Healthy Corridor Development

A Complete Streets Approach to 18th Avenue South

Health Impact Assessment

December 2019

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ACKNOWLEDGEMENTS

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TABLE OF CONTENTS

TABLE OF CONTENTS *(cont.)*

TABLE OF CONTENTS *(cont.)*

LIST OF FIGURES

COMMONLY USED ABBREVIATIONS

ABCD—Asset-Based Community Development [Approach]

ACS—American Community Survey

ADA—Americans with Disabilities Act

ADU—Accessory Dwelling Unit

CBSA—Core Based Statistical Area

CCAD—Codes Compliance Assistance Department

CDC—Centers for Disease Control and Prevention

CMP—Construction Mitigation Program

CPTED—Crime Prevention Through Environmental Design

CSIP—Complete Streets Implementation Plan

CRA—Community Redevelopment Area

DART—Demand and Response Transportation

EPA—Environmental Protection Agency

FLUM—Future Land Use Map

FTA—Federal Transit Administration

FY—Fiscal Year

HART—Hillsborough Regional Area Transit

HIA—Health Impact Assessment

HiAP– Health in All Policies

LTS—Level of Traffic Stress

MPO—Metropolitan Planning Organization

NACCHO—National Association of County and City Health Officials

NACTO—National Association of City Transportation Officials

PPS—Project for Public Spaces

PSTA—Pinellas Suncoast Transit Authority

RRFB—Rectangular Rapid Flashing Beacon

SGA—Smart Growth America

SPPD—St. Petersburg Police Department

TD—Transportation Disadvantaged

TPL—Trust for Public Land

ULI—Urban Land Institute

HEALTHY ST. PETE
HEALTH IN ALL POLICIES
for a healthier community

BACKGROUND

Health in All Policies

The City of St. Petersburg is dedicated to promoting health as evidenced by its launch of the Healthy St. Pete initiative in 2015 to work towards its mission of building a culture of health by making the healthy choice the easy choice through a collaborative community effort. As part of its Healthy St. Pete initiative, the City has adopted a Health in All Policies (HiAP) approach through both an executive order and council resolution. In its adoption of a HiAP approach, the City has recognized that the conditions in which people are born, live, learn, work, play, and age, known as the social determinants of health, have the greatest influence on the health outcomes of our residents and that plans, policies, programs, and projects implemented by the City outside of the traditional health sector significantly impact the social determinants of health. As such, the City knows that all departments have a role to play in achieving health equity, defined as the highest level of health for all people.

A major goal of HiAP is to apply the consideration of health, health impacts, and the social determinants of health to the City's decision-making. In partnership with the Health in All Policies Pinellas County Collaborative, the City has adopted the approach of integrating HiAP Decision-Support Tools, including Health Planning Matrices, Health Lens Analysis, Health Notes, Health Impact Assessments, and various site audit and observational tools, in decision-making processes for policies, programs, plans, and projects.

HiAP
Health in All Policies
PINELLAS COUNTY COLLABORATIVE

HEALTHY ST. PETE

Health Impact Assessment

Health Impact Assessments (HIA) are a type of decision-support tool that help communities make choices that improve public health. They are defined as "a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, program or project on the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects."[1] Health Impact Assessments offer recommendations to decision-makers for alternatives or improvements that can promote and improve population health in addition to eliminating, reducing, or mitigating the potential negative impacts of a proposed policy, project, or plan.[2]

In the United States, There Are Typically Six HIA Phases [3, 4]

1. Screening

Determine whether an HIA is feasible, timely, and would add value to the decision-making process

2. Scoping

Create a plan and timeline for conducting an HIA that defines priority issues, research questions and methods, and identifies participant roles

3. Assessment

Create an existing conditions profile for a geographic area and/or population in order to understand baseline conditions and to be able to predict change

Evaluate potential health impacts, including the magnitude and direction of impacts, using quantitative and qualitative research methods and data

4. Recommendations

Develop recommendations to improve the project, plan, program, or policy and to mitigate any negative health impacts

5. Reporting

Present results to decision makers, affected communities, and other stakeholders

6. Monitoring

Tracks the impacts of the HIA on the decision-making process and the decision, the implementation of the decision, and the impacts of the decision on health determinants

Dr. M.L. King Jr. Street was recently resurfaced with Complete Streets modifications in St. Petersburg

Complete Streets

Streets are a key public space that make up much of the land in cities around the world, and they are a vital part of what makes an attractive and livable community.[5] However, across America, our conventional street design has often prioritized cars, with many streets lacking features that support other transportation modes, such as walking, bicycling, and taking public transit. To remedy this, cities across the nation have shifted their focus to create Complete Streets. Complete Streets create better transportation environments for people of all ages and physical and economic abilities to safely and comfortably move around a city, whether they are walking, bicycling, taking public transit, or driving.[6] Over 1,400 US cities, regions, and states have implemented Complete Streets policies. Complete Streets include strategic connections within the grid of streets such that a network of routes and facilities are provided for all modes to efficiently reach all parts of the city. There is no singular design that makes a street complete as each one is unique and responds to the community context.[7] Rather than a single set of prescribed elements, Complete Streets are flexible and take into account the surrounding land uses they're intended to serve. They may include sidewalks, separated or unseparated bike lanes, special bus lanes, comfortable and accessible public transportation stops, frequent and safe crossing opportunities, median islands, accessible pedestrian signals, curb extensions, narrower travel lanes, roundabouts, and more.[8]

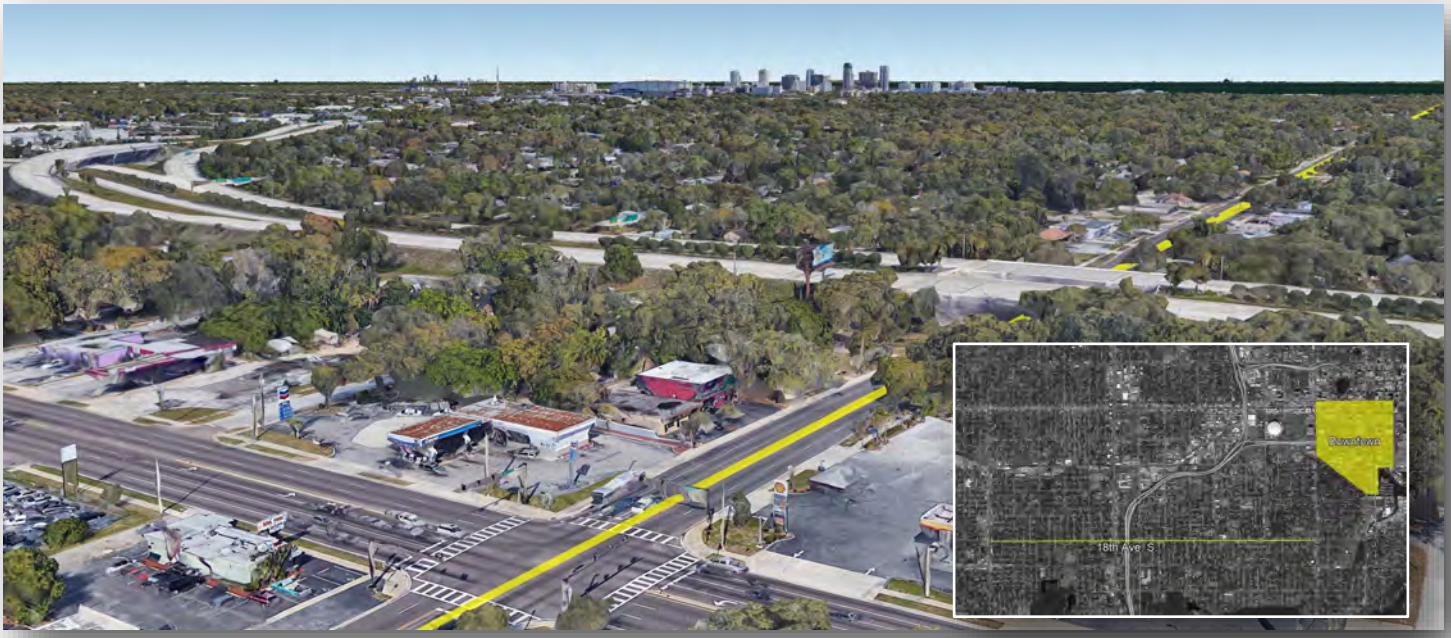
Complete Streets in St. Petersburg

The City of St. Petersburg has a well established dense grid of streets spanning the entire city. This grid system provides significant transportation mode options and many viable route alternatives, meaning there are numerous routes for wherever someone may want or need to go. However, there are still many safety issues and barriers for those traveling outside of cars. The Tampa-St. Petersburg-Clearwater metropolitan area ranked 9th in 2019 on the list of most dangerous metropolitan areas for people walking based on the pedestrian danger index, per Smart Growth America's Dangerous by Design Report.[9] In addition to the public safety issues associated with many roads being "dangerous by design," there are also historical underfunding issues for public transportation in Pinellas County. The Pinellas Suncoast Transit Authority (PSTA), which serves the entire county, has a budget of roughly $80 million, although comparably sized communities in the U.S. typically have a budget of more than $200 million, making it one of the lowest funded transit agencies in the nation for its size.[10] PSTA strives to provide the best service they can but acknowledges that funding is limited.

The City has affirmed its commitment to Complete Streets to address the public safety issues. On November 2, 2015, Mayor Rick Kriseman issued a Complete Streets Administrative Policy (#020400) to direct future priorities and projects. The City Council then unanimously approved the Complete Streets City Council Resolution 2015-540, which affirmed Council's support of the City's Complete Streets Program, including the Administrative Policy. The Resolution calls for the City to continue the development of its transportation system with the intent to "create a comprehensive, integrated, and connected network where Complete Streets are designed and operated to promote safety and accessibility for all users of our roads, trails, and transit systems, including people walking, bicycling, using public transit, driving, and operating commercial and emergency vehicles, and people of all ages and physical and economic abilities."[11]

In June 2019, the City adopted the Complete Streets Implementation Plan (CSIP), which serves as a vision and blueprint for how St. Petersburg's streets should be designed and function over the next 20 years. The plan addresses the need for a safe and efficient multimodal transportation network and lays out the process improvements, program enhancements, capital projects, and performance measures required to meet those needs. The goals include the following:

1. Safe and Comfortable Access
2. Mobility Options for an Integrated Transportation Network
3. Transportation Efficiency that promotes reliable travel times for all modes
4. Social Equity
5. Economic Development
6. High Quality of Life and Community Places
7. Improved Public Health
8. Community Sustainability, Resiliency, and Environmental Quality



Location of 18th Avenue South from Google Earth

Project Background

Eighteenth Avenue South is a neighborhood collector roadway that travels east-west from 49th Street to 4th Street. St. Petersburg's characteristic street grid breaks down north and south of 18th Avenue South. The result is that almost all roadway users, including people walking, biking, and taking public transit, must travel along 18th Avenue South at some point for nonlocal east-west trips. The road is currently characterized by low traffic congestion that results in high motor vehicle speeds. The speeding traffic increases the impacts of crashes and creates difficulties for pedestrians, bicyclists, and transit users. With the added consideration of high poverty and low motor vehicle ownership rates in the neighborhoods surrounding the corridor, residents that walk, bicycle, or take public transit are faced with both safety issues and unpleasant active transportation experiences.

The need to modify the design of the corridor to reduce vehicle speeds and accommodate other modes of travel was heard consistently through public involvement conducted during the development of the CSIP. The CSIP identifies 18th Avenue South as needing separated bike lanes and a reduced maximum desired operating speed of 25 mph. The project is identified as a "Phase 3" project in the CSIP with a timeline of 6-10 years to allow for additional public dialogue and coordination with regional stakeholders. In late 2018, the City applied for and received a grant from Forward Pinellas, the Metropolitan Planning Organization (MPO) for Pinellas County, to conduct a Complete Streets concept planning study on 18th Avenue South between 14th and 35th Streets. The study will begin in early 2020 and its purpose is to identify a suite of safety and operational improvements and potential corridor-level modifications. This HIA will help to inform the scope of work of the upcoming concept planning study and will provide additional evidence necessary to decide on potential corridor modifications that best promote the health of the community.

As of late 2019, the corridor has been identified as one of the top ten priority projects across all of Pinellas County in the draft Forward Pinellas Active Transportation Plan. That designation indicates a commitment to fund full construction of the needed corridor modifications within the plan's 25-year planning horizon. The exact timing of funding availability or source remains undetermined. It is worth noting that the project definition within the plan extends the concept study boundaries east to 4th Street and includes the development of a greenway along Salt Creek between 18th Avenue South and Lake Maggiore.

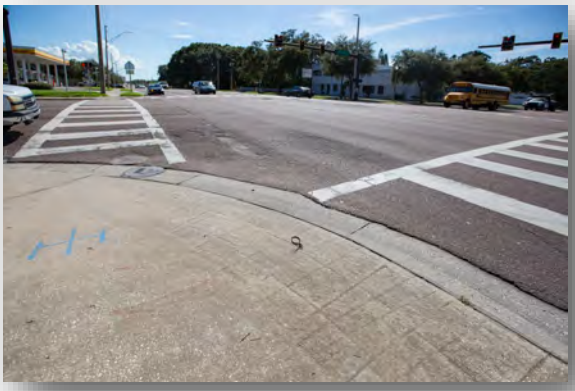
Project History

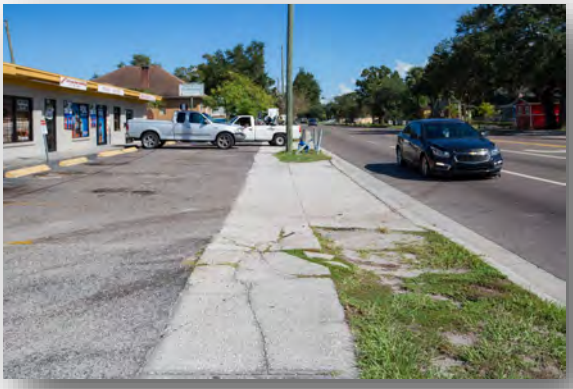
The City has been attempting to address the critical needs along 18th Avenue South for years, as the corridor's needs have been brought up in various studies, reports, and plans in the past decade such as the CSIP, a 2017 Walk Audit Report completed by the Florida Consumer Action Network, and the South St. Petersburg Community Redevelopment Plan.

The CSIP included numerous public engagement workshops in 2017, including a project map and corridor identification activity to identify priority issues and locations for projects. The public identified 18th Avenue South as one of the roads where safety and added mobility improvements are necessary. Public comments were made regarding the need for better lighting, the need to install new and improved existing bike lane markings, and the need to reduce vehicle speeds.

Additionally, the Florida Consumer Action Network Foundation conducted a walk audit of the 18th Avenue South corridor (11th Street to 34th Street) in March 2017. They provided the following recommendations:

1. Speed (reduce speeding)
2. Lighting
3. Bike accommodations
4. Sidewalk width (should be at least 5 ft.)
5. Bus stop amenities





Photos from 18th Avenue South showing curb cuts with and without tactile paving, a bicyclist using the sidewalk, and a parking configuration which causes automobiles to back onto 18th Avenue South

Cracked sidewalk along 18th Avenue South

The group also made the following comments regarding the 18th Avenue South corridor:

"
- Bike/pedestrian/public transit improvements would benefit community lifestyle and be good for small business — put people in front of businesses and 'connects'
- Lighting, especially near bus stops, would be good for safety
- Converting road from 4 to 2 lanes would slow traffic (good for business) and create room for bike facilities. Many people already bike to school and work.
- Make 18th Avenue South an "economic corridor." Businesses, bus stops with shelters and lighting, sidewalk at least 5', bike lane protected with curb, travel lane, median (or paint).
- Should also address crossings (some areas 300' or more between crossings). "

Project History *(continued)*

In the development of the South St. Petersburg Community Redevelopment Plan, the City hosted several meetings convened by an ad hoc advisory committee to collect community input. The community identified a catalog of issues impacting South St. Petersburg at an October 2014 community workshop for the Plan. Several issues that are relevant to the 18th Avenue South corridor are highlighted as follows:

- Poor transit/transportation access
- Speeding in neighborhoods
- Long walks to school through crime ridden areas
- Linking people with jobs
- Unemployment/underemployment
- Community ownership in neighborhood
- 'Broken windows [theory]' — dumping/loitering/prostitution
- Lack of crime prevention
- Vacant land and housing, mixed income housing
- Lack of new construction
- Perception of South St. Petersburg/ poor marketing of successes
- Poor mental/physical health — diabetes/obesity

The South St. Petersburg Community Redevelopment Plan addresses many of these issues by centering its objectives and policies on revitalizing commercial corridors to grow existing businesses and attract new ones; reinvigorating the housing market through rehabilitation and new construction, including the rehabilitation and development of affordable housing; expanding opportunities for entrepreneurs, minorities, women, disadvantaged business enterprises, and small businesses; improving the work readiness skills of residents; and improving early childhood education and teen job readiness. The plan recognizes that the "redevelopment and revitalization of South St. Petersburg's commercial corridors is essential for the CRA [(Community Redevelopment Area)] to meet its many needs and capitalize on its many opportunities" and that commercial corridors "will promote the creation and growth of small businesses, stimulate multifamily residential investment, revitalize their adjoining neighborhoods, provide an employment base and meet the consumer needs of the CRA and City."[12]

A list of relevant plans, studies, and other documents relevant to the project and the area can be found in Appendix A.

HIA SCREENING AND SCOPING

The HIA planning team used Human Impact Partner's Screening Tool to determine whether an HIA would be feasible and how it could help to inform decisions. The team decided to conduct this HIA in order to help inform the upcoming concept planning study and to make recommendations to key decision-makers on how to maximize positive health impacts and mitigate any negative health impacts.

The HIA team held two scoping meetings in late summer and early fall of 2019. The team opted to conduct an intermediate HIA . The team also agreed that the follow-up Complete Streets concept planning study would involve community engagement, and it was best to wait until the consultant was on board in order to avoid confusion and duplication of effort. In the discussion of health impacts, the team choose to focus on traffic injuries and fatalities, physical inactivity, and the economic determinants of health. These focuses were chosen for the following reasons: high rates of vehicular crashes, expressed community concerns regarding chronic health issues, data showing some of the highest prevalence rates of physical inactivity and associated chronic diseases around 18th Avenue South in the City, and recognition that economic and workforce development is a major goal of the South St. Petersburg Community Redevelopment Plan.

The team set the following goals and research questions for the HIA:

Goals

1. Elevate health in the decision-making process
2. Promote fair opportunities for residents to achieve good health and well-being
3. Identify how Complete Streets modifications can promote health and economic development in the South St. Petersburg CRA
4. Provide contextually relevant information on the linkage between economic development, transportation, and public health
5. Create a basis for the future concept planning consultant to incorporate information from the HIA into community engagement and education processes

Research Questions

How could potential Complete Streets corridor modifications on 18th Avenue South impact the following:

1. Active transportation opportunities and physical activity?
2. Access to employment opportunities for neighborhood residents? (Citywide and on the corridor)
3. Existing neighborhood-serving local businesses on the corridor?
4. Future development including neighborhood-serving businesses and affordable housing for community members?

Hypothesized Health Impacts

The HIA team created a logic model (Figure 1) demonstrating the potential impacts of Complete Street Modifications on the economic determinants of health, physical activity, and injuries and fatalities. The team also recognized that the HIA was taking place early in the process and, in combination with the concept study, would help to inform the specific Complete Streets modifications. Therefore, as specific alternatives were not yet available, the team worked on a list to define what potential treatments could occur (Figure 2). These were guided by the recommendations for 18th Avenue South found in the CSIP (Figure 3) and by City staff members discussing some of the public comments made during previous community engagement processes.

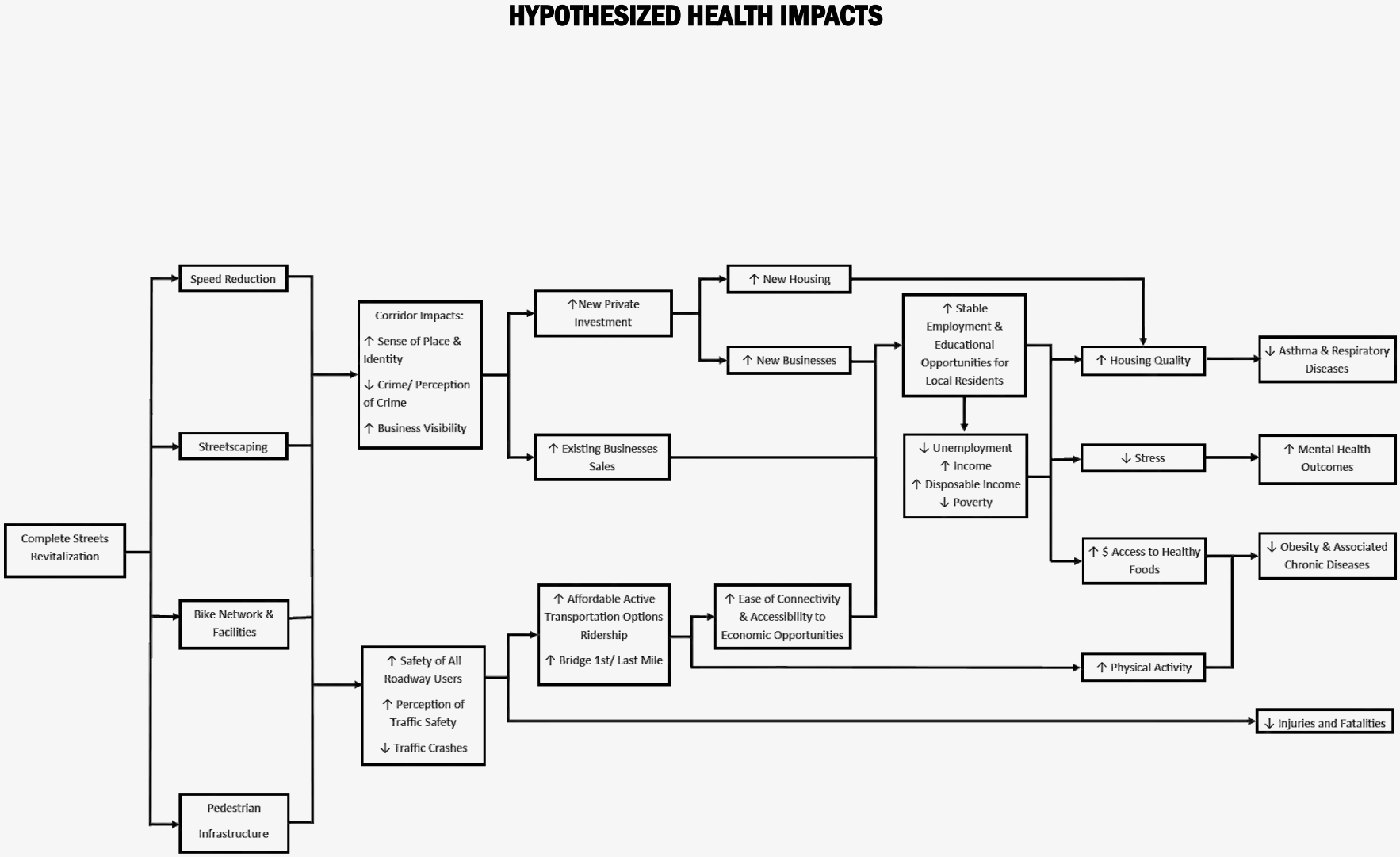


Figure 1: Hypothesized health impacts

Figure 2: Potential Corridor Modifications

Speed Reduction

- Traffic calming[13] strategies:
    - Horizontal deflections: lateral shifts, chicanes, realigned intersections, and traffic circles
    - Vertical deflections: speed humps, speed cushions, speed tables, raised crosswalks, and raised intersections
    - Street width reductions: corner extensions/bulb-outs, chokers, median islands, on-street parking, landscaped buffers, and road diet (4→3 lanes, 4→2 lanes, or 3→2 lanes, depending on the segment in consideration)
    - Routing restrictions: diagonal diverters, closures, and median barriers/forced turn islands
- Modification of larger intersections to include replacement of signals with modern roundabouts, coordination of progression between signals to match desired speeds, and modification of signal cycle lengths or phasing to achieve safe operations and speed moderation
- Street trees

Streetscaping and Placemaking

- Enhancement and separation of pedestrian areas with landscaping, trees, planters, etc.
- Street furniture: benches, chairs, opportunities for sidewalk dining, bicycle parking, water fountains and bottle-filling stations, etc.
- Building fronts/facade improvements
- Community identity signage and banners
- Public art (e.g., murals, statues, paint on asphalt road, etc.)
- Land use and zoning: changes in density, intensity, and land uses (mixed-use, commercial, residential, parklets, etc.)

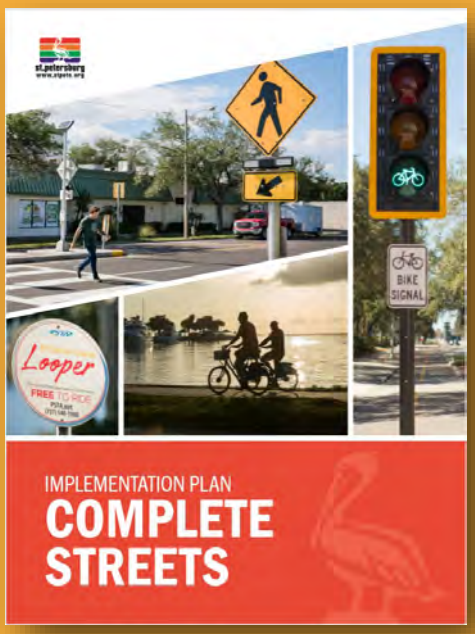
Bicycle Network and Infrastructure

- Connected routes and facilities for bicyclists: separated bike lakes; striped bike lanes, shared-use pathways for bicyclists and pedestrians.
- Bicycle network that connects surrounding areas to the corridor: neighborhood greenways that enhance connectivity to existing and future commercial retail/mixed use destinations on the 18th Avenue South corridor.
- Protected intersection designs that maintain the comfort and connectivity of bicycle lanes through larger intersections.
- Short- and long-term parking for bicycles.

Pedestrian Infrastructure

- Wider sidewalks
  - 8-10 ft. minimum widths dependent on surrounding land uses
  - Combination shared-use/multimodal trail for pedestrians and bicyclists
- Added crossing locations at recurring distances
  - Consistency with surrounding land uses and destinations
  - Consistency with bus stops for improved first/last mile connectivity
- Sidewalk modifications to add or enhance buffer from the curb/road
- Address overhanging vegetation and irrigation
- Address driveway and vehicle parking configurations that induce conflicts and result in vehicle encroachment and obstructions
  - Address missing sidewalks
  - Visually distinguish walking zones where buffered sidewalks may not be feasible
- Signage
  - Wayfinding signage for bicyclists, pedestrians, and transit users
  - Pedestrian awareness (e.g., Rectangular Rapid Flashing Beacon [RRFB] crossings, crosswalk signs, “drive like your kids live here,” “yield to pedestrians” signs at intersections, etc.)
- Pedestrian-scaled lighting
- Signals
  - Modify traffic signals such that pedestrian walk phases are included in all cycles instead of requiring push-button activation
  - Evaluate signal operations and timing to minimize pedestrian delay and exposure: concurrent phasing, exclusive pedestrian phasing, split phasing, leading pedestrian intervals, etc.

Figure 3: Takeaways from the Complete Streets Implementation Plan



1. 18th Avenue South is identified as a "neighborhood collector" through a mixed-use and residential land use context zones.

2. The maximum desired operating speed should be 25 mph; the current posted speed is 35 mph.

3. 18th Avenue South has a modal priority of public transit. Therefore, the new proposed street configuration should support transit use, and it should incorporate some level of transit amenities.

4. The flexible design guidance for neighborhood collectors for the three context zones found along the corridor suggests some combination of 6-10 ft. sidewalks (dependent upon the context zone); separated bicycle facilities or 7 ft. buffered bike lanes; and neighborhood greenway features along connecting streets. The CSIP states that "Neighborhood Greenways utilize the existing grid of low volume and speed neighborhood streets to provide comfortable routes for people riding bicycles while simultaneously improving crossings for people walking and continuing neighborhood desires for traffic calming."

5. The recommendation is for a separated bike lane with striped or physical barriers. (See Figure 14)

6. The Potential Future Lane Re-Allocations section of the plan includes 18th Avenue South as a potential 4→3 lane road diet during phase 2 (2021-2024).

Preliminary schematic ideas of potential roadway configurations for 18th Avenue South. Measurements are approximate.

Rectangular Rapid Flashing Beacon (RRFB) crosswalk on 18th Avenue South in front of Perkins Elementary School

Research and Assessment Methodology

The assessment portion of the HIA involves two parts: 1) creating an existing conditions profile, and 2) evaluating the potential health impacts utilizing a literature review. The literature review will look at many of these potential modification strategies both holistically and, in some cases, specifically. The geographic scale of the assessment will include a target area and study area (Figure 4) and a combination of other geographic scales dependent upon data availability and limitations. When entire census tracts are utilized, the census tracts include tracts 201.1, 205, 208, 207, 206, and 212, as these are the tracts border or encompass the 18th Avenue South corridor between 49th and 4th Streets.

Target Area

The upcoming Complete Streets concept study will look at the 18th Avenue South corridor ranging from 35th Street to 14th Street. Recommendations for corridor-level modifications from the HIA and the concept study will be largely targeted to this area with recognition of the importance of these modifications connecting into the existing transportation network surrounding the area. Most of the data is presented for the entirety of the study area. However, the team determined that it was worthwhile to focus some datasets to the target area where corridor modifications will be made, as these areas are likely to be impacted sooner than the larger study area.

Study Area

The 18th Avenue South corridor serves as a main travel route for nonlocal east/west trips by many roadway users, including people walking, biking, driving, and taking public transit. Any corridor modifications made in the target area will likely impact people living and working in the surrounding area. The HIA team decided to define the study area as the entirety of the 18th Avenue South corridor from 49th Street to 4th Street. This decision was made for various reasons. First, although the upcoming concept study will only include the smaller target area, funding may become available for changes up to 4th Street. Second, these boundaries align with the eastern and western boundaries of the South St. Petersburg CRA along 18th Avenue South and with the established neighborhood association and census tract boundaries. The team additionally decided to include a ¼ mile buffer north and south of the corridor to incorporate people who live and work within walking distance. This results in a 1.88 square mile area.

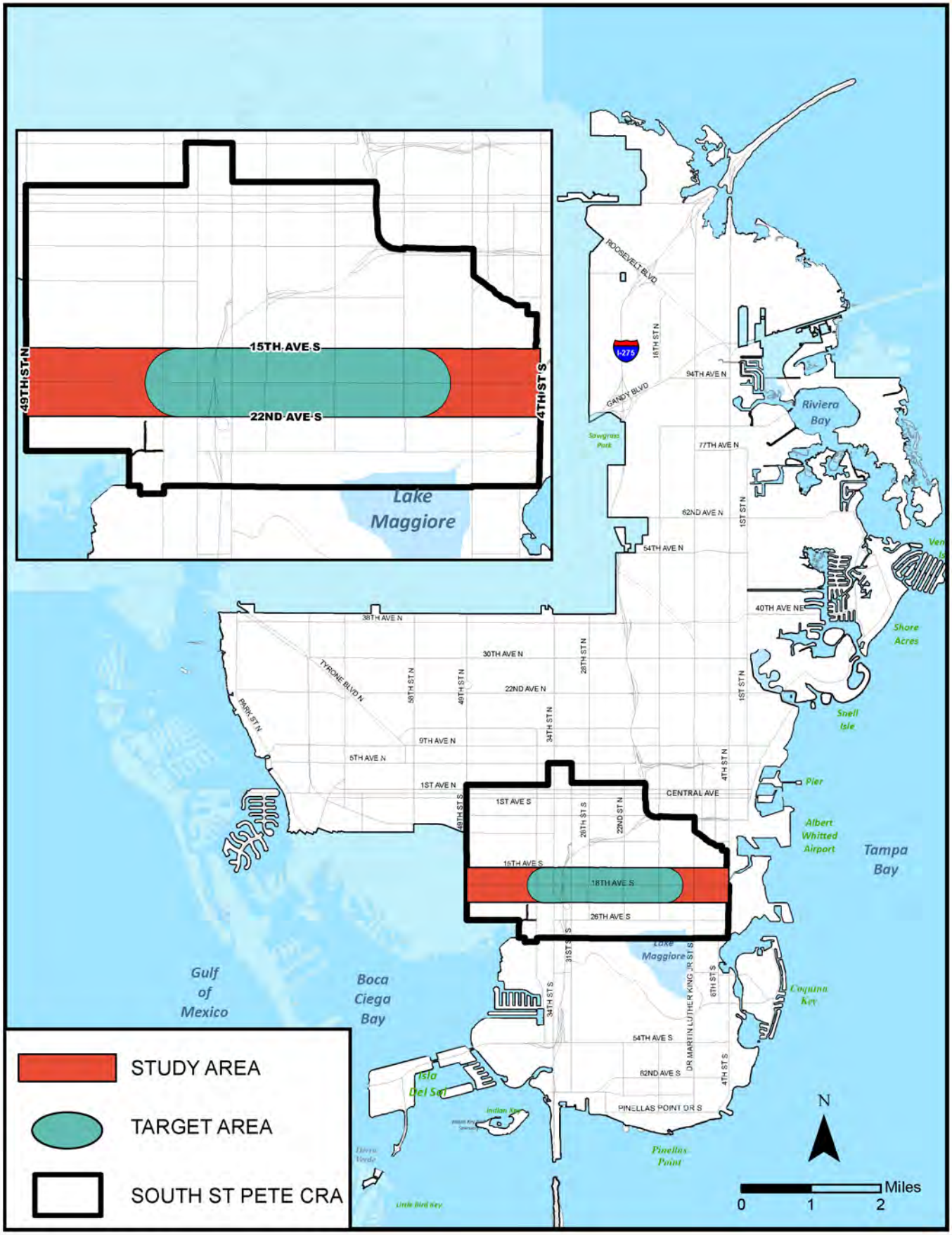


Figure 4: Map of study area, target area, and South St. Petersburg CRA Boundary

A 31st Street neighborhood sign along 18th Avenue South

COMMUNITY PROFILE

Neighborhoods

Neighborhood associations help build a sense of community, enhance resident's lives, resolve issues that adversely affect the neighborhood, protect property values, and work with local businesses and City Administration to improve and sustain the neighborhood through collective group action. There are eight registered neighborhood associations that are within the study area (Figure 5). There are also two areas that have boundaries touching 18th Avenue South with no known neighborhood association within the study area.

Neighborhood Associations

1. Childs Park Neighborhood Association
2. Bartlett Park Neighborhood Association
3. Highland Oaks Neighborhood Association
4. Melrose Mercy Neighborhood Association
5. Thirteenth Street Heights Neighborhood Association
6. Cromwell Heights Neighborhood Association
7. Mel-Tan Heights Neighborhood Association
8. Thirty-first Street Neighborhood Association

South St. Petersburg Community Redevelopment Area

The South St. Petersburg CRA was established in 2015 and is 6.4 miles making it the largest CRA in St. Petersburg and one of the largest in Florida. The CRA is made up of more than 20 neighborhood and business associations and two Florida Main Street Districts. The South St. Petersburg CRA's Redevelopment Plan identifies key redevelopment, including accessibility to community resources, such as employment and educational opportunities, due to a lack of transportation. The plan states the following:

> " Access to employment, health care, groceries and safe and affordable housing is critical among populations with limited resources, who often do not have a reliable method of transportation. Access to employment is especially critical since economies and labor markets are regional...Those who are transportation disadvantaged in South St. Petersburg have longer commutes, rely more on public transportation, and have less mobility than residents in St. Petersburg. With an employment market that is regional and the continued suburbanization of employment within the region, St. Petersburg's workforce must be geographically mobile to take advantage of all available employment opportunities. South St. Petersburg residents have less mobility accounting to some degree for their lagging income levels relative to the city. "

Figure 6 on the following page provides more detail on the CRA's Redevelopment Plan including current programs.

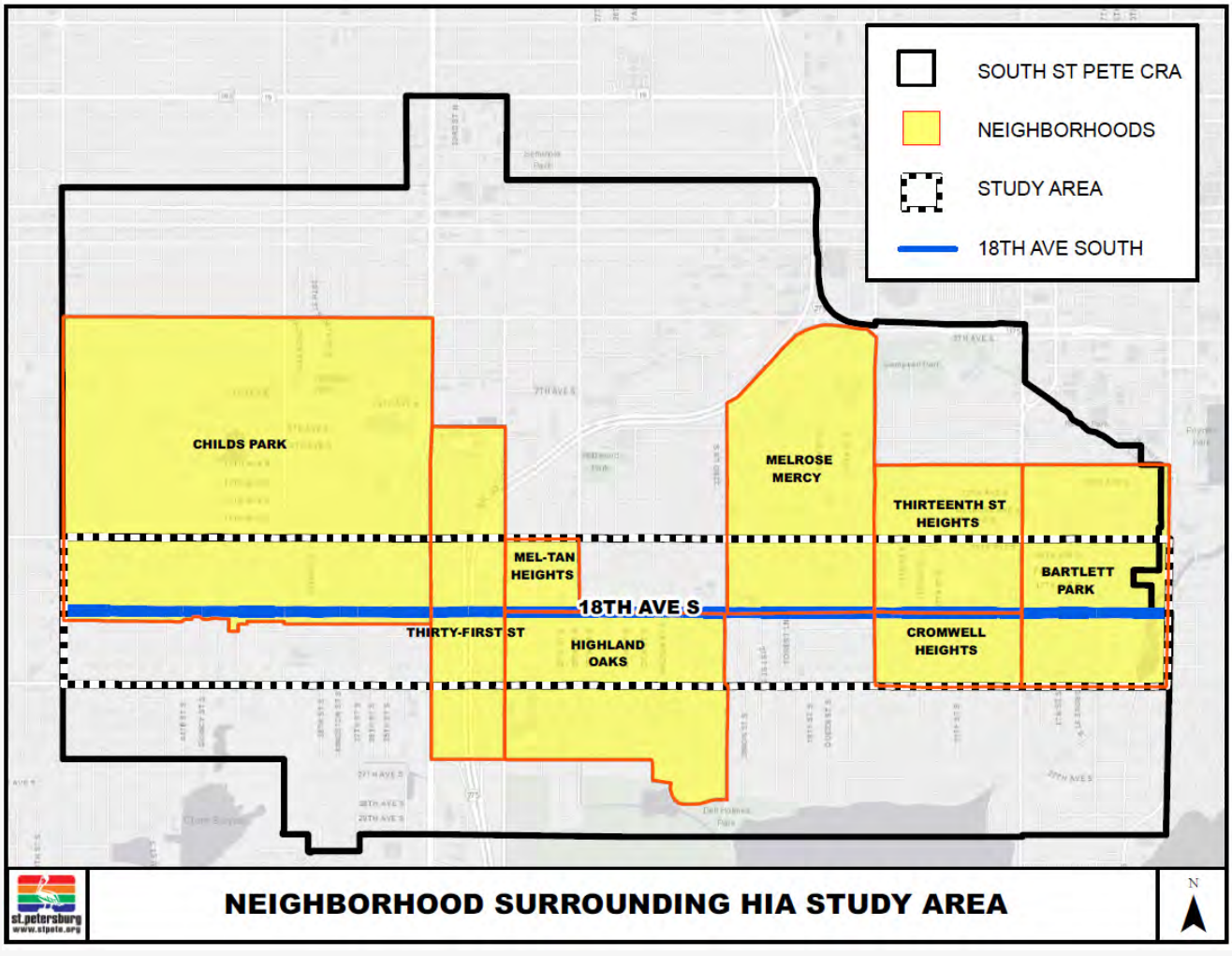


Figure 5: Map of neighborhood and South St. Petersburg CRA boundaries

Figure 6: South St. Petersburg CRA: Redevelopment Approach and Existing Programs

The redevelopment approach for the CRA is a multifaceted revitalization strategy that embraces both traditional "placed-based" economic development strategies customary to redevelopment plans as well as "people based" strategies that seek to improve the education, workforce readiness, and workforce training opportunities for the residents of South St. Petersburg. The South St. Petersburg Redevelopment Plan's Action Plan includes "Housing and Neighborhoods Revitalization" and "Business Development and Job Creation" strategies, such as "Access to Capital", "Small Business Support Strategies," "Commercial Corridor Revitalization", "Manufacturing Development." Sub-strategies under these categories that relate to 18th Avenue South redevelopment include corridor focused business retention, business and corridor appearance, multimodal functionality and pedestrian scaled design, neighborhood character and identity, neighborhood appearance and safety, and neighborhood organizational development.

The South St. Petersburg CRA already has many active programs funded by Tax-Increment Financing (TIF). The following is a short list of programs:

Housing and Neighborhood Revitalization Programs

- Affordable Housing Redevelopment Loan Program
- Affordable Single-Family Façade Improvement Grant Program
- Affordable Single-Family Homeownership Program
- Affordable Multifamily Housing Development Program
- Affordable Residential Property Improvement Grant Program
- "Paint Your Heart Out" Program

Commercial Corridor Revitalization and Business Development Programs

- Commercial Site Improvement Grant
- Commercial Building Interior and Tenant Improvement Grant
- CRA Commercial Revitalization Program
- Redevelopment Microfund Program
- CRA Property Acquisition and Site Improvement Program

Education, Job Readiness, and Workforce Development Programs

- Workforce Readiness and Development Program
- Early Childhood Education
- Teen Job Readiness and Entrepreneurial Development

DEMOGRAPHIC PROFILE

Population and Household Makeup

In the study area, there are an estimated 11,344 people living in 4,016 households. The total number of families is 2,577.[14] The total population has increased 1.20% annually since 2010.[15] The population in the study area is younger than the city average, with a median age of 37.3 years old compared to 43.9 years old citywide. The study area also has a higher percentage of households with children under 18 years of age (32.1%) than the City average (22%). Additionally, a larger percentage of households with children are male or female householders without spouses compared to the City average.

Table 1: Households Composition and Types (2019 Estimate)

	Study Area		City
Family households (with one or more people under 18 years)	1,117	32.1%	21.8%
Married-couple family	305	8.8%	11.2%
Male or Female Householder (no spouse present)	812	23.3%	10.6%
Nonfamily Households	0	0%	0.3%
Households with no people under 18 years	2,366	67.9%	78%

Race and Ethnicity

The population living within ¼ mile of the corridor is largely African American (88.3%), especially when compared to the City as a whole (24.9%). [16]

Table 2: Race and Ethnicity (2019 Estimate)		
Race	**Study Area**	**City**
White Alone	8.3%	66.1%
Black Alone	88.3%	24.9%
American Indian/Alaska Native Alone	0.2%	0.3%
Asian Alone	0.3%	3.8%
Pacific Islander Alone	0.0%	0.1%
Other Race	0.7%	1.7%
Two or More Races	2.3%	3.1%
Hispanic Origin (Any Race)	2.9%	8.5%

Twin Brooks neighborhood identity marker

Income and Poverty

The population living around 18th Avenue South has a lower median, average, and per capita income than the City as a whole. The estimated household poverty rate in the study area (30.5%) is over double the City's poverty rate (14.5%). In fact, at least 88.8% of households in the study area are estimated to make less than the average City household income. Notably, many of the households that are below the poverty line are "other family" households (representing male or female householders with no spouse present) and "nonfamily" households. Figure 7 shows environmental justice areas designated by Forward Pinellas.

Table 3: Income (2019 Estimate)		
	Study Area	**City**
Median Household Income	$29,711	$53,704
Average Household Income	$41,096	$76,920
Per Capita Income	$14,909	$34,096

Table 4: Households by Poverty Status (2019 Estimate)			
	Study Area		**City**
	# of Households	**% of Households**	**% of Households**
Income in the past 12 months below poverty level	1,063	30.5%	14.5%
Married Couple Family	56	1.6%	1.5%
Other Family Male or Female Householder (no spouse present)	532	15.3%	4.3%
Nonfamily Household Male or Female Householder	474	13.6%	8.6%
Income in the past 12 months at or above poverty level	2,420	69.5%	85.6%
Married Couple Family	703	20.2%	34%
Other Family Male or Female Householder (no spouse present)	819	23.5%	13.6%
Nonfamily Household Male or Female Householder	899	25.8%	38.1%

Environmental Justice Areas

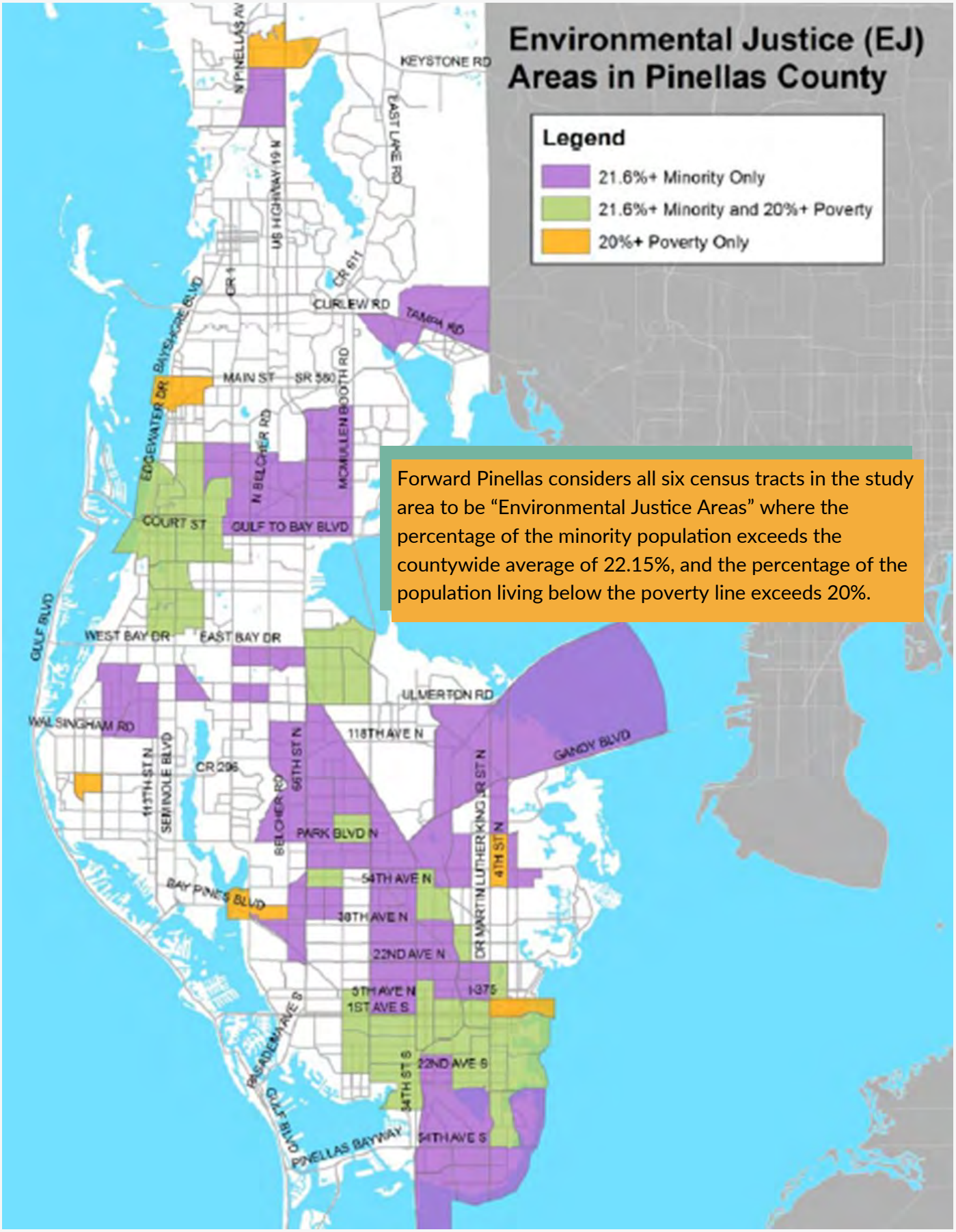


Figure 7: Map of Environmental Justice Area in Pinellas County. Map courtesy of Forward Pinellas.

Employment and Unemployment

The estimated unemployment rate of civilians 16 years old and older in the labor force in the study area in 2019 is 9.8%, which is higher than the estimated City average of 4.1% unemployment. Many people in the geographic study area work in the services industry (56%), followed by retail trade (14%), and manufacturing (6.6%).

Table 5: Employed Population 16+ by Industry in Study Area (2019 Estimate)	
Agriculture/Mining	0.9%
Construction	5.1%
Manufacturing	6.6%
Wholesale Trade	0.8%
Retail Trade	14.0%
Transportation/Utilities	4.9%
Information	0.8%
Finance/Insurance/Real Estate	4.7%
Services	56.0%
Public Administration	6.0%

Educational Attainment

Similar to the entirety of the CRA, there is some educational underperformance in the study area compared to the City's averages. It is estimated that 14% of people living in the study area have a bachelor's degree or higher compared to 35.1% of people Citywide. In the study area, 17.7% of people also lack a High School diploma or General Education Development (GED) equivalent, which can lead to a higher chance of unemployment and difficulties in finding well-paying jobs.

Table 6: Educational Attainment of Adults Ages 25+ (2019 Estimate)		
	Study Area	**Estimate City**
Less than 9th Grade	7.0%	2.8%
9th-12th Grade, No Diploma	10.7%	5.9%
High School Graduate	33.6%	21.3%
GED/Alternative Credential	6.8%	4.3%
Some College, No Degree	21.9%	20.0%
Associate Degree	6.0%	10.7%
Bachelor's Degree	9.2%	22.0%
Graduate/Professional Degree	4.8%	13.1%

Transportation Modes

Vehicle ownership is lower in the study area compared to the City average. Approximately 18.9% of households in the study area do not have vehicles compared to 10% of households Citywide. Additionally, 49.1% of households only have one vehicle available. The average number of vehicles available is between 1-1.5 depending on the census tract, whereas the average number of vehicles in the Tampa-St. Petersburg-Clearwater Core-Based Statistical Area (CBSA) is estimated to be 1.6 vehicles per household.

Table 7: Households by Vehicle Availability (2019 Estimate)

	Study Area		City
	# if Households	% of Households	% of Households
No Vehicle Available	657	18.9%	10.0%
1	1712	49.2%	46.1%
2	853	24.5%	33.8%
3	207	5.9%	7.7%
4	46	1.3%	1.8%
5+	8	0.2%	0.5%

The American Community Survey (ACS) provides data on how workers commute to work for the census tracts in surrounding 18th Avenue South. Some notable data shows that a higher percentage of workers in the tracts surrounding 18th Avenue South utilize public transportation or walk to work compared to the City averages. Aside from the ACS data, the City conducted a citywide survey on transportation modes in in 2018, which received 756 responses from residents. Three of the questions included transportation modes used for commuting to/from work, moving across town or between neighborhoods for purposes other than commuting to/from work, and for traveling within neighborhoods. This data (Figure 8) shows far more people walking and bicycling for various trip purposes than ACS data implies. Additionally, as trip lengths likely shorten, people are more likely to choose to walk or bicycle to their destination.

In regard to travel time, it's estimated that 34.5% of workers who live in the study area (age 16+) travel at least 30 minutes to their place of work. This is higher than the City estimate of 30.7% of workers. Additionally, the population that lives in the study area is more likely than the rest of the City to work in Pinellas County as opposed to another Florida county. 91% of workers (age 16+) in the study area work in Pinellas County (compared to 86.1% of City residents) and 6.5% work in another Florida county (compared to 12.9% of City residents).

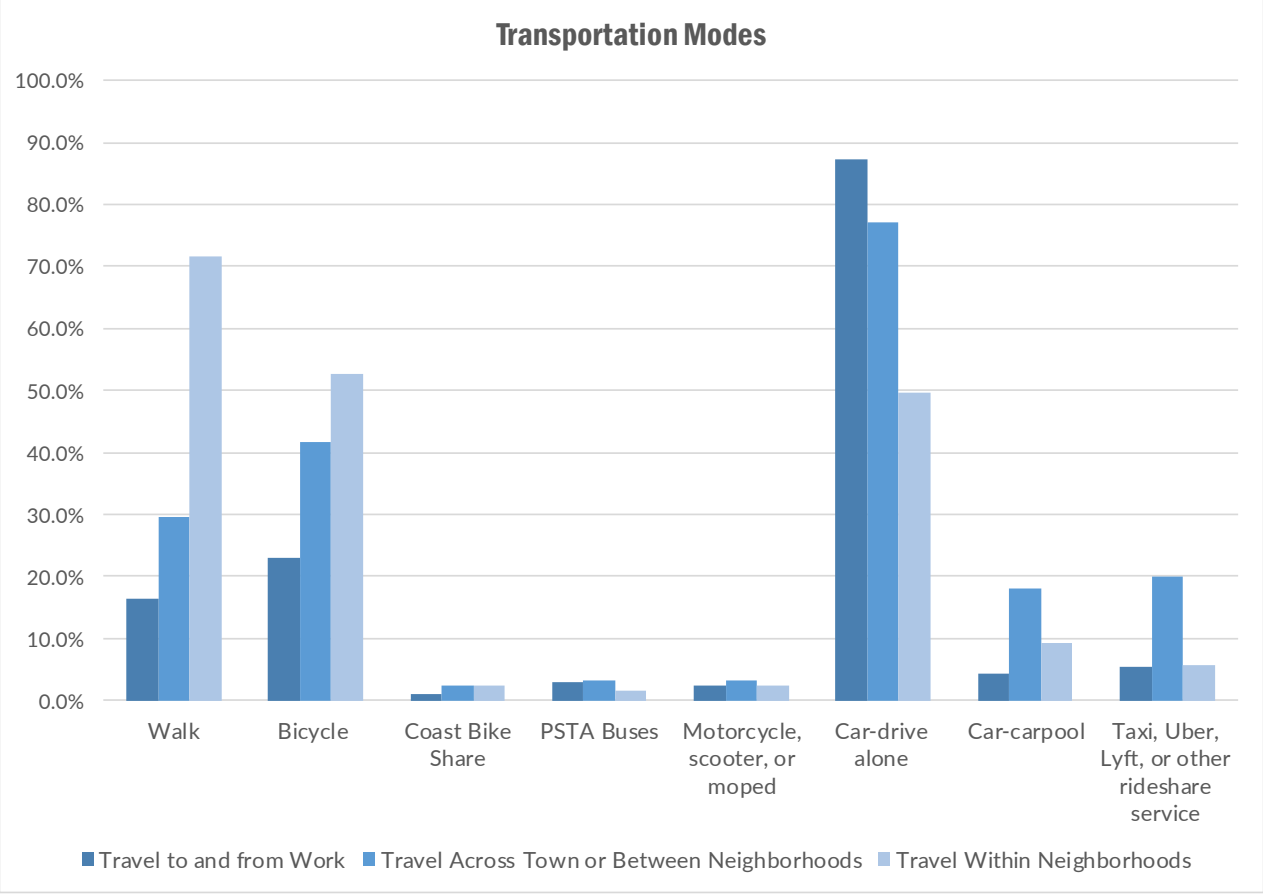


Figure 8: Transportation modes from City survey

Table 8: Means of Transportation to Work of Workers Age 16+ (2013-2017 ACS Estimates)									
	Study Area								City
	Census Tract						Combined Tracts		
	201.1	205	206	207	208	212	Total	Percent	Percent
Total	2,083	1,153	1,428	1,374	1,447	799	8,284	100%	
Car, truck, or van	1,969	996	1,172	1,062	1,125	543	6,867	82.89%	86.85%
Public transportation	42	95	6	181	94	193	611	7.38%	2.21%
Taxicab	0	0	0	14	0	12	26	0.31%	0.16%
Bicycle	0	9	17	0	68	0	94	1.13%	1.35%
Walked	22	0	80	0	84	7	193	2.33%	1.76%
Other means	50	23	85	30	52	44	284	3.43%	1.09%
Worked at home	0	30	68	87	24	0	209	2.52%	6.24%

Bus stop on 18th Avenue South Avenue South near I275

Transportation Affordability: The H+T Affordability Index

Transportation is often a household's second largest expense after housing. The H+T Affordability Index considers the cost of housing as well as the cost of transportation, thus providing a more comprehensive understanding of the affordability of place. According to the index, the average annual transportation costs for a typical household in St. Petersburg are $11,206.[17] The average family in St. Petersburg can expect to pay $11,283 annually for automobile costs, which includes the cost of automobile ownership and annual gas costs. Transportation costs are considered affordable if they are 15% or less of household income, which the regional typical household is $7,063. Given the concentration of poverty and many lower-income families living in and around the 18th Avenue South corridor, automobile ownership can represent a significant household expense, which makes it unattainable for many families. This is likely why the area has many households without vehicles and why other modes of more affordable transportation, such as public transportation, are more prevalent.

The average resident in St. Petersburg pays 56% of their income towards their combined housing and transportation costs. The census tracts surrounding the 18th Avenue South corridor contribute a lower percentage of their income towards their combined housing and transportation costs than the City average. However, they contribute about the same percentage of their income towards transportation as the average resident (24%) as a percentage of their income. When looking at data specifically for single-parent family households in the census tracts surrounding 18th Avenue South, the percentage of their income towards housing and transportation costs jumps drastically, with these families paying between 74.29% and 79.76% of their income on housing and transportation compared to a national average of 55%.[18] This is important, as these census tracts have far higher than average prevalence of single-parent households.

Table 9: Housing and Transportation Costs as a Percentage of Income

Tract	Combined Housing + Transportation Cost (H+T)	Housing Cost	Transportation Cost	H+T Range
201.1	48%	24%	24%	43% - 52%
205	44%	22%	23%	37% - 49%
206	54%	29%	25%	49% - 59%
207	51%	26%	25%	50% - 53%
208	47%	24%	24%	40% - 51%
212	42%	19%	23%	34% - 47%
City Average	56%	32%	24%	N/A

PSTA electric bus

Transit Affordability

The ticket options and their associated fares for the PSTA bus system are found in Table 10. PSTA has unlimited Go Cards available for intra-county trips which can be used for all the routes within the study area but exclude access to routes 100x and 300x which provide service to Tampa from other parts of Pinellas County (Downtown St. Petersburg and Ulmerton Road). Regional Go Cards are available at a slightly higher cost which include those routes.

Reduced fares are available for adult students, youths, seniors, and people with disabilities with proper identification. PSTA also participates in the Pinellas County Transportation Disadvantaged (TD) Program, which is a state-funded program that provides reduced cost transportation throughout the county to residents who qualify as "Transportation Disadvantaged" (household income not exceeding 150% of poverty.) Participants that have jobs beginning or ending between 10 p.m.— 6 a.m. can also purchase the late-shift add-on to the 31-Day Monthly TD Pass, which provides TD riders with 25 free on-demand trips per month to/from work when bus service is not available. PSTA also provided Demand Response Transportation services (DART service) for “people who, because of their disability, are unable to safely and independently utilize PSTA buses.”[19] The service may provide “door-to-door service which parallels or “complements” local bus service in accordance with the Americans with Disabilities Act (ADA).” The DART fare for a one-way trip is $4.50.

Table 10: PSTA Tickets and Fare Prices			
	Regular Fare	**Reduced Fare (For Adult Students, Youths, Seniors, and People with Disabilities with proper ID)**	**Transportation Disadvantaged Program**
Pinellas County-Only Routes			
Cash Fare	$2.25	$1.10	
Daily Unlimited Go Card	$5.00	$2.50	
3-Day Unlimited Go Card	$10.00	$5.00	
7-Day Unlimited Go Card	$25.00	$12.50	
10 Non-Consecutive Day Bus Passes			$5/ Month
31-Day Unlimited Go Card	$70.00	$35.00	$11.00
Regional Routes			
Route 100x or 300x	$3.00	$1.50 on certain mid-day trips	
1-Day Regional [Unlimited] Go Card	$6.00		
3-Day Regional [Unlimited] Go Card	$18.00		
7-Day Regional [Unlimited] Go Card	$30.00		
Passport Monthly Pass Flamingo *(Unlimited access on all PSTA & HART services for entire calendar month)*	$85.00		

PSTA provided data on TD bus passes in the last year for the three zip codes surrounding the study area. There were 3,301 people who purchased TD bus passes in the last year and 564 DART program participants who took trips in the last year.

Table 11: Participation in TD and DART		
Zip Code	**TD Participants**	**DART Participants**
33705	1,503	227
33711	889	132
33712	809	205
Total:	3,201	564

HEALTH STATUS

Life Expectancy

Life expectancy represents the average period that a person may expect to live, and it is one of the most frequently used health status indicators, particularly when discussing health inequities and disparities. In the census tracts surrounding 18th Avenue South, life expectancy ranges from 66.5-74.9 years (Figure 9), which is less than the City's average of 76.8 years. All of these census tracts have life expectancies within the bottom 1/3 of St. Petersburg census tracts for which there is data available. Census tract 212, which incorporates the Thirteenth Street Heights Neighborhood and portions of the Campbell Park and Melrose Mercy Neighborhoods, has the worst life expectancy of all census tracts in the entire City.

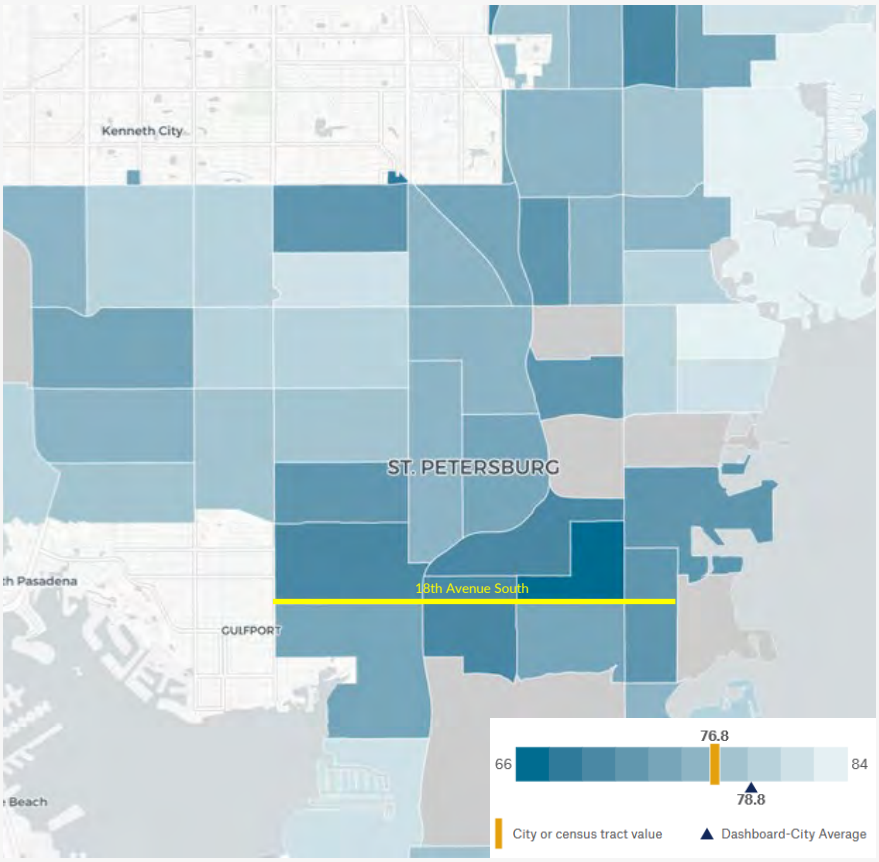


Figure 9: Map of life expectancy disparities. Courtesy of Cityhealthdashboard.com

Obesity and Chronic Diseases

The census tracts surrounding 18th Avenue South have higher prevalence of obesity and many of the chronic diseases associated with physical inactivity and poor nutrition, including higher prevalence of diabetes, coronary heart disease, high cholesterol, and high blood pressure, compared to other areas of the City (Table 12). The census tracts around 18th Avenue South also show a higher prevalence of physical inactivity, defined as no leisure-time physical activity in the past month, compared to other areas of the City. While food insecurity data isn't available for the area, it's estimated that 14.2% of households in Pinellas County experience food insecurity, defined as a lack of consistent access to enough food for an active, healthy life. [20] Food insecurity is closely related to poverty, and given the concentration of poverty in the study area, it's likely there are many households facing food insecurity. The Supplemental Nutrition Assistance Program (SNAP), formally known as food stamps, is one program aimed at addressing food insecurity. It's estimated that over a third of families (35.7%) in the study area receive received SNAP benefits compared to 13.6% of the City's population.

According to the CDC, "poor diet quality is the leading risk factor associated with death and disability in the United States" and "eating a diet rich in fruits and vegetables as part of an overall healthy diet can help protect against a number of serious and costly chronic diseases."[21] Data on fruit and vegetable consumption is not available for the study area. However, the CDC estimates that only one in ten US adults eat the recommended amount of fruits or vegetables each day. Additionally, research shows that there are income-related disparities in fruit and vegetable consumption, with only "7% of adults who live at or below the poverty level meeting the daily vegetable recommendation, compared to 11.4% of adults with the highest household incomes." [22] It's likely that there are many individuals in the study area that do not consume the recommended daily amount of fruits and vegetables because of the concentration of poverty and high rates of nutrition-related chronic diseases.

Table 12: Health Behavior, Risk Factors, and Health Outcomes[23]

Location	Physically Inactive Adults (2016)	Obese Adults (2016)	Adults with Diabetes (2016)	Adults with Coronary Heart Disease (2016)	Adults with High Cholesterol (2015)	Adults with High Blood Pressure (2015)
201.1	38.1%	39.5%	16.0%	8.3%	35.3%	40.7%
205	42.9%	44.9%	19.0%	8.6%	37.2%	45.4%
206	40.3%	42.7%	19.3%	8.8%	36.3%	45.8%
207	42.3%	43.8%	20.4%	9.3%	36.5%	47.0%
208	43.2%	45.4%	18.5%	8.1%	36.1%	44.4%
212	46.8%	46.1%	20.9%	10%	38.7%	47.7%
City	27.8%	29.4%	10.8%	7.1%	34.6%	32.5%

Mental Health

There is a higher prevalence of the population reporting frequent mental distress in the census tracts surrounding 18th Avenue South compared to the City average (Figure 10). Frequent mental distress is a self-reported measure where adults aged 18+ report that their mental health was not good for 14 or more days during the past 30 days. Approximately 16.4%-20.1% of the population in the area report frequent mental distress, compared to 13% of the City's total population.

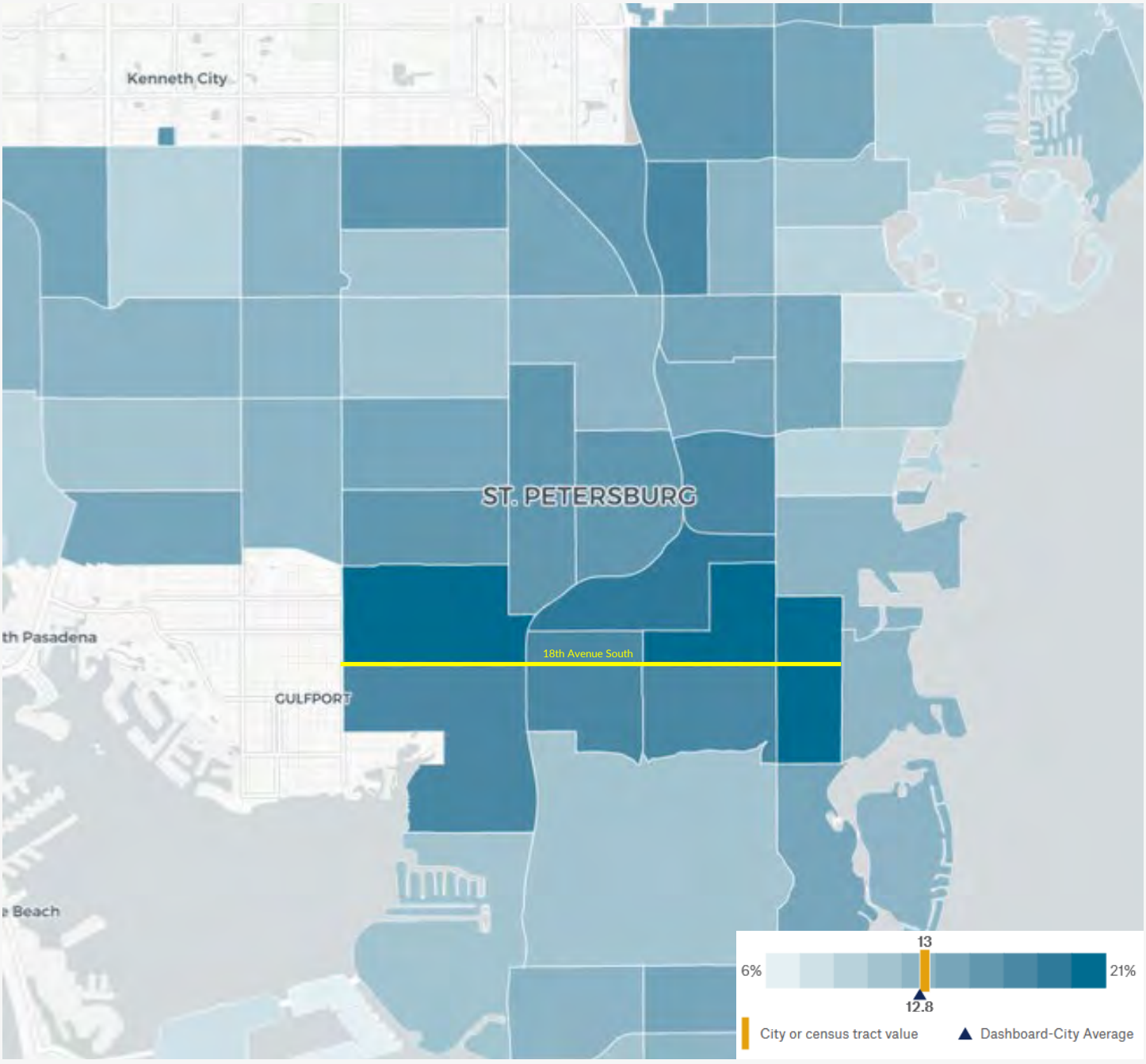


Figure 10: Map of disparities in mental health outcomes. Courtesy of Cityhealthdashboard.com

Asthma

Prevalence of current asthma in adults in the census tracts surrounding 18th Avenue South ranges from 10.3%-11.6%, which is higher than the Pinellas County average of 6.2% (Figure 11).[24]

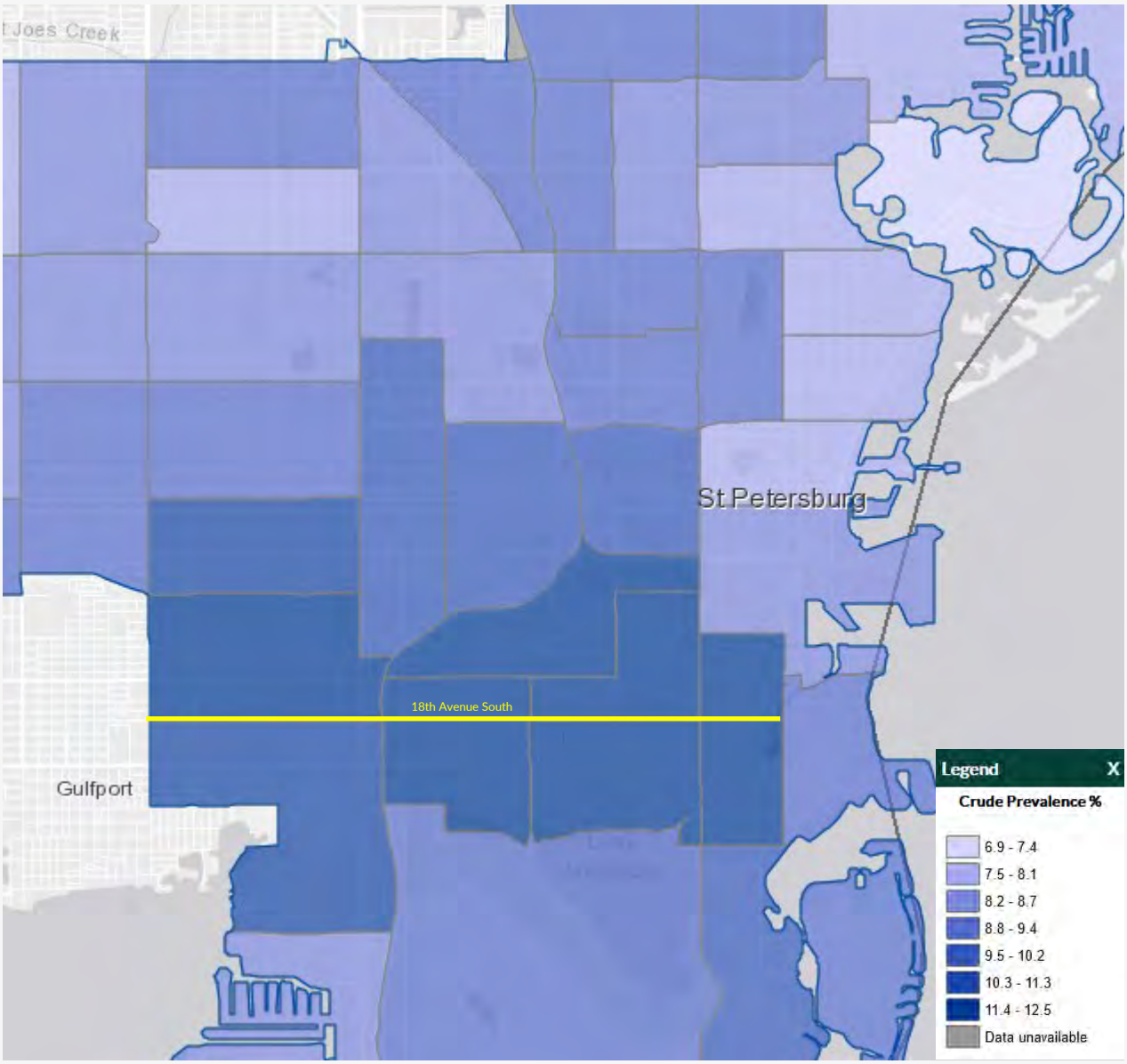


Figure 11 : Map of disparities in adult asthma prevalence. Courtesy of CDC's 500 Cities Project.

18TH AVENUE SOUTH TRANSPORTATION PROFILE

Activity Centers and Multimodal Connectivity

According to the 2019 *Countywide Plan Strategies*, 18th Avenue South is designated as a secondary multimodal corridor between Dr. M.L. King Jr. Street and 37th Street. Secondary corridors are corridors identified as "appropriate for investment in improved transit frequency, which may provide local or regional connectivity" by the *Countywide Plan Strategies*.[25] The 18th Avenue South corridor provides a critical link for east-west connectivity by linking two other secondary multimodal corridors (4th and 49th Streets) and crossing a major primary corridor (34th Street, also known as US 19). As a primary corridor, 34th Street may be "appropriate for investment in high-frequency, limited-stop transit." Thirty-fourth Street is also one of three countywide Forward Pinellas SPOTlight emphasis areas. Forward Pinellas has begun the "A Vision for US 19" planning process, which focuses on improved connectivity; safer travel conditions for bicyclists, pedestrians, and transit users; and identifying improvements and land use conditions necessary to achieve the vision for the corridor. Upon implementation of the plan, multimodal changes made to 34th Street may impact bicycle and pedestrian activity and transit ridership along 18th Avenue South.

Portions of 18th Avenue South are also located near two Forward Pinellas designated activity centers, providing connectivity between them (Figure 12). Notably, to the northeast of the corridor is the City's downtown, which is a designated urban center. The urban center designation recognizes the City's downtown as an area that serves as an "employment, retail, residential and public focal points of Pinellas County and/or the Tampa Bay region, with significant existing and future development potential and capacity for increased density/intensity, and the potential to serve as anchors for premium transit routes."[26] It is important to note that the map is a rough estimate of the urban center, and the adopted boundaries of the urban center are further north of the study area, as seen in Figure 13.

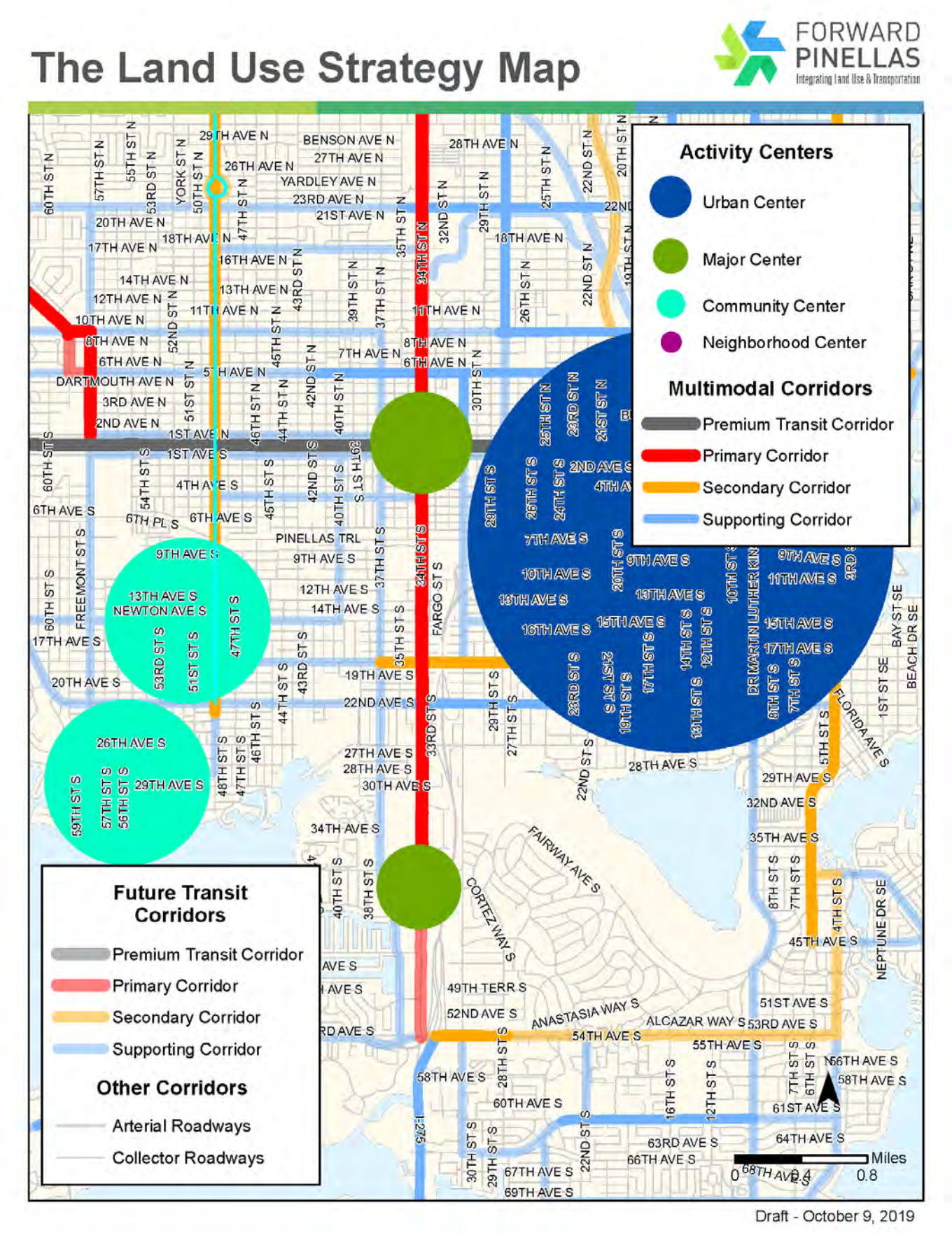


Figure 12: Forward Pinellas Land Use Strategy Map

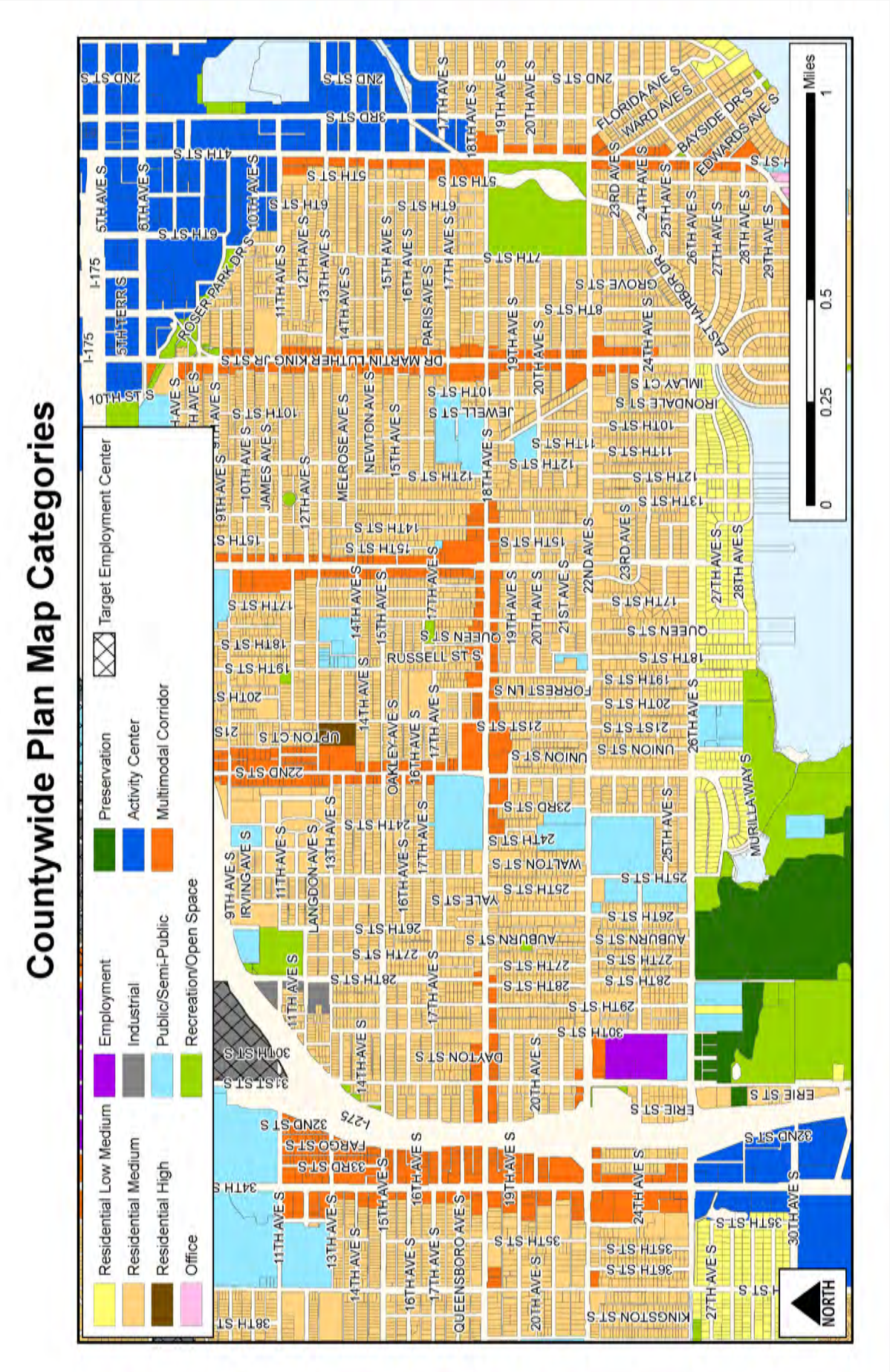


Figure 13: Forward Pinellas Countywide Plan Map Categories

Roadway Configuration

St. Petersburg is defined by the established urban grid of streets, which provides multiple route and mode options for getting around. The characteristic street grid breaks down north and south of 18th Avenue South. The result is that all roadway users, including people walking, biking, driving, and taking transit, must travel along 18th Avenue South at some point for nonlocal east-west trips. Eighteenth Avenue South is functionally classified as a collector roadway with a posted speed limit of 35 mph for the entire corridor. The cross section of the roadway varies along its extent with the following configurations:

- 49th Street to 35th Street: one travel lane and bike lanes in each direction, two-way center turn lane with intermittent landscaped islands for traffic calming.
- 35th Street to 34th Street: this segment is a transition where the curb-to-curb width widens to add a travel lane in each direction moving from west to the east approaching the signalized intersection with 34th Street. The added lane on the north side is a merge for westbound vehicles leaving 34th Street. The added lane on the south side is a right turn only lane that is also shared with bicyclists continuing east across 34th Street.
- 34th Street to 16th Street: two lanes undivided in each direction, with widening to add left turn lanes at 34th Street, 31st Street and 22nd Street. There are no bicycle lanes or markings. Notably, the intersection at 28th Street is offset, and the traffic signals include 'No Turn on Red' restriction signs for northbound and southbound traffic.
- 16th Street to Dr M.L. King Jr. Street: one lane in each direction with a two-way center turn lane and no bicycle lanes or markings.
- Dr. M.L. King Jr. Street to 4th Street: one lane in each direction with intermittent parking allowed on both sides.

Eastbound bike lane on 18th Avenue South in the Childs Park neighborhood

Bicycle Network and Facilities

The existing and proposed bicycle network are shown in Figures 14 and 15 . There are currently no continuous dedicated bicycling facilities on 18th Avenue South within the target area. There are minimally-sized unseparated bike lanes along 18th Avenue South from approximately 49th Street to 34th Street in the Child's Park neighborhood, immediately adjacent and crossing half a block into the target area. The eastbound bike lane starts just east of 49th Street runs for 14.5 blocks and drops into a turn lane at 34th Street, without offering bicyclists an alternative safe route to continue east. The westbound bike lane starts roughly between 34th and 35th Streets, runs 14.5 blocks, then similarly turns into a right turn lane onto 49th street.

Bike lanes are present on sections of several north-south collectors that cross 18th Avenue South in the study area. There are striped bike lanes along 22nd Street, 31st Street, and 37th Street. However, these bike lanes are at or below the minimum widths, have no lateral or vertical separations or buffers from motorized traffic, have intermittent interruptions, and also drop at signalized intersections without any signage or markings to indicate the mixing zones or mitigate potential conflicts between turning motorists and bicyclists.

To the north of the study area, there are bike lanes on the parallel 15th Avenue South, from 31st Street to 16th Street. To the south, there are bike lanes along 26th Avenue South from east of 31st Street to east of 12th Street. However, the bike lane is dropped at several traffic calming islands and each stop sign.

Bicyclist riding on sidewalk along 18th Avenue South

Bike rack on private property in front of a barber shop.

City staff only found three bike racks visible from the sidewalk during a walk audit of the target area. There are two bike racks near the bus stops on both sides of the street adjacent to Tangerine Plaza and there is one bike rack on private property in front of the "Sports Cuts" barber shop on the south side of the street immediately east of the I-275 overpass. In the larger study area, there are bike racks at both the Johnson Community Library and Frank Pierce Recreation Center, both of which are also designated as Coast Bike Share "virtual" hubs where the bikes may be returned as unofficial program hubs. The study area east of 34th Street is within the Coast Bike Share service area.

City staff have previously canvassed the area to identify locations to add bike racks for both private bicycles as well as to be designated as additional virtual Coast Bikeshare hubs. However, the auto-centric configurations of the commercial properties with wide or continuous driveways result in no suitable location to install bike racks on public property.

Bike rack in front of Frank Pierce Recreation Center

Existing Bicycle Infrastructure

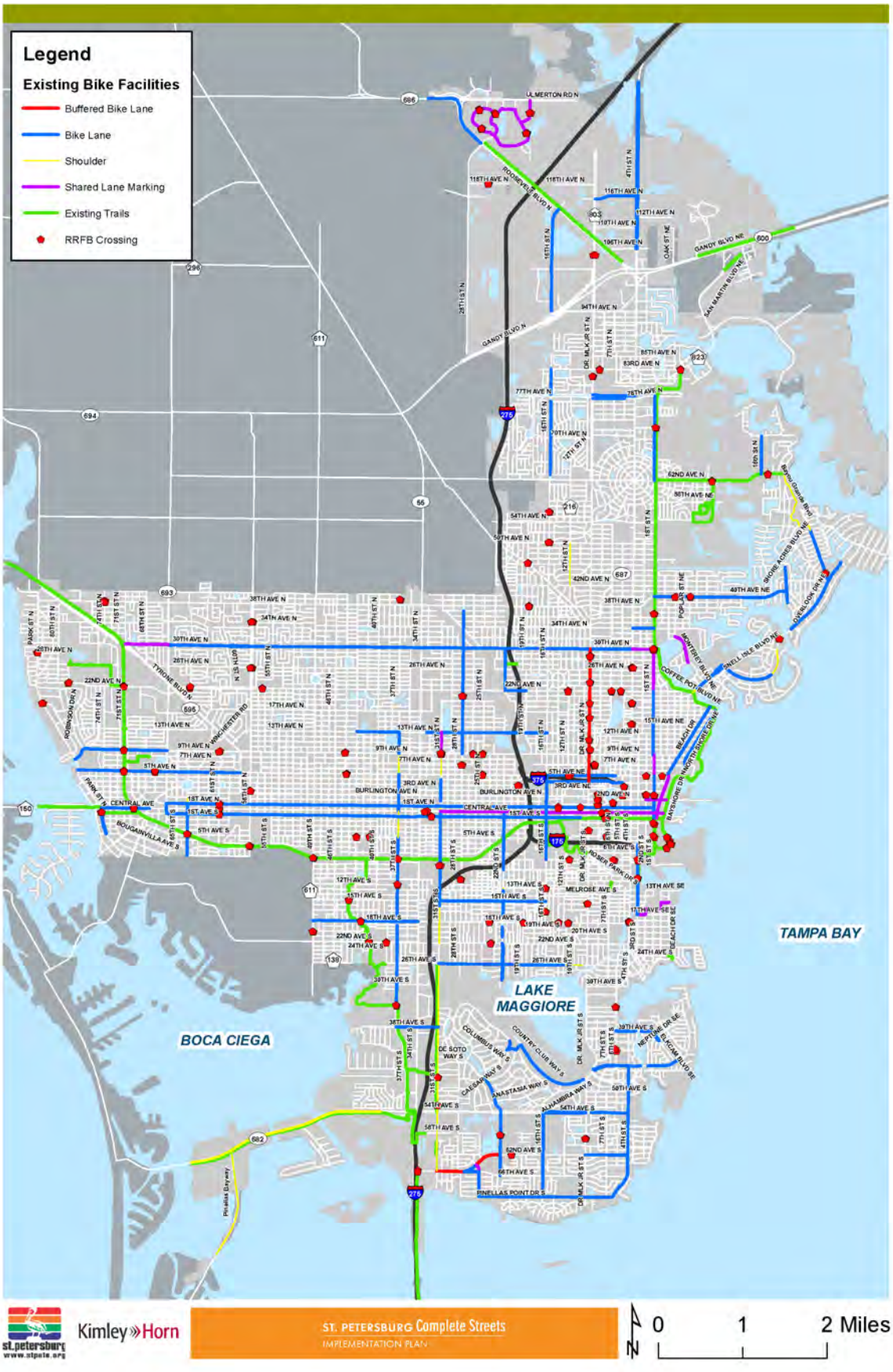


Figure 14: Map of existing bicycle infrastructure from the City's Complete Streets Implementation Plan

Proposed Bicycle Network & Crossings—South

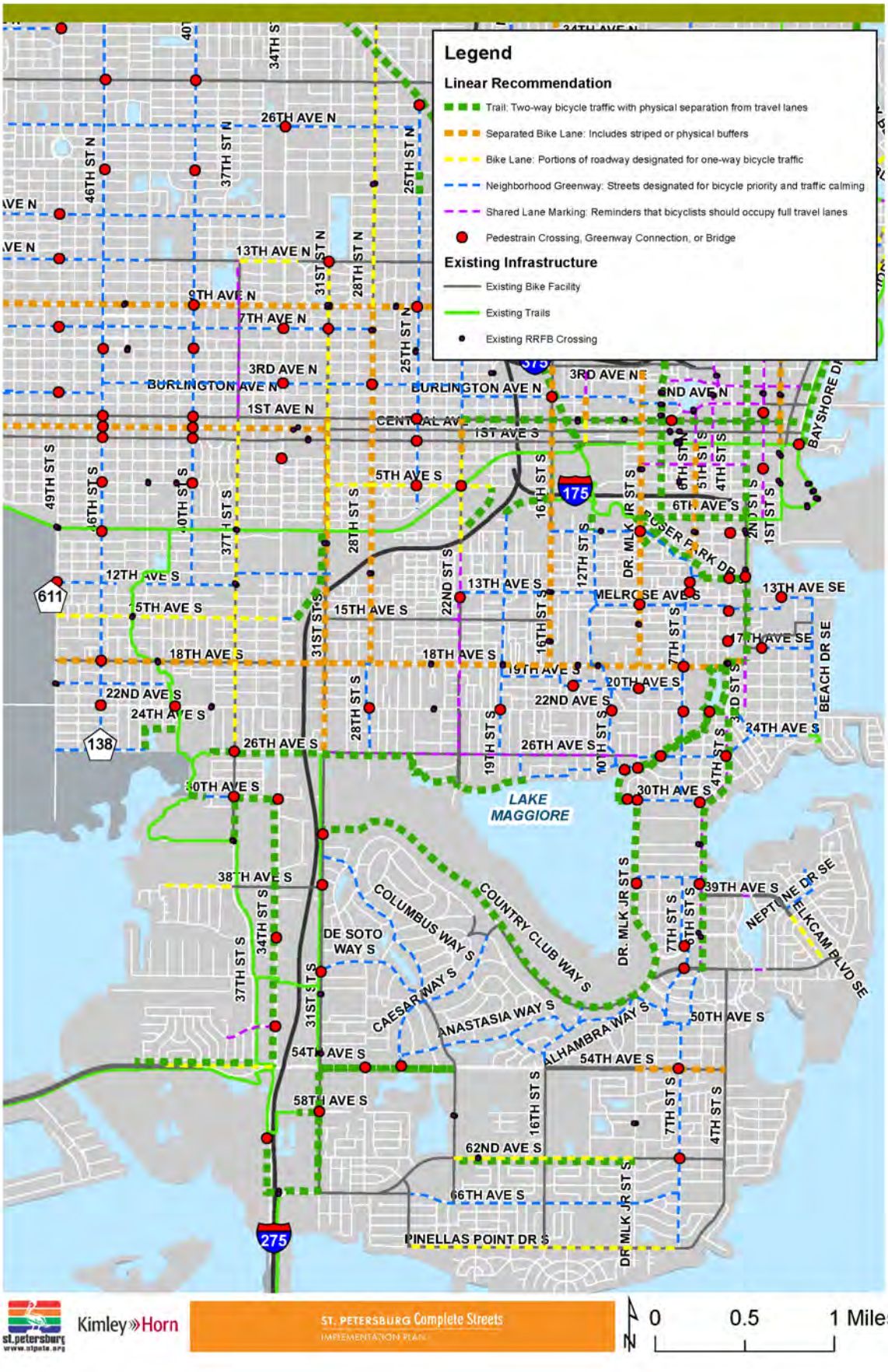


Figure 15: Map of recommendations from the City's Complete Streets Implementation Plan

Bicycle Level of Traffic Stress

Different people have different levels of comfort bicycling in traffic. Industry practice has identified four generalized types of bicyclists based on skill and experience level: children and elderly, interested but concerned, enthused and confident, strong and fearless. The strong and fearless riders can navigate even the most stressful streets in the City, but most bicyclist types cannot, which can decrease the viability of bicycling even short distances. The City's Complete Streets Implementation Plan introduced a metric called Level of Traffic Stress (LTS), which estimates the level of comfort for a given bicycle route based on the above-defined four different types of bicyclists. A general principle is that the comfort of most people on bicycle requires more separation as motor vehicle traffic volumes and speeds increase.

Evaluating 18th Avenue South's LTS for bicyclists shows that most of the corridor is not a comfortable place to ride a bicycle for most people. Below is an assessment of the 18th Avenue South corridor by segment:

- 49th Street to 34th Street: The existing 5 ft. wide bike lane and posted speed limit of 35 mph yields an initial LTS 2. However, given that the observed speeds are significantly higher than posted, this segment is comfortable for only some casual bicyclists and for the enthused/confident and strong/fearless types of bicyclists.
- 34th Street to 16th Street: There is no bike lane, and there are two lanes in each direction. The existing traffic volumes and posted speed limit of 35 mph yields an initial LTS 3. However, given the excessively higher vehicle speeds observed on the corridor, judgement would indicate a LTS 4 for this segment. This segment is only comfortable for the strong and fearless type of bicyclist.
- 16th Street to 4th Street: There is no bike lane, and there is one travel lane in each direction. The existing traffic volumes and posted speed limit yields a LTS 3, which is only comfortable for the enthused/confident and strong/fearless types of bicyclists.

Bicyclist riding on sidewalk along 18th Avenue South next to unbuffered bike lane between 35th and 34th Streets

Pedestrian Sidewalks

Sidewalks are generally provided along both sides of 18th Avenue South within the study area. The sidewalks are generally minimum widths and too narrow for two people to walk comfortably side-by-side. Most of the corridor has a grass buffer between the curb and sidewalk, though some of them are very narrow and not wide enough to support trees. There are some areas where there is no sidewalk buffer, including near 34th Street, near Dayton Street, near Prescott Street, and near Perkins Elementary School.

The walk audit team noted numerous issues with sidewalks in the area. The team found that there were problems surrounding driveways including several areas of wide continuous driveways and informal parking configurations that result in vehicle encroachment and obstructions. The sidewalk surfaces are generally not continuous across driveways with the asphalt often overtaking the sidewalk in terms of both color and slope. The walk audit team also noted that there are a lot of duplicative and unused "driveways to nowhere" where the sidewalk is interrupted by a driveway that appears as if it leads to a structure or parking area that no longer exists. There were also some unpaved driveways where the sidewalk abruptly stopped, creating accessibility issues particularly for people with disabilities. There are many locations with significant sidewalk cracks and numerous instances of sidewalk obstructions, including overgrown shrubs and bushes, trash cans, sand, and grass. Finally, the team noted that there was a lot of trash along the entire corridor surrounding the sidewalks and a lack of public trash cans within sight of the sidewalk.

Interrupted sidewalk on 18th Avenue South

Pedestrian Crosswalks

Marked crosswalks are found at the following signalized intersections: 37th, 34th, 31st, 28th, 22nd, 16th, and Dr. M.L. King Jr. Streets. At nearly all the signals, there are missing or nonfunctional crosswalk call buttons, and much of the crosswalk paint is faded. At some intersections, there is a mix of automatic crosswalks and crosswalk call buttons, but there are no signs to indicate that crosswalks signals are automatic in addition to holes in the pole where the buttons used to be, which can leave one to feel as if the buttons are "missing." Additionally, the tactile paving for the visually impaired is worn down or torn out at most intersections. During the walk audit, the team also commented that there was insufficient time to cross many of the roads. For example, walkers only have 20 seconds to cross 34th Street and only 10 seconds to cross 31st Street.

There are mid-block marked pedestrian crossings equipped with median refuges and RRFBs at the following locations:

- Between 43rd Street and 42nd Street, crossing for the Skyway Trail;
- East of 40th Street, leading to a church on the south side of the street;
- West of 24th Street, leading to Perkins Elementary School. This location has a crossing guard stationed there for school arrival and dismissal;
- Between the offset legs of 19th Street, leading to a convenience store on the southeast corner;
- Between the offset legs of 13th Street; and
- Between 12th Street and 11th Street, leading to the Enoch Davis Recreation Center and James Weldon Johnson Community Library on the north side.

The T-intersection with 49th Street has brick-stamped crosswalks across all three legs, though there are no traffic signals or warning beacons to aid pedestrian crossings. The intersection with 4th Street has marked crosswalks and a median refuge island with RRFBs between the offset legs of 18th Avenue South.

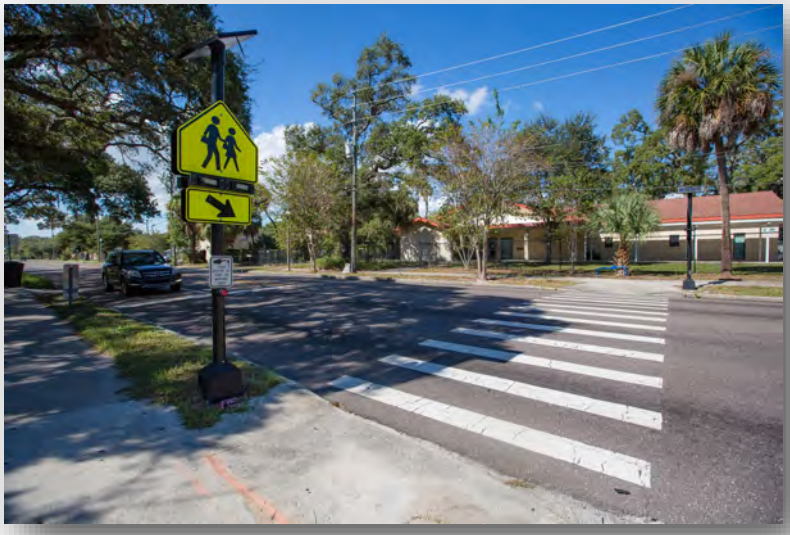
Multiple team members expressed concerns regarding their perceived lack of safety at crosswalks. Based on their experiences on different days at different locations along the target area, they reported that drivers did not stop at the activated mid-block RRFB crosswalks and that drivers turning right honked at them and did not yield when they had a walking signal. The walk audit team found no wayfinding signage at a pedestrian scale.

Figure 16: Walk Score and Bike Score

Walk Score measures the walkability of any address and Bike Score measures whether a location is good for biking using a patented system. The system considers bicycle/pedestrian infrastructure, destinations, distances, connectivity, and other indicators.[27]

Corridor Walk Score*: "Somewhat Walkable" [61-70]	City Average Walk Score: 43
Corridor Bike Score*: "Bikeable" [60-68]	City Average Bike Score: 57

**Methodology: Entered five random 18th Avenue South addresses from corner lot properties at major intersections in the target area into the walkscore.com website.*



Examples of Crosswalks on 18th Avenue South

Pedestrian, Bicycle, and Motor Vehicle Traffic Data

Motor vehicle traffic speeds and volumes were collected for each travel lane at three separate locations within the core of the target area for a 24-hour period on November 13, 2019. The three locations were between 19th and 20th Streets, between 25th and Yale Streets, and between 29th and 30th Streets. Across the three count locations, an average of 12,093 cars travel the corridor each day with an average peak hour volume of 1,153 occurring in the late afternoon.

The overall average speed of all vehicles measured was 38.5 mph, with a posted speed of 35 mph. The 85th percentile speeds ranged from 40.5 mph to 49.6 mph. The most excessive speeding observed was the westbound center lane between 29th Street and 30th Street with 85.7% of motorists exceeding the speed limit and 3.4% of motorists exceeding 55 mph.

Combined pedestrian and bicyclist volumes were measured during daylight hours at four signalized intersections along the corridor on November 13, 2019. The locations were 16th Street, 22nd Street, 28th Street, and 31st Street. A combined 943 people crossed at the signalized intersections either on foot or by bicycle in the observed 24-hour period. Many more crossed at locations along the corridor outside of the signalized intersections, but those are impossible to count. The dominant nonmotorized movements through the signalized intersections along the corridor are mostly east-west and generally with a split of two pedestrians for every one bicyclist. The exceptions are 22nd Street which saw more north-south crossings than east-west crossings and 28th Street which saw more bicyclists than pedestrians.

18th Avenue South has a history and perception of being the location of many traffic crashes (Figure 17). It is likely that many non-injury traffic crashes along the corridor go unreported. In general, crashes are occurring along the entire corridor, and with greater frequency at the signalized intersections. The highest concentrations of crashes involving people walking and riding bicycles are at the intersection with 34th Street and in the stretch between 22nd Street and 16th Street.

Walk button to cross 18th Avenue South at the 31st Street intersection; Automatic signals are used to cross 31st Street along 18th Avenue South

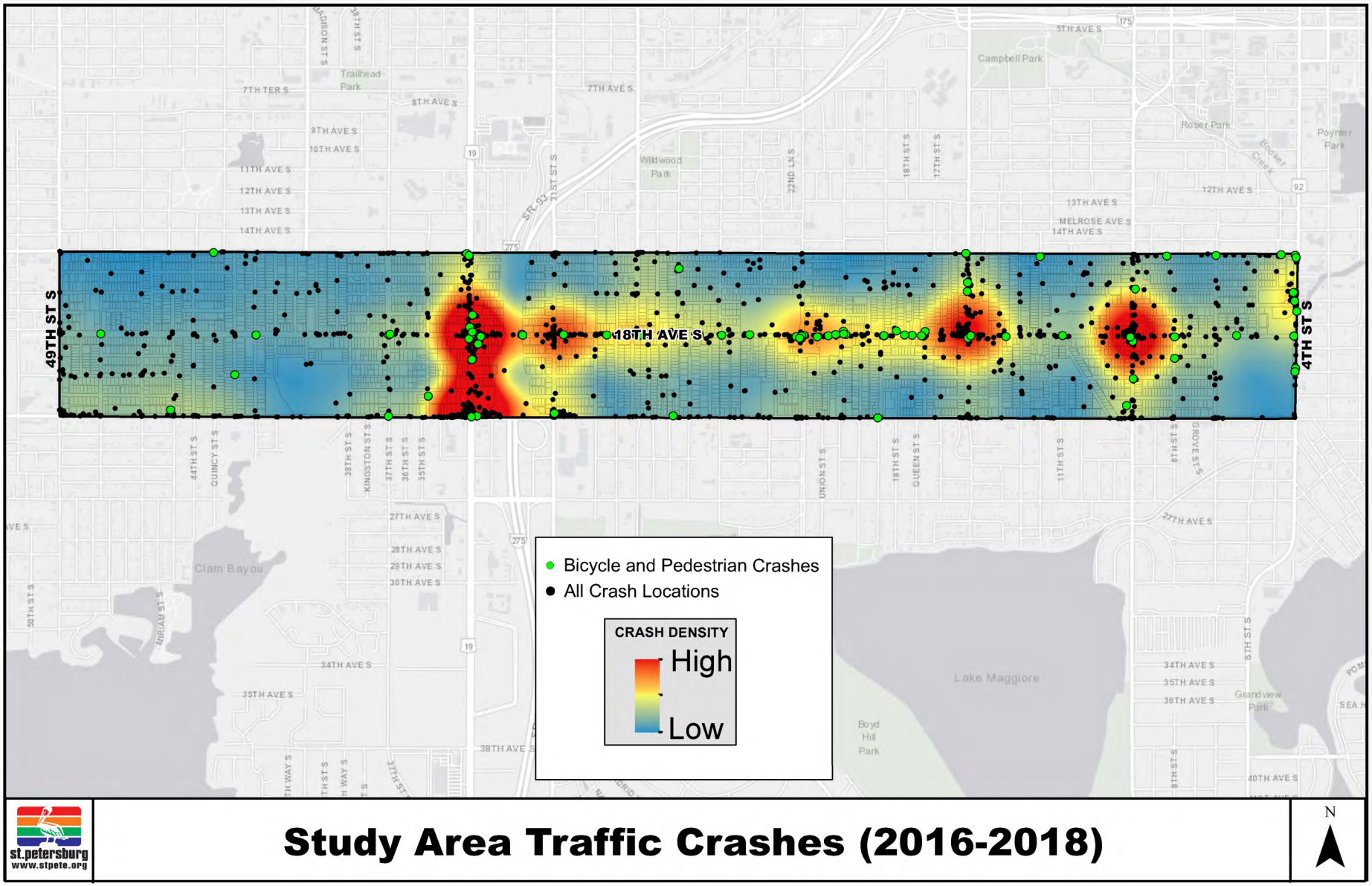


Figure 17: Study area traffic crashes

Bus Routes

There are multiple transit routes operated by the PSTA that traverse the study area, including routes 11, 14, 15, 23, 34, 79, and 90 (Figure 18). Route 14 travels directly down 18th Avenue South between 49th Street and Dr. M.L. King Jr. Street, diverging to the Grand Central Station along 31st Street. Routes 14, 15, and 23 had a combined ridership of 723,291 passengers in FY 2019 which indicates a high level of demand for east-west transit service in the study area. Route 14 alone carried over 400,000 passengers, making it the 11th most productive PSTA route. Route 34, which travels north-south through the study area along 34th Street (U.S. 19), was the 3rd most productive route in FY 2019 carrying 913,299 passengers. Bus stop passenger data is provided in Table 14.

Each route varies in their headway times and passes by a variety of important community amenities, including universities, hospitals, shopping plazas, and small and large employers. Table 13 provides key information on the PSTA routes in the study area, including headway, route description, average number of passengers per day in FY 2019, and list of key known destinations for each route.

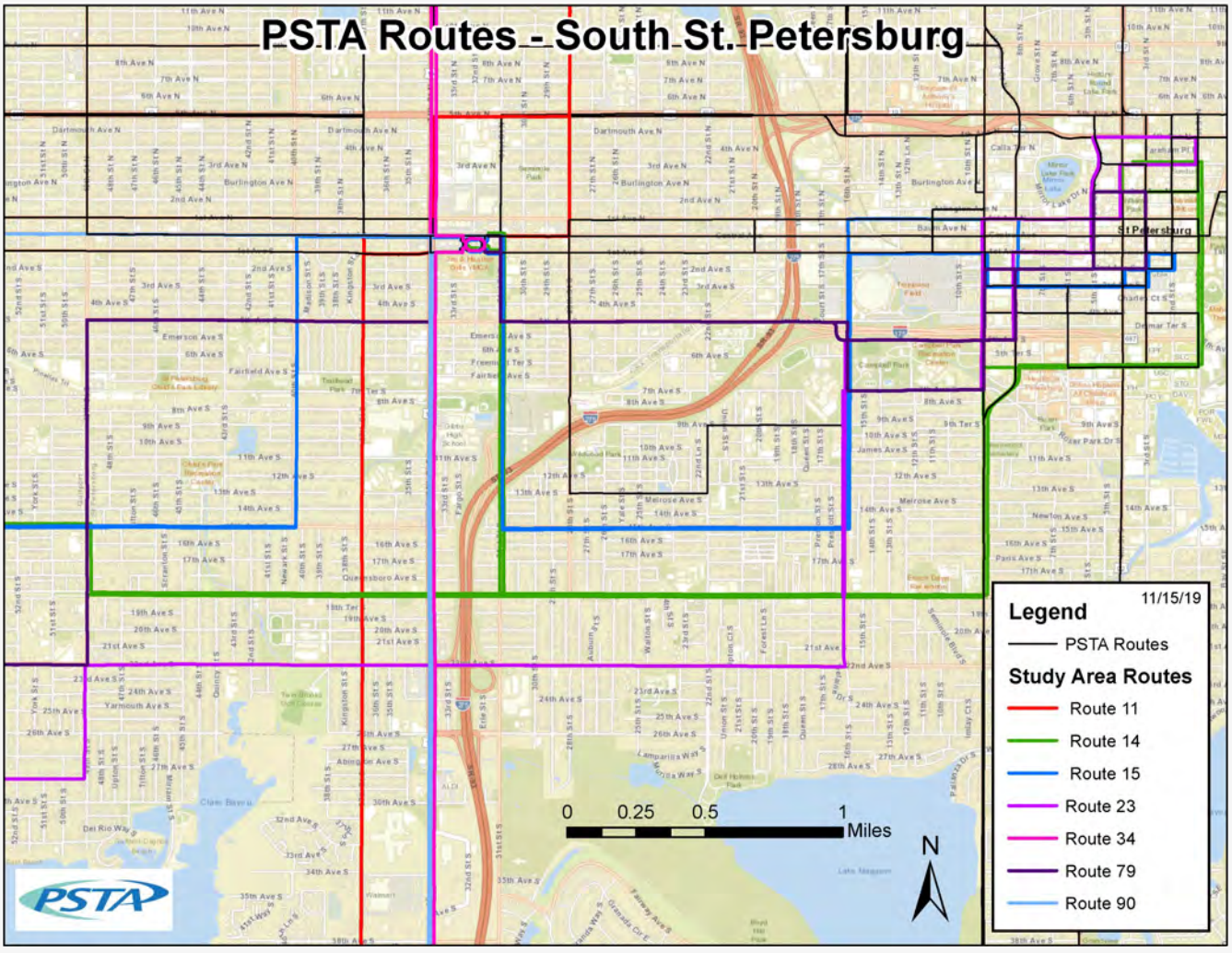


Figure 18: Map of PSTA Routes Near 18th Avenue South. Courtesy of PSTA.

Table 13: Bus Routes in Study Area		
Route #	Description	Key Destinations
Route 14	• 30-minute weekday peak headways • Connects Pasadena to downtown St. Petersburg • Travels along 18th Avenue South between 49th Street and Dr. M.L. King Jr. Street, diverging to Grand Central Station along 31st Street • Average number of passengers per day: 1,096	• Three hospitals: Palms of Pasadena, Bayfront Health St. Petersburg, and John Hopkin's All Children's • Four education campuses: University of South Florida - St. Petersburg, Eckerd College, St. Petersburg College (SPC) - Downtown Center, and Stetson University • Several shopping centers and employers, such as Pasadena Shopping Center and Enoch Davis Center
Route 34	• 15-30-minute weekday peak headways • Travels along 46th Avenue South to Largo Transit Center, diverging to Grand Central Station in downtown St. Petersburg • Average number of passengers per day: 2,502	• Three education campuses: Eckerd College, Pinellas Technical College (PTEC) and Gibbs High School • Multiple shopping centers and employers, such as Walmart and The Shoppes at Park Place • Several economic opportunities along U.S. 19
Route 90	• Provides limited morning and late afternoon commuter series (two trips in the morning and evening) • Travels along Pinellas Bayway and Pasadena to Grand Central Station along 34th Street • Average number of passengers per day: 73	• Shopping centers, employers and hotels: Don CeSar, Tradewinds Islands Resort
Route 11	• 60-minute weekday peak headways • Travels north-south by the Skyway Plaza and Lakewood High School to the PSTA complex located in the Gateway area • Average number of passengers per day: 646	• Two education campuses: Pinellas College, Lakewood High School • Multiple shopping centers and employers, such as The Shoppes at Park Place • Passes Pinellas Park Transit Center and Grand Central Station • Several economic opportunities along U.S. 19
Route 79	• 35-minute weekday peak headways • Travels from downtown St. Petersburg (Grand Central Station) to Largo Transit Center • Passes through Gulfport and South Pasadena • Average number of passengers per day: 1,242	• Two education campuses: SPC - Gibbs Campus, SPC - Health Education Center • Multiple shopping centers and employers, including Tyrone Square Mall, Crossroads Shopping Center, Tri-City Plaza and the Shoppes at Park Place

Route 15	• 60-minute weekday peak headways • Travels east-west, running north on 15th Avenue South, from Gulfport to downtown St. Petersburg • Routes mostly along 15th Avenue South from 58th Street to 16th Street with a nine-block diversion to Central Avenue to pass under the interstate and go to Grand Central Station between 40th Street South and 31st Street South. • Average number of passengers per day: 447	• Education campus: Gibbs High School • Health Center: St. Petersburg Johnnie Ruth Clarke Health Center
Route 23	• 30-minute weekday peak headways • Travels east-west, running immediately south of 18th Avenue South, along 22nd Avenue South • Connects Tyrone Square Mall to downtown St. Petersburg while passing through Gulfport • Average number of passengers per day: 438	• Education campus: Boca Ciega High School • Several shopping centers and employers, such as Tyrone Gardens Shopping Center, Lakeview Shopping Center

Bus stop on 18th Avenue South across from Tangerine Plaza

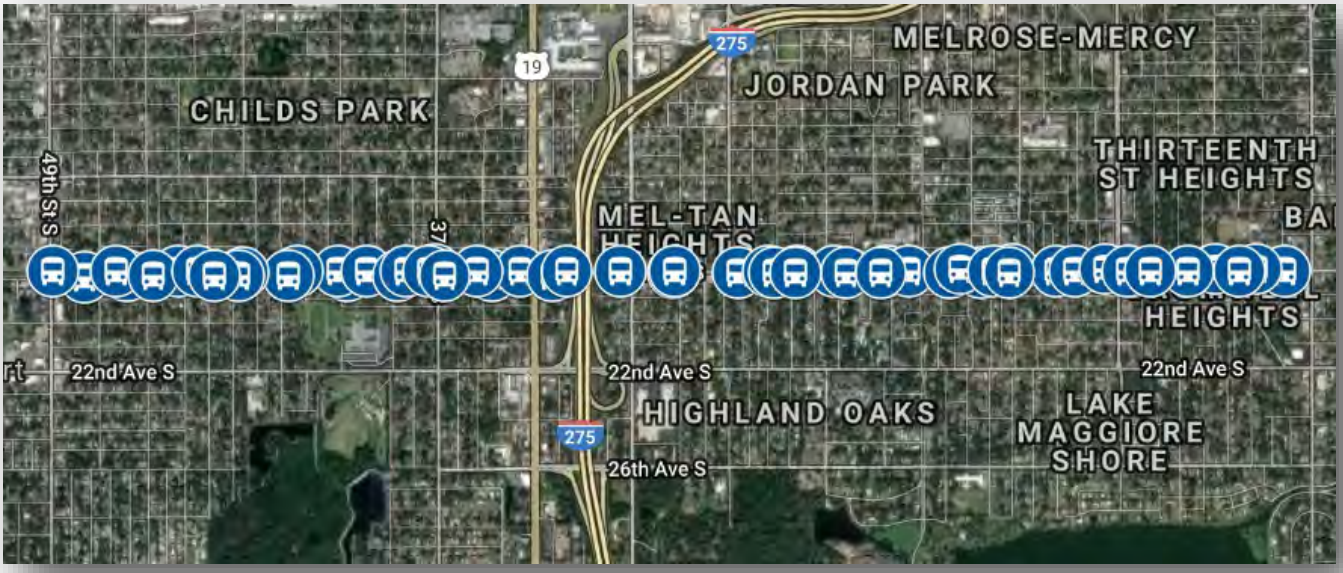


Figure 19: Map of Bus Stops on 18th Avenue South

Bus Stops and Amenities

There are 28 bus stops in the target area, 15 westbound and 13 eastbound, all of which serve route 14. Bus stops were very frequent, as seen in Figure 19, with some stops only being 100 yards apart, which is less than a minute walk for the average walker. The bus stops have varying levels of amenities, as indicated in Table 14. In the target area, the walk audit team found that 15 bus stops have benches, seven have trash cans, two have shelters, and three have a tree providing some shading for relief from the sun. Additionally, only 19 of the 28 stops have concrete slabs for ADA accessibility. There are seven bus stops in the target area that were simply signs without amenities and ADA accessibility. The two bus stops with the most amenities can be found near Tangerine Plaza. These two bus stops, one east and one westbound, had shelters, benches, trash cans, and nearby bicycle racks for bicycle parking.

Bus stop on 18th Avenue South near an unbuffered sidewalk

Table 14: Bus Stop and Amenities Data

Stop*	Direction	Description	Routes	Passengers** Feb-June 2019			Amenities					
				On	Off	Total	Bench	ADA	Trash Can	Shelter (structure)	Tree (shade)	Bike Rack
7221	Eastbound	18TH AVE S & 49TH ST S	14	10	3	13	Yes	Yes	No	No	No	No
7219	Eastbound	18TH AVE S & TIFTON ST S	14	2	2	4	No	No	No	No	No	No
7209	Eastbound	18TH AVE S & 46TH ST S	14	8	3	11	Yes	Yes	Yes	No	No	No
7214	Eastbound	18TH AVE S & 44TH ST S	14	18	2	20	Yes	Yes	Yes	Yes	Yes	No
7210	Eastbound	18TH AVE S & WALTON ST S	14	7	3	9	No	No	No	No	No	No
7217	Eastbound	18TH AVE S & 42ND ST S	14	6	2	8	No	No	No	No	No	No
7226	Eastbound	18TH AVE S & 40TH ST S	14	11	3	13	Yes	Yes	Yes	No	No	No
7229	Eastbound	18TH AVE S & 38TH ST S	14	9	2	10	No	No	No	No	No	No
7227	Eastbound	18TH AVE S & 37TH ST S	14	3	4	7	No	No	No	No	No	No
7243	Eastbound	18TH AVE S & 35TH ST S	14	3	2	5	Yes	Yes	No	No	Yes	No
7244	Eastbound	18TH AVE S & 34TH ST S	14	14	9	23	Yes	Yes	No	No	No	No
8378	Eastbound	18TH AVE S & 31ST ST S	14	6	9	15	No	Yes	Yes	No	No	No
7213	Eastbound	18TH AVE S & 27TH ST S	14	4	6	10	No	No	No	No	No	No
7218	Eastbound	18TH AVE S & 26TH ST S	14	1	9	10	No	No	No	No	No	No
7220	Eastbound	18TH AVE S & 26TH ST S	14	4	5	9	Yes	Yes	No	No	No	No
7215	Eastbound	18TH AVE S & WALTON ST S	14	5	12	17	Yes	Yes	No	No	No	No
7216	Eastbound	18TH AVE S & 23RD ST S	14	5	18	23	No	No	No	No	No	No
7222	Eastbound	18TH AVE S & 22ND ST S	14	20	28	48	Yes	Yes	Yes	Yes	Yes	Yes
7225	Eastbound	18TH AVE S & 21ST ST S	14	3	7	10	No	Yes	No	No	No	No
7228	Eastbound	18TH AVE S & FORREST LANE S	14	13	27	40	Yes	Yes	Yes	No	No	No
7232	Eastbound	18TH AVE S & 17TH ST S	14	3	16	19	No	No	No	No	No	No
7240	Eastbound	18TH AVE S & 16TH ST S	14	11	32	43	Yes	Yes	No	No	No	No
7242	Eastbound	18TH AVE S & 13TH ST S	14	5	21	26	Yes	Yes	Yes	No	Yes	No
7245	Eastbound	18TH AVE S & 11TH ST S	14	5	20	25	Yes	Yes	Yes	No	No	No
7246	Eastbound	18TH AVE S & 10TH ST S	14	1	76	77	No	Yes	No	No	Yes	No
7707	Eastbound	DR M.L.KING JR ST S & 17TH AVE S	14, 20, 23	56	60	117	Yes	Yes	Yes	Yes	No	No

**Blue indicates that bus stop is located in the target area along 18th Avenue South and was evaluated as part of the walk audit*

***Passenger data was collected from PSTA's Feb. 2019 booking period, meaning that ridership data is from February through the beginning of June 2019*

Table 14 Eastbound bus stop and amenities data; data courtesy of PSTA

Table 14: Bus Stop and Amenities Data (cont.)												
Stop*	Direction	Description	Routes	Passengers** Feb-June 2019			Amenities					
				On	Off	Total	Bench	ADA	Trash Can	Shelter (structure)	Tree (shade)	Bike Rack
7706	Westbound	DR M.L. KING JR ST S & 18TH AVE S	14, 20, 23	99	33	132	Yes	No	Yes	No	No	No
7256	Westbound	18TH AVE S & JEWELL ST S	14	12	4	16	No	Yes	No	No	No	No
7249	Westbound	18TH AVE S & 12TH ST S	14	37	5	42	Yes	Yes	Yes	Yes	Yes	No
7252	Westbound	18TH AVE S & 14TH ST S	14	12	6	18	No	No	No	No	No	No
7254	Westbound	18TH AVE S & 16TH ST S	14	29	8	38	Yes	No	Yes	No	Yes	No
7251	Westbound	18TH AVE S & 17TH ST S	14	5	3	8	No	Yes	No	No	Yes	No
7250	Westbound	18TH AVE S & 19TH ST S	14	28	11	38	Yes	Yes	Yes	No	No	No
7253	Westbound	18TH AVE S & 20TH ST S	14	3	4	7	No	No	No	No	No	No
7248	Westbound	18TH AVE S & 21ST ST S	14	27	13	40	Yes	Yes	Yes	Yes	Yes	No
7255	Westbound	18TH AVE S & 22ND ST S	14	22	11	33	Yes	Yes	Yes	No	No	No
7257	Westbound	18TH AVE S & 23RD ST S	14	5	3	8	No	No	No	No	No	No
7259	Westbound	18TH AVE S & 25TH ST S	14	9	3	11	Yes	Yes	No	No	No	No
7258	Westbound	18TH AVE S & YALE ST S	14	7	3	10	No	Yes	No	No	No	No
7260	Westbound	18TH AVE S & 26TH ST S	14	8	6	13	No	No	No	No	No	No
8377	Westbound	18TH AVE S & 30TH ST S	14	3	6	9	No	Yes	No?	No	No	No
7261	Westbound	18TH AVE S & 31ST ST S	14	14	14	27	Yes	No	No	No	No	No
7211	Westbound	18TH AVE S & 31ST ST S	14	2	5	7	Yes	Yes	No	No	No	No
7212	Westbound	18TH AVE S & # 3300	14	2	4	6	Yes	No	No	No	No	No
7224	Westbound	18TH AVE S & # 3411	14	3	3	6	Yes	Yes	No	No	No	No
7223	Westbound	18TH AVE S & 35TH ST S	14	1	4	4	No	No	No	No	No	No
7230	Westbound	18TH AVE S & 37TH ST S	14	3	6	9	No	No	No	No	No	No
7231	Westbound	18TH AVE S & 38TH ST S	14	1	3	4	No	No	No	No	Yes	No
7233	Westbound	18TH AVE S & 39TH ST S	14	0	8	8	No	No	No	No	No	No
7234	Westbound	18TH AVE S & 40TH ST S	14	2	3	5	Yes	Yes	No	No	No	No
7235	Westbound	18TH AVE S & 41ST ST S	14	2	6	8	No	No	Yes	No	No	No
8331	Westbound	18TH AVE S & 43RD ST	14	3	12	14	No	No	No	No	No	No
7238	Westbound	18TH AVE S & 44TH ST S	14	2	11	13	Yes	No	No	No	Yes	No
7239	Westbound	18TH AVE S & 45TH ST S	14	2	7	9	No	No	No	No	No	No
7241	Westbound	18TH AVE S & TIFTON ST S	14	2	7	9	No	No	No	No	No	No
7236	Westbound	18TH AVE S & 49TH ST S	14	2	6	9	No	No	No	No	No	No
7186	Northbound	37TH ST S & 18TH AVE S	11	2	4	5	No	No	No	No	No	No
7187	Southbound	37TH ST S & 18TH AVE S	11	3	1	4	No	No	No	No	No	No
7805	Southbound	34TH ST S & 18TH AVE S	34, 90	9	16	25	Yes	Yes	No	No	No	No
7806	Northbound	34TH ST S & QUEENSBO-RO AVE S	34, 90	20	6	26	Yes	Yes	No	No	No	No
7525	Northbound	49TH ST S & 18TH AVE S	79	1	2	3	No	Yes	No	No	No	No
7526	Southbound	49TH ST S & TANGERINE AVE S	79	2	5	6	No	Yes	No	No	Yes	No

Table 14 (continued): Westbound bus stops and amenities data

PLACEMAKING PROFILE

Streetscaping

Trees

There are approximately 338 trees in the public right-of-way of 18th Avenue South in the target area. There are a mix of species ranging from very old historic oak trees to newly planted trees. There was an overall lack of consistency with the spacing of the trees except for certain blocks where newly planted trees were specifically planted for streetscaping, such as near 34th Street and around Tangerine Plaza. During the walk audit, the team agreed that there are multiple instances where trees and shrubs are blocking directional signage, covering neighborhood signs, and growing into the sidewalk in a manner that impedes or prevents sidewalk users from passing without colliding with the overgrown bushes.

Recently planted trees on 18th Avenue South

Signage

There are approximately 16 neighborhood identity signs visible from 18th Avenue South in the target area. These include signs for the Cromwell Heights Neighborhood, Highland Oaks Neighborhood, Childs Park Neighborhood, and two signs each for 31st Street, Mel-Tan Heights, and Twinbrooks Neighborhoods. There were also two signs for the 16th Street Business District and a sign for the Greater 22nd Business District on their respective intersections with 18th Avenue South. Some of these signs were not easily visible unless one specifically looks for them as they were either small, covered with vegetation, or the sightlines were blocked by trees.

Examples of neighborhood signs on 18th Avenue South

Art

There are at least seven public art murals in the target area. Most of the artwork is found on the walls of private businesses, and relevant to the businesses themselves, such as art found on Hungry Howie's, the Krispy Krab restaurant, and at Lundy's Liquors. There is also informal art found on the corridor, including a mural that says "it's a beautiful life" with a green SpongeBob on a wall facing a vacant lot. There is also some public art on utility boxes, such as near Tangerine Plaza and 16th Avenue South, that was commissioned through the Shine Mural Festival.

Public art on 18th Avenue South

Street Lights

There are 102 “street lights” in the target area, which are a mix of acorn-style street lights and single arm hanging street lights. Overall, along the entire corridor, there is a lack of consistency in street light types, placement, and spacing. However, there are a few areas, for example, surrounding Tangerine Plaza, where acorn style street lights are consistent in their spacing and placement, creating a comfortable walking experience for a few blocks. The team drove the corridor at night and noticed that sidewalks are very dark throughout most of the target area.

Security Lights

During the walk audit, the team noted that there were many security lights found within parking lots along 18th Avenue South. These lights do not serve the purpose of lighting the road or sidewalk as they are primarily utilized for crime prevention and vehicle security.

Lighting underneath I-275 overpass

Perception of Safety and Crime

Code Compliance

The Codes Compliance Assistance Department (CCAD) works to stabilize neighborhoods and protect the community by reducing blight and maintaining the quality of existing structures. They work both to educate property owners and enforce the City code. The department tracks the number of codes cases across the entire City and provided data for the study area from 2014-2019 (September) (Figure 20). Over the almost five year period, there were 970 codes cases on 18th Avenue South, which is more than any other street within the study area. While one reason for this is because the length of the street is the longest within the study area, the large number of cases still shows that there are issues with blight, which can lead to quality of life issues. Overall, there were 3,346 cases that came from the community, through various origins (citizen complaints, See Click Fix, etc.).

Some of the most common code violations in the last five years within the study area included the following:

- Overgrowth (lack of yard maintenance- e.g., overgrown grass or weeds encroaching onto sidewalks or the road)
- Property Maintenance (structural)
- Search for Active Violations
- Civil Citations
- Civil Citations - Junk, Trash, Debris
- Civil Citations - Yard Parking
- Securing Structures (e.g., a structure with an open door/window allowing access to the interior)
- Civil Citations - Inoperable Motor Vehicle
- Junk of Vacant Properties
- Permit(s)

Overgrowth on a curb ramp

Overgrowth over a narrow sidewalk on 18th Avenue South causing many pedestrians to duck their heads

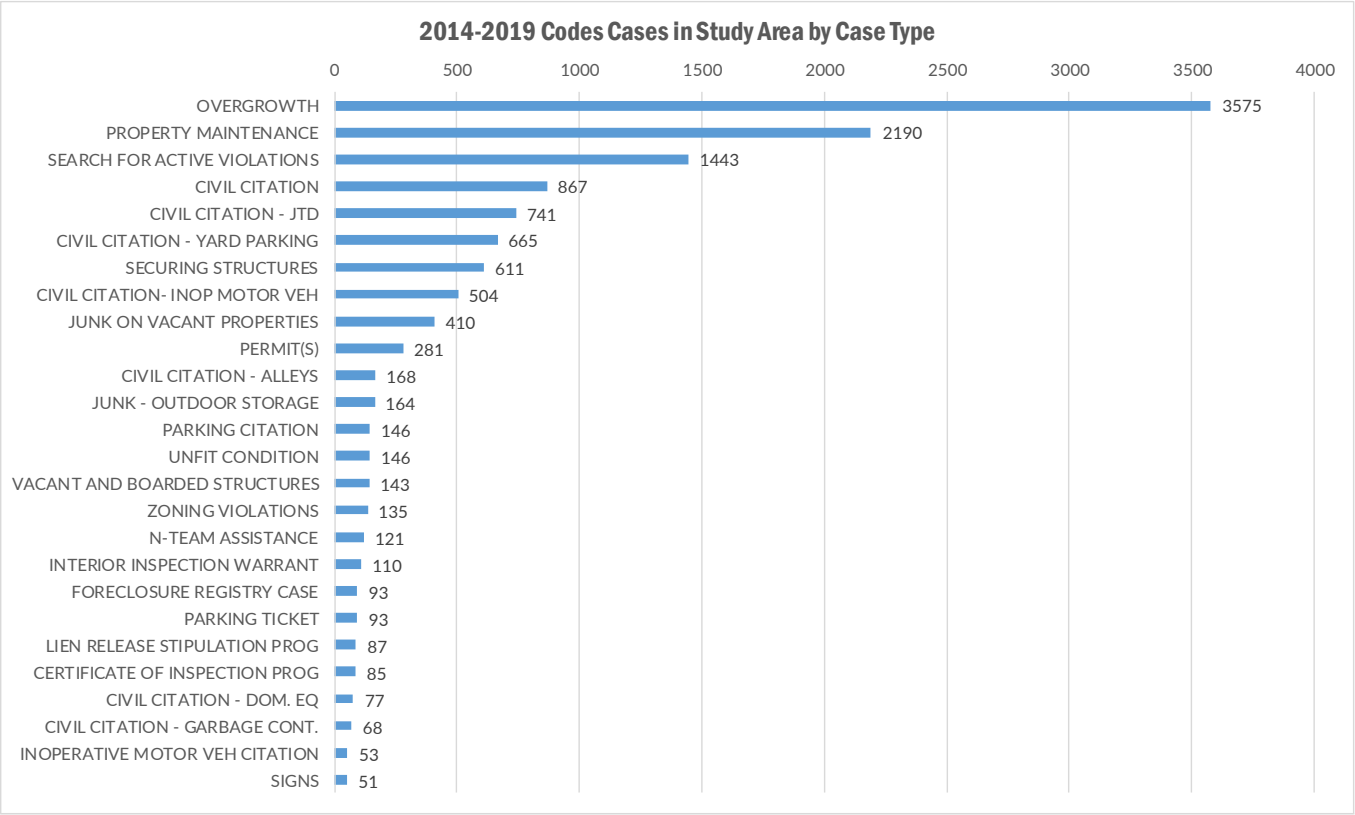


Figure 20: Codes cases in study area by case type

Police Calls

The St. Petersburg Police Department (SPPD) provided police call data between January 1, 2015 and October 9, 2019. Geo-validated arrest data was not available at the time of the request. With regard to this distinction, it's important to note that police call data is likely more representative of perception of crime, rather than actual crime. There could be multiple calls for the same crime or multiple calls for a perceived crime, where no arrest was made.

In an almost four year period, a total of 17,808 police calls in the study area were recorded representing 159 different types of calls as categorized by the SPPD. The HIA team categorized the 159 different types of calls into more broader categories, including those most relevant to the HIA, which included calls related to the following: robbery, burglary, and theft; mental health; person on person crimes; and broken windows and quality of life. While some calls could fit multiple categories, all 159 were assigned to their most prominent broader category. The following Figures (21-24) show the most frequent calls for each of these broader categories.

Police Calls Related to Theft, Robbery, and Burglary

The crimes of robbery, burglary, and theft are commonly lumped together although there are important distinctions. Theft, broadly defined, is taking another's property without the owner's consent and with the intention to permanently deprive the owner of its use or possession.[28] One example is shoplifting. Robbery is similar to theft; however, it has some other elements that theft doesn't require, including the use of force or threat of force, and the property must be within another's control (e.g., on their person or located in a safe that only a store employee can access).[29] Burglary requires entering a structure or dwelling with the intent to commit a crime within it, which could include theft or another crime.[30]

The number one and two police call types in this category both relate to vehicles with 378 calls related to burglary of vehicles and 299 calls related to auto theft. Other police calls were also made for both commercial and residential properties. Of theft, burglary, and robbery, robbery was the least common in the study area.

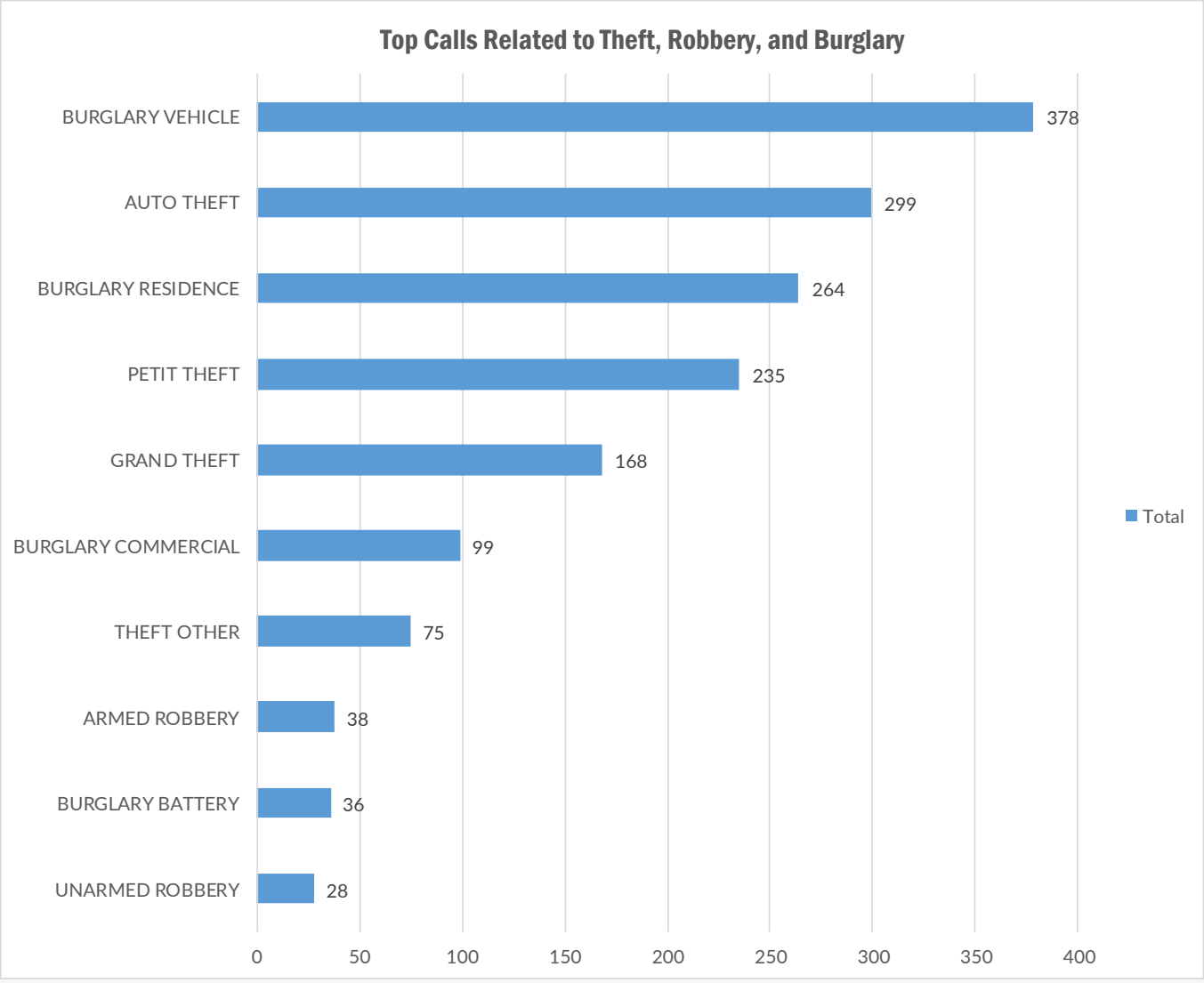


Figure 21: Police calls related to theft, robbery, and burglary

Police Calls Related to Person on Person Crime

Person on person crime generally describes crimes where there is bodily harm, the threat of bodily harm, or other actions committed against the will of an individual. There were more than 2,000 calls relating to domestic disturbances in this category with the broad category of "trouble with an individual" making up 821 of those calls. There is no certainty as to whether calls were made about perceived safety issues inside of buildings or outside in public. However, for those incidences where calls were made in reference to disturbances outside, there could be impacts to a person's perception of safety.

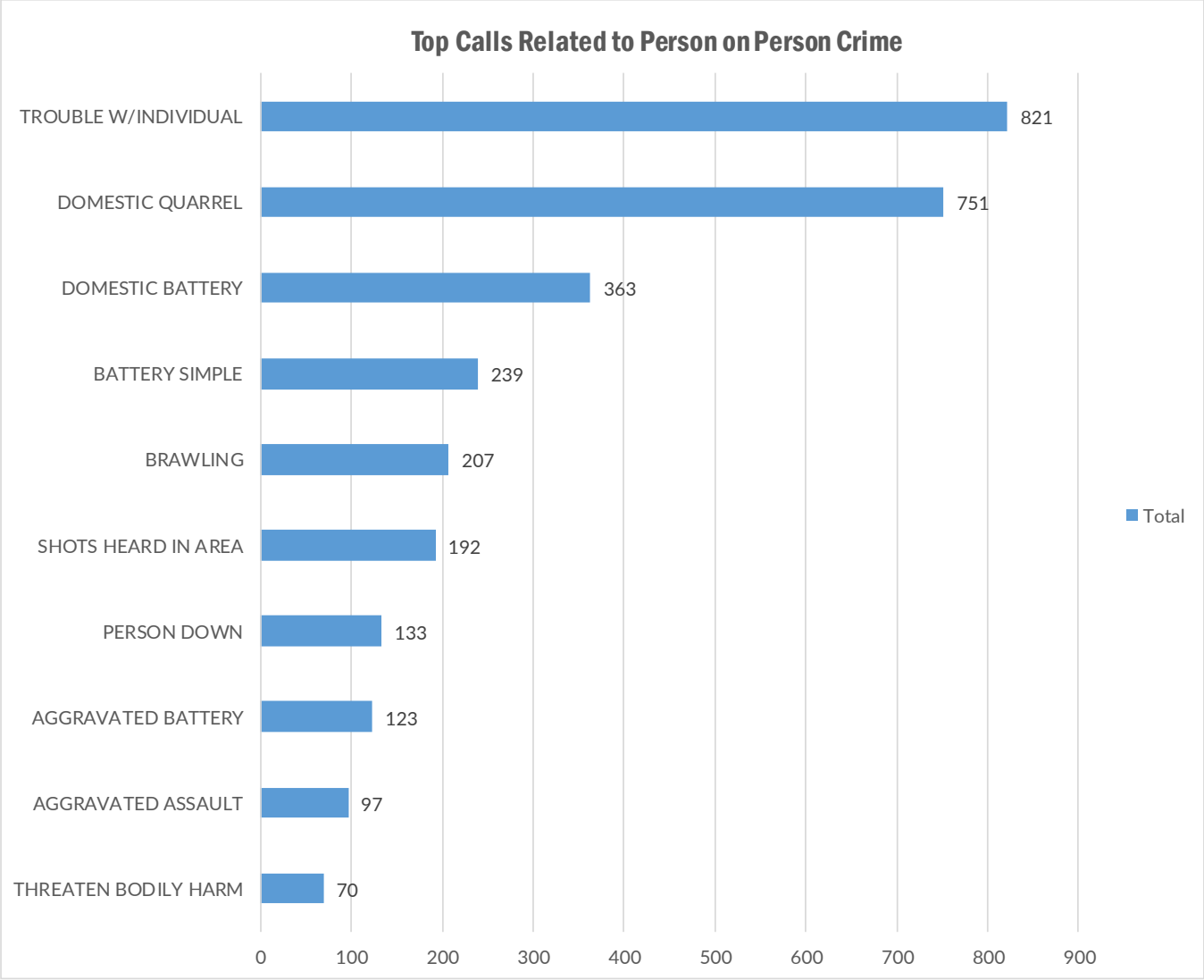


Figure 22: Police calls related to person on person crime

Police Calls Related to Mental Health

There were 436 total calls in the top five categories related to mental health issues and illnesses although that does not necessarily mean there were 436 incidences as there may be multiple calls in relation to the same individual. There also is not always police call data related to mental illness as families often go through the healthcare system to address mental health conditions. There is also a strong stigma associated with mental illness, and a lack of affordable resources, so it's often difficult to understand its prevalence as mental illness frequently goes untreated and therefore unreported.

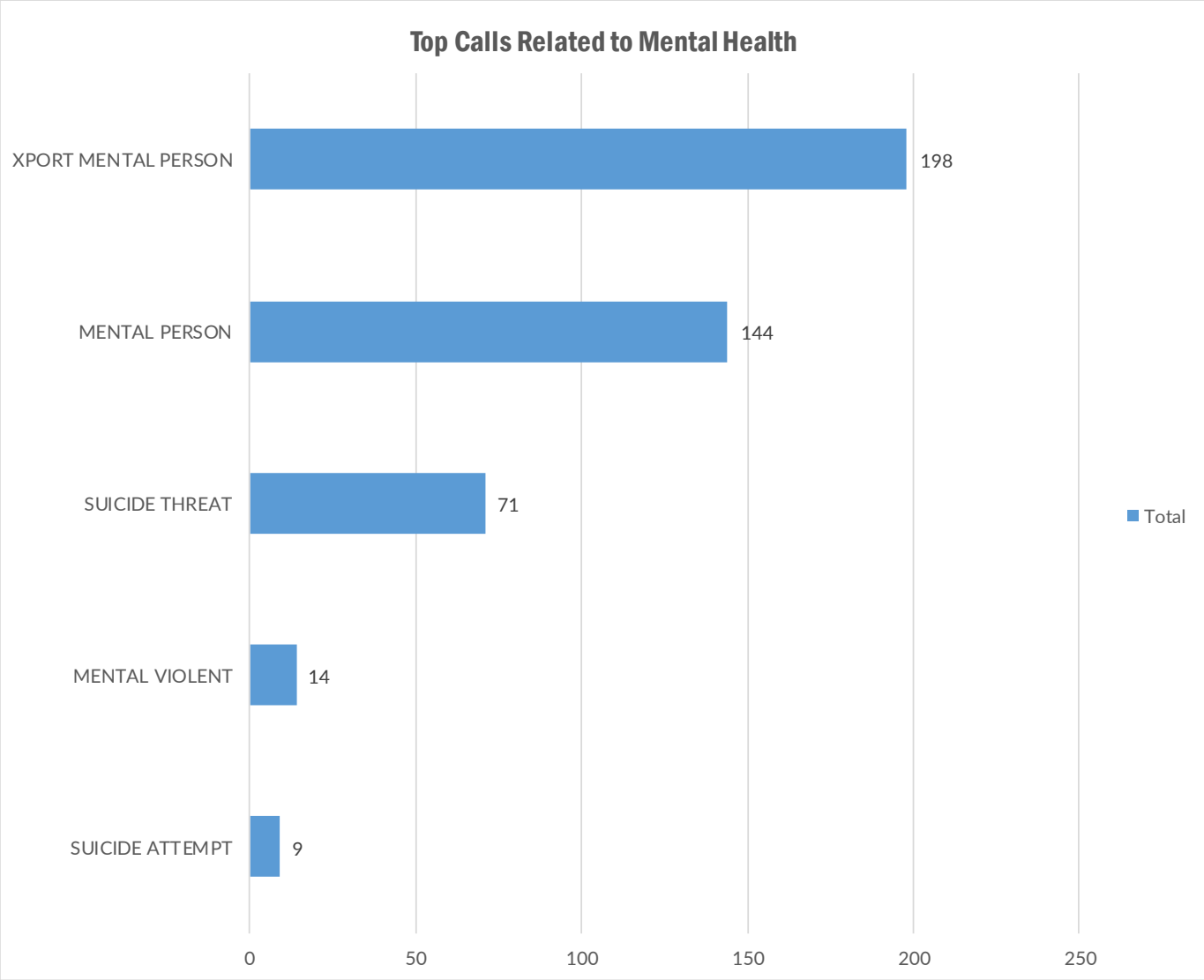


Figure 23: Police calls related to mental health

Police Calls Related to Broken Windows and Quality of Life

Figure 24 shows the top 10 calls likely to be most commonly associated with the broken windows theory, quality of life, and perception of safety/crime. This is a catch-all category that purposefully excluded some call types, such as auto accident-related calls, general calls for assistance, arrest on existing warrants, calls replicated by codes enforcement data above, etc. There were over 200 calls for each of the following call types: checking subject, noise nuisance, suspicious circumstance, trespassing, and criminal mischief. However, without further context, it's impossible to know whether some of these calls were regarding perceived crime and safety issues inside or outside buildings and the actual arrests made in relation to these police calls.

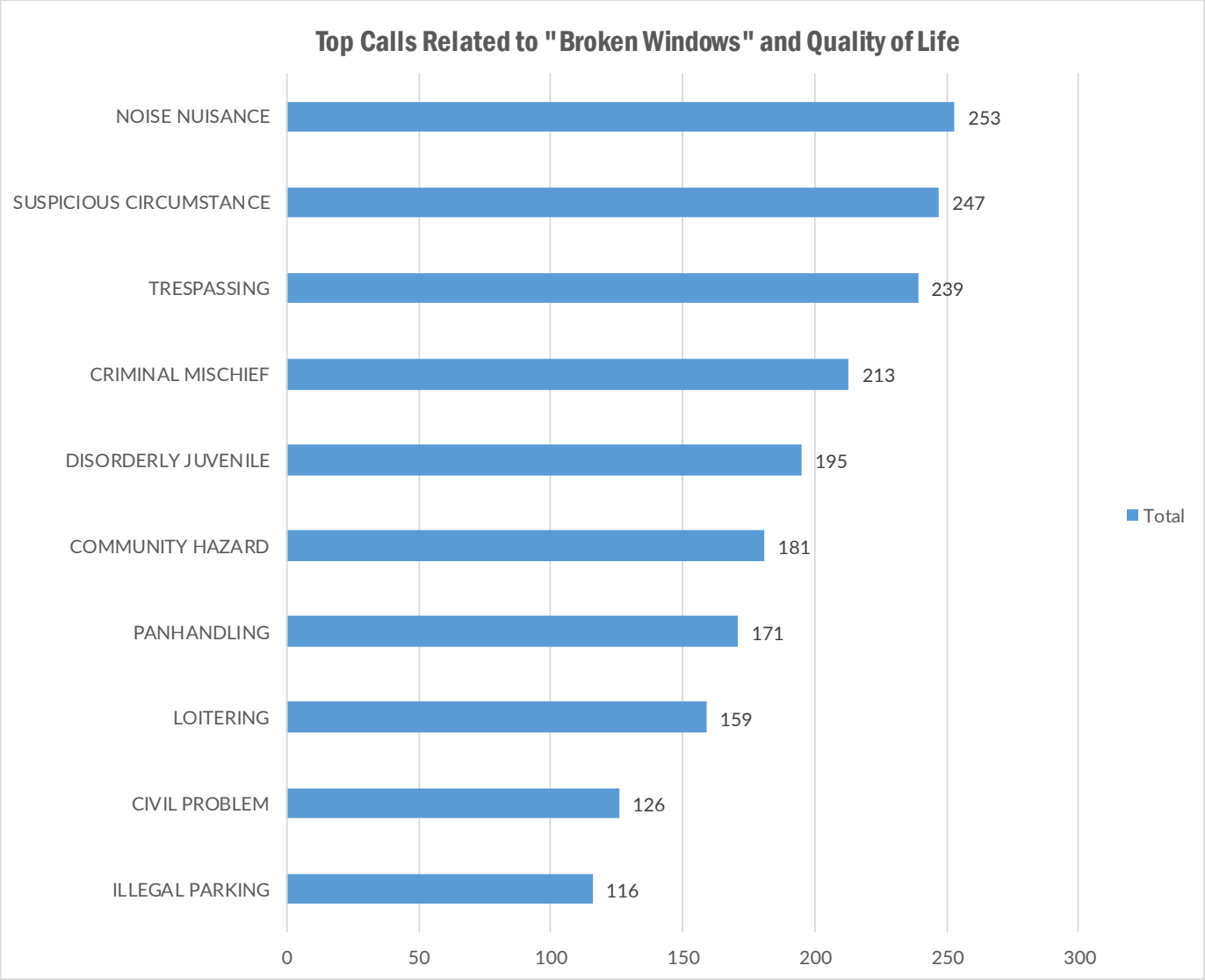


Figure 24: Police calls related to "broken windows" and quality of life

Tangerine Plaza on 18th Avenue South

BUSINESS AND HOUSING PROFILE

Complete Streets Implementation Plan Context Zones

There are several elements of the CSIP that help to determine how the City may approach modifying 18th Avenue South. Land Use Context Zones in the CSIP show three different contexts along the corridor: mixed-use, residential, and park/civic. According to the plan, the zones are defined as follows:

- "Mixed-Use Context Zones are represented by the mixture of both commercial and residential uses. These areas often follow the traditional urban pattern of commercial frontages with residential uses above and behind. Buildings are generally fronting on the sidewalks with parking in some combination of behind the buildings, structured, or off-site. Mixed-Use Context Zones can be either concentrations of blocks, such as downtown, or linear corridors, such as Dr. M.L. King Jr. Street, 34th Street, or Central Avenue and 1st Avenues North and South."
- "Residential Context Zones are characterized by predominantly housing uses. The residential areas are comprised of mostly single-family houses, interspersed with duplexes and low-rise multifamily housing buildings. The areas often feature moderately sized lawns or tree canopies and sometimes brick streets. Residential Context Zones cover a majority of the City's land area."
- "Parks/Civic Context Zones are areas used as parks with natural preservation, parks with active sports fields and playgrounds, drainage and utility corridors, recreation centers, public services, libraries, and schools."

Zoning and Future Land Use

There are a variety of zoning districts and designated future land uses within the study area (Figures 25 and 26). Most of the study area has zoning districts that permit low to medium density residential development, including some multifamily development (NSM - 1, CRT - 1, CCT - 1, and CCS - 1), and allowance for Accessory Dwelling Units (ADU) in certain districts (NT - 1, NSE, CRT - 1, and CCT - 1). Currently developed single family homes make up over 60% of the acreage in the study area while more dense residential uses (i.e., duplexes, triplexes, fourplexes, assisted living facilities, and apartments) make up only 4.5% of the study area acreage (Table 19).

There are also some zoning districts, mostly immediately adjacent to major roads, that allow residential use, commercial use, and some mixed use. Notably, the parcels immediately adjacent to 18th Avenue South within the target area are mostly zoned CRT - 1 and CCT - 1. The CRT district is meant to encourage development of townhomes, condominiums, apartment buildings and mixed-use buildings that are appropriately scaled to the context of the corridor and to facilitate conversion of remaining single-family homes to offices or limited retail uses. The CCT - 1 district is meant to protect the traditional commercial character of these corridors while permitting rehabilitation, improvement and redevelopment in a manner that encourages walkable streetscapes. Many of these parcels have a future land uses of planned redevelopment for residential or mixed use (PR - R and PR - MU). The PR - R district allows for low to medium residential uses where either single family residential or single family with accessory residential development may coexist and prohibits multifamily residential uses. PR - MU allows mixed use retail, office, service, and medium density residential uses.

Enoch Davis Center on 18th Avenue South

The City already has multiple programs and ordinances that encourage affordable and workforce housing through density bonuses and allow for a reduction to the typically required total number of parking spaces for a property's respective zoning district. Developers and property owners may participate in the workforce housing density bonus program, which permits them to apply for density bonuses in certain zoning districts if they are providing "workforce housing." Additionally, the City recently adopted two separate 10% reductions for required vehicle parking spaces for properties committing at least 50% percent of the total number of dwelling units for occupancy as Certified Affordable/Workforce Housing and for those properties located within 1/8 mile of a high frequency transit route, defined as routes with scheduled weekday peak hour headways of 35 minutes or better. As there are a few high frequency routes located within the study area, including along 18th Avenue South, developers and property owners may be eligible to take advantage of this reduced parking requirement.

It is important to note that at the time of writing this HIA, the City adopted two additional Land Development Regulation/Comprehensive Plan packages in December 2019. This package of amendments created a new zoning classification, Neighborhood Traditional Multifamily (NTM), which will allow more missing middle housing, such as duplexes, quadraplexes, townhomes, cottages or tiny home projects along select major street segments. This zoning classification could be adopted for some properties surrounding 18th Avenue South.

Church parking lot on the eastbound side of 18th Avenue South. The parking configuration leads to safety issues due to limited visibility and speeding traffic. Several other buildings on the corridor have similar issues with parking configurations.

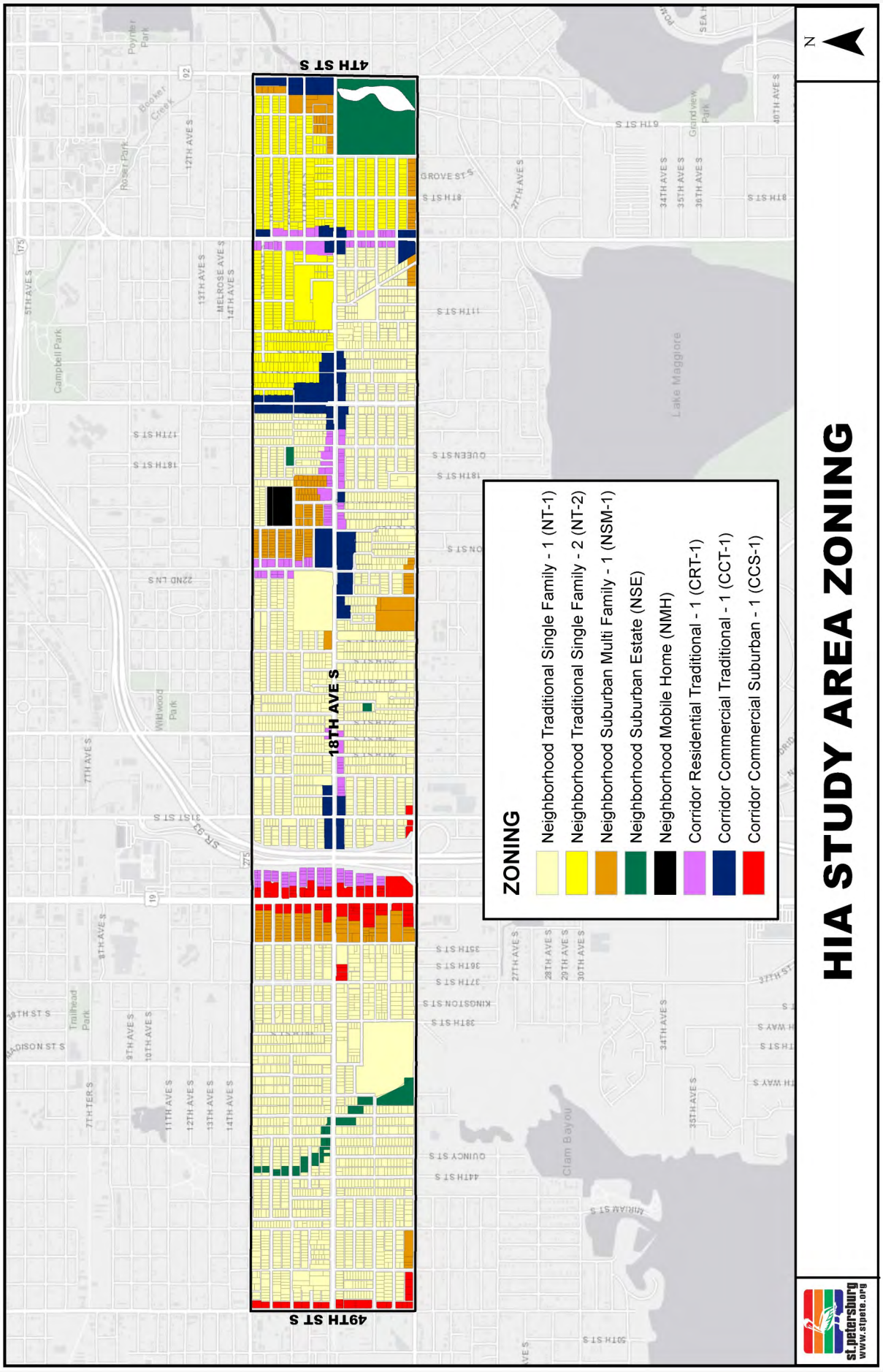


Figure 25: Zoning districts in the study area

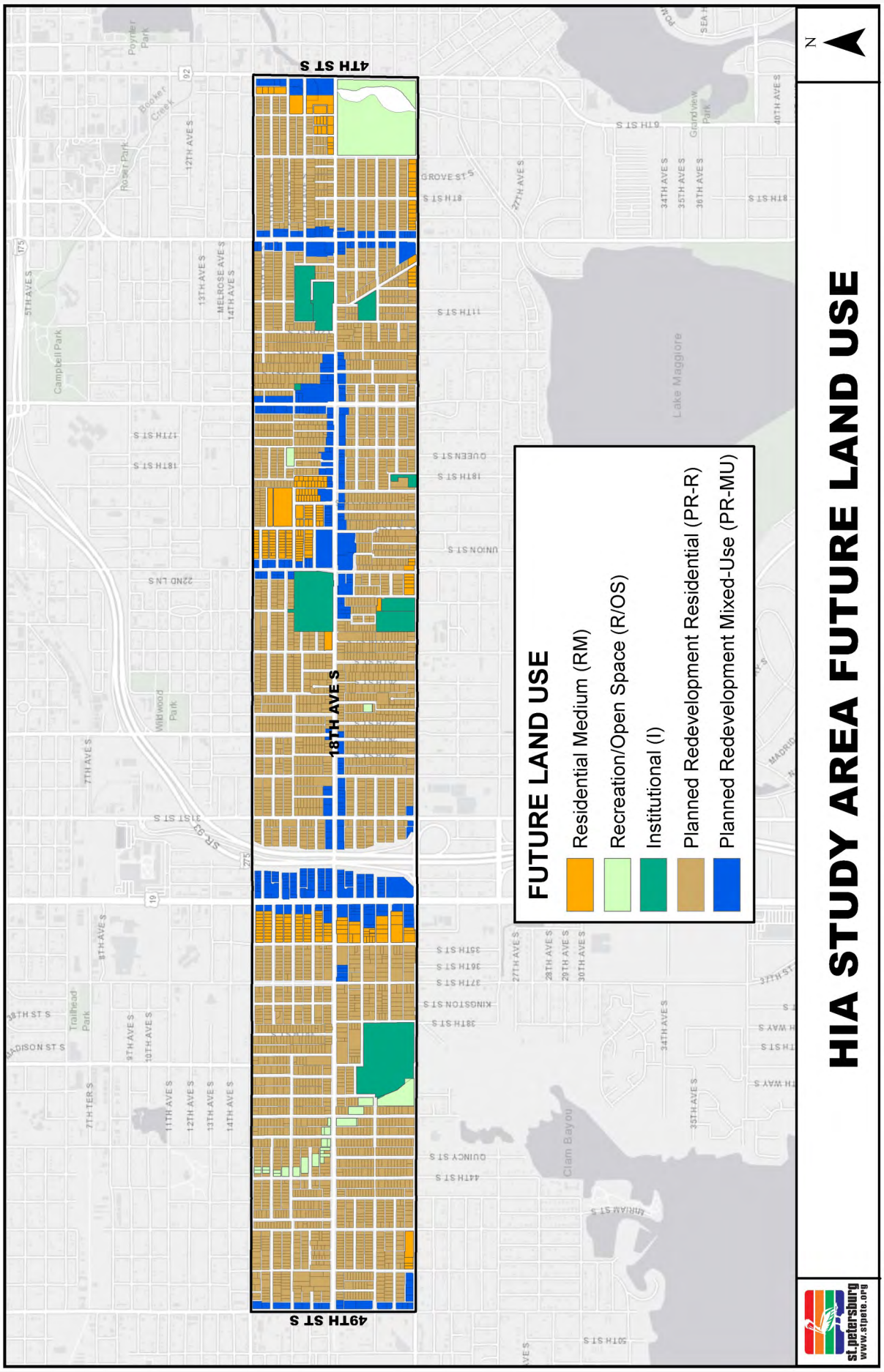


Figure 26: Future land uses in the study area

Business Districts

There are two business districts with boundaries that include some parcels along 18th Avenue South that are important to consider when planning complete street modifications. The first, the 16th Street Business District, is located between 18th Avenue South and Interstate 175. The second, the Deuces Live Association, extends from 18th Avenue South to 1st Avenue South and incorporates some properties located in the Warehouse Arts District Planning Area (located north of I-275). A smaller geographic area between 15th Avenue South and just north of 9th Avenue South is designated a Florida Main Street District, called the Deuces Live Main Street. This district is one of three in the City of St. Petersburg, which supports these Main Street Districts with technical and financial assistance. Notably, the Pinellas Trail crosses through the Deuces Live Association's boundaries at the intersection of 22nd Street South and 5th Avenue South. The trail promotes connectivity and access for bicyclists and pedestrians countywide to the area. Additionally, 22nd Street South as unbuffered bike lanes, providing better accessibility to this trail access point for local residents.

The Deuces Live Association and Warehouse Arts District Planning area have a combined action plan titled The Warehouse Arts District Deuces Live Joint Action Plan and an associated capital improvements budget. The plan identifies improvements to revitalize the area while preserving its cultural heritage. The plan incorporates elements of Complete Streets and placemaking through both basic infrastructural improvements (sidewalks, street trees, lighting, etc.), progressive steps (streetscapes, road diets, bike lanes, etc.), and transformational projects (signature parks and streets). The 22nd Street South corridor also includes an African-American Heritage Walking Trail called "Community, Culture, and Commerce" that focuses on the "rich cultural heritage of the neighborhood, community leaders, landmark businesses, and the evolution from the Jim Crow era to desegregation and the Civil Rights Movement."[31] The changes made to the 22nd Street South corridor, particularly those that enhance walkability, may impact transportation modes utilized on 18th Avenue South.

Greater 22nd Street Business District sign on 18th Avenue South

Community Reinvestment

There has been some historic investment by property owners and the City on commercial and residential properties within the study area. While it's impossible to track all property improvements made that contribute to revitalization in the area, there is some data available.

Permits

Since 2015 there have been many permits issued for new construction and renovations of both commercial and residential properties in the study area, as seen in Table 15. St. Petersburg is mostly developed, with very little undeveloped land available for new construction, so most development is either renovations or redevelopment on previously developed land. Within the study area, there have been 3 permits obtained for new commercial construction, valued at $331,500, and 138 permits for renovations to commercial buildings, totaling over $5.85 million in value. There's been more permit activity for residential construction near 18th Avenue South, with 56 permits for new residential construction over the past four years, totaling over $8.63 million in value. Most of the residential construction permits issued have been for single-family residential houses, and there hasn't been any new construction of multifamily residential properties in the study area since 2015. In regard to renovations of residential properties, there have been 1,557 permits issued, totaling over $10,377,775.

Table 15: Building permits in study area

Building Permits in Study Area																		
Permit Type	**2015**			**2016**			**2017**			**2018**			**2019** (thru 10/1/2019)			**2015 thru 2019**		
	Permit Value	**#**	**Units/SF**	**Permit Value**	**#**	**Units/SF**	**Permit Value**	**#**	**Units/SF**	**Permit Value**	**#**	**Units/SF**	**Permit**	**#**	**Units/SF**	**Permit Value**	**#**	**Units/SF**
Commercial - New Construction										**$331,500**	**3**	**2,500**				**$331,500**	**3**	**$2,500**
Commercial - Renovation	**$1,058,403**	**35**		**$217,256**	**28**		**$2,210,828**	**36**		**$1,312,257**	**23**		**$1,059,709**	**16**		**$5,858,453**	**138**	**$0**
Non-Commercial - New Construction	**$69,891**	**1**		**$961,255**	**2**	**9774**	**$14,000**	**4**		**$900,000**	**1**	**3,485**				**$1,945,146**	**8**	**$13,259**
Residential - New Construction	**$261,400**	**2**	**2**	**$283,921**	**2**	**2**	**$1,075,676**	**7**	**8**	**$2,453,335**	**17**	**21**	**$4,563,125**	**28**	**31**	**$8,637,457**	**56**	**$64**
Single Family	*$261,400*	*2*	*2*	*$283,921*	*2*	*2*	*$988,876*	*6*	*6*	*$1,796,117*	*13*	*13*	*$3,992,707*	*25*	*25*	*$7,323,021*	*48*	*$48*
Duplex							*$86,800*	*1*	*2*	*$657,218*	*4*	*8*	*$570,418*	*3*	*6*	*$1,314,436*	*8*	*$16*
Multifamily																		
Residential - Renovation	**$1,775,150**	**325**		**$1,995,680**	**360**		**$2,450,029**	**411**		**$2,669,591**	**408**		**$1,487,325**	**53**		**$10,377,775**	**1557**	**$0**
Demolished Residential Units	**$54,137**	**13**	**14**	**$95,750**	**15**	**16**	**$123,238**	**15**	**15**	**$40,973**	**8**	**8**	**$0**	**0**	**0**	**$314,098**	**51**	**$53**
Single Family	*$52,337*	*12*	*12*	*$93,350*	*14*	*14*	*$123,238*	*15*	*15*	*$40,973*	*8*	*8*				*$309,898*	*49*	*$49*
Duplex	*$1,800*	*1*	*2*	*$2,400*	*1*	*2*										*$4,200*	*2*	*$4*
Multifamily																		
Other Permit Activitiy	**$6,200**	**15**		**$21,189**	**12**		**$37,094**	**28**		**$61,140**	**12**		**$10,000**	**1**		**$135,623**	**68**	
Total	**$3,225,181**	**391**		**$3,575,051**	**419**		**$5,910,865**	**501**		**$7,768,796**	**472**		**$7,120,159**	**98**		**$27,600,052**	**1881**	

CRA Commercial Grants

The South St. Petersburg CRA has three different commercial grant programs making up their place-based opportunities. The Commercial Revitalization Program (CRP) provides grant awards of up to $100,000 for commercial projects that enhance established business districts by redeveloping and renovating properties and improving the quality of life for surrounding neighborhoods. The Commercial Site Improvement Grant (CSI) and Commercial Interior Grant (CI) both provide reimbursable grants of up to $20,000. The CSI is for commercial property owners that upgrade their building facades, landscaping, lighting, loading and service areas and other features of their sites visible from the public right-of-way. The CI is for interior upgrades to commercial properties with a focus on projects that remedy degraded building systems and extend the economic viability of the building. Between FY 2016 and FY 2019, the City awarded $100,000 total in grants for the CRP, $41,691 total in CSI, and $24,135 total in CI within the study area.

Table 16: Place-Based Opportunity Grants Awarded in the Study Area (2016-2019)

Name	Address	Grant Program
Sundaze Hotel	1590 34th Street S	CRP
Delores M Smith Academy	1766 49th St S	CRP
St. Pete Seafood and Gyro	1760 Dr. M.L. King Jr. St S	CI
Delores M Smith Academy	1766 49th St S	CI
Delores M Smith Academy	1766 49th St S	CSI
Gianfilippo Auto Sales	2101 34th St S	CSI
Imagination Station	3242 22nd Ave S	CSI
Delores M Smith Academy	1766 49th St S	CSI
WestCare Gulf Coast	1735 Dr. M.L. King Jr. St S	CSI
Tennis Foundation of St Pete Inc.	650 18th Ave S	CSI

"For Rent" sign on 18th Avenue South

Rebates for Residential Rehabs Program

The City has a Rebates for Residential Rehab (RRR) program which provides a 20% rebate of the cost of specific building improvements to residential property owners. The building improvements can be rehabs that result in added property values, higher energy efficiency, water conservation, improved building safety, and harden buildings for hurricanes. One of the ideas behind the RRR program is that it creates an incentive for private investment and bolsters employment in the construction industry. The program began in 2014 and since then, the City has approved 68 applications for a total of $376,476 dollars of public investment, resulting in a total public-private investment of over $1.88 million.

Table 17: RRR Program Rebates 2014-2019

Year	# Approved	Original Rebate Approved	Current Balance
2014	18	$113,233	$0
2015	16	$85,472	$0
2016	11	$55,831	$3,116
2017	10	$52,677	$10,000
2018	10	$46,030	$0
2019	3	$23,233	$23,233
Total	**68**	**$376,476**	**$36,349**

CRA Affordable Housing Investments

The South St. Petersburg Community Redevelopment Plan invests in three major pillars to support the revitalization of the CRA: commercial corridor reinvestment, education and workforce development and affordable housing. The City made large strides investing in the first two pillars in FY 2016 and FY 2017. In 2018/19, as affordable housing became an important focus in St. Petersburg as well as nationally, City Administration and City Council created new affordable housing programs for the South St. Petersburg CRA and allocated nearly $1.75 million toward incentivizing affordable multifamily housing development as well as creating and rehabilitating single-family housing in the CRA.

To spur its single-family residential programs, which include down payment assistance, barrier free grants, facade improvement grants and rehabilitation assistance for income-eligible families, City Administration invested nearly $782,000 from the FY 2018/2019 CRA budget. As of November 2019, nearly $246,000 in funding for 17 single-family households was committed in the study area, with six households receiving $54,000 in the target area.

Jamestown Town House and Apartments– a Residential community for low-to-moderate income residents near downtown St. Petersburg

Career fair in St. Petersburg

Current Conditions

Employment

Employment data from the State of Florida's E202 Unemployment Insurance Quarterly Reports show that there are 92 businesses in the study area as of 2019. It is important to note that these reports only show those companies that pay unemployment insurance, which typically excludes businesses that have less than three to five employees, depending on the industry. The team aggregated data from the North American Industry Classification System (NAICS) codes into broader categories in order to maintain the confidentiality of businesses in the study area as required by the City's agreement with the Florida Department of Economic Opportunity for use of its data. The aggregated data can be found in Table 18. The total number of businesses in the study area has decreased overall since 2015, and there have also been shifts in the number of businesses per industry. There are nine less businesses in 2019 than in 2014 that can be classified as Retail and Wholesale Trade. However, the number of businesses reported in the Education, Healthcare, and Social Assistance and the Administration, Waste Remediation, and Other Services categories have increased.

In regard to jobs at companies that are included in this report, there are 751 jobs in the study area in 2019 compared to 743 jobs in 2015. This number has fluctuated significantly throughout the years ranging from 719 to 825 total jobs. The total paid in wages has increased in four years from approximately $23.73 million to $25.29 million with a small dip in 2018. The average total wage has also fluctuated throughout the 4-year period, starting at $31,944 in 2014 and ending with $33,679. In certain categories, the average wages have significantly increased, including the Arts, Entertainment, Food and Accommodations and Information Technology, Fire, and Professional Services categories. Average wages have decreased significantly in the Utilities and Construction and Manufacturing, Transportation, and Warehousing categories.

Table 18: Employment in study area

Table 18: Employment in Study Area												
Category	2015				2016				2017			
	Est.	Emps.	Total Annual Wage	Average Wage	Est.	Emps.	Total Annual Wage	Average Wage	Est.	Emps.	Total Annual Wage	Average Wage
Utilities and Construction	6	20	$703,220	$35,161	5	23	$836,104	$36,352	4	22	$792,132	$36,006
Manufacturing, Transportation and Warehousing	7	100	$5,917,648	$59,176	7	94	$5,304,734	$56,433	8	125	$6,381,020	$51,048
Retail and Wholesale Trade	32	138	$3,010,584	$21,816	28	192	$5,071,208	$26,413	23	109	$2,491,152	$22,855
Information Technology, FIRE, & Professional Services	13	29	$1,174,596	$40,503	13	34	$1,611,322	$47,392	11	35	$1,592,032	$45,487
Education, Health Care and Social Assistance	15	263	$8,837,196	$33,602	13	287	$7,911,906	$27,568	15	279	$9,405,599	$33,712
Arts, Entertainment, Food and Accomodations	13	104	$1,465,012	$14,087	11	120	$1,951,240	$16,260	14	105	$1,795,178	$17,097
Administration, Waste Remediation and Other Services	19	89	$2,626,291	$29,509	19	75	$2,397,216	$31,963	19	84	$2,632,858	$31,344
Total	105	743	$23,734,547	$31,944	96	825	$25,083,729	$30,405	94	759	$25,089,971	$33,057

Table 18: Employment in Study Area (cont.)								
Category	2018				2019			
	Est.	Emps.	Total Annual Wage	Average Wage	Est.	Emps.	Total Annual Wage	Average Wage
Utilities and Construction	4	7	$234,912	$33,559	4	7	$167,696	$23,957
Manufacturing, Transportation and Warehousing	8	107	$5,469,068	$51,113	7	161	$7,200,012	$44,721
Retail and Wholesale Trade	21	110	$2,486,158	$22,601	21	96	$2,329,342	$24,264
Information Technology, FIRE, & Professional Services	10	26	$1,190,860	$45,802	11	26	$1,796,792	$69,107
Education, Health Care and Social Assistance	16	303	$9,590,301	$31,651	17	307	$9,467,875	$30,840
Arts, Entertainment, Food and Accomodations	12	90	$1,570,602	$17,451	11	47	$1,012,983	$21,553
Administration, Waste Remediation and Other Services	18	76	$2,556,906	$33,644	21	107	$3,318,277	$31,012
Total	89	719	$23,098,807	$32,126	92	751	$25,292,977	$33,679

Existing Land Uses

The majority of the study area consists of single-family homes, making up about 61.6% of the acreage (Table 19). There are 104.11 acres of vacant land with 7.11 acres (9 parcels) zoned for NSE - Recreation/ Open Space.

Table 19: Property Uses in Study Area as of November 1, 2019

PROPERTY USE	COUNT	ACRES
ALF - Boarding House (less than 10 units)	1	0.09
ALF (10 or more units)	3	0.70
Apartments (10 - 49 units)	8	7.15
Apartments (5-9 units)	15	3.21
Apartments (50 units or more)	1	0.71
Auto/Marine Repair	9	2.50
Automobile Rental Agency, Used Car Lot, Trailer, Truck & Van Rental	2	0.60
Bar, With or Without Package Store	1	0.33
Church, Church School, Church Owned Building (Parsonage code 0110), Salvation Army, Missions	31	19.72
City Gov't - Non-residential (commercial) only	2	40.29
Club, Lodge, Union Hall, Civic Club, Health Spa	5	1.86
Condo Industrial/Warehouse (Unit)	1	0.48
Convenience Store	7	3.37
County Public Schools	3	40.84
Duplex-Triplex-Fourplex	180	27.01
Fast Food Restaurant	6	3.18
Financial Institution	1	1.44
General Office	9	2.42
General Warehouse	6	1.67
Hotels and Motels (49 units or less)	2	1.64
Light Manufacturing	1	0.21
Manufactured Home Park (Lot Rental Community)	1	5.49
Medical Office Building - single & multi-story	3	2.22
Mortuary, Cemetery, Crematorium, Funeral Home	4	2.16
Neighborhood Shopping Center	1	3.60
Non-Profit Charitable Services	6	9.13
Nursery, Roadside Fruit Stand, Florist Shop, Greenhouse	1	0.47
Open Storage	1	0.35
Post Office	1	3.60
Private Schools & Colleges, Day Care Centers	4	5.45
Restaurant, Cafeteria	4	1.22
Right-of-Way Street and Road, Irrigation Canal, Channel, Ditch, etc.	4	0.26
Sewage Disposal, Solid Waste (private) borrow pit, marsh, mangrove, sand dune, swamp, waste land	16	4.65
Single Building Store	29	10.15
Single Family - more than one house per parcel	161	29.16
Single Family Home	3,271	494.58
Skilled Nursing, Memory Care, Rest Home, Senior Rehab Center, Adult Day Care	3	2.47
Store w/Office or Apartment	6	1.20
Strip Store - (2 or more stores)	19	9.93
Vacant Commercial Land	68	19.73
Vacant Commercial Land w/XFSB	17	9.00
Vacant Industrial Land	6	1.00
Vacant Institutional Land	4	1.00
Vacant Park Land	2	0.58
Vacant Residential - lot & acreage less than 5 acres	490	71.17
Vacant Residential Land w/XFSB	9	1.63
TOTALS	**4,425**	**849.61**

Data courtesy of Pinellas County Property Appraiser

Property Values

Property values in the study area have largely increased from 2015 to 2018 (Table 20). The total taxable value has increased by 55%, and the land value has increased by 37%. The improvement value is estimated at almost $152.8 million, which is a 63% increase over the past three years.

Property Values in the Study Area								
	2015	2016		2017		2018		
	Value	Value	Yr-over-Yr	Value	Yr-over-Yr	Value	Yr-over-Yr	Overall %
Total Taxable Value	$135,784,557	$152,399,367	12%	$177,835,848	17%	$210,428,728	18%	55%
Land Value Only	$42,171,139	$44,886,827	6%	$41,431,208	-8%	$57,649,905	39%	37%
Improvement Taxable Value Only	$93,613,418	$107,512,540	15%	$136,404,640	27%	$152,778,823	12%	63%

Note: The Improvement Value was derived by subtracting Land Value from Total Value. Where such calculation yielded a negative, as would be the case when an exemption was applied to a property, the Improvement Value was calculated as zero.

Housing

The median home value in 2019 in the study area is $94,896. According to the ESRI Market Analysis for the study area in five years, the median home value is projected to increase 6.31% annually to $128,882. There are also more owner - occupied housing units than renter - occupied housing units, although the area is more heavily renters when compared to City averages (Table 21). At the time of the ESRI Market Analysis, there also appears to be a higher percentage of vacant housing units compared to the City average.

Table 21: 2019 Estimate of Housing Units			
	Study Area		City
	# of Housing Units	% of Housing Units	% of Housing Units
Owner - Occupied Housing Units	2,117	42.6%	49.8%
Renter - Occupied Housing Units	1,899	38.2%	35.4%
Vacant Housing Units	949	19.1%	14.9%
Total Housing Units	4,965	100%	100%

Vacant Lot on 18th Avenue South with "It's a Beautiful Life" written on the fence

Vacant Lots

There are 587 vacant parcels (97 acres) within the study area, with about 64% of these located the smaller target area. Most of the vacant mixed-use (33 parcels) are located directly adjacent to 18th Avenue South, and most vacant commercial land appears to be surrounding the 34th Street (US 19) corridor. Vacant multifamily residential lands are sporadic throughout the study area, with two main areas of concentration between 35th and 34th Streets and in the Melrose Mercy neighborhood just north of Tangerine Plaza. Figure 27 projects an estimate of development potential on vacant parcels in the study area.

Figure 27: Projected Estimates of Development Potential on Vacant Land

The HIA team utilized the vacant land data and with an agreed-upon set of assumptions, calculated projected estimates for the number of dwelling units and the amount (square footage) of commercial development that could be constructed on vacant parcels. Assumptions included considerations to parcel size, flood zones, mixed-use development, and zoning districts. The analysis also assumed that no more than 20% of the gross total number of ADU's and no more than 40% of the gross total number of workforce units that could potentially be constructed within the study area will be built. The full description of assumptions can be found in Appendix B.

Dwelling Units: The team concluded that there could be 1,098 total units built, which includes the following:

- 1,025 Base Units, of which 928 are principal units and 97 are accessory dwelling units
- 68 additional eligible workforce housing units

Commercial Space: The team concluded that there could be a maximum of 493,687 square feet of gross Commercial Space developed.

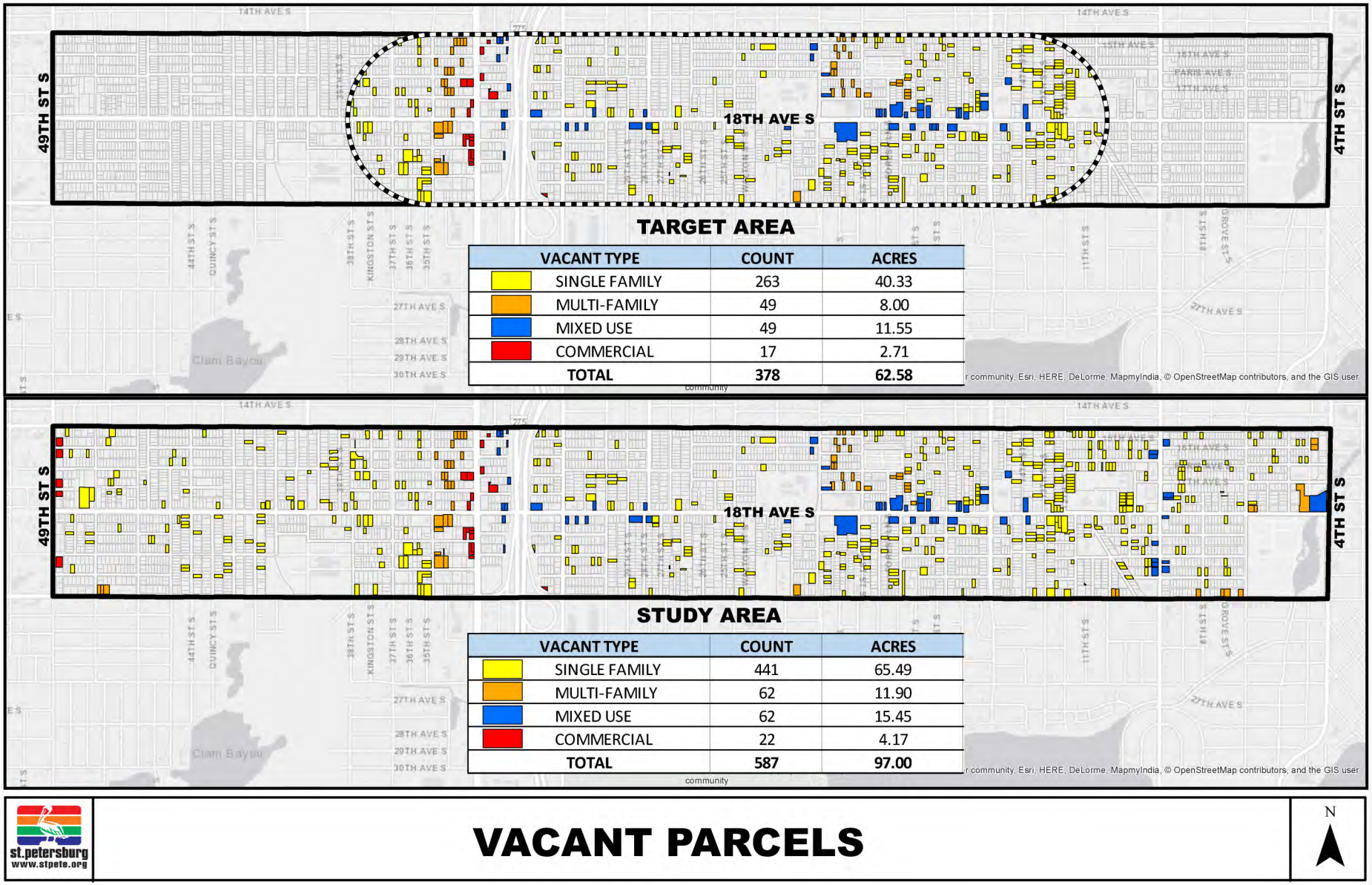


Figure 28: Maps of vacant parcels in the target and study areas

A bicyclist riding on 18th Avenue South

HEALTH, ACTIVE TRANSPORTATION, AND A COMPLETE 18TH AVENUE SOUTH

There is overwhelming evidence that engaging in physical activity can reduce a person's risk for obesity and various chronic conditions and diseases, such as type 2 diabetes, cardiovascular (heart) disease, high blood pressure (hypertension), stroke, bone and joint diseases, many types of cancer, depression, anxiety, and dementia. [33-36] The CDC recommends that adults get at least 150 minutes of moderate-intensity aerobic activity every week, plus muscle-strengthening activities at least 2 days a week. The CDC estimates that 1 in 10 premature deaths could be prevented by achieving the recommended level of physical activity. Additionally, 1 in 8 cases of breast cancer, 1 in 8 cases of colorectal cancer, 1 in 12 cases of diabetes, and 1 in 15 cases of heart disease, all could be prevented by getting enough physical activity. However, although the benefits are widely known, only about half of adults in the United States get the physical activity they need to help reduce and prevent chronic diseases. In the area surrounding 18th Avenue South, the data also reveals that between 38.1% to 46.8% of adults reported no leisure time physical activity in the past month.

The question of why people do not achieve recommended levels of physical activity is complex, and many health behavioral theorists have proposed numerous models with multiple variables explaining why an individual chooses to engage in a healthy behavior, such as physical activity. One such model, the Health Belief Model, holds that there are two components of health behavior "1) the desire to avoid illness, or conversely get well if already ill; and, 2) the belief that a specific health action will prevent, or cure, illness." [37] The model includes the following six constructs:

1. "Perceived susceptibility - This refers to a person's subjective perception of the risk of acquiring an illness or disease."
2. "Perceived severity - This refers to a person's feelings on the seriousness of contracting an illness or disease (or leaving the illness or disease untreated)."
3. "Perceived benefits - This refers to a person's perception of the effectiveness of various actions available to reduce the threat of illness or disease (or to cure illness or disease)."
4. "Perceived barriers - This refers to a person's feelings on the obstacles to performing a recommended health action. There is wide variation in a person's feelings of barriers, or impediments, which lead to a cost/benefit analysis. The person weighs the effectiveness of the actions against the perceptions that it may be expensive, dangerous (e.g., side effects), unpleasant (e.g., painful), time-consuming, or inconvenient."
5. "Cue to action - This is the stimulus needed to trigger the decision-making process to accept a recommended health action." Cues may be internal cues (e.g., symptoms) or external (e.g., information and advice from others, illness of a family member, seeing someone else performing a healthy behavior, or promotional signage encouraging a healthy behavior)."
6. "Self-efficacy - This refers to the level of a person's confidence in his or her ability to successfully perform a behavior." [38]

In following the Health Belief Model as it relates to physical activity as an intentional health behavior, a person would need to have some level of perceived susceptibility and perceived severity of an illness (or many illnesses) and would need to view physical activity as beneficial to help prevent or cure those illnesses. In considering WHO's definition of health, "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity," this model could also be applied not as strictly to the actual disease state (e.g. incidence of diabetes, incidence of heart disease, etc.), but also to how engaging in a particular health behavior (e.g., physical activity) might promote general feelings of health and well-being.

Two often promoted forms of physical activity are walking and bicycling, as they are considered great and "easy" ways to meet the recommended weekly physical activity guidelines. Someone can achieve significant health benefits by walking at a brisk pace (3 miles per hour) or bicycling for 30 minutes a day. [39-42] Numerous studies have concluded that walking and cycling can provide valuable daily physical activity, generally falling into the moderate-intensity range that provides health benefits including increased rates of caloric expenditure. [43-53] People can choose to walk or bike for 1) recreation/physical activity or 2) for transportation purposes, allowing access to goods, services, and activities, or 3) for both. [54] Walking and bicycling, along with other variants of small-wheeled transport (e.g., skates, skateboards, scooters, etc.), are considered forms of "active transportation," defined by the CDC as "any self-propelled, human-powered mode of transportation." The benefits of active transportation have been studied by both public health and transportation researchers. In a 2010 study, Pucher et al. examined cross-sectional health and travel data for 14 countries, 50 US states, and 47 of the 50 largest US cities. They found that active travel (bicycling and walking) is associated with more adults meeting recommended levels of physical activity, fewer obese adults, and a reduced prevalence of adult diabetes. [55]

Transportation researchers have proposed numerous conceptual frameworks describing the determinants of transportation mode choice and travel behavior (i.e., why a person chooses one mode over another). [56] The concepts of "perceived barriers" and "cues to action" from the Health Belief Model are consistent with many of the concepts described in these frameworks as to why a person chooses active transportation modes. One well-known theoretical model is Schneider's Theory of Routine Mode Choice Decisions, which suggests a five-step mode choice process consisting of 1) awareness and availability, 2) basic safety and security, 3) convenience and cost, 4) enjoyment, and 5) habit. [57] The following four sections are organized by the first four steps of this framework with a discussion on their implications to active transportation and other community priorities.

A bus stop across the street from Tangerine Plaza on 18th Avenue South

AWARENESS AND AVAILABILITY

Schneider claims that "people must be aware of a mode and have it available as an option to travel to an activity," and this has been confirmed in several other travel behavior studies. [58-61] In comparing this concept to those elements of the Health Belief Model, unavailability serves as a barrier, while a lack of awareness corresponds to a lack of cues to action. Vehicle availability and the built environment are two awareness and availability factors that impact the travel mode choices by community members.

What the Literature Says about Vehicle Availability

The availability of vehicles can either facilitate or create a barrier for people when they are making modal choices. There are numerous studies that evaluate the role of vehicle ownership (including bicycles) and how people choose to commute. Automobile ownership can facilitate more automobile use. Bicycle ownership has a positive relationship with bicycling, and some studies show that the availability of a bicycle in a household is the strongest single predictor of bicycling for transportation. [62-64] Bike share may also increase bicycle ridership when available at convenient locations, although there are other barriers to participating in bike share. Lack of payment options and a lack of familiarity are two awareness- and availability-related barriers that impact bicycle share ridership. [65]

Interpretation and Recommendations

Vehicle Availability

As seen in the preceding "Transportation Modes" data sets from the existing conditions profile (Table 7), the population has a lower average number of vehicles per household than the City average, and 68.1% of households have either no vehicle available or only one vehicle available. Unfortunately, there is no data available for bicycle ownership within the study area. Over 10% of workers around 18th Avenue South walk, bicycle, or take public transportation to work. In regard to public transit, as seen in Figure 18, there are multiple routes available to residents that travel through the study area . Adopting Complete Streets corridor modifications on 18th Avenue South would improve health equity by enhancing the availability of multimodal options, particularly for those residents without cars, thus improving their ability to safely go to work, school, and community locations.

What the Literature Says about the Built Environment

It is commonly accepted that the manner in which communities are planned, designed, and built can have a major influence on our behaviors including our travel mode choice. The American Heart Association claims that "there is widespread agreement that there is sufficient evidence to warrant public health action on the role of the built environment in increasing physical activity." [66] There is a growing body of evidence suggesting that differences in the built environment influence the likelihood that people will use active transport for their daily travel. [67-69] One major barrier for someone trying to walk, bicycle, or take public transportation is a lack of transportation infrastructure that safely supports those modes and a lack available routes to a person's destination. When streets are incomplete and lack of transportation infrastructure, such as sidewalks or bike lanes, and when modal networks are incomplete (e.g., there are bicycle routes or bus routes to an intended destination), an individual may choose a less active transportation mode. On the other hand, designing complete streets that have pedestrian, bicycle, and public transportation facilities that increase connectivity and include parking facilities (e.g., bike racks and bike share stations) both increases their availability and the awareness of these modes (due to increased visibility).

Smart Growth America analyzed 37 Complete Streets projects for their report "Safer Streets, Stronger Economies." In the report, they found that 13 projects included pedestrian counts, and that 12 of those projects had an increase in pedestrian activity following Complete Streets improvements. [70] Similarly, 22 projects of 23 projects reporting bicycle counts found increases in bicycles counts, and 6 out of 7 projects found increases in transit ridership following Complete Streets Improvements. According to NACTO, high quality bike facilities increase ridership. They state that "studies from cities across North America show that adding protected bike lanes significantly increases bike ridership on those streets, with rates ranging from 21% to 171%." [71] In regard to pedestrian infrastructure, the Bureau of Transportation Statistics reports that people who say that sidewalks are not available in their communities are slightly less likely (4%) to be walkers. [72] The availability of other specific characteristics might also be important to encourage walking. In a 2008 literature review, Salens and Handy found numerous studies showing that there are consistent positive relations between walking for commuting (frequency) and the following built environment attributes: [increased] density, distance/proximity to nonresidential destinations, land use mix, availability of parks and open space, and route/network connectivity. [73] An article in the American Heart Association's Circulation, Sallis et al. concludes that "key characteristics of built environments and community design are land use (residential, commercial, institutional, or park and open space), intensity (population density), location relative to other community destinations, interconnections available to reach those destinations, and aesthetic qualities. Having a variety of destinations close by has been positively associated with walking and bicycling for transportation. Destinations refer to land uses that are frequently accessed in daily life for shopping, education, work, and recreation. Proximity to parks and commercial areas is associated with higher active transportation." [74]

Many health behavioral studies show the direct correlation between the built environment, including Complete Streets elements, and physical activity. One study found that 43% of people with safe places to walk within 10 minutes of home met recommended activity levels and that among individuals without safe place to walk, just 27% were active enough. [75] According to Active Living Research, "the percentage of adults who get enough physical activity is 15% higher in neighborhoods that have sidewalks than it is in those that don't." [76] There have also been studies that show higher levels of physical activity among public transportation riders. [77] It's believed that nearly one third of transit users meet the Surgeon General's recommendations for minimum daily exercise through their daily travels. [78] This is likely because public transportation, while not typically defined as active transportation, is often a multimodal trip, meaning that most people who use public transportation typically also use an active transportation mode, for example, walking or bicycling to or from bus stops or making other trips by foot during their day.

Interpretation and Recommendations

Built Environment

In order to encourage active transportation and physical activity on 18th Avenue South, it's evident that modifying the street to include Complete Streets facilities supportive of bicycling and walking would have positive impacts on the health of the community. The community should consider a variety of infrastructural improvements as part of these complete streets facilities beyond simply improving bicycle and pedestrian routes (e.g., bike lanes, widened sidewalks, shared-use trail, etc.).

It's important to increase the availability of bicycle parking, as there are currently only three known bike racks on the target area. This may require creating new public-private partnerships to help existing businesses that wish to increase bicycle parking but may not have the financial means to do so. Active Transportation awareness-building infrastructure could also be incorporated into the corridor, for example, pedestrian-scale wayfinding signage that raises awareness of existing bicycle, pedestrian, and bus routes. Although Complete Streets facilities are important, they alone are likely not the "public health intervention" silver bullet for increasing physical activity as there are many aspects of the built environment that impact whether people will walk or bicycle. The American Heart Association recommends a whole-of-government approach as being crucial to the creation of 'walkable' communities in new and existing developments. [79] The community, in collaboration with the City, may consider a holistic multisectoral approach to redevelop 18th Avenue South, including evaluating potential land use changes (e.g. zoning and FLUM) that increase density and create a more active land use mix of destinations that complement existing businesses. Adopting a holistic built environment approach could help contribute to a healthier more bike-, walk-, and transit-friendly corridor.

BASIC SAFETY AND SECURITY

Schneider claims that "people seek to travel to activities using a mode that they perceive to provide a basic level of safety from traffic collisions and security from crime." [80] Perception of safety and personal security can be major barriers to engaging in physical activity, including walking and bicycling.

What the Literature Says About Perception of Traffic Safety

Traffic safety is often considered of highest priority for transportation planners, and it's one of the seemingly most discussed topics when it comes to barriers to walking and bicycling. As far back as 1992, the Federal Highway Administration named concerns over traffic safety and lack of routes as the top individual factors that disincentivize bicycling. [81] In a 2017 study regarding bicycle share in underserved communities in three cities, McNeil et al. concluded that "the biggest barrier to bicycling generally is concern about traffic safety, regardless of race or income." [82] The CDC also claims that "many Americans view walking and bicycling within their communities as unsafe due to heavy traffic and a scarcity of sidewalks, crosswalks, and bicycle facilities. Improving these elements could encourage active transportation such as children biking to school or employees walking to work." [83]

People perceive safety differently and therefore have different levels of comfort when riding a bicycle. The typology developed by Roger Geller at the City of Portland, Oregon, broadly defines four types of cyclists, described as follows:

1. Strong and Fearless: People willing to bicycle with limited or no bicycle-specific infrastructure
2. Enthused and Confident: People willing to bicycle if some bicycle-specific infrastructure is in place
3. Interested but Concerned: People willing to bicycle if high-quality bicycle infrastructure is in place
4. No Way, No How: People unwilling to bicycle even if high-quality bicycle infrastructure is in place. [84]

In a national survey of adults in the 50 largest metro regions in the U.S., Jennifer Dill, Ph.D., at Portland State University, found that roughly 7% of adults identified as Strong and Fearless, 5% identified as Enthused and Confident, and the majority 51% identified as Interested but Concerned. [85] The different levels of comfort and perceived safety impacts on ridership lead to different preferences for the types of bicycle infrastructure that would make potential riders feel safe. NACTO recommends designing for the Interested but Concerned and to remember who is already riding. [86] There are numerous studies regarding community preferences and how roadway configurations and bicycle infrastructure impact the perception of safety. Literature generally shows that more separation from motor vehicle traffic may help increase bicycling among the Interested but Concerned. A summary of many studies reinforcing the desire for separation is provided in People for Bikes's statistics library summarizing many studies and press releases. [87] The following quotes from the statistics library are those that relate to the perception of safety and what people want in bicycle infrastructure:

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- 96 percent of people using protected bike lanes believe they increased safety on the street. — *Monsere, C., et al., 2014 .Lessons from the Green Lanes (National Institute for Transportation and Communities)*
- 80 percent of people who live near a protected bike lane project believe it increased safety on the street. — *Monsere, C., et al., 2014. Lessons from the Green Lanes (National Institute for Transportation and Communities)*
- Ninety percent of users say they feel safer bicycling on Pennsylvania Ave because of the new protected lanes. — *District Department of Transportation, 2012. Bicycle Facility Evaluation*
- Protected bike lanes are seven times more effective than painted ones. A 2015 survey of adults in the 50 largest U.S. metro areas found that adding a conventional painted bike lane to a four-lane commercial street increases the number of people who feel very comfortable" biking there from 9 percent to 12 percent. Adding a protected bike lane boosts this to 29 percent. The reported comfort difference between a protected and conventional bike lane is about the same as the difference between a protected bike lane and an off-street path. — *Jennifer Dill, TREC at Portland State University - National Association of Realtors national survey*
- 75 percent of people who live near a protected bike lane project say they support more in other locations. For those aged 18-34, it's 85 percent; for those aged 18-24, 97 percent. — *Monsere, C., et al., 2014. Lessons from the Green Lanes (National Institute for Transportation and Communities)*
- 10 percent of people who live near a protected bike lane project give a perfect comfort rating to a conventional painted bike lane. 22 percent give a perfect rating to a bike lane buffered by paint. 70 give a perfect comfort rating to a bike lane protected by planters. — *Monsere, C., et al., 2014. Lessons from the Green Lanes (National Institute for Transportation and Communities)*

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(continued)

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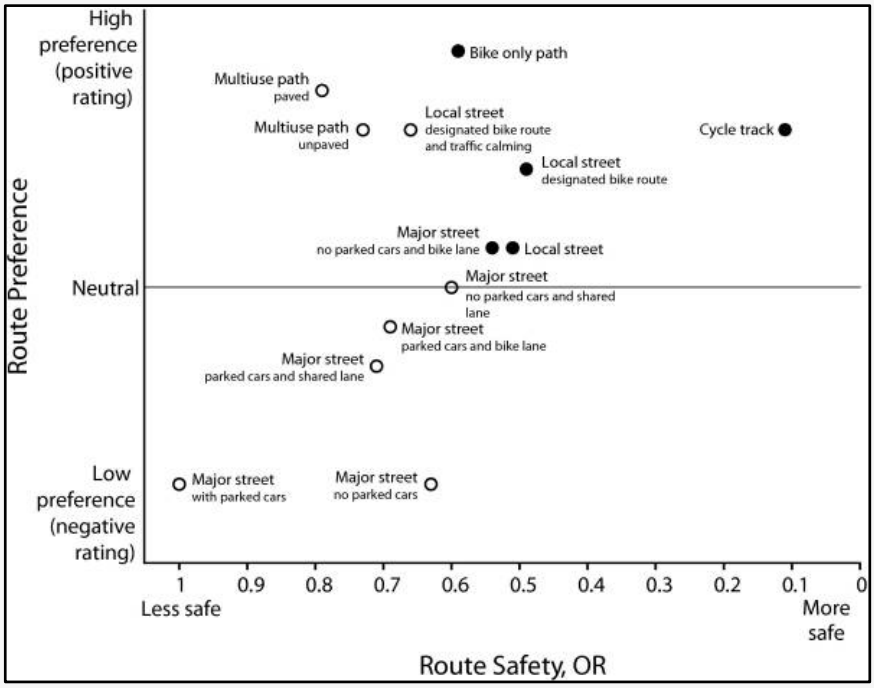
- 62 percent of people who live near protected lane projects would be more likely to ride a bicycle if motor vehicles and bicycles were physically separated by a barrier. — *Monsere, C., et al., 2014 - Lessons from the Green Lanes (National Institute for Transportation and Communities)*

- A survey of Toronto residents found that 72 percent support protected bike lanes. — *Rider, D., 2011 -* 65% of Torontonians say no to road tolls; 72% want bike lanes. — *Thestar.com, 3 June 2011*

Another notable study from Vancouver looks at the overlap of safety and preference; the results are summarized in Figure 29 below. Additionally, sociodemographic status can also alter perception of safety and infrastructure preferences. According to NACTO, "recent national research suggests that people of color are more likely than white Americans to say that adding protected bike lanes would make them ride more." [88] Another study concluded that "men and women's perceptions of safety and of the feasibility of bicycling differ; women are more sensitive to the absence of bike lanes and trails." [89] "

Figure 29: Vancouver Studies on Safety and Route Preferences

The graph below shows data from two separate Vancouver studies—one on route safety and the other on route preference. Teschke et al., the authors of the safety study, conclude that "many route types with positive preference ratings were also among the safest: cycle tracks; local streets; bike only paths; and major streets with bikes lanes and no parked cars. These provide a range of options with potential to both lower injury rates and increase cycling. This in turn may create a positive feedback cycle because increased ridership has been associated with increased safety." [90]



What the Literature Says About Traffic Safety

There are a multiple of options when designing Complete Streets that lead to differential safety impacts. However, a major goal of Complete Streets is to promote the safety of all roadway users and there are a multitude of studies and policy briefs that discuss various elements of Complete Streets and how they lead to reduced injuries and fatalities. Some key quotes collected from fact sheets by Smart Growth America, NACTO, People for Bikes, and WesternITE are found below and on the next few pages.

Smart Growth America [91-93]

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- Designing a street with pedestrians in mind—sidewalks, raised medians, better bus stop placement, traffic-calming measures, and treatments for travelers with disabilities—may reduce pedestrian risk by as much as 28 percent. [94]

- Streets designed with sidewalks, raised medians, better bus stop placement, traffic-calming measures, and treatments for disabled travelers improve pedestrian safety. Some features, such as medians, improve safety for all users: they enable pedestrians to cross busy roads in two stages, reduce left-turning motorist crashes to zero, and improve bicycle safety.

- About 70 percent of projects experienced a reduction in collisions, and in many cases, the reduction amount was significant. Approximately 56 percent of projects experienced a reduction in injuries. In some projects where collisions and injuries went down, automobile volumes were essentially unchanged or increased, while pedestrian and bicycle traffic increased — meaning the rates of collision and injury dropped the same or more than the absolute change. In many of the projects where collisions or injuries increased, travel across modes also increased by a large percentage. In many instances, the rate (as opposed to the absolute number) of crashes or injuries (or both) fell. For example, in Porter Square in Cambridge, MA, bicycle collisions increased 150 percent after the Complete Streets improvements—but bicycle volumes increased 929 percent. The rate of collision among bicyclists decreased from 2.5 to 0.6 collisions per 100 bicycle trips after the Complete Streets changes.

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Crosswalk in front of Perkins Elementary School

NACTO [95]

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- NACTO research in seven cities shows that pairing bike share with protected bike lanes encourages riding, increases the visibility of people on bikes, and reduces overall biking risk.

- Riding a bike is getting safer as cities build better bike lane networks. In five of the seven US cities NACTO surveyed, the absolute number of bicyclists killed or severely injured declined from 2007 to 2014, even as bike ridership rates increased. Additionally, even in the cities where the absolute number of bicyclists killed or severely injured increased over the time period, that rate is rising at a slower pace than the increase in bicycling itself. This decline in risk comes at the same time as bike ridership rates in the cities surveyed have more than doubled. All seven cities have invested in high-comfort bike facilities.

- Gains in bike safety are especially important for low-income riders and riders of color. 49% of the people who bike to work earn less than $25,000 per year, and Black and Hispanic bicyclists have a fatality rate 30% and 23% higher than white bicyclists, respectively. Building extensive protected bike lane networks benefits those who are most at risk.

- Bike share programs increase the visibility of cyclists, making riding safer for everyone. The risk of a bicyclist being struck by a motorist declines as the number of people biking increases. Appropriately scaled bike share systems can dramatically increase the total number of people on bikes in a city and help build political momentum for bike lanes.

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Bicyclist riding through the intersection of 18th Avenue South and 22nd Street South

People for Bikes [96]

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- Streets with protected bike lanes saw 90 percent fewer injuries per mile than those with no bike infrastructure. — *Teschke, K., et al., 2012. Route Infrastructure and the Risk of Injuries to Bicyclists: A Case-Crossover Study*

- Streets with protected bike lanes saw 28 percent fewer injuries per mile than comparable streets with no bike infrastructure. People were also 2.5 times more likely to bike on the protected lanes than in general travel lanes. — *Lusk, A., et al., 2010. Risk of injury for bicycling on cycle tracks versus in the street, Injury Prevention, December 1, 2010*

- Protected bike lanes reduce bike-related intersection injuries by about 75 percent compared to comparable crossings without infrastructure. — *Harris et al, 2013. Comparing the effects of infrastructure on bicycling injury at intersections and non-intersections using a case crossover design, Injury Prevention*

- Major streets without bike facilities are where the most bike crashes happen, followed by minor streets without facilities, bike paths, and then bike lanes. — *Moritz, W., 1997. Survey of North American bicycle commuters: Design and aggregate results, Transportation Research Record: Journal of the Transportation Research Board, 1578, 91-101*

- After two streets in Minneapolis were converted to be more bicycle friendly, bike traffic increased 43%, total vehicle crashes decreased, traffic efficiency was maintained, and parking revenues remained consistent. — *City of Minneapolis, 2010. — Hennepin and 1st Avenues two-way conversion leads to fewer crashes, better access*

- A review of 23 studies on bicycling injuries found that bike facilities (e.g., off-road paths, on-road marked bike lanes, and on-road bike routes) are where bicyclists are safest. — *Reynolds, C., et al., 2009. The impact of transportation infrastructure on bicycling injuries and crashes: a review of the literature, Environmental Health, 8:47*

- The safest bicycle routes in Vancouver, BC, and Toronto, ON were found to be cycletracks on major streets, local streets with traffic diversion, and off-street bike paths. — *Teschke, K., et al., 2012. Route Infrastructure and the Risk of Injuries to Bicyclists, American Journal of Public Health, Volume 102*

- From 2000 to 2009, bike crashes in Minneapolis, MN dropped 20%, while the number of city bicyclists increased 174% between 2003 and 2008. — *City of Minneapolis, 2010, in Flusche, D., 2011. Ridership up crashes down: 'Safety in Numbers' in Minneapolis BikeLeague.org blog, 9 February 2011*

- The more cyclists there are, the safer cycling is. — *Jacobsen, P., 2003 Safety in numbers: more walkers and bicyclists, safer walking and bicycling, Injury Prevention, 9, 205-209*

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People for Bikes *(continued)*

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- When protected bike lanes are installed in New York City, injury crashes for all road users (drivers, pedestrians, and cyclists) typically drop by 40 percent and by more than 50 percent in some locations. *Wolfson, H., 2011. — Memorandum on Bike Lanes, City of New York, Office of the Mayor, 21 March 2011*

- The installation of many miles of new bike lanes in New York City did not lead to an increase in bike crashes, despite the increase in the number of cyclists. *Chen, L., et al., 2011.— Evaluating the safety effects of bicycle lanes in New York City, American Journal of Public Health, November 17, 2011*

- Bicycling in New York City increased 8% between 2010 and 2011, 102% since 2007, and 289% compared to 2001. During the same time, safety increased for all road users. — *New York City Department of Transportation, 2011. — NYC DOT Announces Commuter Biking has Doubled in the Last Four Years*

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WesternITE [97]

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- About two-thirds of pedestrian fatalities in the US occur at night or under low-light conditions. Pedestrian fatalities are 3 to 6.75 times more likely at night, taking into account pedestrian volumes (Sullivan and Flanagan, 1999). Several studies have found that pedestrian injuries at nighttime are typically reduced by roughly half by illumination *Schwab et al., 1982, Elvik, 1995, Commission Internationale de l'Eclairage, 1992*

- San Francisco's innovative WalkFirst project ranked roadway lighting improvements as highly effective at improving pedestrian safety, medium cost, and long time frame (*San Francisco City and County, 2014).* The project's toolkit webpage suggested that lighting improvements should be targeted especially to locations with a high nighttime crash profile and to complex intersections.

- A comprehensive review of 13 studies concluded that improved street lighting also significantly reduces crime. *Welsh and Farrington, 2008*

- Enhanced lighting may improve daytime personal security on affected blocks, perhaps by communicating to potential criminals that there is greater public attention to the location. Lighting is also a major factor in perceived walking comfort. "Low lighting" was one of the primary barriers Seattle residents cited as discouraging walking after dark. *Seattle, 2012*

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What the Literature Says About Promoting Bicycling and Walking

One important fact to note regarding actual safety is the concept of safety in numbers, essentially that the more cyclists there are, the safer cycling is. Safety in numbers also has been found to be relevant for pedestrians. Jacobsen found that the likelihood of a pedestrian being injured or killed by a collision with a motorist decreases as the number of people walking increases. [98] In order to best increase safety for all pedestrians and cyclists, interventions to increase the number of people walking and cycling might be considered. Pucher, Dill, and Handy conducted an international review in 2010 of infrastructure, programs, and policies to increase bicycling. [99] They found numerous studies regarding individual interventions including many related to improving transportation infrastructure and policies, such as different types of bike routes, bike boxes, traffic signal coordination, wayfinding signage, traffic calming strategies and speed reduction, and end of trip facilities (bicycle parking at destinations and bus stops; short-term rental bikes, etc.). They also reviewed studies about programming that promotes bicycling, including individualized marketing, workplace trip reduction programs, travel awareness programs, bike-to-work days, recreational bicycling events, education and training (which increase self-efficacy), and other programs promoting access. One important contribution of the review, however, was its discussion on how it's difficult to isolate separate impacts of individual policy interventions to promote bicycling. The authors provide numerous case studies of cities that dramatically increased bicycling levels while also improving safety, showing that successful cities took a comprehensive approach with multiple interventions spanning beyond simply improving infrastructure. They conclude that these case studies suggest that a "comprehensive approach produces a much greater impact on bicycling than individual measures that are not coordinated." Elaborating on this idea, they state that a "complete system of bicycling infrastructure (e.g., lanes, paths, cycletracks, bike boxes, traffic signals, parking, etc.) may have far more impact than the sum of its individual parts. Similarly, some specific programs might appear to have a negligible impact when examined in isolation but a significant impact when implemented comprehensively. Even more important, a coordinated package of complementary infrastructure measures, programs, and policies may enhance the impact of any intervention that is a component of that package."

Interpretation and Recommendations

Safety and Promoting Active Transportation

There are multiple incidences of traffic crashes along 18th Avenue South, as seen in Figure 17. Concerns about safety along 18th Avenue South have been expressed numerous times throughout the years, which indicates a likelihood that perceived safety due to lack of pedestrian and bicycle infrastructure could be a barrier to choosing these active transportation modes. Based on the literature review, Complete Streets corridor modifications will increase the safety of all roadway users. In regard to which exact Complete Streets facilities should be considered, it's best to consider both actual safety of all roadway users in addition to local resident preferences impacted by perception of safety. Outreach should be conducted with current roadway users in the study area, particularly those who fall in the Interested, but Concerned category for bicycling, as their perception of safety is important to consider for planning facilities that meet their needs. Community engagement should specifically ask residents how they believe different modifications may improve safety and gather feedback on what will make residents feel the safest when bicycling and walking. Considering both safety and the perception of safety, through the lens of "community wants," might lead to less crashes, more community buy-in of Complete Streets modifications, and potentially more utilization of active transportation modes, thus increasing physical activity and providing health benefits.

Beyond transportation infrastructure, the community should consider which complementary measures (i.e. programs, policies, and projects) might enhance the Complete Streets transportation infrastructure improvements and promote bicycling and bicycle awareness and safety. Some preliminary ideas for complementary programming measures from the literature review include: individualized marketing and travel awareness programs; business [district] outreach to establish workplace trip reduction programs, increasing on -site bicycle parking (bike racks) for employees and customers, and increasing participation in bike-to-work day; community education and training programs that increase self-efficacy; community health programs (e.g., bike socials and walking groups); programs that increase access to bicycles; and activation events such as community rides down 18th Avenue South with local residents. In regard to programs that increase access to bicycles, one consideration might be to work with Coast Bike Share to expand bike share stations to the study area and identify what other barriers exist to community participation in Coast Bike Share (e.g., lack of awareness, affordability, etc.).

In order to start or enhance bicycling programming efforts, the community and City might consider an Asset-Based Community Development (ABCD) approach. The first step would be to create an asset inventory of existing programs, resources, and organizations (businesses, nongovernmental organizations [NGOs] (NGOs) nonprofits, governmental entities, and existing collaborative partnerships) that promote bicycling and identify whether there are programs already within the study area. A preliminary identification of assets can be found in the CISP Existing Programs section, which describes various bicycling-related programming efforts. Following the identification of existing assets, a needs-gap-analysis could be conducted to identity what programs could be created or expanded specifically to the area surrounding 18th Avenue South. The best practice would be to identify local community leaders that could take ownership of bicycle programming within the study area, including neighborhood associations, nonprofits, or single motivated individuals. Another idea is to provide existing health promotion entities with information on active transportation and enhance partnerships between these health organizations, pedestrian and bicycling organizations, and community residents.

What the Literature Says About Perception of Crime and Crime Prevention Through Environmental Design (CPTED)

Perception of crime is another barrier when choosing a transportation mode and when engaging in physical activity. Healthy 2020 People states that "people who fear crime in their communities may engage in less physical activity. As a result, they may report poorer self-rated physical and mental health. One study found that people who perceive their environment to be less safe from crime may also have higher body mass index scores and higher levels of obesity due to reduced physical activity." [100] Fear of crime may impact whether people choose to walk or bike both recreationally, and to intended destinations (including bus stops). This could extend to whether people choose to make optional trips, for example, if someone fears becoming the victim of a crime, they may be less likely to walk along a commercial corridor and visit local shops.

There have been many studies evaluating perception of crime and physical activity. A 2018 meta-analysis conducted by Rees-Punia et al. found 16 cross-sectional studies yielded effects for perceived safety and four effects for objective [actual] crime. [101] The authors concluded that those reporting feeling safe from crime had 27% greater odds of achieving higher levels of physical activity and those living in areas with higher objectively-measured crime had 28% reduced odds of achieving higher levels of physical activity. Another notable study from 2014 involved adults from a relatively low-income and ethnically mixed neighborhood in Salt Lake City. This study found that "lower perceived crime safety was significantly associated with higher BMI and greater risk of obesity" and that residents with lower perceived safety had less moderate-to-vigorous physical activity. [102]

There are also multiple studies specific to the likelihood of walking. In a 2012 study by Evenson et al. of adults in Chicago ages 45-85, they found that perceiving a safer neighborhood was positively associated with transport walking and perceiving lower violence was associated with a greater odds of leisure walking. [103] They state that the "strongest associations between safety and transport walking and exercise in the study were observed among persons living in the safest neighborhoods, according to the combined measures of safety that utilized both reporting a safe neighborhood and police-recorded measures of crime as compared to those living in areas that both were reported as being unsafe and fell in the highest category for police-recorded crimes." The article also discussed other studies from their literature review that have concluded that fear of crime has an impact on travel decisions, including studies that show that fear of crime affects use of public transportation. [104-106] In another study, Mason et al. conducted a study of 3,824 British adults from 29 deprived neighborhoods in the UK. [107] They concluded that "people who felt safe or who trusted their neighbors tended to walk more often." They also found that the specific perceived crimes could impact walking frequency. For example, they found that people perceiving serious local antisocial behaviors (drunkenness or burglary) as a problem walked locally less often while people perceiving drugs as a problem tended to walk locally more often.

CPTED design principles is a multidisciplinary and evidence-based approach for reducing crime and mitigating fear of crime. CPTED principles can be applied to both public spaces, such as roadways, and to private buildings. The four main principles of CPTED are natural surveillance, natural access control, territorial reinforcement, and maintenance. Various strategies that can be implemented promoting these principles include the following: creating feelings of natural surveillance ("eyes on the street"), improving sightlines, improving lighting, reducing concealed or isolated routes, eliminating potential hiding spots, and improving territoriality. Many strategies applicable to roadway design for safer streets can be found in the "Crime Prevention Through Environmental Design [CPTED] Toolkit: A Guide for Planning and Designing Safer Streets in the City of Paterson" created by the Together North Jersey Initiative. [108]

One notable strategy in the CPTED Toolkit is related to proper tree selection, placement, and maintenance in order to both create a pleasant pedestrian environment, increase perception of safety, and to deter unwanted activity. The link between vegetation and crime prevention is well studied. The University of Washington maintains an Urban Forestry/Urban Greening research page titled "Green Cities: Good Health." In their fast facts section, they include the following information from various studies:

"

- "Among minor crimes, there is less graffiti, vandalism, and littering in outdoor spaces with natural landscapes than in comparable plant-less spaces." [109]
- "Studies of residential neighborhoods found that property crimes were less frequent when there were trees in the right-of-way, and more abundant vegetation around a house." [110]
- "Public housing buildings with greater amounts of vegetation had 52% fewer total crimes, 48% fewer property crimes, and 56% fewer violent crimes than buildings with low amounts of vegetation." [111]
- "In a study of community policing innovations, there was a 20% overall decrease in calls to police from the parts of town that received location-specific treatments. Cleaning up vacant lots was one of the most effective treatment strategies." [112]
- Vegetation can be managed to create a reassuring environment, reduce fear, and increase citizen surveillance and defensible space. Principles of Crime Prevention Through Environmental Design CPTED suggest how to achieve safer places.

"

A portion of sidewalk on 18th Avenue South that has limited sightlines

Many other studies also corroborate that abundance of vegetation can deter criminal activity. [113-117] There is also some consensus that the presence of vegetation, particularly in public spaces, deters criminal activity by encouraging greater use of public space, thereby providing greater social supervision and an "eyes on the street" effect, and potentially serving as symbols of neighborhood social control. [118, 119] This falls directly in line with famed urban theorist, Jane Jacobs' concept that city social surveillance relies on more users of public spaces to create "eyes on the street," thus naturally deterring crime. There are also a few studies indicating how vegetation impacts perception of crime. A 2009 study in Houston, Texas found that community gardens appear to generate enhanced perceptions of residents regarding the reduction of illegal activities and crime, although they didn't appear to actually affect the number of property crimes in a neighborhood. [120] While it has been a longstanding practice to remove vegetation in order to deter crime, linking it to obscuring view and physical barriers, recent research increasingly shows the many benefits of increasing and maintaining grass, trees, and shrubs. There are certainly ways to choose vegetation and design public spaces in a way that still maintains visibility and sightlines.

Another CPTED concern is "image management," which is relevant to both occupied and vacant properties. In regard to vacant buildings, they're often viewed as eyesores, public safety hazards, and crime magnets, that also hurt the value of surrounding properties. Cities have used various solutions to address vacant buildings across the nation. In 2011, the City of Philadelphia began enforcing a Doors and Window Ordinance requiring property owners of abandoned buildings to install working doors and windows in all structural openings. In a study following two years of enforcement, Kondo et al. found that building remediations were significantly associated with citywide reductions in overall crimes, total assaults, gun assaults, and nuisance crimes. [121] They stated that building renovation permits were significantly associated with reductions in all crime classifications across multiple city sections and that there were no significant spatial displacement effects. One of the authors, MacDonald stated "replacing broken windows and doors is an effective deterrent of crime—and a low-cost alternative to demolishing abandoned buildings… During a time when big cities like Philadelphia are looking to tackle issues of crime and violence, this study points to a potentially effective tactic for municipalities to continue or implement in helping make their neighborhoods safer and ultimately improving health outcomes." The City of St. Petersburg has a similar requirement that all unsecured openings (such as windows and doors) on occupied structures must be locked and maintained in good repair, and that unsecured or broken windows and doors on vacant structures can be boarded. Some cities and nonprofits have also looked at how to green vacant properties. Detroit, Philadelphia, and Baltimore all have coordinated community-led and city-supported efforts to turn vacant parcels into community green spots that have shown success. [122] In a Philadelphia study, Branas et al. conducted a decades-long difference-indifferences analysis of the impact of a vacant lot greening program in Philadelphia, Pennsylvania, on health and safety outcomes. [123] They found an association between greening remediation of vacant lots and reduced risk of neighborhood violence, stress, and sedentary behavior.

Adequate street lighting, including pedestrian-scale lighting, is also a notable CPTED strategy which can improve perception of safety, decrease crime, improve traffic safety for all roadway users, and increase perceived pedestrian comfort. [124-127] A systematic review in 2006 on lighting, reviewing 13 individual studies, concluded that taken together, improved lighting leads to reductions in crime. The overall reduction in crime after improved lighting being 20%. [128] A more recent individual study in New York City demonstrated that lighting cut nighttime crime by 39%. [129] In regard to impacts of pedestrian-scale lighting on both crime and perception of crime, Kendahl Herring summarizes "Pedestrian-scale lighting may also provide a deterrent to crime. Individuals are more likely to avoid areas that they do not feel safe. Decorative style pedestrian-scale lighting can enhance commercial districts with effective light distribution and color rendition. The benefit of nighttime security and safety will promote a sense of well-being and contribute to greater access to shops, restaurants, and other public attractions." [130] Aside from improving perception of personal safety, the pedestrian-scale lighting provides added benefits in traffic safety as well.

Interpretation and Recommendations
CPTED

There have been numerous concerns expressed regarding perception of safety by neighborhood residents and public safety was one of the subject areas addressed through community engagement during the South St. Petersburg CRA development. Redevelopment issues identified at the South St. Petersburg CRA Workshop included perception of South St. Petersburg and its poor marketing of successes; community ownership in neighborhoods, crime watch; lack of crime prevention/ community policing; "Broken Windows"- dumping/ loitering/prostitution; long walks to school through crime ridden areas; vacant land and housing; and homeless housing. The plan concludes that "The perception of crime and threats of physical harm pose significant issues for revitalizing any community as they hinder reinvestment by businesses and families." The crime data obtained at the time of the CRA plan development also pointed to a basis for these perceptions.

Crime rates for criminal homicide, robbery, aggravated assault, larceny theft, motor vehicle theft, and arson (all Part I crimes) were higher in the CRA compared to the rest of the City between 2011 and 2013. Recent police calls, codes enforcement, and vacant land data shown in the Existing Conditions Profile also reveal residential concerns for safety and reinforce comments made during the CRA development related to broken windows and perception of safety. Recent walk audit observations of existing security lighting also show that there are already efforts to reduce crime.

[In regard to the 18th Avenue South next steps, the relationship between perception of crime and next steps for Complete Streets revitalization should be addressed in the community engagement process.] This includes discussing with residents whether perception of crime is an issue specifically along 18th Avenue South and what CPTED strategies they believe could be incorporated into corridor modifications. There are many CPTED strategies from the CPTED Toolkit that may be incorporated into Complete Streets modifications and into complementary policies and programs that could enhance the benefits of Complete Street Modifications. Many of these strategies place-making and economic development co-benefits aside from crime prevention and increasing perception of safety.

Some examples of CPTED strategies to discuss with the community include:

Streetscape Elements

- Improve maintenance of all transportation infrastructure (sidewalk cracks, crosswalk paint, etc.)
- Install pedestrian-scale street signs, including neighborhood signs and wayfinding signs
- Incorporate Pedestrian-scale lighting
- Create sidewalk zones and ownership hierarchy (with local businesses); Consider allowing private furniture in the "frontage zone" near sidewalks ("semipublic space" defining ownership)
- Incorporate community-led art projects such as street quilts (paint on the asphalt road) and murals
- Incorporate street furniture with a unified aesthetic reflecting the culture of the neighborhood and locate it in visible well-lit areas where the community indicates that they would like it and are willing to take ownership of it
- Add trash receptacles in public spaces for litter prevention
- Graffiti removal and ensure all new streetscape elements are graffiti-resistant
- Plant vegetation, including street trees, and maintain them in a way that follow CPTED principles for sightlines. Utilize "right tree in the right place" concept. When choosing tree species, balance CPTED considerations with other priorities such as community preference and placemaking, maintenance considerations, contribution to urban ecology, contribution to traffic calming, etc. Consult the City's "tree experts" across multiple departments
- Improve maintenance of overgrown vegetation on public land and continue to work with property owners on property maintenance techniques for maintaining existing vegetation currently growing into the public right-of-way. Identify barriers preventing some property owners from maintaining vegetation and work with neighborhood associations and property owners to identify long-term sustainable solutions
- Establish or enhance existing litter and neighborhood cleanup and prevention programs

Frontage, Storefronts, and Lobbies

- Consider establishing a "porch light program" for businesses and houses along the corridor
- Evaluate current window coverage (by advertising signs) and orientation. Identity improvements for commercial stores to enhance their sightlines to the street
- Encourage businesses installing new security grills and gates over doors and windows to consider aesthetically-pleasing designs and design them in a way that provides visibility to the street
- Ensure owners are aware of existing CRA grants that can help them improve their facades
- Evaluate how commercial CRA grants may encourage the use of CPTED principles and enhance pedestrian-, bicycle-, and transit-oriented design

Vacant Lots

- Repurpose vacant lots for community-based uses. Ideas include community gardens, playgrounds, public art displays, community markets, or evaluating potential ideas for permanent structures that benefit the community (e.g., affordable housing). Evaluate existing City programs and policies related to vacant land and conduct further research on how to build upon these efforts

Culture and Placemaking

- Identify community events and programming that activate the corridor, such as food markets, music and dance performances, family events, street fairs, etc. Events may be community-led with City support.

The City is also fortunate to have at least two CPTED experts on staff, including the Director of Community Services and an Information Specialist in the St. Petersburg Police Department, both of whom also have numerous CPTED community contacts that have shown interest in helping the City promote CPTED in the past. Involving these two staff members in community discussions will be important for providing CPTED expertise.

Photo Courtesy of PSTA Facebook Page

CONVENIENCE AND COST

Convenience and cost are both major elements that influence a person's choice of transportation mode, and the types of physical activity they wish to engage in. The concept of convenience and the similar element of "time consumption" are also both commonly acknowledged as some of the most common reasons (i.e., perceived barriers) to physically active lifestyles, as many people perceive there to be insufficient time to exercise or they find physical inactivity inconvenient. [131] The idea of the perceived cost of physical activity has also been mentioned as a perceived barrier in a few studies. [132]

What the Literature Says about Convenience and Cost

"People seek to travel to activities using a mode that requires less time, effort, and money." [133-136] There are multiple studies pointing to both time savings and effort savings (as it relates to ease-of-use) as major determinants in modal choice. [137, 138] Essentially, if a person perceives a travel mode to require too much time or if it's inconvenient to figure out how to use that travel mode efficiently, one may opt for a more convenient travel mode. While this applies to nearly all transportation modes, there is an abundance of literature on time savings and effort savings as it relates to public transportation.

Time and ease-of-use are considered important factors that contribute to the quality of public transport, and transportation agencies have traditionally used average travel times and travel time savings to measure their systems' performance and the benefits of improvement investments. [139-141,] Research has also shown that living near transit stations or bus stops can correlate with higher ridership, likely due to both availability and convenience. [142] According to Jarett Walker, a public transit consultant, "transit planners generally observe that the walking distance that most people seem to tolerate — the one beyond which ridership falls off drastically — is about 400 m (around 1/4 mi) for a local-stop service, and about 1,000 m (around 3/5 mi) for a very fast, frequent, and reliable rapid transit service." [143]

The time and inconvenience of travel planning prior to a trip also influences travel mode decisions. The time spent determining which bus route and which bicycle route (i.e., the perceived safest bicycle routes) to a destination can also be a barrier. According to Schneider, planning a bicycle route takes less time when activities are concentrated versus when activities are dispersed. [144] That is to say that compact development patterns may influence the accessibility of destinations (activities) and that better accessibility (i.e., shorter distances between activity locations) can mitigate barriers to walking and bicycling. He further states that walking and bicycling may be more time-competitive with or faster than automobile when activities are located nearby. This could be particularly true when paired with limited availability of parking as this can add to trip planning time for automobile users.

In regard to cost, according to the Federal Transit Administration (FTA), "The high costs of car-based transportation (especially when configured as single-occupant trips) can trap low-income families in poverty, since the lack of transportation is a major disincentive to employment" and "the lack of reliable and affordable transportation was one of the reasons for low income families staying in poverty." [145] In a study by researchers at the Mineta Transportation Institute, "Getting Around When You're Just Getting By: The Travel Behavior and Transportation Expenditures of Low-Income Adults," authors concluded that most low-income households are concerned about their transportation costs and thus "actively and strategically manage their household resources in order to survive on very limited means and to respond to changes in income or transportation costs." They further state that low-income travelers, similar to higher-income travelers, carefully evaluate the costs of travel, in terms of both time and out-of-pocket expenses, in addition to the benefits of different travel modes. [146] This necessity to control transportation costs is reflected by the demographics of different transportation mode users. For example, we know that low-income Americans are more likely to take public transit and more likely to bike for transportation. [147-149] In fact, it's estimated that "half of the people who bike to work earn less than $25,000/year." [150] Emphasizing the financial burden of transportation costs, the authors of the Mineta Transportation Institute study also state that "although low-income households find ways to cover their transportation expenditures, many of these strategies had negative effects on households," which include heightened stress and anxiety, reduced expenditures on necessities such as food, inability to participate in discretionary activities, and spatial entrapment in the neighborhoods around their homes. [151]

According to Smart Growth America, "Complete Streets can lower transportation costs for families. Americans spent an average of 18 cents of every dollar on transportation, with the poorest fifth of families spending more than double that figure. In fact, most families spend far more on transportation than on food. When residents have the opportunity to walk, bike, or take transit, they have more control over their expenses by replacing car trips with these inexpensive options. Taking public transportation, for example, saves individuals $9,581 each year." [152] Complementary measures to Complete Streets could also enhance cost-lowering benefits for low-income families. The 2013 FTA report on disadvantaged communities includes a discussion on how sprawling land use patterns create fewer transportation choices and higher transportation costs that impact low-income communities. [153] One of their major recommendations from the report is promoting Transit-Oriented Developments as they can promote transit ridership, reduce traffic congestion and air pollution, provide affordable housing, curb urban sprawl, and improve quality of life.

Interpretation and Recommendations

Equitable Transportation

There is a high concentration of low-income families living around 18th Avenue South, which can lead to financial barriers for specific mode choices, particularly the annual operating costs association with automobile ownership. For those low-income households that do own a vehicle, there are still financial barriers, such as the cost of gas or parking costs at their destinations. The current roadway configuration of 18th Avenue South is very auto-centric, creating both real and perceived safety barriers for roadway users who choose to, or must, walk, bike, or take public transit. The influence of perceived lack of safety combined with inconvenience of some transportation modes, can lead to more low-income families choosing to drive, even when they might prefer another more affordable transportation mode.

Smart Growth America states that "Transportation policy that treats facilities for these users [bicyclists, walkers, and public transportation users] as an optional extra perpetuates the inequalities and ignores major segments of the country's population." [154] Complete Streets are part of an equitable transportation system as they provide transportation mode choices which are essential to ensure that "all people have access to education, employment, religious and cultural institutions, and friends and family." [155] Making 18th Avenue South safer for walking, bicycling, and taking public transit makes it easier for families who want to take affordable transportation options to do so. For families choosing to make at least some trips using more affordable active transportation options, the cost savings could be very significant. In fact, the American Public Transportation Association estimates that the average household could save nearly $10,000 taking alternative transit and living with one less car. They additionally state that 93% of transportation expenditures go towards buying, maintaining, and operating cars. [156] These cost savings could allow families to spend a smaller portion of their income on transportation costs and reallocate that money towards other health-promoting purposes, such as better housing, healthy foods, educational opportunities, etc.

Another recommendation for addressing convenience and cost is to incorporate other complementary measures to enhance the convenience benefits of Complete Streets, such as promoting Transit-Oriented Development along the 18th Avenue South corridor. This is also in line with the Integrated Sustainability Action Plan's call for complete and compact development and target of increasing the percentage of households and businesses with access to transit (within ¼ mile of a transit stop/facility). Additionally, there should be some considerations as to how to address cost as it relates to availability of transportation modes. This could include raising awareness of PSTA's Transportation Disadvantaged (TD) program, particularly their TD Late Shift program. Consideration could also be given to improving the affordability of bicycles for people who do not own a bicycle, by enhancing the equity plan of Bike Share to address cost and payment options, which are major barriers to participation in bicycle share programs. [157]

ENJOYMENT

People choose transportation modes that provide them with personal physical, mental, or emotional benefits. A key part of creating an enjoyable active transportation environment is placemaking and improving neighborhood aesthetics. The American Planning Association's report, "The Benefits of Street-Scale Features for Walking and Biking," names nine features that encourage active transportation, including sidewalks, bicycle facilities, traffic calming, crossing aids (crosswalks and pedestrian signals), aesthetics and placemaking, public spaces (parks, plazas, etc.), street trees, green infrastructure, and street furniture. [158] They conclude that these nine features have the following benefits: increased levels of physical activity, increased social cohesion (social interaction, social support, sense of community, shared cultural identity, etc.), crime prevention and public safety improvements, multimodal traffic safety improvements, improvements in mental health (stress, anxiety, depression, fear of crime, etc.), and economic benefits (increased consumer spending, return on investment, job creation, pedestrian and bicycle traffic for local businesses, etc.).

What the Literature Says About What the Literature Says About Placemaking

It is well established that placemaking strategies, such as public art and streetscaping, are an important part of creating healthy and active corridors and that they support pedestrian-, bicycle-, and transit-oriented design. The term "placemaking" has been used in the community development field since the 1960s. [159]

The Project for Public Spaces (PPS) explains placemaking as follows:

> "*Placemaking inspires people to collectively reimagine and reinvent public spaces as the heart of every community. Strengthening the connection between people and the places they share, placemaking refers to a collaborative process by which we can shape our public realm in order to maximize shared value. More than just promoting better urban design, placemaking facilitates creative patterns of use, paying particular attention to the physical, cultural, and social identities that define a place and support its on-going evolution.*
>
> *With community-based participation at its center, an effective placemaking process capitalizes on a local community's assets, inspiration, and potential, and it results in the creation of quality public spaces that contribute to people's health, happiness, and well being.* [160] "

The concept of applying placemaking elements to public spaces is well practiced around the world. The PPS recognizes streets themselves as "critical public spaces that can lend richness to the social, civic, and economic fabric of our communities," and thus has an entire toolkit dedicated to "Streets as Places" [161] including their list of eight principles for Streets as Places.

Eight Principles for Streets as Places[162]

- **Great Activities and Destinations**
  Activities and destinations are key to creating a place that feels vibrant and dynamic. Great streets have at least 10 things to do on them, creating a buzz of activity, and often have an "inside-outside" quality where indoor activities spill onto the street.
- **Safe**
  Great streets create an environment with elevated perception of safety from traffic and crime.
- **Inviting and Rich in Detail**
  Great Streets are attractive to people when they have interesting features that are rich in detail. This may include public art, lighting, landscaping, attractive architecture with open building facades, interesting shop window displays, sidewalk activities displays, dining, active ground floor retail, human scaled amenities and signage, etc.
- **Designed for Lingering**
  "The desire to go 'through' a place must be balanced with the desire to go 'to' a place." [163] People tend to spend more time where they feel comfortable and where they can have their basic needs met.
- **Interactive and Social**
  "The best streets encourage participation. People stop to talk or maybe they sit and watch… taking in what the street has to offer." [164]
- **Unique**
  Local communities may design streets to tell the story they want to tell, showcasing a community's identity, history, and local assets.
- **Accessible**
  Great streets prioritize pedestrians and are accessible to everyone, where people of different ages, ethnicities, and income levels intersect and interact.
- **Flexible**
  Streets can be flexible spaces to meet multiple community goals.

What the Literature Says About Equitable Creative Placemaking

Placemaking has exceptional and well-proven benefits; however, these benefits are often obscured in public debates surrounding placemaking. As the PPS articulates in its 2015 article on equity, "critics have voiced concerns, again and again, that Placemaking provides amenities that are geared toward a specific demographic—that its aim is to make "less desirable" areas more aesthetically palatable, and that it works to accelerate (or even initiate) gentrification by increasing property values and driving long-term residents out of their neighborhoods." [165] However, the PPS states that this is a fundamental misunderstanding of placemaking. They state that it's not the end products- i.e., it's not a bike lane, or a new market, or a hand-painted crosswalk, or public art, or a new development- that define "placemaking." Instead, placemaking is the means to the end, a process by which the existing community defines its priorities. They further state that "placemaking, a collaborative process by which we (residents, architects, activists, community leaders and planners alike) shape our public realm together, is fundamentally about inclusion and shared community ownership." [166] In an article entitled "Making Places for Everyone- With Everyone," Kimberly Burrowes states that placemaking is the "process of collaboratively creating places that are meaningful to a community and that enhance people's quality of life. Placemaking is about fostering a sense of belonging in a place and providing the community an opportunity to define its use. When done effectively, it can help strengthen local economies, reduce crime, drive civic engagement, and improve health and well-being." [167] Placemaking, when it's a true community-driven process, can increase social and community cohesion by building trust, strengthening relationships and social networks, increasing civic engagement, and strengthening and protecting neighborhood identity. [168] As Susan Silberberg in "Places in the Making" states, "in placemaking, the important transformation happens in the mind of participants, not simply in the space itself. … The iterative actions and collaboration inherent in the making of places nourish communities and empower people." [169]

A mural by artist Cecilia Lueza in St. Petersburg, FL at the intersection of Central Avenue and 5th Street. Photo courtesy of the St. Petersburg Arts Alliance website.

Two other concepts related to equitable and culture-driven placemaking have risen in recent years—"placekeeping" and "creative placemaking." Oakland Mayor Libby Schaff discusses the concept of "Placekeeping" as part of placemaking, which she says, "is about engaging the residents who already live in a space and allowing them to preserve the stories and culture of where they live." [170] The American Planning Association maintains an entire knowledgebase collection page with dozens of resources for creative placemaking, which they describe as "a process where community members, artists, arts and culture organizations, community developers, and other stakeholders use arts and cultural strategies to implement community-led change. This approach aims to increase vibrancy, improve economic conditions, and build capacity among residents to take ownership of their communities." [171] They further state that creative placemaking uses "art and cultural activities to rejuvenate public spaces." In an interview of Lynne McCormack, the Local Initiatives Support Corporation's Director of Creative placemaking, Ms. McCormack answers the question as to how creative placemaking differs from simply investing in the arts in a struggling place.

> "*The idea is to use arts and culture to build social connection—and we believe that enhances the other elements of community development.*
>
> *Let's say you take a historically disinvested place and organize an event there that brings residents out of their homes, brings people to that place and lets everyone see it in a different way. People start to take ownership of the place. That's a very simple placemaking 101 strategy. It's better when the community is involved in connecting their culture to that event. It's better still when the community catalyzes the event, and participates in planning and implementing it.*
>
> *So there's more to it—there's something behind the scenes that's actually bringing people in the neighborhood together to start to re-envision or lift up the history of the place, the beauty of the place, the culture of the place.* [172] "

Inclusion of public art is one major aspect of creative placemaking that can improve community health and solidify cultural identity of corridors. The Trust for Public Land (TPL) and the National Association of County and City Health Officials (NACCHO) have begun a new initiative to help communities achieve health equity through creative placemaking, which they call "Creative Parks, Healthy Communities". They are aiming to develop a toolkit by 2020 with strategies that leverage the arts and culture's role as drivers of community health, in recognition that health outcomes are determined by strong, culturally resilient communities. [173] The TPL and NACCHO are not the only two major organizations that are focused on providing guidance on equitable development through culturally-appropriate creative placemaking. The Chicago Metropolitan Agency for Planning (CMAP) and PolicyLink have two separate guidance documents entitled "Arts and Culture Planning: A Toolkit for Communities" and "Creating Change through Arts, Culture, and Equitable Development: A Policy and Practice Primer" respectively. [174, 175] Bloomberg Associates has another guidebook, entitled "Asphalt Art Guide: How to Reclaim City Roadways and Public Infrastructure with Art." [176] The Asphalt Art Guide includes numerous case studies with highlighted best practices that showcase art projects on roadways, in pedestrian spaces, and in vertical spaces (e.g., walls, utility boxes, etc.). It also includes a Tools & Tactics section which discusses how to start and implement public art projects.

Interpretation and Recommendations

Equitable Creative Placemaking

In order to enhance the health benefits of Complete Streets to make 18th Avenue South more walk- and bicycle-friendly, the City and local community should collaborative to create a vision for placemaking surrounding the 18th Avenue South Corridor that aligns with the preferred roadway configuration. Guidance provided in the TPL/NACCHO toolkit, CMAP toolkit, PolicyLink primer, and Bloomberg's Asphalt Art Guide may be followed to determine how to help the community to define 18th Avenue South as an enjoyable and healthy place. One of the main objectives will be identifying existing and potential community leaders that currently live or work around the corridor and empower them to create the placemaking vision. Community leaders should be diverse and representative of the whole community, with a focus on including both business owners and residents from the seven surrounding neighborhoods. Different placemaking strategies might be considered in achieving the community's goals. Preliminary ideas to present to the community include: Community-led public art projects, including asphalt art, vertical art (murals), and sidewalk art; street furniture, including benches, tables, shade structures, etc.; pedestrian-scale lighting fixtures; landscaping and shade-providing street trees; wayfinding signage to local neighborhood-serving businesses, nearby parks and recreation centers, and other places-of-interest; community identity signage, including increasing the visibility of neighborhood signs; and creating consistently programmed community events in and around the corridor (e.g., food markets, music and dance performances, street fairs, family events, other events memorializing the past history of the local community, etc.). The CPTED considerations for placemaking, discussed further in discussion on safety, should also be considered when creating the placemaking vision. A key CPTED consideration should be to create some level of a unified aesthetic that reflects the culture of the surrounding neighborhoods and links to existing/potential future business districts in the study area, including the Deuces Live Association corridor.

Placemaking also extends beyond those strategies that can be implemented in public right of way. Many strategies relate to architectural and urban design, including the architectural features (e.g. building fronts, window placement, canopies, etc.) and placement of buildings on land (e.g. setbacks and parking configurations). A larger discussion with the community might take place to determine how the FLUM aligns with the proposed roadway configuration and how to encourage development patterns that are more pedestrian-friendly for attracting foot traffic to help contribute to the sense of place. Existing businesses might be assisted through technical assistance on applying for existing CRA grants that help with exterior improvements that contribute to the corridor's identity and help their business attract more customers.

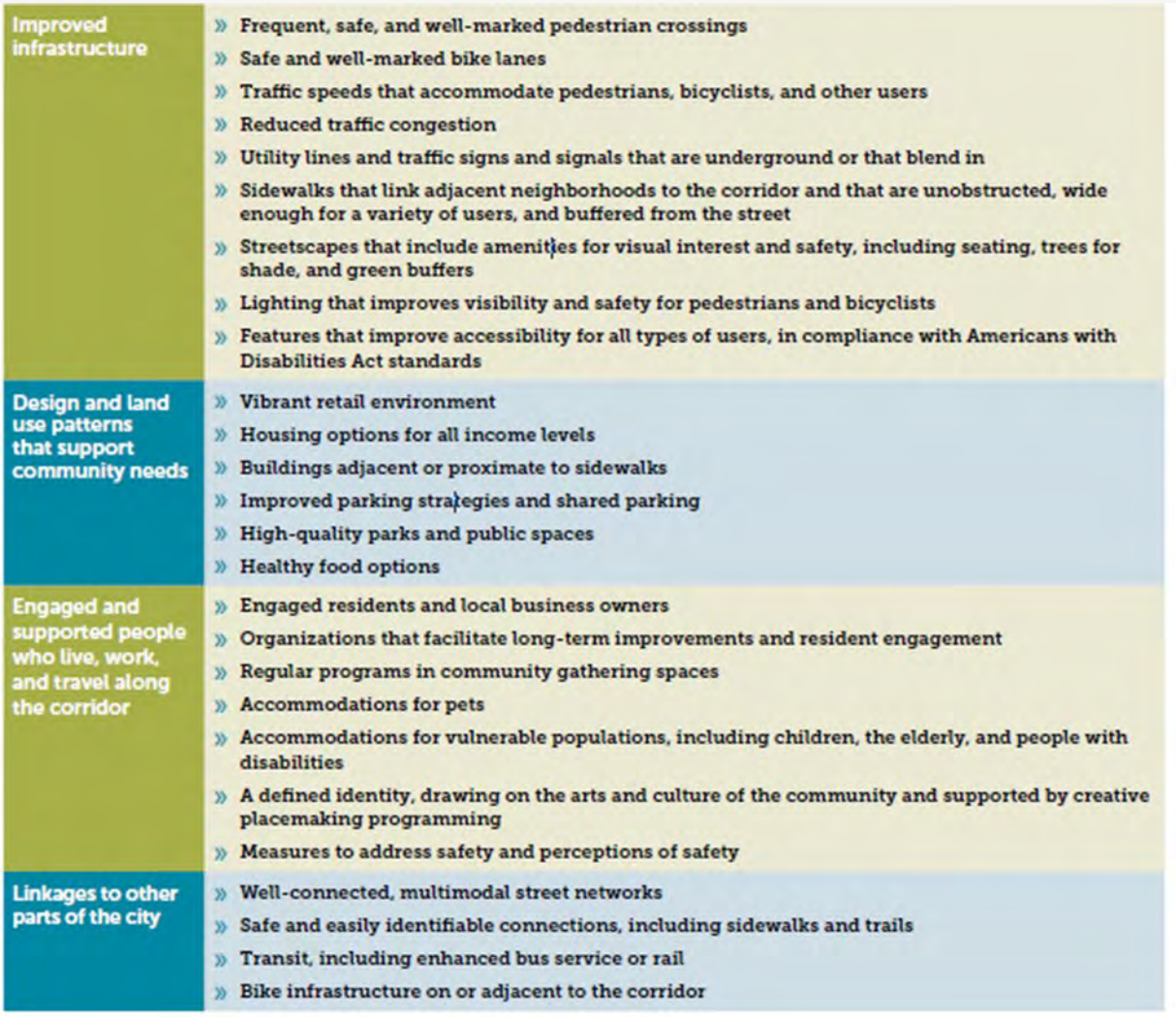
Figure 30: Increasing Ridership and Creating an Enjoyable Public Transportation System

One factor for increasing enjoyment in public transportation is improving user experience at bus stops by incorporating bus stop amenities such as shelters, benches, lighting, bicycle parking, signage with system information, art and placemaking features, and ADA-compliant concrete pads. Improving bus stop amenities can make bus stops more accessible, comfortable, and safe places to wait and may be linked to increases in ridership. According to a 2018 study from the University of Utah, improving bus stops by providing shelters, seating, ADA-compliant concrete pads, and trash receptacles leads to statistically significant increases in overall stop-level ridership and reduced demand for paratransit service. [177] Additionally, there's research suggesting that stop amenities can reduce perceived wait time, as transit users tend to overestimate the amount of time they wait. [178] Different amenities serve different purposes: shelters provide protection from the sun and rain; benches provide much needed relief from standing, particularly for the elderly or people with disabilities; lighting increases perception of safety and improves visibility for bus drivers to see passengers; wayfinding signage and schedules help customers navigate the system; and ADA-compliant concrete pads vastly increase accessibility of public transit for people with disabilities and for young children in strollers. Stop amenities can also be creative and there are many examples of artistic bus stops that contribute to placemaking across the country. [179, 180]

According to TransitCenter, "as far as transit investments go, enhancing bus stops is a low-cost, high-impact way to make system-wide upgrades to a transit network." [181] The City, PSTA, and the community should consider which stop amenities could be incorporated as part of the larger 18th Avenue corridor modifications. However, first, PSTA should consider rebalancing stop spacing and consolidating stops for route 14, as there are an abundance of bus stops in the target area with varying levels of use. Consideration should be made to individual stop utilization, existing and potential future places of interest, surrounding stops, community feedback, and the proportion of customers who are elderly or disabled. [182] According to TransitCenter, "stop placement is crucial to providing fast and reliable bus service—the more often a bus has to stop along a route, the slower it will move." This is likely because a higher frequency of stops leads to more delays in deceleration, door opening and closing, acceleration and reentry into traffic, and traffic signal delays. Research also shows that stop consolidation does not lead to decreased ridership. The Coalition for Smarter Growth states that, although "stop consolidation can decrease accessibility for some passengers who must travel farther to reach a bus stop, the significant reduction in trip time that results from optimal bus stop spacing can offset this inconvenience enough to minimize loss of ridership." [183, 184] There is a lot of guidance available from industry professionals on bus stop amenities and consolidation. NACTO provides guidance on the basic elements for a great bus stop in their 2016 Transit Street Design Guideline, which is a great resource for the City and PSTA planners when approaching 18th Avenue South. [185] The key recommendation is to evaluate respacing and consolidating bus stops and focus on creating well-located and quality bus stops with a range of amenities in order to improve bus system speed and reliability and create an enjoyable public transportation experience.

Figure 31: Urban Land Institute's Healthy Corridors Project

Urban Land Institute (ULI), with support from the Robert Wood Johnson Foundation and the Colorado Health Foundation, has a Healthy Corridor Project, which aims to provide best-practices for transforming underperforming suburban and urban arterials to be safe, healthy, vibrant, mixed-use places with next-generation infrastructure." [186] The following image shows their "Healthy Corridor Typology" which make up a holistic healthy corridor. Urban Land Institute states "A healthy corridor has land uses and services that allow residents and visitors to make healthy lifestyle choices more easily. A healthy corridor is a place that reflects the culture of the community, promotes social cohesion, inspires and facilitates healthy eating and active living, provides and connects to a variety of economic and educational opportunities and housing and transportation choices, and adapts to the needs and concerns of residents." [187] Many of the elements from this typology are discussed throughout this HIA. Further recommendations for 18th Avenue South can come from these best practices and are reflected in the recommendation section.



ECONOMIC IMPACTS OF COMPLETE STREETS

Complete Streets Corridor modifications can lead to positive economic advantages, particularly if implemented using an equitable development approach integrating people-focused strategies (efforts that support community residents) and place-focused strategies (efforts that stabilize and improve the neighborhood environment.) [188] Complete Streets is considered a proven method for improving conditions for local existing businesses and for revitalizing an area and attracting new development. [189] Positive economic advantages of Complete Streets include improved property values, increased existing local business sales, and an increased potential for development and investment projects. [190]

What the Literature Says About Economic Impacts

There have been many reports throughout the years that evaluate the economic impacts of Complete Streets, different elements of Complete Streets (e.g. walkability, placemaking, etc.), and strategies often paired with Complete Streets, such as compact development and smart growth. One example of an economic impact report specifically about Complete Streets was released in 2015 by Smart Growth America (SGA), titled "Safer Streets, Stronger Economies." This report serves as a literature review on the economic impacts of Complete Streets, and it includes an economic analysis of 22 Complete Streets projects across the nation. In the report, SGA concluded that "taken together, these economic measures suggest that Complete Streets projects were supportive of employment, new businesses, and property values." [191] However, they also add that there is limited data availability to apply these findings very broadly and that additional data collection is needed on the economic impacts of Complete Streets projects. Some detailed highlights of their findings are as follows:

Higher Employment Levels:

"Employment Levels rose after Complete Streets projects- in some cases, significantly." [192] Findings revealed that more people were employed along Complete Streets projects after projects were completed than before. Additionally, more people were employed on streets with Complete Street modifications than other unimproved comparison streets in the same cities.

Retail Sales:

Four communities that collected data on retail sales reported that retail sales increased at local businesses following Complete Streets implementation.

Higher Property Values:

Of ten projects reporting before-and-after data on property values, eight reported increased property values and two reported no negligible changes. In six projects, SGA compared property values along Complete Streets projects to similar unimproved corridors and/or citywide trends. In this analysis they found that four of the projects outpaced both the comparison and/or the city and the other two projects had negligible differences.

Private Investment:

Eight communities reported private investment data following Complete Streets projects. The figures ranged from $500,000 to $5.8 billion depending on the community. Communities reported new and renovated housing in addition to new commercial space, such as new retail businesses, restaurants, and office space. Complete Streets implementation was often part of a broader economic development strategy and the street modifications were often a catalyst for holistic economic development.

Net New Businesses:

"Communities reported increased net new businesses after Complete Streets improvements, suggesting that Complete Streets projects made the street more desirable for businesses." [193] All six communities with available data on new businesses reported increases in the number of businesses following their Complete Streets improvements.

In another 2015 report titled “Capturing the Benefits of Complete Streets,” prepared for the Florida Department of Transportation, the National Center for Transit Research evaluated the economic impacts of a diverse set of Complete Streets Projects in Florida and Ohio. The report concluded that the “Complete Streets performed well, demonstrating maintained and enhanced economic activity, often outperforming other nearby areas and their cities as a whole. This work showed that the benefits of Complete Streets projects can be numerous and expected to include enhanced economic activity.” [194] The report also states that “overall, the results of the case study analyses show that the Complete Streets projects are associated with increased property values and job growth along the respective corridors. While a direct causal link cannot be established, these results are consistent with other recent research showing that Complete Streets projects are associated with increased economic activity.” [195]

Complete Streets modifications are often implemented with other economic development strategies, including placemaking and smart growth through mix of land uses and compact development. According to Enterprise Community, creative placemaking can change neighborhood perception and make places feel safer, which spurs economic development as safer neighborhoods can drive up foot traffic and support local businesses. [196] Peter Kageyama, founder of the Creative Cities Summit, also emphasized the importance of incorporating placemaking strategies into street design. He states that "no longer is it sufficient to build places that are merely functional and safe. Our placemaking aspirations must be as high and as grand as our economic goals because they are bound together." [197] In regard to Smart Growth, The Environmental Protection Agency (EPA) has a four-part report series on the relationship between Smart Growth and economic success, which includes Complete Streets concepts as part of Smart Growth. In these reports, the EPA conveys that stores can expect stronger retail sales, as they find it “easier to attract customers when they are in locations that can be reached in multiple ways and provide a diverse, vibrant environment.” [198]

Beyond the immediate benefits of economic development in place, Complete Streets can also help to facilitate access to greater economic opportunities for residents living near Complete Streets, such as access to jobs or educational opportunities. According to Smart Growth America, “car-dependent communities create barriers,” and “providing [multimodal] transportation options is essential in ensuring that all people have access to education, employment, religious and cultural institutions, and friends and family.” [199] In a study on upward mobility based at Harvard University, researchers found that commuting time is the single strongest factor in the odds of escaping poverty and that the longer an average commute, the worse the chances of low-income families moving up the ladder. Nathaniel Hendren, a professor of economics at Harvard University and one of the researchers, told the *New York Times* that the relationship between transportation and social mobility is stronger than that between mobility and several other factors, like crime, elementary-school test scores, or the percentage of two-parent families in a community. [200] In a separate study from New York University’s Rudin Center for Transportation, also profiled in the *New York Times*, researchers found “residents of the areas least well served by mass transit relied on personal vehicles. Areas in the middle third — those with some, but insufficient, access to transportation — had the highest rates of unemployment and the lowest incomes”. [201]

Figure 32: Short-Term Construction Impacts

While roadway projects, including Complete Streets projects, have the potential to create a positive long-term impact for existing local businesses, there is still the possibility of short-term negative impacts to business sales during construction. Construction Mitigation Programs (CMP) are one way that municipalities are addressing these potential short-term losses. These programs may focus on open and direct communication between cities and local businesses; business education; construction techniques to minimize business impacts, such as phased construction, lighting, and alternative multimodal routes and parking configurations; business promotion and advertising; and direct financial assistance to businesses. A few examples of business promotion strategies utilized by cities as part of CMPs include signage to promote local businesses to the community; websites that describe traffic information to promote access to business and/or include business-related information, such as business hours and links to business websites; paid advertising; and coordinated business promotion events and discounts programs, such as corridor coupon books. Examples of business education strategies implemented by cities includes direct technical assistance and creating 'construction survival guides' for business, with information on specific construction projects, marketing strategies, communication strategies, and information on resilient small business financial management. Many more examples of CMP ideas can be found in a 2010 report by the University of Wisconsin-Madison and in the Construction Dive's article "6 cities getting creative when road work hurts business. [202, 203]

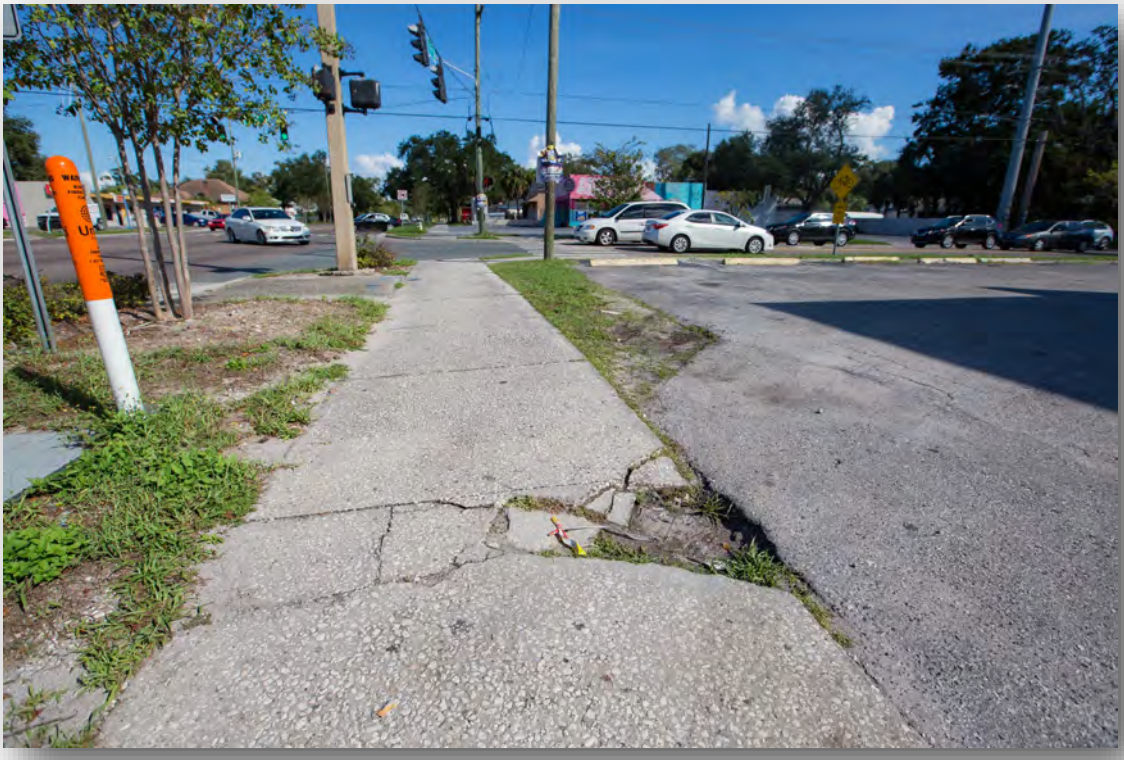
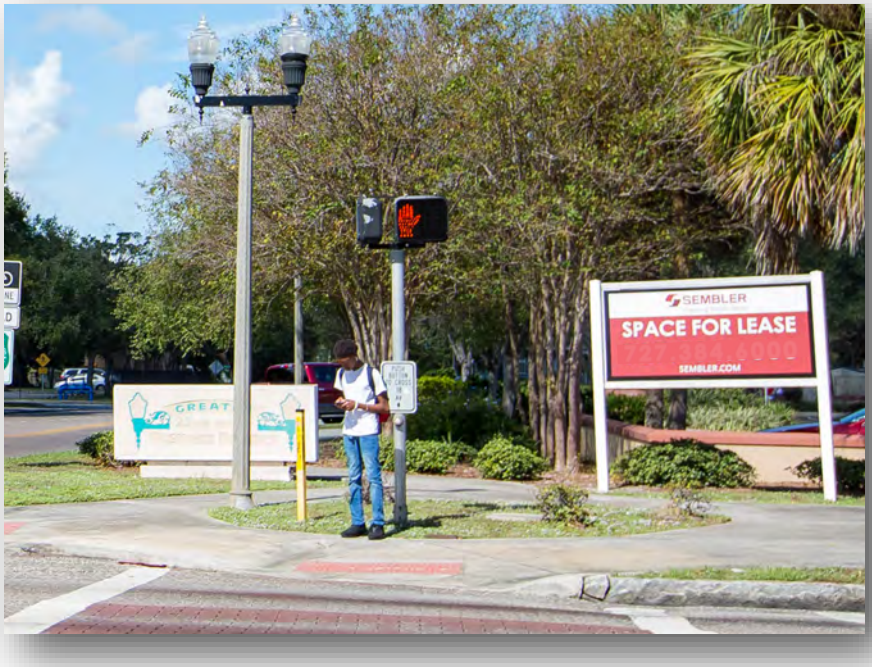


Photo of a sidewalk crack on 18th Avenue South

Redeveloping 18th Avenue South with Complete Streets modifications will have significant long-term benefits to the economic determinants of health of local residents and business owners. Based on the literature review, it's possible that Complete Streets may increase property values; spur private investment, including new housing and businesses; and increase local business sales. One of the key recommendations is ensuring that private investment is beneficial to the local community. The community and City should implement placemaking strategies that solidify the cultural identity of the corridor, strategically attract and incentivize the development of affordable housing, leverage City and community resources to empower local entrepreneurs to start neighborhood-serving businesses on the corridor (e.g., Greenhouse programs; nonprofit economic development programs), and continue efforts to attract at least one healthy food outlet (e.g., grocery store, co-op, farmer's market, etc.) to the study area. Short-term strategies to mitigate construction impacts to local businesses should also be incorporated into the project's construction plan. The City may be able to leverage existing resources, such as small business technical assistance programs at the Greenhouse, CRA commercial grant programs, and existing communication strategies to help existing businesses survive and thrive during construction.

Beyond the immediate impacts to existing and new businesses on the corridor, implementing Complete Street modifications on 18th Avenue South would also improve accessibility of CRA residents to economic opportunities citywide. Adding bicycle facilities to 18th Avenue South would address a major separated bicycle facilities gap in east-west connectivity in South St. Petersburg, as seen in Figure 15. These new facilities could help residents better access job and workforce training opportunities. Additionally, improving bus service, through creating quality bus stops (as discussed in Figure 30), is also important for ensuring transit riders have equitable access to economic opportunities city-wide.



Space for Lease and Greater 22nd Street Business District signs near Tangerine Plaza

Complete Streets on 18th Avenue South can be part of the overall strategy to spur economic development in the area, and it complements existing economic development efforts in the CRA, including the new Deuces Rising and Warehouse Arts District Deuces Live Joint Action Plans for 22nd Street South. Economic development leads to positive downstream health impacts, as there are strong links between poverty status, employment status, income levels, educational attainment, and housing to health status. The World Health Organization states that "higher income and social status are linked to better health" and that "low education levels are linked with poor health, more stress, and lower self-confidence." [204] In regard to income and educational attainment and stress, the American Psychological Association reports that "people with low incomes and racial/ethnic minority populations experience greater levels of stress than their more affluent, white counterparts, which can lead to significant disparities in both mental and physical health that ultimately affect life expectancy." [205] This is likely linked to financial stress, defined by the Financial Health Institute as "a condition that is the result of financial and/or economic events that create anxiety, worry, or a sense of scarcity, and is accompanied by a physiological stress response." [206] Examples of financial stress include families worrying about paying for housing, transportation, and healthy foods. Chronic stress brought on by financial stressors can lead to both physical and mental health issues. According to the National Institute on Mental Health, "because the source of long-term stress is more constant than acute stress, the body never receives a clear signal to return to normal functioning. With chronic stress, those same lifesaving reactions in the body can disturb the immune, digestive, cardiovascular, sleep, and reproductive systems. Some people may experience mainly digestive symptoms, while others may have headaches, sleeplessness, sadness, anger, or irritability. Over time, continued strain on your body from stress may contribute to serious health problems, such as heart disease, high blood pressure, diabetes, and other illnesses, including mental disorders such as depression or anxiety." [207]

Another downstream health impact related to economic development, included in the hypothesized health impacts logic model (Figure 1), is the prevalence of asthma and respiratory diseases. There are two ways that Complete Streets may lead to reduced asthma and respiratory disease prevalence. First is through its impacts on employment and income through the creation of new jobs on the corridor, improved local existing business sales, improved multimodal accessibility to citywide work and educational opportunities, and through significant cost savings associated with residents being able to choose more affordable active transportation modes. These impacts could lead to families having more disposable income that could theoretically be spent on more quality housing. The second is through its impacts on private investment in the area, including new housing. The Urban Institute has a report entitled "The Relationship between Housing and Asthma among School-Age Children," which provides an in-depth review of the relationship between housing and asthma, in addition to a review on household characteristics, such as income, poverty, educational attainment, household type (single parent households), housing tenure, and homeownership among others. [208] One of the major policy takeaways from this report is the importance of reducing environmental hazards associated with poor quality housing, such as dampness and mold exposure, exposure to cockroaches and rodents; environmental tobacco smoke; and housing conditions that lead to mold formation, such as plumbing leaks, roof leaks, and inadequate ventilation especially in older and poorly maintained buildings. New housing typically does not have as many asthma-causing environmental hazards, and families moving from inadequate housing to new housing could reduce their exposure to environmental hazards. In summary, Complete Streets modifications on 18th Avenue South can help achieve economic development goals to financially empower families to move to better quality housing and also create new opportunities for housing development, leading to potential reductions in asthma and other similar respiratory diseases.

HEALTH IMPACTS

Complete Streets corridor modifications to 18th Avenue South will have positive long-term health benefits for residents and workers in the study area. The impacts in this section are based solely on the implementation of Complete Streets on 18th Avenue South (Defined in Figure 2) and do not consider those recommendations made throughout the report and summarized in the following section. Implementing Complete Streets modifications and incorporating the recommendations from this HIA for a multi-intervention approach could significantly enhance positive health benefits, transforming 18th Avenue South into a vibrant and healthy corridor.

Table 22: Health Impact Predictions		
	Health Determinant, Behavior, or Outcome	**Direction**
Place-Based Impacts	Bicycle Level of Traffic Stress	↓
	Active Transportation Modes (bike counts, pedestrian counts; ACS "Means of Transportation to Work" percentages)	↑
	Public Transit Ridership (Stop-level data)	↑
	Vehicle Speed	↓
	Vehicle Crashes	↓
	Permits - New Construction (commercial, mixed-use, and residential)	↑
	Permits - Renovations (commercial, residential)	↑
	Number of Businesses	↑
	Total Wages and Average Wages of Study Area Businesses	↑
	Number of Housing Units	↑
	Number of Vacant Parcels	↓
	Property Values	↑
	Perception of Crime (police calls, code enforcement cases)	↓
Population Impacts	Injuries and Fatalities	↓
	Physical Activity	↑
	Life Expectancy	↑
	Obesity	↓
	Chronic Conditions & Disease Prevalence (e.g., type 2 diabetes, cardiovascular [heart] Disease, high blood pressure/hypertension, high cholesterol, stroke, bone and joint diseases, many types of cancer, depression, anxiety, dementia)	↓
	Transportation Costs as a Percentage of Income (H+T Index)	↓
	Unemployment	↓
	Income	↑
	Number of Households below Poverty Level	↓
	Educational Attainment	↑
	Stress, Depression, & Anxiety Prevalence	↓
	Food Security & Quality Nutrition	↑
	Asthma Prevalence	↓

Active Transportation Impacts

Complete Streets modifications on 18th Avenue South…

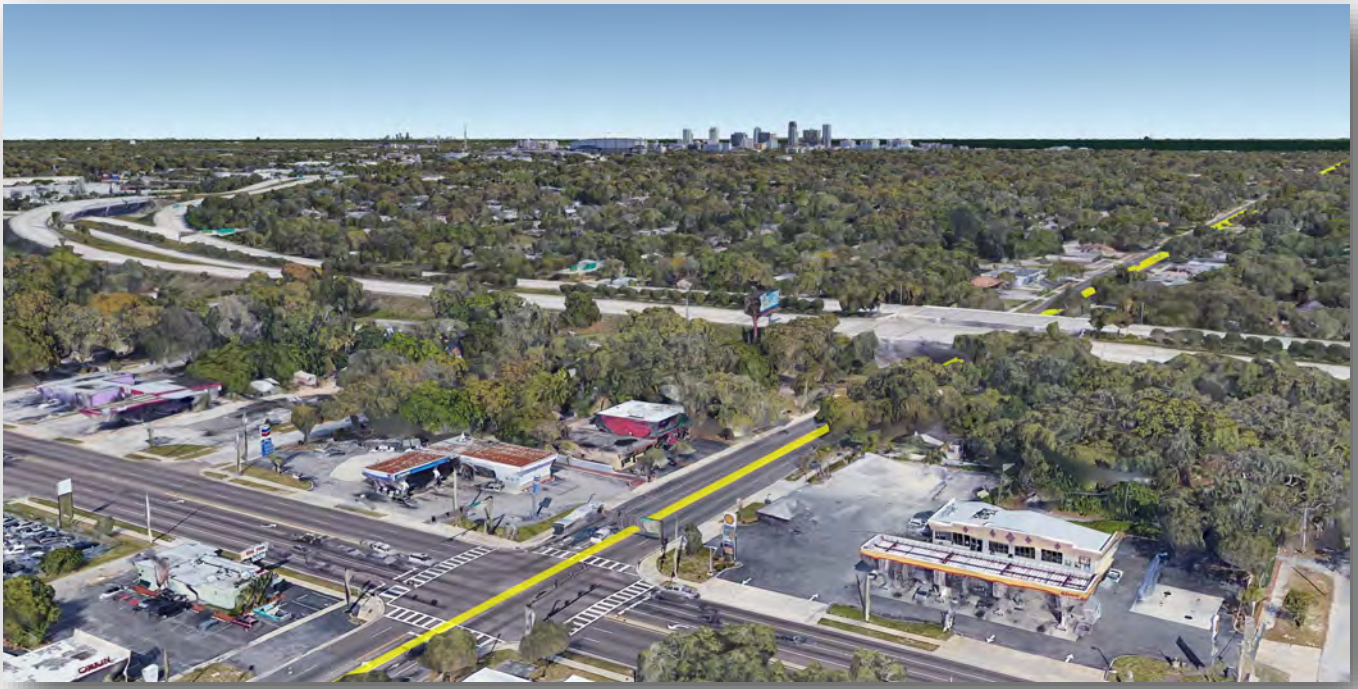
- Will likely increase the use of active transportation for both commuting and recreation, due to the following:
    1. Increased availability of supportive active transportation facilities and routes;
    2. Increased awareness of active transportation modes from increased visibility of active transportation facilities and other active transportation users;
    3. Increased perception of traffic safety, including lowering the bicycle level of traffic stress;
    4. Increased convenience of bicycling by creating a safe east-west bicycle route close to numerous households where none currently exists; and
    5. Increased enjoyment and perception of safety from crime due to the integration of placemaking strategies such as streetscaping.
- May increase bus ridership due to improved conditions facilitating walking and bicycling to bus stops (i.e., improved first/last mile connectivity), improved bus stop amenities (street furniture), and improved transit system efficiency (i.e. , improved convenience) from bus stop consolidation.
- Will likely increase physical activity due to increases in walking and bicycling for commuting and recreation, which can lead to increased life expectancy and reduced prevalence of obesity and chronic conditions and diseases associated with physical inactivity.
- Will likely decrease traffic crashes and reduce vehicular speeds to align with desired operating speeds due to integration of traffic calming strategies.
- Will likely reduce the severity of traffic injuries and fatalities of all roadway users on the corridor due to decreased traffic crashes, increased separation of pedestrians and bicyclists from automobiles, decreased vehicular speeds when crashes still occur, and increased ridership of active transportation. (i.e., safety in numbers).

Economic Determinant of Health Impacts

Complete Streets modifications on 18th Avenue South…

- Will likely reduce transportation costs as percentage of income for those electing to utilize more affordable transportation modes (e.g., walking, bicycling, and public transportation) for at least some trips, leading to increased disposable income.
- Will likely increase accessibility to employment and educational opportunities citywide for residents living in the study area by addressing a critical east-west network connectivity gap for the City's bicycle network combined with modifications that create a more efficient and enjoyable public transportation experience.
- May lead to increased business sales by existing businesses, allowing them to employ more local residents; increase wages for business owners and employees; and reinvest money in renovating and improving their businesses.
- May lead to increased private investment in the study area, which could decrease the number of vacant parcels; increase the number of businesses leading to more employment opportunities and improved accessibility to resources; and increase the number of quality housing units leading to reduced asthma prevalence for those moving from less quality housing.
- May reduce the perception of crime through placemaking and reduction of vacant land parcels, which could lead to less police calls and potentially less codes cases.
- May increase property values.

Increased income, reduced unemployment, and reduced household poverty can lead to less financial stress, which is associated with depression and anxiety. Additionally, increases in disposable income can help individuals become more food secure and use extra money towards more nutritional foods and quality housing. (e.g., renovating existing housing or moving to better housing).



CONCLUSION AND RECOMMENDATIONS

Transforming 18th Avenue South into a Complete Street can create the foundation for a healthy corridor that supports the economic and health equity goals of the South St. Petersburg CRA and the City. The recommendations of HIAs are made to minimize, mitigate, or avoid harmful health impacts and to optimize beneficial health impacts. In this case, in order to enhance the equitable health and economic benefits of Complete Streets on 18th Avenue South, the community should consider a comprehensive approach with multiple complementary interventions. The recommendations that follow are based on a data-driven and evidence-based approach to healthy corridor development from this HIA; however, due to the HIA and project timelines, the community has not yet been consulted in forming these recommendations. As such, the next steps are to present the results, including the recommendations, of the HIA to the community and empower them to ultimately decide on the precise Complete Streets corridor modifications and other complimentary policies and programs. Community engagement should be wide-spread, involving the residents of the seven identified neighborhood associations surrounding 18th Avenue South, local businesses, other local community organizations, and the South St. Petersburg CRA Citizen Advisory Council (CAC). Throughout the rest of the project planning process, the community and City staff should determine who is responsible for implementing each of these recommendations and how they fit in with broader planning and policymaking efforts.

Traffic Calming and Speed Reduction Recommendations

• Incorporate traffic calming strategies, such as the following:
  ○ Horizontal deflections: lateral shifts, chicanes, realigned intersections, and traffic circles.
  ○ Vertical deflections: speed humps, speed cushions, speed tables, raised crosswalks, and raised intersections.
  ○ Street width reductions: corner extensions/bulb-outs, chokers, median islands, on-street parking, landscaped buffers, and road diet (4→3 lanes, 4→2 lanes, or 3→2 lanes, depending on the segment).

• Modify larger intersections to include replacement of signals with modern roundabouts, coordination of progression between signals to match desired speeds, and modification of signal cycle lengths or phasing to achieve safe operations and speed moderation.
• Incorporate Street Trees *(see Placemaking)*.

Bicycle Network and Facilities Recommendations
• Discuss with the community their perception of traffic safety and identify bicycle facilities that respond to community needs. The final design should include bicycle facilities that both increase actual safety and make bicyclists feel safer so that they are embraced and utilized by the community.

• Install separated bicycle facilities that enhance safety and perception of safety
  ○ Examples include separated bike lanes, striped bike lanes, shared-use pathways for bicyclists and pedestrians, etc.
  ○ Incorporate protected intersection designs that maintain the comfort and connectivity of bicycle lanes through larger intersections.

• Ensure connectivity to existing and proposed bicycle network and facilities.   ○ Modifications to 18th Avenue South fit within the broader need for citywide bicycle routes that connect people to economic opportunities. The facilities should include connections to existing and proposed bicycle routes, including proposed neighborhood greenways.

• Evaluate new locations for short- and long-term bicycle parking.
  ○ Public Land: Coordinate with local business owners to ensure perceived “ownership” of new bike racks. This provides a CPTED benefit following the idea of “eyes-on-the-street”/ “eyes-on-the-bicycles.”
  In identifying locations, recognize that people are often unwilling to park a bicycle in public right of way if they don’t feel it will be safe to leave there.
  ○ Private Land: Coordinate with local businesses through outreach on the benefits of providing bicycle parking and funding opportunities *(see funding recommendations)*.
  ○ Consider locating Coast Bike Share physical hubs at key community locations, such as shopping centers, recreation centers, libraries, etc., to increase visual awareness and accessibility of bicycles.

Placemaking & Streetscaping Recommendations

• Develop creative placemaking programming to establish a defined identity for the corridor that draws on the arts and culture of the community.
  ○ Incorporate community-led public art, such as murals and street quilts (e.g., painted intersections).
  ○ Partner with local artists that live in the neighborhoods surrounding the corridor.
  ○ Bring SHINE Mural Festival to select locations on 18th Avenue South.

• Incorporate street trees, landscaping, and planters for traffic calming and enhancement and separation of pedestrian areas.
○ Utilize "Right Tree in the Right Place" concept. Balance considerations for community placemaking, CPTED principles for sightlines, maintenance, urban ecology, traffic calming, and how trees can contribute to a comfortable pedestrian environment (including providing shade).   ○ Consult with City staff tree experts in the Office of Sustainability and Parks & Recreation.

• Incorporate street furniture, such as benches, chairs, sidewalk dining, etc. that contribute to a vibrant retail environment.
  ○ Utilize a unified aesthetic reflecting the culture of the surrounding neighborhoods.
  ○ Locate street furniture in visible well-lit areas and where the community is willing to take "ownership" of it (i.e., coordinate with local business owners).

• Incorporate public trash receptables for litter prevention and adopt a maintenance strategy. This could include trash receptacles at bus stops.

• Incorporate pedestrian-scale signage (on-street and off-street), including the following:
  ○ Community identity signage (neighborhood signs, business district signs, etc.).
  ○ Wayfinding signs for bicyclists, pedestrians, and transit users to community locations and surrounding nearby routes (e.g., local shopping and retail, the African-American Heritage Walking Trail, community locations [museums, libraries, recreation centers, parks], etc.).
  — Utilize best-practices, such as inclusion of both mileage and minutes, which leads to increased awareness and perception of self-efficacy.
  ○ Pedestrian and bicyclist awareness signage (e.g., RRFB crossings, crosswalk signs, "drive like your kids live here," "yield to pedestrians" signs at large intersections, etc.).

• Use graffiti-resistant materials as necessary for all street furniture and signage.
• Consider modifications to utility lines and traffic signals that place them underground or allow them to better blend in.
• Coordinate with PSTA to create quality bus stops.   ○ Incorporate high quality bus stop amenities and enhance bus system efficiency through stop consolidation and respacing. Prior to stop respacing, consider existing stop utilization, existing places of interest, potential future places of interest (per zoning districts and FLUM), and the proportion of customers who are elderly or disabled at individual stops.
• Coordinate with local business and neighborhood association to integrate placemaking and CPTED strategies on private properties to enhance the overall identity of the corridor.

Pedestrian Facilities and Walkability Recommendations

• Widen Sidewalks
  ○ 8-10 ft. minimum widths dependent on surrounding land uses.
  ○ Consider a shared-use, multimodal trail to serve both pedestrians and bicyclists.

• Add or Enhance buffers from the curb/road to sidewalks.

• Incorporate frequent and well-marked pedestrian crossings at recurring distances.
  ○ Ensure consistency with surrounding land uses and destinations.
  ○ Ensure consistency with bus stops for improved first/last mile connectivity. Coordinate with PSTA on stop consolidation and utilize stop data to determine crossing locations.
  ○ Improve markings at existing pedestrian crossings.

• Address overhanging vegetation
  ○ Address overhanging vegetation on public lands, including in the public right of way, if any.
  ○ Coordinate with CCAD to better understand issues related to overgrowth of vegetation on private properties along 18th Avenue South. Identify common barriers that prevent some property owners from maintaining vegetation. Work with neighborhood associations, property owners, CCAD, and Community Services Department to identify long-term sustainable solutions.

• Address driveway and vehicle parking configurations that induce conflicts and result in vehicle encroachment and obstructions.
  ○ Address missing sidewalks.
  ○ Visually distinguish sidewalks where they intersect driveways (i.e. ensure sidewalks are always visible overtop a driveway. This can be accomplished through material selection or painted walking zones.
  ○ Identify and address "driveways to nowhere" in public right of way. Coordinate with owners.
  ○ Identify properties where there are major safety concerns for all roadway users due to parking configurations that force drivers to reverse directly onto 18th Avenue South. Coordinate with land owners to identify alternative parking configurations.

• Consider private property trash can and recycle bin placement in relation to sidewalks and bicycle facilities to ensure these routes are not blocked on pickup days. Coordinate with City Sanitation to determine how far away from the curb trash cans may be placed.
• Incorporate Pedestrian-scaled lighting that both promote traffic safety and increase perception of safety (CPTED).
• Modify traffic signals such that pedestrian walk phases are included in all cycles instead of requiring push-button activation. Incorporate signage that makes this clear to pedestrians.
• Evaluate signal operations and timing to minimize pedestrian delay and exposure. Consider concurrent phasing.

Land Use Recommendations To Promote Active Transportation, Economic Development, and Affordable Housing

• Evaluate existing zoning and FLUM classifications and, in coordination with the community, identify how to encourage contextually appropriate changes, such as the following:
  ○ Density/intensity changes - especially for the purpose of promoting affordable housing.
  ○ Considering rezoning some parcels with the newly adopted Neighborhood Traditional Multifamily (NTM) zoning classification to allow for more missing middle housing.
  ○ Land-use mix changes that promote walkability through reducing distances and increasing proximity to community destinations.
  ○ Encourage pedestrian-, bicycle-, and transit-oriented design elements.

• Continue to promote affordable housing density bonuses and identify other City strategies that may increase affordable housing around 18th Avenue South.
• Encourage specific types of neighborhood-serving development, such as healthy food retail, where possible and appropriate. See CDC's "Healthier Food Retail" and ChangeLab Solution's "Getting to Grocery" for recommendations.
• Conduct further analysis of the existing vacant lots in the study area and identify strategies for creative redevelopment (where possible)   ○ Evaluate existing city programs and policies and community-led efforts related to vacant land and identify how to build upon these efforts to repurpose vacant land into community-based uses and affordable housing along 18th Avenue South. Consider new strategies utilized by other communities.

Programming Recommendations To Promote Active Transportation
• Promote active transportation by increasing awareness of existing routes (PSTA bus routes, bicycle routes) and programs for the Transportation Disadvantaged (e.g., PSTA's TD Program, Coast Bike Share's program). Partner with organizations, businesses, recreation centers, libraries, etc., in the area to provide information.

• Identify existing organizations that provide bicycle-, pedestrian-, and transit-related programming and Transportation Demand Management (TDM) programming, including organizations that raise awareness of multimodal transportation (e.g., walk groups, bicycle ride groups, etc.), provide safety information, or have programs that improve accessibility and affordability of multi-modal transportation.
  ○ Identify if any of these organizations already work in the study area and how to build-upon their efforts.
  ○ Identify similar organizations that currently work in the CRA on related topics, e.g., nonprofits (health promotion, financial empowerment, etc.), healthcare providers, recreation centers, libraries, neighborhood associations, etc., that could provide information on active transportation. Ensure these organizations have information on the financial and wellness benefits of active and affordable transportation modes.

• Plan "activation events," such as recreational bicycling events and walking groups, on the corridor for awareness building.   ○ Incorporate these as part of the community engagement planning process (e.g., walk audit, bike audit), and as kickoff events following construction.

• Partner with local businesses on the corridor to help them become more bike-friendly.
  ○ Promote Bike-Friendly Business (BFB) Certification.
  ○ Encourage businesses to implement employee wellness programming that involves active transportation, such as bike-to-work days.

• Evaluate barriers to participation from community residents for Coast Bike share, including affordability barriers. Create an equity plan for bike share.

Funding-Related Recommendations
• Identify how to leverage multiple funding sources in a coordinated manner, potentially including City funding, Pinellas County funding, CRA TIF Funding (as permitted through existing approved programs), and external grant sources (federal, state, private, etc.).
• Increase awareness of CRA grant opportunities for exterior property improvements to property owners on 18th Avenue South.

• Ensure funding is available as part of the overall project budget for implementing a Construction Mitigation Program that helps local businesses.
  ○ Strategies may be implemented through leveraging existing programs and economic development incentives to help local businesses on the corridor (e.g., existing Greenhouse programs, existing CRA grant programs, etc.).
• Promote complementary measures to Complete Streets (e.g., bicycle racks, exterior improvements that follow pedestrian-, bicycle-, and transit– oriented design principles, placemaking elements, etc.) in City and CRA grant programs (e.g., Neighborhood Matching Grant. Commercial Site Improvement Grant, etc.) as permitted. Consider expanding list of eligible purchases to include these elements when they are not already permitted.
  ○ The City's Healthy Commercial Development Health Planning Matrix could be incorporated into the grant application and review criteria (strengths and weaknesses) for commercial grants to encourage these elements.

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APPENDIX A: LIST OF RELEVANT PLANS, REPORTS, STUDIES, AND OTHER DOCUMENTS

- Complete Streets Implementation Plan [Identified Phase 3 Project] (2019- City of St. Petersburg)
- Forward Pinellas Complete Streets Program- Concept Planning Project Application (2018- City of St. Petersburg)
- Transportation Disadvantages Service Plan, 2017- 2020 (2019- Forward Pinellas)
- (Draft) Forward Pinellas Active Transportation Plan [Listed Project] (2019- Forward Pinellas)
- Complete Streets for St. Pete- Building a Healthier, Safer City through Better Street Design Report (2017) Florida Consumer Action Network Foundation [FCAN])
- Walk Audit City Council Presentation & Handouts (April 6th 2017- FCAN)
- Deuces Rising Plan (2019- City of St. Petersburg)
- Warehouse Arts District Deuces Live Joint Action Plan (2018- City of St. Petersburg)
- Integrated Action Sustainability Plan (2019- City of St. Petersburg)
- South St. Petersburg Community Redevelopment Plan (2015- City of St. Petersburg)
- Countywide Plan Strategies (2019 Update- Forward Pinellas)
- Tangerine Plaza Market Analysis (2017- Community Solutions Group)
- Update on the Economic Impact of Poverty Report for the Pinellas County Board of County Commissioners (Pinellas County- 2013)
- Health in All Policies Executive Order and Council Resolution (2019- City of St. Petersburg)
- Complete Streets Administrative Policy (#020400) and City Council Resolution (2015- City of St. Petersburg)

APPENDIX B: FIGURE 28 LIST OF ASSUMPTIONS

- This analysis assumes that no more than 20 percent of the gross total number of accessory units that could be potentially constructed within the study area will be built.
- This analysis assumes that no more than 40 percent of the gross total number of workforce units that could be potentially constructed within the study area will be built.
- Parcels zoned NSE are city owned parcels for its park lands and are not included in the analysis.
- The two parcels shaded in blue are located within the Salt Creek flood zone are not expected to be developed to the maximum density allowed by the zoning ordinance. Staff reduced the density calculation to one-half that allowed by the zoning ordinance and eliminated any workforce units from the calculations.
- This analysis does not project any dwelling units to be constructed on CCS-1 parcels which are located along 34th Street South and 49th Street South. These parcels are expected to be developed as commercial land uses.
- Parcel size must be 70 percent or greater of the minimum lot size of the zoning district in order for a unit (principal and/or ADU) to be constructed. For instance, if the minimum lot size is 10,000 SF and the existing lot size is at least 7,000 SF then one unit can be constructed. When a parcel is large enough to be subdivided into two or more lots, all but one of the proposed lots must meet the minimum lot size of the zoning district. The last created parcel must be at least 70 percent of the minimum lot size of the district for units to be built.
- Commercial SF for CCS-1 parcels was calculated assuming that each parcel would be developed to the maximum FAR allowed by zoning. Commercial SF for the CCT-1 and CRT-1 was calculated by assuming that all parcels 10,000 SF in area and larger had the potential for mixed-use development in which half of the total allowable FAR square footage was residential. The number of units was calculated by assuming that each dwelling unit would be 1,100 SF gross. This number was then divided into the SF allotted for residential.