. and West Ave. to connect to school entrance

- Re-stripe crosswalk with Ladder design
- Install ADA curb ramps with truncated dome tactile strip at the bottom of the curb ramp with contrasting color

4) "SCHOOL XING" pavement markings on West Ave. before first school entrance to enhance driver awareness near school

5) Install speed humps on:

- Dade St. between West Ave and Allendale Rd.



SOUTH SHAVER ELEMENTARY (CONTINUED)

The below street segments are lacking sidewalks on both sides:

- Shaver St. between West Ave. and Lamar Dr.
- Shaver St. between Pauline St. and Fresa Rd.
- Doris Ave
- Tiller Terrace
- Valerie Ave
- W. Austin Ave. between Miami Rd. and Shaver St.
- Austin Ave. between Shaver St. and Robinhood St.
- Dade St. between Campbell Ave. and W. Houston Ave.
- Johnson St. between Austin Ave. and Houston Ave.

To ensure sidewalks are on both sides of the street, install additional sidewalks on:

- Garner Rd. between Shaver St. and Merle St.
- Shaver St. between W. Houston Ave. and Allendale Rd.
- Shaver St. between Lamar Dr. and Pauline St.
- Campbell Ave. between Dade St. and Shaver St.
- Robinhood St. between Austin Ave. and Wafer St.
- Robinhood St. between Littlejohn Ct. and Garner Rd.
- Queens Rd. between Fenwood Dr. and Fresa Rd.
- Shaver Rd. between Queens Rd. and Shaver St.

The below sidewalks were rated to be in poor condition (many bumps/cracks/overgrown landscaping) and are in need of repair or improvements:

- Vince St. between Allendale to West.
- Shaver St between W. Austin Ave. and Campbell Ave.
- Lenny Ln. between Garner Rd. and Lewis St.

SPARKS ELEMENTARY

It is important to note that a majority of the students who walk or bike to Sparks Elementary do so from the rear of the school property. There is an adjacent apartment complex that has installed a permanent gate in the property fence line to allow students access to the school grounds. Additionally, three side streets (Paul St., Joseph St., and Satsuma St.) end at the school property. We recommend that Sparks Elementary continue working with the apartment complex and nearby church to ensure that students will continually have access to school property, and are able to walk in a safe and clean environment.

1) Upgrade existing crosswalk to signalized Pedestrian Crossing on Southmore Ave. near Leneva Ln. (See Appendix A)

- Install Pedestrian Hybrid Beacon Signal
- Re-stripe crosswalk with Ladder design and "SCHOOL XING" marks on pavement
- Update worn ADA curb ramps with truncated dome tactile strip at the bottom of the curb ramp with contrasting color
- Install additional "Pedestrian Crossing" signage on roadside and overhead crossing
- Explore option to move west on Southmore Ave. between Leneva Ln. and Wichita St. to serve as midblock crossing for entire segment between Preston Ave. and Burke Rd.



The below street segments are lacking sidewalks on both sides:

- London St. between Southmore Ave. and Penfield Dr.
- Preston Rd. between Prairie St. and Southmore Ave.

To ensure sidewalks are on both sides of the street, install additional sidewalks on:

- Paul St. off E. Harris Rd.
- Joseph St. off E. Harris Rd.
- Satsuma St. off E. Harris Rd.
- Almdares Ave. between Medellin St. and Red Bluff Rd.
- Perdue St. between Penfield St. and Southmore Ave.
- Preston Rd. between Prairie St. and Red Bluff Rd.
- Preston Rd. between Southmore Ave. and San Augustine Ave.
- London St. between Penfield St. and Prairie St.

The below sidewalks were rated to be in poor condition (many bumps/cracks/overgrown landscaping) and are in need of repair or improvements:

- Zapp Ln. between Southmore Ave. and Marlen Ave.
- Marlock Ln. between Southmore Ave. and Marlen Ave.
- Lavonia Ln. between Southmore Ave. and Marlen Ave.
- Marlen Ave. between Marlock Ln. and Zapp Ln.
- Marlen Ave. between Ruella Ln. and Burke Rd.
- E. Harris Rd. between Paul St. and Joseph St.

ADDITIONAL APPENDICES

APPENDIX A - SIGNALIZED PEDESTRIAN CROSSING



ESTIMATED COST

Infrastructure	Description	Median	Average	Min. Low	Max. High	Cost Unit
Pedestrian Hybrid Beacon	Pedestrian Hybrid Beacon	\$51,460	\$57,680	\$21,440	\$128,660	Each

Source: Pedestrian Safety Guide and Countermeasure Selection System, FHWA

ADDITIONAL APPENDICES

APPENDIX B - FLASHING BEACONS



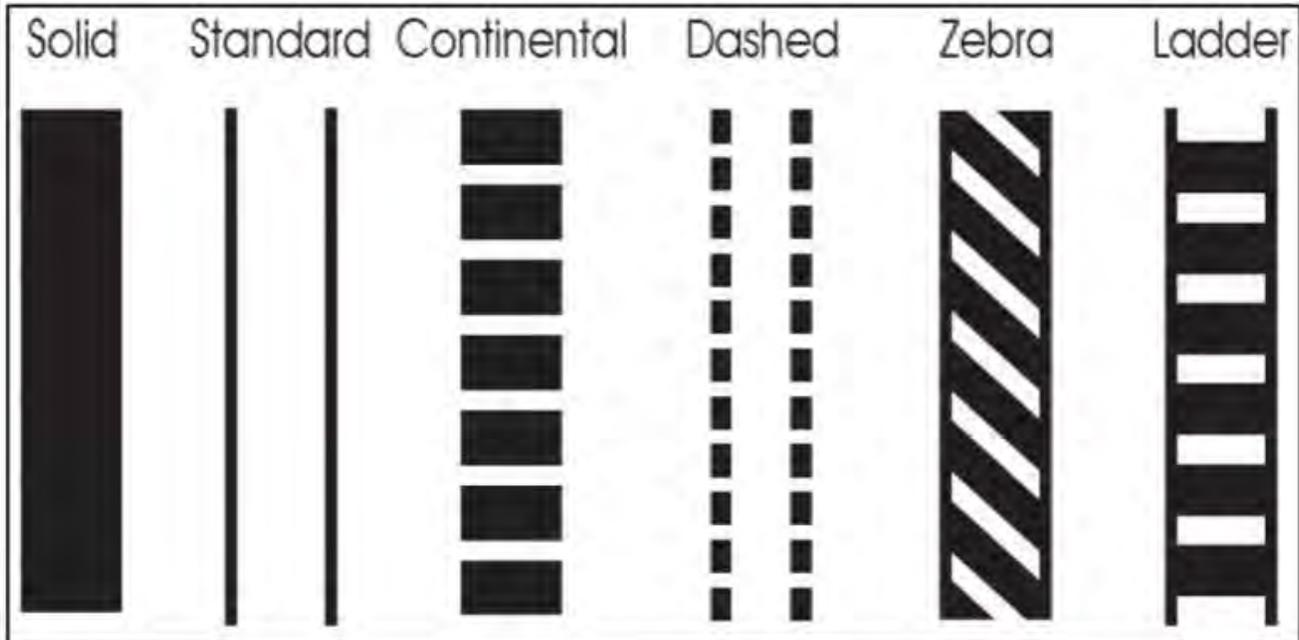
ESTIMATED COST

Infrastructure	Description	Median	Average	Min. Low	Max. High	Cost Unit
Flashing Beacon	Flashing Beacon	\$5,170	\$10,010	\$360	\$59,100	Each
Flashing Beacon	RRFB	\$14,160	\$22,250	\$4,520	\$52,310	Each

Source: Pedestrian Safety Guide and Countermeasure Selection System, FHWA

ADDITIONAL APPENDICES

APPENDIX C - CROSSWALK STYLES



ESTIMATED COST

Infrastructure	Description	Median	Average	Min. Low	Max. High	Cost Unit
Crosswalk	High Visibility Crosswalk	\$3,070	\$2,540	\$600	\$5,710	Each
Crosswalk	Striped Crosswalk	\$340	\$770	\$110	\$2,090	Each
Crosswalk	Striped Crosswalk	\$5.87	\$8.51	\$1.03	\$26	Linear Foot
Crosswalk	Striped Crosswalk	\$6.32	\$7.38	\$1.06	\$31	Square Foot

Source: Pedestrian Safety Guide and Countermeasure Selection System, FHWA

ADDITIONAL APPENDICES

APPENDIX D - RAISED PEDESTRIAN CROSSWALK (SPEED TABLE)



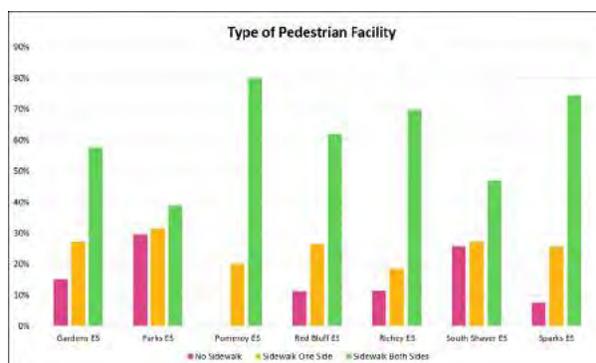
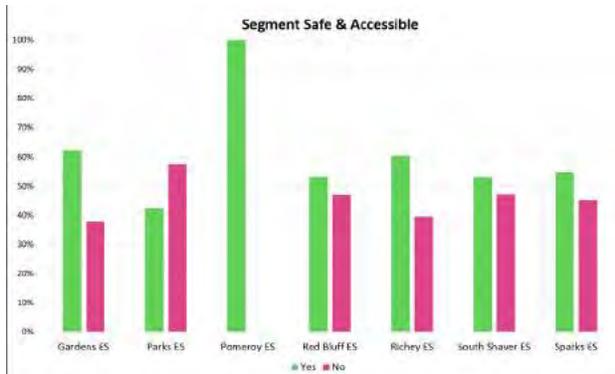
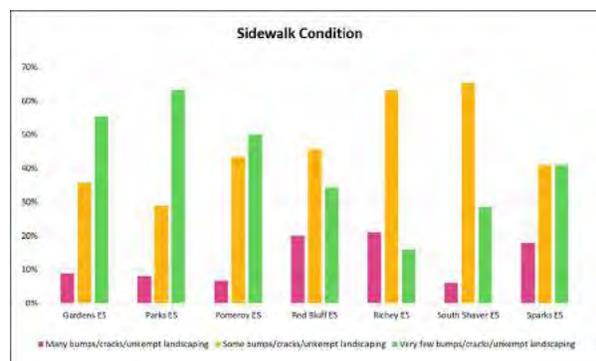
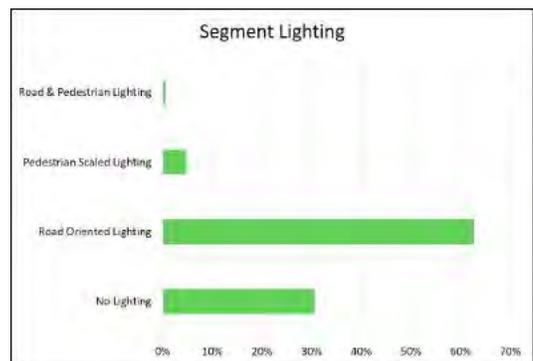
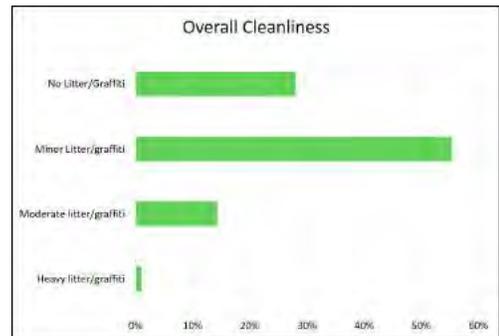
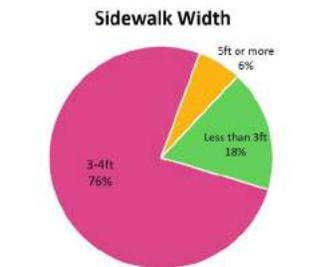
ESTIMATED COST

Infrastructure	Description	Median	Average	Min. Low	Max. High	Cost Unit
Raised Crossing	Raised Crosswalk	\$7,110	\$8,170	\$1,290	\$30,880	Each

Source: Pedestrian Safety Guide and Countermeasure Selection System, FHWA

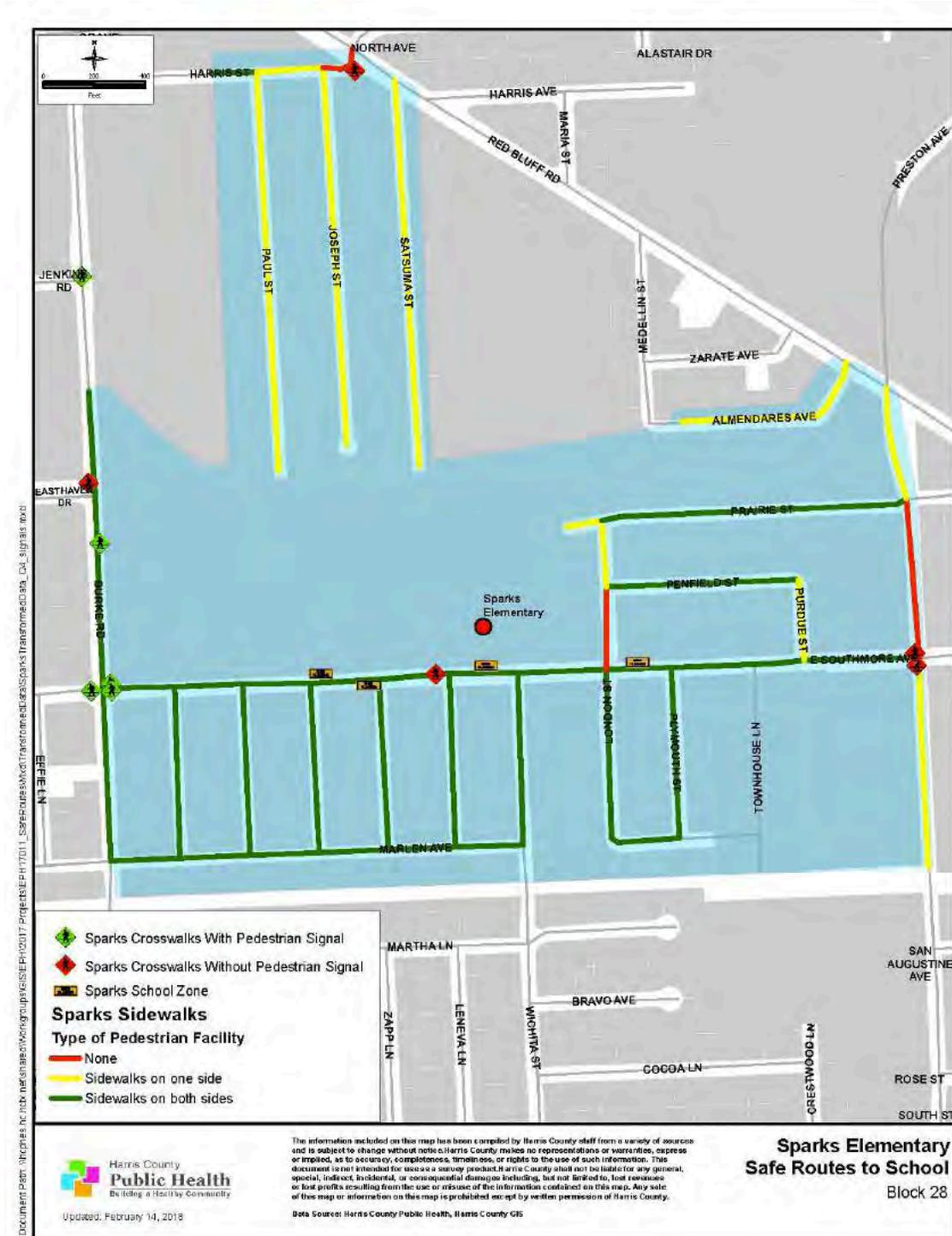
ADDITIONAL APPENDICES

APPENDIX E - ENVIRONMENTAL SCAN TOOL AND RESULTS



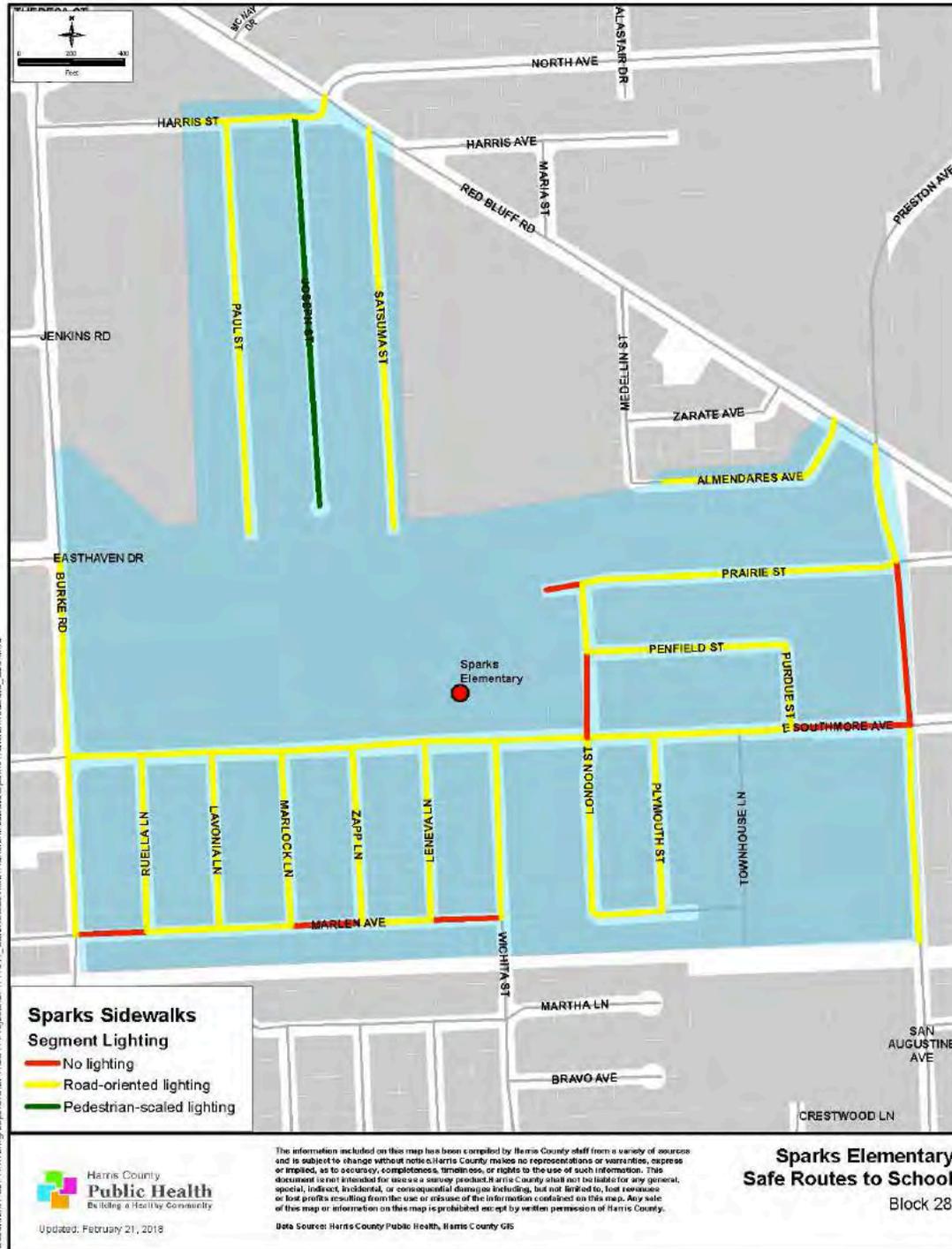
ADDITIONAL APPENDICES

APPENDIX F - MAPPED ENVIRONMENTAL SCAN TOOL RESULTS



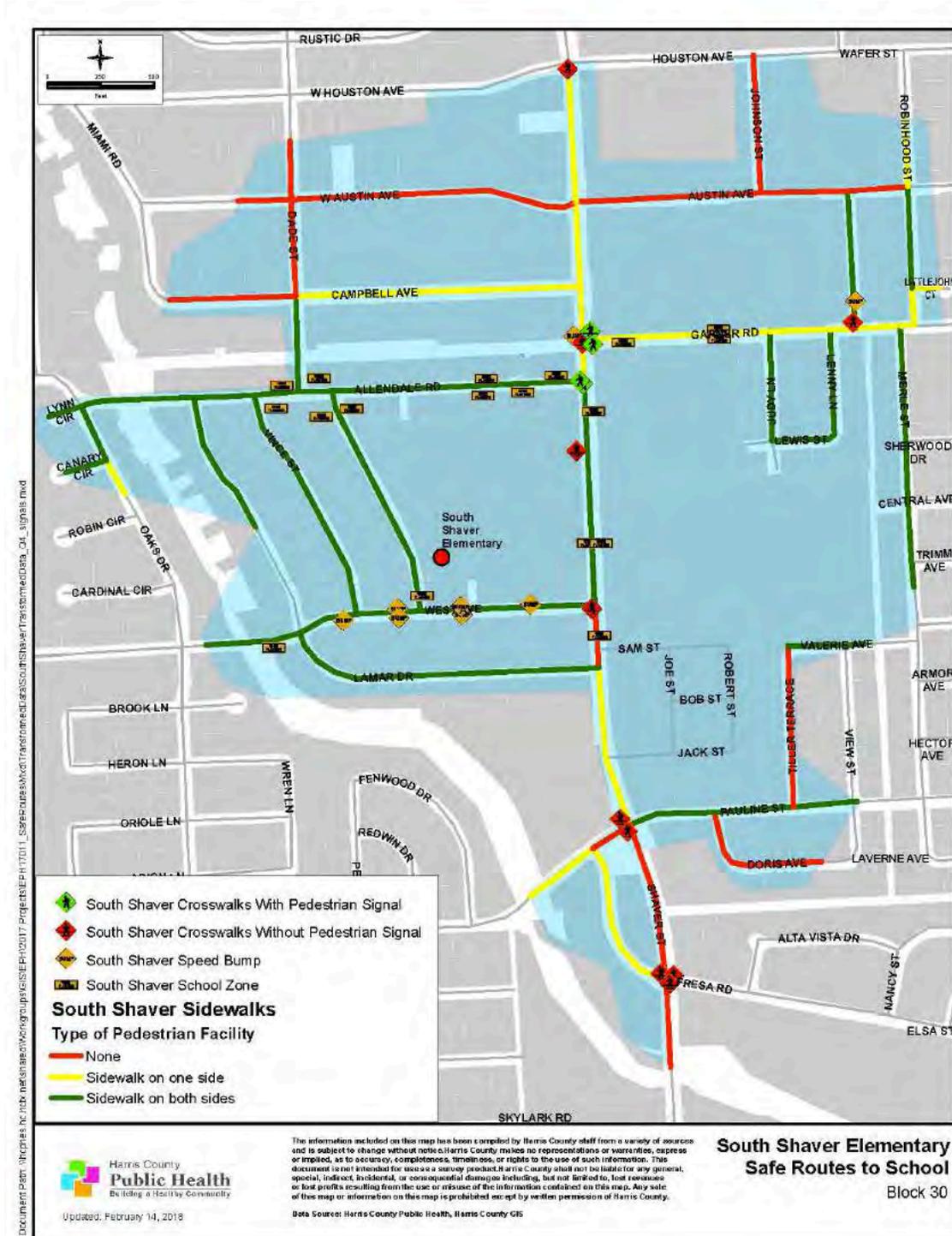
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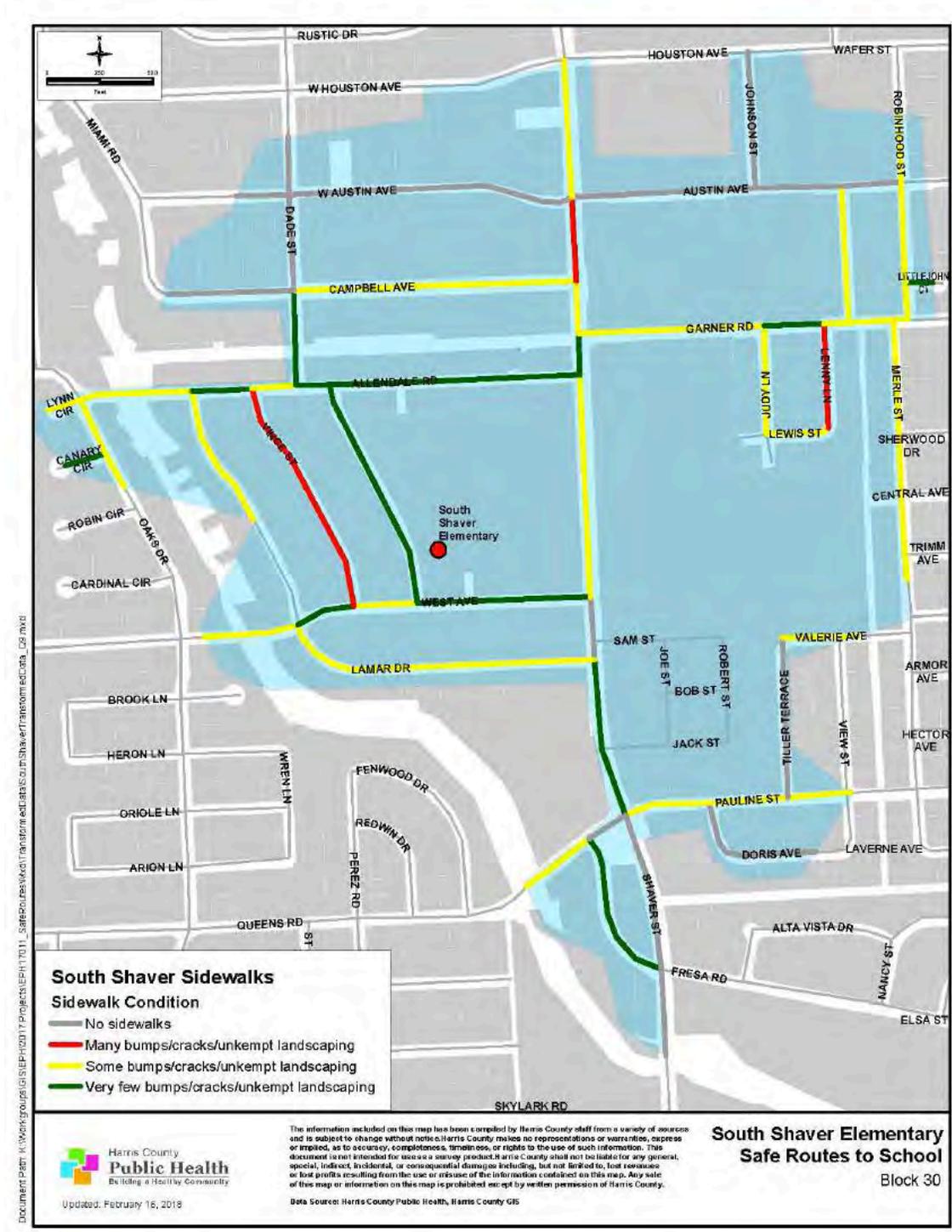
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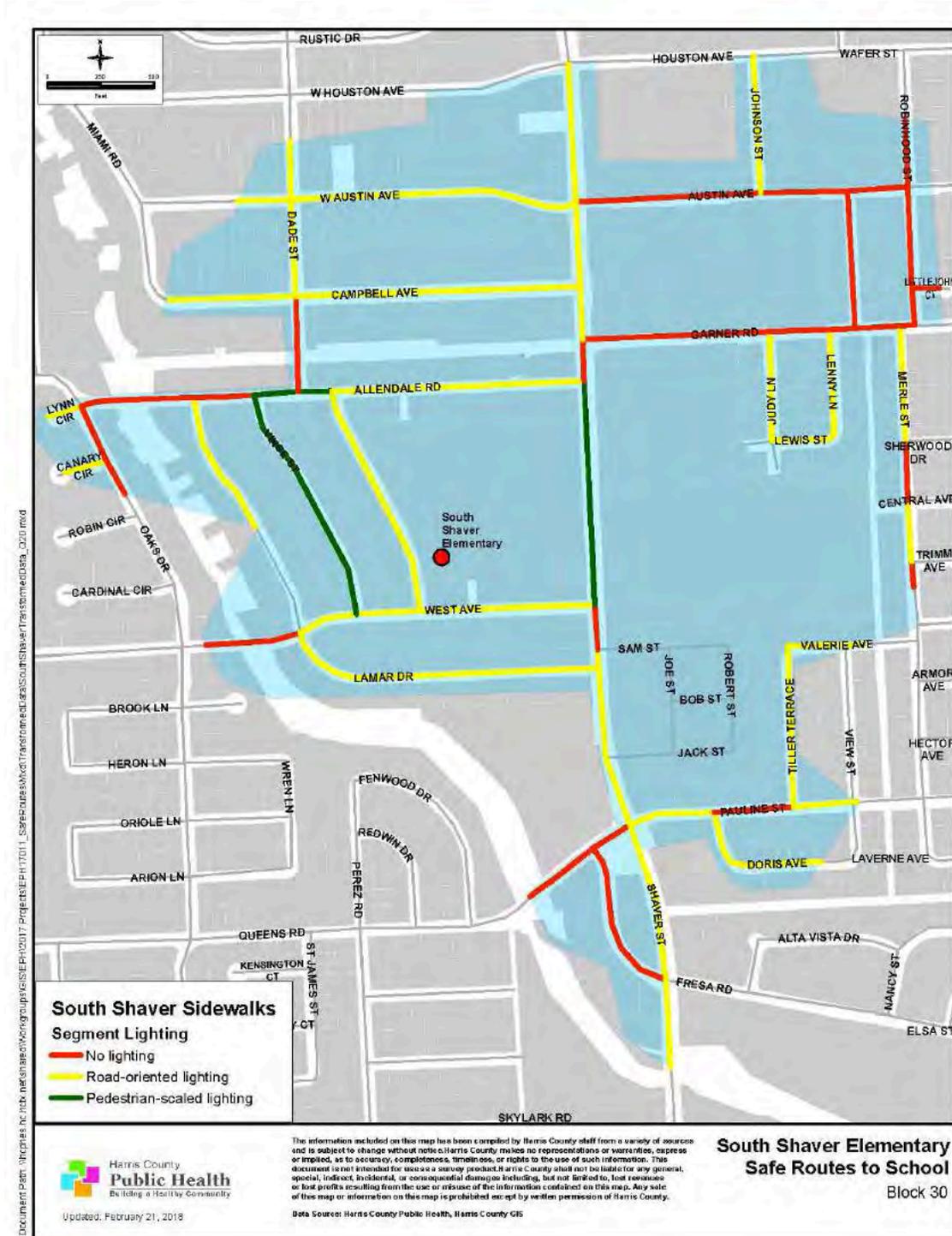
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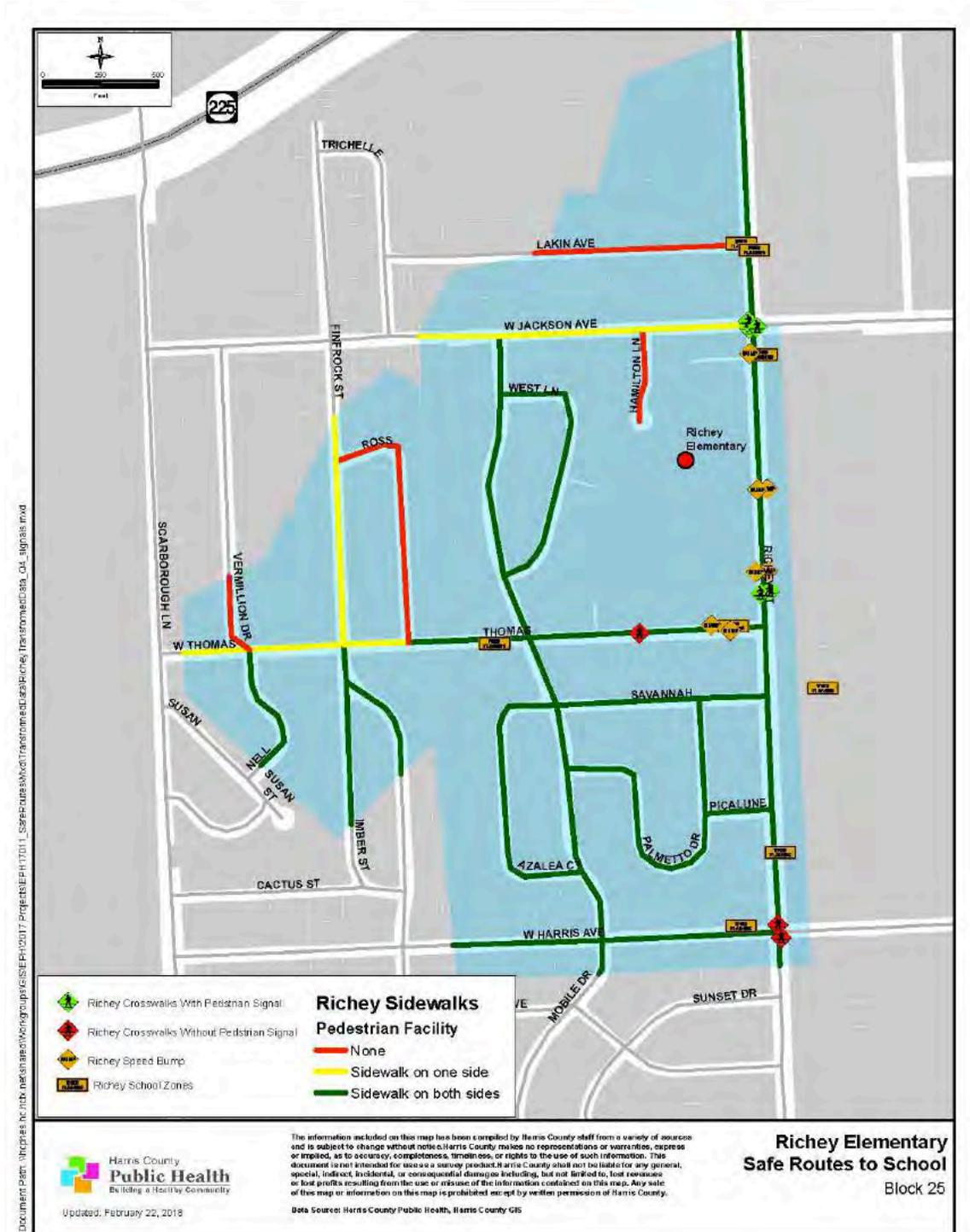
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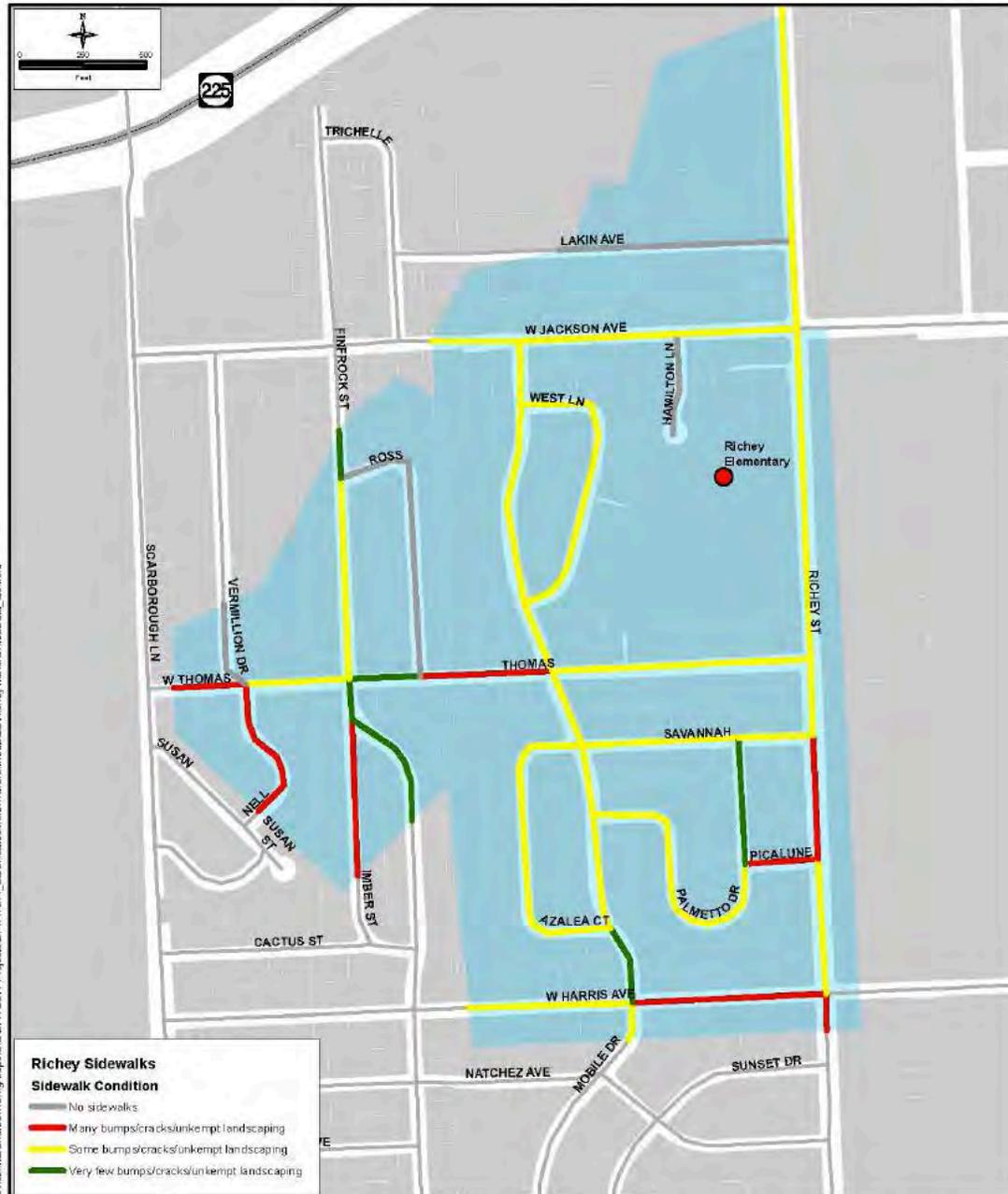
ADDITIONAL APPENDICES

APPENDIX F - MAPPED ENVIRONMENTAL SCAN TOOL RESULTS



ADDITIONAL APPENDICES

APPENDIX F - MAPPED ENVIRONMENTAL SCAN TOOL RESULTS



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Richey Sidewalks
Sidewalk Condition

- No sidewalks
- Many bumps/cracks/unkept landscaping
- Some bump/cracks/unkept landscaping
- Very few bumps/cracks/unkept landscaping

Harris County
Public Health
 Building a Healthier Community

Updated: February 22, 2018

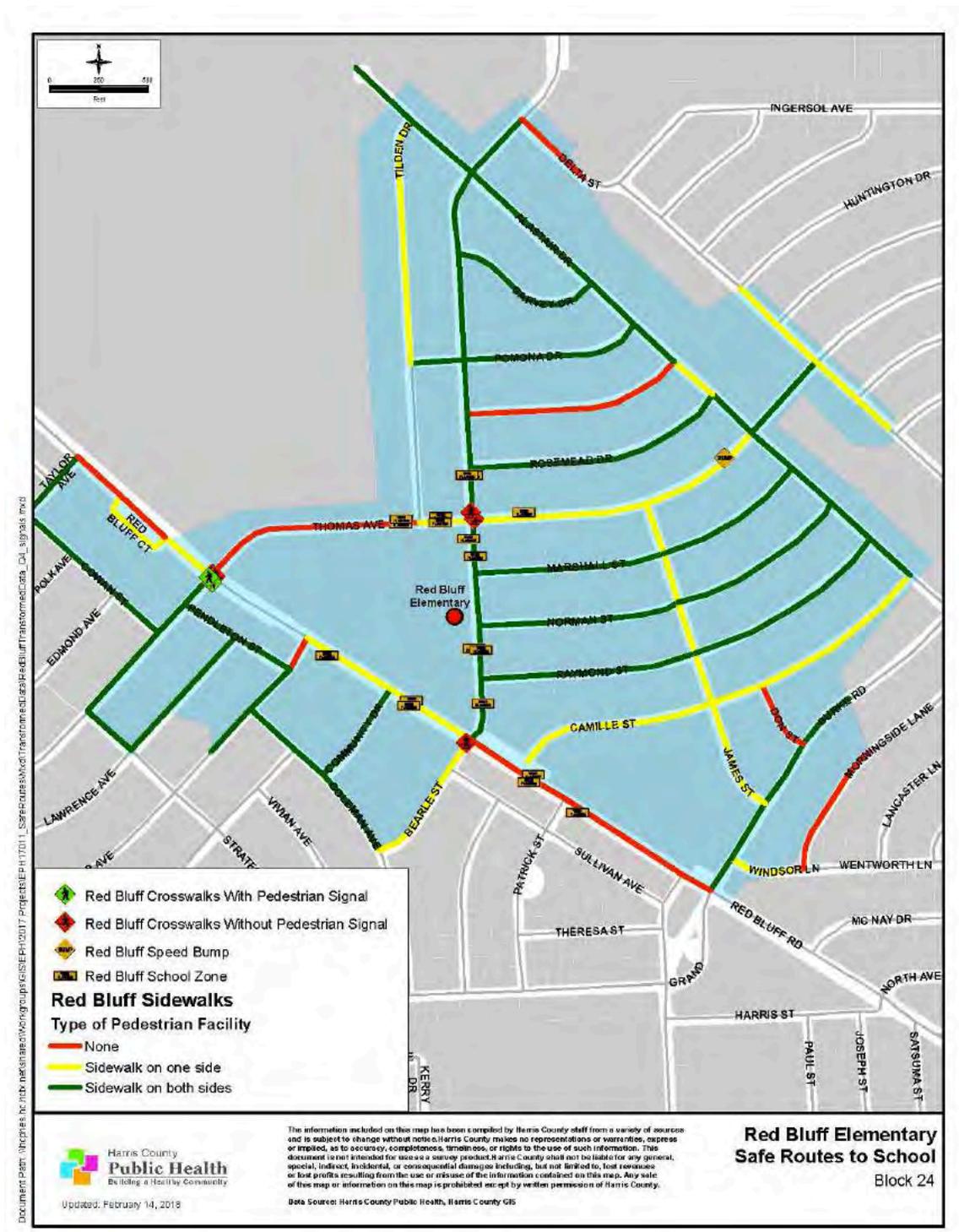
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Data Source: Harris County Public Health, Harris County GIS

**Richey Elementary
 Safe Routes to School**
 Block 25

ADDITIONAL APPENDICES

APPENDIX F - MAPPED ENVIRONMENTAL SCAN TOOL RESULTS



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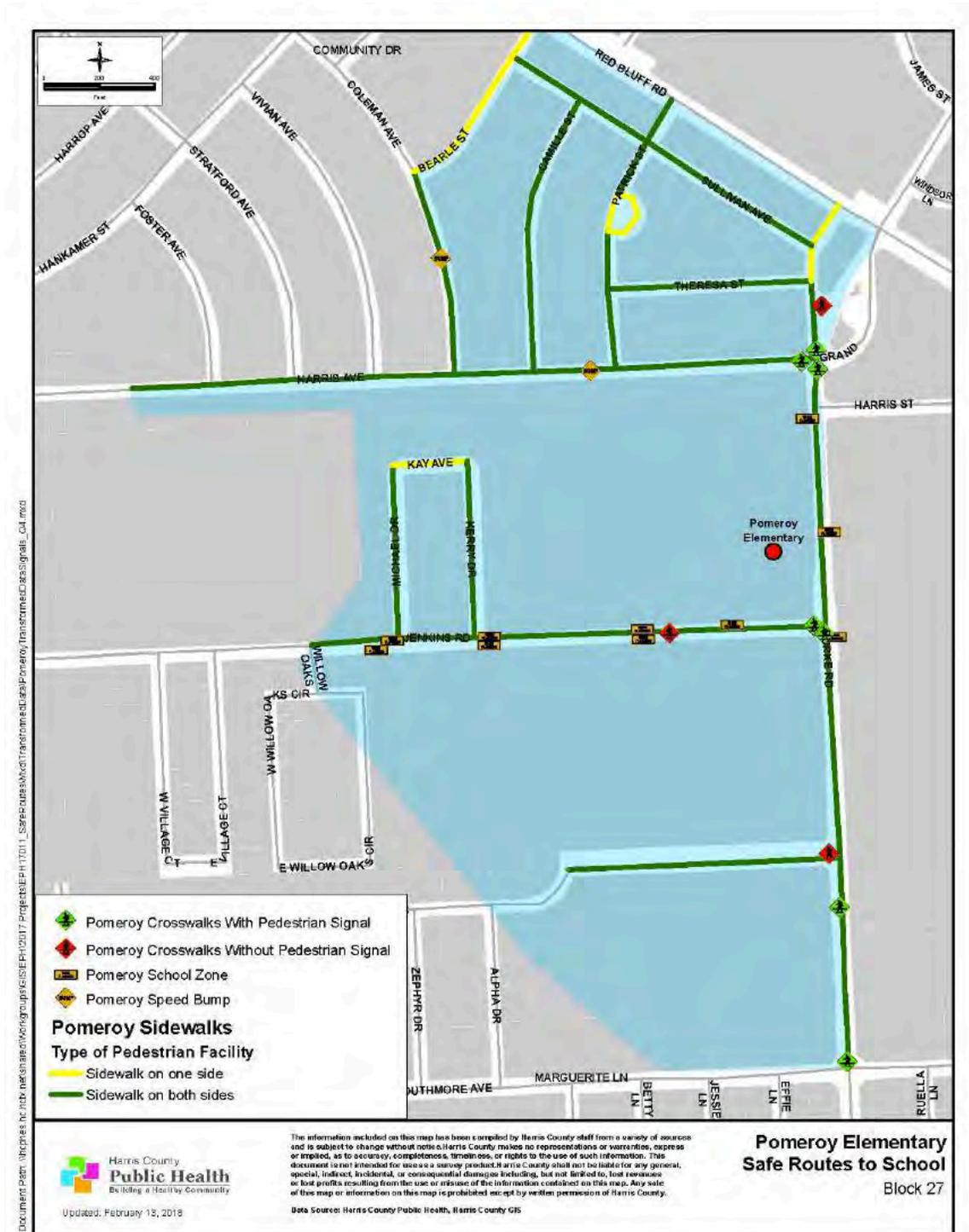
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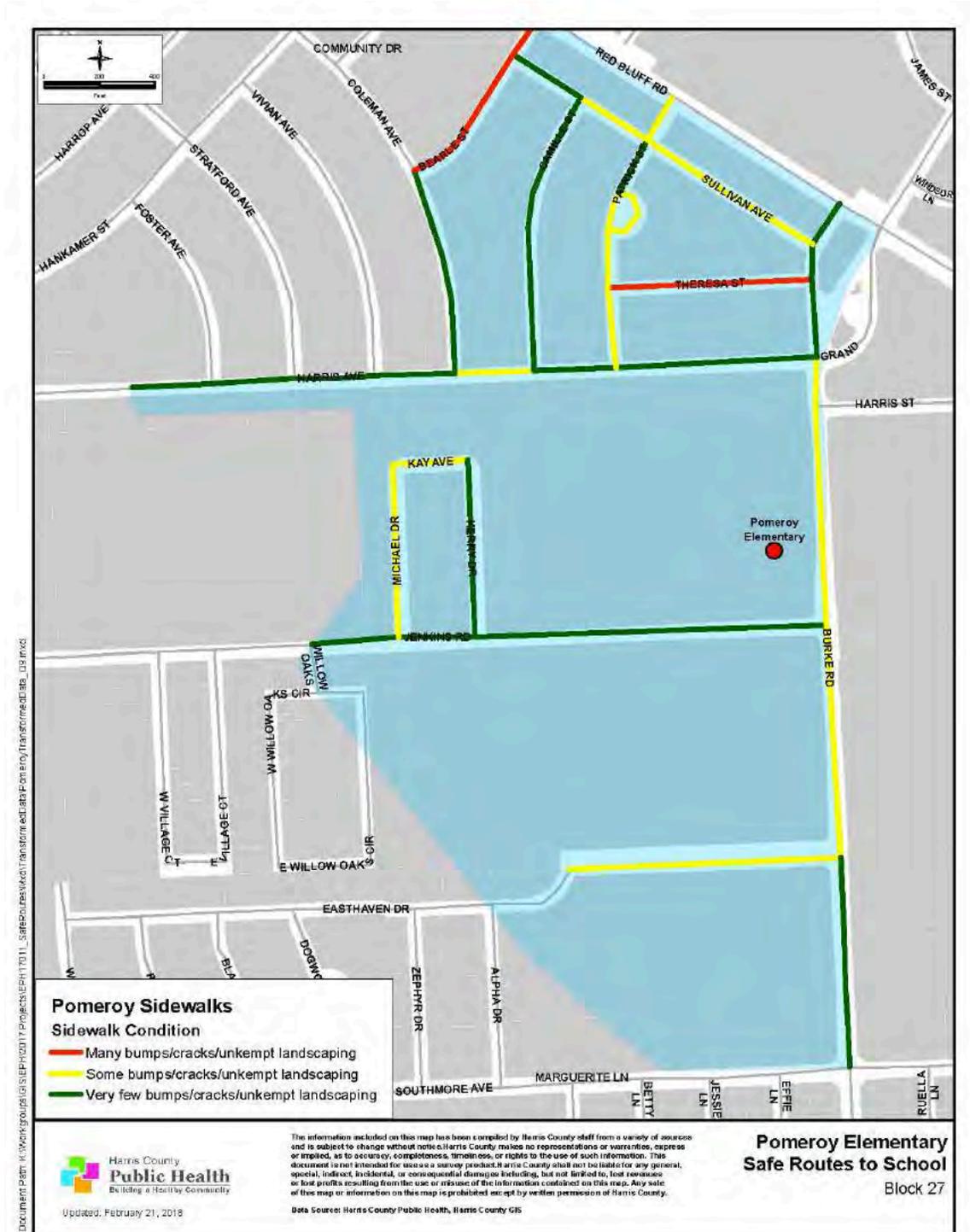
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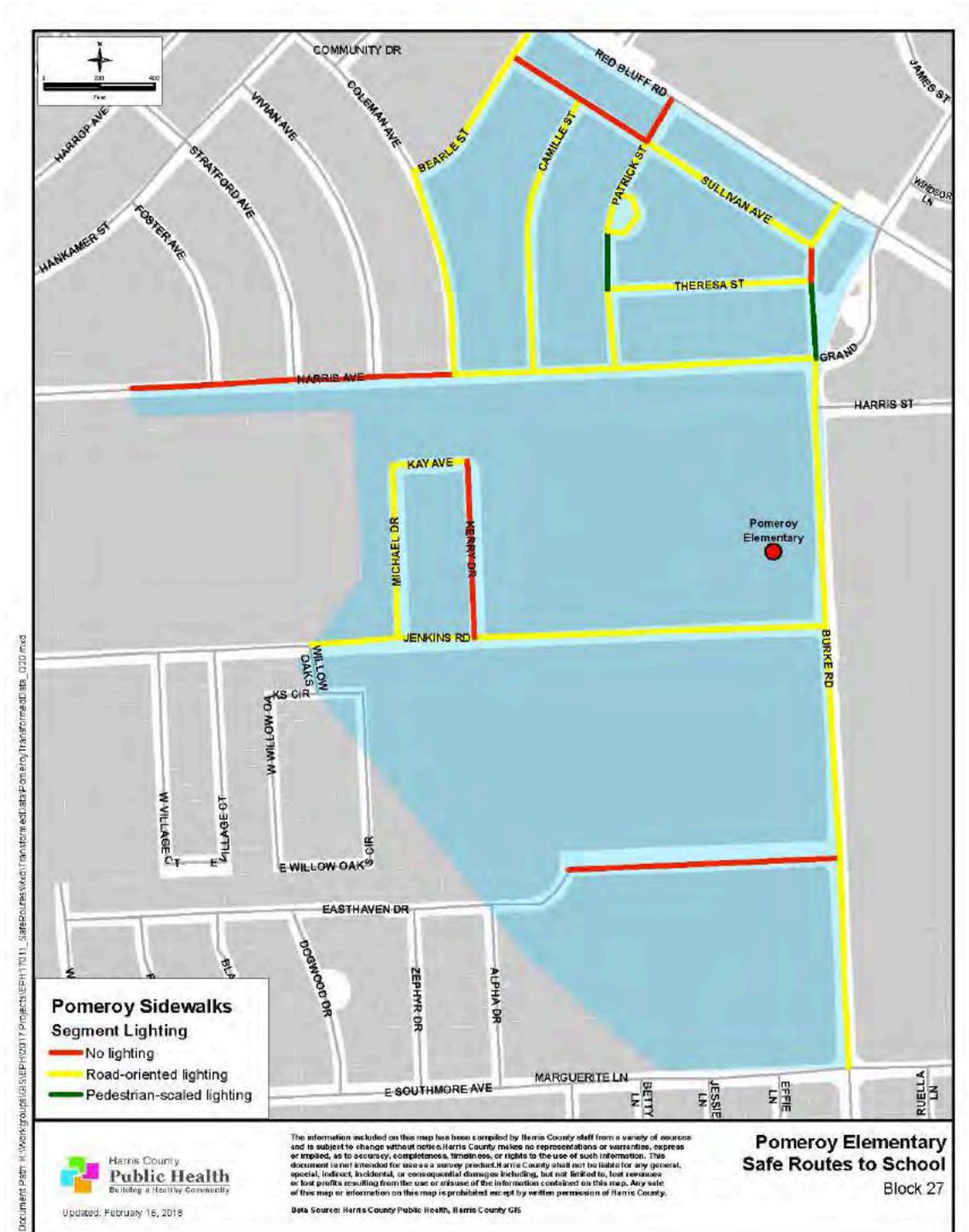
APPENDIX F - MAPPED ENVIRONMENTAL SCAN TOOL RESULTS



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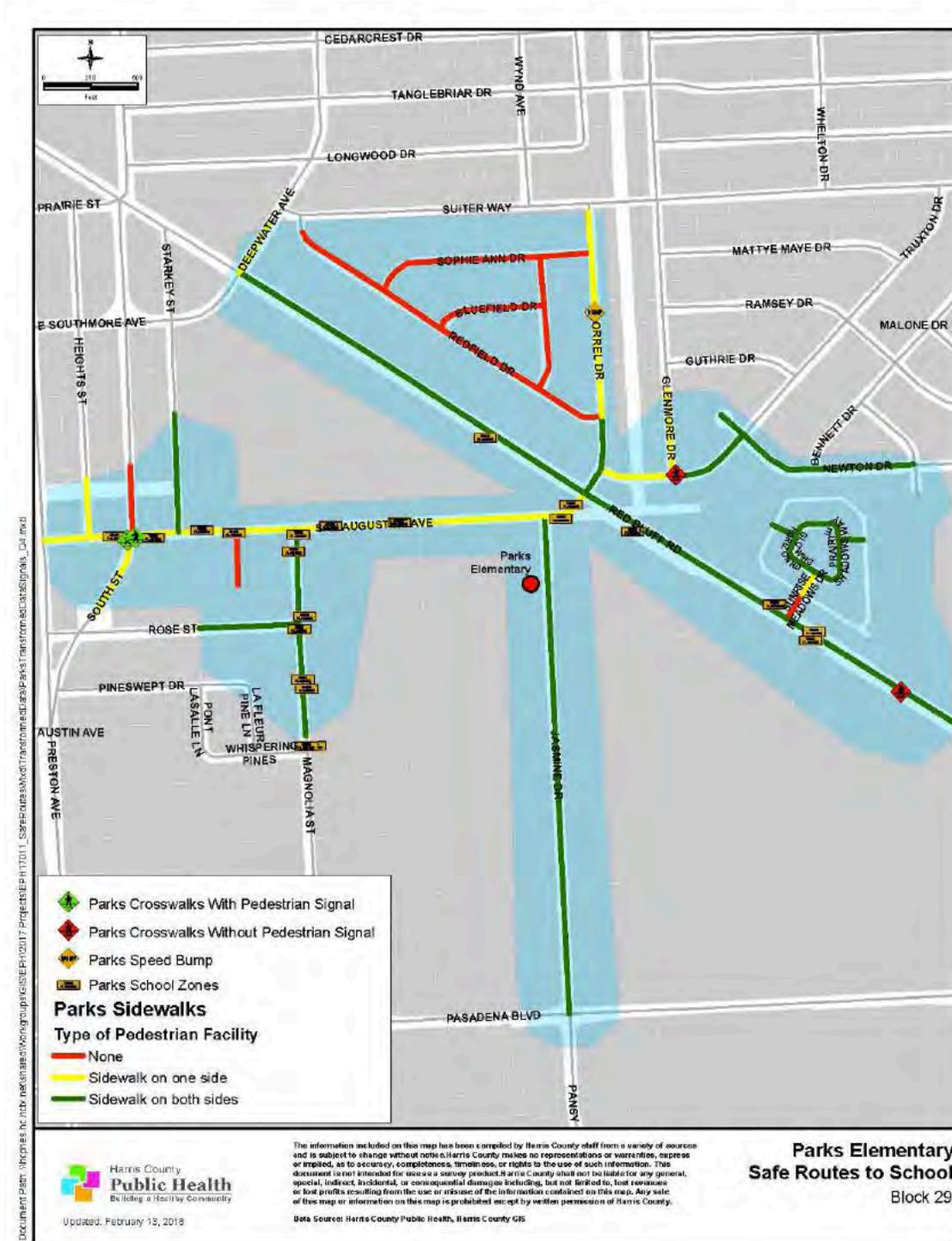
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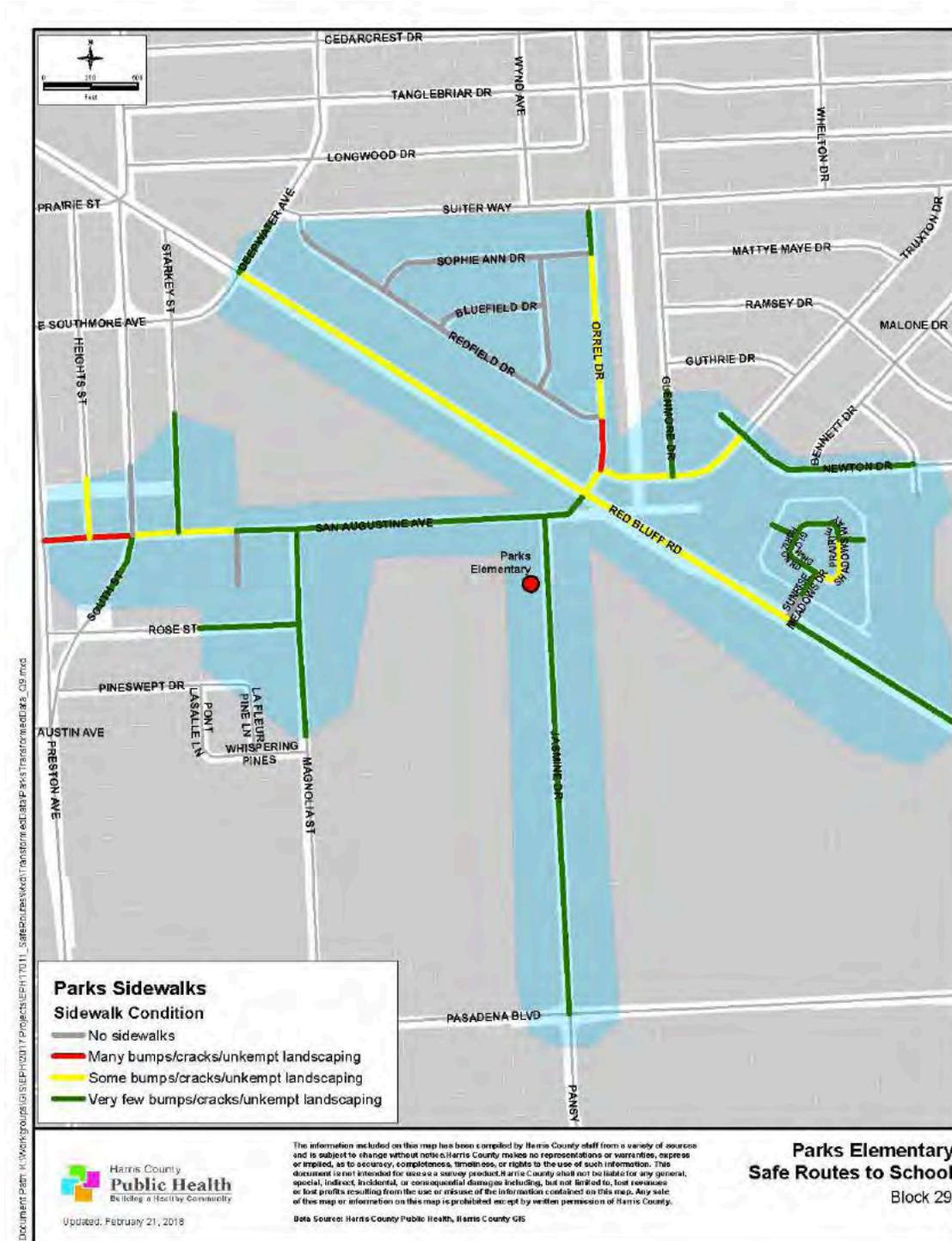
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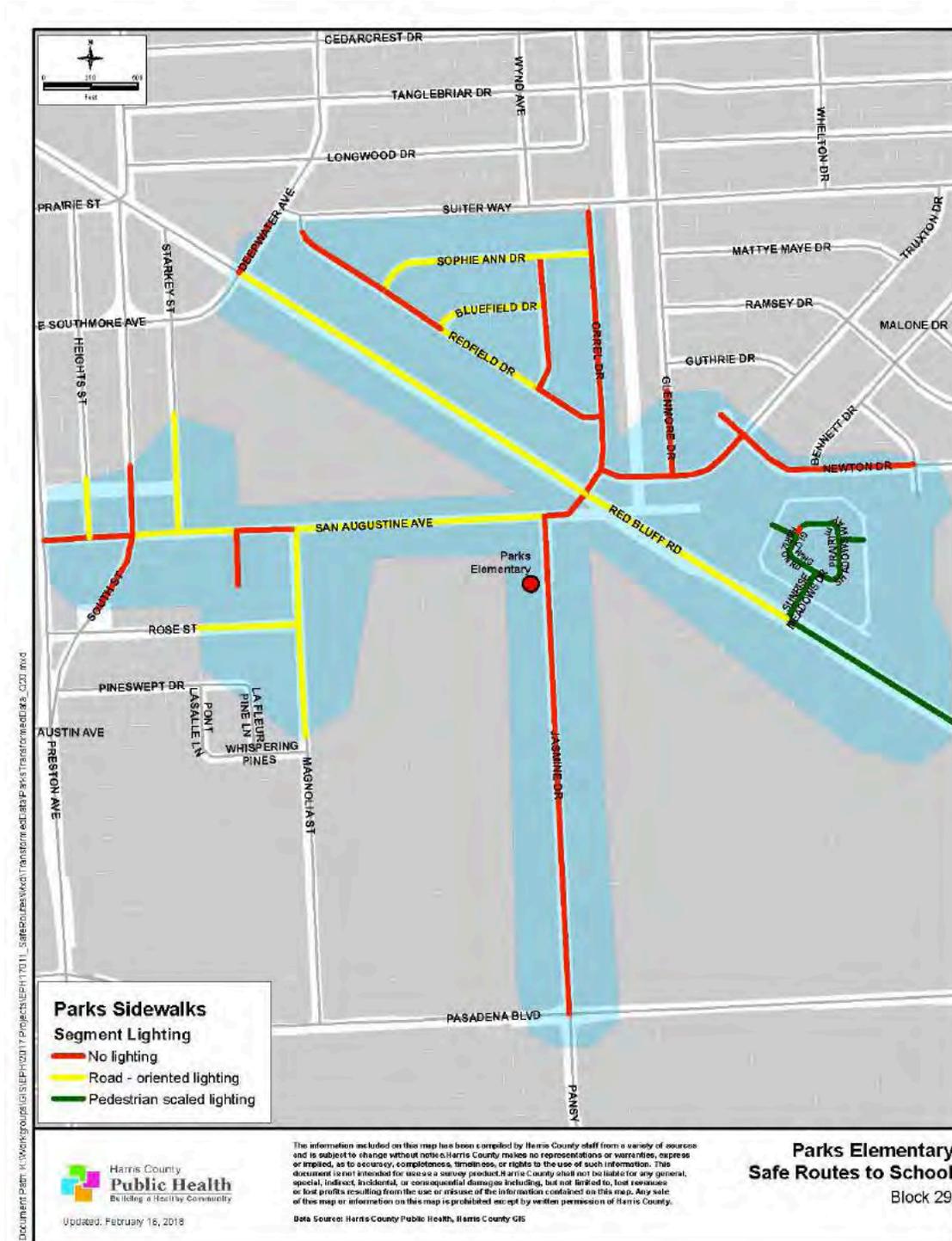
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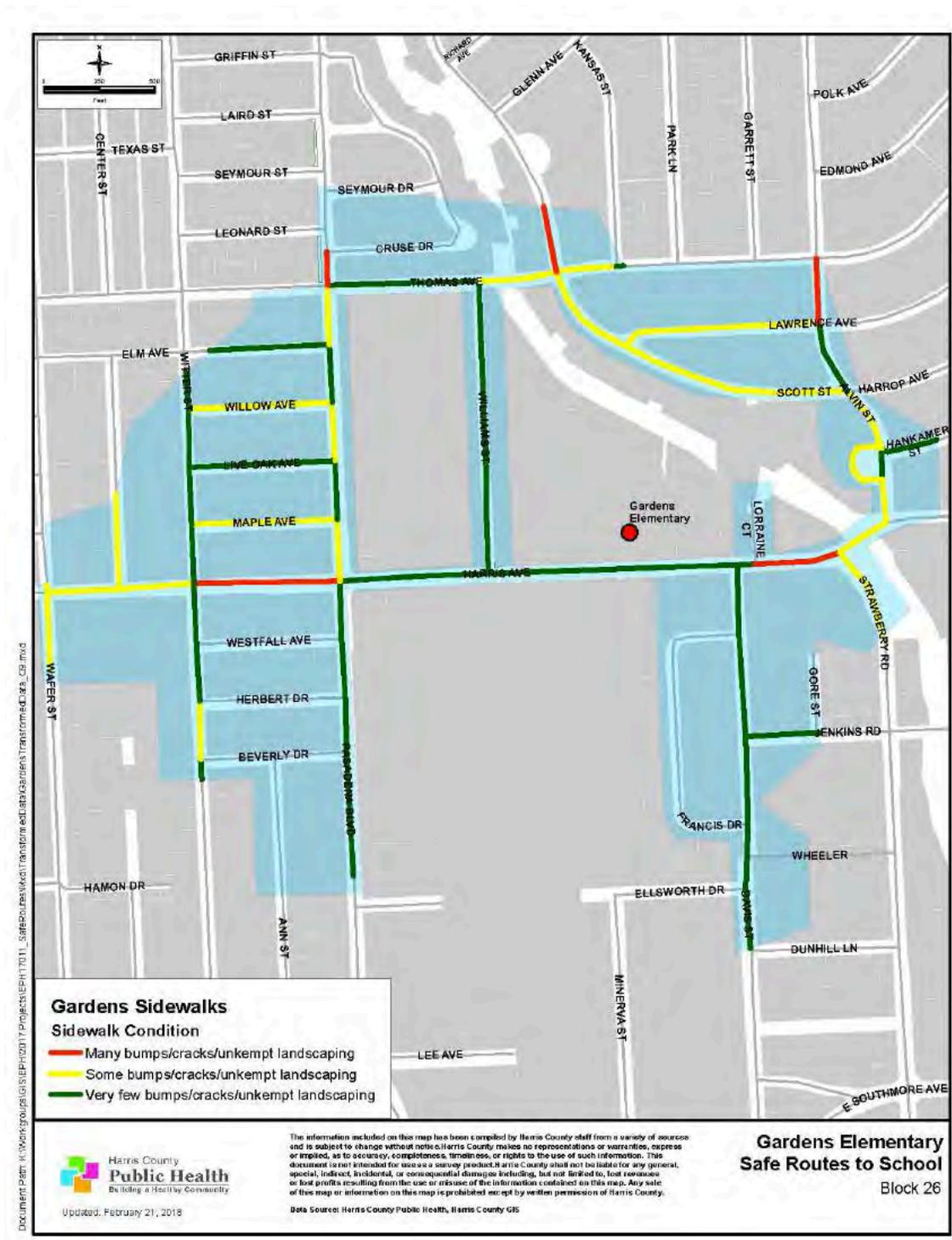
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