City of Pasadena

Livable Centers Study

Source: City of Pasadena

Report Completed: November 2020

Inside Cover

/ Client

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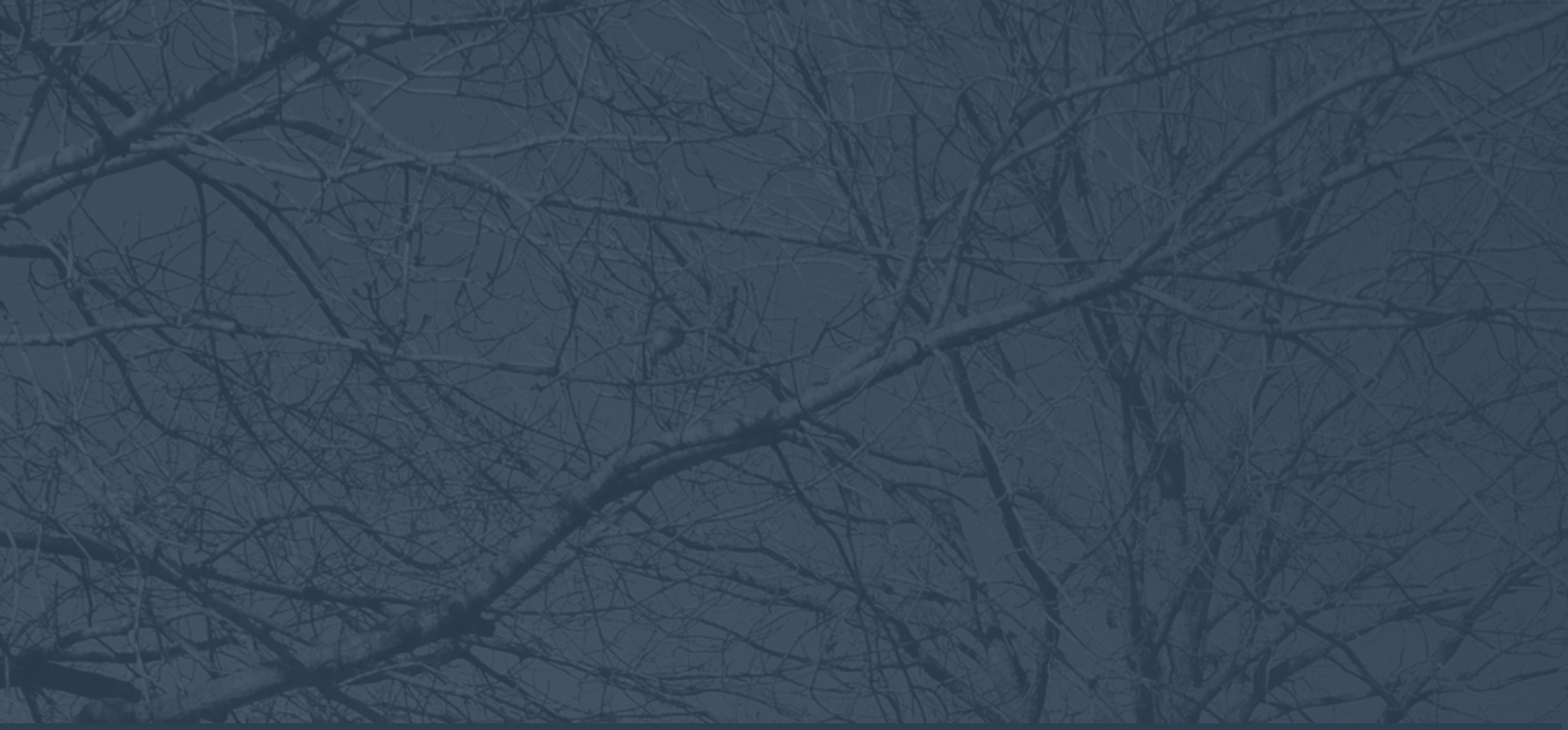

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Project Overview

Origin

The Houston-Galveston Area Council (H-GAC) defines Livable Centers as 'places where people can live, work, and play with less reliance on their cars.' The Livable Centers Program works with communities to study strategies for transforming auto-oriented environments into multi-modal communities through policies and programs. The City of Pasadena was awarded funds for a Livable Centers Study by H-GAC in 2017. In 2019, AECOM was awarded to conduct the study.

The Livable Centers Program is designed to address several components that contribute to creating safe, convenient, and desirable communities. These **livability principals** include:

Improved pedestrian safety, access, and site walkability

Increased multi-modal transportation options

Increased private investment in public improvements

Continued economic development

Improved environmental quality

Purpose

The purpose of the City of Pasadena's Livable Centers Study is to create a vision for a thriving area that promotes growth and redevelopment. With these elements at the forefront of design, the Livable Centers Program aims to deliver implementable ideas that capitalize on a community's existing opportunities while remediating long-standing problems.

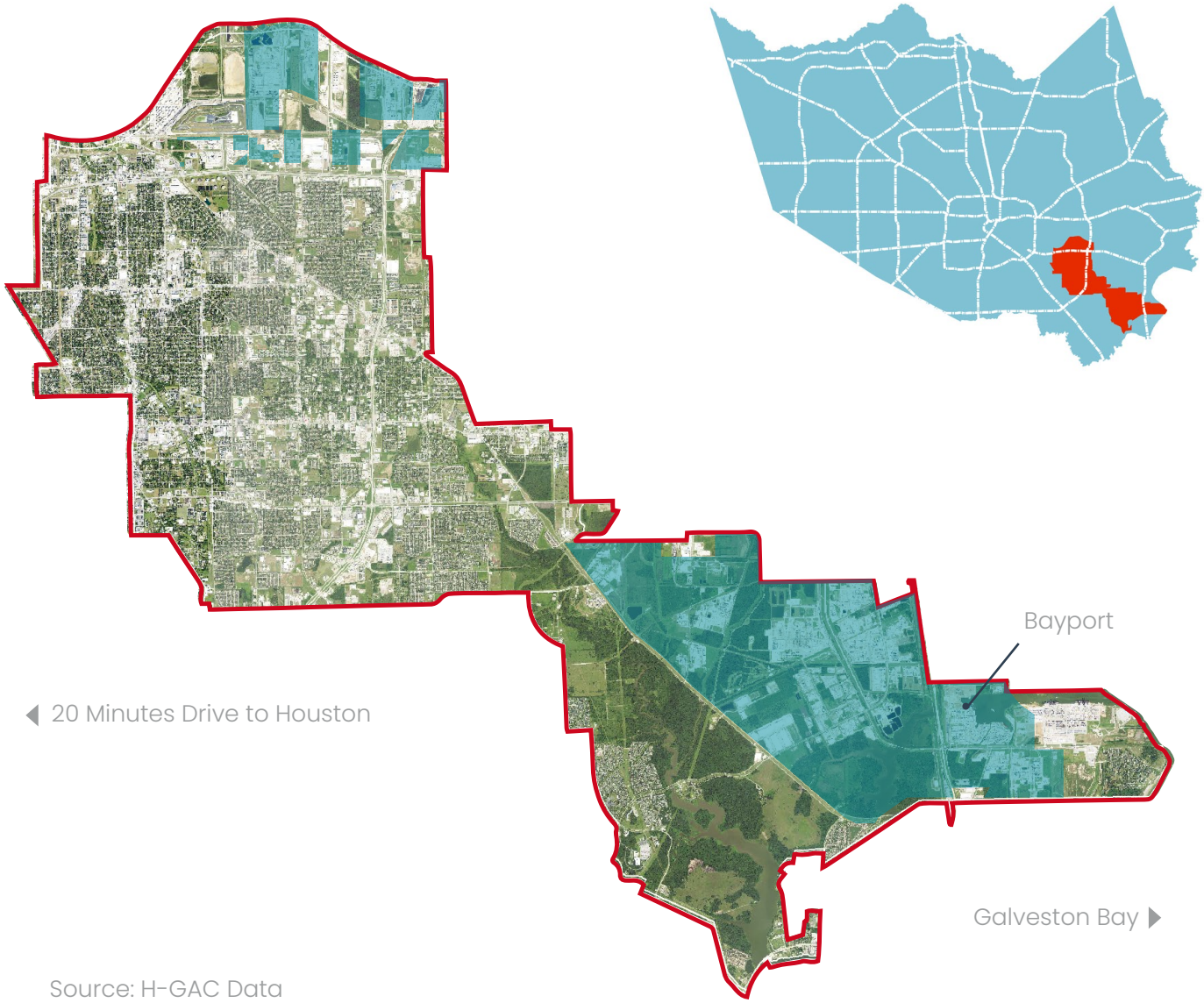
Funding

Livable Centers are part of H-GAC's 2040 Regional Transportation Plan's strategy to improve multi-modal mobility in the region. The Transportation Policy Council allocates funding through the Transportation Improvement Program (TIP) for a variety of transportation plans, including the Livable Centers Program. To date, 37 projects are identified in the Regional Transportation Plan, and $575.7 million is allocated for multi-modal transportation improvement, such as sidewalks, bikeways, transit, and intersection /bridge /underpass treatments.
Funding for this Livable Centers Study was part of H-GAC's TIP program, covering 80% of the project through federal funding with a 20% local match.

Study Area

(The City) of Pasadena is the seventeenth most populous city in Texas, with approximately 150,000 residents. It is the second largest municipality in the H-GAC region and a key driver of the region's industrial economy. The City has a land area of approximately 59 square miles. It is located in the southeast portion of Harris County and is approximately 20 minutes away from central Houston by car, as illustrated in Figure 01.

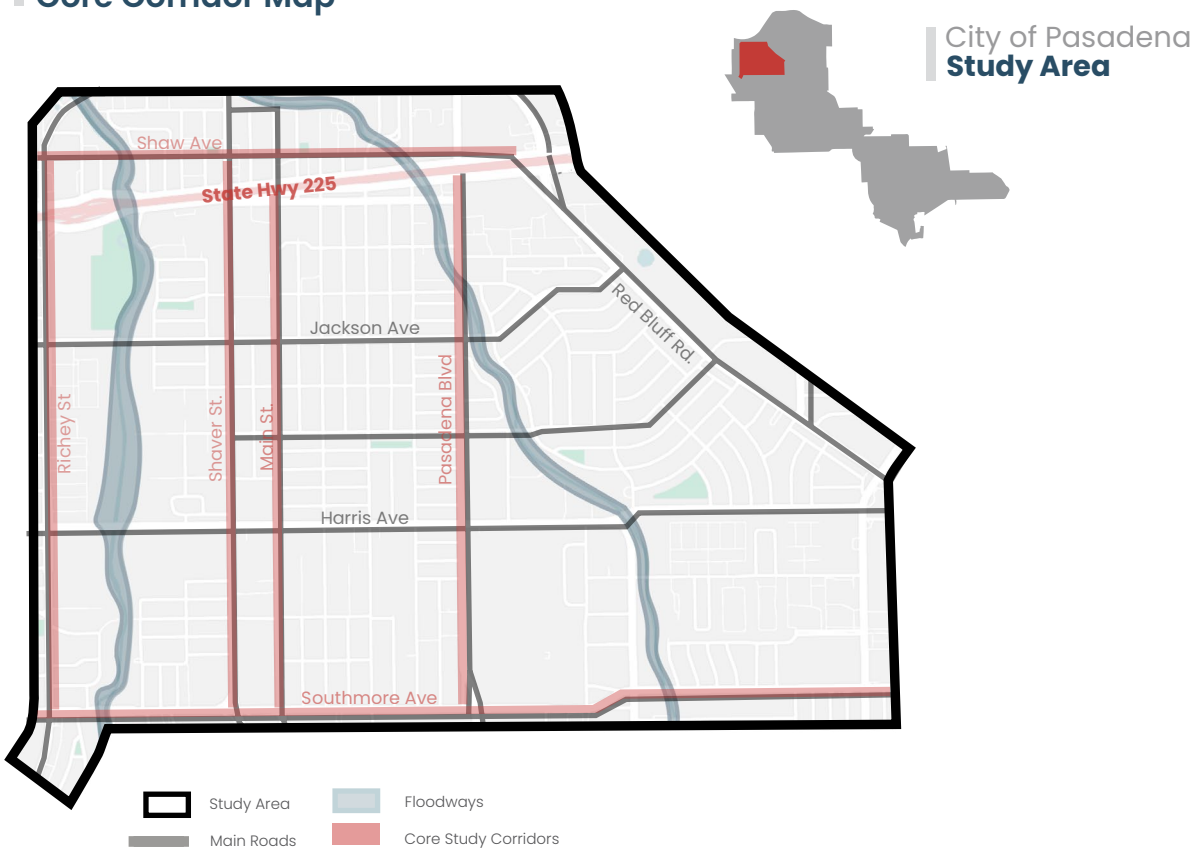
Figure 01: City of Pasadena and Harris County Map



Source: H-GAC Data

The Study Area for this Livable Centers is approximately 3.6 square miles and includes 5,322 parcels. The key study corridors are Shaw Avenue, Pasadena Boulevard, Main Street, Shaver Street, and Southmore Avenue. Its population of approximately 27,000 community members are supported by 10 schools, 16 places of worship, and over 800 business. Figure 02 illustrates core study area corridors are 1) Richey Street 2) Main Street 3) Main Street) Pasadena Boulevard 4) Shaw Avenue 5) Southmore Avenue.

Figure 02: Study Area Map and Core Corridor Map



Source: AECOM

Land Use within the Study Area

As an unzoned municipality, the City of Pasadena has a long history with a mix of land uses that make it a unique place to live, work, and play. The primary land use type in the study area is single family residential, which accounts for 34% of the total area. This is followed by commercial (24%), which occurs primarily along the main corridors of Pasadena Boulevard, Southmore Avenue, Shaw Avenue, and SH 225. The third largest land use categories are government and institutional uses (parks, civic areas, and administrative buildings), followed by multifamily as shown in Figure 03.

About 6% of the parcels are coded as vacant. These lots are distributed widely throughout the study area and contribute greatly to the area's lack of appeal to potential new residents. The underutilization of these vacant lots is compounded by the overabundance of commercial lot parking. This can be seen along major corridors like Pasadena Boulevard and Southmore Avenue.

While they do not represent a large share of the study area, there are a significant number of church properties (65 parcels or 72 acres), mostly in the southern and central half of the study area.

Aside from a large single-family neighborhood in the eastern portion of the study area, uses are generally mixed, due to the fact that the City of Pasadena does not have zoning regulations. The lack of zoning has challenged

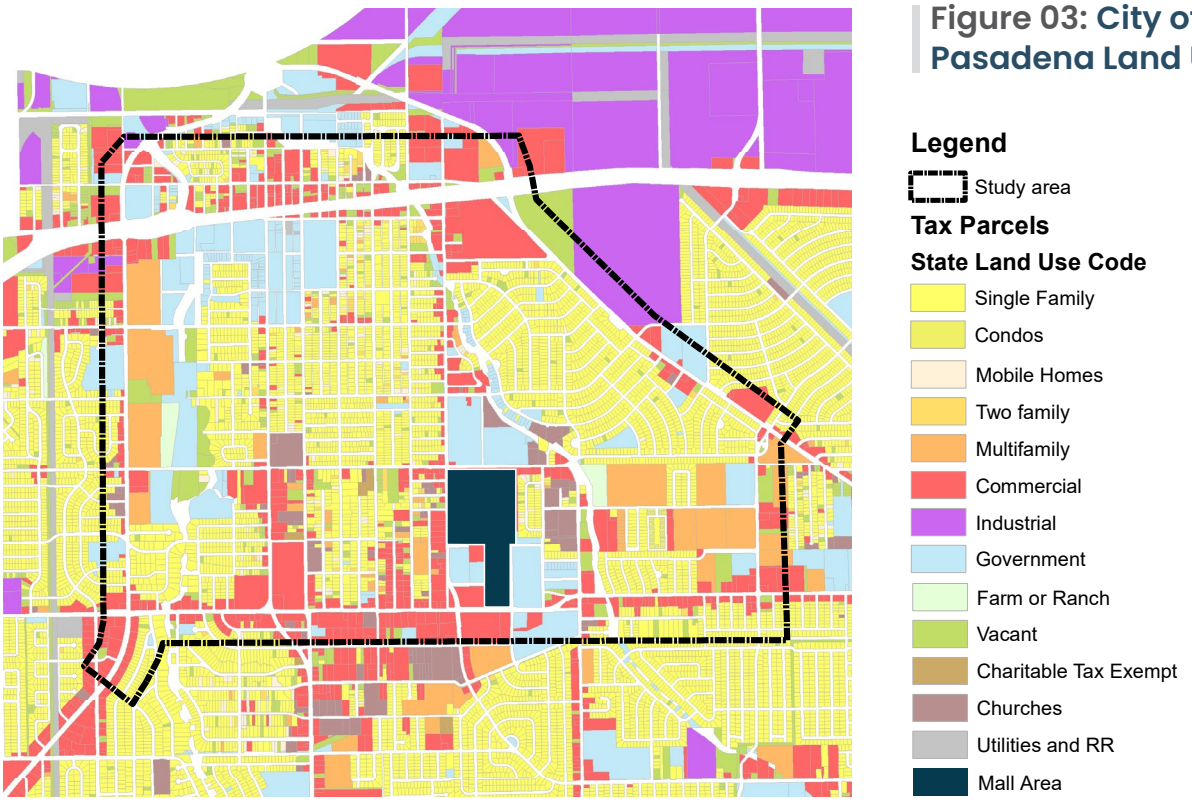


Figure 03: City of Pasadena Land Use

Source: Harris County Appraisal District

resident health, as industrial land uses buttress residential lots with no buffer between the two. This is evident adjacent to Shaw Avenue and Richey Street.

Project Goals

One of the goals of this study is to provide catalyst projects for the City of Pasadena to help create equitable outcomes of investment for the community. These outcomes will center around improving community assets along these corridors as well as making significant infrastructure improvements and amenity additions that accommodate pedestrian activity. Improvements to existing assets and infrastructure in the area are needed, as current conditions suggest low livability. By public account, the quality of life in the study area is hampered by aged and poorly maintained properties, insufficient and deteriorating pedestrian and biking infrastructure, and a lack of quality open spaces and public facilities for community enjoyment. Changes to these conditions will depend on new development that supports and enhances the area's urban character.

Promoting community vitality and wellness is central to building a better city. With more equitable outcomes, increased safety, and overall improvements to quality of life, a place can experience high levels of growth and transform into a regional anchor that is inviting and a place of opportunity for current and new residents. These desired outcomes were used to identify the broader goals of the study. The following project goals were developed within the City for this study and adopted by community residents and the Steering Committee members to develop a highly implementable plan.

1. Spur strategic planning for future growth and change in the region's second largest municipality.

2. Create a quality place that incorporates Pasadena's rich heritage and culture while instilling a strong identity for the area.

3. Engage the public and community stakeholders to establish community needs and prioritize projects within the study area.

4. Evaluate and recommend diverse housing options that cater to the needs of the current residents and attract future residents and investors to the area.

5. Create safer places and infrastructure for walking and biking with close proximity to amenities such as green spaces, school, retail, and employment centers.

6. Create and promote an environment conducive to alternative transportation modes that lessen vehicular use and traffic.

7. Utilize, protect and expand green spaces, waterways, and natural resources within the built environment. Strengthen connections to existing hike and bike trails.

8. Create additional parks and green space through innovative efforts and partnerships.

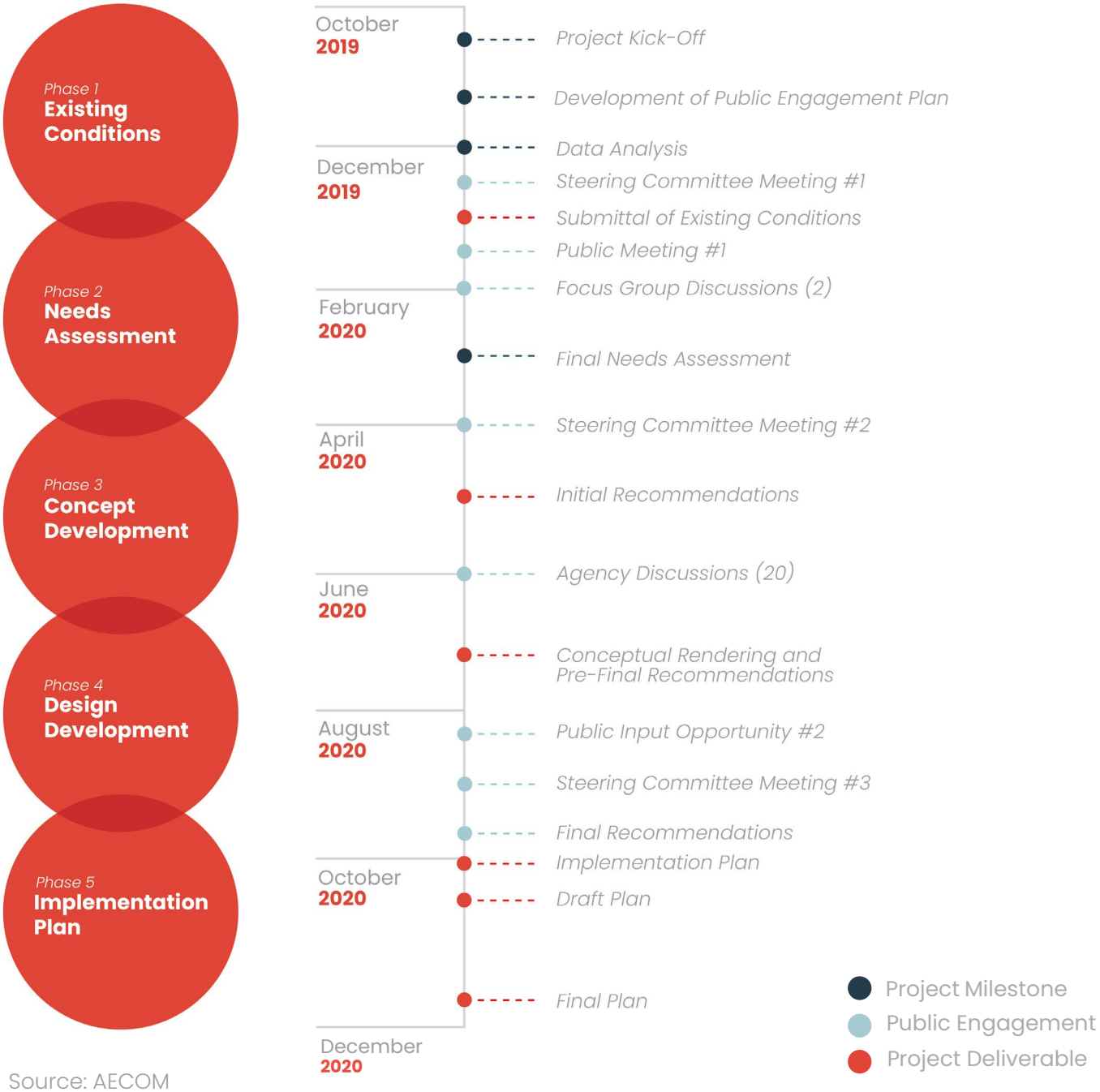
9. Incorporate and expand the work of existing community-based initiatives such as Healthy Living Matters, a Harris County childhood obesity prevention collaborative, and others.

10. Establish long-term economic development priorities and foster economic competitiveness.

Project Timeline and Process

The plan was originally intended to be developed in a 10-month period with two public meetings; however, due to COVID-19, the actual duration was twelve months and all events after March 2020 were held virtually. Figure 04 illustrates the project timeline and process that was conducted. The following chapter provides explanation of the public engagement that was held for this study.

Figure 04: Project Process and Timeline



Source: AECOM

Project Partners

This Livable Centers Study could not have been a success without the help of the following project partners. Their dedication to the project helped guide the project team into developing actionable recommendations.

Project Team

Agency Partners

/ TxDOT
/ Harris County Flood Control District
/ Fuller Center

/ Habitat for Humanity
/ San Jacinto College
/ Urban Harvest
/ Harris Health System

/ Pasadena ISD
/ Pasadena Economic Development Corporation
/ Harris County Public Health

Steering Committee Members

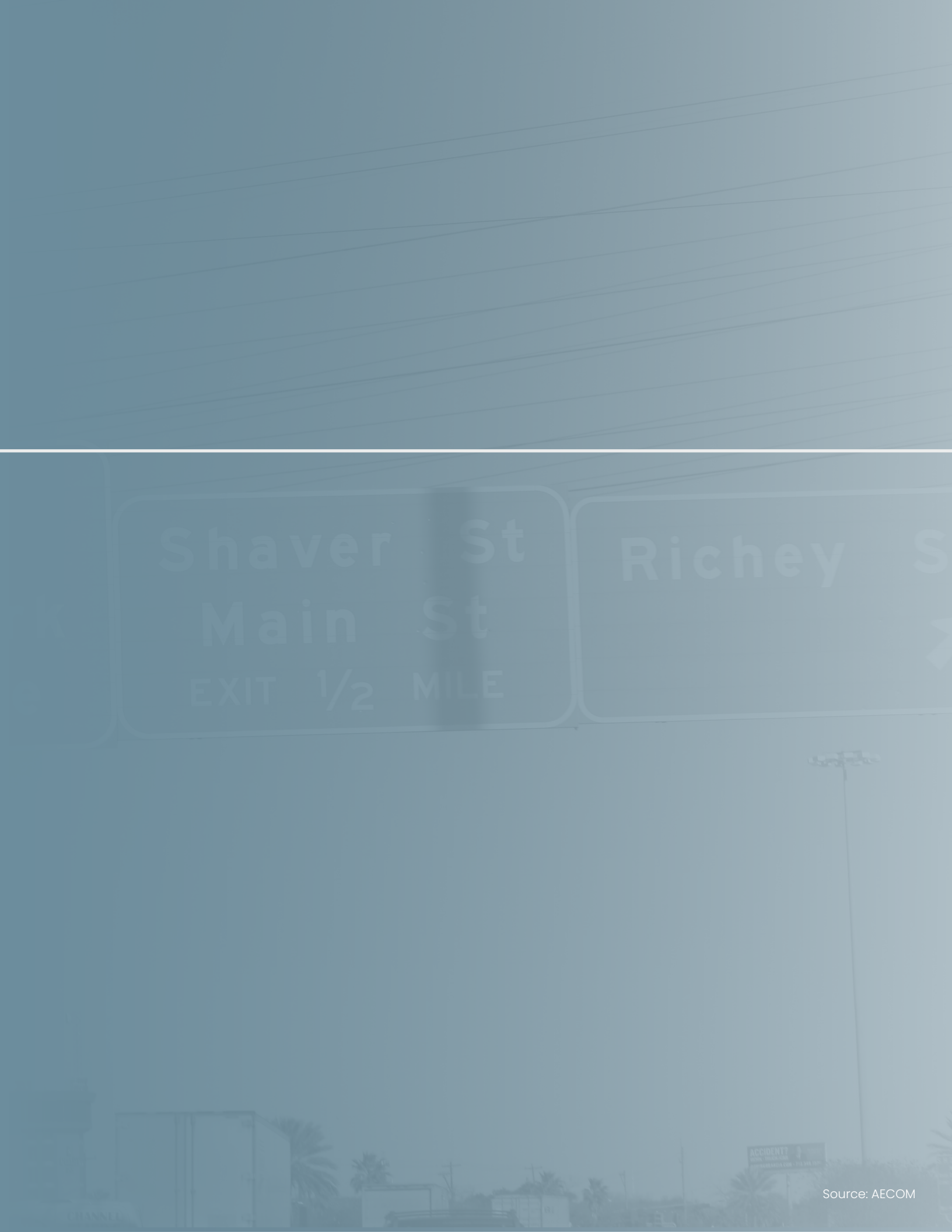
/ Harris County Transit
/ TxDOT
/ IMPACT Pasadena
/ J Morales Architecture
/ La Iglesia del Pueblo

/ El Bollio Bakery
/ Harris County Public Health – Healthy Living Pasadena
/ Pasadena ISD
/ Neighborhood Networks

/ ARG Real Estate, LLC
/ Pasadena Health Center
/ Community Residents

Public Engagement

02



Source: AECOM

02

Public Engagement

From the beginning, the project team recognized the importance of having a well thought out public engagement plan to ensure the final project was realistic, implementable and a true reflection of the communities needs. As previously noted, the City of Pasadena and particularly the study area, have a large number of non-English speaking residents. Therefore, it was important that the project team deploy strategies that reached these specific households and that the team was prepared to communicate with residents in their preferred language. Not only was all material created in English and Spanish, all events had live translation and were equipped with project members that were bilingual.

Figure 05: Public Input from Public Meeting #1

Source: AECOM

Steering Committee

The City of Pasadena played a pivotal role in ensuring the members of the Steering Committee were a true representation of the study area community, thus the establishment of this committee occurred very early in the project. The City hand selected local business, residents, and local leaders (all who either work or live within the study area) to form the study's Steering Committee. The main role of the Steering Committee was to:

1. Ensure project development was a true reflection of the community
2. Help provide direction as recommendations were being developed
3. Be the trusted voice to the community and help spread the word when public input was needed

The Steering Committee formally met three times; however, updates were provided on a regular basis.

Focus Groups

To help supplement information received from the public, two focus group meetings were held before finalizing the Needs Assessment. These focused discussions were an opportunity for the project team to hear directly from community residents in an intimate setting, including questions like what keeps them up at night and where the opportunity. The project team facilitated these open-ended conversations by having the residents draw on study area maps if there were specific problem areas and specific locations where recommendations could have the most beneficial impact for the community. Figure 06 are images taken from the focus group discussions.

Agency Meetings

Agency meetings were crucial during the Concept Development Phase (Chapter 5). As initial recommendations were developed and presented to the Steering Committee, a list of potential agencies and organizations that could be involved in the implementation of the recommendations were identified. The project team then held specific agency discussions, organized by recommendations, with these identified agencies to obtain feedback on the following:

1. The viability of implementing the draft recommendations
2. How the recommendation can be improved
3. Whether agencies should be part of the development and/or implementation of the recommendations.

The project team hosted 20 separate agency calls within a 6-week period. Recommendations were not considered pre-final until all parties agreed that recommendations were feasible to implement and a true reflection of the communities need..

Public Survey

A public survey with 17 questions was deployed early in the project to understand community issues, the community's long-term vision for the study area, and identify elements that need to change in the future. The survey received 350 responses.

Public Meetings

Within the project cycle they were two moments that required extra attention from the community. The first public meeting was to inform the community of what the project team believed to be issues (based on data analysis and field observations) and to obtain feedback on the preliminary analysis, help the team further understand their issues, and gather initial direction on how their issues can be rectified through the livable centers project. The second public meeting goal was to obtain feedback from the public on the draft recommendations. Unfortunately, due to COVID-19 this meeting was not able to happen in person. Thus, the project team developed a website that visualized all the recommendations and explained the overall intent of each strategy. In order to advertise these opportunities to normally hard to reach households, the project team conducted some traditional face to face outreach (keeping health safety measures) and utilized the steering committee members to help spread the word. The project website received close to 100 responses. Figure 07 are images taken from the first public meeting.

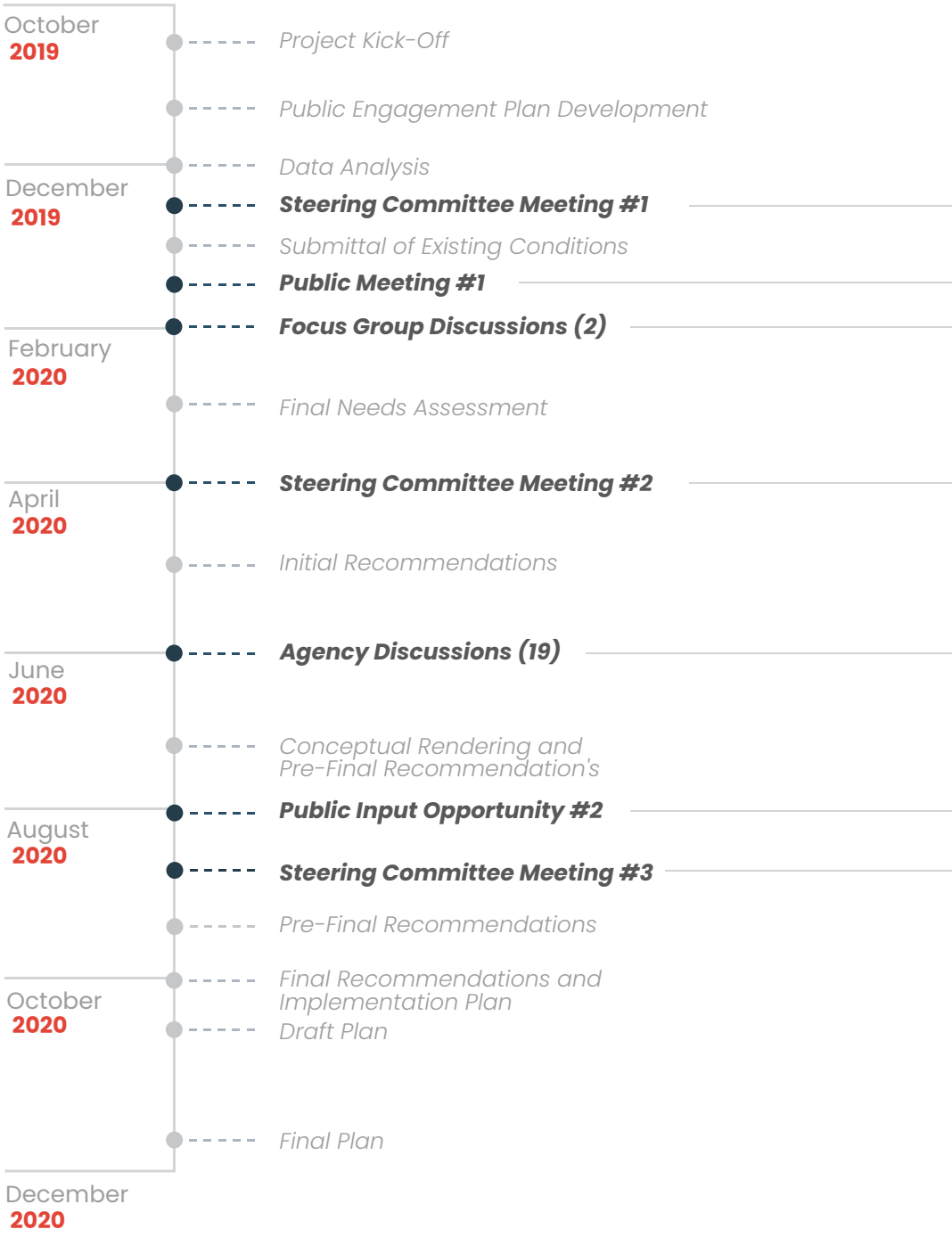
Figure 06: Images from Focus Group Discussion

Figure 07: Pubic Input from Public Meeting #1

Source: AECOM

Figure 08 illustrates the outcome of each public engagement milestone.

Figure 08: Public Engagement Outcomes



Source: AECOM

Outcome: Obtain feedback on initial data analysis, validated project goals, and obtain consensus from the committee on public engagement plan.

Outcome: Over 100 residents and community members attended the first public meeting and close to 350 responses were received from the Public Survey.
Outcome: 30 hand-selected community residents and leaders from local organizations were a part of two focused discussions. These community members gave insight on what types of development would be well-received within the community, as well as which community members may be a project resource during the concept development phase.

Outcome: Validate the final needs assessment and obtain guidance on how recommendations should be approached. The committee gave insight on what types of development would be well received within the community and provide insight on who may be a resource within the concept development phase and survey.

Outcome: Agencies helped the project team understand existing obstacles and re-frame recommendations to be realistic and implementable within the community. At the end of the discussion, a lead agency was determined for each recommendation. This lead agency would help ensure the project continues to obtain support and ultimately help lead the implementation of the recommendations.

Outcome: The second public opportunity obtain over 150 responses and recommendations were updated based on feedback received. In general, all recommendations were well received and community members expressed overall excitement.

Outcome: Steering Committee members provided final comments on the pre-final recommendations, helped validate the project prioritization methodology, and ultimately helped prioritize the 11 recommendations.

Existing Conditions

03

Source: City of Pasadena

03

Existing Conditions

Overview

The purpose of the existing conditions analysis is to identify opportunities and challenges that could be addressed in the final recommendations to create a truly livable community. Through community engagement and data analysis, it was apparent that current conditions should be evaluated within three overarching categories: Housing and Economic Development, Mobility, and Quality of Life.

Housing and Economic Development

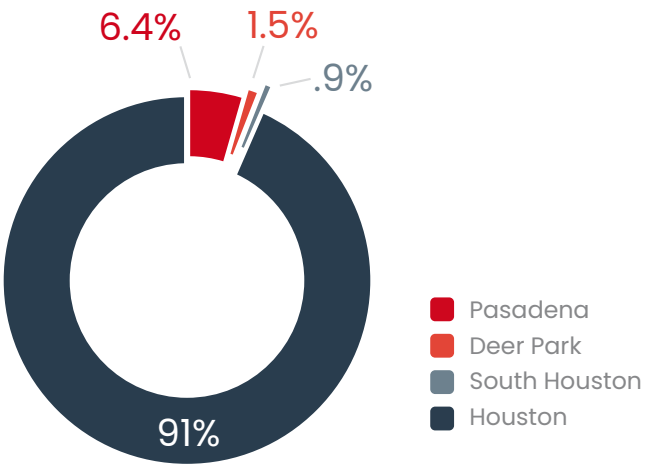
There are several factors contributing to the study area's current housing condition. These factors can be analyzed through the lens of economic development, which has been relatively poor in the area. Lack of quality housing options, low-earning jobs, vacant lots, and unmaintained, aged housing are all factors contributing to the area's overall attractiveness. What has resulted are net job outflows, reduced safety outcomes, and increased poverty which is stressing housing and economic development in the area.

The existing conditions analysis suggests that creating new methods of promoting housing affordability while incentivizing economic development will improve the study area's quality of life and overall attractiveness for new development and new young families.

Population and Household Characteristics

Population in both the study area and the City of Pasadena has steadily increased at an annual rate of about 1% since 1990 (Table 01). In 2017, the City of Pasadena had a population of 153,909. Compared to neighboring municipalities in the area, Pasadena's population is the second largest behind the City of Houston (Figure 09 and Table 01). Table 01 also indicated the compound annual growth rate (CAGR) which states the growth rate over

Figure 09: City Share of Area Population



Source: ACS

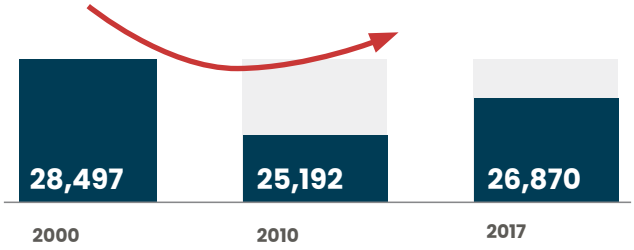
Table 01: City of Pasadena Population Compared to Neighboring Cities

City	1990	2000	2010	2017	CAGR 90-17
Pasadena	119,363	141,674	149,043	153,909	0.95%
South Houston	14,207	15,833	16,983	17,563	0.79%
Houston	1,630,553	1,953,631	2,099,451	2,267,336	1.23%
Deer Park	27,652	28,520	32,010	33,748	0.74%

Source: ACS 5-Year Estimates

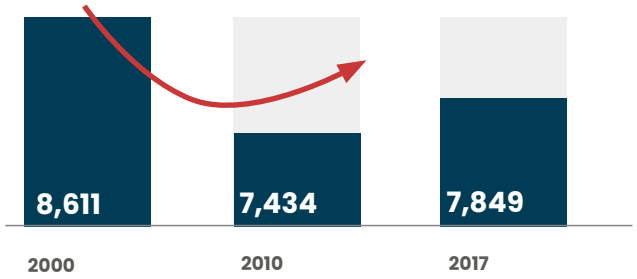
The regional trend for population change in Texas between 2000 and 2017, and particularly the Houston Metropolitan Statistical Area (MSA), has been growth. This is also true for Pasadena generally, but not for the study area specifically. Between 2000 and 2010, the study area lost 3,305 people and 1,177 households. The study area added back 1,678 people and 415 households between 2010 and 2017, but this has not brought area counts back to pre-2010 levels. In the study area, the median age in 2017 was 27.4, which is lower than the median average for the City of Pasadena overall (29.1). The study area's median age appears to be trending up, which is also the case for Pasadena. Finally, the study area has a greater share of renters than homeowners, a trend that appears to be growing.

Figure 10: Study Area Population



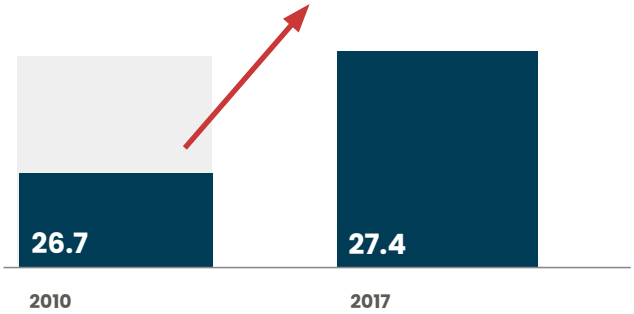
Source: U.S. Census

Figure 11: Study Area Households



Source: U.S. Census

Figure 12: Study Area Median Age



Source: U.S. Census

Figure 13: Study Area Tenure

Source: U.S. Census

Place of Birth and Households

Household structure in the City of Pasadena generally mirrors the U.S. average. Although, single female households with children continues to rise and outpace the U.S. average (17% in the City of Pasadena compared to 13% in the U.S.).

In 2017, 27% of Pasadena residents were born outside of the U.S., significantly higher than the U.S. average (13%). However, the city had a lower share of foreign-born residents than all of its neighboring cities except Deer Park. Tables 02 and 03 breaks down where the City's population was born as well as the household structure types.

Table 02: Population by Place of Birth

	Places of Birth Shares (2010)			Places of Birth Shares (2017)		
Area	**Same State**	**Different State**	**Foreign**	**Same State**	**Different State**	**Foreign**
Pasadena	59%	14%	27%	60%	12%	27%
South Houston	55%	8%	36%	54%	6%	41%
Houston	52%	18%	29%	52%	18%	30%
Deer Park	73%	20%	7%	69%	20%	10%
Texas	61%	22%	17%	60%	22%	18%
Houston MSA	55%	22%	23%	54%	21%	25%
U.S.	59%	27%	14%	58%	27%	15%

Source: U.S. Census

Table 03: Household Structure Types

	Family Structure (2010)					Family Structure (2017)				
Area	**Married Couple**	**Single Male**	**Single Female**	**Living Alone**	**Not Alone**	**Married Couple**	**Single Male**	**Single Female**	**Living Alone**	**Not Alone**
Pasadena	51%	7%	15%	21%	5%	49%	7%	17%	22%	5%
South Houston	54%	9%	18%	14%	7%	56%	10%	15%	16%	3%
Houston	39%	6%	16%	31%	4%	39%	6%	16%	32%	7%
Deer Park	60%	6%	12%	18%	7%	58%	7%	13%	19%	4%
Texas	51%	5%	14%	24%	6%	50%	5%	14%	25%	5%
Houston MSA	51%	6%	14%	23%	6%	51%	5%	14%	24%	5%
U.S.	48%	5%	13%	27%	7%	48%	5%	13%	28%	6%

Source: U.S. Census

Despite this growth, there has been a decline in home ownership in the City of Pasadena, since 2010 which is consistent with neighboring cities, except for South Houston (Table 04). The share of households in the City which are owners, rather than renters, is lower than all neighboring cities except Houston. Although there are more total households in the city now (Table 05), a reduction in total housing units (Table 06) and slow economic growth in the area are limiting household incomes and exacerbating housing affordability.

Home values and rents in the City of Pasadena are generally lower than in the Houston Metropolitan Statistical Area (MSA) and U.S. average. In 2017, the median rent in the City was $867 compared to the U.S. average of $982 (Figure 14). The median home value in the City was $108,700 in 2017, compared to $193,500 in the U.S. (Figure 15). Median household income in the City ($50,200) is lower than U.S. and Houston MSA averages, although higher than all neighboring communities except Deer Park. Table 07 shows the median household income for the City of Pasadena and its surrounding cities.

Barriers preventing increased household incomes can be observed through population characteristics analyzing poverty. Based on data analysis there are many contributors that could attribute to lower household incomes. Table 08 illustrates some noteworthy population characteristics of study area. Figure 16 illustrates the percent of residents that do not have access to a car.

Table 04: Home Ownership Comparison

City	1990	2000	2010	2017
Pasadena	51.52%	56.10%	56.58%	53.30%
South Houston	56.74%	58.87%	56.53%	59.82%
Houston	44.59%	45.79%	45.39%	43.25%
Deer Park	75.04%	79.33%	77.34%	73.66%

Source: ACS 5-Year Estimates

Table 05: Total Household Comparison

City	1990	2000	2010	2017	CAGR 90-17
Pasadena	42,044	47,031	48,471	48,931	0.56%
South Houston	4,304	4,593	4,792	4,617	0.26%
Houston	616,877	717,945	782,643	833,950	1.15%
Deer Park	8,822	9,615	11,133	11,322	0.93%

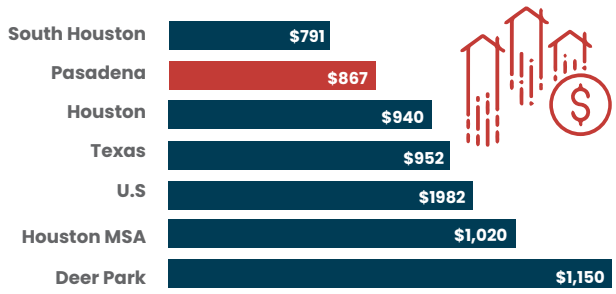
Source: ACS 5-Year Estimates

Table 06: Housing Unit Comparisons

City	1990	2000	2010	2017	CAGR 90-17
Pasadena	50,367	50,367	53,899	53,817	0.25%
South Houston	4,947	4,947	5,258	5,014	0.05%
Houston	782,009	782,009	892,649	943,183	0.70%
Deer Park	9,921	9,921	11,742	12,235	0.78%

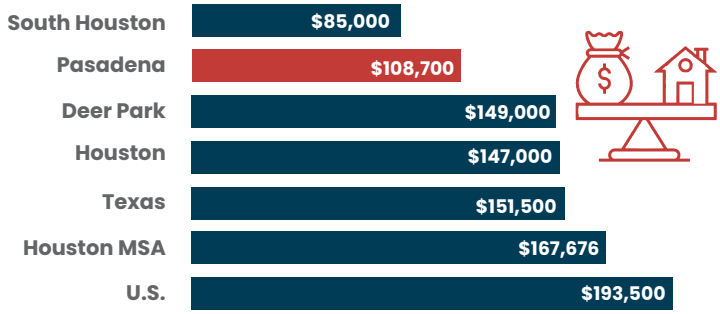
Source: ACS 5-Year Estimates

Figure 14: Median Gross Rent



Source: Houston MSA

Figure 15: Median Home Value



Source: Houston MSA

Table 07: Median Household Income

City	1990	2000	2010	2017	CAGR 90-17
Pasadena	$28,729	$38,522	$45,116	$50,207	2.09%
South Houston	$23,485	$31,924	$35,564	$44,607	2.40%
Houston	$26,261	$36,616	$42,962	$49,399	2.37%
Deer Park	$46,199	$61,334	$73,820	$78,329	1.98%

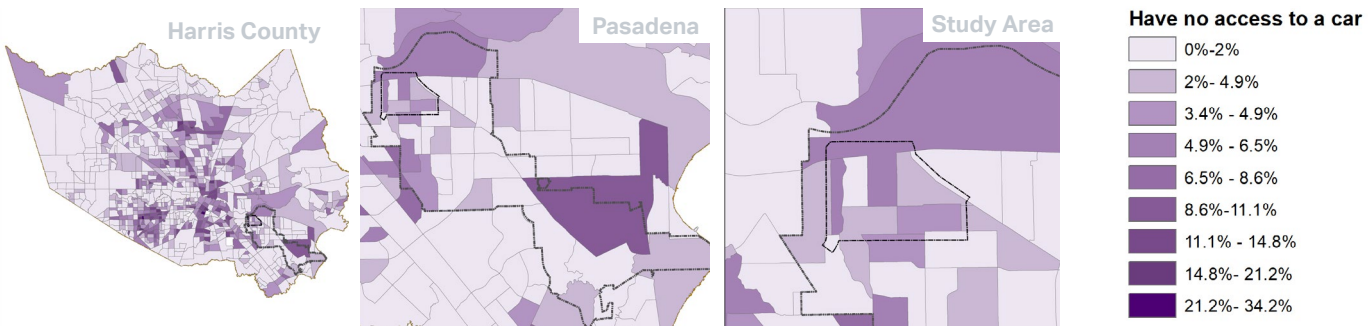
Source: ACS 5-Year Estimates

Table 08: Population Characteristics

	median per capita income (in $$,)	median age (yrs, average of tracts)	% minority (non-white-identified) population	% Hispanic or Latino	% speak english less than 'very well'	% below federal poverty level	% graduated college or higher
Study Area Average	20,582	28.98	14.36	84.23	25.17	24.12	4.7
Pasadena Average	28,649	33.61	16.64	58.67	21.27	17.33	18.05
Harris County Average	33,235	34.38	36.12	42.30	22.95	18.08	29.34
US Average	28,776	37.80	27.00	17.60	8.50	14.60	30.90

Source: ACS 5-Year Estimates

Figure 16: Percentage of Households with No Access to a Car



Source: ACS 5-Year Estimates

Study Area Employment

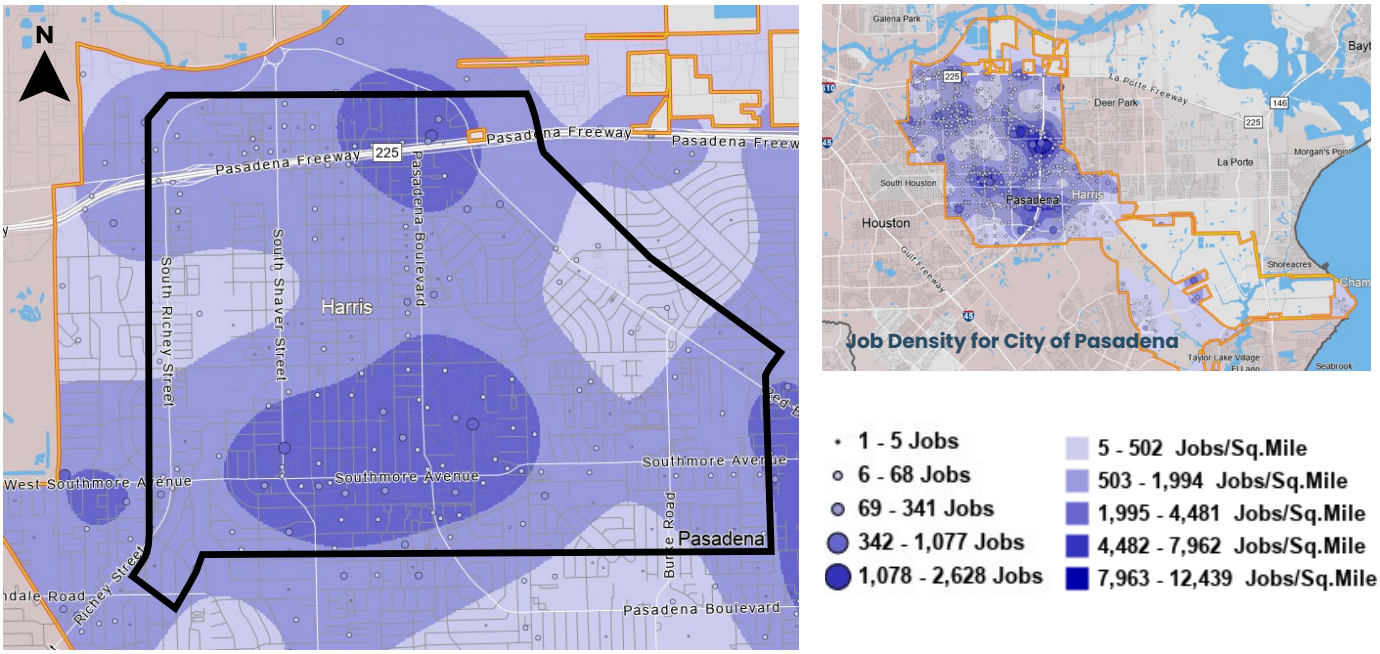
Table 09 shows the employment summary of the City of Pasadena compared to its surrounding cities. The industries with the highest location quotient (LQ) in the City of Pasadena have been highlighted in the table. LQ is a way of quantifying how concentrated a particular industry cluster is in a region compared to the the nation. Figure 17 shows job density for the study area by location in 2017. Job locations correspond largely to areas of commercial and institutional land use along Southmore Avenue and Pasadena Boulevard (clusters to the south), and industrial areas at Shaw Avenue and Pasadena Boulevard (the northeast corner).

Table 09: City of Pasadena 10 Largest Industries (2017)

Industry	Pasadena City Employment	Pasadena City LQ	Houston LQ	South Houston LQ	Deer Park LQ
Elementary & secondary school	5,062	1.55	0.70	2.48	1.91
Restaurants and other eating places	4,658	1.23	0.86	0.75	0.98
General medical and surgical hospitals	2,307	1.03	0.93	0.00	0.06
Executive, legislative and general governament	2,103	0.85	0.41	0.20	0.63
Department stores	1,622	1.61	0.63	0.05	0.00
Residential building construction	1,475	2.44	1.06	1.74	1.10
Architectural and engineering services	1,460	2.56	3.00	1.23	4.98
Chemical merchant wholesalers	1,386	22.17	2.15	6.72	75.74
Machinery and supply merchant wholesalers	1,368	3.34	3.03	5.02	4.49
Colleges and universities	1,330	1.30	0.53	0.00	0.06

Source: EMSI

Figure 17: Job Density by Location

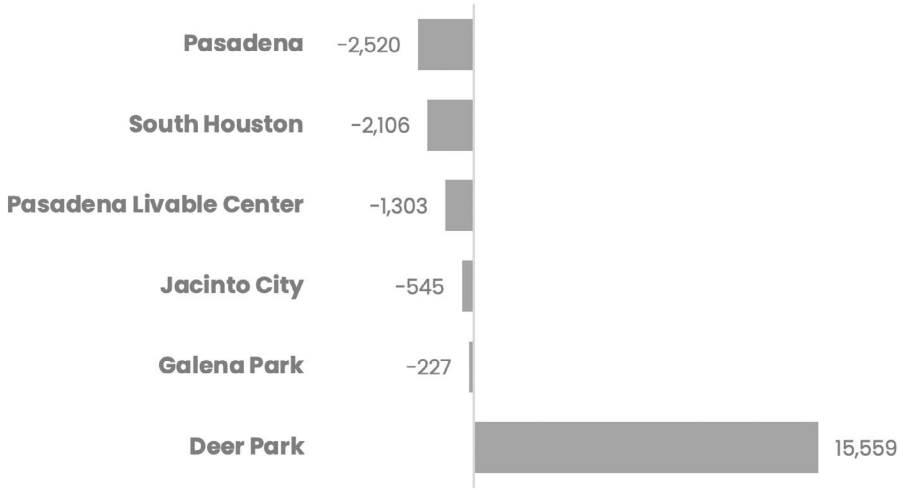


Source: American Community Survey

The City of Pasadena and its surrounding cities, with the exception of Deer Park, have historically had job outflows (i.e. more people living in the city but working somewhere else than people working in the city). Deer Park had a 15,000 job inflow in 2017, while Pasadena's neighboring cities ranged from a 230 job outflow (Galena Park) to a 2,100 job outflow (South Houston). Pasadena had the largest job outflow of all cities studied (2,620), as shown in Figure 18.

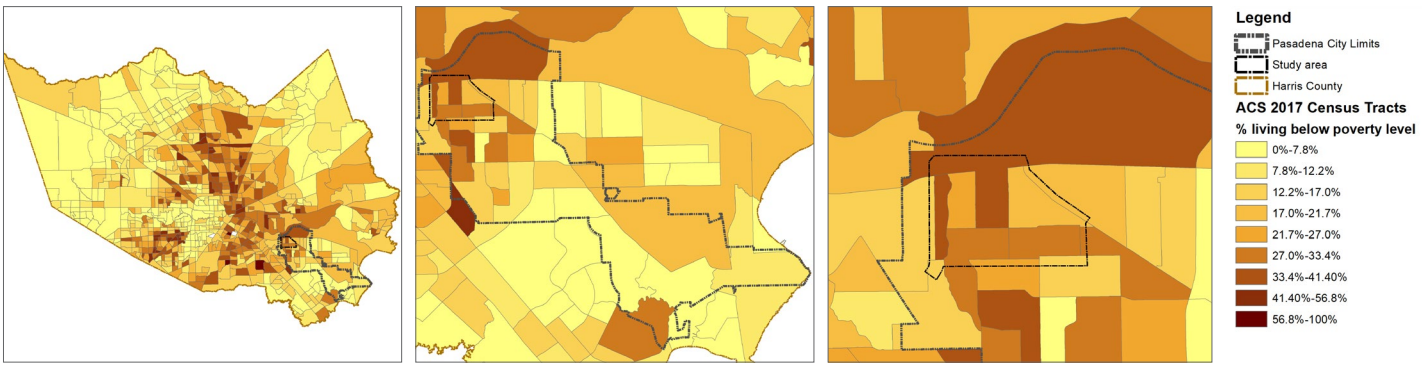
In the study area, there are more workers that generally earn a lower wage than workers in Pasadena as a whole (Figure 19). A higher share of lower earning jobs is an issue because it is contributing to making the area a less desirable place to live and work and is reducing the overall quality of life.

Figure 18: 2017 Net Job Inflow



Source: U.S. Census

Figure 19: Population Living Below Poverty Level

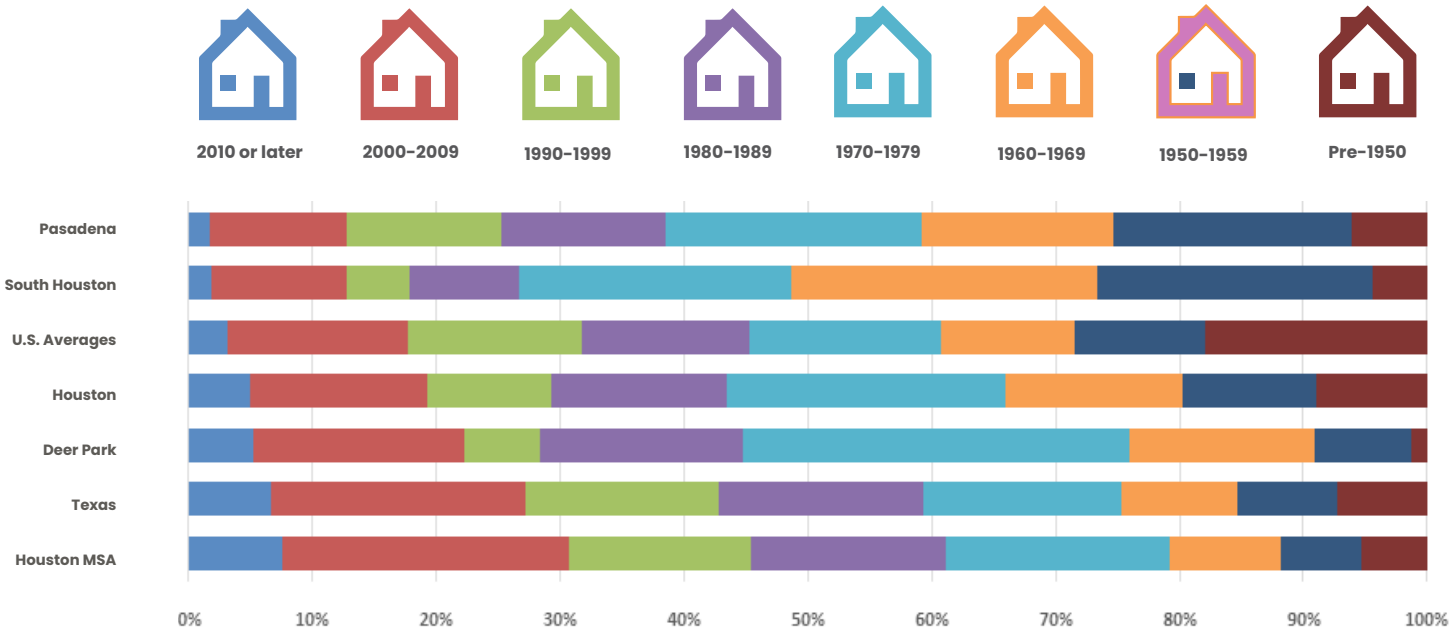


Source: American Community Survey

Housing by Decade

Among the City of Pasadena's neighboring cities, Deer Park has the greatest percentage age of newly constructed housing stock, followed by Houston and then South Houston. The City of Pasadena has the fewest newly constructed housing units. As shown in Figure 20. Up until 2010, Pasadena had a relatively even distribution of housing units added each decade (about 10-20%). The share of new units since 2010 has dropped below 2% of the total units. The lack of new housing and the prevelance of older housing stock is contributing to the absence of diverse housing options that residents desire.

Figure 20: Housing by Decade of Construction



Source: U.S. Census

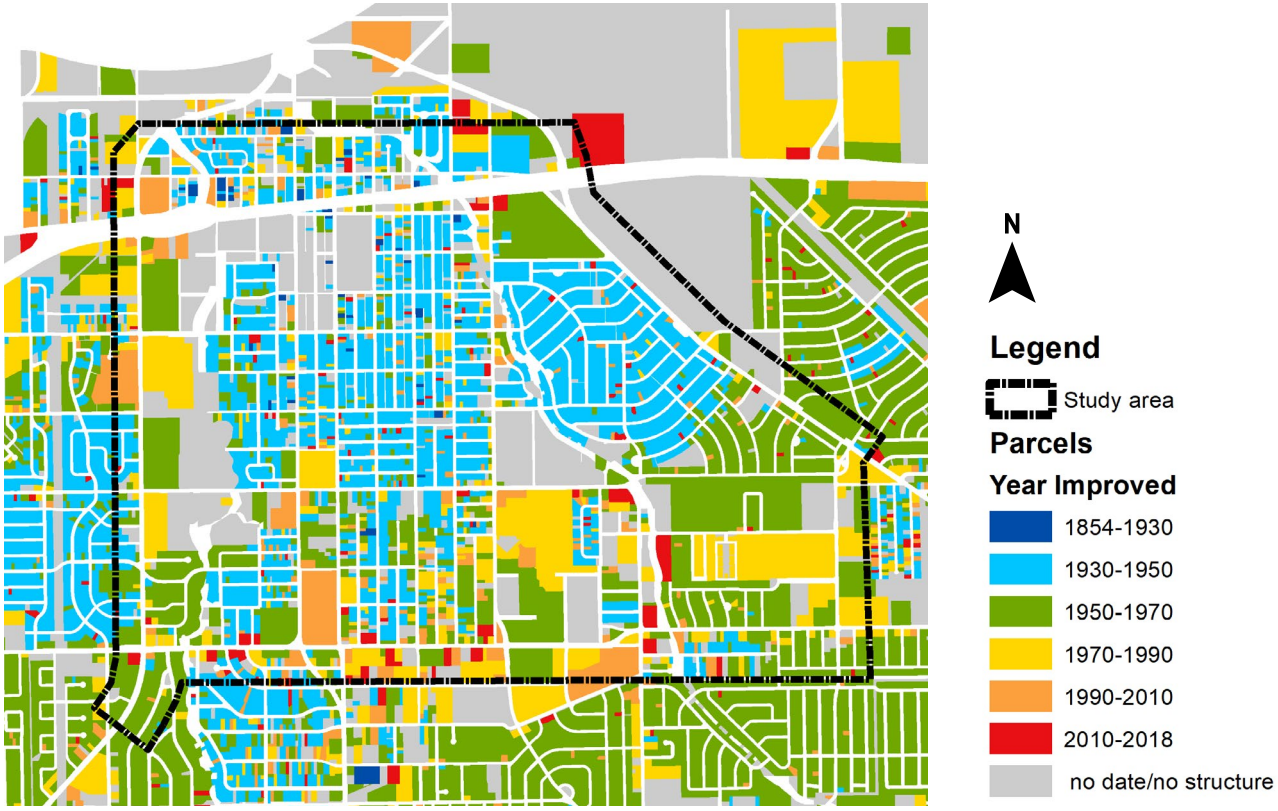
Building Condition

The Harris County Appraisal District tracks the year of a property's most recent improvement. This is not a perfect cipher for real building age (as older structures may have been improved recently) but it does provide insight to which parcels have been maintained and improved.

A significant amount of the existing housing infrastructure in the study area has not seen recent improvements. This includes apartments along Richey Street and buildings between Pasadena Boulevard and Red Bluff Road. The dilapidation of these properties is largely brought on by absentee landlords and property owners who are not maintaining their buildings. This has created an undesirable environment and has made it difficult to develop incentives and programs that attract developers to add more quality housing stock and commercial development in the area.

The average year for parcel improvements in the study area is 1953 which is much older when compared to the average year for all properties in the city of Pasadena, which is 1970. This suggests that the study area is one of most poorly kept parts of town. This is especially evident when considering the housing stock in the area, particularly multifamily units on Richey Street. Figure 21 shows the improvement year by parcel for the entire City of Pasadena.

Figure 21: Study Area Parcel Improvement Year



Source: Harris County Appraisal District Parcel Data

Of the 4,811 parcels with building improvement age information, the largest group (1,400 locations or 29% of parcels) have an improvement value year between 1940 and 1944. These properties fall largely within the western portion of the study area, west of Pasadena Boulevard and east of Vince Bayou. This area, which corresponds with the old street grid and the highest density of mixed land uses, also has a significant mix of building improvement age within it, particularly in the southern portion. Thus, there is also a substantial number of commercial properties that have been improved in the last 20 years (250 parcels with a date greater than or equal to 2000) within the older portions of the study area.

Lot vacancy is also a major issue. As shown in Figure 21, areas in gray either have no structure on the property or contain no date for structure presence. Sites that emerged from public engagement on the topic of vacancy include the State Bank building, the mall area, and lots along Shaw Avenue. The vacancy of these spaces has contributed to increased homeless activity, decreased commercial activity, and has reduced the building presence and sense of arrival in the study area.

Building Permits

Harris County has historically dominated in building permit issuance, representing over 50% of all permits issued in the Houston Metropolitan Statistical Area (MSA) since the 1980s. Since the 1980s, however, Montgomery and Fort Bend Counties have commanded larger shares of permit issuance and reduced Harris County's share from 80% to 50% of permits issued by decade as shown in Table 10.

Table 10: Houston MSA Building Permit by Decade

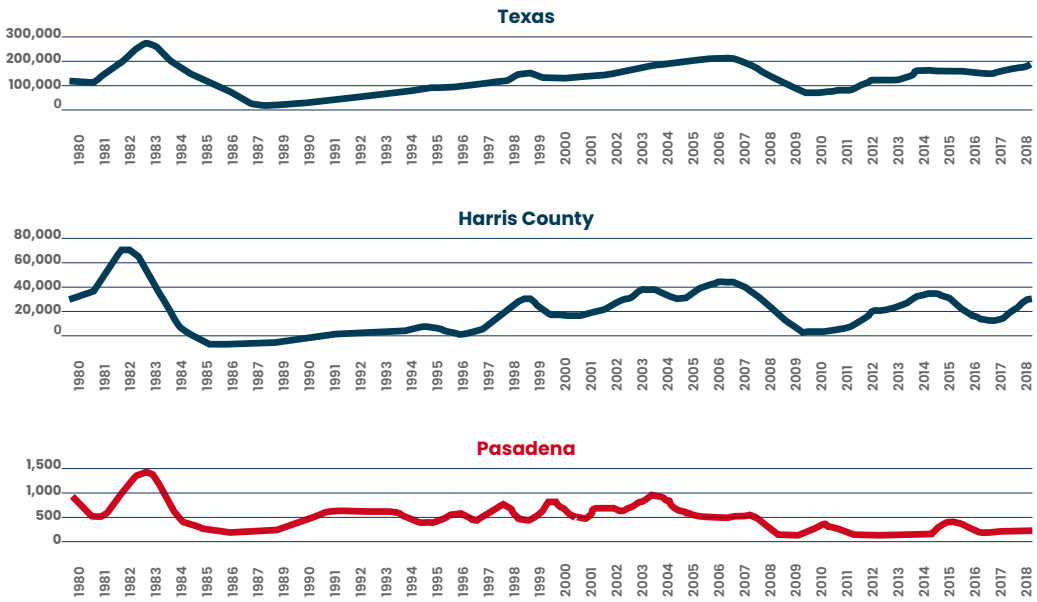
Area	1980	1990	2000	2010
Austin County	0.2%	0.1%	0.1%	0.1%
Brazoria County	4.5%	6.1%	36.%	5.9%
Chamber County	0.1%	0.6%	0.8%	0.8%
Fort Bend County	3.5%	4.7%	8.8%	17.2%
Galveston County	6.4%	5.9%	5.3%	4.8%
Harris County	82.9%	70.1%	66.2%	58.3%
Liberty County	1.3%	1.0%	0.5%	0.8%
Montgomery County	0.9%	11.4%	11.6%	11.9%
Waller County	0.2%	0.2%	0.4%	0.3%
Houston MSA	313,537	253,077	502,701	418,590

Source: Houston MSA

Pasadena has experienced a lack of permit issuance growth relative to Texas and Houston MSA averages since 2010, effectively maintaining its 2010 permit issuance rate as of 2018 (issuing 200 or fewer permits per year).

Since the community has reached its build out, there is a need for an infill development strategy to sustain any level of housing reinvestments. Figure 22 shows the comparison of building permits.

Figure 22: Building Permit Total by Year



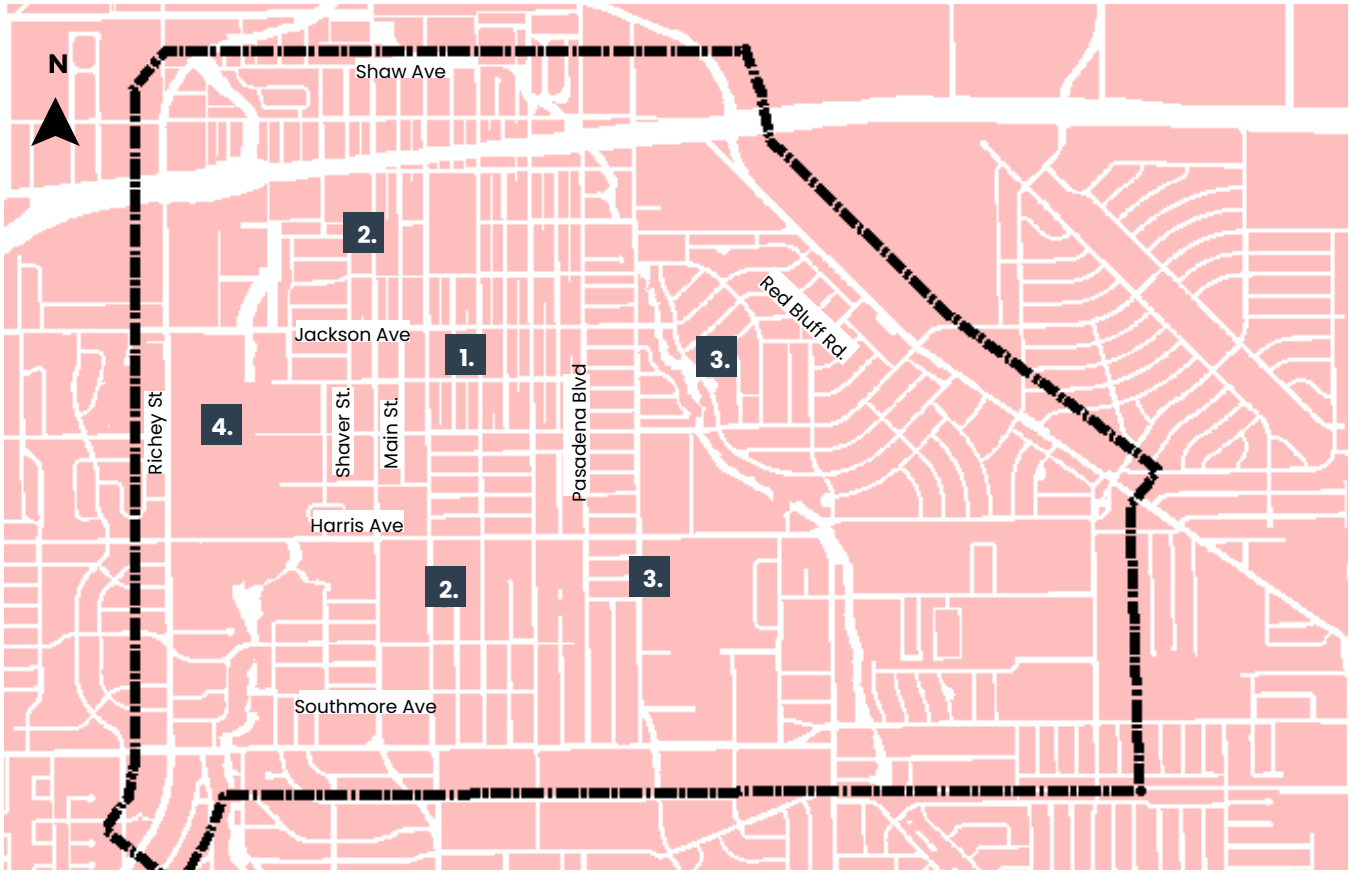
Source: American Community Survey

Block Structures

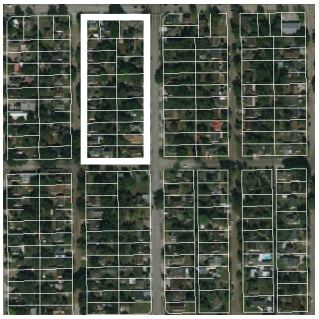
There are generally four types of block topologies in the study area: old grid, old grid with new subdivisions and conveyances, new grid, and super-block. Figure 23 illustrates the four types of block structures and where these types can be found within the study area.

Much of the study area's block patterns follow either old grid or old grid with new subdivisions and conveyances. These topologies present opportunities for the area as they generally promote connectivity, unlike the new grid and super-block topologies which measured to have relatively poorer connectivity outcomes.

Figure 23: Study Area Block Structures



1. Residential homes between Harris Avenue and Jackson Avenue



2. Johnson street, a cul-de-sac between Harris Avenue and Elaine Avenue

3. Pasadena Gardens, residential subdivision

4. The Macroplaza mall complex

Source: AECOM

1. Old Grid (Figure 24)

Street Ownership: **Public** | Private
Overall Connectivity: Poor | Fair | Good | **Very Good**

- Block face is regular, 650 ft. to 700 ft. by 250 ft. to 350 ft. Block perimeter is regular, 1,800 ft. to 2,010 ft. Straight streets running along cardinal directions with 90-degree intersections, few or no culs de sacs.
- Lots are regular and generally 50 ft. to 60 ft. wide and 100 ft. to 200 ft. deep.

2. Old Grid (Modified) (Figure 25)

Street Ownership: **Public** | **Private**
Overall Connectivity: Poor | **Fair** | **Good** | Very Good

- Streets generally are straight and follow cardinal directions. Block face is irregular in size and rectangular in shape (block shown is 700 ft. by 1,430 ft. with a perimeter of 6,320 ft). Lots vary widely in size but generally rectangular in shape.
- Traditional grid has been changed through re-platting, additional subdivision, and land conveyance.
- Some partial or fragmentary right of way; some streets appear to be on private parcels.

3. New Grid (Figure 26)

Street Ownership: **Public** | Private
Overall Connectivity: Poor | Fair | Good | **Very Good**

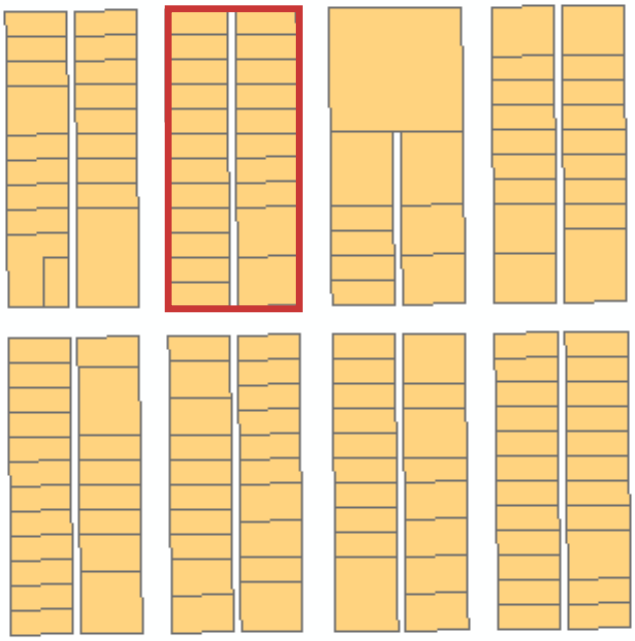
- Few or no alleys, cul-de-sacs are more common. Streets are curvilinear and some, but not all, intersect at 90 degrees. Wide variation in block face and perimeter (shown is 200 ft. by 1,200 ft).
- Lots are regular and generally 60 ft. to 80 ft. wide and 100 ft. to 200 ft. deep.
- This grid promotes lower traffic speed and therefore pedestrian safety.

4. Superblock (Figure 27)

Street Ownership: **Public** | **Private**
Overall Connectivity: **Poor** | Fair | Good | Very Good

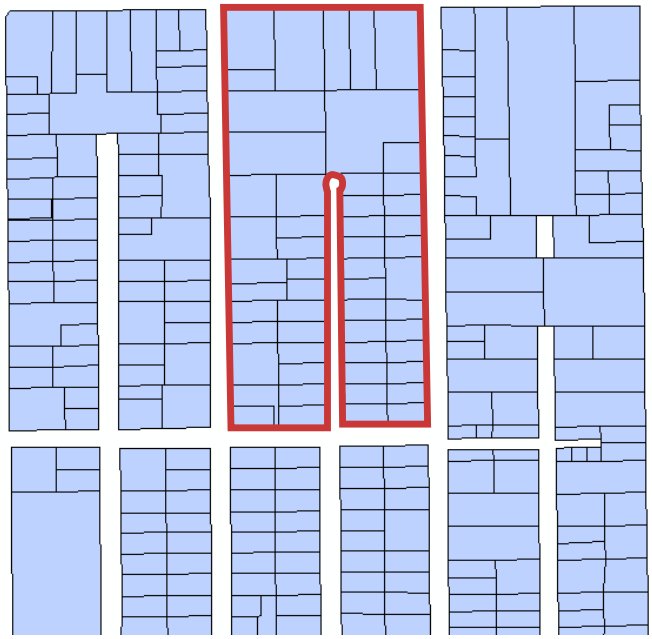
- Huge, irregular blocks with long block faces (block shown is 1,920 ft. wide and 2,940 ft. long) and large block perimeters.
- Irregularly shaped lots, large in size. Few through streets, more reliance on private fire lanes or drive aisles within or partially through the block.
- This form is typical in the mall complex area and around Vince Bayou, where crossings are limited and large irregular blocks are common on floodplain-affected land.
- No defined pedestrian routes and therefore it is difficult to navigate.

1. Figure 24: Old Grid Example



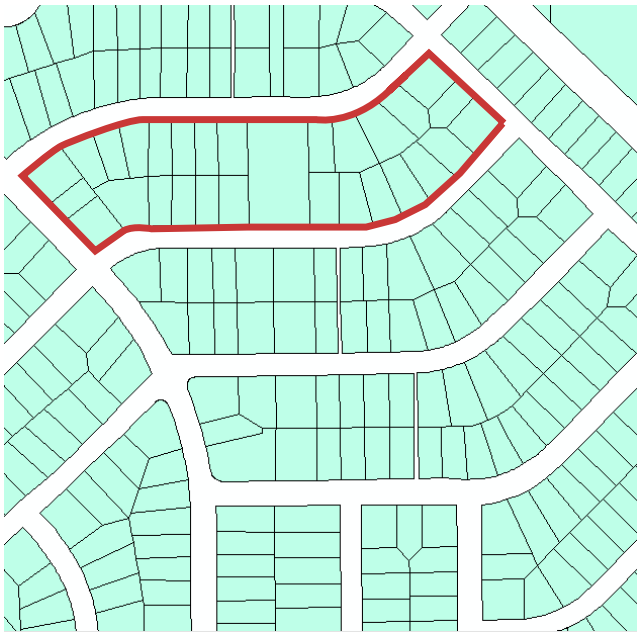
Source: AECOM

2. Figure 25: Old Grid - Modified Example



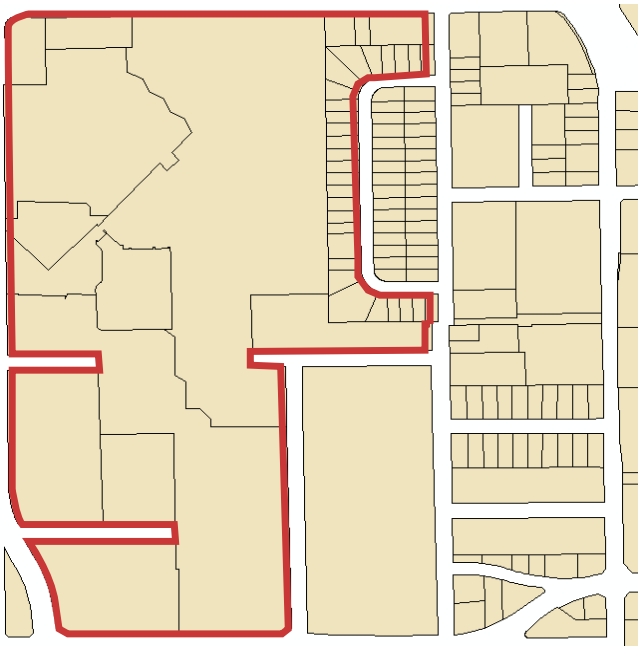
Source: AECOM

3. Figure 26: New Grid Example



Source: AECOM

4. Figure 27: Super Block Example



Source: AECOM

Susceptibility to Change

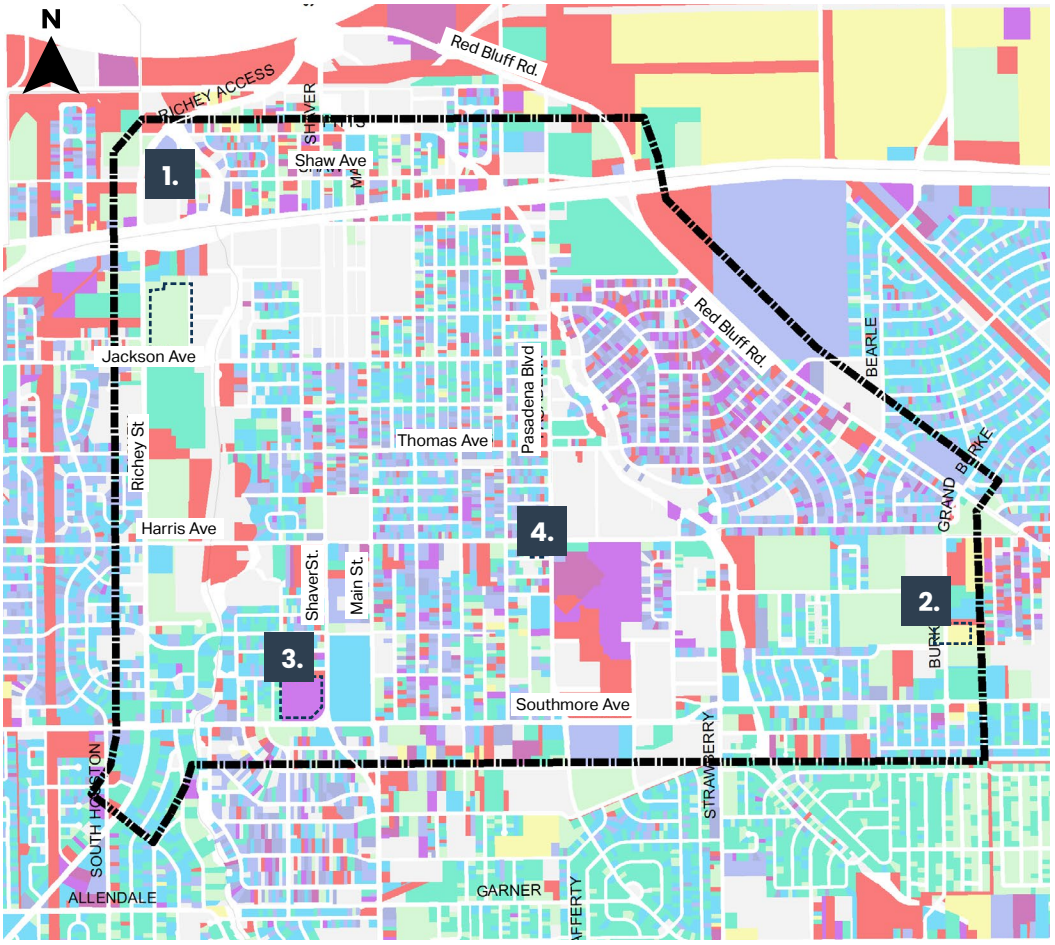
The ratio of a property's land value to its improvement value provides a basic metric of redevelopment potential. The higher the land value to improvement ratio, the more susceptible the parcel is to redevelopment. In the study area, land value is outpacing the improvement value for many of the parcels. Figure 28 shows a ratio in decimal where the land value meets or exceeds 20% (0.20 or greater) of the improvement value. Identified parcels are considered susceptible to change because the improvements to the structures on the lot are not keeping pace with the value of the lot itself.

In other words, increasingly valuable parcels that can be utilized for other purposes are held back by existing structures without comparable value. The vast majority of the parcels in the study area fall into this category. For most properties in the study area, the land value exceeds 30 to 50% of the improvement value (blue, purple, and red values).

Locations 1 and 2, as shown in Figure 28, both fall beneath the 20% threshold, and both are multifamily housing complexes. Locations 3 and 4 fall above the 20% threshold (both are greater than 80%). Both properties are strip mall commercial buildings with large parking lots.

While it is not possible to identify overall susceptibility trends for the study area from only four locations, two observations can still be made. The first is that building age does not appear to be a factor, since all four properties have similar improvement years (around 1960). Second, both density and building coverage appear to be factors. Those lots in which the building footprint is a very small portion of the overall site have a less favorable ratio. This would suggest underutilized land, and in particular excess parking within the study area, may have a higher value with a different use.

Figure 28: **Study Area Land Value to Improvement Value**



Land Value to Improvement

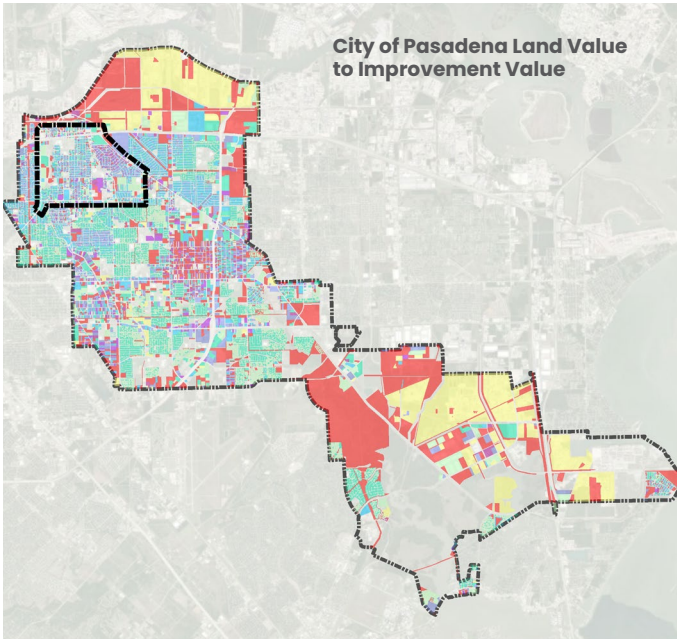
- 0 - 0.1 (Least Susceptible)
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8 (Most Susceptible)
- tracts with no data

1. Multifamily at Richey Street and Jackson Avenue

2. Multifamily at Burke Road and Easthaven Drive

3. Strip mall at Southmore Avenue and Shaver Street

4. Macroplaza Mall at Southmore Avenue and Pasadena Boulevard



Source: Harris County Appraisal District

Mobility

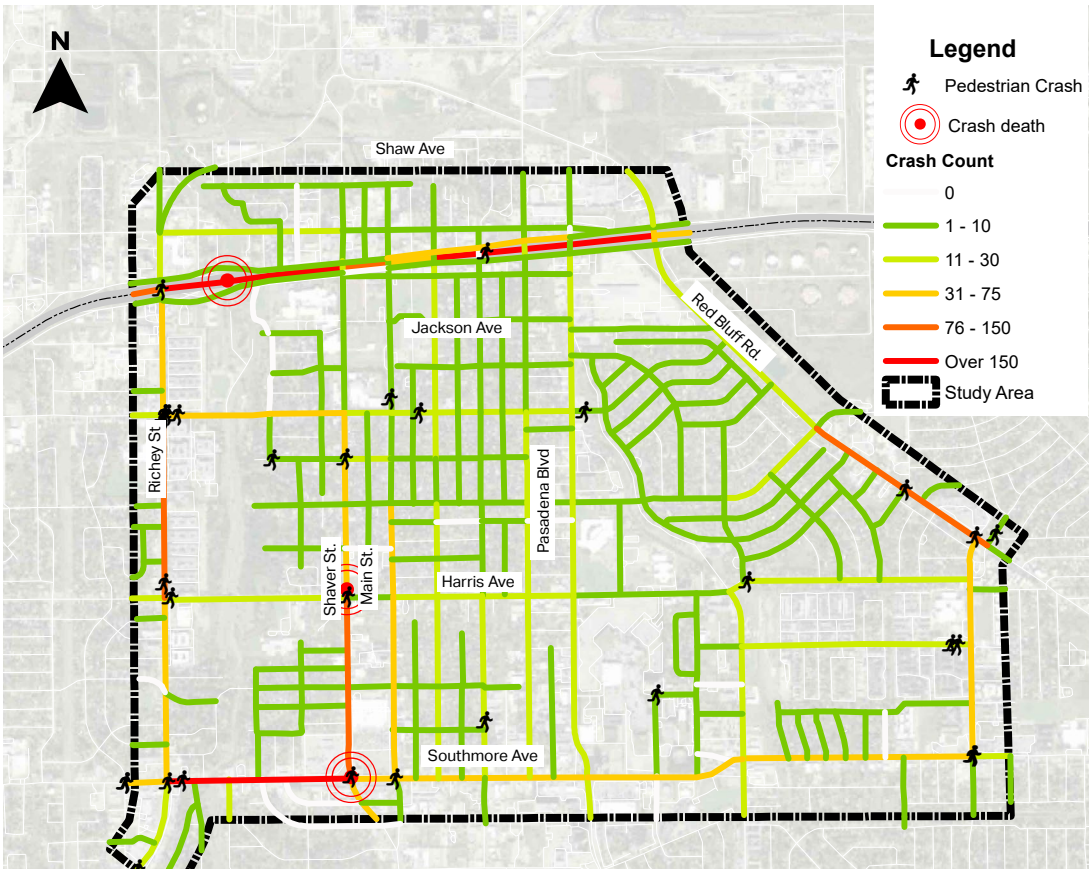
Improving pedestrian access and updating existing transportation infrastructure is a priority in the study area. Needed improvements should aim to accommodate multimodal transportation and improve safety and land use connectivity according to this Existing Conditions analysis.

Safety

This section evaluated roadway safety data to determine overall issues and potential areas of concern related to automobile, bicycle, and pedestrian travel. Currently, the study area does not promote a safe environment for pedestrian activities such as walking or biking. Figure 29 illustrates study area collisions between 2016 and 2019. There were 3,028 traffic collisions in the study area during 2016 - 2019; three resulted in fatalities. Despite the relatively low number of fatalities, approximately 22% of the collisions resulted in at least a possible injury. Pedestrians were involved in 32 collisions and bicyclists were involved in 21 collisions.

Figure 29 and Table 11 detail traffic collisions on study area road segments with the highest number of crashes. Overall, the highest number of traffic collisions occurred on SH 225 with 387 total crashes. The most critical high collision hotspots along a non-highway corridor is the segment along Southmore Avenue between Richey Street and Shaver Street (157 collisions). Richey Street was the site of 218 total crashes during this time period. The segment between Harris Avenue and Jackson Avenue was the site of 91 total collisions.

Figure 29: Study Area Collisions (2016- 2019)



Source: TxDOT & H-GAC

Examining the total number of crashes within a corridor alone provides a snapshot of the incidence of collisions in a corridor, but it offers little information on how roadway conditions in the corridor may be contributing to the collisions. The crash rate includes the impact of the segment length (crashes per mile) and overall volume of traffic to provide clearer evidence on the cause of the collisions. A higher number of crashes per mile may hint at access management issues, such as curb cuts, frequent traffic signals or stops signs, or unprotected left turns as an underlying cause. Access management issues, however, may be exacerbated by higher traffic volumes. Higher traffic volumes mean more exposure to potential collisions. A high number of crashes in a high-volume corridor is an indicator of the need for capacity improvements, such as medians or additional lanes in a corridor. Interestingly, the highest crash rate among the high collision corridors was the four-lane collector segment of Burke Road between Harris Avenue and Southmore Avenue with a crash rate of 11.72. This half-mile segment was the site of 64 collisions, including one pedestrian collision, but only accommodated about 7,600 vehicles per day. The leading cause (33%), according to police reports, was failure to yield the right-of-way while making a left-turn, exiting a private drive way, or at a stop sign. As volumes increase along the corridor, safety improvements, such as a center turn-lane, may be needed to mitigate the number of crashes in the corridor.

Table 11: Study Area Collision Corridors

High Collision Corridors	Crashes	Crash Rate	Volumes	Bike / Pedestrian	Fatalities
Main St. From Southmore Ave. to Harris Ave.	59	6.77	11,931	0	0
Shaver St. From Southmore Ave. to Harris Ave.	107	11.68	12,544	1	1
Richey St. from Harris Ave. to Jackson Ave.	91	7.84	16,600	3	0
Jackson Ave from Richey St. to Shaver	51	10.99	6,359	4	0
Southmore Ave. from Strawberry Rd. to Burke Rd.	58	6.41	9,989	1	0
Southmore Ave. from Pasadena Blvd. Strawberry Rd.	68	8.79	12,042	1	0
Southmore Ave. from Richey St. to Shaver St.	157	11.25	18,736	3	0
SH 225 from Main St. to Pasadena Blvd.	387	4.33	122,395	0	0
Red Bluff Rd. from Thomas Ave to Burke Rd.	103	4.33	28,561	3	0
Burke Rd. from Harris Ave to Southmore Ave.	64	11.72	7,635	1	0

Source: TxDOT & H-GAC

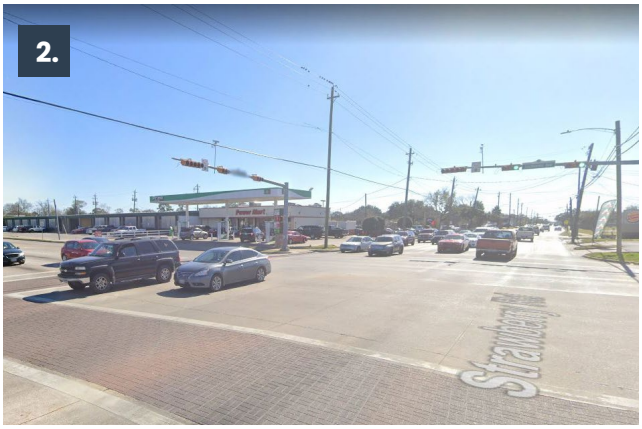
High Crash intersections are illustrated in Table 12. Between 2016 and 2019 the largest number of intersection crashes in the study area (63) occurred at the intersection of Southmore Avenue and Shaver Street. An interesting comparison is the intersection of Main Street and Southmore Avenue, which lies just one block to the east and is the site of only 34

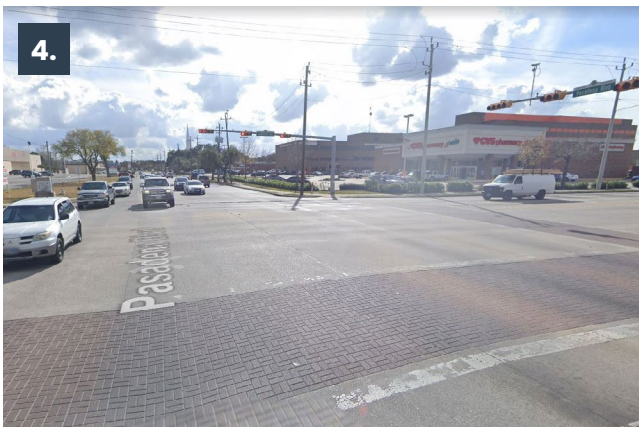
crashes. Main Street and Shaver Street have the same speed limits, similar traffic volumes, similar land uses (both front the Walmart), and each forms a leg of a one-way couplet system. The highest intersection crash rate among the high crash intersections was the intersection of Southmore Avenue and Strawberry Road. In spite of accommodating only 8,300 vehicle per day in either direction, the intersection was the site of 39 crashes. The causes of the collisions were primarily access management issues and included failure to yield while making a left turn, failure to control speed, and following too closely.

Table 12: Study Area High Crash Intersections

No	High Crash Intersections	Crashes	Through Volumes	Crash Rate (MEV)
1	Shaver St. and Southmore Ave.	63	22,268	1.03
2	Southmore Ave. and Strawberry Rd.	39	8,303	1.64
3	Southmore Ave. and Main St.	34	20,399	0.59
4	Southmore Ave. and Pasadena Blvd.	33	14,672	0.91

Source: TxDOT & H-GAC





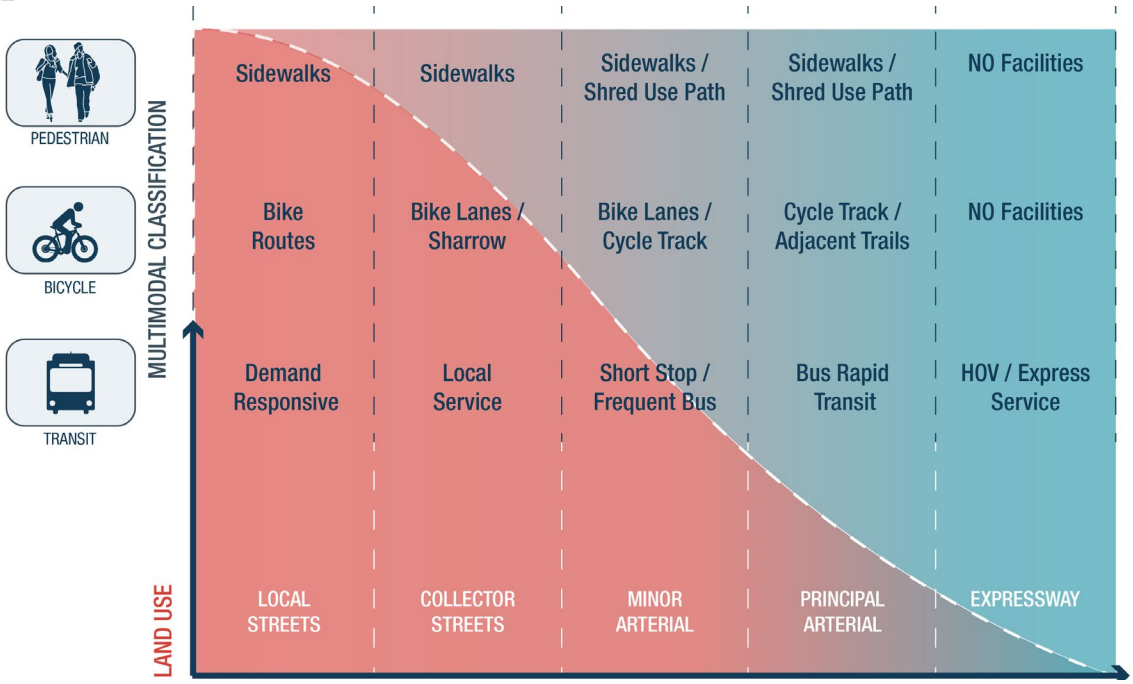
Source: Google Earth

Functional Classification

The functional classification of streets is used to identify the hierarchy, function, dimensions, and modes that may be accommodated by a roadway. Streets and highways are typically grouped into classes based on characteristics such as geometric design, speed, and traffic capacity. Functional class also determines a commuter's ease of access to land uses within the thoroughfare network. The resulting relationship between land use and functional class is a key factor in determining the feasibility of integrating modes, such as pedestrian, bicycles, and transit into a mobility system.

Figure 30 explains the relationship between functional classification and land use. Typically, the higher the roadway's functional classification, the higher the level of mobility and lower the level of land use access points. Freeways, for instance, typically provide no direct access to land uses, but allow continuous connectivity between regional destinations. The balance of land use access and mobility have a significant impact on the overall flow of traffic within a road network.

Figure 30: Functional Classification Diagram

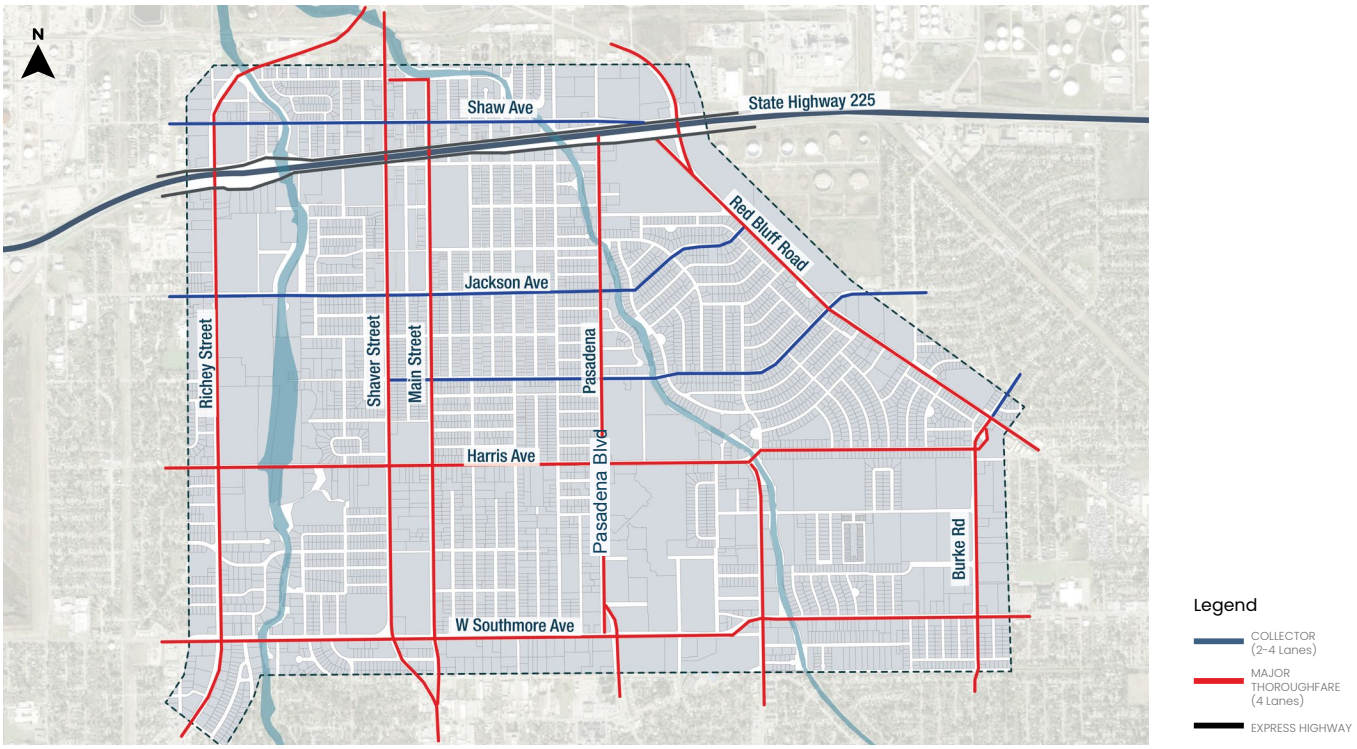


Source: AECOM

Figure 31 illustrates the City of Pasadena's functional classification system which currently consists of four classifications: Collectors, Major Thoroughfares, Highways, and Expressways. Collectors are designed for short trips and low speeds. They serve primarily to connect trips to higher functional class facilities and provide the highest level of access to adjacent land uses. Study area collectors include Jackson Avenue, Thomas Avenue, Shaw Avenue.

Major thoroughfares or arterials are designed to accommodate large volumes of traffic and operate at a high level of mobility. They are

Figure 31: **Study Area Existing Roadway Classification**



Source: City of Pasadena

designed for longer distance trips and provide access to major activity centers and adjacent cities. Major thoroughfares should only connect to other major thoroughfares or highways, and the number of driveways with direct access should be limited. Major thoroughfares in the study area include, Shaver Street, Main Street, Richey Street, Pasadena Boulevard, Red Bluff Road, and Southmore Avenue.

Classifying commercial corridors, such as Southmore Avenue and Richey Street as major thoroughfares, for instance, is in direct conflict with the roadways' actual use in the community, which is providing a high level of access to local neighborhoods, businesses, and other activity centers.

Similar to major thoroughfares, highways are designed to move high volumes of traffic between major destinations or between cities at high speeds and a low level of land use access. There are currently no roadways classified under the City's highway functional classification in the study area. However, the Pasadena Highway (SH 225), which bisects the northern section of the study area, is classified as an expressway in the City's functional classification system. Expressways or freeways are not typically included in a city's functional classification system, as they are usually included in the state system and are not managed by the city. They are designed to move high volumes of traffic with the least amount of land use access.

Local roads, which are not included in the City of Pasadena's functional classification system, provide the lowest level of mobility, but make up the majority of the roads in the community. The trade-off for decreased mobility is a high level of land use access and flexibility.

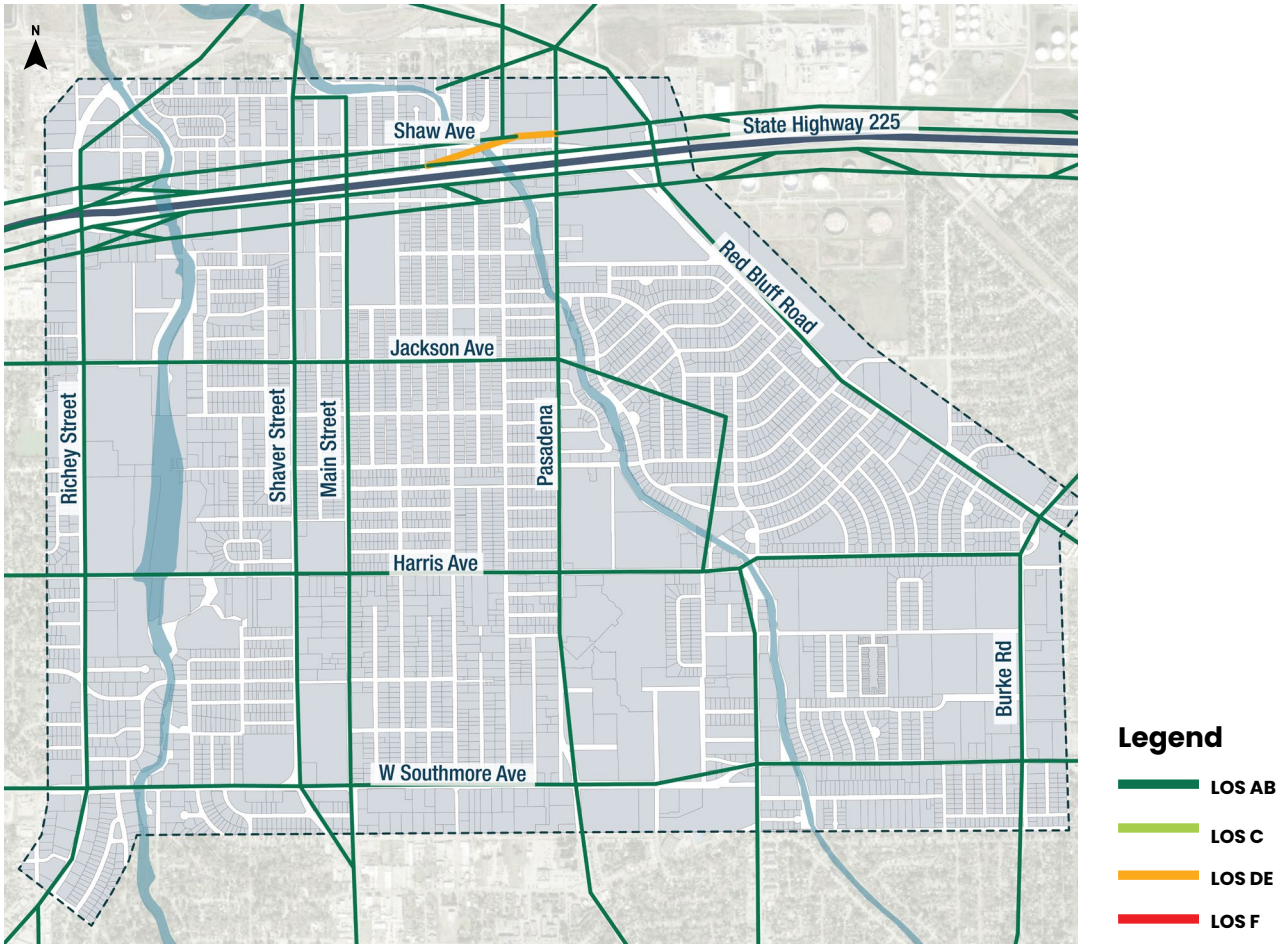
Level-of-Service

Level-of-Service (LOS) is a performance measure used to evaluate the function and flow of traffic through a transportation network. LOS is an operational expression that measures the volume to capacity ratio of a roadway to quantify congestion levels. Level-of-service ranges from A through F, with A referring to free flow traffic conditions and F representing severely congested facilities.

Evaluating the operational efficiency of a transportation system, however, goes beyond a roadway's volume to capacity ratio. Factors such as the number of curb cuts, traffic signals, construction, functional classification, and adjacent land use also play a significant role in the operational efficiency of a roadway. The A.M. and P.M. peak hour or peak period LOS are typically used in traffic analysis. This is because the highest demand is typically placed on the transportation system during morning and afternoon rush hours. Figures 32 and 33 illustrate the A.M. and P.M. peak period LOS.

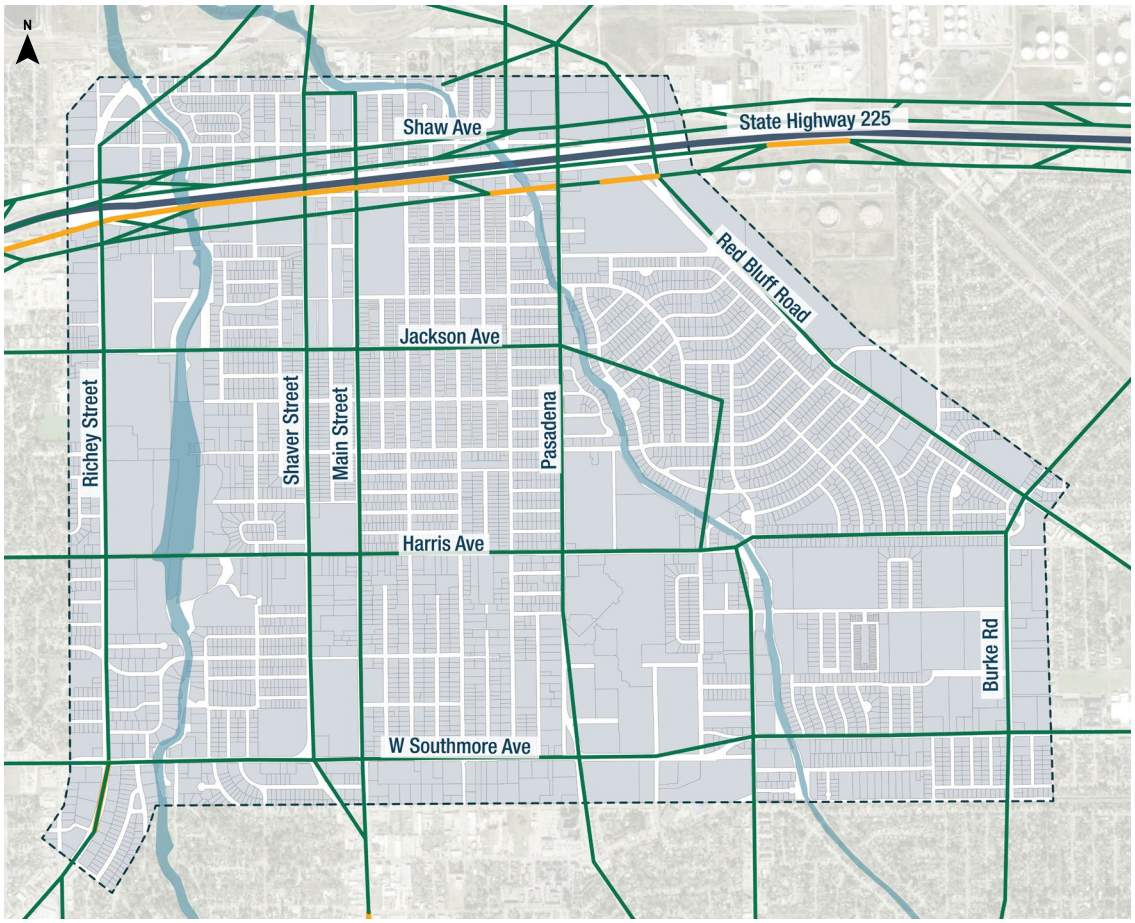
According to the H-GAC 2020 Travel Demand Model output, all the arterial or collector roadways in the study area perform at LOS A or B. Traffic is able to move quickly through the study area but the ease of movement negatively impacts adjacent land uses and walkability.

Figure 32: **Study Area A.M. Level of Service**



Source: H-GAC Data

Figure 33: **Study Area P.M. Level of Service**



Source: H-GAC Data

Volumes

Understanding the current traffic volumes is an essential component to understanding a community's overall transportation system. The Annual Average Daily Traffic (AADT) provides information on traffic history. AADT is the total volume of vehicle traffic divided by 365 days. Although traffic counts collected over a specific time period may be utilized in its determination, AADT is an estimate of the number of vehicles passing through a transportation system in a 24-hour period, greater than a day, but less than one year.

Overall, the network operates at relatively high LOS in terms of vehicular capacity. Typical sources of congestion observed in the study area include construction, school zones, and traffic collisions.

The highest overall volumes in the study area are located on SH 225. The highway carries as many as 128,000 vehicles per day (vpd). Although highways are not typically given a large amount of consideration in small area plans, the level of congestion on SH 225 should be considered because it impacts study area residents' commute to work.

Within the arterial and collector system, Red Bluff Road, a four-lane arterial facility, carries the highest volume of traffic. The segment between Thomas Avenue and Harris Avenue, for instance, accommodates about 28,000 vpd. The roadway operates at about 76% of its daily capacity or LOS C. A.M. and P.M. peak period volumes for the segment, however, are about 5,000 vehicles and 8,000 vehicles respectively, and operate at LOS A. Other high-volumes corridors include Richey Street and Pasadena Boulevard, which carry as many as 25,000 vpd and 18,000 vpd respectively.

Public Transit

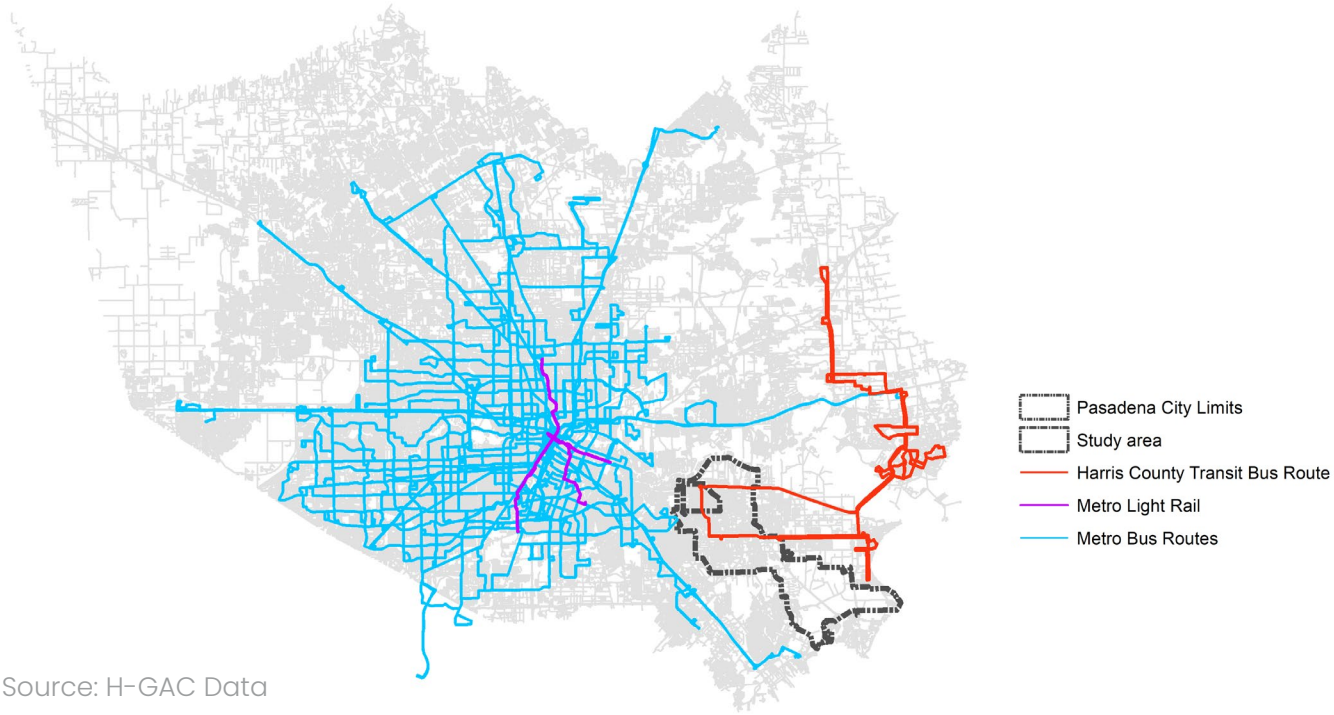
Although the City of Pasadena does not currently subscribe to a specific transit service provider, the study area is currently bisected by Harris County Transit's La Porte/Baytown Shuttle, which operates from 6:00 A.M. to 6:00 P.M.

The route, illustrated in Figure 35, provides service to the Strawberry Clinic (located on Shaw Avenue) and the Social Security office (located on Watters Road), in addition to stops at the Gulfgate Center, where riders can transfer to buses in the Metro system.

However, due to its current schedule and route, the La Porte/Baytown Shuttle does not seem to provide enough options for transit-dependent residents commuting between the cities of Pasadena and Houston.

The route operates under thirty-minute headways, but only stops at the Strawberry Clinic or the Social Security office when the facilities are open. Further, the shuttle only services eastbound commuters to and from the Social Security office and only westbound riders to and from the Strawberry Clinic. This can be problematic for study area residents

Figure 34: **Harris County Public Transportation Service**



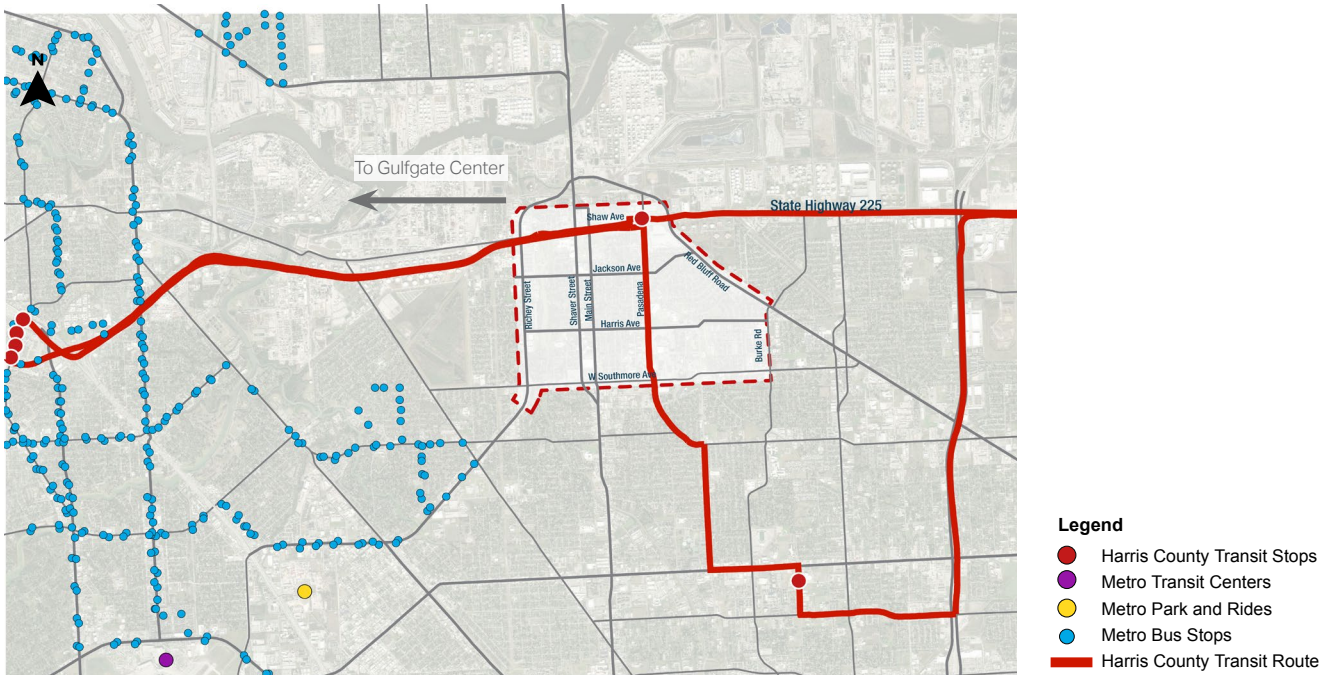
Source: H-GAC Data

who do not own a car and need to travel to Houston as the social security office is 2.5 miles south of the study area.

Additionally, the last eastbound shuttle from the Gulfgate Center leaves at 5:00 P.M, allowing no time for commuters who get off work at 5:00 P.M. to use the system. In addition to the La Porte/Baytown Shuttle, there are also several bus stops located just outside the City of Pasadena limits, where study area residents can take the bus to jobs and other destinations within the Metro Service Area. Stops are located along Woodbine Street, Allendale Road, Flagstone Drive, and Richey Street. There is also a Metro Park and Ride and a Transit Center within five miles of the study area.

Demand response service is also available for Pasadena senior and disabled residents through the City's Catch a Ride Program.

Figure 35: **Study Area Public Transportation Service**



Source: H-GAC Data

Sidewalk Coverage

From a sidewalk coverage analysis, the study area lacks sufficient sidewalks and/or the existing sidewalks are not sufficient for the community's requirements. The following is a deeper analysis of the four main corridors in the study area.

1. Southmore Avenue

Southmore Avenue is a four to five lane arterial roadway with long blocks and sidewalks on both sides. Although sidewalks cover the entire corridor, their condition and age vary. As the study area's primary commercial corridor, the roadway is fragmented by a large number of curb cuts, which diminishes walkability.

2. Main Street & Shaver Street

Main Street is the northbound one-way leg of an arterial couplet that also includes Shaver Street. Sidewalks, located on both sides of the roadway vary in age, but are generally in good condition. Despite having only two stop-controlled intersections in a 1.5-mile stretch, the corridor has a large number of curb cuts and intersecting roadways, and observed travel speeds are higher than the posted speed limit of 35 mph.

3. Richey Street

The northern segment of Richey Street is a four-lane arterial with long blocks. The southern segment is a five-lane arterial with wide shoulders in lieu of sidewalks. In the segment between Shaw Avenue and the north study area boundary, there are no sidewalks, except on the bridge crossing Vince Bayou. The road itself is in fair to poor condition, with no established curbs on either side of the road. There are few designated points of access or egress for parking lots.

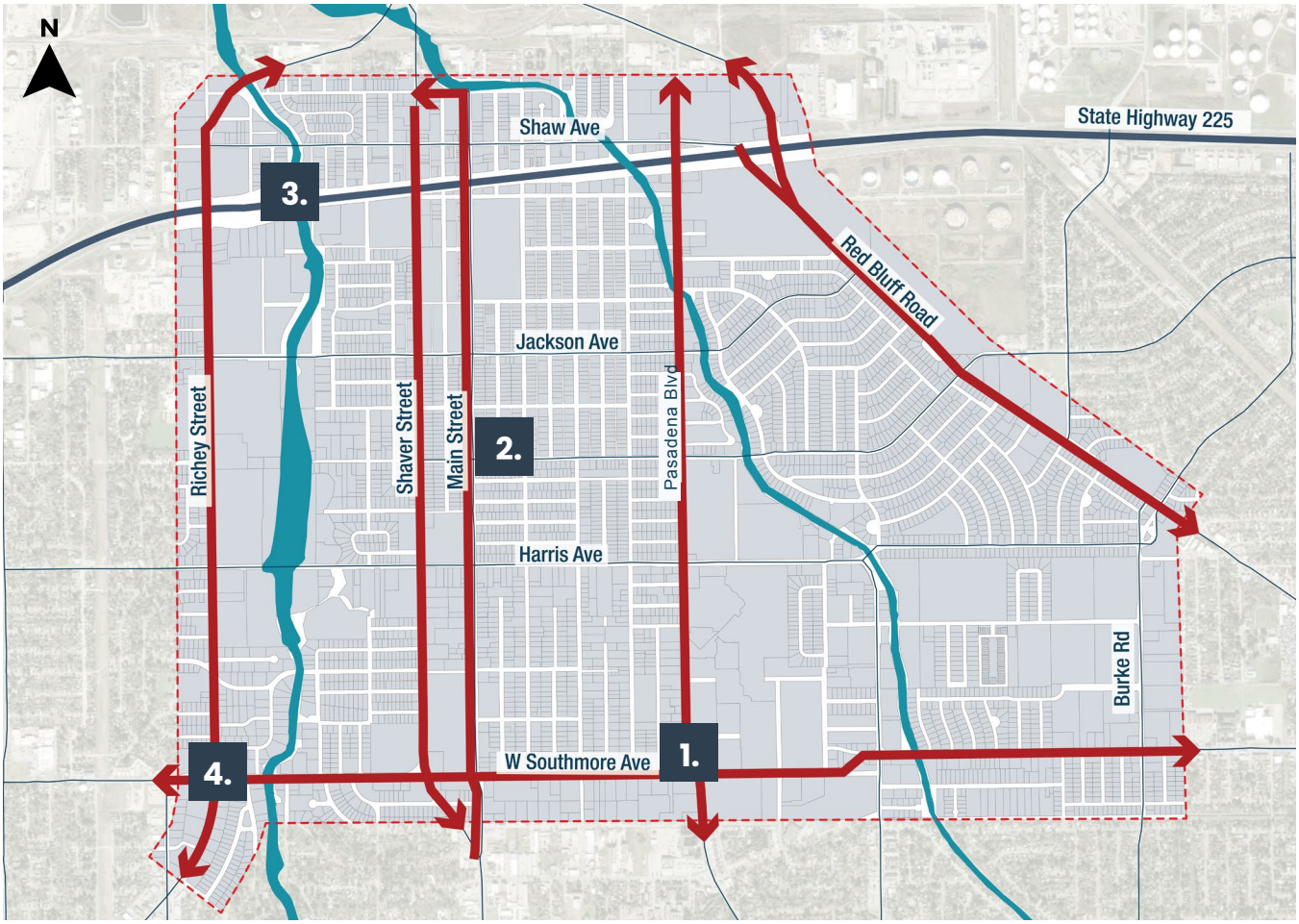
4. Pasadena Boulevard

Pasadena Boulevard is a two to four-lane arterial roadway with mostly small blocks and a few larger blocks between Harris Avenue and Southmore Avenue (within the study area). Although the sidewalks cover the entire corridor, it is broken into multiple segments due to a large number of curb cuts.

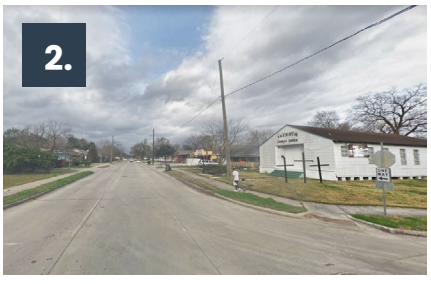
5. Red Bluff Road

Red Bluff Road is a four-lane arterial roadway that is used as a major through road for truck traffic. It borders the northwestern boundary of the study area for approximately 1.37 miles. While there is some sidewalk coverage, (primarily on the more residential side) long block lengths, a wide right of way, and large and frequent curb cuts interrupt the pedestrian experience. Sidewalk maintenance is generally poor and there is little shade.

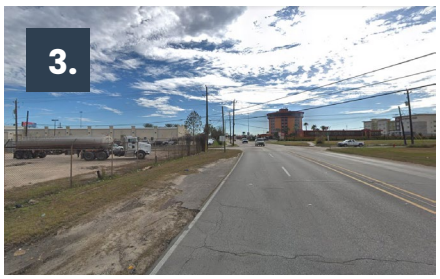
Figure 36: **Study Area Main Corridor Existing Traffic Flow**



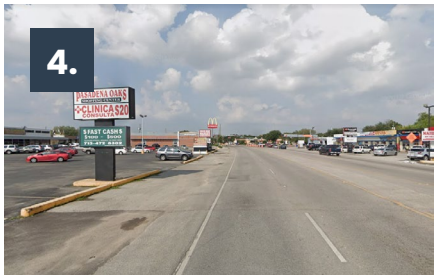
Looking west on Southmore Avenue between Pasadena Boulevard (to the east) and Wafter Street (to the west).



Looking north on Main Street at the intersection of Thomas Avenue and Main Street. Note the pedestrians on the east side of the street.



Looking north on Richey Street between Shaw Avenue (to the south) and Vince Bayou (to the north).



Looking north on Richey Street between the study area boundary (to the south) and Southmore Avenue (to the north).

Source: AECOM

Quality of Life

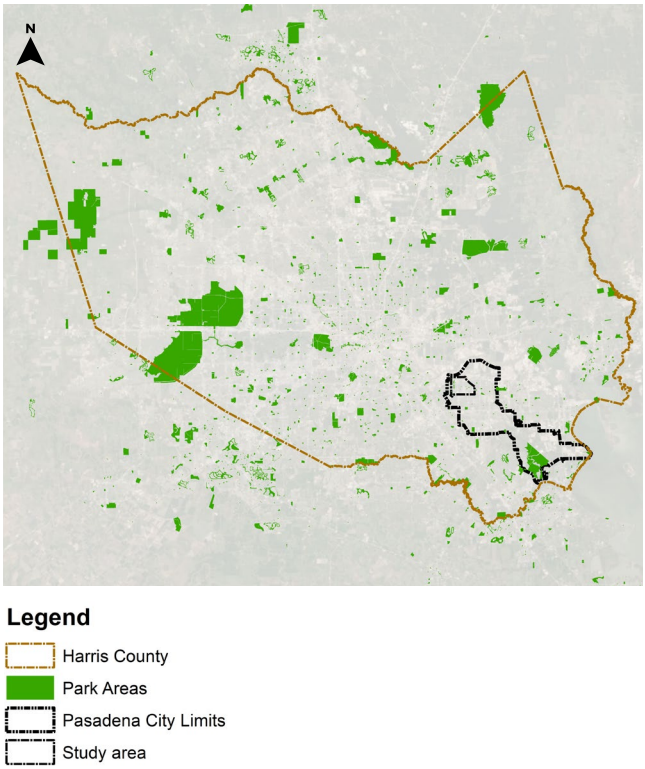
This section focuses on open space, key health indicators, grocery store access, and the quantity of impervious surfaces and tree coverage. These categories help define the Quality of Life for study area residents. Health indicators for the study area can be a reflection of the amount of access to quality food sources and open spaces.

Open Space

The study area is well served by parks. Twelve named parks fall within the boundaries of the study area, and there are four additional parks within a half mile of the study area boundary. The largest of these parks is the 21-acre Memorial Park, which runs along Vince Bayou on the west side of the study area. This park is also adjacent to Felix Morales Elementary School and Pasadena High School and backs up to both multifamily and single-family developments.

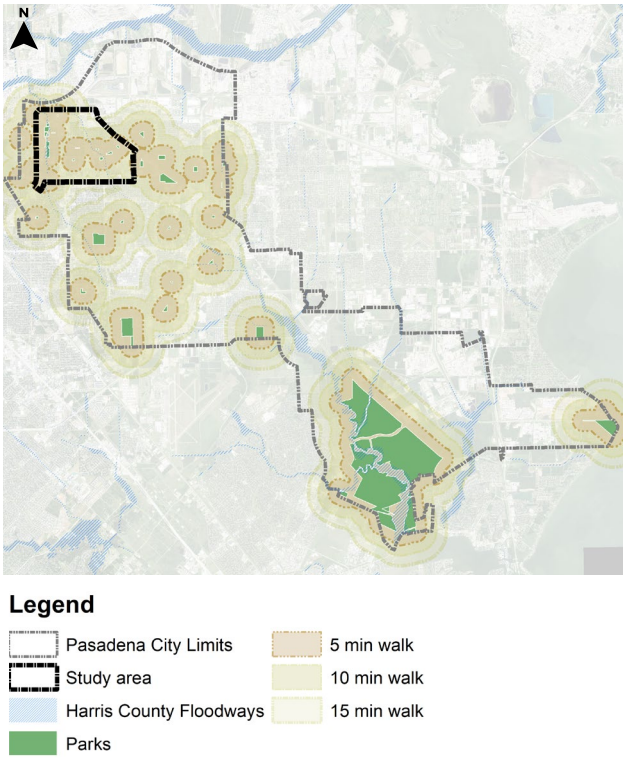
A buffer analysis shows walk coverage for 5, 10, and 15-minute thresholds (approximately 1/4 mile per 5 minutes). While an as-the-crow-flies overlay does not consider the street grid or account for major barriers (like highways and water features), the study area generally has short block lengths, so a simple area buffer can be considered accurate here. This walkshed does not take into account sidewalk conditions, which are addressed in another section. Per this buffer, most of the study area and all the residential units within the study area are within a 15-minute walk or less from a park. Seven of the eight schools in the study area are also within a 5-minute walk of an area park (Figure 5).

Figure 37: Harris County Park Coverage



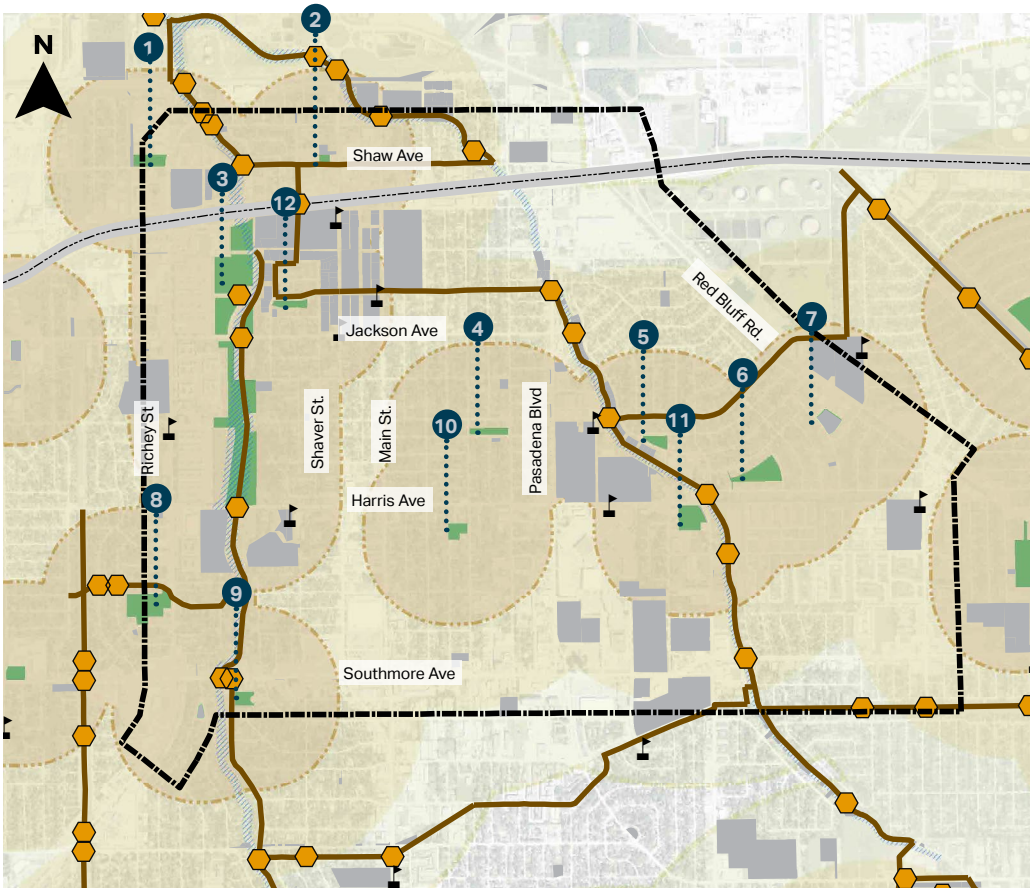
Source: H-GAC Public Data Set, Parks Areas

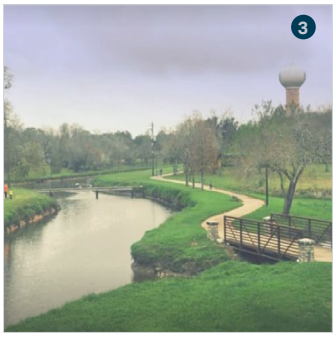
Figure 38: City of Pasadena Park Coverage



Source: H-GAC Public Data Set, Parks Areas

Figure 39: **Parks within the Study Area**





Legend

- Study area
- School sites
- **Connection Type**
- Intersections/ Crossings
- Trails
- Harris County Highways
- Parks
- 5 min walk
- 10 min walk
- 15 min walk
- Public Lands - 2019

1. Light Company Park
2. Friendship Gardens
3. Memorial Park
4. Rusk Park
5. Gardens Park
6. Revelon Park
7. Community Park
8. Sunset Park
9. Pasadena Highlands Park
10. TJ Cross Park
11. Ashbury Park
12. Harris County Park

Source: H-GAC Public Data Set, Parks Areas

Although there is a sufficient number of parks in the study area and access to them is fair, their quality is lacking. Through public engagement, it emerged that Memorial Park, Sunset Park, and Rusk Park needed revitalization and could use park improvements such as playground equipment, picnic tables, and green infrastructure elements that promote a safe and healthy environment for families and children. This would add additional gathering spaces for the community and support the vision set in the Pasadena Healthy Parks Plan of creating a welcoming, thriving, and connected Pasadena.

Health Indicators

In 2016, the Center of Disease Center (CDC) initiated a 500 Cities Study which tracked 27 health indicators to provide city and census track-level area estimates for chronic diseases risk factors, health outcomes, and preventive services for the largest 500 cities in the U.S. The City of Pasadena was part of this study. Table 13 shows the average value for tracts in the study area (which is comprised of 12 tracks) compared to average values from the City of Pasadena (which is comprised of 52 tracts), Harris County (786 tracts), and the U.S. as a whole.

The following are major takeaways from the data:

- On average, it appears that in the study area, fewer people get annual checkups, screen their cholesterol, and screen for colon disease than in City of Pasadena as a whole.
- Less women and men over 65 have access to core preventative health services within the study area.
- On average, it appears there are more uninsured people in the study area than the city of Pasadena as a whole.
- It appears that more people are smokers and have diabetes and more people are sedentary (i.e., do not engage in physical activity) than in Pasadena as a whole.
- Within the study area, more people have poor mental and physical health and are considered obese.
- Fewer people in the study area go to the dentist and have significant tooth loss than in the City of Pasadena as a whole.

Table 13: **Health Indicators across Study Area, City of Pasadena, and Harris County**

	coronary heart disease	doctor visit within past year	screening cholesterol	screening for colon disease	chronic obstructive pulmonary disease	men 65+ can access core health services	women 65+ can access core health services
Study Area Average	5.92	63.53	72.28	46.41	6.14	22.88	23.52
Pasadena Average	5.64	65.70	76.50	53.85	5.75	27.69	28.56
Harris County Average	5.40	67.92	77.76	56.02	5.43	27.28	28.53
U.S. Average	6.60	71.20	77.60	65.20	6.51	34.70	31.70

report poor mental health	obesity	yearly pap exam	report poor physical health	report not enough sleep	have had a stroke	have significant tooth loss
16.89	37.63	79.89	15.86	34.43	3.10	24.62
14.51	33.54	80.42	13.57	34.39	2.89	18.79
13.86	34.07	81.52	12.80	35.74	3.14	18.22
11.37	29.06	79.50	12.10	34.60	3.20	14.50

	are smokers	go to the dentist	have diabetes	high cholesterol	chronic kidney disease	are sedentary	women recieve yearly mammogram
Study Area Average	21.00	43.07	13.16	34.68	3.35	38.52	73.87
Pasadena Average	18.08	53.61	11.56	35.12	3.05	32.54	74.69
Harris County Average	17.60	54.64	11.89	33.80	3.09	31.24	76.86
U.S. Average	16.40	65.70	10.80	37.10	2.90	24.20	75.20

not covered by health insurance	arthritis	binge drinking	high blood pressure	takes blood pressure medication	cancer diagnosis	asthma
45.43	17.77	18.92	29.29	66.44	4.17	8.24
33.91	18.79	19.67	28.97	69.18	5.05	7.90
30.03	18.69	19.15	30.77	69.70	4.93	8.30
12.30	25.40	16.90	31.9	77.20	6.60	8.90

Based on CDC sources and data, health indicators fall into three types: unhealthy behaviors (such as smoking and inactivity), prevention measures (such as screening, doctor checkups), and health outcomes (disease prevalence).

For unhealthy behaviors (five indicators), the 12 census tracts average for the study area show poorer outcomes for two: smoking, and lack of physical activity.

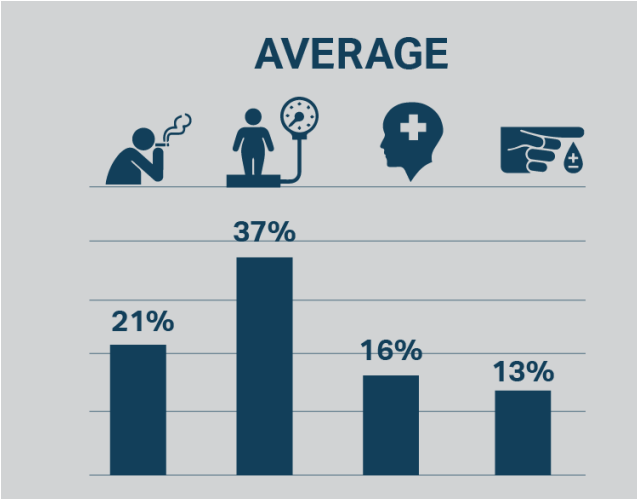
For preventative care measures (nine indicators), the study area shows poorer outcomes for seven of them: regular doctor and dental checkups, screening for colon and cholesterol issues, access to core services for age +65 men and women, and health insurance coverage.

For health outcomes (13 indicators) the study area shows poorer outcomes for five: diabetes, poor physical health, obesity, tooth loss, and poor mental health.

Figure 40 shows the 12 census tracts that comprise the study area. Based on the 500 Cities data, these tracts appear to have a higher percentage of participants with diabetes (13%), citizens who are classified as obese (37%), and citizens with tooth loss (24%) as compared to census tracts elsewhere in the City of Pasadena. A high rate of citizens report that they have no time for leisure or physical activity (38%), a greater share in the study area than in the overall city population. The percentage of citizens with high cholesterol, arthritis, and rates of cancer (the study excludes skin cancer) are either on par with or slightly better than the city average.

Within the study area, there is also some variation in outcomes. For example, Tract No. 2200 shows a large percentage of its citizens (19% or greater) reporting their mental health as poor. This is high for Pasadena as well as Harris County overall. This tract also reports the greatest rate of its respondents with no time for physical activity and the highest rates of obesity, as well as the smallest percentage of citizens receiving a yearly checkup within the study area.

Figure 40: Percent of Tract Population Affected by Smoking, Obesity, Mental Health, and Diabetes



Source: CDC 500 Cities

Figure 41: **Major Health Indicators per Study Area Census Tracts**

Census tracts that are high in smoking

SMOKING

Track
5

Census tracts that are high in obesity

OBESITY

Track
5,10, 12

Census tracts that are high in mental health issues

MENTAL HEALTH

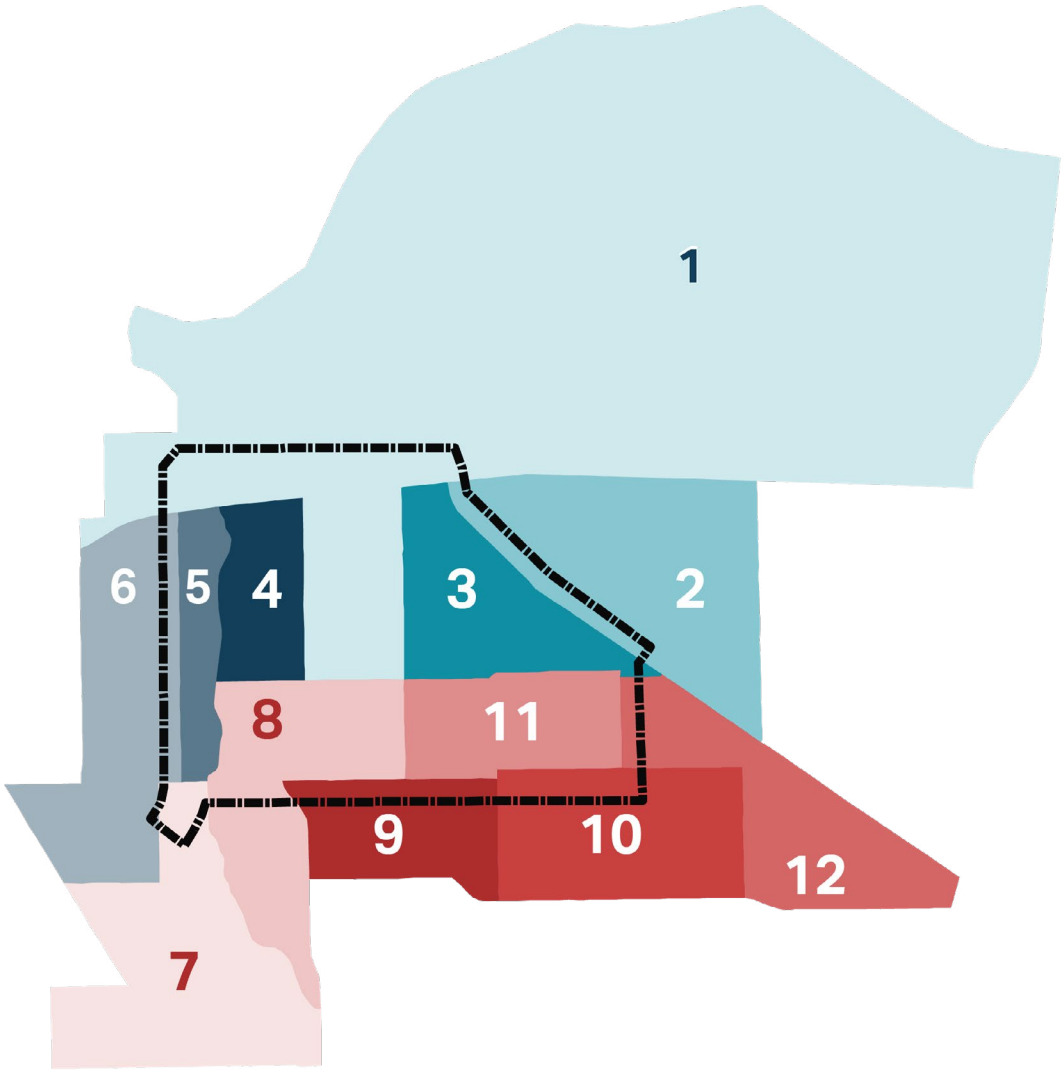
Track
10

Census tracts that are high in diabities

DIABETES

Track
1,4, 8, 18

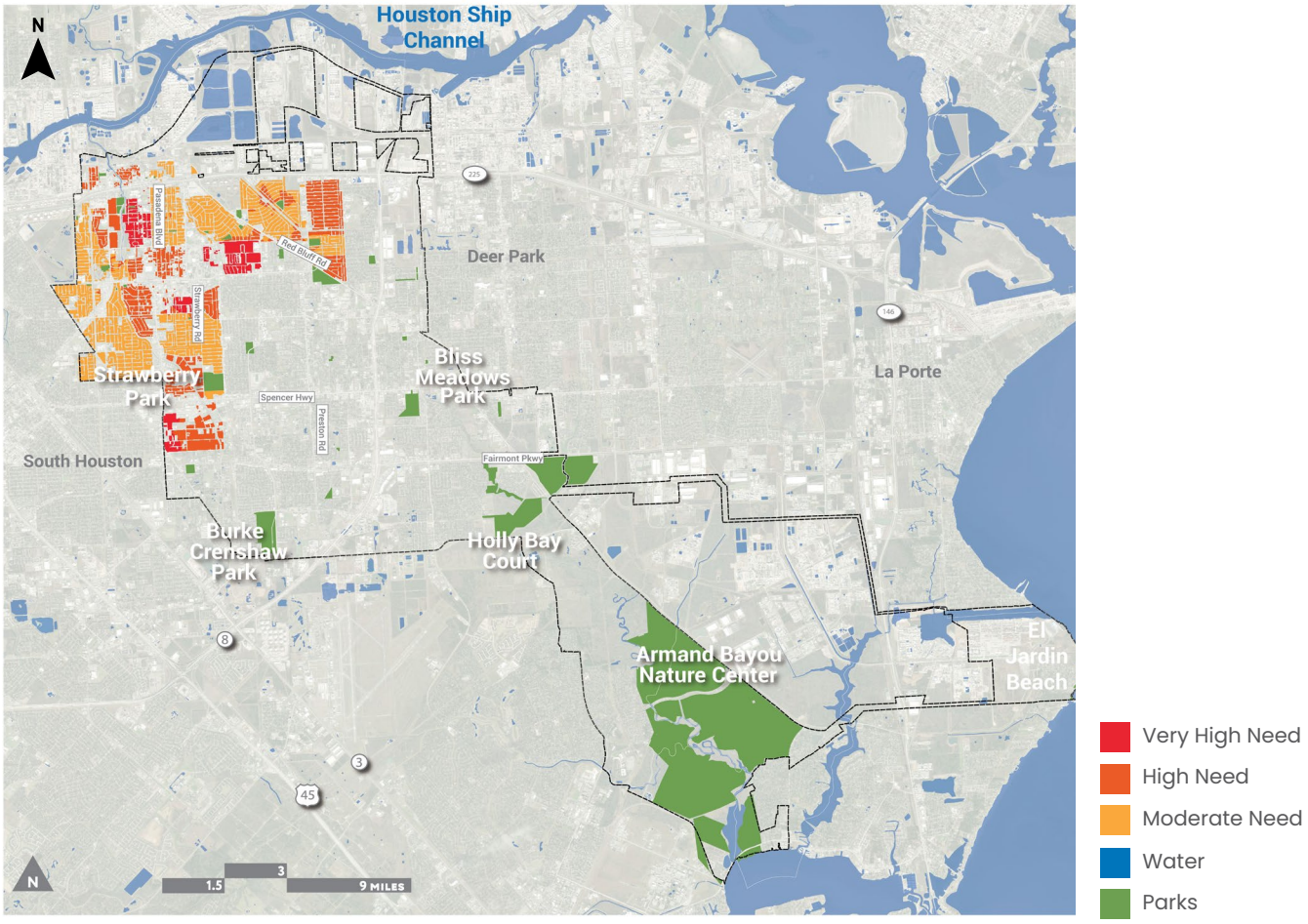
1	48201324100	4	48201322200
2	48201322800	5	48201322000
3	48201322900	6	48201321900
7	48201321600	10	48201323000
8	48201322100	11	48201323200
9	48201323300	12	48201323100



Source: CDC 500 Cities

In order to remedy some of the poor health outcomes, the City of Pasadena initiated a Healthy Parks Master Plan to revitalize the existing park system within the city. Based on initial recommendations, of the 46 parks in the City of Pasadena, there are 10 parks that are in high need of investment. Of these 10 priority parks, three are located within the Livable Centers study area: Memorial Park (rated Very High, 3 of 46), Light Company Park (rated High, 7 of 46), and Revlon (rated High, 10 of 46). Specific park recommendations can be found in the Pasadena Healthy Parks Plan. Figure 42 illustrates the Socioeconomic Vulnerability Map that was developed through the Pasadena Healthy Parks Plan.

Figure 42: **Major Health Indicators per Study Area Census Tracts**

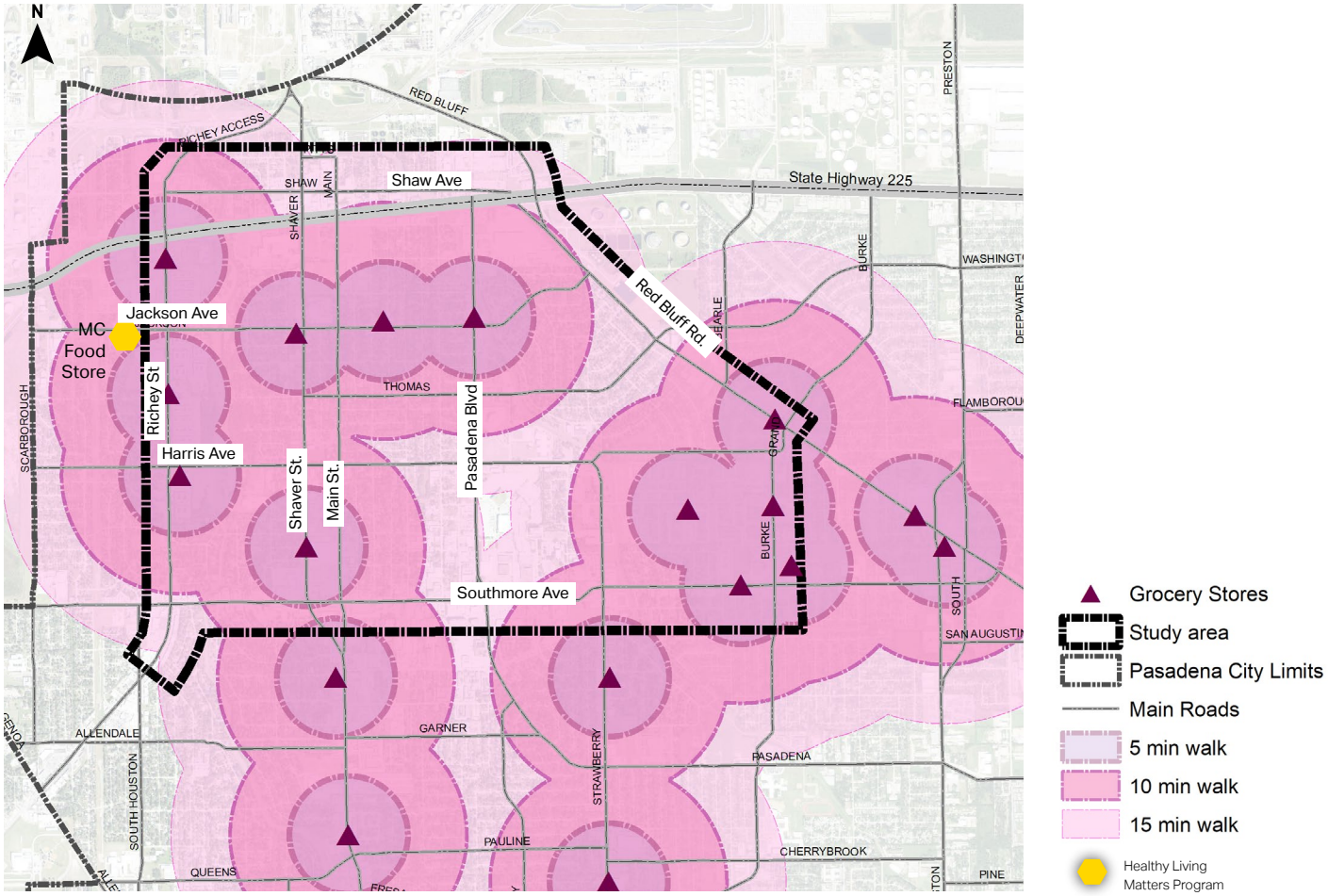


Source: Asakura Robinson, City of Pasadena Draft Parks Master Plan, 2020

Grocery Store Access

There are twelve grocery stores located within the study area. Grocery stores in this context include both large supermarkets and small grocery stores or mercados. Figure 43 shows 5, 10 and 15 minute walking buffers from the twelve study area grocery stores and six grocery stores within two miles of the study area. The buffer is as-the-crow-flies (rather than along the road network). The map indicates that almost all residential areas are within a 15-minute walk of a grocery store, and most are within a 10-minute walk.

Figure 43: Major Health Indicators per Study Area Census Tracts



Source: AECOM

Since a concern within the study area is food access, this map would seem to indicate that it is not an issue. However, the walk buffers do not take into account other important factors affecting food access. The first factor is the relative price and availability of fresh fruits and vegetables and other desired items at each location. Differences in the size and offerings of area grocery stores may be substantial, and consumers may choose to drive to a large grocery store with better selection and prices rather than walk to a smaller nearby store that is more expensive. The Healthy Corner Store Network, a program initiated by Healthy Living Matters Pasadena, attempts to bridge this gap by partnering with local convenience stores to incentivize them to provide and display healthy food options. There is at least one participating store located within the study area.

The second factor that affects the accessibility of food (and particularly residents' ability to access food by non-motorized methods) is the quality of the environment on the route between home and the store. The lack of appropriate sidewalks, lack of bicycle infrastructure, unsafe crossing conditions, and weather can all limit active commuting to the store.

Impervious Surfaces and Tree Coverage

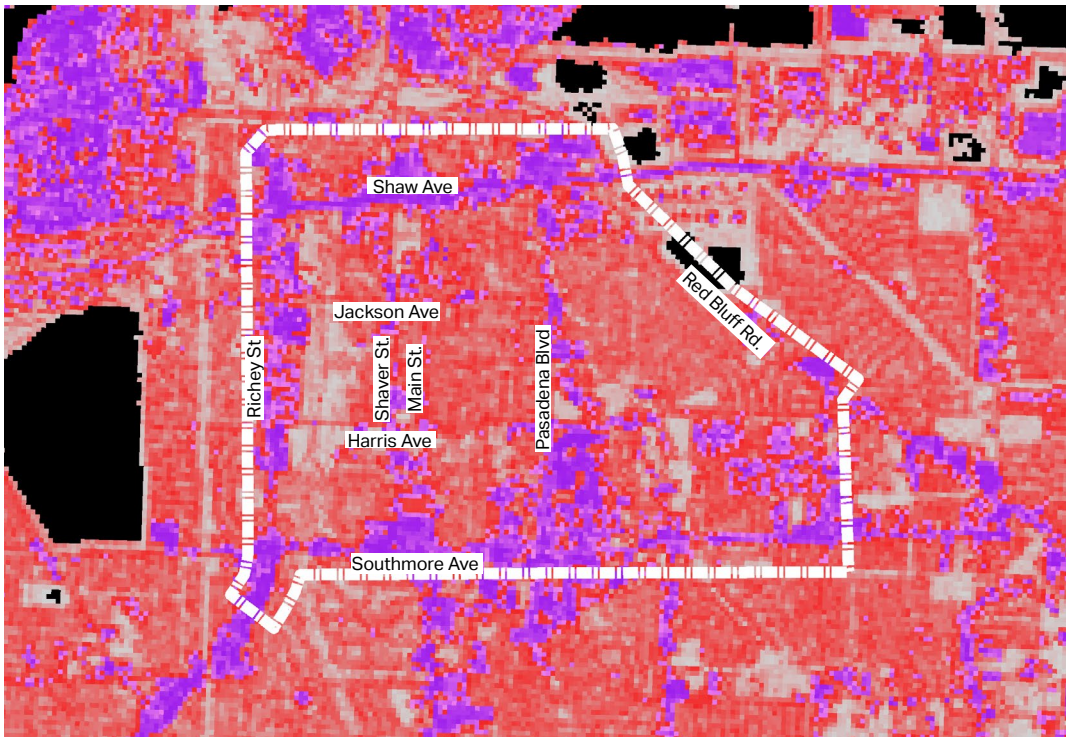
Impervious surface coverage and tree coverage have vast effects on neighborhood environments and health. Impervious surfaces can create two main types of issues. The first is flooding. Impervious surfaces block water absorption into the ground and also elevate the rate of flow of stormwater. This can cause erosion and flooding, particularly in areas where stormwater infrastructure is inadequate or nonexistent.

The second main issue is elevated temperatures, caused by the urban heat island effect. The urban heat island effect develops in urban or metropolitan areas due to impermeable, dry, dark surfaces such as roads and buildings. This effect is strongest in areas with few trees or green spaces, often that are dominated by asphalt or concrete. Increased heat renders these environments less walkable and bikeable, creates unpleasant conditions at outdoor transit stops, and increases erosion rates of road infrastructure.

Figure 44 shows impervious surface coverage in the study area. Dark purple areas represent high intensity development, red and pink are medium and low intensity development respectively, and light tan represents mostly undeveloped open space. Black areas are undevelopable areas, like water bodies, or areas with no data. The areas with the greatest intensity of development (and the highest percentage of impervious surfaces) within the study area include the SH 225 corridor in the north, Southmore Avenue to the south, Pasadena Boulevard to the east, and Richey Street to the west. The least impacted areas are along Vince Bayou and in the study area's many parks.

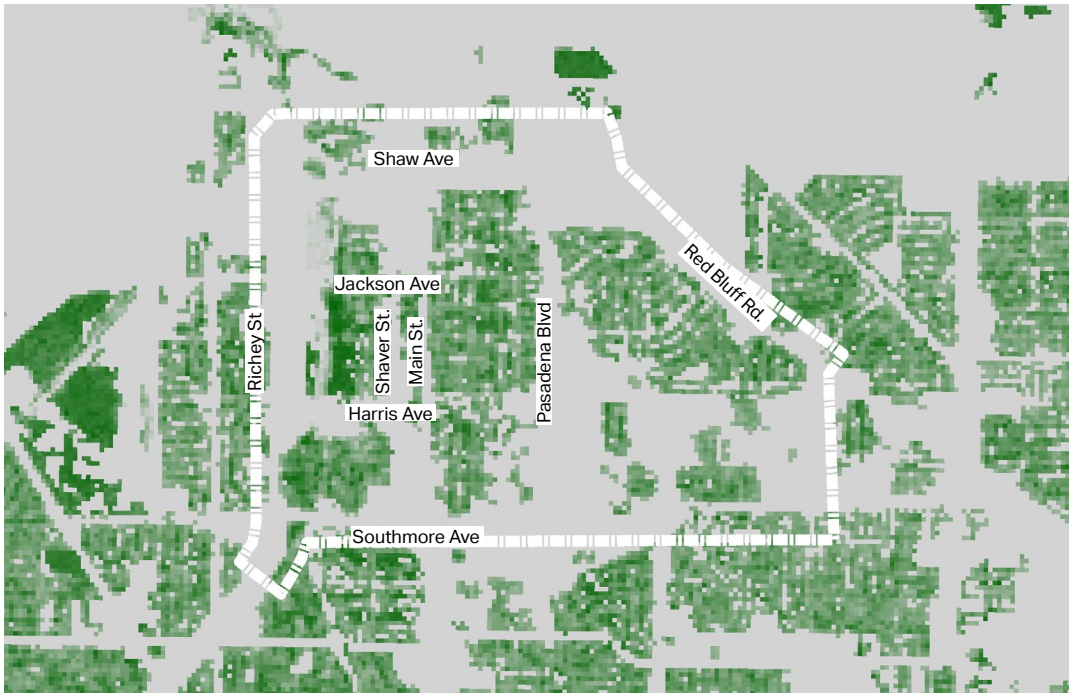
Figure 45 shows tree cover in the study area. It appears most tree cover is located primarily within residential neighborhoods, though there is an additional dense cluster along the bayou in the west. Large canopy gaps exist in the mall complex area, as well as the portion of the study area north of Jackson Avenue. The study area's main arterials have limited tree coverage adjacent to the roadway, particularly along Richey Street and Pasadena Boulevard.

Figure 44: **Study Area Impervious Surfaces**



Source: Raster Image H-GAC, 2011

Figure 45: **Study Area Tree Cover**



Source: Raster Image H-GAC, 2001

Needs Assessment

04

Source: AECOM

04

Needs Assessment

The needs assessment phase of this project was a natural result of the issues heard from the community (public meeting, two focus groups and public survey), major takeaways from the existing conditions, and analysis from the project team. Based on feedback received, the project team identified 44 issues that captured the needs of the needs of community within the study area. The needs assessment was presented to the Steering Committee, and their feedback was incorporated before finalizing the issues.

Upon review of the 44 issues, there were three major categories which represented the overarching topics of the individual issues: Housing & Economics, Mobility, and Quality of Life.

Housing & Economics

Fourteen specific issues were identified in this category. The 14 issues were grouped into three major issue categories.

Mobility

Twenty-one specific issues were identified in this category. The 21 issues were grouped into 5 major issue categories.

Quality of Life

Nine specific issues were identified in this category. The nine issues were grouped into four major issue categories.

Housing + Economy

01

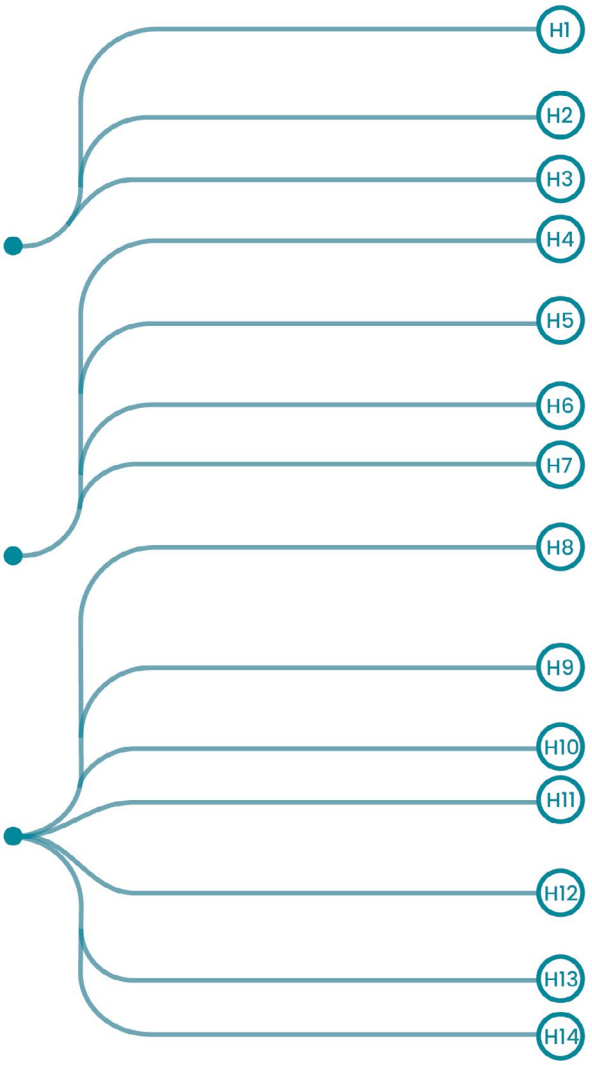
A greater variety of housing options that are affordable and suit the different needs of the community is needed within the study area.

02

The study area lacks diversity in retail, entertainment and dining.

03

A lack of incentives and programs to encourage property owners to redevelop or improve their properties has led to dilapidated conditions and extended property vacancies.



H1 Young families do not p and unattractive.

H2 The multifamily housing

H3 There is a desire for hou

H4 The study area lacks a specific locations wher

H5 Residents feel that the include along Shaw Av

H6 Existing businesses alo

H7 The Macroplaza Mall ar an opportunity for new

H8 Shaw Area has multipl study area perceive th on these lots.

H9 Since the demolition of gateway to the study a

H10 Apartments along Rich

H11 There are a few dilapi around these areas fee

H12 Absentee landlords an undesirable environme

H13 There are a lack of prog

H14 On average, the most r complete home improv

perceive the study area as an attractive place to live and raise a family because the existing housing infrastructure is old

g stock on Richey Street is aged.

using units available at a more affordable price point along Main Street and Shaver Street.

access to stores that sell heathy food. The Intersection of Harris Avenue and Pasadena Boulevard were identified as e residents felt access to a grocery store is needed.

study area lacks diverse dining options (other than taquerias). Specific areas residents identified a lack of dining options enue, Shaver Street, and Pasadena Boulevard.

ng Red Bluff Road and Richey Street could benefit from façade improvements to increase aesthetic and curb appeal.

rea has been underutilized for a long time and creates a gap of services within the community. Residents feel that this is restaurants, entertainment, or retail that is currently missing in this area.

e vacant lots which have attracted people experiencing homelessness to set up encampments there. Residents of the is to be an unsafe situation and feel that these sites should be developed or measures put in place to mitigate activity

f the State Bank building, the site has been inactive. It is located at an important roadway intersection which acts like a rea. There is an opportunity to create presence and a sense of arrival in this location.

ey Street are visually unappealing and need façade revamps.

dated buildings along Richey Street, as well as the area between Pasadena Boulevard and Red Bluff Road. Residents el that this makes their neighborhood less appealing and desirable.

d property owners are not maintaining their buildings on Richey Street. The lack of maintenance and care results in an nt, which in turn has prevented new development like quality housing stock and commercial development

grams incentivizing property owners to redevelop vacant and underutilized lots.

recent year for parcel improvements in the study area is 1953. Residents feel the need for home ownership incentives to vements.

Mobility

01

Existing infrastructure in the study area does not promote a safe environment for pedestrians or bicyclists.

02

The primary corridors within the study area are not configured to promote vehicular safety.

03

The study area is not well-connected and vehicular circulation is limited.

04

Flood mitigation infrastructure in the study area is not well-maintained.

05

Current parking configurations within the study area create limitations in the right-of-way.

M1 The study area only has there is a need for a trai

M2 There are locations with safe walking/biking/ped area and the area unde

M3 Munger Street and Red space makes it unsafe f

M4 Harrop Avenue, Main Str community members re

M5 Most of the study area l Boulevard and Burke Str

M6 The majority of the sidew four feet wide, which ca

M7 Areas around the old bo street furniture, fountain

M8 Richey Street lacks suffic

M9 Richey Street lacks shad

M10 Truck traffic is an issue i residential streets when

M11 The current speed limit o which reduces visibility

M12 Congestion mitigation is Street and Southmore A

M13 The following intersecti Southmore Avenue and Bluff and SH 225. These

M14 Businesses on Main Stre

M15 On average, the percen overall and there are no

M16 The City's current functi and safety along comm

M17 The current thoroughfa entertainment and resta

M18 There are flooding issue

M19 The areas around Pasa areas should be evaluc

M20 There is an overabunda land area for shopping

M21 Most residential streets within the road due to th

a few dedicated trails close to Vince Bayou, Memorial Park and Pasadena Highlands Park. Based on community feedback, l system to connect all the parks and outdoor recreational facilities.

in the study area that lack pedestrian amenities (landscaping, lighting, ADA compliant sidewalk, public art) to encourage destrian activities. Community members specifically mentioned the following areas: Shaw Avenue corridor/the old theater r SH 225 between Shaver Street and Randall Street.

Bluff Road were noted as two specific streets that lack continuous sidewalk connections. The lack of dedicated walking or pedestrians to walk along these streets.

reet and Shaver Street have deteriorating sidewalks and need to be repaired/replaced. Due to the deteriorating condition, esort to walking within the street at times.

acks safe bike lanes and/or shared use paths for biking activities. Residents specifically identified sections along Pasadena eet.

walks are not ADA compliant and are too narrow to promote a safe walking/biking experience. Existing sidewalks are about nnot accommodate a biker/walker/wheelchair at the same time.

nk site, Macroplaza Mall, and the municipal complex are missing pedestrian infrastructure and amenities such as sidewalks, s, and street trees.

cient lighting, creating potential visibility issues for pedestrians at night.

ded walking paths and street trees for pedestrian activities.

n residential neighborhoods. Although there is a truck route that runs through the study area, truck drivers are known to use traffic is backed up, which results in unwanted noise and discourages walking to occur.

and lane configuration along Red Bluff Road, Southmore Avenue, Richey Street and Burke Street promotes fast moving traffic of businesses along the corridors and does not promote a safe walking/biking experience.

s needed at the intersections of Shaver Street and Southmore Avenue, Pasadena Boulevard and Southmore Avenue, Main venue.

ons have a high number of reported crashes: Jackson Avenue and Richey Street, Taylor Avenue and Red Bluff Road, Main Street, Southmore Avenue and Shaver Street, Southmore Avenue and Richey Street, Richey Street and SH 225, and Red corridors should be evaluated for safety improvements.

et and Shaver Street are not very accessible for vehicles as it is currently a one-way couplet.

ntage of individuals that do not have access to at least one vehicle (2.94%) is higher in the study area than in Pasadena t many affordable alternatives for transportation within the study area.

onal roadway classification system conflicts with actual roadway usage which limits land use connectivity, access, visibility nercial corridors.

re network does not provide localized connections to key destinations within the community such as schools, parks, aurants.

s at the entrance/exit ramps for SH 225 at Richey Street and Memorial Park. Flood mitigation improvements are needed

dena Boulevard North of SH 225 and the intersection of Red Bluff Road and Thomas Avenue are prone to flooding. These ted for flood mitigation.

nce of parking as a result of the current Parking Ordinance, which requires one (1) parking space for every 200 feet of general centers.

within the study area are narrow. When vehicles park on the street, it poses safety issues for residents who are forced to walk he narrow sidewalks.

Quality of Life

01

Although the study area has enough parks, it lacks quality open spaces because existing facilities are not regularly maintained.

02

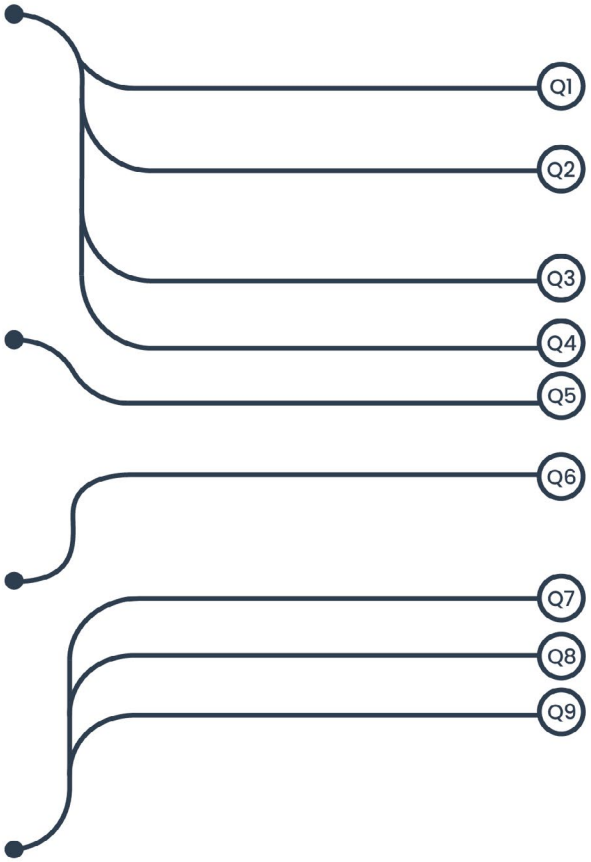
The study area does not have facilities that can serve residents as outdoor community gathering places.

03

There are no gateways or sense of arrival when entering the study area.

04

The study area lacks community facilities and services.



The following locations we
east of Pasadena Boulev

There is no buffer betwe
incompatible land uses a

The following three parks
most needed park impr
forwarded to the Pasade

Shaw Avenue is not very i

Other than the Peter C. F
identified the need for ou

The study area lacks a se
may be suitable for gatew
intersections of Southmo

There is a lack of police p

The study area lacks hea

There are a lack of educa

ere identified as areas that lack active green space and/or pedestrian oriented facilities: areas along Vince Bayou, the area ard, and the area surrounding the existing Macroplaza Mall.

en the industrial and residential land uses around Shaw Avenue and Richey Street. The lack of a buffer between these creates undesirable conditions in these residential areas.

were identified as needing a revamp: Memorial Park, Sunset Park and Rusk Park. Residents identified the following as the ovements: landscaping, new playground equipment, picnic tables, and splash pads for the children (this issue was na Parks Master Plan for their awareness).

inviting as there are no trees or open space areas for pedestrian activities.

ogo Recreation Center, there are few outdoor community gathering spaces within the study area. Community members tdoor spaces that can serve the dual purpose of recreation and community gathering areas.

ense of arrival or gateway. The following locations were identified as the primary entrance points into the study area that way monumentation: Pasadena Boulevard and Southmore Street, the intersection of SH 225 and Pasadena Boulevard, the re Street and Main Street, and SH 225 and Shaver Street.

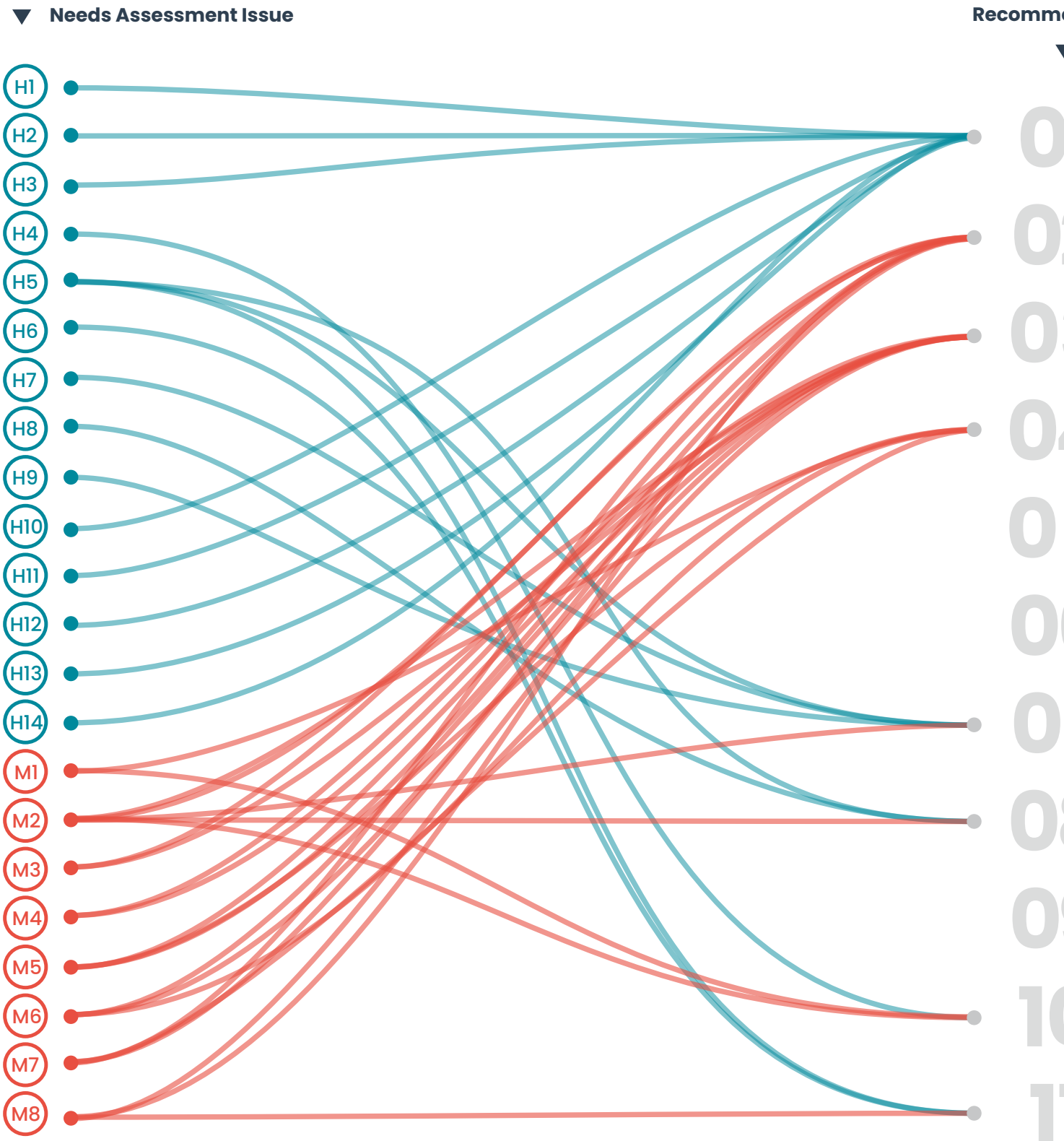
resence and insufficient security within the study area to curtail gang activity.

lthcare services (clinics, urgent care, etc.).

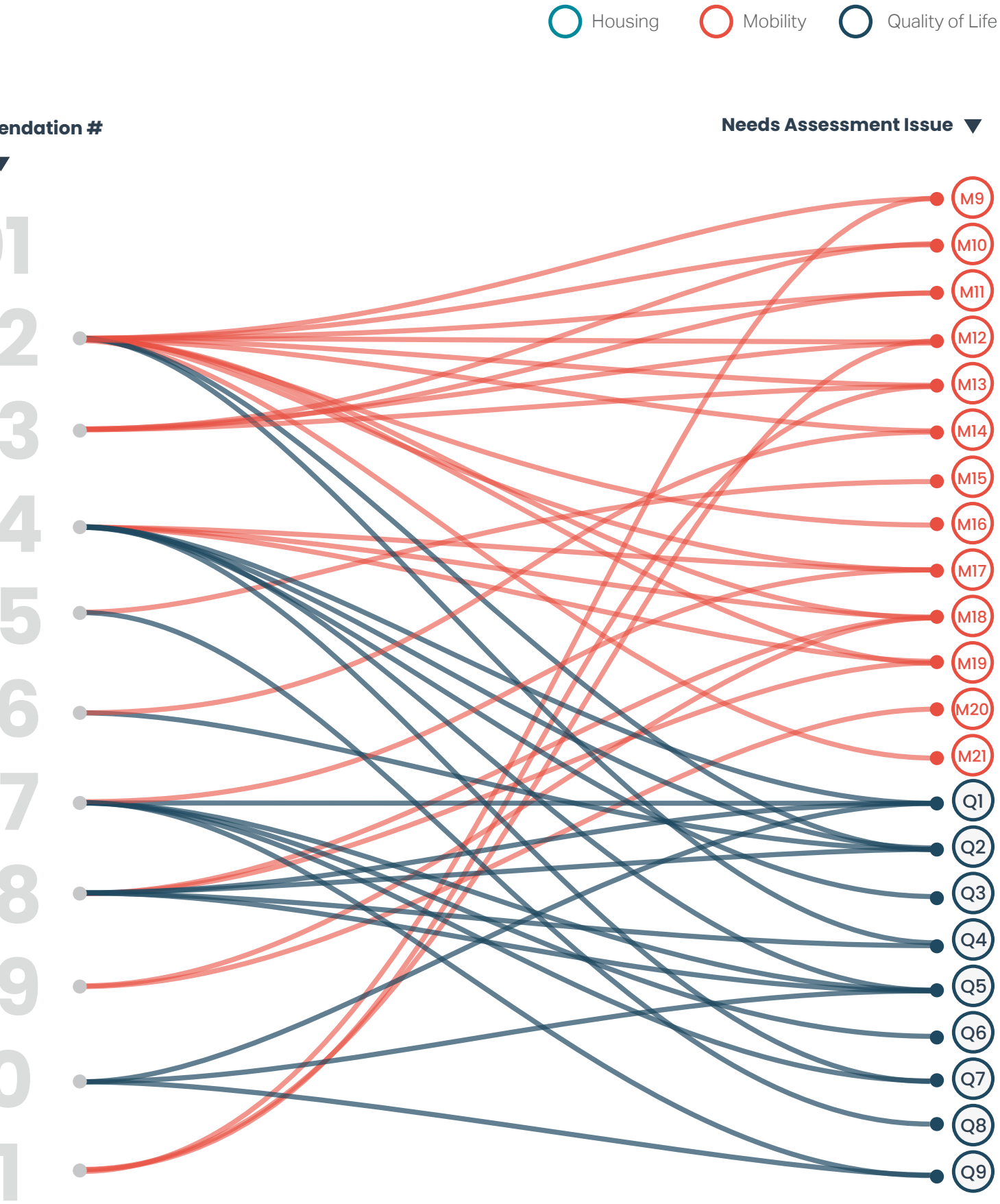
ational centers for children within the study area.

Figure 46 illustrates how the 44 issues documented in the Needs Assessment have been addressed within the proposed 11 Recommendations. The following chapter will explain each recommendation in detail.

Figure 46: **Bridging Needs Assessment to Final Recommendations**



Source: AECOM


Housing
Mobility
Quality of Life
endation #
Needs Assessment Issue
M9
M10
M11
M12
M13
M14
M15
M16
M17
M18
M19
M20
M21
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9

Recommendations

05

Source: City of Pasadena

Conceptual Plan Framework

The recommendations have been developed to address a range of project goals and livability principles that were identified at the beginning of the study. The following serves as a guide to help walk through each of the eleven recommendations. In addition to the project goals and livability principles, the subject area of focus (housing, mobility, or quality of life) and the recommendation type (policy, program, and/or project) are indicated in the recommendation.

1. Subject Areas /

Housing

Mobility

Quality of life

2. Livability Principles /

1. Improved pedestrian safety, access, and site walkability
2. Increased multi-modal transportation options
3. Increased private investment in public improvements
4. Continued economic development
5. Improved environmental quality

3. Project Goals /

1. Spur strategic planning for future growth
2. Create a quality place
3. Engage the public & community stakeholders
4. Recommend diverse housing options
5. Create safety through infrastructure
6. Promote alternative transportation modes
7. Expand green spaces, waterways, and resources
8. Create additional green space amenities
9. Incorporate community-based health initiatives
10. Promote economic development

4. Recommendation Types /

Policy

Establish legal norms, rewriting city rules to help change the current standards the community lives by

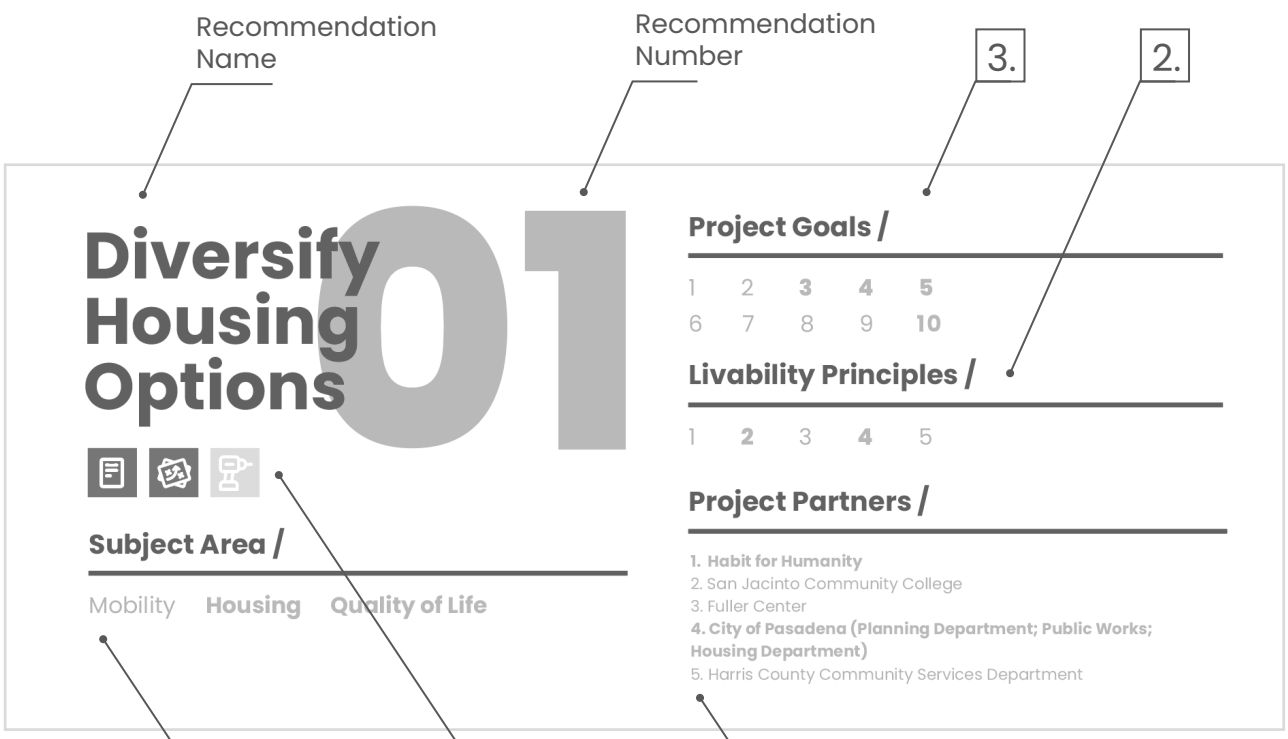
Project

A physical project that is to be built within the study area

Program

a one-time program and/or pilot project that provides the City the opportunity to test the recommendation with the community. If the program/pilot project is well-received by the community there is opportunity to expand into other areas of the study area

Reading the Recommendations



Project Partners identifies all agencies to be involved in the implementation of the recommendation. Partners in **bold** indicate the Lead Agency.

Diversify Housing Options 01

Subject Area /

Mobility **Housing** **Quality of Life**

Project Goals /

1 2 **3** **4** **5**
6 7 8 9 **10**

Livability Principles /

1 **2** 3 **4** 5

Project Partners /

1. **Habitat for Humanity**
2. San Jacinto Community College
3. Fuller Center
4. **City of Pasadena (Planning Department; Public Works; Housing Department)**
5. Harris County Community Services Department

Desired Outcomes

Through the public engagement process and discussion with project stakeholders, there is a clear need to establish more housing options with the City of Pasadena and there is specific need for affordable housing units to be available for first time home buyers. The Diversifying Housing Stock recommendation seeks to create a long-range housing strategy that seeks to ignite new residential redevelopment to occur by updating the existing housing ordnance for developers/homeowners to build a variety of housing types which are currently not allowed due to the restrictive housing ordinance.

The City of Pasadena will seek strategies that facilitate greater housing options by updating the existing housing ordnance, identifying local incentives for current homeowners to improve the condition of their existing homes, and look for the opportunity to create a land trust program to encourage development of new affordable housing stock.

Implementation Strategies

Update housing ordinance:

Update housing-related ordinances (subdivision, multifamily, townhome, patio home, setback regulations) to provide flexibility for diverse housing options to be built. Initial ordinance updates could include allowing for higher dwelling units per acre, reducing the existing setback requirement of 25-ft from front of lot, and creating new ordinances to enable infill and mixed-use development to occur. This specific strategy is city-wide and not limited to only the study area.

Creation of a land trust program in hopes of developing a partnership with a developer to construct affordable housing units:

With the help of project partners, the City of Pasadena would like to formulate a Land Trust Program that would seek opportunities to develop affordable housing units on City-

Owned parcels to ensure housing affordability is maintained for years to come. This specific strategy is a long-term goal, however the commencement of establishing the land trust program committee to initiate discussion is a short-term goal.

Establish renovation incentives:

The City should study common patterns of out of compliance properties in the study area to determine the most common issues. Create opportunities to bring out of compliance and informal structures back into compliance. This could potentially be accomplished through incentive programs that encourage homeowners to build legally, such as an expedited permit review process or a grant program supporting home repair and residential improvements.

Figure 47 and 48 are examples of new housing options that could be built once the housing ordinance is updated.

Figure 47: Example of New Housing Option
(Townhomes with one to two walls that are shared with adjacent properties)

Figure 48: Example of New Housing Options
(Attached single family housing describes the home is built to the edge of the lot line)

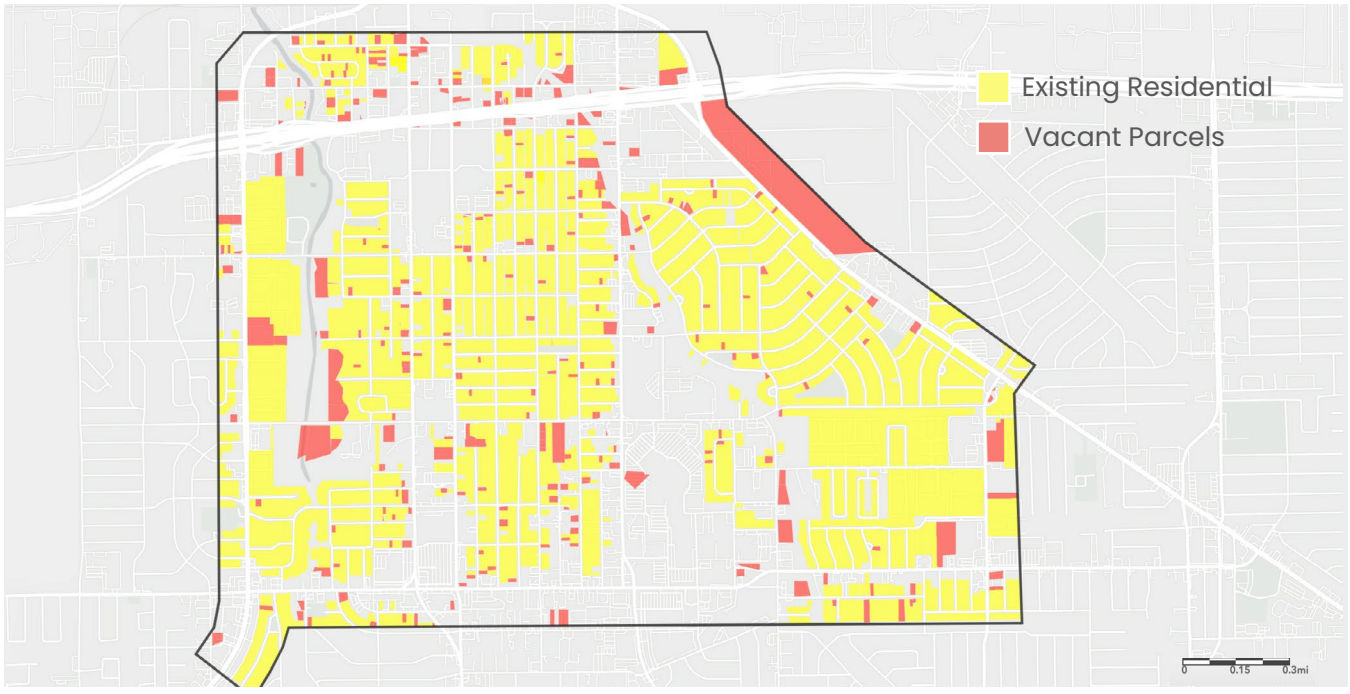


Figure 49: Existing Single Family Units and Vacant Parcels within the Study

Source: AECOM

Update Roadway Classification and Street Design Standards 02

Project Goals /

1 **2** **3** 4 **5**
6 **7** 8 **9** 10

Livability Principles /

1 **2** 3 **4** **5**

Project Partners /

1. City of Pasadena (Planning Department; Public Works)
2..TxDOT
3. Pasadena Economic Development Corporation

Subject Area /

Mobility Housing **Quality of Life**

Desired Outcomes

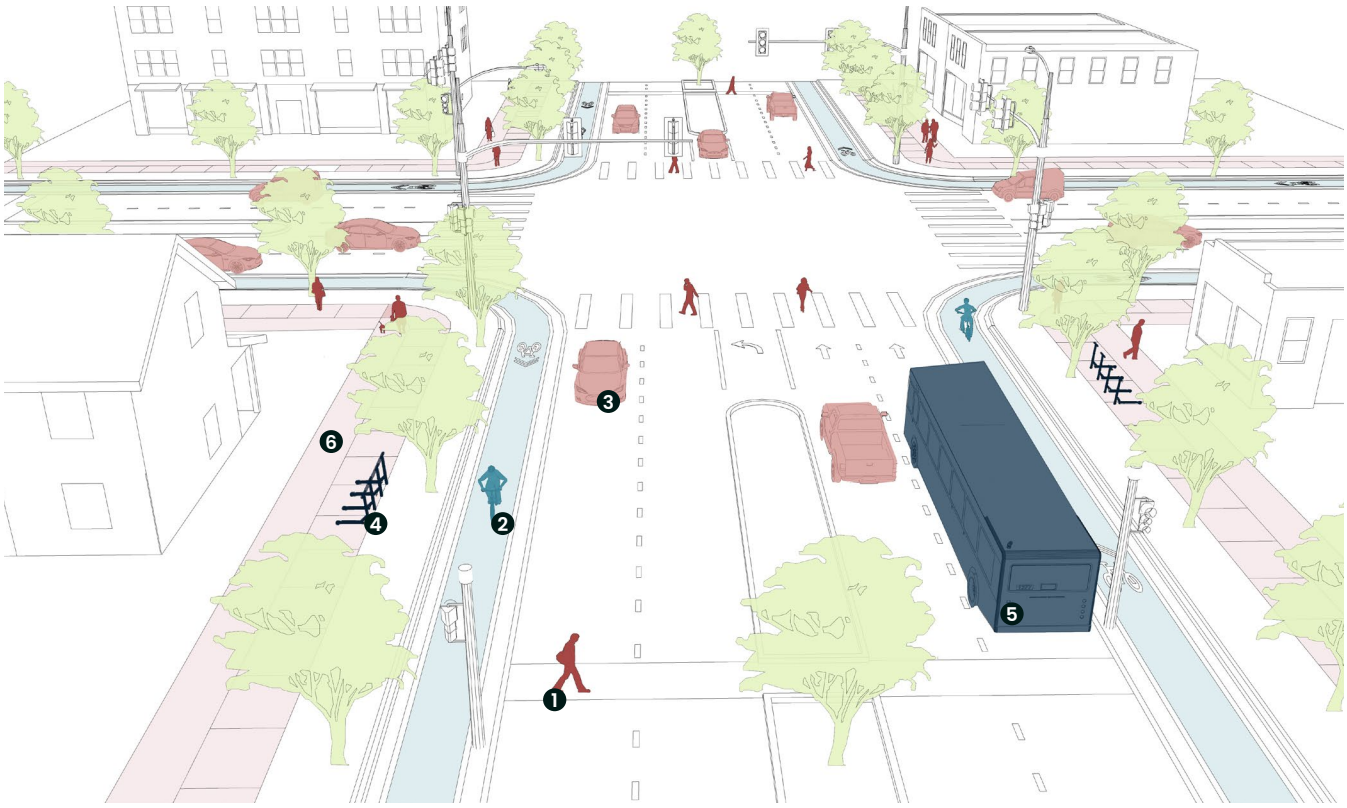
Develop a city-wide Complete Streets policy which establishes a set of guidelines for reconstructing or building new roadways. The policy will provide a menu of street types incorporating a variety of transportation options. It will also establish clear expectations and responsibilities for agencies and the public to ensure the community receives safe streets for all modes of transportation. Updating the City's design standards would accomplish three goals. First, it will encourage the use of various transportation modes. Second, it will enhance pedestrian and bicyclist access, comfort, and safety. Third, it will develop a neighborhood identity.

Implementation Strategies

Pursue complete street attributes in future street projects:

As the needs arises to conduct road repairs and redesigns within the City of Pasadena, the City should implement design standards that encourage the use of multi-modal transportation and improves the comfort and safety of pedestrians and bicyclists. In addition to utilizing the National Complete Streets Coalitions elements of a Complete Streets Policy when discussing the improvement of city road infrastructure. Project partners will seek to evaluate the Complete Street Policy as road repairs are necessary and will implement, when appropriate, alternative transportation needs into the existing road standards.
The following roads are top candidates for these recommended design standards to be implemented in the future: Richey Street, Shaver Street, Main Street, Pasadena Boulevard, Shaw Avenue, Jackson Avenue, Harris Avenue, Southmore Avenue and Red Bluff Road.

Figure 50: **Elements of Complete Streets Policy**



Source: AECOM

Users

1. People on Foot
2. People on Bike
3. People in Personal Motorized Vehicle
4. People Using Micro-mobility
5. People Using Public Transportation
6. People Using Sidewalks

Improve Roadway Safety 03

Project Goals /

1 **2** **3** 4 **5**
6 7 8 9 **10**

Livability Principles /

1 **2** 3 4 **5**

Project Partners /

1. City of Pasadena (Planning Department; Public Works)
2.TxDOT
3. Harris County Engineering
4. Pasadena Economic Development Corporation

Subject Area /

Mobility Housing **Quality of Life**

Desired Outcomes

The purpose of this recommendation is to provide a toolbox of potential implementable solutions that could help provide traffic calming measures to improve safety and help mitigate crashes along high-crash corridors. This would improve traffic flow and circulation throughout the study area. This toolbox includes an array of recommendations that the City of Pasadena can evaluate and implement as the project partners feel is most appropriate. Through the project process, Richey Street, Pasadena Boulevard, and W. Southmore Avenue were areas with the highest traffic issues and could result in the highest benefit for improving roadway safety. As part of H-GAC's sub-regional mobility study, Pasadena Boulevard should be evaluated to consider roadway safety improvements.

Implementation Strategies

Implement roadway improvements as the City determines necessary:

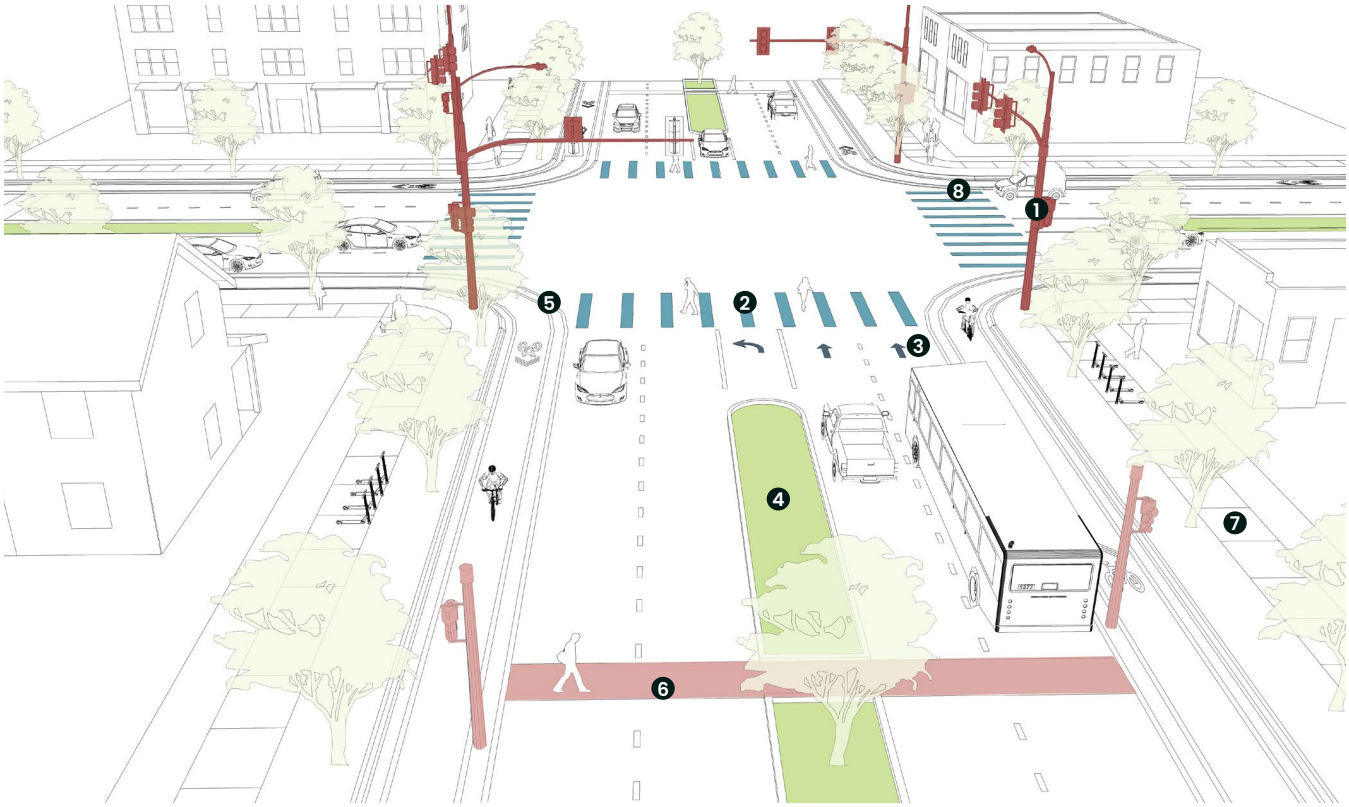
The City of Pasadena will evaluate the following set of tools as intersections and roadway improvements occur with the study area.

Table 14: Safety Improvement Toolbox

Source: AECOM

Tool Name	Tool Benefit
Intersection pedestrian crossing	Pedestrian safety
ADA intersection upgrade	Pedestrian safety
Mid-block crossing	Pedestrian safety
Mid-block crossing beacon	Pedestrian safety
Landscaped median	Vehicle and pedestrian safety
Curb extensions	Vehicle and pedestrian safety
Sidewalk reconstruction	Pedestrian safety

Figure 51: Examples of the Proposed Safety Improvements



Source: AECOM

1. Synchronize signal timing
2. Enhanced Intersection Pedestrian Crossing
3. Prohibit Right on Red at Problem Intersections
4. Install Raised Medians
5. Install curb bulb outs
6. Mid-Block Crossing
7. Sidewalk Reconstruction
8. ADA Intersection Upgrade

Urban Trail Network 04

Subject Area /

Mobility **Housing** **Quality of Life**

Project Goals /

1 **2** **3** 4 **5**
6 **7** **8** **9** **10**

Livability Principles /

1 **2** **3** **4** **5**

Project Partners /

1. City of Pasadena (Planning Department; Parks and Recreation)
2. Pasadena ISD
3. Harris County Flood Control District
4. Pasadena Economic Development Corporation

Desired Outcomes

Establish a connected urban trail system that acts as a pedestrian highway along the Vince and Little Vince Bayous. There will be specific west/east connectors throughout the City to connect residents to the trail system. The conceptual network was based on the following factors: connection to major destinations within the Livable Center (existing and future), connection to major parks, and establishing connections to the designated safe routes to schools' paths. Design of the urban trails within the study area will be sustainable and enhance the existing green space that currently exists along the bayous.

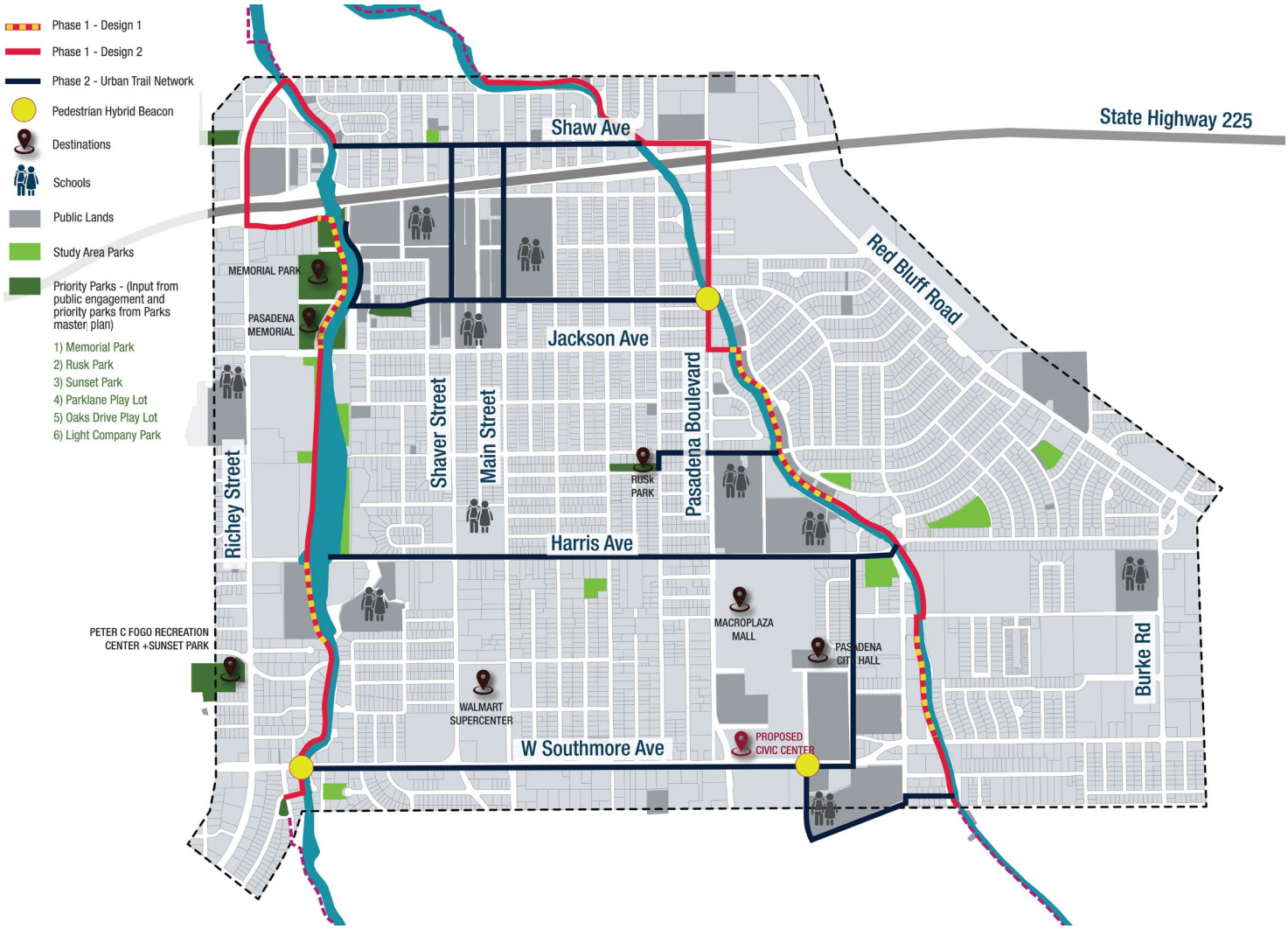
Implementation Strategies

This recommendation has been developed in two phases.

Phase 1 will establish a north to south connection along both bayous. There are two proposed trail designs for this portion of the urban trail. Design 1 is intended to promote gathering spaces along already popular destinations, while Design 2 is intended to be more of a thoroughfare.

Phase 2 will establish dedicated east to west connections. Since Phase II of the proposed urban trail will utilize existing roads, it is recommended that shared-use paths be developed to allow ample space for pedestrians and multi-modal vehicles to be used.

Figure 52: **Urban Trails Network I Plan**



Source: AECOM

Figure 53: **Proposed Trail Design 1**

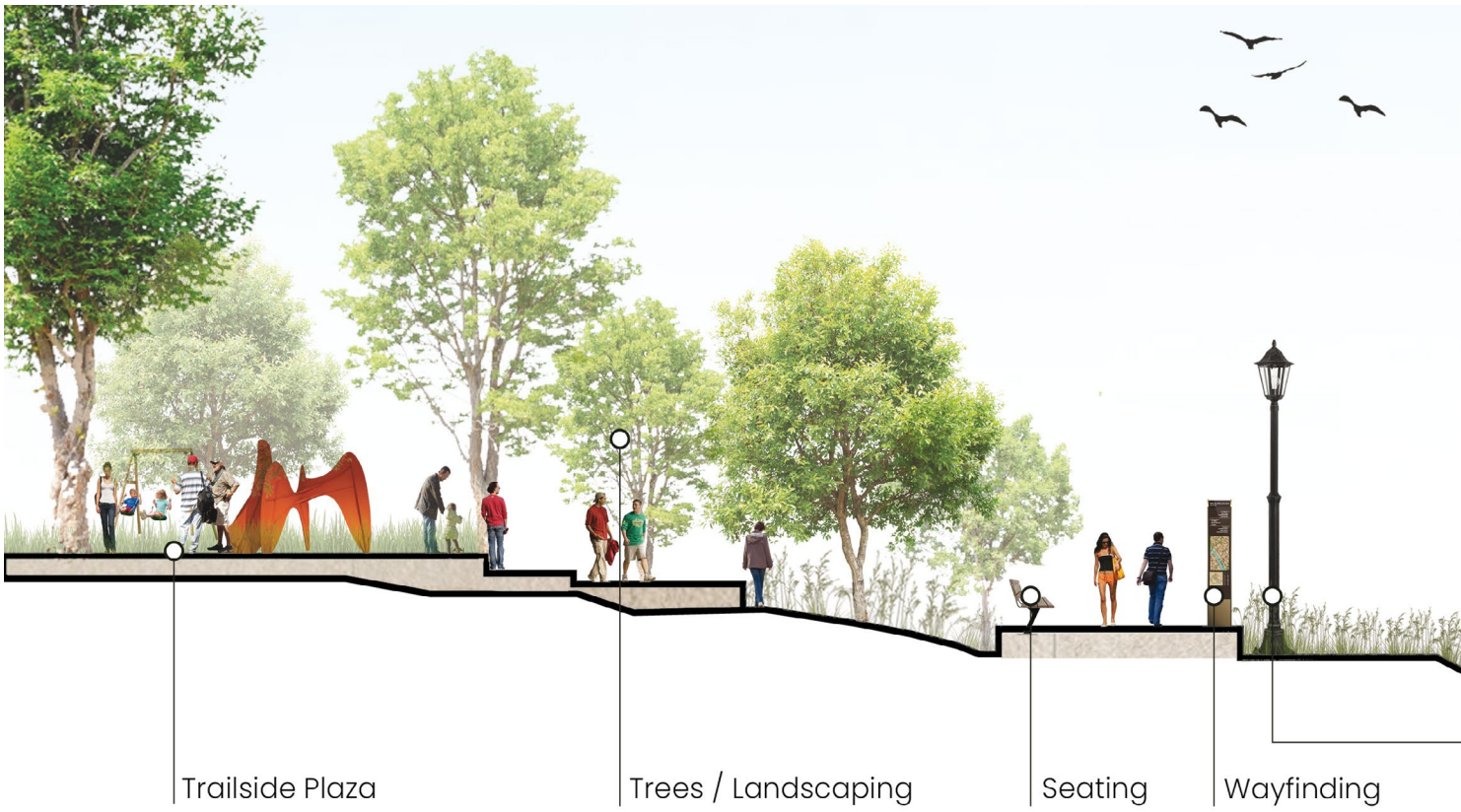
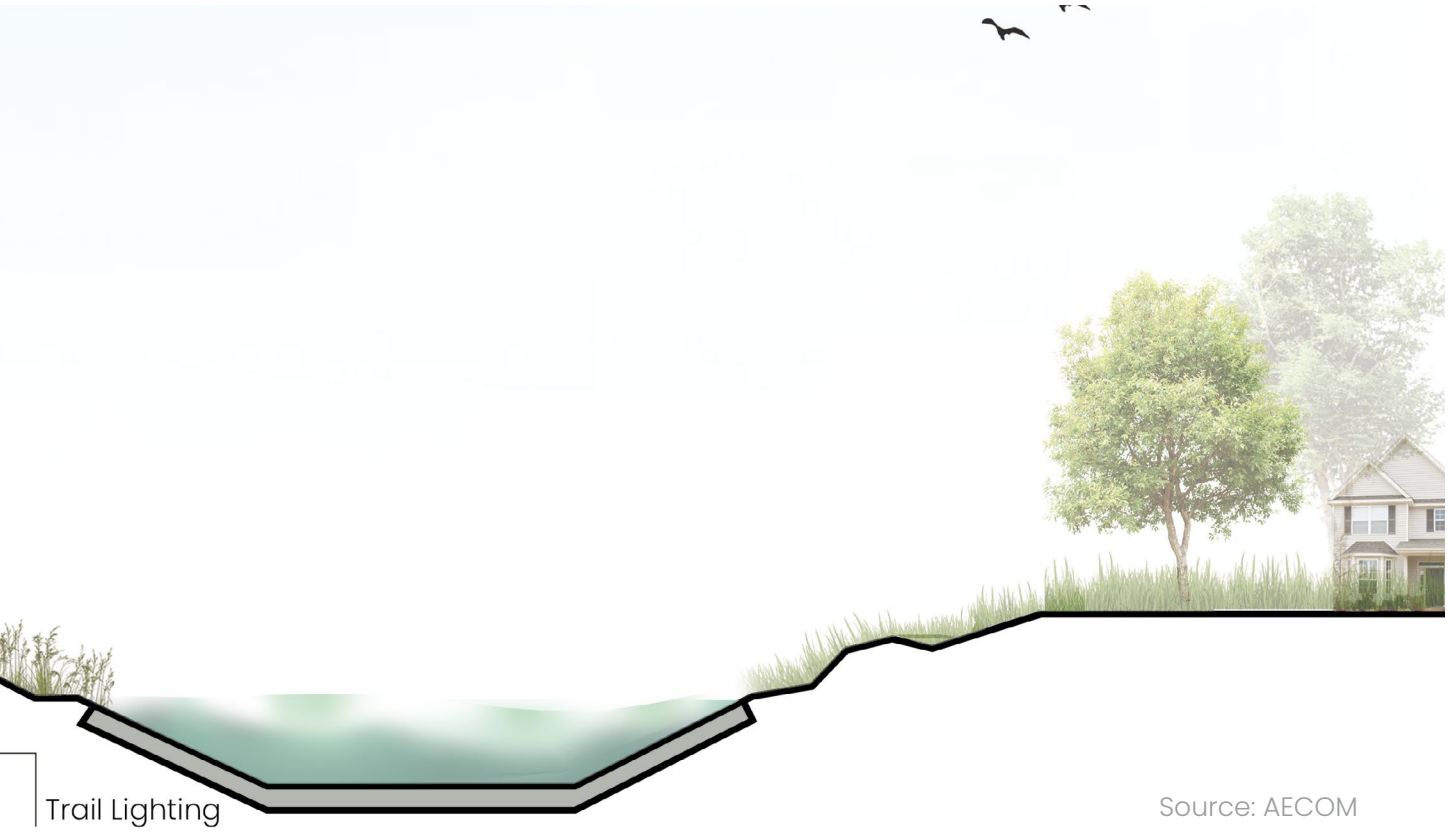
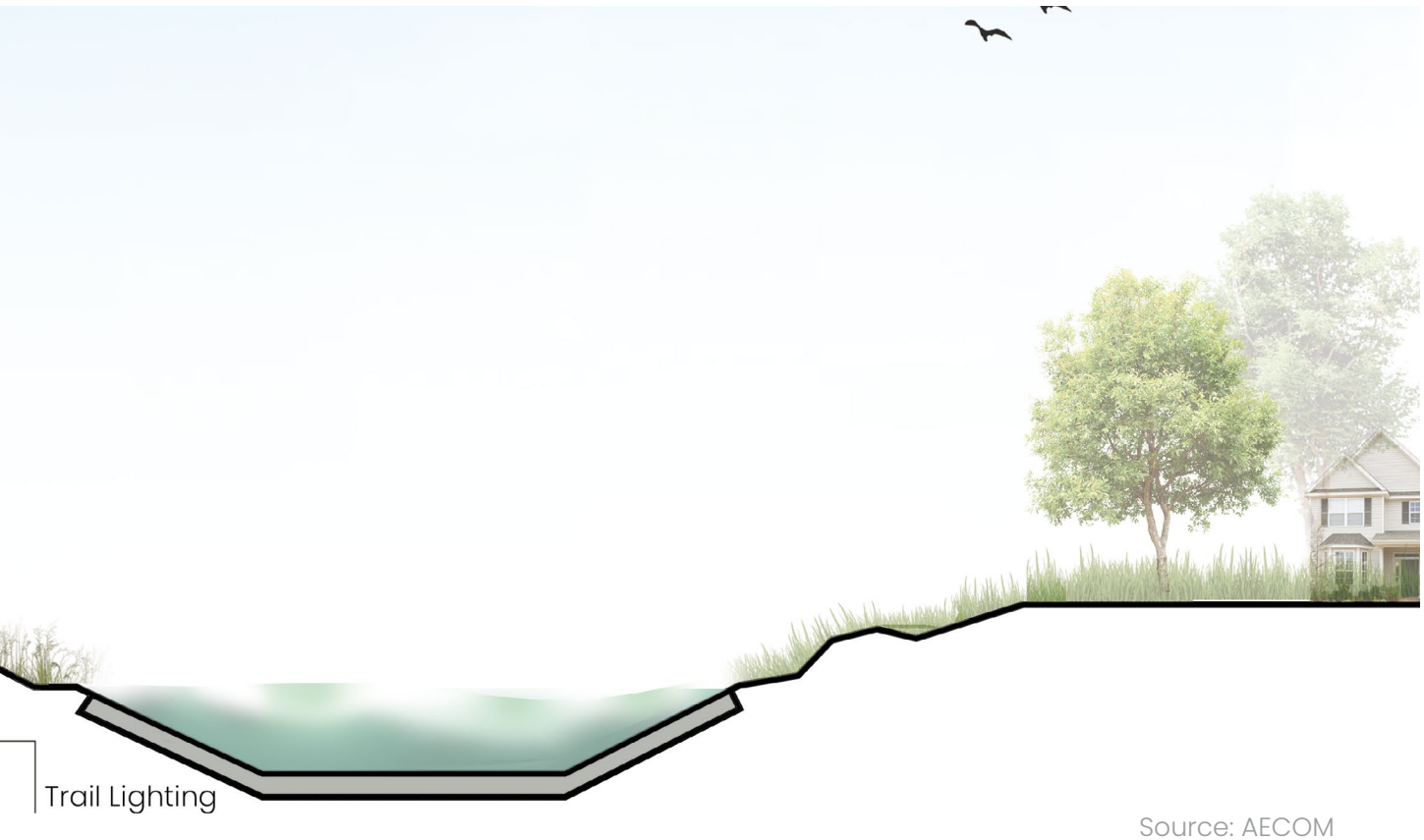


Figure 54: **Proposed Trail Design 2**



Source: AECOM



Source: AECOM

Micro-Transit Pilot Project 05

Subject Area /

Mobility Housing Quality of Life

Project Goals /

1 2 **3** 4 5
6 7 8 9 10

Livability Principles /

1 **2** **3** 4 **5**

Project Partners /

1. Harris County Transit;
2. City of Pasadena (Planning Department; Public Works Department)

Desired Outcomes

Provide affordable alternatives for shorter transportation trips. The Micro-Transit Pilot Project aims to meet the needs of low to moderate income residents in the study area. It would provide access to civic services, medical services, shopping, jobs, and education.

Implementation Strategies

The Micro-Transit Pilot Project would be designed to substitute individual's short trips within the study area. It could also connect to key locations within a specific distance outside of the study area. Micro transit vehicles typically transport only a few passengers at a time, eliminating the need for larger transit vehicles. The program would be implemented through a contract with a turnkey service provider. The provider would supply the technology, vehicles, and drivers. Ideally, the pilot would last at least 12-months, but could extend up to 18-months or 24-months if the project had met certain criteria. Federal and state grant funding could be pursued to help fund the pilot project costs. A potential funding source is H-GAC Transit Pilot Program.

06 Redesign of Main Street and Shaver

Project Goals /

1 2 3 4 5
6 7 8 9 10

Livability Principles /

1 2 3 4 5

Project Partners /

1. City of Pasadena (Planning Department; Public Works Department)
2. TxDOT
3. Harris County Engineering

Subject Area /

Mobility Housing Quality of Life

Desired Outcomes

In order to improve roadway safety and at the same time help promote economic development, the outcome of this recommendation is to redesign both Main and Shaver Street from one-ways into two-way streets. Allowing bi-directional traffic to travel on these streets could improve business visibility from the traveling vehicles and encourage different travel patterns to occur within the City. When the redesign of both streets occurs, the City of Pasadena will reclassify Main Street to be a collector street and Shaver Street will become a minor arterial. Currently both streets are classified as major thoroughfare roads.

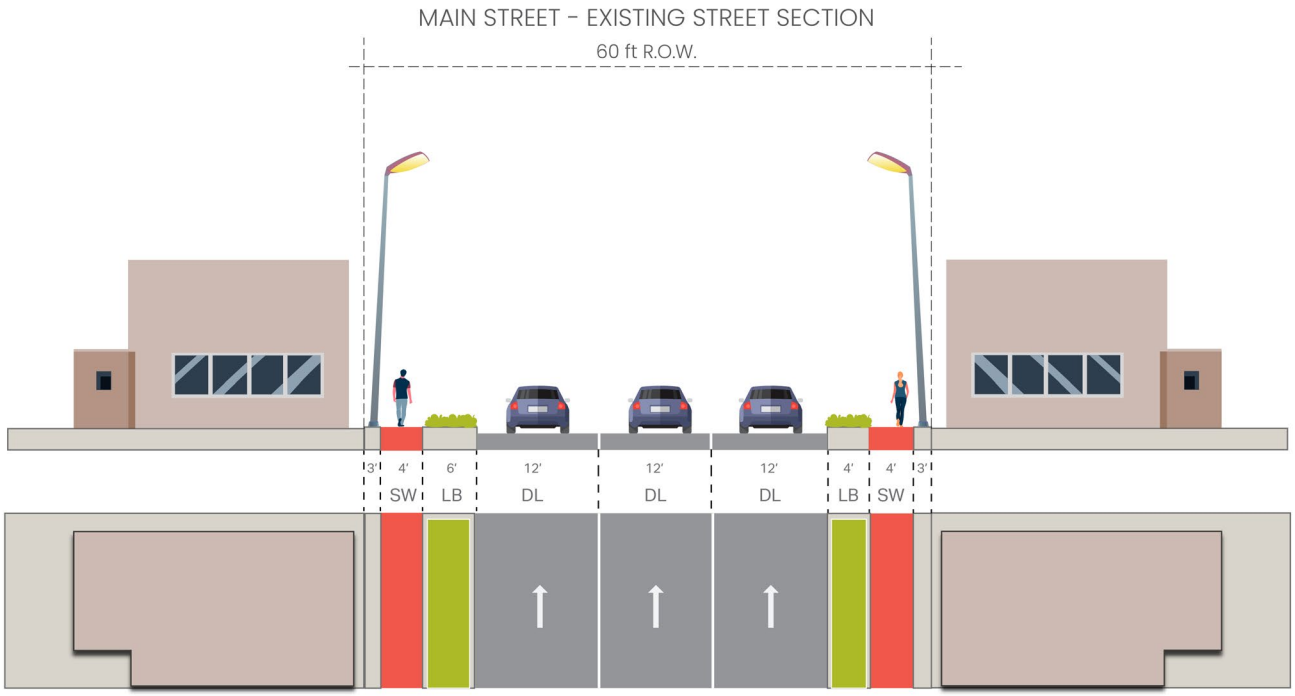
Implementation Strategies

Redesign Roadways:

The City of Pasadena should redesign both Main Street and Shaver Street to become two-way streets. Figures 55 to 58 illustrate before/after of what the new designs could look like. Both streets would be redesigned to improve pedestrian circulation and provide multi-modal options for travel. If funding is an issue, the City of Pasadena could consider restriping the street instead of reconstruction.

Figure 55: **Main Street Existing Street Section**

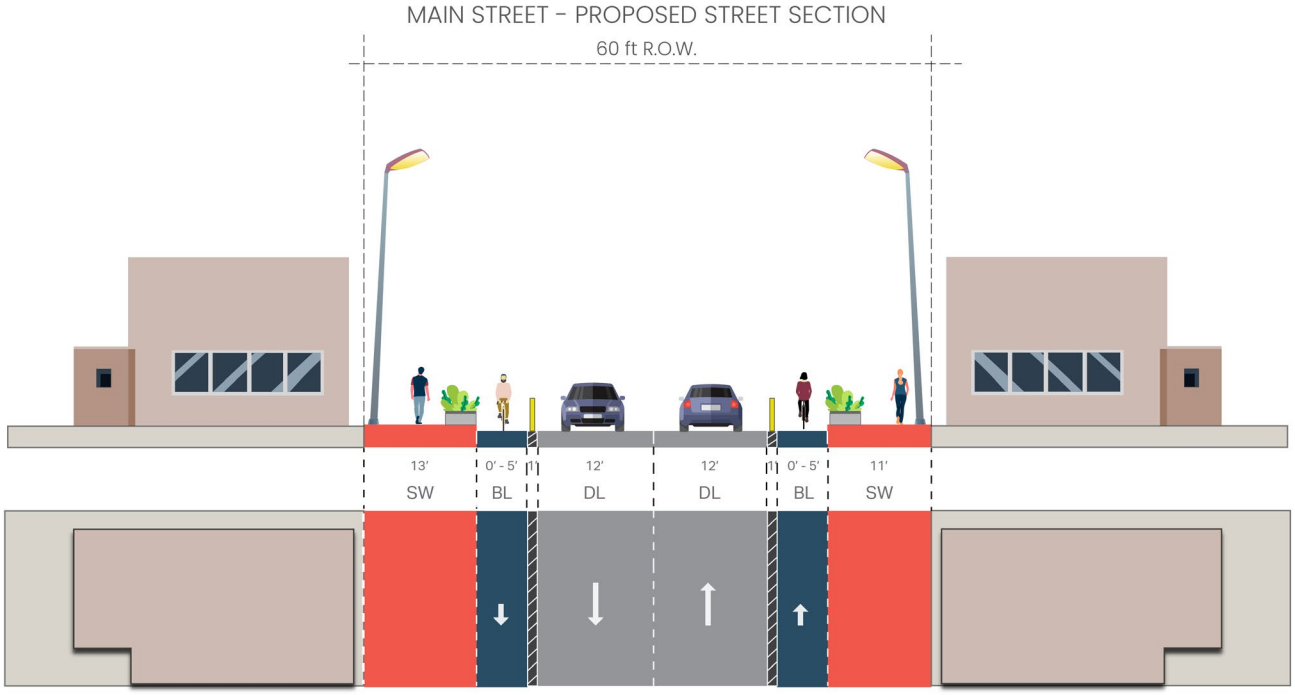
Source: AECOM



BB Bike Buffer
BL Bike Lane
DL Driving Lane
TL Turning Lane
LB Landscape Buffer
MD Median
SW Sidewalk
SUP Shared Use Path with distinguished areas for bike-lane and sidewalks

Figure 56: **Main Street Proposed Street Section**

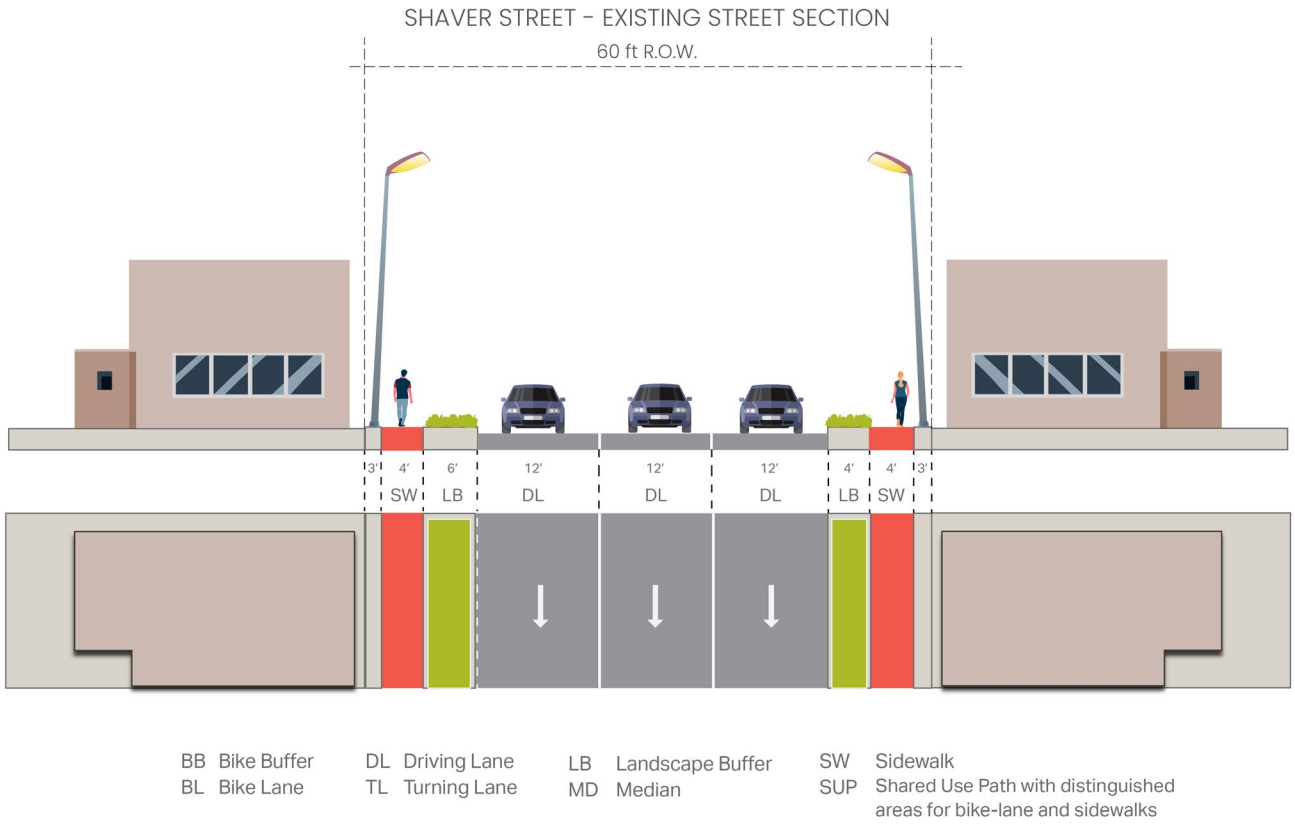
Source: AECOM



BB Bike Buffer
BL Bike Lane
DL Driving Lane
TL Turning Lane
LB Landscape Buffer
MD Median
SW Sidewalk
SUP Shared Use Path with distinguished areas for bike-lane and sidewalks

Figure 57: **Shaver Street Existing Street Section**

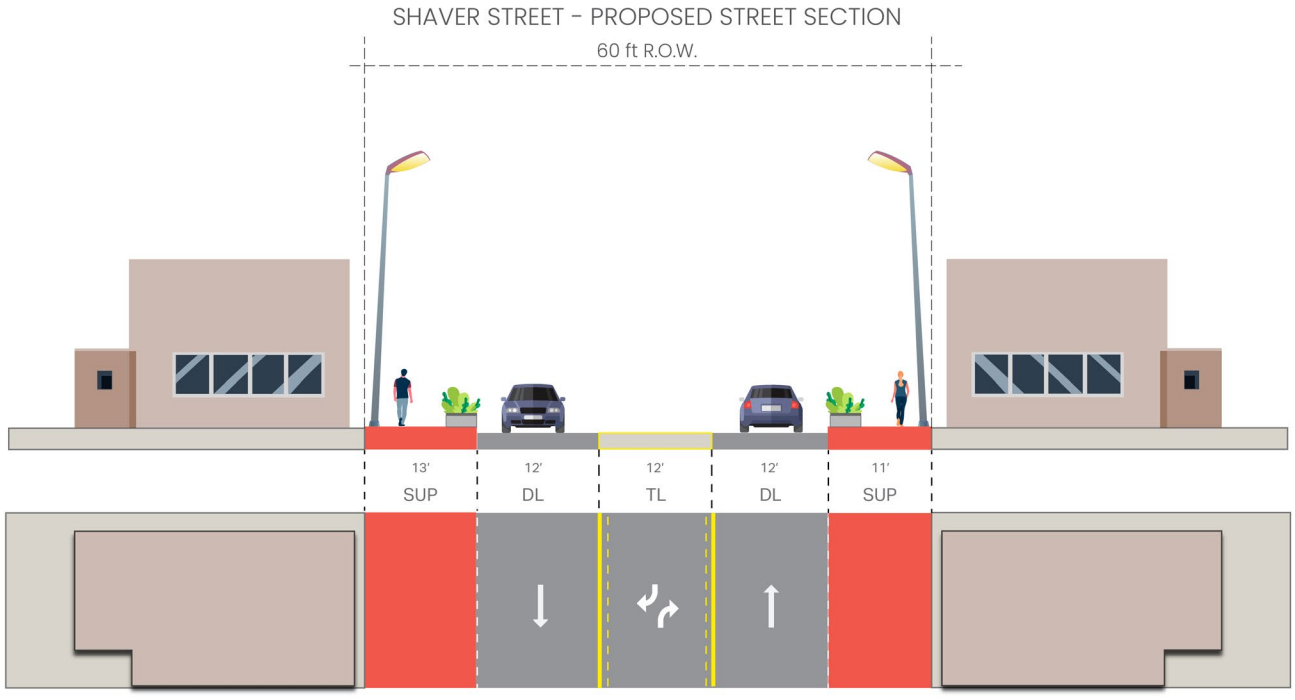
Source: AECOM



BB Bike Buffer
BL Bike Lane
DL Driving Lane
TL Turning Lane
LB Landscape Buffer
MD Median
SW Sidewalk
SUP Shared Use Path with distinguished areas for bike-lane and sidewalks

Figure 58: **Shaver Street Proposed Street Section**

Source: AECOM



BB Bike Buffer
BL Bike Lane
DL Driving Lane
TL Turning Lane
LB Landscape Buffer
MD Median
SW Sidewalk
SUP Shared Use Path with distinguished areas for bike-lane and sidewalks

City Civic Center 07

Project Goals /

1 **2** **3** 4 **5**
6 **7** **8** **9** **10**

Livability Principles /

1 2 **3** **4** 5

Project Partners /

1. City of Pasadena (Planning Department; Public Works)
2. Pasadena Economic Development Corporation

Subject Area /

Mobility Housing **Quality of Life**

Desired Outcomes

The overall objective of this recommendation is to transform the southern area of the Macroplaza Mall area into a vibrant environment that the community could use as a natural gathering space, encourage outdoor events to occur, and create a food hall to improve local business viability. The goal of this recommendation is to create a catalyst project within the study area that could help bring more jobs to the area, provide flexible space for community events to occur (farmers markets, food truck events, concerts, etc.), and ultimately to create a destination that can complement the existing activity of the mall.

Implementation Strategies

In order to bring to fruition the long-term vision of the City Civic Center (Figure 59), the overall program has been broken up into smaller projects that can be implemented as opportunities present themselves. The goal of this recommendation is to create a vibrant environment that can enable future community activities while respecting that the mall is a privately-owned entity.

Outdoor Amphitheater area:

Construct an outdoor amphitheater and flexible, open, gathering space that could be used to host community events in the open air. This open space could have a water feature and ample open space to host farmers markets and/or a food truck park. An outdoor sculpture/monument is also envisioned at the corner of Southmore Avenue and Pasadena Boulevard which would serve as a gateway into the Civic Center.

Food Hall:

Repurpose the old AT&T building to be an open-air food hall that has both food and beverages for purchase. Having the food hall near the outdoor amphitheater could help activate the area as community members could eat at the food hall and then spend time in the amphitheater area.

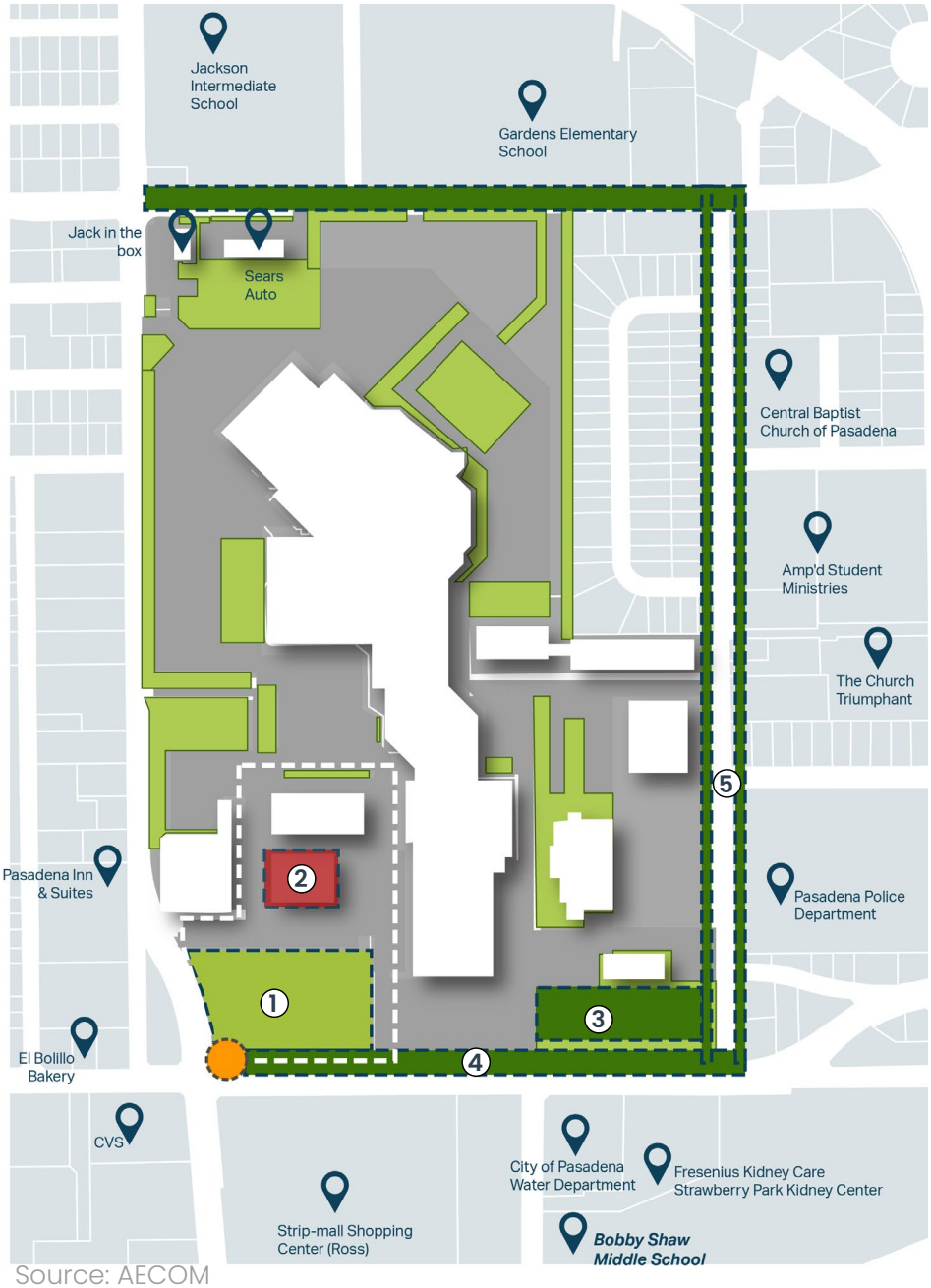
Civic Campus:

Due to the lush trees that currently exist in the corner of Southmore Avenue and Davis Street, the need of establishing more outdoor opportunities, and the close proximity to the civic functions (City Hall, Public Library, and Courthouse) it was determined that this area should be preserved as a natural gathering space.

Pedestrian Corridor Enhancements:

In order to encourage a multi-modal connection to the civic center, Davis Street and Harris Avenue will be undertaking enhancements to create an environment that induces people to walk/bike to the Civic Center. These enhancements include lighting, additional trees and landscaping, and widening of sidewalks.

Figure 59: Proposed City Civic Center Long Term Plan



① Outdoor Amphitheater

② Food Hall

③ Civic Campus

④ Pedestrian Corridor

Source: AECOM

Figure 60: **Proposed Outdoor Amphitheater Area**

Source: AECOM

① Food Hall

② Outdoor Seating Area

③ Memorial Plaza

④ Seating

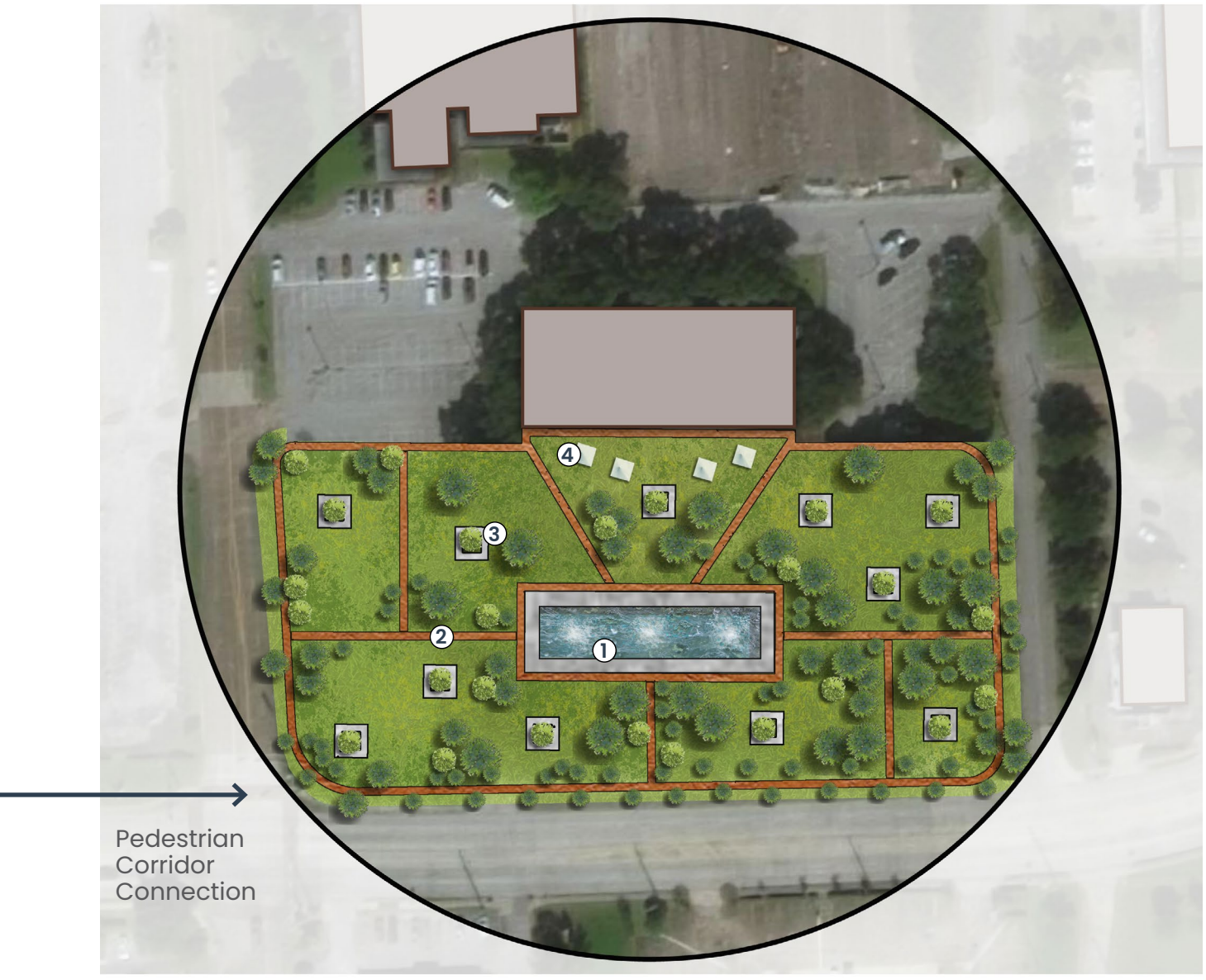
⑤ Old Bank Memorial - Art Installation

⑥ Stormwater Management Facility

⑦ Pedestrian Corridor

⑧ Flexible Open Space (Food Truck Parking Area or Farmers Market)

Figure 61: **Proposed Campus Open Space**



Source: AECOM

① Water Feature

② Pedestrian Corridor

③ Planter with Seating

④ Outdoor Event Area

08 Development of Shaw Avenue District

Subject Area /

Mobility Housing **Quality of Life**

Project Goals /

1 **2** **3** 4 **5**
6 **7** **8** 9 **10**

Livability Principles /

1 **2** **3** **4** **5**

Project Partners /

1. City of Pasadena (Planning Department; Public Works Department)
2. Pasadena Economic Development Corporation

Desired Outcomes

This recommendation strives to transform Shaw Avenue into a destination for the City of Pasadena. In order to help jump start this program, it is recommended that the City of Pasadena adopt a Tax Increment Reinvestment Zone (TIRZ) district that would provide a financial mechanism to help financially implement elements of the Shaw Avenue District Plan. The overall Shaw District boundary is from Richey Street to Red Bluff (as shown in Figure 62), however in order to kick start the masterplan, a pilot project has been developed which details redevelopment opportunities that could occur from Friendship Garden to Crane Park, from Shaw Avenue to just South of SH 225.

Implementation Strategies

The following projects have been identified as part of the pilot project in transforming the existing dilapidated industrial area into an innovative adaptive reuse district that encourages pedestrian activity and promotes retail/restaurants to start establishing a new destination within the Study Area as shown in Figure 63.

Redesign of Shaw Avenue:

In order to promote pedestrian and multi-modal activity around the district, pedestrian amenities need to improve within the street right-of-way. It is recommended that shared use sidewalks (minimum of 10 feet) be established and that on-street parking only be offered on one side of the road.

Façade Improvements:

In order to encourage reuse of existing buildings, it is recommended that the City start a façade program that would work with building owners to help improve the aesthetic of existing buildings which would provide a new look and feel for the area.

Infill Development:

To help induce new development to occur

in vacant and/or underutilized parcels, it is recommended that the City of Pasadena allow new buildings to be constructed if they help establish retail and/or restaurant uses. Parking requirements for uses within the district will be minimal as the intent is to establish a shared-used parking lot under SH 225. Not having dedicated parking spaces will help lot coverage be dedicated to building uses versus being utilized for parking areas. Details of the shared-used parking lot is discussed in the next recommendation. Figure 64 and 65 illustrate the proposed redesign of Shaw Avenue.

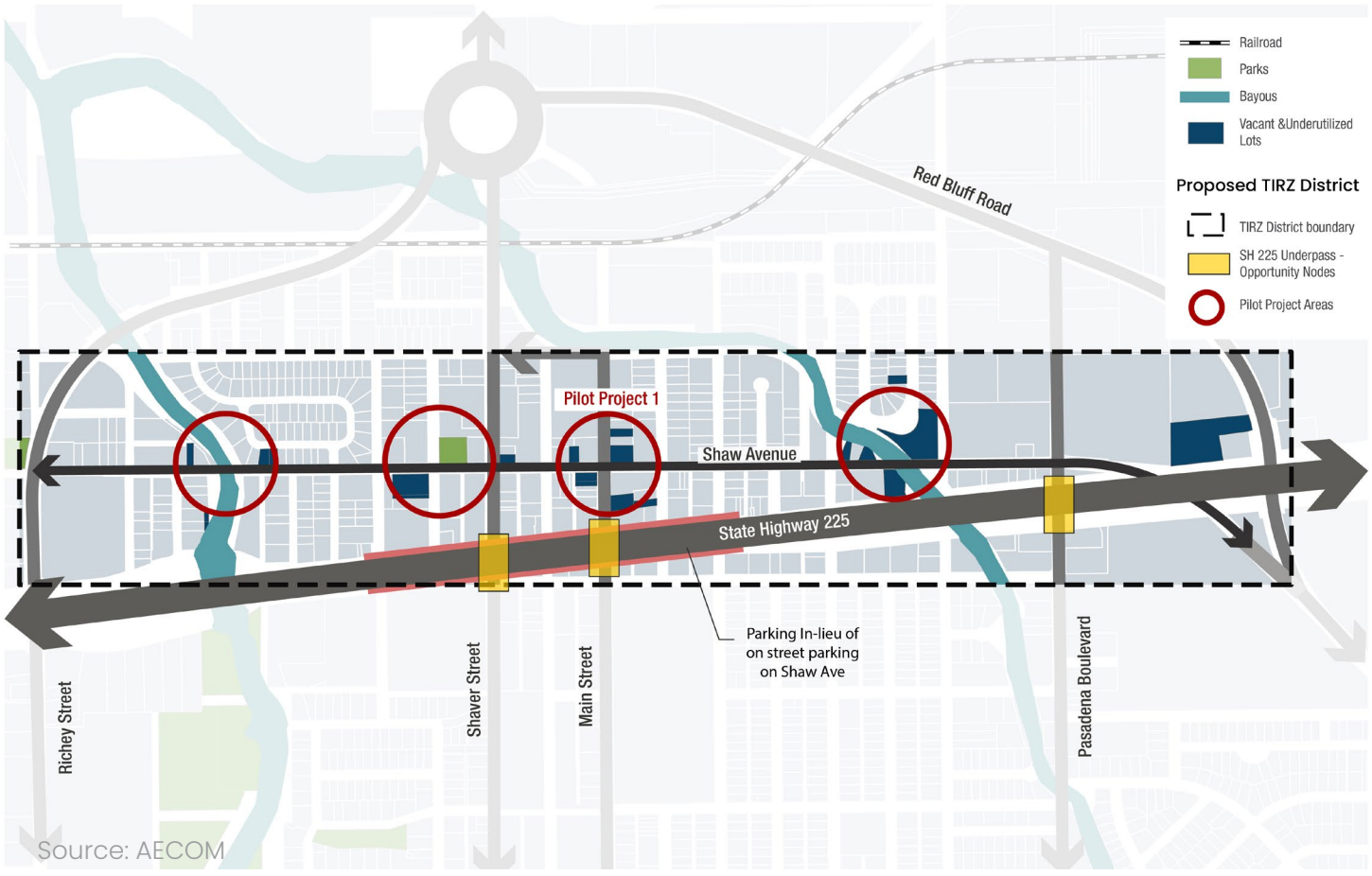
SH 225 Underpass Revitalization:

To encourage placemaking upon entering the Shaw District, it is recommended that public art be implemented in the underpass to help establish a gateway into the revitalized district. It is recommended that local artists design murals that represent the community. In addition to art installation, it is recommended that lighting and sidewalk improvements be implemented to help encourage walking and biking to the new destination.

Pocket Parks:

Two plaza/parks have been identified to help provide open spaces for visitors to enjoy while they are visiting the new Shaw Avenue District. It is recommended that these open areas embrace the industrial theme to pay homage to Shaw Avenue's history.

Figure 62: Shaw Avenue District Long Range Vision



Source: AECOM

Figure 63: **Proposed Pilot Project for Shaw Avenue District**

Source: AECOM

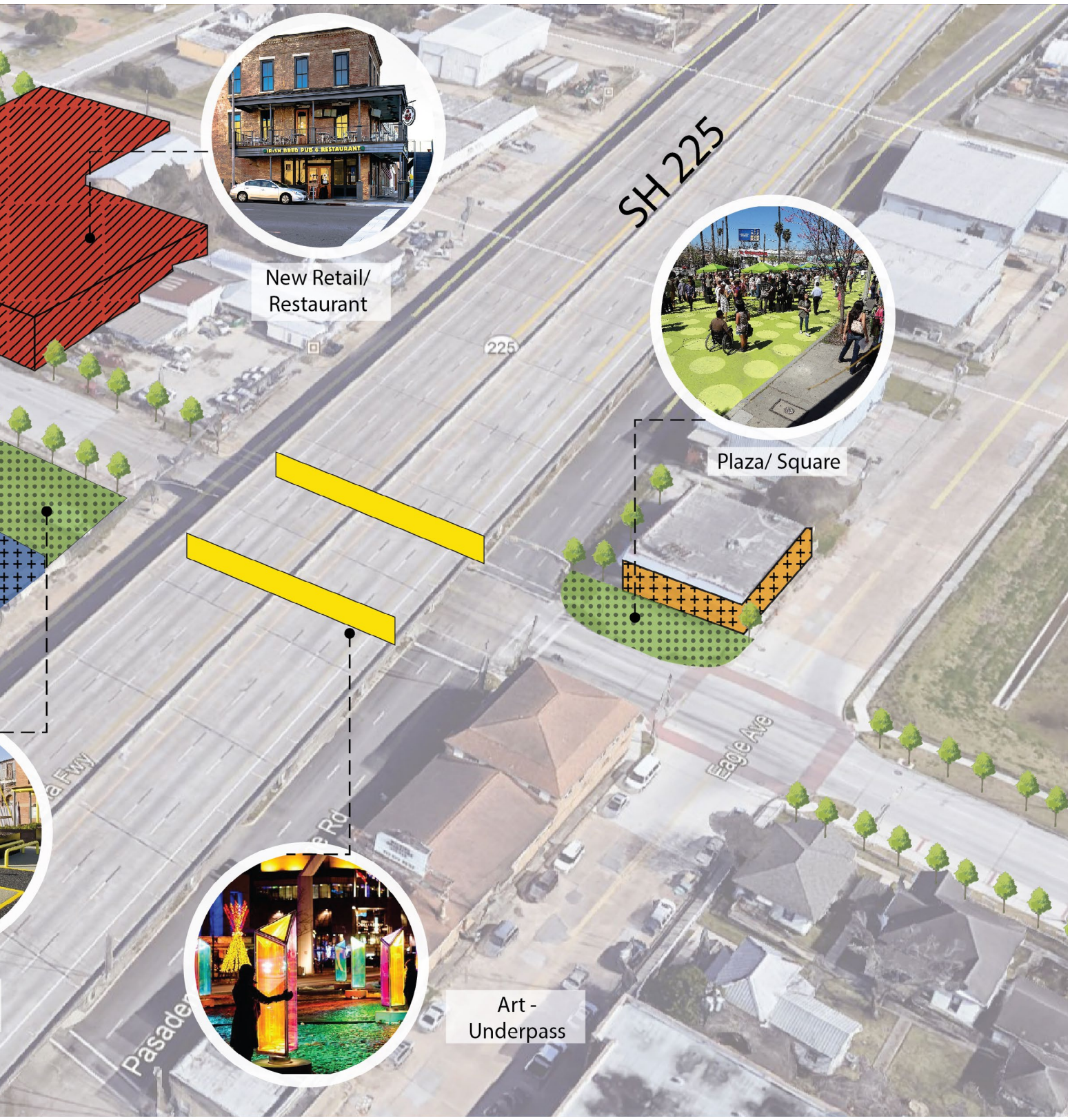

SH 225
225
New Retail/
Restaurant
Plaza/ Square
Art -
Underpass
Eagle Ave

Figure 64: **Shaw Avenue Existing Street Section**

Source: AECOM

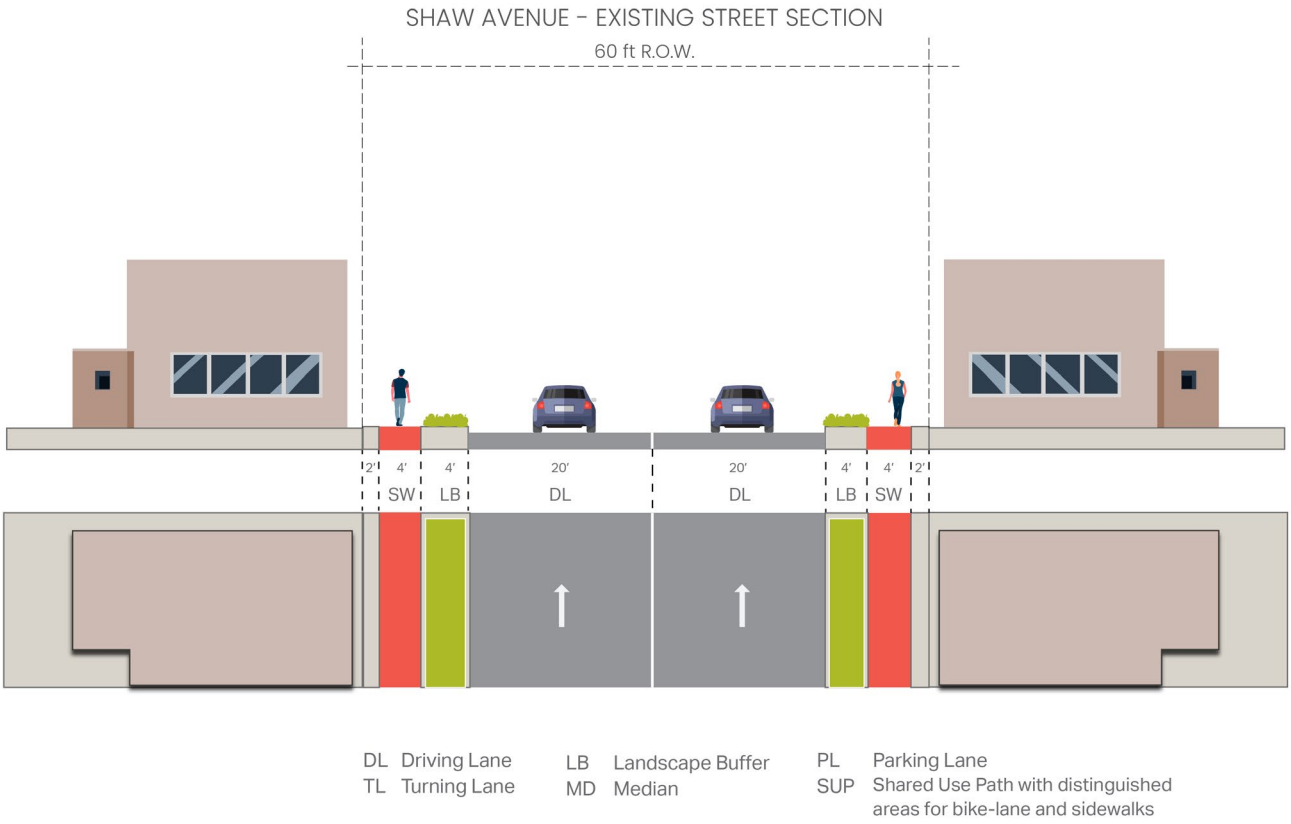
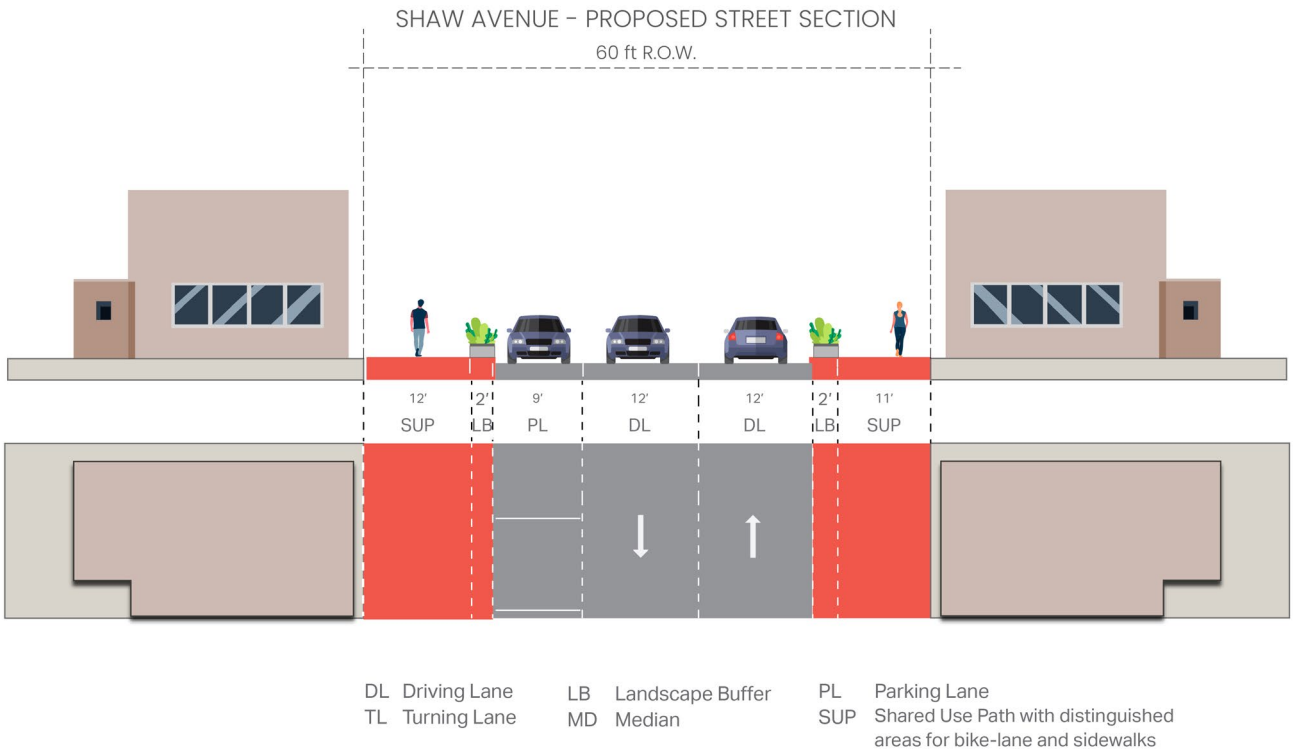


Figure 65: **Shaw Avenue Proposed Street Section**

Source: AECOM



Parking Management 09

Project Goals /

1 2 **3** 4 **5**
6 7 8 9 **10**

Livability Principles /

1 **2** **3** 4 5

Project Partners /

1. City of Pasadena (Planning Department; Public Works Department)

Subject Area /

Mobility Housing Quality of Life

Desired Outcomes

As an outcome of the stakeholder process, the community would like to see a shopping center with more realistic parking requirements, as there currently is an overabundance of parking lots in certain parts of the study area. As a result, the City of Pasadena would like to establish a long-term goal to reduce parking requirements in order to incentivize higher lot coverage. A short-term goal is to establish two pilot projects to understand if this change in parking model would be accepted within the community.

Implementation Strategies

Short-Term Recommendation:

Before the City of Pasadena updates its parking ordinance, it is recommended that pilot projects be developed to gauge the community's wilingness to accept lower parking requirements. The short-term recommendation is to establish shared parking lots (versus dedicated parking areas by business) at the proposed Civic Center and the Shaw Avenue District Redevelopment Project. Within the Civic Center, no new parking lots would be built. Instead, existing parking lots around the Marcoplaza would be used to satisfy the parking requirement. For the Shaw Avenue District Project, the existing parking area under SH 225 will be updated to become a shared-used parking lot in the evening with well-marked parking spaces as shown in Figure 67.

Long-Term Recommendation:

Update the City's parking ordinance to reduce the required number of parking spaces based on building square footage and instead establish shared-use parking lots that could accommodate multiple tenants.

Figure 66: **Existing Parking Conditions Under SH 225**

Figure 67: **Proposed Parking Improvements**

Community Gardens 10

Subject Area /

Mobility Housing **Quality of Life**

Project Goals /

1 **2** **3** 4 **5**
6 **7** **8** **9** 10

Livability Principles /

1 2 **3** 4 **5**

Project Partners /

1. Healthy Living Matters
2. Harris County Public Health
3.City of Pasadena (Planning, Public Works, Parks and Recreation, Community Development)
4. Pasadena Economic Development Corporation
5. Urban Harvest
6. Pasadena ISD

Desired Outcomes

A long-term goal for the City of Pasadena is to establish community gardens for residents throughout the City. In order to gauge if these gardens will be successful (meaning residents will sign up for garden beds), a short-term recommendation is to establish a pilot project of 1.5-acre along West Harris, west of the Vince Bayou. This parcel is city-owned and is currently designated as a future park area. If the pilot project were to succeed, the long-term goal is to convert the entire 8-acre area into a large-scale community garden and establish partnerships with the local organizations and schools within the City.

Implementation Strategies

In order to kick-start the idea of implementing community gardens within the City of Pasadena, the following are recommended elements to be constructed in the pilot project.

Raised Garden Beds:

To provide accessible garden beds for all interested residents, it is recommended that raised bed be constructed. Once constructed these beds would be assigned to interested residents and/or local organizations and they would be held responsible for maintaining their specific garden.

Outdoor Classroom:

In hopes of educating members of the community garden on how to grow/maintain their garden bed, it is recommended that picnic tables be included in the pilot project to allow for classes to be held near the garden.

Access and Security:

In order to promote a safe environment, it is recommended that the pilot project be secured with a chain-link fence and a parking area be provided. This would help establish a sense of place as well as indicate to those traveling along Harris Avenue that the area has been transformed into a community garden.

Figure 68: **Proposed Community Garden Plan**

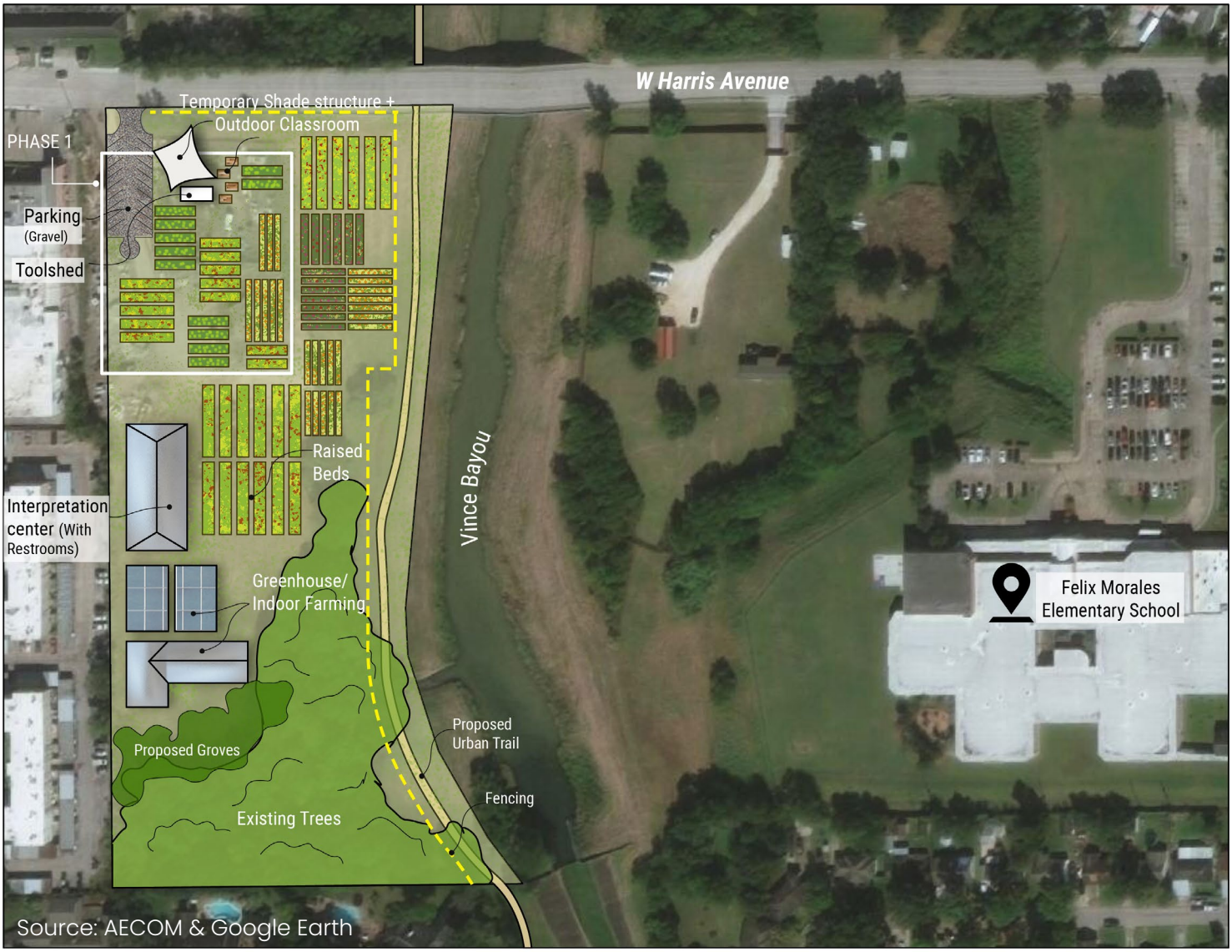


Figure 69: **Example Raised Garden Beds**

Source: Inhabit.com

Figure 70: **Example Outdoor Classroom Space**

Source: Inhabit.com

Improve Access Management Along Richey Street 11

Project Goals /

1 **2** **3** 4 **5**
6 7 8 9 **10**

Livability Principles /

1 2 **3** **4** 5

Project Partners /

1. City of Pasadena (Planning Department; Public Works)
2. Pasadena Economic Development Corporation
3. Local Business Owners

Subject Area /

Mobility Housing **Quality of Life**

Desired Outcomes

The southern portion of Richey Street known as El Mercado between Southmore Avenue and Mobile Drive, is a highly visited destination within the community. This recommendation proposes the City deploy a study that focuses on evaluating improvements specific to pedestrian safety, traffic flow upon entering/exiting the shopping areas, and provide a framework that helps resolve ongoing parking issues.

Implementation Strategies

In order to properly understand how to improve this area, it is recommended the study evaluate the following topics.

Segment Redesign:

In order to help establish clear ingress and egress to the shopping center, it is recommended that this segment of Richey Street be redesigned to help establish clear sidewalk delineations between Richey Street and the dedicated parking area. Because local business owners would like to see this area improved, there is the opportunity to improve pedestrian amenities within the private property right-of-way. Dedicating pedestrian space closer to the storefronts would help create a safer environment for those walking within El Mercado.

Access and Parking Management Improvements:

Evaluating overall traffic flow and parking management will be necessary in order to provide visitors an environment where they feel they can safely park and enter the shopping center. In addition, establishing an access and parking management plan could help visitors navigate safely through shopping areas. This would attract visitors as parking and access to El Mercado will be well-defined, which is currently an issue that has resulted in community members not wanting to visit this shopping center.

Figure 71: **Proposed Access Management Site Plan**

Source: AECOM

Figure 72: **Richey Street Existing Street Conditions**

Source: AECOM

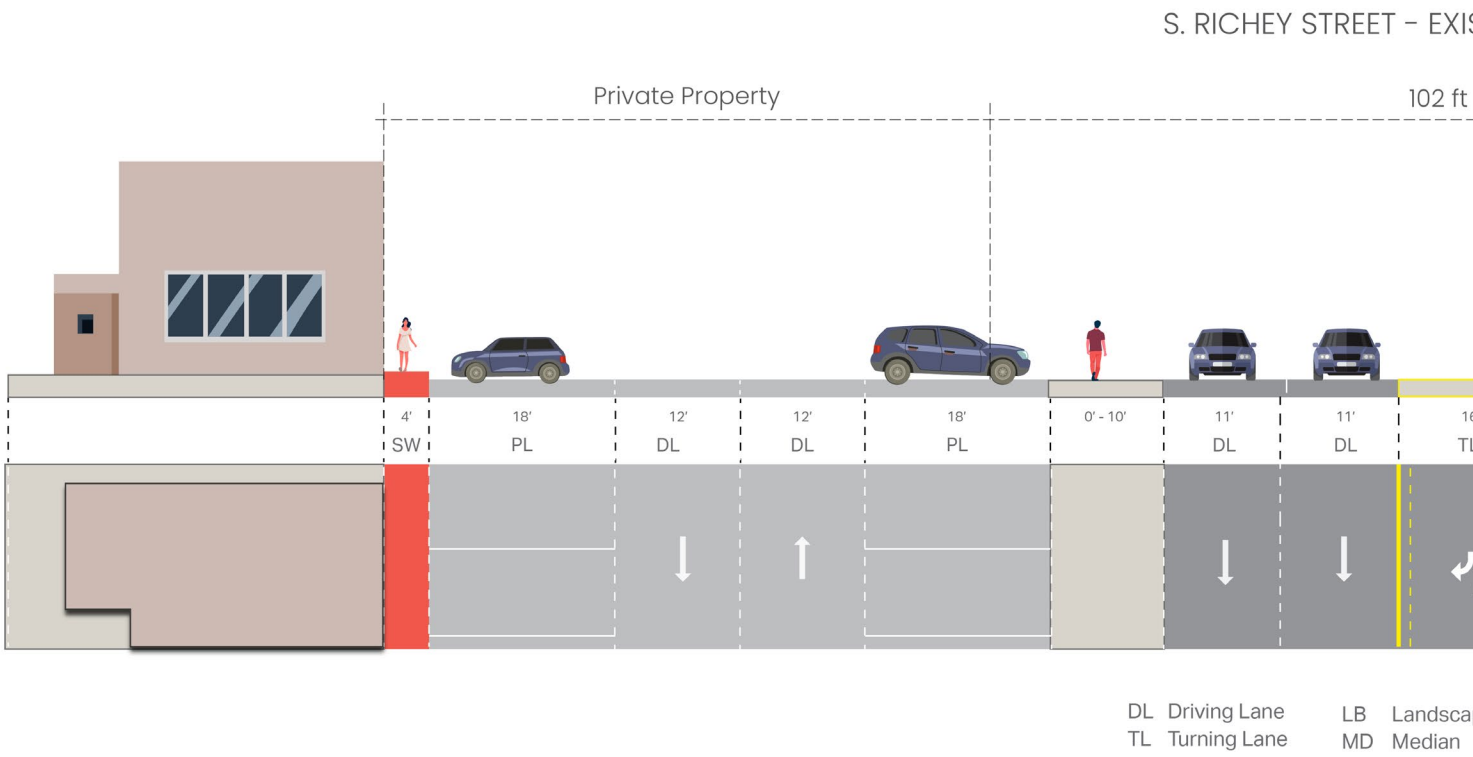
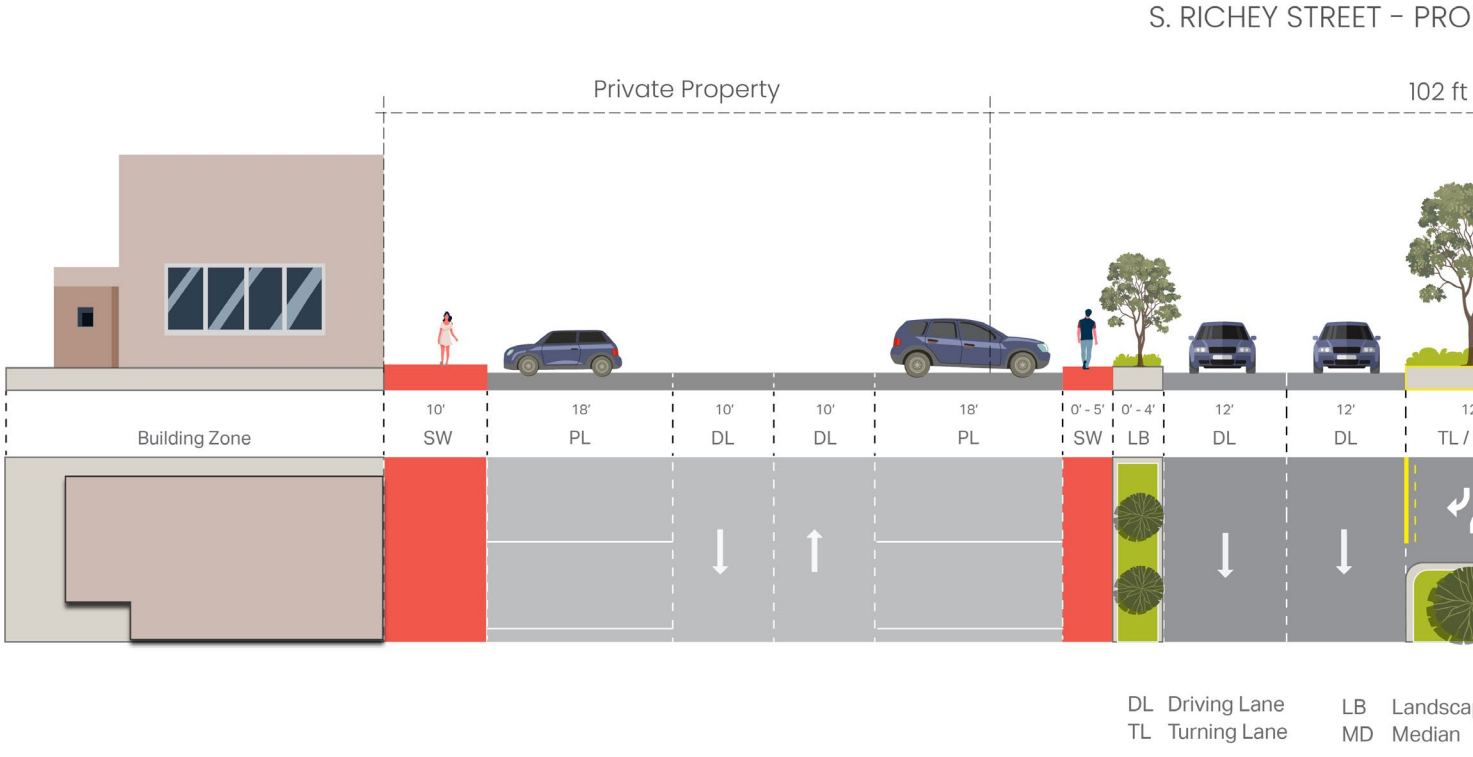
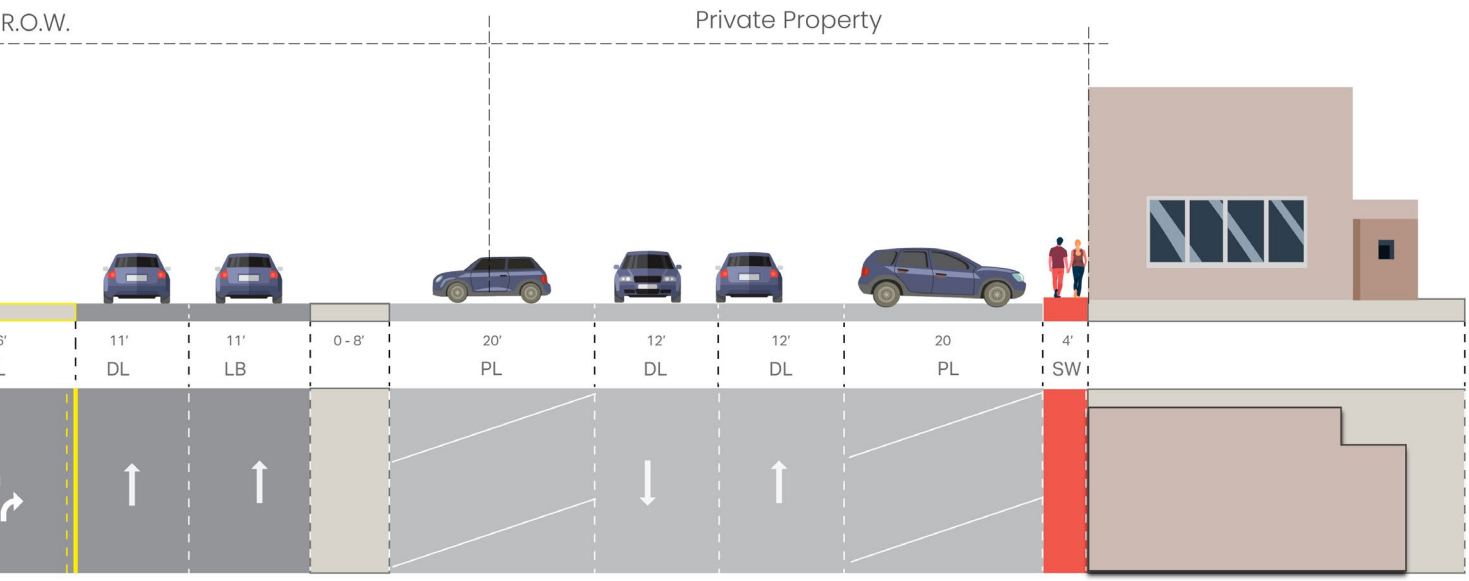


Figure 73: **Richey Street Proposed Street Section**

Source: AECOM

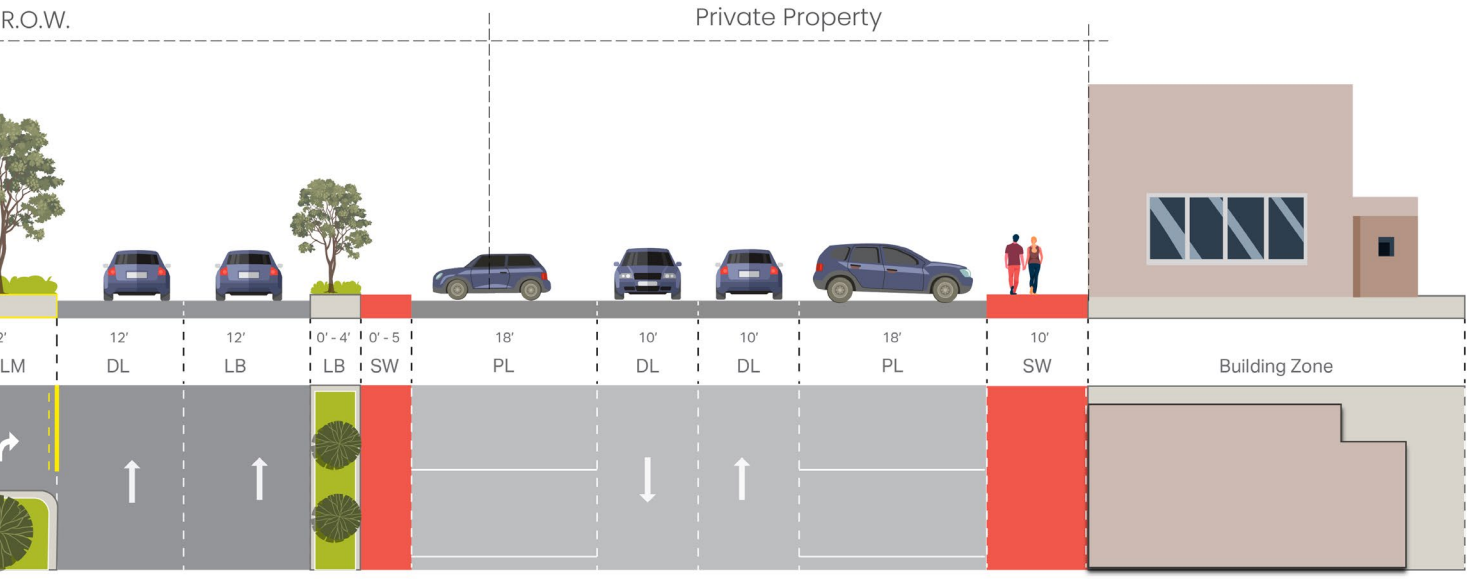


STING STREET SECTION



pe Buffer
SW Sidewalk
PL Parking Lane

POSED STREET SECTION



pe Buffer
SW Sidewalk
PL Parking Lane

Implementation

06

Source: AECOM

06
Implementation

Knowing that all eleven recommendations are important to the community, the project team worked with Steering Committee members to understand how the projects rank amongst each other and in terms of community priority. Each recommendation was assessed on how many factors would be achieved if the recommendation were to be implemented. Table 15 and 16 explain the prioritization factors and their associated score values.

The following indicates how scores were translated to priority levels.

Table 15: Priority Scores

Priority Level	Score
High	16 - 23
Medium	8 - 15
Low	7 & below

Source: AECOM

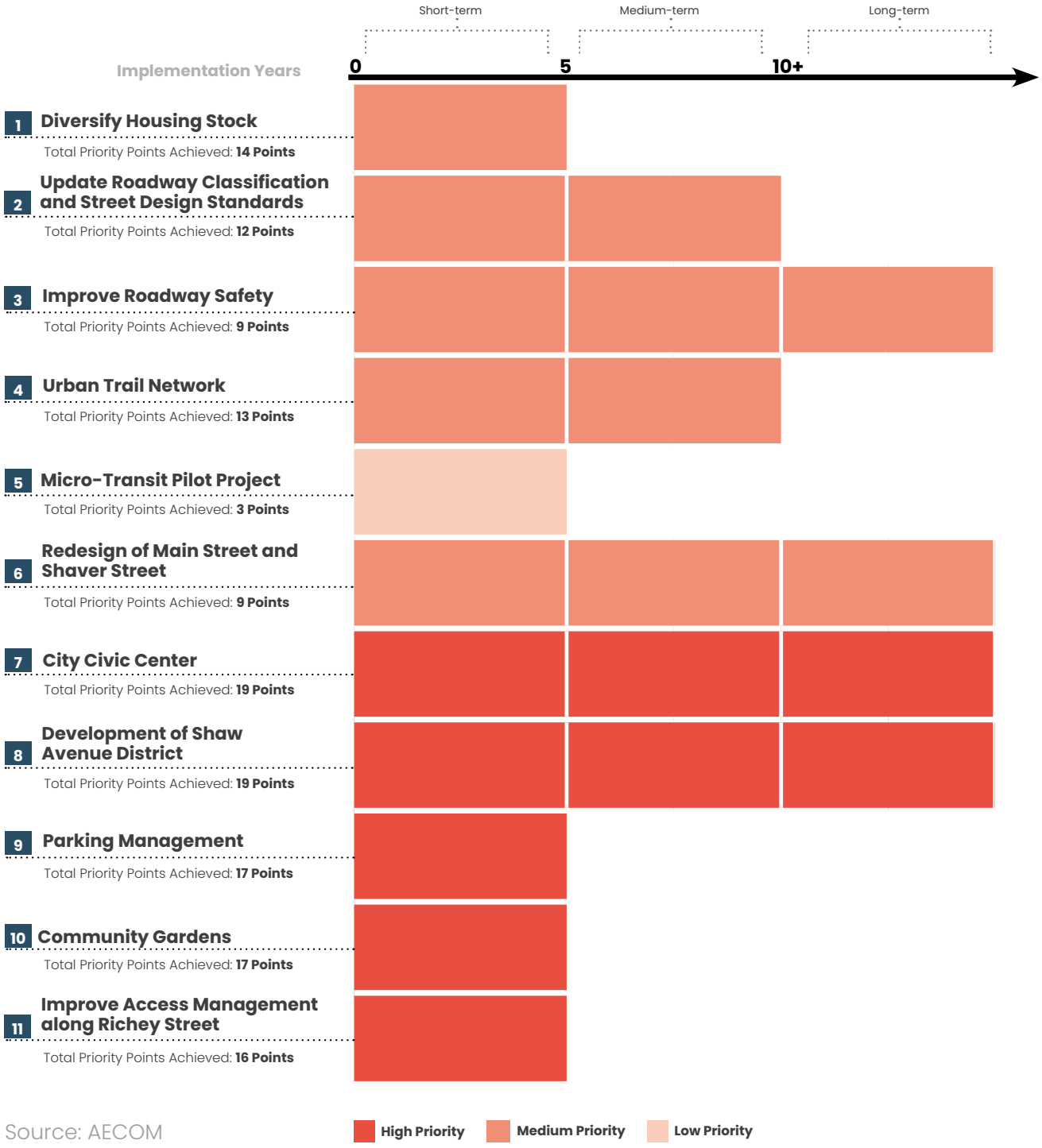
Table 16: Prioritization Factors

Creation of Local Jobs – Does the recommendation help induce the creation of new jobs within the study area?	3 Points
Bike and Pedestrian Accessibility – Does the recommendation help improve bike and pedestrian amenities? Does it help encourage the use of multi-modal travel?	3 Points
Improves Housing Options – Does the recommendation help incentivize the creation of diverse housing options?	3 Points
Area Beautification – Does the recommendation help beautify the study area?	3 Points
Ability to Leverage Non-Traditional Funding Mechanisms – Does the recommendation leverage additional funding sources, other than city funding?	2 Points
Implementation Feasibility – How easily can the recommendation be implemented?	2 Points
Improves Access to Open Space – Does the recommendation result in additional open space for the community? Is the open space accessible by multi-modal options?	2 Points
Promotes Walkability & Pedestrian Safety – Does the recommendation promote overall safety for pedestrians and reduce conflicts between other modes?	2 Points
Positive Impact on City Tax Revenues – Does the recommendation help improve the value of parcels and assets?	2 Points
Positive Public Health Impact – Does the recommendation have a positive impact on the overall public health of the community? Does the recommendation help physically activate the community?	1 Point
Improves Congestion and Overall Traffic Safety – Does the recommendation help improve traffic and congestion within the study area?	1 Point

Source: AECOM

Table 17 indicates how projects ranked based on priority and timeframe. Timeframe indicates a general timeline as to how long it may take for a project to be fully implemented.

Table 17: Project Priority Table and Implementation Timeline



Source: AECOM

Table 18 indicates how projects ranked on based on priority and timeframe. Timeframe indicates a general timeline as to how long it could take for the project to fully implemented.

Appendix A contains planning level rough order of magnitude cost for every recommendation.

Table 18: Potential Funding Sources per Recommendations

	Project	Cost*	Local Funding	TIRZ Funding	Metropolitan Planning Organization / TxDOT / METRO	Federal Grants	State Grants	Local Government Funding	Private Sources
1	Diversifying Housing Stock	N/A	X	X					
2	Update Roadway Classification and Street Design Standards	N/A	X		X				X
3	Improve Roadway Safety	N/A	X		X	X			X
4	Urban Trail Network	$4,626,500	X	X		X	X		X
5	Micro-Transit Pilot Project	$786,500	X	X	X				
6	Redesign of Main Street and Shaver Street	$5,715,500	X		X				X
7	City Civic Center	$19,588,500	X	X		X	X		X
8	Development of Shaw Avenue District	$32,788,500	X	X		X	X		X
9	Parking Management	$854,000	X	X					
10	Community Gardens	$39,000	X				X		X
11	Improve Access Management along Richey Street	$60,000	X						X

Costs have been rounded up to the nearest $500

Source: AECOM

APPENDIX

A

Disclaimer:

The following cost estimations are not intended to be used for permitting, bidding, or construction.

All cost estimates have been prepared by AECOM for the sole use of the City of Pasadena Livable Centers Program.

This estimate represents our planning judgment as professionals knowledgeable with the construction of similar projects. This estimate is for planning and programming purposes only and does not guarantee what actual construction costs will be.

Diversify Housing Options

01

Overall Project Cost:
N/A

Recommendation is a policy and therefore does not have direct project-related costs.

Subject Area /

Mobility **Housing** **Quality of Life**

Project Goals /

1 2 **3** **4** 5
6 7 8 9 **10**

Livability Principles /

1 2 **3** **4** 5

Project Partners /

1. **Habitat for Humanity**
2. San Jacinto Community College
3. Fuller Center
4. **City of Pasadena (Planning Department; Public Works; Housing Department)**
5. Harris County Community Services Department

Update Roadway Classification

02

Overall Project Cost:
N/A

Recommendation is a policy and therefore does not have direct-project related costs.

Subject Area /

Mobility Housing **Quality of Life**

Project Goals /

1 **2** **3** 4 **5**
6 **7** 8 **9** 10

Livability Principles /

1 **2** 3 **4** **5**

Project Partners /

1. **City of Pasadena (Planning Department; Public Works; Housing Department)**
5. TxDOT

Improve Roadway Safety

03

Subject Area /

Mobility Housing **Quality of Life**

Project Goals /

1 **2** **3** 4 **5**
6 7 8 9 **10**

Livability Principles /

1 **2** 3 4 **5**

Project Partners /

1. City of Pasadena (Planning Department; Public Works; Housing Department)
2. TxDOT
3. Harris County Engineering
4. Pasadena Economic Development Corporation

Overall Project Cost:

N/A

The following table provides planning-level cost estimates per tool that is being recommended.

Estimated Costs

Item	Units	Unit Price	Assumptions
Roadway Safety Toolkit			
Intersection pedestrian crossing (Standard)	EA	Approximately $240	Assuming 36' crossing distance
Intersection pedestrian crossing (High-visibility)	EA	Approximately $350 to $1,000	High-visibility paint, ladder design, etc.; Assuming 36' crossing distance
ADA intersection upgrade	EA	$10,000	Assumes 4 new ADA ramps, short segment of sidewalk, & new curb and gutter.
Mid-block crossing	EA	$12,000	Includes striping, signage, and ADA ramps
Mid-block crossing beacon	EA	$75,000 to $100,000	HAWK technology
Landscape Median	SF	$270	Assumes Type II curb; Topsoil, fertilizer, and seeding; landscaping not included here.
Curb extensions	EA	$15,000 per curb	A four-way intersection would have 8 curb extensions
Sidewalk reconstruction	SY	$115	
Signal timing adjustment	EA	$2,500 to $3,500	Per intersection

Urban Trails Network

04

Subject Area /

Mobility Housing Quality of Life

Project Goals /

1 2 3 4 5
6 7 8 9 10

Livability Principles /

1 2 3 4 5

Project Partners /

1. City of Pasadena (Planning Department; Parks and Recreation)
2. City of Pasadena ISD
3. Harris County Flood Authority
4. Pasadena Economic Development Corporation

Overall Project Cost:
$4,626,500

**Costs have been rounded up to the nearest $500*

Estimated Costs

Item	Qty	Units	Unit Price	Cost*	Assumptions
Phase 1 Trail Design 1 (6,200')					
General Conditions (15%)	1	LS	$9,125.59	$9,500	Mobilization, Permits, etc.
SWPPP and Tree Protection	1	LS	$50,000.00	$50,000	Temporary and Permanent Erosion Control, Stormwater BMP's
Demolition/Removals	13778	SY	$3.00	$41,500	Small Trees, Misc Concrete, Curbs
Topsoil Removal/Stockpiling	2411	CY	$12.00	$29,000	Assume 9" Average Topsoil Depth
Earthwork (Cut/Fill)	3215	CY	$8.00	$26,000	Assume 1' Average Depth w/ Balanced Site
Aggregate Base	1378	CY	$45.00	$62,000	6" Depth
Asphalt Pavement	574	CY	$200.00	$115,000	10' Width @ 3" Depth (Intermediate and Surface Course)
Decorative Concrete Crosswalks	333	SY	$140.00	$47,000	Colored and Stamped Concrete. 6 Crossings @ 12' x 50' Avg. (Includes Removal)
ADA Curb Ramps	12	EA	$1,200.00	$14,500	At Each Street Crossing
Topsoil Placement	2411	CY	$12.00	$29,000	Assume 6" + 3" Redistributed for General Grading
Seeding/Restoration	6889	SY	$2.25	$15,500	4' on each side. Preparation included.
Benches	25	EA	$1,500.00	$37,500	500' O.C.
Trash Receptacles	25	EA	$1,200.00	$30,000	500' O.C.
Bike Racks	18	EA	$650.00	$12,000	3 Per Plaza

Trailside Plaza	2480	SF	$15.00	$37,500	20'x20' decorative paver wayside plaza @ 1000' O.C.
Ped/Trail Lighting	62	EA	$4,500.00	$279,000	100' O.C. Alternating Sides
Trail Signage & Wayfinding	6	EA	$800.00	$5,000	Branding and Wayfinding at each wayside plaza
Trees	413	EA	$500.00	$207,000	30' O.C. per side
Shrubs	350	EA	$50.00	$17,500	Groupings of 14 each bench/trash receptacle location
			Subtotal	**1,064,500**	
			Design/Engineering & Construction Contingency (30%)	$319,500	
			Total	**$1,384,000**	$220 Per Linear Foot of Primary Trail

Item	Qty	Units	Unit Price	Cost*	Assumptions
Phase 1 Trail Design 2 (16,700')					
General Conditions (15%)	1	LS	$37,518.79	$38,000	Mobilization, Permits, etc.
SWPPP and Tree Protection	1	LS	$150,000.00	$150,000	Temporary and Permanent Erosion Control, Stormwater BMP's
Demolition/Removals	27833	SY	$6.00	$167,000	Small Trees, Misc Concrete, Curbs, Existing Asphalt, Drainage Structures
Topsoil Removal/Stockpiling	5567	CY	$12.00	$67,000	Assuume 9" Average Topsoil Depth
Earthwork (Cut/Fill)	7422	CY	$8.00	$59,500	Assume 1' Average Depth w/ Balanced Site
Aggregate Base	2783	CY	$45.00	$125,500	6" Depth
Asphalt Pavement	1237	CY	$200.00	$247,500	8' Width @ 3" Depth (Intermediate and Surface Course)
Decorative Concrete Crosswalks	778	SY	$140.00	$109,000	Colored and Stamped Concrete. 14 Crossings @ 12' x 50' Avg. (Includes Removal)
ADA Curb Ramps	28	EA	$1,200.00	$34,000	At Each Street Crossing
Topsoil Placement	5567	CY	$12.00	$67,000	Assume 6" + 3" Redistributed for General Grading
Seeding/Restoration	14844	SY	$2.25	$33,500	4' On Each Side. Preparation included.
Pedestrian Hybrid Signals	2	EA	$90,000.00	$180,000	HAWK Signals
Benches	67	EA	$1,500.00	$100,500	1000' O.C.
Trash Receptacles	67	EA	$1,200.00	$80,500	1000' O.C.
Ped/Trail Lighting	167	EA	$4,500.00	$751,500	100' O.C. Alternating Sides
Trail Signage & Wayfinding	6	EA	$800.00	$5,000	Branding and Wayfinding at Each Wayside Plaza
Trees	557	EA	$500.00	$278,500	60' O.C. per side
			Subtotal	**$2,494,000**	
			Design/Engineering & Construction Contingency (30%)	$748,500	
			Total:	**$3,242,500**	$193 Per Linear Foot of Primary Trail

Micro-Transit Pilot Project

05

Subject Area /

Mobility Housing Quality of Life

Project Goals /

1 2 **3** 4 5
6 7 8 9 10

Livability Principles /

1 **2** **3** 4 **5**

Project Partners /

1. Harris County Engineering
2. City of Pasadena (Planning Department; Public Works Department)

Overall Project Cost:

$786,500

** Assumption*
** Cost have been rounded up to the nearest 500*

Estimated Costs

Item	Qty	Units	Unit Price	Cost*	Assumptions
Micro-Transit Pilot Project					
Turnkey provider cost		Revenue hour	$50 - $60		Need to know the number of vehicles and span of service to determine vehicle revenue hours
					Quantity = (number of vehicles * hours of service)*number of days in service
	13,104.00	Revenue hour	$60	$786,500	Vehicles = 3; Span of service = 14 hrs; Days in service = 312 (6 days per week)
			Subtotal	**$786,500**	
Design/Engineering & Construction Contingency (30%)				N/A	
			Total:	**$ 786,500**	

Redesign of Main Street and Shaver Street

06

Subject Area /

Mobility Housing Quality of Life

Project Goals /

1 **2** **3** 4 **5**
6 **7** **8** **9** 10

Livability Principles /

1 **2** **3** **4** **5**

Project Partners /

1. City of Pasadena (Planning Department; Public Works Department)
2. TxDOT
3. Harris County Engineering

Overall Project Cost:
$5,715,500

**Costs have been rounded up to the nearest $500*

Estimated Costs

Item	Qty	Units	Unit Price	Cost	Assumptions
Shaver Street					
General Condition (15%)	1	LS		$290,500.00	
Reconstructed sidewalk (13' SUP)	14,347	SY	$70.00	$1,004,500.00	Clearing sidewalk area; new concrete
Reconstructed sidewalk (11' SUP)	12,140	SY	$70.00	$850,000.00	Clearing sidewalk area; new concrete
Stripe removal	19,866	LF	$0.36	$7,500.00	
Stripe prep 4"	39,731	LF	$0.08	$3,500.00	
New stripe 4" yellow dash	19,866	LF	$0.94	$19,000.00	
New stripe 4" yellow solid	19,866	LF	$0.78	$15,500.00	
Center lane arrows on street	20	EA	$203.23	$4,500.00	Placed at every intersection
2 - 3' wide Landscape - Street buffer	240	EA	$125.00	$30,000.00	Planting buffer is spaced apprx. every 40 feet to allow for extra room along the SUP
Signage	20	EA	$30.00	$1,000.00	Placed approximately every 1/4 mile to indicate SUP
			Subtotal	**1,935,500.00**	

Item	Qty	Units	Unit Price	Cost*	Assumptions
Main Street					
General Condition (15%)				$301,000	
Reconstructed sidewalk (13' SUP)	14,491	SY	$70.00	$1,014,500.00	Clearing sidewalk area; new concrete
Reconstructed sidewalk (11' SUP)	12,262	SY	$70.00	$858,500.00	Clearing sidewalk area; new concrete
Stripe removal	20,064	LF	$0.36	$7,500.00	
Stripe prep 4"	30,097	LF	$0.08	$2,500.00	
New stripe 4" white solid	20,064	LF	$0.70	$14,500.00	
2 - 3' wide Landscape - Street buffer	250	EA	$125.00	$31,500.00	Planting buffer is spaced approx. every 40 feet to allow for extra room along the SUP
Bicycle lane	2.8	Mile	$25,000.00	$70,000.00	Not painted; markings on-street; buffered; assumes both travel directions
Bicycle pavement marking	20	EA	$184.74	$4,000.00	One marking approximately every 0.1-mile
Signage (roadway)	40	EA	$30.00	$1,500.00	One sign every 500 feet indicating bike lane
Signage	20	EA	$30.00	$1,000.00	Placed approximately every 0.1-mile to indicate SUP
			Subtotal	**$2,005,500.00**	
			Design/Engineering & Construction Contingency (30%)	$602,000.00	
			Total:	**$2,908,500.00**	

City Civic Center

07

Subject Area /

Mobility Housing **Quality of Life**

Project Goals /

1 **2** **3** 4 5
6 **7** **8** **9** 10

Livability Principles /

1 2 **3** **4** 5

Project Partners /

1. City of Pasadena (Planning Department; Public Works Department)
2. Pasadena Economic Development Corporation

Overall Project Cost:
$19,855,500

**Costs have been rounded up to the nearest $500*

Estimated Costs

Item	Qty	Units	Unit Price	Cost	Assumptions
Southmore Avenue Streetscape				1450 LF. Assume 45' wide improvement area. North Side of Street Only. Assume existing roadway curb to remain. Will require easement/agreement with private property owners (not included in cost).	
General Conditions (15%)	**1**	**LS**	**$110,092.50**	**$110,093**	Assume 15% of Project Construction. Includes Permitting, Insurance, Fees, Mobilization, Etc.
SWPPP and Tree Protection	1	LS	$20,000.00	$20,000	
Asphalt Removal	20000	SF	$1.00	$20,000	Assume Parking Lot Between Jeff Ginn Mem Dr and Davis St will Be Removed. Assume existing sidewalks will be removed.
Concrete Sidewalk Removal	7250	SF	$1.00	$7,250	
Special Paving	11600	SF	$15.00	$174,000	1450 LF, 16' Sidewalk with 50% of Area Decorative Paving (Brick or Unit Pavers)
Concrete Sidewalk	11600	SF	$6.00	$69,600	1450 LF, 16' Wide Sidewalk with 50% Plain Standard Concrete, 4" Depth
ADA Curb Ramps	4	EA	$1,200.00	$4,800	2 curb ramps per crosswalk
Furnish and Place Topsoil	430	CY	$60.00	$25,800	Assume 4" Average Topsoil
Street Tree	78	EA	$500.00	$39,000	Assume 40' Spacing. Double Row.
Bench	16	EA	$1,500.00	$24,000	Assume 100' Spacing
18" Seating Wall	750	LF	$100.00	$75,000	Assume Cast in Place Seating Walls Along 50% of Street Length
Bike Rack	10	EA	$650.00	$6,500	Assume 10 Bike Racks and Concrete Pads
Trash Receptacle	8	EA	$1,200.00	$10,000	Assume 200 Foot Spacing

Pedestrian Light Pole	39	EA	$4,500.00	$175,500	Assume 40' Spacing
Ornamental Plantings	14500	SF	$4.00	$58,000	Assume 10' wide planting strip of perennial plantings, 1450 LF
Seeded Turf	3222	SY	$2.25	$7,500	Assume 20' wide turf area, 1450 LF
Irrigation System	1	AC	$15,000.00	$15,000	Assume Planting Areas Irrigated
Crosswalk	2	EA	$1,000.00	$2,000	Assume Ladder Crosswalk Pavement Marking at Each Drive/Street Crossing
			Subtotal	**$844,500.00**	
			Design/Engineering & Construction Contingency (30%)	$235,500.00	
			Total	**$1,098,000.00**	

Item	Qty	Units	Unit Price	Cost*	Assumptions
Davis Street Streetscape				**2540 LF. Assume west side only. Assume 10' sidewalk adjacent to commercial on private property (1140 LF), 6' sidewalk + 6' planting strip adjacent to residential (1400 LF). Will require easement/agreement with private property owners (not included in cost)**	
General Conditions (15%)	1	LS	$78,450.00	$2,639,500	Assume 15% of Project Construction. Includes Permitting, Insurance, Fees, Mobilization, Etc.
SWPPP and Tree Protection	1	LS	$30,000.00	$30,000	
Concrete Curb Removal	2280	LF	$4.00	$9,500	
Asphalt Removal	15000	SF	$1.00	$15,000	Assume 1 parking space (18' of pavement) will be removed at commercial areas to create wider space for sidewalk
Concrete Sidewalk Removal	7000	SF	$1.00	$7,000	Remove existing sidewalks in residential area
Concrete Driveway Apron Removal	22	EA	$250.00	$5,500	Demo residential driveway aprons at new sidewalk locations
Concrete Curb	2280	LF	$25.00	$57,000	"Assume new roadway curb is required for commercial areas but not residential areas and new parking lot curb at commercial areas."
Concrete Sidewalk	19800	SF	$6.00	$119,000	Assume 10' Wide Sidewalk Commercial Areas (1140 LF), 6' Sidewalk at Residential Areas (1400 LF)
ADA Curb Ramps	10	EA	$1,200.00	$12,000	2 curb ramps per crosswalk
Residential Driveway Apron	22	EA	$1,500.00	$33,000	Assume all residential driveways will require replacement or significant modification
Furnish and Place Topsoil	500	CY	$60.00	$30,000	Assume 4" Average Topsoil
Street Tree	64	EA	$500.00	$32,000	Assume 40' Spacing along entire length of corridor
Seeded Turf	2000	SY	$2.25	$4,500	Assume 8' Width at Commercial (1140 LF), 6' Width at Residential (1400 LF)

Irrigation System	1	AC	$15,000.00	$15,000	Assume Commercial Areas Only
Pedestrian Light Pole	33	EA	$4,500.00	$148,500	Assume 60' Spacing at Commercial (1140 LF) and 100' Spacing at Residential (1400 LF)
Crosswalk	5	EA	$1,000.00	$5,000	Assume Ladder Crosswalk Pavement Marking at Each Drive/Street Crossing
			Subtotal	**$3,162,500.00**	
Design/Engineering & Construction Contingency (30%)				$949,000.00	
			Total:	**$4,111,500.00**	

Item	Qty	Units	Unit Price	Cost*	Assumptions
Harris Avenue Streetscape				**1750 LF. Assume south side only. Typical cross section to include 8' planting strip + 8' Sidewalk. Will require easement/ agreement with private property owners (not included in cost).**	
General Conditions (15%)	1	LS	$62,775.00	$63,000	Assume 15% of Project Construction. Includes Permitting, Insurance, Fees, Mobilization, Etc.
SWPPP and Tree Protection	1	LS	$20,000.00	$20,000	
Asphalt Removal	21500	SF	$2.00	$43,000	Assume 1 parking space (18' of pavement) will be removed at mall to create wider area for sidewalk
Concrete Removal	1400	SF	$2.00	$3,000	Assume existing concrete sidewalks removed.
Concrete Curb	1200	LF	$25.00	$30,000	Assume existing roadway curb to remain. Assume new parking lot curb at mall.
Concrete Sidewalk	14000	SF	$6.00	$84,000	Assume 8' Wide Sidewalk
ADA Curb Ramps	14	EA	$1,200.00	$17,000	
Commercial Driveway Apron	7	EA	$5,000.00	$35,000	**Assume all commercial driveways will require replacement or significant modification**
Furnish and Place Topsoil	180	CY	$60.00	$11,000	**Assume 6" Average Topsoil**
Street Tree	44	EA	$500.00	$22,000	**Assume 40' Spacing**
Seeded Turf	1560	SY	$2.25	$4,000	**Includes Prep**
Irrigation System	0.5	AC	$15,000.00	$7,500	**Assume landscape areas will be irrigated**
Pedestrian Light Pole	30	EA	$4,500.00	$135,000	**Assume 60' Spacing**
Crosswalk	7	EA	$1,000.00	$7,000	**Assume Ladder Crosswalk Pavement Marking at Each Drive/Street Crossing**
			Subtotal	**$481,500.00**	
Design/Engineering & Construction Contingency (30%)				$144,500.00	
			Total:	**$626,000.00**	

Item	Qty	Units	Unit Price	Cost*	Assumptions
Adaptive Re-Use Food Hall				**Project is based off adaptive reuse of old AT&T building which has a 28,000 SF Building Footprint**	
General Conditions (15%)	1	LS	$924,000.00	$924,000	Assume 15% of Project Construction. Includes Permitting, Insurance, Fees, Mobilization, Etc.
Building Renovation	28000	SF	$200.00	$5,600,000	$180/SF Low End - $250/SF High End.
Site Improvements	28000	SF	$20.00	$560,000	Assume Building Surrounds Will Be Updated with Seating Areas, Side-walks, Plantings, Trees, Lighting
			Sub Total	**$7,084,000.00**	
			Design/Engineering & Construction Contingency (30%)	$2,125,500.00	
			Total:	**$9,209,500.00**	

Item	Qty	Units	Unit Price	Cost*	Assumptions
Adaptive Re-Use Food Hall				**Project is based off a 4.75 acre area**	
General Conditions (15%)	1	LS	$325,275.00	$325,500	Assume 15% of Project Construction. Includes Permitting, Insurance, Fees, Mobilization, Etc.
SWPPP and Tree Protection	1	LS	$30,000.00	$30,000	
Asphalt Removal	110000	SF	$1.00	$110,000	Removal of Existing Asphalt Parking Lot
Pond - Excavation	10000	CY	$8.00	$80,000	Excavation for Stormwater Basin. 0.6 Acres x 10 ft average depth. Assume Haul Away
Pond - Drain Structures	1	LS	$10,000.00	$10,000	Assume 2 Headwalls and 1 Outfall Structure
Amphitheather Excavation	7800	CY	$8.00	$62,500	Excavation for Amphitheater and Stage. 1.6 Acres x 3 ft average depth. Assume Haul Away
Gateway - Sculpture/Memorial	1	ALLOW	$100,000.00	$100,000	
Gateway - Special Paving	1000	SF	$15.00	$15,000	Assume Unit Pavers
Concrete Sidewalks	25000	SF	$6.00	$150,000	Assume 2500 LF of Walks at 10' Wide.
Amphitheater - Paver Sidewalks	5000	SF	$15.00	$75,000	Assume Pavers Around Stage and Focal Point Areas
Amphitheater - Seating Walls	900	LF	$100.00	$90,000	Assume 6 Rows at 150' Each, Cast in Place Concrete
Amphitheater - Concrete Stairs	30	LF	$500.00	$15,000	
Amphitheater - Stage/Band Shell	1	EA	$350,000.00	$350,000	includes elevated stage, bandshell, lighting, sound system
Food Truck - Asphalt Aggregate Base	186	CY	$45.00	$8,500	10000 SF x 6" Depth. Assume 320 LF x 30' Wide Paved Area + Drives Con-nections.

Food Truck - Asphalt Surfacing	123	CY	$200.00	$25,000	10000 SF X 4" Depth. Assume 320 LF x 30' Wide Paved Area + Drives Connections.
Food Truck - Concrete Curbs	800	LF	$25.00	$20,000	
Food Truck - Seating Area Paving	2000	SF	$3.00	$6,000	Assume Decomposed Granite Pavement
Food Truck - Picnic Tables	25	EA	$2,000.00	$50,000	Assume high end metal picnic table
Food Truck - Shade Structure/Tent	2000	SF	$15.00	$30,000	Assume tensile shade sail type structure
Lighting - Safety	60	EA	$4,500.00	$270,000	pedestrian light poles.
Lighting - Decorative	1	ALLOW	$75,000.00	$75,000	Gateway lighting, landscape lighting, bollard lights
Benches	20	EA	$1,500.00	$30,000	
Trash Receptacles	10	EA	$1,200.00	$12,000	
Bike Racks	20	EA	$650.00	$13,000	
Drinking Fountain	3	EA	$8,000.00	$24,000	
Furnish and Place Topsoil	1320	CY	$60.00	$79,500	
Trees	190	EA	$500.00	$95,000	Assume 40 Trees Per Acre x 4.75 Acres.
Ornamental Groundcover Planting	10000	SF	$4.00	$40,000	Assume approximately 5% of Site Area to Be Planted With Ornamentals
Pond Planting	22500	SF	$2.00	$45,000	Assume Stormwater Seed Mix + Native Plugs at 2' Spacing. Assume 30' Ring Around Pond = 0.5 Acres
Seeded Turf	12000	SY	$2.25	$27,000	Assume approximately 1/2 of Project Area is Turf Lawn
Irrigation System	2.60	AC	$15,000.00	$39,000	Assume Turf and Ornamental Planting Areas are Irrigated
Site Electrical Service	1	LS	$35,000.00	$35,000	
Technology	1	ALLOW	$50,000.00	$50,000	Device Charging Stations, Public Wifi Service
Site Storm Drainage	4.75	AC	$12,000.00	$57,000	
Misc Site Utilities	1	ALLOW	$50,000.00	$50,000	Water Line for Drinking Fountains and Other Utility Work
			Subtotal	**$2,494,000.00**	
			Design/Engineering & Construction Contingency (30%)	$748,500.00	
			Total:	**$3,242,500.00**	

Item	Qty	Units	Unit Price	Cost*	Assumptions
Civic Campus Open Space				**Project is based off a 2.75 acre area**	
General Conditions (15%)	1	LS	$157,275.00	$157,500	Assume 15% of Project Construction. Includes Permitting, Insurance, Fees, Mobilization, Etc.
SWPPP and Tree Protection	1	LS	$20,000.00	$20,000	
Concrete Sidewalk	18000	SF	$6.00	$108,000	Assume 10' Sidewalks in 4x3 Grid Covering Side
Special Paving	3000	SF	$15.00	$45,000	Assume Unit Pavers in Focal Point Areas
Seating/Planter Walls	1320	LF	$100.00	$132,000	Assume 18" Height. Cast in Place Concrete. 6 Planters at 100'x10'
Benches	16	EA	$1,500.00	$24,000	
Trash receptacles	8	EA	$1,200.00	$10,000	
Drinking Fountain	1	EA	$8,000.00	$8,000	
Bike Racks	8	EA	$650.00	$5,500	
Public Art or Fountain	1	ALLOW	$75,000.00	$75,000	
Furnish and Place Topsoil	2200	CY	$60.00	$132,000	Assume 6" Average Topsoil
Ornamental Plantings	20000	SF	$4.00	$80,000	Assume all planters plus 10' along building edge
Trees	110	EA	$500.00	$55,000	Assume 40 Trees Per Acre
Seeded Turf	12100	SY	$2.25	$27,500	
Safety Lighting	30	EA	$4,500.00	$135,000	Pedestrian Light Poles
Decorative Lighting	1	ALLOW	$50,000.00	$50,000	Tree Uplights, Collard Lights, or Other Decorative Lighting
Site Electrical Service	1	LS	$20,000.00	$20,000	
Technology	1	Allow	$30,000.00	$30,000	Device Charging Stations, Public Wifi Service
Irrigation System	2.75	AC	$15,000.00	$41,500	Assume turf areas and planters to be irrigated
Misc Site Utilities	1	LS	$50,000.00	$50,000	Water Line and Other Miscellaneous Utility Costs
Subtotal				**$1,206,000.00**	
Design/Engineering & Construction Contingency (30%)				$362,000.00	
Total:				**$1,568,000.00**	

Development of Shaw Avenue District

08

Subject Area /

Mobility Housing **Quality of Life**

Project Goals /

1 **2** **3** 4 **5**
6 **7** **8** 9 **10**

Livability Principles /

1 **2** **3** **4** **5**

Project Partners /

1. City of Pasadena (Planning Department; Public Works Department)
2. Pasadena Economic Development Corporation

Overall Project Cost:
$32,788,500

**Costs have been rounded up to the nearest $500*

Estimated Costs

Item	Qty	Units	Unit Price	Cost	Assumptions
Pilot Project: Underpass near Intersection of Shaw Avenue and Main Street					
General Condition (15%)	1	LS	$16,145.96	$16,500.00	Assume 15% of Project Construction. Includes Permitting, Insurance, Fees, Mobilization, Etc.
Art Installation	1	EA	$37,000.00	$37,000.00	Costs dependent on final design. Anticipated amount will include all fees and expenses including materials, equipment, labor, permits, insurance, taxes, and installation. Reference 3rd St Underpass Mural Project Fort Worth, TX. https://www.dfwi.org/mural
Lighting	1	LS	$16,266.48	$16,500.00	1 LED light will be placed on each column
Striping And Pavement Markings	1		$1.08	$1.08	Regulatory pavement markings including crosswalk, roadway striping and turn signage.
Site Preparation	1	LS	$5,617.36	$6,000.00	Full removal of 5" depth concrete sidewalk and gutter
Sidewalk Installation	1	LS	$35,986.92	$36,000.00	5' wide 5" depth concrete sidewalks will be installed with 4 ramps at signal intersections
Signage	1	LS	$1,012.12	$1,500.00	Directional signage
Public Safety Cameras	1	LS	$11,755.78	$12,000.00	CCTV cameras will be installed to enhance public safety
			Subtotal	**$125,500.00**	
			Design/Engineering & Construction Contingency	$38,000.00	
			Total	**$163,500.00**	

Item	Qty	Units	Unit Price	Cost*	Assumptions
Pilot Project: Intersection of Shaw and Main Street					
General Condition (15%)	1	LS	$3,273,060	$3,273,500	Assume 15% of Project Construction. Includes Permitting, Insurance, Fees, Mobilization, Etc.
New Development - Building 1 (Construction + Land Acquisition)	1	LS	$1,871,821	$1,872,000	1 story building w/ brick veneer wood truss framing . RS Means estimate for City of Houston
New Development - Building 2 (Construction + Land Acquisition)	1	LS	$2,991,300	$2,991,500	2 story building w/ brick veneer / wood framing . RS Means estimate for City of Houston
New Development - Building 3 (Construction + Land Acquisition)	1	LS	$10,622,009	$10,622,500	2 story building w/ brick veneer / wood framing . RS Means estimate for City of Houston
Adaptive Reuse - Building 1 - Art Gallery/Office/Retail	1	LS	$3,186,000	$3,186,000	Assume 15,930 SF Building. 2 Stories of Renovation. Our assumption is that the interior of the building will be completely gutted and the exterior of the building will be renovated/ repaired, new mechanical and electrical systems, new windows, etc. Structural changes to the building, building condition, change of building uses, environmental hazard mitigation, and grade of finishes would all effect cost and are relatively unknown at this point in time.
Adaptive Reuse - Building 2 - Retail/Restaurant	1	LS	$2,269,200	$2,269,500	Assume 11,364SF Building. 2 Stories of Renovation. Our assumption is that the interior of the building will be completely gutted and the exterior of the building will be renovated/ repaired, new mechanical and electrical systems, new windows, etc. Structural changes to the building, building condition, change of building uses, environmental hazard mitigation, and grade of finishes would all effect cost and are relatively unknown at this point in time.
Adaptive Reuse - Building 3 - Retail/Restaurant	1	LS	$674,275	$674,500	Assume 7,706SF Building. 1 Stories of Renovation. Our assumption is that the interior of the building will be completely gutted and the exterior of the building will be renovated/ repaired, new mechanical and electrical systems, new windows, etc. Structural changes to the building, building condition, change of building uses, environmental hazard mitigation, and grade of finishes would all effect cost and are relatively unknown at this point in time.
Façade Improvements -Building 1 - Restaurant	1	LS	$4,795	$5,000	Paint removal and application and new signage
Park	1	LS	$200,998	$201,000	Contingent on final design. Cost estimation includes an irrigation system, fence removal, landscaping and CCTV cameras
			Subtotal	**$25,095,500.00**	
			Design/Engineering & Construction Contingency (30%)	$7,529,000.00	
			Total:	**$32,625,000.00**	

Parking Management

09

Subject Area /

Mobility Housing Quality of Life

Project Goals /

1 2 **3** 4 **5**
6 7 8 9 **10**

Livability Principles /

1 **2** **3** 4 5

Project Partners /

1. City of Pasadena (Planning Department; Public Works Department)

Overall Project Cost:
$854,000.00

**Costs have been rounded up to the nearest $500*

Estimated Costs

Item	Qty	Units	Unit Price	Cost*	Assumptions
Parking Management Pilot Project (Civic Center)					
General Condition (15%)	1	LS	$14,653.83	$15,000.00	Assume 15% of Project Construction. Includes Permitting, Insurance, Fees, Mobilization, Etc.
Lighting	1	LS	$81,332.40	$81,500.00	1 LED light will be placed every 20ft
Striping And Pavement Markings	1	LS	$12,182.40	$12,500.00	Regulatory pavement markings including crosswalk, roadway striping and turn signage.
Signage	1	LS	$4,177.40	$4,500.00	Directional signage
			Sub Total	**$113,500.00**	
Design/Engineering & Construction Contingency (30%)				$34,500.00	
			Total:	**$148,000.00**	

Estimated Costs

Item	Qty	Units	Unit Price	Cost*	Assumptions
Parking Management Pilot Project (Shaw District Freeway Underpass)					
General Condition (15%)	1	LS	$70,800.00	$71,000.00	Assume 15% of Project Construction. Includes Permitting, Insurance, Fees, Mobilization, Etc.
Site Preparation	1	LS	$164,000.00	$164,000.00	Assume 15% of Project Construction. Includes Permitting, Insurance, Fees, Mobilization, Etc.
Lighting	1	LS	$146,500.00	$146,500.00	
Striping And Pavement Markings	1	LS	$10,000.00	$10,000.00	
Parking Payment	1	LS	$75,000.00	$75,000.00	
Public Safety Cameras	1	LS	$71,000.00	$71,000.00	CCTV cameras will be installed to enhance public safety
Signage	1	LS	$5,500.00	$5,500.00	
			Signage	**$543,000.00**	
Design/Engineering & Construction Contingency (30%)				$162,900.00	
			Total:	**$706,000.00**	

Community Gardens 10

Subject Area /

Mobility Housing **Quality of Life**

Project Goals /

1 **2** **3** 4 **5**
6 **7** **8** **9** 10

Livability Principles /

1 2 **3** 4 **5**

Project Partners /

1. Healthy Living Matters
2. Harris County Public Health
3. **City of Pasadena (Planning, Public Works, Parks and Recreation, Community Development)**
4. Pasadena Economic Development Corporation
5. Urban Harvest
6. City of Pasadena ISD

Overall Project Cost:
$39,000

**Costs have been rounded up to the nearest $500*

Estimated Costs

Item	Qty	Units	Unit Price	Cost	Assumptions
Pilot Project					
General Conditions	1	LS	$1,725.00	$2,000	Assume 15% of Contractor Installed Items. Includes Permitting, Insurance, Fees, Mobilization,
Sediment Erosion Control	1	LS	$500.00	$500	
Wood Raised Garden Beds	10	EA	$250.00	$2,500	Assume 4' Wide x 10' Long Raised Beds, 18" height. Cedar. Assume 50 Beds for Initial Pilot Project. Material Only, Volunteer Installed.
Mulch Walkways	10	CY	$27.00	$500	Assume 4' Wide Mulch Walkway Around Beds and Amenities at 3" Depth. Adjacent Beds Share Walkways. Material Only, Volunteer Installed.
Topsoil	22	CY	$35.00	$1,000	Assume 2.2 Cubic Yards of Topsoil Per Each Raised Garden Bed. Material Only, Volunteer
Gravel Parking Lot	500	SY	$12.00	$6,000	Assume 10 Parking Spaces for Initial Pilot Project.
Temporary Shade Structure	1	EA	$800.00	$1,000	
Wood Picnic Tables	6	EA	$100.00	$1000	
Water Tap, Meter, Backflow Preventer					Assume Water Line Tap, Water Meter, and Backflow Preventer Provided (Furnished and Installed By Others)

Irrigation Extension Line	400	LF	$10.00	$4,000	Assume 400 feet of Water Line Needed to Supply Water to Hose Bibs.
Hose Bibs - Post Mounted	4	EA	$200.00	$1,000	Assume 4 Hose Bibs Spaced So That Each Garden Bed is Within 50'.
Fencing	600	LF	$12.00	$7,500	Assume 36" Ht. Wood Split Rail Fencing To Enclose 0.5 Acre Area. Material Only, Volunteer Installed.
Tool Shed	1	EA	$3,000.00	$3,000	Assume 8'x12' Prefabricated Tool Shed. Material Only, Volunteer Installed.
Tools	1	ALLOW	$1,000.00	$1,000	Assume Allowance for Purchase of Shovels, Rakes, Wheel Barrows, Hand Tools, Lawn Mower, Rototiller, Hoses, Etc.
			Subtotal	**$31,000**	Project cost is for the planning level study.
			Design/Engineering & Construction Contingency (30%)	$8,000	
			Total	**$39,000**	

Improve Access Management along Richey Street

Overall Project Cost:
$60,000

Subject Area /

Mobility Housing **Quality of Life**

Project Goals /

1 **2** **3** 4 **5**
6 7 8 9 **10**

Livability Principles /

1 2 **3** **4** 5

Project Partners /

1. City of Pasadena (Planning Department; Public Works)
2. Pasadena Economic Development Corporation
3. Local Business Owners

Estimated Costs

Item	Qty	Units	Unit Price	Cost	Assumptions
Richey Street Improvements				**Proposed study should include the follow tasks.**	
Traffic Impact	**1**	**LS**			
Drainage Analysis	1	LS			
Parking Inventory	1	LS			
Design Considerations	1	LS			
			Subtotal	**$60,000.00**	Project cost is for the planning level study.
Design/Engineering & Construction Contingency (30%)				N/A	
			Total	**$60,000.00**	

APPENDIX

B

Appendix B

Air Quality Benefits Estimate

The ultimate goal of the recommendations in this report is to improve livability within the study area. One of the factors that contributes to livability is air quality. Many of the project recommendations, such as the Micro-Transit Pilot Project, the Urban Trail network, and various intersection and street improvements with pedestrians and bikes in mind, have positive implications for improved air quality, as they aim at reducing or eliminating the number of car-based trips that are made. This will also result in a reduction of toxic emissions from cars, such as Nitric Oxides (NOx), Volatile Organic Compounds (VOC), and Carbon Monoxide (CO).to creating safe, convenient, and desirable communities.

There are several factors in the study area that show potential for mode shift in response to project recommendations:

1. The study area average share of workers who drive alone to work is high, at 74% (See Figure 1 for Census Tract level breakdown of drive alone rates). This leaves room for significant improvement. (ACS Transportation to Work Variables, 2017, 5 year estimates)

2. The average trip length for the study area is 6.89 miles. This is typically too far for a traditional bike trip but is within the range of e-bike trips or a shared commuter van.

3. The study area does not currently have a congestion problem, as all roads are performing at a B or better level of service (LOS). This means that more aggressive measures can likely be taken to manage traffic and signals in favor of bicyclists and pedestrians without compromising current LOS and moreover, improvements need not focus only on peak period trips.

4. H-GAC 2017 Origin-Destination data shows a significant share of trips originating within the study area TAZs that also end within them. About 28% of all daily trips are confined to the catchment area. Of these, 88% are non-work trips. This suggests that additional travel choice options within the study area would impact a wide range of activities, from shopping to school trips.

To gauge an appropriate mode shift rate, we looked at the range of drive alone rates within the study area itself. Census Tract 3220, on the western side of the study area, has the lowest drive alone rate in the study area at 63%, 10 points below the average (See Figure 2). This is also one of the most densely populated census tracts and it has a mix of land uses, including the majority of the study area's multifamily properties as well as school and commercial properties. It thus seems reasonable to aspire to a 10% mode share for the rest of the study area.

Method

The calculations below projected a simplified estimate of the potential emissions reductions for the area. The data used for our emissions calculations are the number of total daily trips, trip generation rates and the average miles per trip for the 22 Traffic Analysis Zones (TAZs) that constitute our study area as published in the H-GAC 2017 Origin-Destination table (See Figure 3) as well as an estimated mode shift rate and national emission averages.

Catchment Area

The Pasadena Livable Studies Center Area was defined as the catchment area to determine the number of trips that would potentially be affected by project recommendations. There are 22 TAZs within the study area. (See Figure 1 for boundary comparison).

Trips Generated

The following regional trip generation rates, based on H-GAC 2017 Origin-Destination trip data, were used to estimate the total trips produced in the catchment area:

- **5.20 trips per household**
- **1.55 trips per job**

Total Daily Trips

Trip generation rates were applied to the number of households and number of jobs in the study area, as shown by the HGAC regional land use data for 2018. There are approximately 92,136 daily trips originating in or ending within the study area per day. Approximately 23% of these trips are work trips and 77% were non-work trips.

Mode Shift Rate

The mode shift rate is the percent change from car trips to non-car trips. This is the primary factor assumed in trip reduction. An assumed 10% of the household and employment trips generated in the catchment area will switch from vehicular trips to bicycle and pedestrian trips. This assumption applies to overall daily trips (rather than just peak hour trips). Mode shift will reduce the number of trips made by car, in this case by 9,213 trips..

VMT Reduction

The total reduction in vehicle miles traveled (VMT) was calculated by multiplying the average length of a trip within the catchment area (6.89 miles/trip) by the number of trips reduced by assumed mode shift (9,213 trips).

Air Quality Benefits

The MOSERS 11.1 methodology was used to estimate emissions reductions. Emissions rates used are the estimated average emissions of all vehicles, based on 2018 US Department of Transportation data. Estimates for the emissions per mile were used for the following air quality factors:

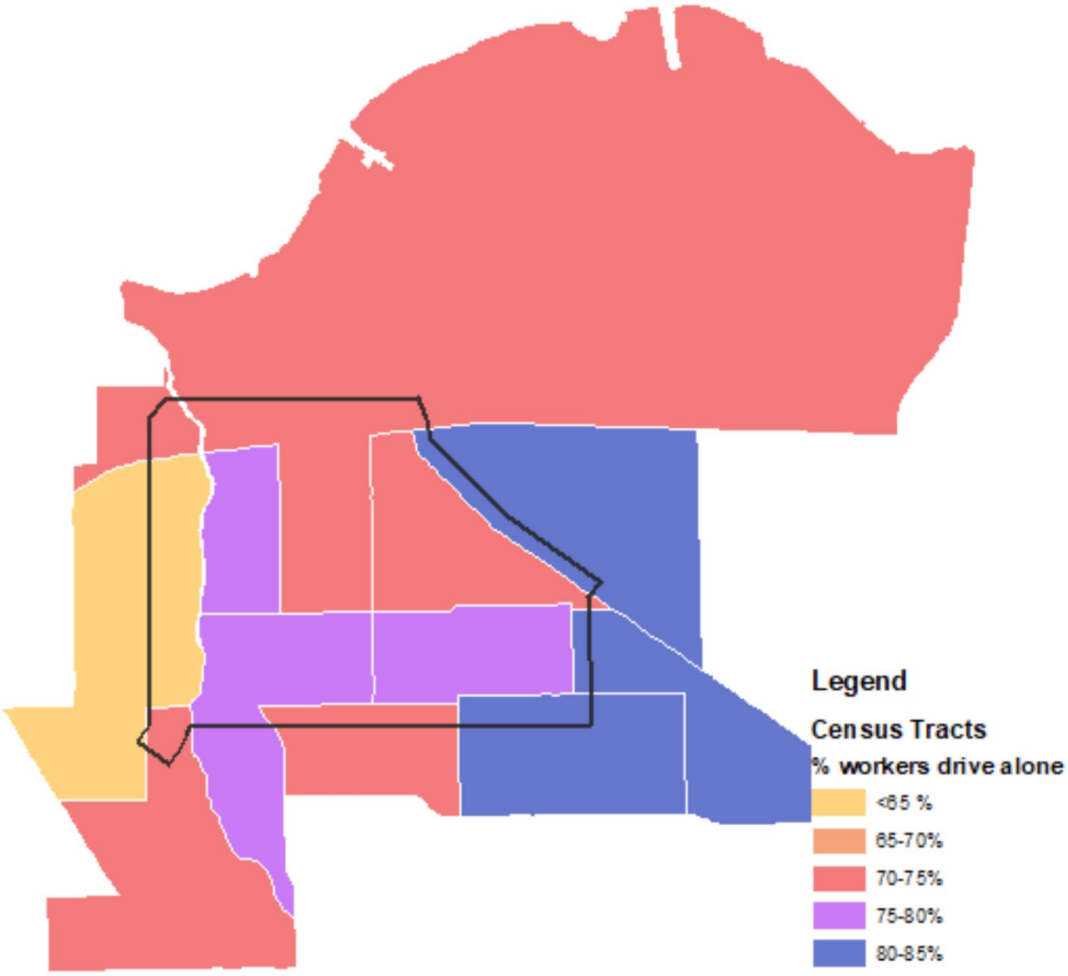
- **NOx – 0.239 grams per mile**
- **VOC – 0.315 grams per mile**
- **CO – 3.732 grams per mile**

Total emissions were annualized to determine the reduction in annual kilograms (kg) resulting from the implementation of Pasadena Livable Centers recommendations, again on the assumption that 10% of trips currently occurring in the study area will shift from single passenger vehicular trips to bike, pedestrian, and transit trips. Total estimated air quality benefits are provided in the annual emissions reduction tab in Table 1.

Table 01: Total Estimated Air Quality Benefits

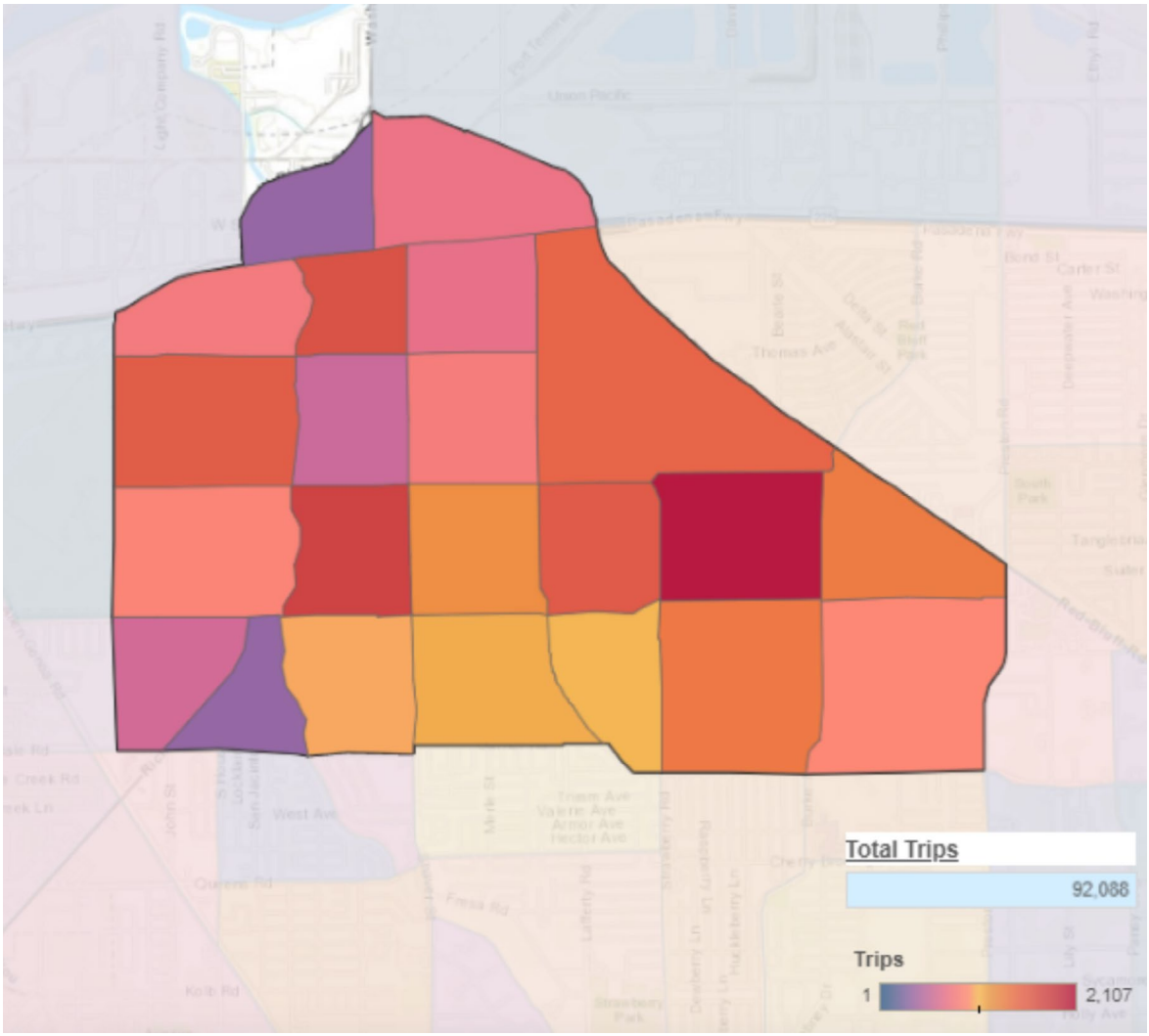
Calculation Step	Equation		Quantity	Units
Pasadena Livable Center Trip Generators (2018)	a	Households	13,583	homes
	b	Employment	13,874	jobs
Trip Rates	c	Households	5.2	trips/day/job
	d	Employment	1.55	trips/day/home
Total Trips	e=(a*c)+(b*d)		92,136	trips/day
Mode Shift Rate	f		10%	percent trips
Trips Replaced	g=e*f		9,213.63	trips
Miles per Trip Replaced	h		6.89	miles/trip
Vehicle Miles Travel Replaced	j=g*h		63,481.91	miles
Emissions Factors	k	Nox	0.24	gm/mile
	l	VOC	0.32	gm/mile
	m	CO	3.73	gm/mile
Total Emissions Reduced	n=j*k	Nox	15,235.66	gm
	o=j*l	VOC	20,314.21	gm
	p=j*m	CO	236,787.53	gm
Assumed Annual Days	q		365	days/year
Metric Conversion Factor	r		1,000	gm/kg
Annual Emissions Reduction	s=n*q*r	Nox	5,561,015,377.32	kg/year
	t=o*q*r	VOC	7,414,687,169.76	kg/year
	u=p*q*r	CO	86,427,447,322.52	kg/year

Figure 01: Share of workers that commute alone by passenger vehicle



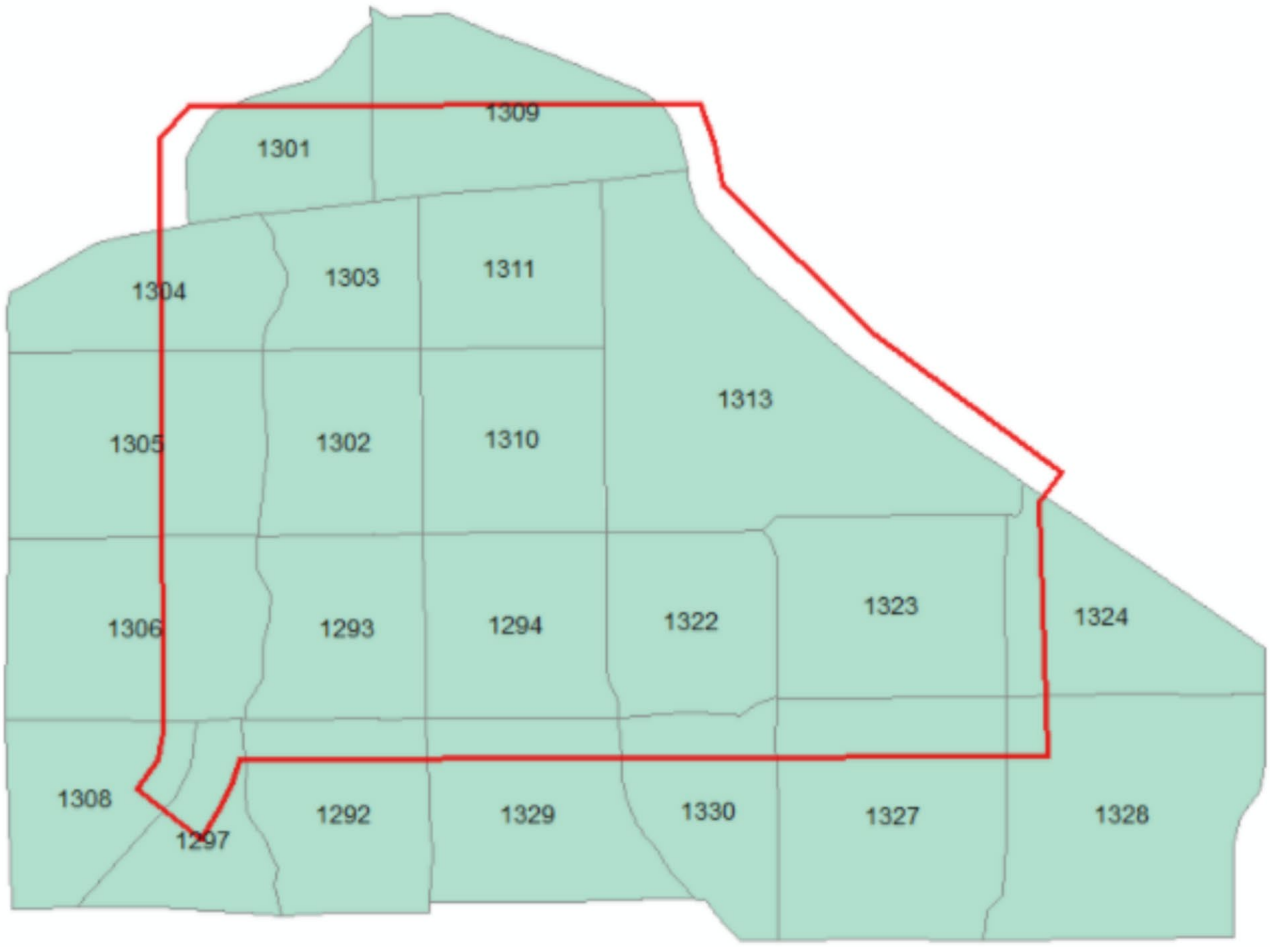
Source: ACS Transportation to Work Variables (2018, 5-year estimates)

Figure 02: Total trips for study area and per TAZ as a heat map.



Source: 2017 Origin-Destination Data, H-GAC Travel Demand Model

Figure 03: 22 TAZs used for study catchment area



Source: 2017 Origin-Destination Data, H-GAC Travel Demand Model