



Safe Access to Parks

Sulphur Springs

Local Park Pilot

Final Existing Conditions

August 2021



Hillsborough TPO
Transportation
Planning Organization

SAFE STREETS NOW





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I. Introduction

The Hillsborough Transportation Planning Organization (TPO) is conducting a Safe Access to Parks pilot project (project or pilot) to develop a process that can be replicated at parks throughout the County to implement safety countermeasures with a focus on speed management. A toolbox of safety countermeasures, building on the 2019 *Speed Management Action Plan*, will be developed as part of this process. This pilot project includes three different types of park facilities in Hillsborough County, including a local, regional, and linear park whose context and transportation safety issues broadly represent other facilities in the region, such that the findings from this pilot project can be applied elsewhere in the County.

The project scope includes the following tasks:

1. Identify parks to include in the pilot project
2. Conduct a detailed existing conditions assessment of each park location
3. Solicit public feedback
4. Develop a toolbox of safety countermeasures
5. Apply countermeasures to each park location

This report documents Task 2, the existing conditions assessment.

A. Park Selection Process

A quantitative process was developed that primarily considered equity and transportation safety metrics to identify candidate parks within Hillsborough County. Of the approximately 200 local parks within the County, defined as a park less than 5 acres that may have a varying level of active and passive amenities that typically serves the local area, **Sulphur Springs Park** was ranked one of the highest based on a combination of equity and safety factors. It is also located adjacent to

the **River Tower Park**, a passive regional park, which is defined as a park greater than 5-acres that has no planned programming. River Tower Park placed third on the ranking process for passive regional parks and its location adjacent to Sulphur Springs Park provides an opportunity to improve transportation safety and access around and to both parks. Therefore, the combined park complex was selected for inclusion in the pilot. Additional details provided are provided in a technical memorandum dated [May 3, 2021](#). Other parks selected for inclusion in the pilot are the Upper Tampa Bay Trail (linear), and Copeland Park (active regional).

This report is organized to provide a description of the park, surrounding roadway and land use context, travel characteristics, and collision assessment. This information will be further refined based on a public outreach campaign to identify transportation concerns that are not readily apparent through traditional data collection approaches.



Sulphur Springs Park Entry Monument



II. Park Description

Sulphur Springs Park is located at 701 E Bird Street, and the adjacent River Tower Park is located at 8105 N Florida Avenue in Tampa. For the purposes of this report, Sulphur Springs Park and the adjacent Sulphur Springs Pool and River Tower Park are considered one park. The combined park area is generally bound by E Bird Street to the north, N Florida Avenue to the west, Nebraska Avenue to the east and the Hillsborough River to the south, as shown on **Figure 1**. I-275 runs through the middle of the combined park, but there is a trail connecting the two sides. The trail connects to Nebraska Avenue, but access is restricted.

The combined parks total approximately 20-acres; Sulphur Springs Park is less than 5 acres. This park has a variety of amenities, including a pier, fishing, swimming pool, playground, picnic shelters with grills, nature trail, and historical architecture. Sulphur Springs Park is open from sunrise to sunset. The pool is open year-round with varying operating hours depending on the season.



Historic Gazebo



Sulphur Springs Pool



Boardwalk Under I-275



West of I-275, the park can be accessed via a single driveway on E Bird Street. There are several driveways that provide access to the park from E Bird Street east of I-275 as well as an access point from N Nebraska Avenue. The parking area west of I-275 is a partially paved, partially gravel lot. East of I-275, there is a large, paved lot north of the park.

Pedestrian access to the park is limited. Both the east and west edges of the park are fenced. West of I-275, pedestrians can only access the park via the driveway and there is no designated path for people walking, meaning that people walking or bicycling must share the driveway with people driving.

East of I-275, primary pedestrian access is provided at the driveway from E Nebraska Avenue. The narrow width of the sidewalk and utility pole placement can make it challenging for multiple people to walk to the park side-by-side, and for people with strollers to access the park from the neighborhoods to the east of the park. Access is also provided through the parking areas from Bird Street, although there is not a designated path for people walking or bicycling.

Hillsborough Area Regional Transit (HART) provides transit service in the area with one route operating along the eastern edge of park frontage and another on the western edge. Additional details regarding transit access to the park and the pedestrian connections are provided in the Transportation Setting chapter.

Due to COVID-19 restrictions in place at the time of the data collection effort, no scheduled events were occurring at Sulphur Springs Park and the pool was closed for annual maintenance. The pool has since opened.



Entry to River Tower Park from E Brid Avenue



Entry to Sulphur Springs From N Nebraska Avenue



III. Transportation Setting

This chapter provides an overview of the study area, including a description of the roadway network, transit service, and population characteristics.

A. Key Streets

This section includes a description of the roadways that provide primary access to Sulphur Springs and River Tower Park with a focus on roadways that connect and bound the site. **Figure 2** summarizes the Transportation Context, including the locations of signalized intersections, bus stops, sidewalk network, and bicycle lanes. During the data collection period in late May, there were fairly high levels of active transportation observed on streets around and connecting to the parks.

N Florida Avenue

N Florida Avenue forms the western boundary of River Tower Park. It starts at Water Street in Downtown Tampa to the south, and merges with N Nebraska Avenue to the north. Overall, N Florida Avenue is about 12 miles in length and serves as a key north-south roadway. There is no direct access to the park from N Florida Avenue. In the park vicinity, land uses fronting the roadway are primarily commercial, with a fairly high density of commercial driveways along the corridor that can increase conflicts between people walking and people driving. Most of the intersections along the corridor are unsignalized, with signals at the intersection of E Broad Street, E Bird Street, and Waters Avenue. The signalized intersections have pedestrian push buttons, pedestrian signals, and crosswalks for all legs. There is also a new mid-block signalized crossing between Bird Street and Waters Avenue, co-located with a HART transit stop. With the exception of the signalized intersections, there are no marked crossings across N Florida Avenue.

Key characteristics of N Florida Avenue include:

- North – South Arterial
- Designated Florida Department of Transportation (FDOT) facility
- Varying curb to curb width of 40 to 94-feet in park vicinity
- Two travel lanes in each direction south of Waters Avenue and three travel lanes in each direction north of Waters Avenue
- No on-street parking
- Posted speed limit of 40 to 45 miles per hour
- Bicycle lanes (North of Waters Avenue)
- Transit access (Hart Route 1)
- An average of 15,600 vehicle trips per day in the park vicinity
- Over 700 collisions over the past 5 years
 - 24 collisions resulted in a severe injury or fatality (KSI)
 - 2 fatal collisions
 - 55 collisions involving a vulnerable road user (bicyclist, pedestrian, motorcyclist)



N Florida Avenue, North of Bird Street

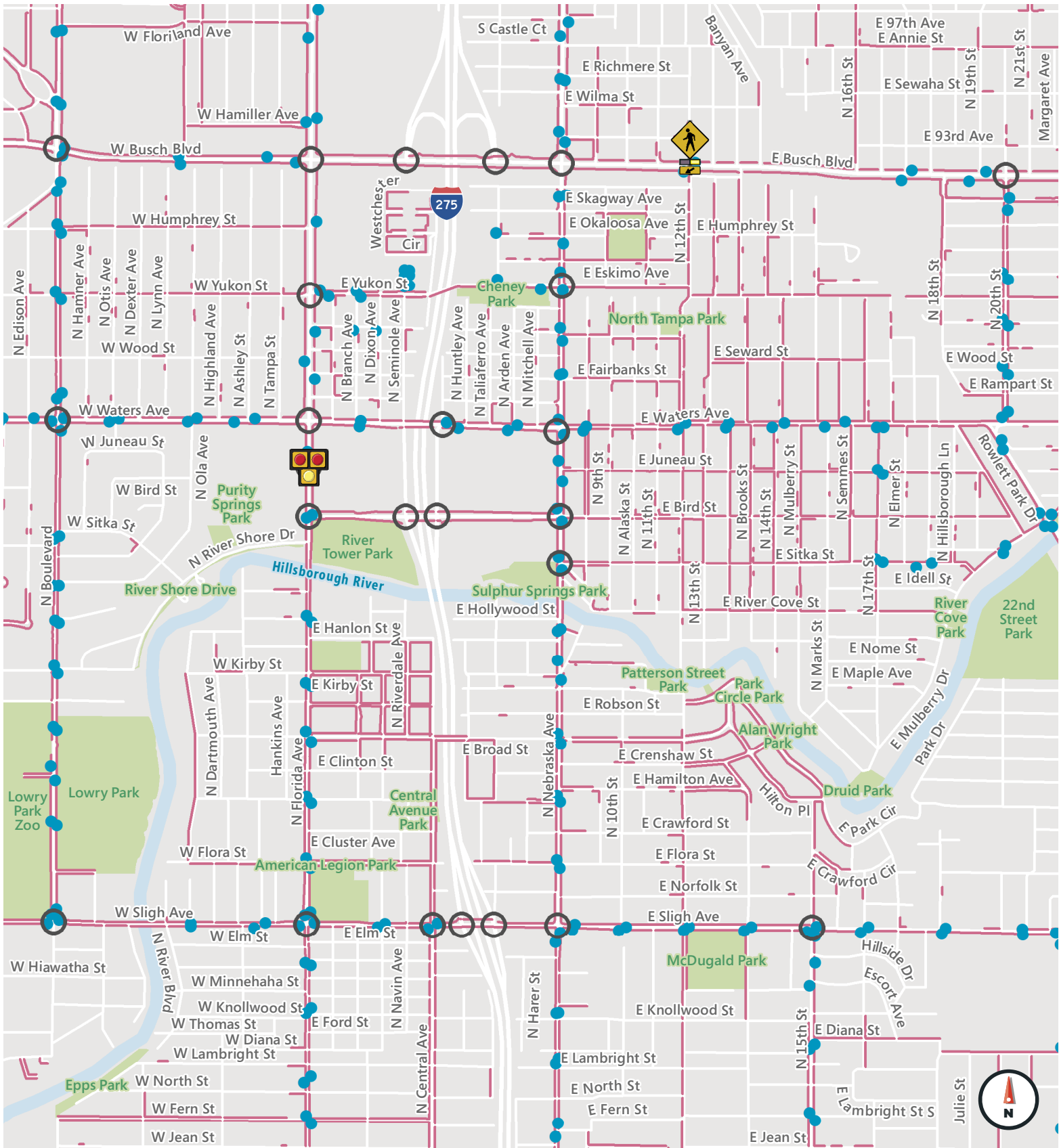
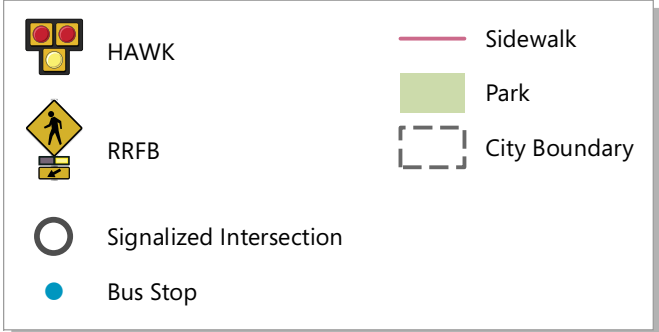


Figure 2
Sulphur Springs Park
Transportation Network Elements



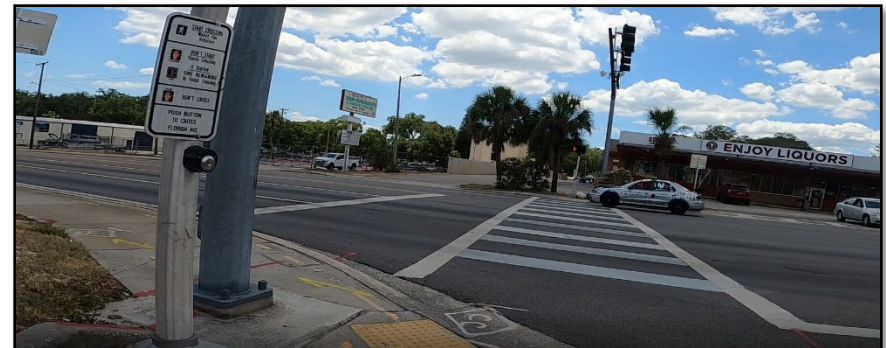


During the data collection effort, the following was observed about the condition, design and operation of N Florida Avenue:

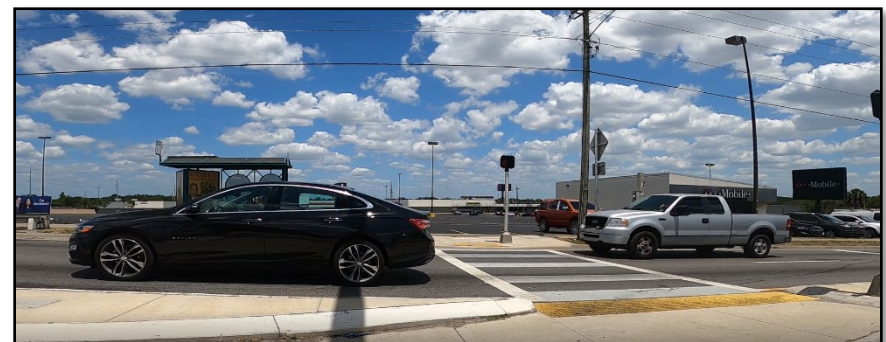
- Continuous sidewalks are provided on both sides of N Florida Avenue within the park vicinity. In contrast, few connecting side streets provide sidewalks on either side of the roadway. Sidewalk widths in the area range from four feet on the bridge to seven feet. The City of Tampa requires that all new sidewalk be at least 5 feet wide and a 6 foot or greater width sidewalk is recommended for two-way pedestrian travel.
- Signal poles placement at some intersections puts people on the sidewalk close to the travel lane (see right for example)
- There have been recent improvements along the corridor to improve the conditions for people walking, including reconstruction of the intersection of W Waters Avenue at N Florida Avenue to eliminate high speed right turn lanes on both the westbound and southbound approaches and reduce the pedestrian walking distance and exposure.
- Curb heights along the bridge vary, and the sidewalk is level with the roadway in some locations. Curbs enhance safety by providing vertical separation between vehicles and pedestrians.
- Some sections of the roadway have small grass landscape buffers ranging from one to five feet. A buffer between the sidewalk and vehicular travel way can make it feel more comfortable to walk.
- HART operates Route 1 along N Florida Avenue. Some stops only provide benches, while others include shelters with benches and trashcans. More details about transit service to the area are provided in the next section.
- Between E Bird Street and Waters Avenue, pedestrian crossings are located between 300 and 600 feet apart, about a 1 to 3-

minute walk. North of Waters Avenue and south of Bird Street, pedestrian crossings are less frequent, and people may need to walk 5 to 7 minutes out of their direction to reach a signalized crossing. Long cycle lengths can also result in significant pedestrian delay at signalized crossings.

- LED roadway lighting is provided on both sides of N Florida Avenue, but no pedestrian-scale lighting is present. The public outreach campaign will include a question related to the adequacy of street lighting levels in the area, with a focus on pedestrian crossing locations.



Signal Pole within Pedestrian Path at Intersection of North Florida and Bird Street



Mid-Block Signalized Crossing



E Bird Street

E Bird Street forms the northern boundary of the park complex and extends 1.4 miles between N Florida Avenue and N Ogontz Avenue. It primarily connects the Sulphur Springs area to I-275. Only southbound on-ramps and northbound off-ramps are provided at this interchange, both on the south side of E Bird Street. There are one-way roadways on the north side of E Bird Street connecting both ramps to E Waters Avenue. The intersections west of Nebraska Avenue are signalized, while the intersections east of Nebraska Avenue are unsignalized.

Key characteristics of E Bird Street include:

- No on-street parking
- No bicycle facilities
- No transit service
- Over 150 collisions over the past 5 years
 - 2 collisions that resulted in severe injury and 1 fatality
 - 12 collisions involving a vulnerable road user

West of N Nebraska Avenue

- East – West Arterial
- 35 to 46-foot typical pavement cross section
- Two-three travel lanes in each direction
- Posted speed limit of 30 miles per hour
- An average of 7,400 vehicle trips per day

East of N Nebraska Avenue

- East – West Local Street
- 20-foot typical pavement cross section
- One travel lane in each direction
- Posted speed limit of 25 miles per hour



Sidewalk Gap on South Side of E Bird Street



*Pedestrian Crossing at E Bird Street / I-275
Southbound On-Ramp*



During the data collection effort, the following was observed about the condition, design and operation of E Bird Street:

- Sidewalks are inconsistently provided along E Bird Street west of N Nebraska Avenue. The design is inconsistent with some sidewalks adjacent to the travel way, and some sidewalks with a landscape buffer. Where provided, they are typically 5-feet.
- There are several areas where the walking path merges with vehicle facilities, including off-street parking and driveways. These areas are high conflict zones between people driving and other roadway users as the right-of-way and designated paths of travel for all roadway users is not clear.
- Curbs and gutters, which are beneficial for separating vehicles from pedestrians and for drainage, are not consistently provided in the area.
- Large portions of the sidewalk network appear to be poorly maintained. Vegetation growth, sand, and other debris reduces the useable sidewalk space in many areas, and completely covers the sidewalk in some locations.
- Curb ramps and pedestrian pushbuttons do not appear to meet current ADA standards at some intersections along the corridor. Many ramps appear to have slopes that are too steep. Some pedestrian pushbuttons are located too far from the curb. For example, the pushbutton on the northwest corner of the intersection of E Bird Street and the I-275 Off-Ramps/N Lamar Avenue, the pushbuttons are located ten feet away from the pedestrian path of travel (the standard is within one and a half and six feet).
- There is no shade on the corridor sidewalk area between N Florida and Nebraska Avenue.
- West of N Nebraska Avenue the only streets intersecting E Bird Street are the I-275 ramps, which are approximately 1,000 feet

from N Florida Avenue and 1,300 feet from N Nebraska Avenue. East of N Nebraska Avenue, intersections are spaced about 250 feet apart. The shorter spacing is more desirable; however, there are no marked crossings in this area.

- There are no transit routes on the roadway. However, Route 1 runs along N Florida Avenue and has a stop in both the northbound and southbound directions at its intersection with E Bird Street. More details about transit service to the area are provided in the next section.
- West of N Nebraska Avenue, there appears to be a mixture of LED and high-pressure sodium (HPS) roadway lighting. LED lighting provides better illumination than HPS and is the preferred standard for new lighting. East of N Nebraska Avenue, primarily LED lighting is provided. However, no pedestrian scale lighting is present along the corridor.
- Traffic volumes on the section of E Bird Avenue suggest vehicular travel lanes could be eliminated without degrading conditions for people driving, which could permit the provision of dedicated bicycle facilities and improved walking facilities.



Undefined Pedestrian Area on E Bird Street



N Nebraska Avenue

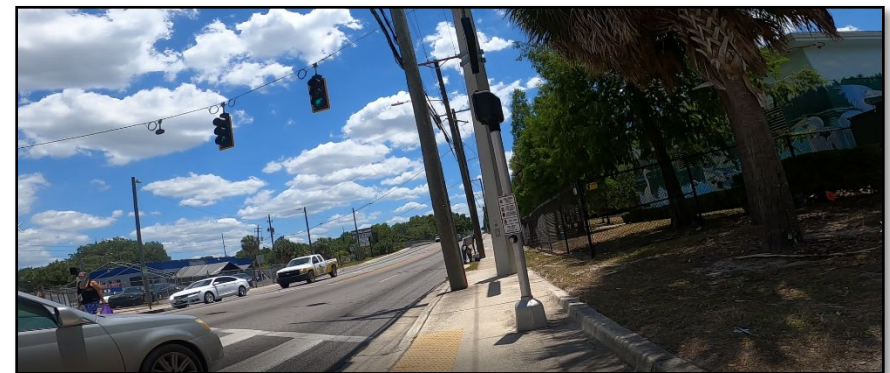
N Nebraska Avenue forms the eastern boundary of Sulphur Springs park. It extends from E Washington Street in the south and merges with N Florida Avenue in the north. The land uses fronting the roadway are primarily commercial with direct driveway access. Between E Sitka Street and E Waters Avenue, intersections are spaced about every 500 feet, with marked and signalized crossing every 500 to 1,000 feet. North and south of this section, intersections are more closely spaced, generally between 150 to 250 feet, but signalized intersections are only available about every quarter of a mile, which may require a 3 to 5 minute walk to a protected crossing.

Key characteristics of N Nebraska Avenue include:

- North – South Arterial
- FDOT Facility
- Typical 54-foot pavement width
- Two lanes to three in each direction
- No on-street parking
- Posted speed of 45 miles per hour
- Transit access (Hart Route 400)
- Average of 21,500 vehicle trips per day
- Around 745 collisions over the past 5 years
 - 16 collisions resulted in a severe injury or fatality (KSI), including 4 fatal collisions
 - 53 collisions involving a vulnerable road user (bicyclist, pedestrian, motorcyclist)

During the data collection effort, the following was observed about the condition, design, and operation of N Nebraska Avenue:

- Sidewalks are consistently provided on N Nebraska Avenue in the vicinity of Sulphur Springs Park. The sidewalks range from approximately four feet on the bridge to approximately seven feet, with the wider sidewalks typically on the east side of the roadway.
- Adjacent businesses were observed to place their trashcans on the sidewalk, reducing the walkable space on trash collection days.
- Utility poles obstructing the sidewalk in some locations, primarily around the signalized intersections.
- The sidewalks on the bridge are protected by concrete barriers. The remaining sidewalks are immediately adjacent to the roadway.
- The Sulphur Springs Park Trail connects to N Nebraska Avenue, but is currently gated.



Utility Poles within Sidewalk on Nebraska at Sitka Street



- Curb and gutter is inconsistent in the area, with some sidewalk areas almost flush with the travel lane decreasing the protection of people walking from people driving.
- LED roadway lighting is primarily provided on the west side of N Nebraska Avenue. Pedestrian scale lighting is not present.
- HART operates Route 400 along N Nebraska Avenue. There are stops near E Waters Avenue and E Sitka Street. Transit stop facilities vary greatly along the corridor from signs with no additional amenities to shelters with seating and trashcans.



Sidewalk Along N Nebraska Avenue

- The intersection of N Nebraska Avenue at E Sitka Street also includes Van Dyke Place, which complicates the operation of the intersection, increases pedestrian crossing distances, and increases potential conflicts. Eliminating the connection of Van Dyke Place could be explored as access to parcels can still be maintained from Grant Avenue and N 9th Street.



MetroRapid Stop Along N Nebraska Avenue at Waters Avenue



Aerial View of N Nebraska Avenue, E Sitka Street and Van Dyke Place



Roadways in the residential neighborhoods to the west of the park are generally have a 20-foot paved cross section to allow for two-way vehicle travel. Sidewalks are intermittently provided, primarily on some key east-west (such as E Bird Street and Sitka Street) and north-south streets (such as 12th Street and Klondyke Street). Curb and gutter is not provided, and intersections are primarily side-street stop-controlled, meaning that vehicle traffic on the side-street must stop and yield to traffic on the main street. Marked crosswalks are typically not provided throughout the neighborhood, and street lighting is generally limited to intersections.

I-275 and the Hillsborough River serve as major barriers to accessing the park from the neighborhoods to the south. Sidewalks along N Florida Avenue and N Nebraska Avenue across Hillsborough River have diminished walking areas as the location of pipes intrudes into the walking area, and some portions of the sidewalk are level with the vehicular travel way.

B. Transit Access

There are five transit routes that operate near Sulphur Springs Park. Holiday hours vary. The Yukon Transfer Center is about a half mile north of the park and connects Routes 14 and 16. Route 1 has a stop within 1,000 feet of the transfer center. Routes 1 and 400, have headways as short as 15 minutes during peak hours (**Table 1**). Routes with shorter headways tend to be more desirable than routes that operate less frequently.



Typical Residential Street to East of Park



Sidewalk on N Florida Avenue over Hillsborough River



Table 1: Local Transit Options

Route	Operating Hours (to nearest half hour)	Frequency	Road Near Park
1	M-F: 4:00 AM - 1:00 AM Sat-Sun: 6:00 AM - 11:00 PM	15 minutes to 1 hour 30 minutes to 1 hour	N Florida Avenue
14	M-F: 5:00 AM - 11:00 PM Sat-Sun: 5:00 AM - 11:00 PM	1 hour 1 hour	N Florida Avenue (north of Waters Avenue)
16	M-Sat: 6:00 AM - 11:30 PM Sun: 6:30 AM - 11:00 PM	30 minutes 1 hour	Waters Avenue
39	M-F: 4:30 AM - 11:30 PM Sat: 6:00 AM - 11:30 PM Sun: 6:00 AM - 11:00 PM	30 minutes 30 minutes 1 hour	Busch Boulevard
400	M-F: 4:30 AM - 12:30 AM Sat-Sun: 5:00 AM - 12:30 AM	15 minutes to 1 hour 30 minutes to 1 hour	N Nebraska Avenue

Source: HART

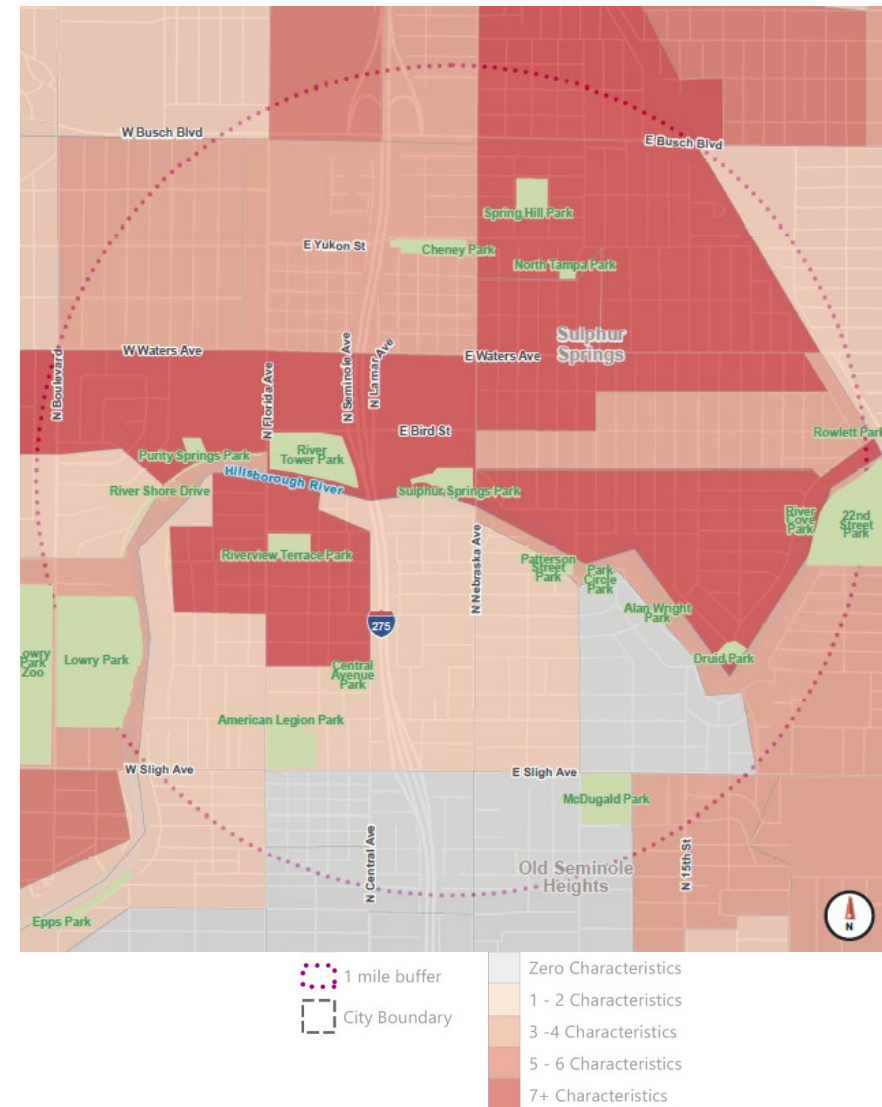


C. Population Characteristics

The park selection process focused heavily on equity metrics as defined by the Hillsborough TPO Community of Concern definitions, with the area around Sulphur Springs Park meeting criteria in all categories being at least one standard deviation above the County median.

- Percent minority population
- Limited English proficiency households
- Low Income Households
- Households living with a disability
- Zero vehicle households
- Percent of residents who are under 18-years old
- Percent of residents who are over 65-years old

The TPOs Vision Zero Action Plan and other recent studies have shown the people living in communities of concern are significantly more likely to be involved in a traffic collision that results in a severe injury or a fatality. As this area has a higher-than-average population of households without a vehicle, and a high population of people under the age of 18, the park is likely a major walk/bike destination for people residing in the surrounding vicinity. Improving the safety of roadways in the area, with a focus on people walking and bicycling, can help improve safety outcomes for the area.



Communities of Concern in Study Area
 Source: Hillsborough TPO



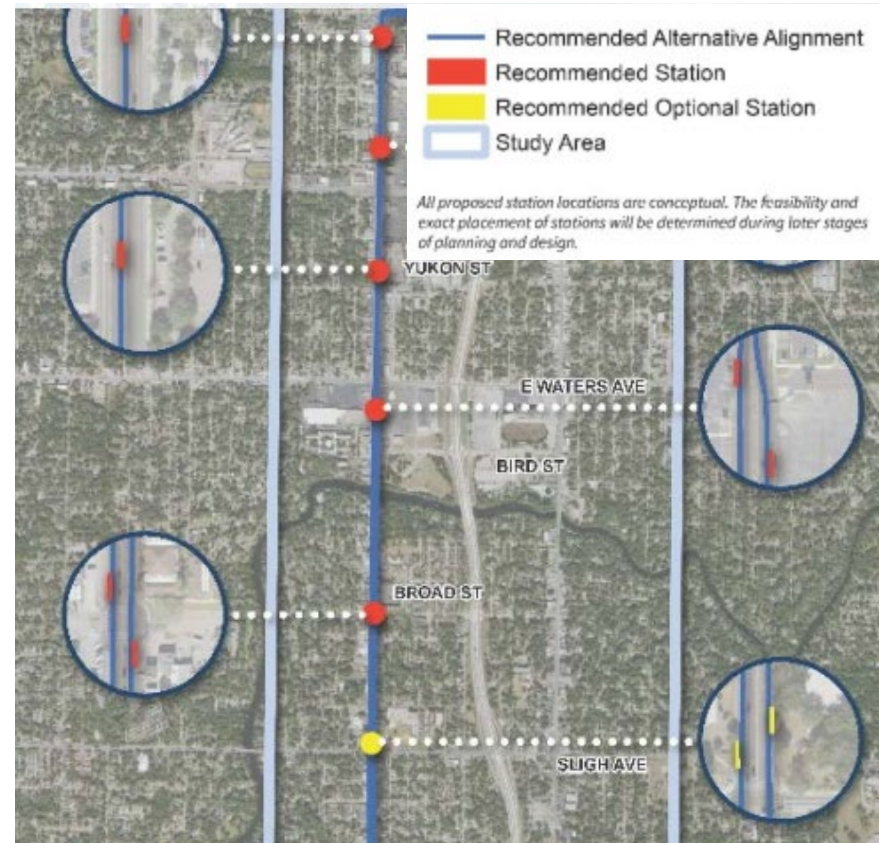
D. Other Area Studies

The City of Tampa, the Florida Department of Transportation (FDOT), the Hillsborough TPO, and HART have prepared plans for transportation network improvements in the study area. FDOT recently implemented improvements along N Florida Avenue and N Nebraska Avenue aimed at providing access management and improving pedestrian connectivity.

HART is currently evaluating the potential to provide [Bus Rapid Transit](#) using some combination of the N Florida, N Nebraska and Fowler Avenue corridors, with the goal of providing a dedicated lane for transit between Downtown Tampa and USF for at least half of the travel distance on both corridors. The goal of the BRT project would be to significantly increase the reliability of transit travel along the corridors and improve the overall travel time of transit as compared to driving a vehicle. Improved bicycle and pedestrian connections from the surrounding areas to the stops would also be included.

The BRT study led by HART identifies a preferred alternative that would provide BRT on Florida Avenue between Downtown Tampa and Linebaugh Street, where it would then connect to Nebraska Avenue, and ultimately USF along Fowler Avenue. Stop locations in the study area were identified between Bird Street and Waters Avenue, where the BRT would travel in the right lane with mixed traffic.

BRT corridors represent a significant investment in the transportation network and can often spur redevelopment within the station area to maximize the number of people who work or live close to transit. There are several under utilized parcels within the area that would provide opportunities to not only better connect the community to BRT, but to the park system as well via non-private auto modes.



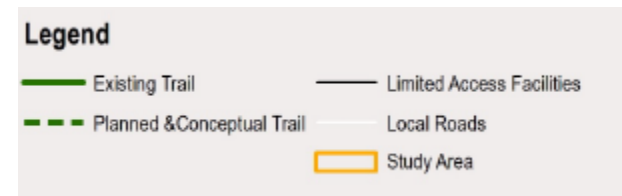
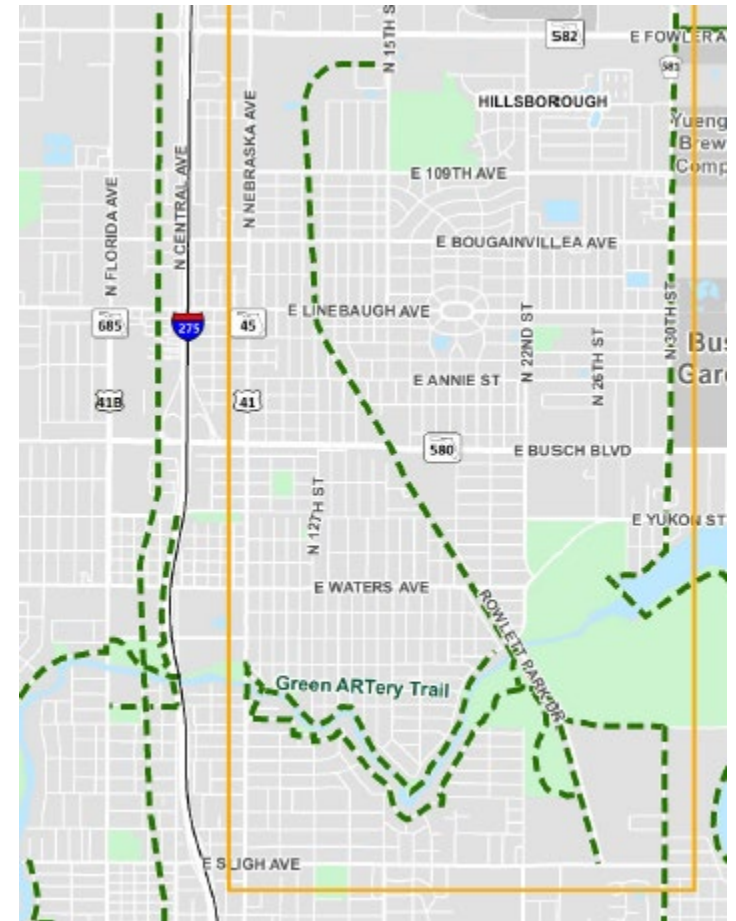
Potential BRT Route and Stop Locations on N Florida Avenue
Source: HART

FDOT is leading the [Heights Mobility Study](#), which is an effort to improve safety and mobility in the Greater Seminole Heights/ Tampa Heights area, especially, along the N Florida Avenue and Tampa Street/Highland Avenue corridors between downtown Tampa and the Hillsborough River. The park area is just north of the study area boundary and there may be an opportunity to better connect the two areas.



The City of Tampa is currently updating their [Parks and Recreation Master Plan](#), which includes a robust public engagement process. One of the key themes heard from the public was a desire for improved connections for people walking and bicycling to parks. Citizen requests included dedicated off-street trail facility to connecting to neighborhoods, including the Sulphur Springs area to the University of South Florida.

The Hillsborough TPO is in the process of preparing a [University of South Florida to Green ARtery Trail](#) study that is evaluating the conceptual and new connections from the University area to the existing and proposed trail system in Tampa and Hillsborough County. Three potential alignments are currently under consideration, one alternative would provide a trail along N 15th Street from Linebaugh Avenue to Fowler Road. A second alternative would provide a trail along the N 22nd Street Corridor, and a third would provide a trail along the N 30th Street Corridor. This trail would connect to the planned ARtery Trail along both the north and south banks of the Hillsborough River that is planned to start at N Nebraska Avenue at Sulphur Springs Park. This trail has been identified in the [City of Tampa Mobility Plan](#).



Planned Trails in Study Area

Source: Hillsborough TPO USF-Green Artery Trail Study Existing Condition Report

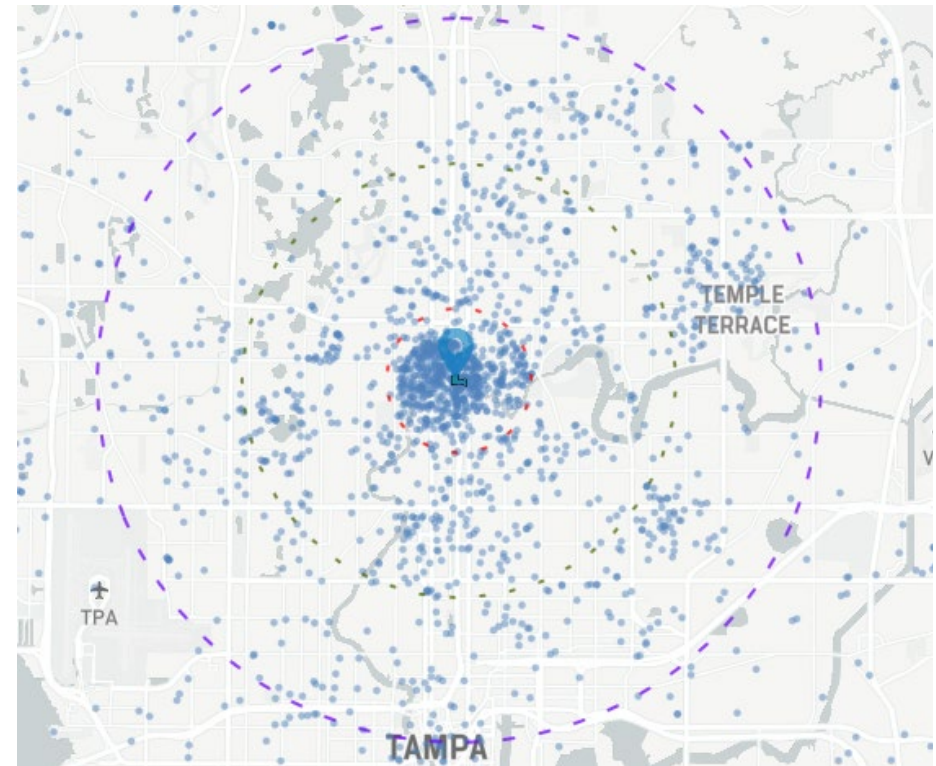


IV. Travel Characteristics

Data from a wide variety of sources was reviewed to create a profile of travel characteristics to and from Sulphur Springs Park to aid in the identification of transportation safety concerns and potential counter measures. Location based mobile data was used to identify the catchment area of park visitors, with most park visitors originating within a one mile radius (red circle) of the park, which is to be expected for a locally service park.

A review of common routes that people take to access the park shows that many park visitors come from adjacent neighborhoods (with the potential to be walk or bike trips), and many trips route on N Florida Avenue, N Nebraska Avenue, I-275, Waters Avenue, Sligh Avenue, and E Bird Avenue. Therefore, the focus on safety counter measures should be on these major streets and the minor connecting roadways.

Sulphur Springs Park receives a fairly consistent number of visitors throughout the week. The most popular days are Tuesday and Wednesday and least visited days are Sunday and Monday. The park sees steady levels of activity between 6 AM and 6 PM, with the highest levels of activity occurring in the morning (7 AM to 9 AM) and in the late afternoon (3 PM to 4 PM).



Common Daytime Locations of Park Visitors (Source: Near, formally UberMedia)



Data from [wejo](#), reflective of the time period October 2019, was obtained to document average and 85th percentile travel speeds on roadways surrounding the park, and to identify hot-spots where hard braking routinely occurs. This data was obtained from on-board vehicle sensors, including devices that are built into the vehicle that provide data to the vehicle manufacturer and devices that are installed by the vehicle owner, such as for monitoring fleet vehicles, and from insurance companies for use in monitoring driver behavior and providing insurance discounts/setting premiums. While this data set is limited to those who have such devices on their vehicles, it provides multiple months of data that can be evaluated by time of year, day of week and time of day. The dataset used in this analysis is based on over 6,495,000 observations representing over 1,800,000 individual trips. All data is anonymous and cannot be traced back to any individual driver.

The speed data can be used to determine if there are specific roadway segments where people routinely drive in excess of the posted speed limit, and if prevailing travel speeds are more likely to result in a serious or fatal injury if the collision involves a vulnerable roadway user. A pedestrian struck by a vehicle being driven at 20 miles per hour has more than a 90 percent chance of survival, while the same pedestrian struck by a vehicle being driven at 40 miles per hour has a less than a 10 percent survival rate.

The wejo data shows that the **average** daily travel speed on roadways that provide direct pedestrian access to the park (E Bird Street, and N Nebraska Avenue) is around 30 miles per hour (the posted speed limit is 30 miles per hour on Bird and 45 miles per hour on N Nebraska Avenue). However, the 85th percentile speed is between 40 and 50 miles per hour. During peak hours, the prevailing travel speed is close to the posted speed limit.

Within the neighborhood to the east of the park, morning peak hour travel speeds are over 30 miles per hour for some segments, which is in excess of the posted speed limit of 25 miles per hour.

The City of Tampa is undertaking an evaluation to reduce the posted speed limit on all local streets to 25 miles per hour. The change in posted speed limit should also be accompanied by design changes to reinforce the slower speeds.

Hard braking is an event in which a driver applies more force than is typically needed to slow or stop a vehicle using the vehicle's **brake** system, defined as reducing your speed by more than 6.5 miles per hour per second. Hard braking can reduce a driver's ability to respond to other roadway hazards and can result in rear-end crashes if other people driving are not prepared for the hard-breaking event.

The hard-breaking data shows that there are hot-spots of hard breaking near the Sulphur Springs park entry on Nebraska Avenue, along Bird Avenue, and on N. Florida between Waters Avenue and E Bird Street. The hard-breaking locations can be indicative of locations with potential sight distance limitations, or other roadway design elements that do not provide consistent feedback to people driving to alert them to potential hazards in advance of making an evasive maneuver.

The speed data is summarized on **Figure 3** for the daily condition and **Figure 4** for the peak hour condition. The hard-breaking data is summarized on **Figure 5**.

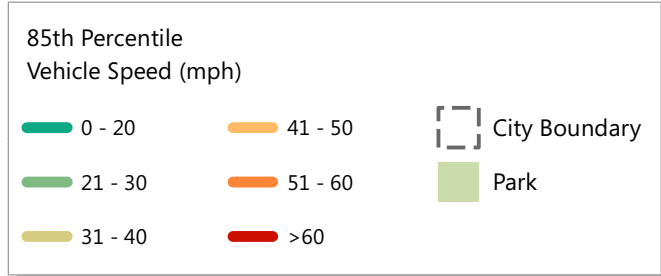
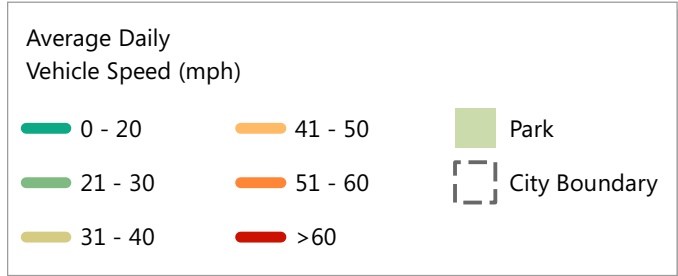
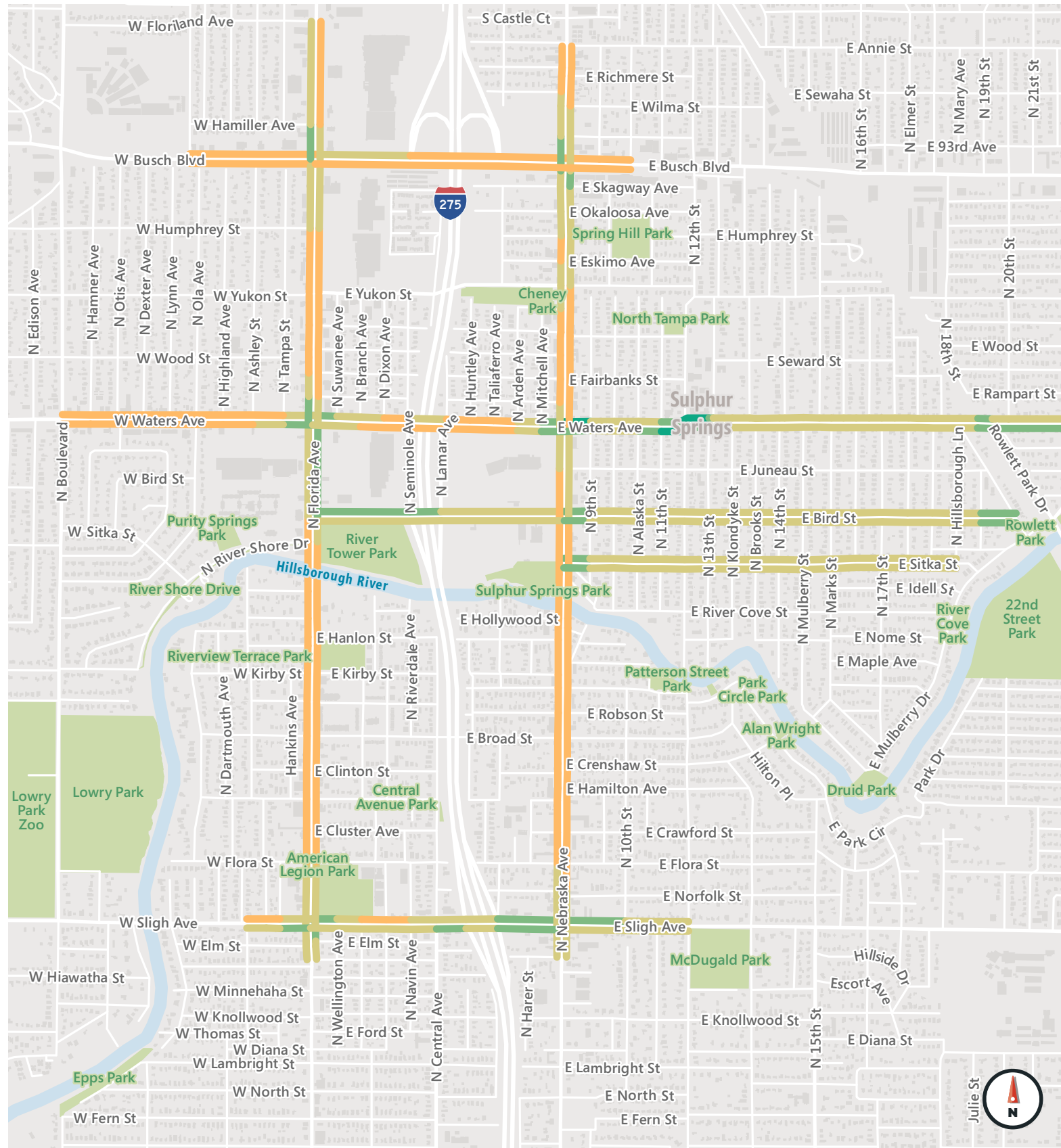
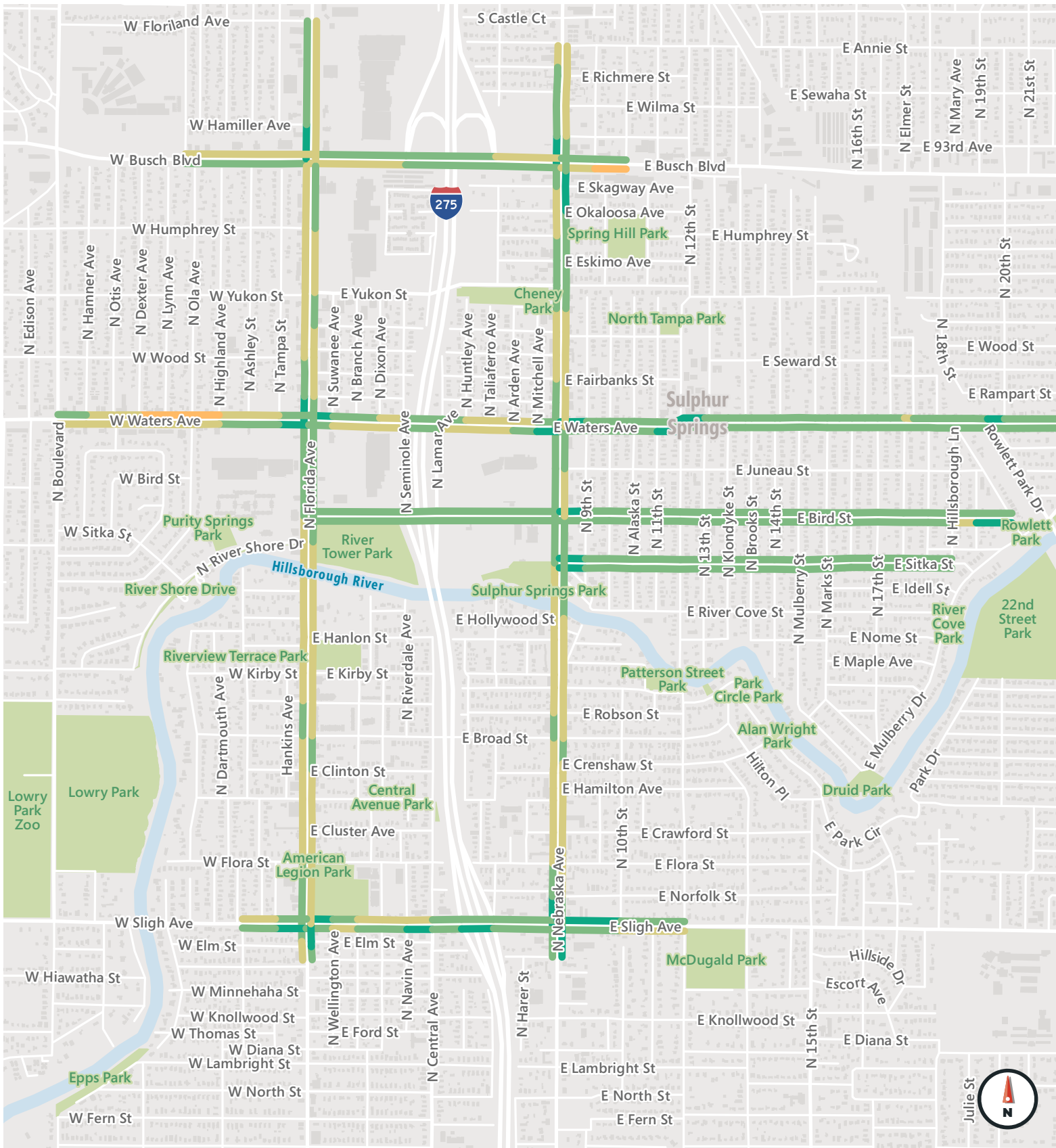


Figure 3
**Sulphur Springs Park
 Vehicle Speed Data**

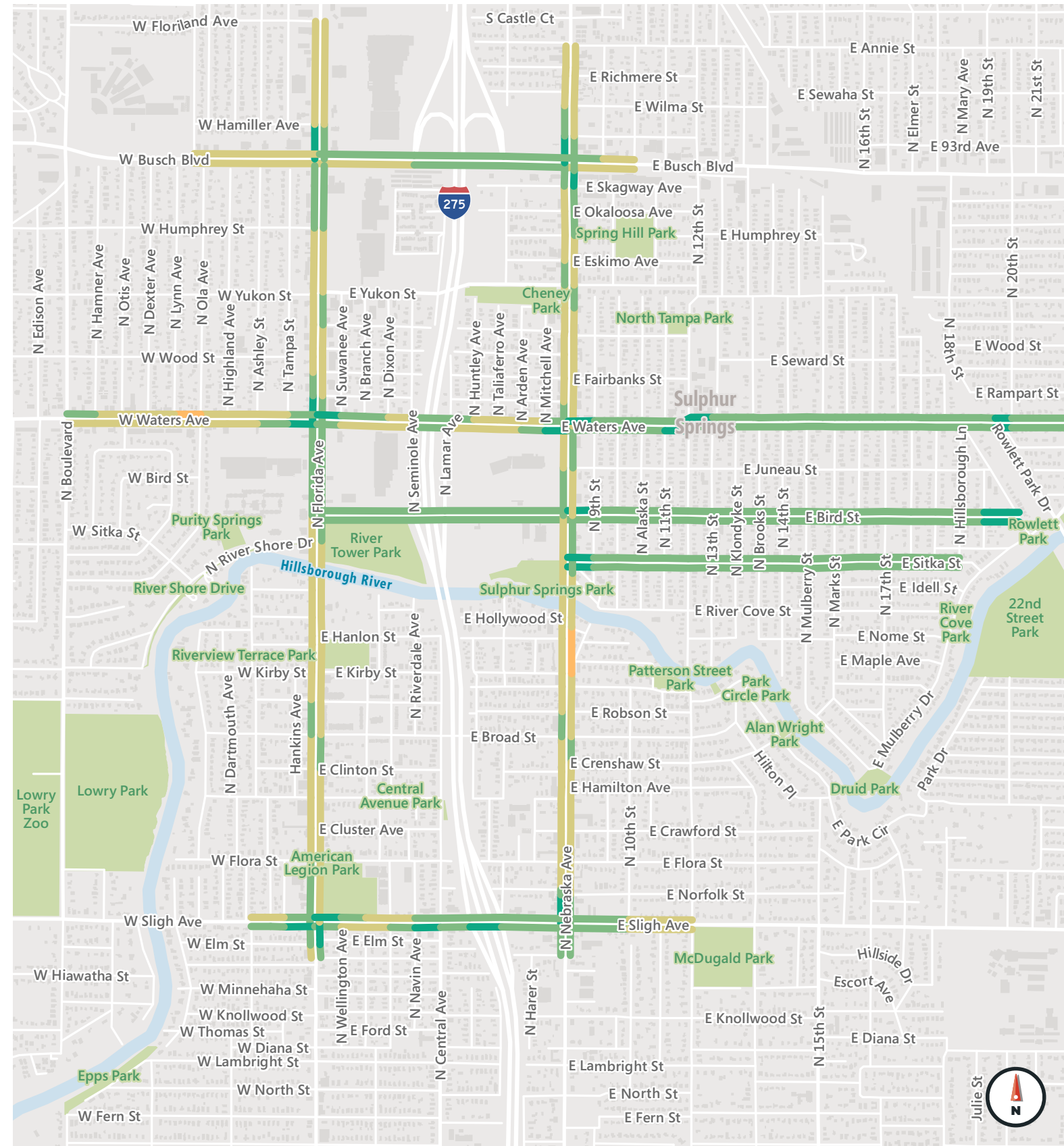
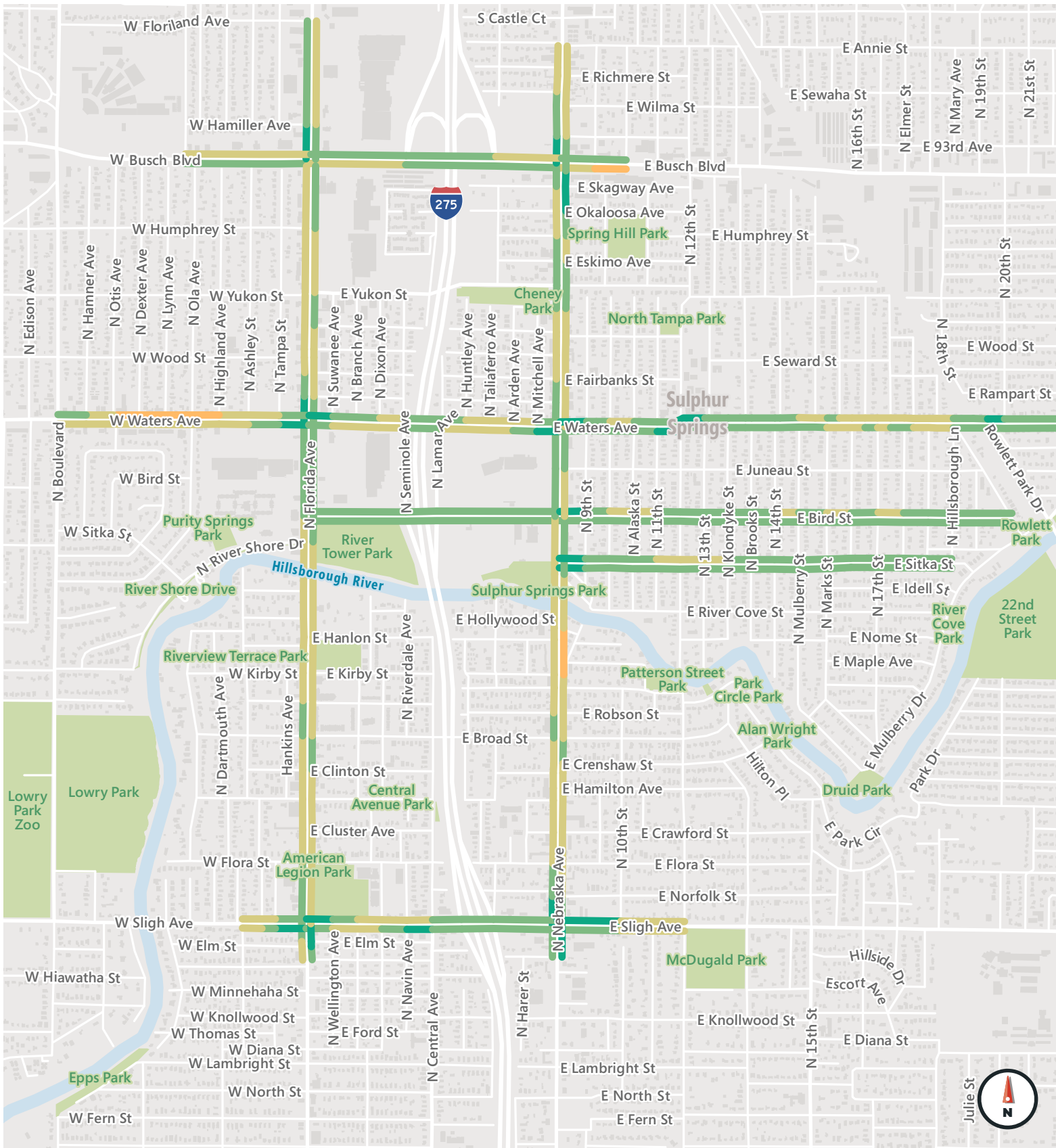
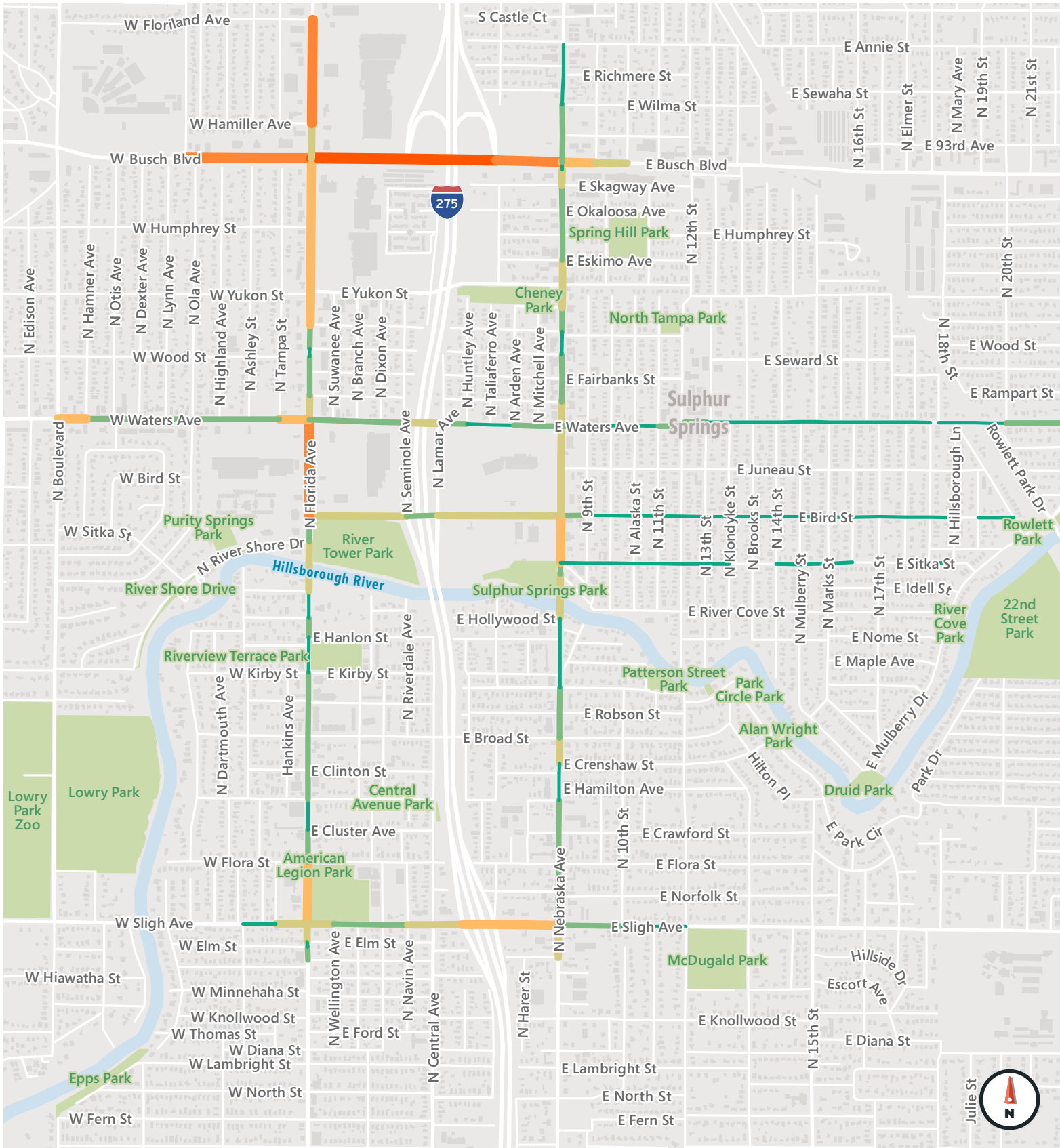


Figure 4
Sulphur Springs Park
AM & PM Peak Vehicle Speed



Number of hard brakes

- | | | |
|---|---|---|
| █ 1 - 20 | █ 126 - 250 | Park |
| █ 21 - 75 | █ 251 - 500 | City Boundary |
| █ 76 - 125 | █ 501 - 966 | |

Figure 5

Sulphur Springs Park Hard Braking



Available traffic count data was reviewed for roadways that provide primary access to Sulphur Springs Park, as summarized in **Table 2** along with the number of travel lanes, roadway classification, speed limit and observed average and 85th percentile speed. On several portions of the street network, the observed average travel speed is less than the posted speed limit, such as on N Florida and N Nebraska avenues. This could be indicative of congested conditions, poor signal progression that might allow for travel at or over the speed limit between traffic signals, with the overall average travel time reduced due to delay at signals, and/or roadway design elements that encourage travel at speed lower than the posted speed limit. This indicates there could be opportunities to reduce the posted speed limit along both the N Florida and Nebraska avenue corridors without appreciably changing the overall travel time for people driving. Any change to the posted speed limit would need to

be made in combination with other roadway enhancements to further reinforce slower travel speeds, and traffic signal timing adjustments that generally maintain overall travel time along the corridor.

The 85th percentile speed of people driving on the residential portions of E Bird Street, Sitka Avenue and E Waters Avenue in line with the posted speed limit, but there are opportunities to incorporate speed management strategies on those streets to better manage travel speeds and reduce the severity of conflicts with vulnerable roadway users. Speeds on these roadways are also higher than is desired on a residential street where there can often be conflicts between people accessing residential driveways, people playing outside, and through vehicle travel.

Table 2: Roadway Volume and Speed Summary

Roadway	Classification	Lanes	AADT	Speed Limit	Average Speed	85 th Percentile Speed	Percent of Daily trips at speeds ≥ 10 miles above speed limit
N Florida Avenue	Arterial	4	15,600	40	26	32	0.05%
E Bird Street (West of N Nebraska Avenue)	Arterial	4	7,400	30	22	30	0.24%
E Bird Street (East of N Nebraska Avenue)	Local	2	N/A	25	25	30	1.66%
N Nebraska Avenue	Arterial	4	21,500	45	25	33	0.01%
Waters Avenue (West of N Nebraska Avenue)	Arterial	4	21,000	45	26	34	0.01%
Waters Avenue (East of N Nebraska Avenue)	Collector	2	21,000	30	23	28	0.09%

Source: Hillsborough TPO, City of Tampa and FDOT. Data representative of 2015 through 2018. Speed data from wejo, representing typical travel behavior in October 2019, as summarized by Fehr & Peers.



The data was also reviewed to assess what percent of daily travel was at least 10 miles per hour in excess of the posted speed limit. Bird Street, east of Nebraska Avenue experiences the most people driving more than 10 miles over the speed limit, with more than 3.5 percent of AM peak hour travel and over 1.5 percent of daily travel at speeds 10 miles per hour or more in excess of the posted speed limit.

Guidance based on existing traffic volumes and vehicle speeds from the [FHWA Bikeway Selection Guide](#) indicates that for streets with daily traffic volumes in excess of 6,000 vehicles per day and a prevailing speed of people driving over 30 miles per hour, a separate bike lane or shared use path is an appropriate bicycle facility. Between 3,000 and 6,000 vehicles per day, and speed of people driving up to 30 miles per hour, a buffered bike lane is recommended. For streets with less than 3,000 vehicles per day and people driving less than 25 miles per hour, a shared lane may be appropriate. This guidance should be considered if new bicycle facilities are identified for the area.

The Hillsborough TPO prepared a [Bicycle Facility Selection Toolkit](#) in 2018 which identifies appropriate bicycle facilities given prevailing travel speeds and volumes, as well as the surrounding land use context. Based on this guidance, separated bike lanes or shared use paths are the most appropriate bicycle facility type on major roadways in the area.



V. Collision Assessment

A collision assessment was conducted for the roadways within a mile radius of the park in the past five years, with a summary of all collisions show in **Table 3**, collisions that resulted in a severe injury shown in **Table 4**, and collisions that resulted in a fatality shown in **Table 5**. The general location of collisions is shown on **Figure 6**. Collisions on specific corridors was summarized in Chapter III.

Over the 5-year period, including 2020 when collisions nationwide saw a decrease under COVID-19 conditions, a total of 4,565 reported collisions occurred within a mile radius of Sulphur Springs Park. Of these, 18 collisions (0.4 percent of total collisions) resulted in a fatality, and an

additional 98 collisions (1.9 percent of collisions) resulted in a severe injury. The number of collisions in the area increased every year between 2016 and 2019. In 2020, the number of collisions decreased by almost 30 percent. However, with fewer people driving during the COVID-19 pandemic, collisions were lower in 2020 nationwide. It is unclear if this decrease is the start of a downward trend with the City of Tampa, the Hillsborough TPO and Florida Department of Transportation placing a focus on transportation safety. The number of collisions resulting in someone being killed or severe injured (KSI collisions) also decreased in 2020, but the 5-year trend for these types of collisions is less consistent.

Table 3: Collision Summary

Year	All Collisions		Motorcycle		Bicyclist		Pedestrian	
	Collisions	% Change	Collisions	% Change	Collisions	% Change	Collisions	% Change
2016	688	-	15	-	24	-	35	-
2017	891	30%	13	-13%	19	-21%	27	-23%
2018	1,067	20%	17	31%	29	53%	29	7%
2019	1,130	6%	20	18%	24	-17%	23	-21%
2020	819	-28%	18	-10%	19	-21%	21	-9%
Total	4,595	-	83	-	115	-	135	-

Source: CDMS, 2021

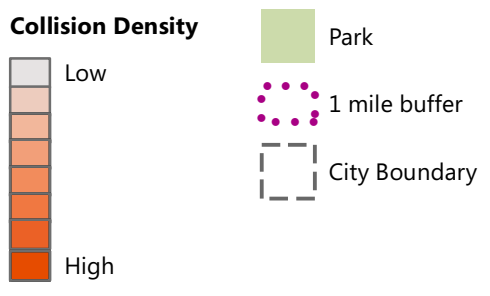
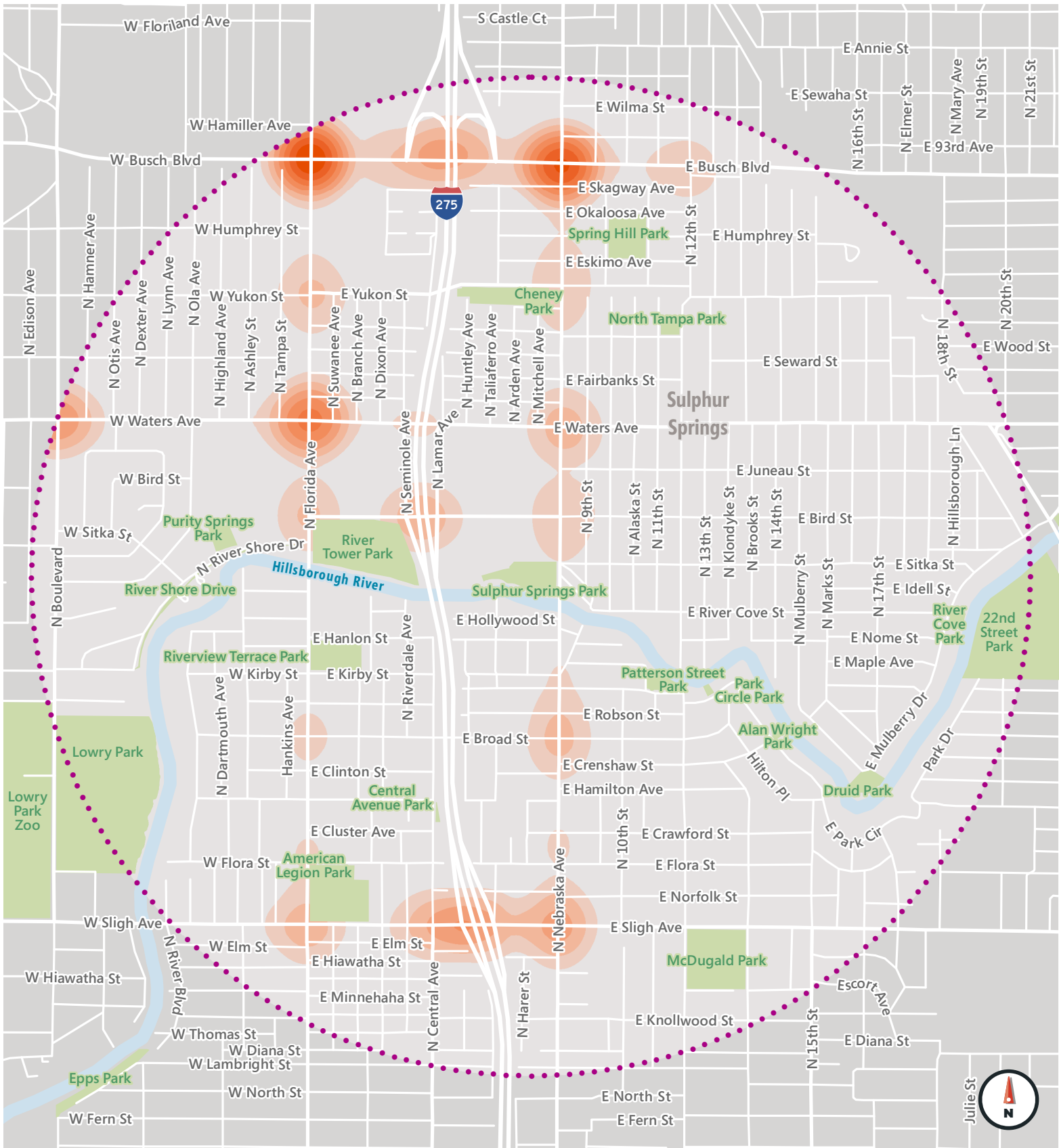


Figure 6
Sulphur Springs Park Collisions



Table 4: Severe Injury Collision Summary

Year	All Travel Modes		Motorcycle		Bicyclist		Pedestrian	
	Collisions	% Change	Collisions	% Change	Collisions	% Change	Collisions	% Change
2016	23	-	5	-	2	-	8	-
2017	26	13%	3	-40%	1	-50%	8	0%
2018	14	-46%	4	33%	2	100%	3	-63%
2019	24	71%	7	75%	1	-50%	5	67%
2020	11	-54%	3	-57%	1	0%	4	-20%
Total	98	-	22	-	7	-	28	-

Source: CDMS, 2021

Table 5: Fatal Collision Summary

Year	All Travel Modes		Motorcycle		Bicyclist		Pedestrian	
	Collisions	% Change	Collisions	% Change	Collisions	% Change	Collisions	% Change
2016	2	-	1	-	0	-	1	-
2017	4	100%	1	0%	0	0%	1	0%
2018	4	0%	1	0%	2	--	2	100%
2019	5	25%	0	-100%	0	-100%	2	0%
2020	3	-40%	1	--	0	0%	2	0%
Total	18	-	4	-	2	-	8	-

Source: CDMS, 2021



Vulnerable users (motorcyclists, bicyclists, and pedestrians) are involved in 7 percent of total collisions, but they are involved in 57 percent of KSI collisions and 78 percent of fatal collisions. Therefore, a focus on safety countermeasures in the area that improve safety outcomes for people walking, riding a bike or driving a motorcycle will be a critical component of improving accessibility to the park for all travel modes.

The time-of-day collisions occur was also reviewed, as summarized in **Table 6**. Vehicle only collisions tend to be more prevalent during the mid-day and evening peak periods. Overall collisions between the hours of 7 PM and 6 AM account for approximately 22 percent of all collisions, but 72 percent of fatal collisions, which predominately affect vulnerable users.

Table 6: Collisions by Time of Day

Time of Day	Total Collisions		KSI Collisions		Fatal Collisions	
	Collisions	%	Collisions	%	Collisions	%
Overnight (7PM-6AM)	1,007	22%	31	32%	13	72%
Morning Peak (6AM-10AM)	880	19%	17	17%	1	6%
Midday (10AM-3PM)	1,269	28%	23	23%	1	6%
Evening Peak (3PM-7PM)	1,439	31%	27	28%	3	17%
Total	4,595	100%	98	100%	18	100%

Source: CDMS, 2021



The types of crashes that are occurring on the roadway system were also reviewed, as different roadway treatments can address different crash patterns (**Table 7**). Angle and rear-end collisions are the most frequent, accounting for 63 percent of collisions. As potential safety countermeasures are identified, crash patterns will be reviewed at specific locations where countermeasures are proposed.

Table 7: Crash Type Summary

Crash Type	All Collisions		KSI Collisions	
	Collisions	%	Collisions	%
Angle	1,153	25%	21	21%
Sideswipe	550	12%	3	3%
Pedestrian	97	2%	21	21%
Rear End	1,761	38%	15	15%
Hit Non-Fixed Object	29	1%	2	2%
U-Turn	29	1%	2	2%
Single Vehicle	28	1%	1	1%
Left Turn	357	8%	14	14%
Head On	124	3%	4	4%
Hit Fixed Object	272	6%	6	6%
Bike	47	1%	2	2%
Run Off Road	4	0%	0	0%
Right Turn	45	1%	0	0%
Unknown	99	2%	7	7%
Total	4,595	100%	104	100%

Source: CDMS, 2021

Based on the collision reports, the top 3 contributing actions to a collision in the study area are:

- Failed to Yield Right-of-Way (21 percent)
- Followed too Closely (19 percent)
- Operated motor vehicle in Careless or Negligent Manner (12 percent)

As the focus of countermeasures will be on those that address potential conflicts with people driving and vulnerable roadway users (people walking, people bicycling and people riding a motorcycle), the specific locations of collisions that resulted in a severe injury or fatality for a vulnerable roadway user were also reviewed, with most occurring on Florida Avenue, Nebraska Avenue, Busch Boulevard, and Waters Avenue. No collisions were reported within the neighborhoods to the east and south of the park.

The age (**Table 8**) and sex (**Table 9**) of people involved in collisions in the area was also reviewed and compared to the area and City demographics to see if people in a specific age group or sex are disproportionately affected by collisions. Overall, people aged between 25 and 44 are overrepresented as both people driving and non-motorists in collision. Non-motorists over the age of 75 are slightly overrepresented in collisions, as they comprise approximately 3 percent of the area population and 4 percent of non-motorists in collisions. This could indicate that traffic signal timings do not provide sufficient time for some people in the community to cross the street.

While a collision is less likely to involve people over 60 and under 15 as both a driver and a non-motorist, this may be due to a lack of continuous walking and bicycling facilities that suppress demand, rather than a lack of desire to walk or bicycle. Males are significantly more



likely to be involved in a collision as both a driver and a non-motorist than females.

Table 8: Age of People Involved in Collisions

Age	Drivers		Non-Motorists		Total		Sulphur Springs Park Area		Tampa, Florida	
	#	%	#	%	#	%	#	%	#	%
<15	15	0%	25	11%	40	0%	4,551	17%	69,552	18%
15-24	1,353	17%	42	19%	1,395	17%	3,690	14%	54,867	14%
25-44	3,604	46%	79	35%	3,683	46%	7,657	29%	118,153	30%
45-59	1,828	23%	43	19%	1,871	23%	5,945	22%	76,423	20%
60-75	892	11%	25	11%	917	11%	3,852	15%	49,480	13%
75+	175	2%	9	4%	184	2%	847	3%	19,441	5%
Total	7,867	100%	223	100%	8,090	100%	26,542	100%	387,916	100%

Source: CDMS, 2021

Table 9: Sex of People Involved in Collisions

Category	Male	Female
Drivers	58%	42%
Non-Motorist	74%	26%
Sulphur Springs Park Area	51%	49%
Tampa	49%	51%

Source: CDMS, 2021



VI. Key Findings

Based on the review of the existing conditions assessment for Sulphur Springs Park, we identified several transportation themes for consideration in the application of safety countermeasures with a focus on speed management:

- Most park users originate within one mile of the park, such that countermeasures should focus on a one-mile radius
- Inconsistent and deficient sidewalk system may deter some people from walking to the park
- No bicycle facilities connect from the neighborhoods to the park, and sidewalks are not of sufficient width to accommodate many people simultaneously walking, using strollers and bicycling
- Volume of people driving on E Brid Street around I-275 does not appear to warrant the current cross-section, and opportunities to remove vehicle travel lanes and replace with bicycle and pedestrian facilities should be explored
- There are potential opportunities to improve the intersection of N Nebraska Avenue at Sitka Street to decrease pedestrian crossing distances and better connect the planned ARTery Trail to the Sulphur Springs Park Trail
- Long walking distances between signalized crossings and long cycle lengths can result in significant wait times for pedestrians can deter walking in the area, and lead to risky street crossing behavior
- Collision profiles indicate that people walking, bicycling and motorcycling are more likely to be killed or severely injured on

roadway surrounding the park, and safety counter measures should focus on these modes

- Men and people aged 25-44 are disproportionately affected by collisions, with non-motorists over the age of 75 are also disproportionately affected by collisions
- Average travel speeds on major roadways surrounding the park indicate that there could be an opportunity to decrease the posted speed limit for people driving to less than 40 miles per hour

During the public engagement process, feedback related to the following should be sought:

- What are drainage issues that affect travel during and after periods of rain?
- What lighting issues affect your travel?
- What do you think are the transportation challenges in your neighborhood, specially related to accessing the park and other public facilities in the area?
- Where do you feel unsafe walking or bicycling and why?
- Where do you think street crossings should be added?
- What transportation improvements would you like to see in your neighborhood and connecting to Sulphur Springs Park?
- Would you or your family walk, bike and take transit more if facilities were improved?