December 2022

Soulard Traffic Calming Study

CBB TRANSPORTATION ENGINEERS+PLANNERS

CITY OF ST. LOUIS
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Executive Summary

As transportation needs change and evolve over time, the desire to live in walkable and bikeable neighborhoods continues to grow. To that end, the City of St. Louis works every day to enhance the safety of pedestrians and bicyclist within all its neighborhoods. The purpose of this traffic study is to enhance safety within the neighborhood of Soulard. The goal to enhance safety means that the vision of Soulard is one that meets the transportation needs for users of all ages and abilities, providing mobility for people walking, biking, using public transit and driving. Additionally, Soulard has many single-family residential homes that front the street, and a safer corridor will enhance the livability for residents in Soulard, as well as for adjacent homes surrounding the area.

This document details the Soulard Traffic Calming Study and the recommended improvements for safety enhancements along the street. The traffic calming study engaged multiple City departments as well as solicited the input from local residents, businesses, and organizations during the traffic calming process. City departments engaged in this effort include:

- City of St. Louis Board of Public Service
- City of St. Louis Street Department
- City of St. Louis Planning and Urban Design
- Ward 7 Alderman Jack Coatar
- Soulard SBD & CID

After initial concerns were identified, transportation data was collected to review those concerns and verify potential issues within the corridor. Based on the data of the existing conditions, initial recommendations were made and reviewed by the City of St. Louis and consulting team. These recommendations were discussed and refined, and then brought to the public at a meeting in June 2022. Residents reviewed the recommendations and provided input, as well as got the chance to vote on some aesthetic treatments that may be feasible for implementation. This report outlines traffic calming recommendations for Soulard, and includes a combination of pinned on bumpouts, speed humps, high visibility crosswalks, and the opportunity for mobility hubs. This report outlines the study process and recommended improvements.

It should be noted that implementation and final placement of all traffic calming recommendations is subject to available funding for design and construction, as well as approval by the elected officials, residents and the City of St. Louis staff.

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Introduction & Study Process

The City of St. Louis was an early adopter of the idea of better designing our roadways for users of all ages and abilities.

An early adopter of Complete Streets (original ordinance in 2010, and bolstered in 2015), St. Louis has focused efforts on enhancing pedestrian safety and building out better protected bike facilities. Designated a Pedestrian Focus City by the Federal Highway Administration, the City has a pedestrian safety action plan.

Additionally, the adoption of a citywide traffic calming policy in 2016 has allowed for more implementation of vertical traffic calming tools on local roads.

Traffic Calming: the deliberate slowing of motor vehicles to enhance safety

INTRODUCTION

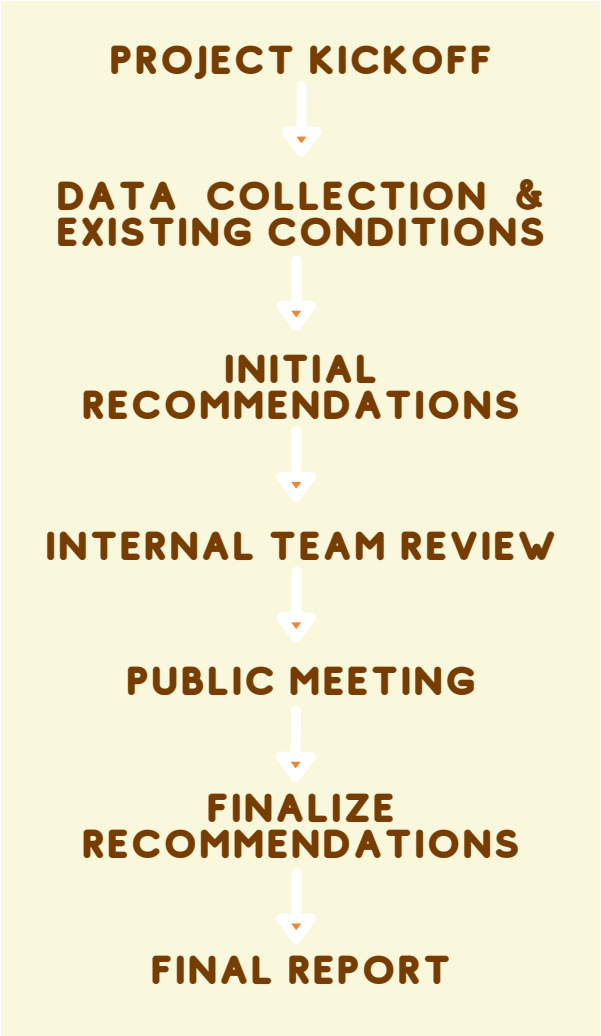
Traffic calming is defined as the deliberate slowing of motor vehicles on roadways using both speed management and volume management strategies. In light of changing transportation trends in recent years, and growing concerns over climate impacts of transportation systems, the need to more safely design streets for people walking, biking and using public transportation has grown. Thus, traffic calming and the interest in implementing traffic calming has grown.

The purpose of this traffic study is to enhance safety in the Soulard Neighborhood. The limits of the study are 9th Street (Carroll Street to Sidney Street), 12th Street (Geyer Ave to Sidney Street), Geyer Ave (7th Street to 12th Street), Russell Blvd (7th Street to Gravois Ave), and Lafayette Ave (7th Street to 10th Street). The study limits include neighborhood wide recommendations. The Soulard Neighborhood is currently an area of focus within the 7th ward by neighbors and the Alderman, Jack Coatar, due to concerns of high speeds travelling along the roadway, as well as high pedestrian usage. The purpose of the Soulard Traffic Calming Study is to develop traffic calming recommendations throughout the neighborhood.

This document provides a detailed summary of the traffic study process and recommendations for implementation. It should be noted that implementation and final placement of all traffic calming recommendations is subject to available funding, as well as approval by the elected officials, residents and the City of St. Louis staff.

Sections are outlined and include:

- The study process, including data collection, public engagement, recommendations, and an implementation plan.
- Existing conditions information, including functional classification information, traffic speeds, vehicular counts, and bike counts.
- Issues identified that were both confirmed with data, or common resident complaints, and;
- Recommendations for the neighborhood of Soulard.



An appendix outlining the following materials is attached to this document and includes:

- Traffic Calming Recommendations plans sheets
- Traffic Calming Recommendations cost estimates
- Traffic Calming Recommendations strip map
- Existing Conditions Memo
- Public Meeting Material
- Traffic Calming Toolbox

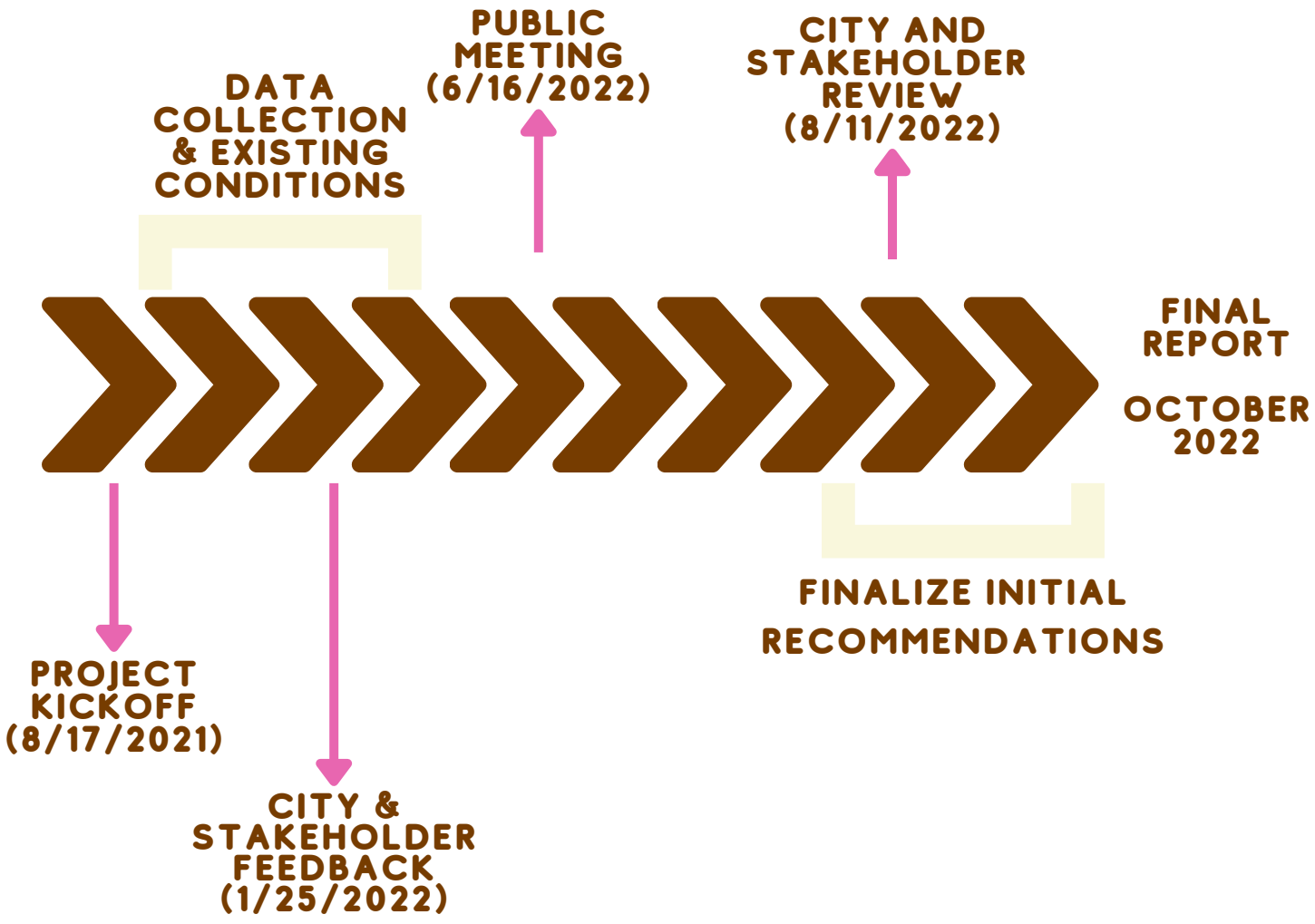
This study outlines projects for Soulard to slow down motorists and enhance safety for all users travelling throughout the neighborhood. These recommendations are based on not only input from the neighborhood, but local current data and industry leading transportation research on the effectiveness of traffic calming. The methods are available in long term and more costly solutions, but also in more lean solutions to be implemented right away. We know this plan will enhance the livability for residents throughout the Soulard neighborhood and within adjacent neighborhoods.

STUDY PROCESS

The Soulard Traffic Calming Study was a two year project that involved thorough data collection, public engagement, development of alternatives and alternatives refinement. This section outlines the study process for the project.

TIMELINE

This year long project began in August 2021. The initial part of the project focused on identifying problems and needs in the corridor from City staff, Alderman Jack Coatar, and pre-identified key stakeholders serving on a neighborhood transportation safety committee. Following this input and being equipped with a better understanding of issues and opportunities, the next step was data collection.



DATA COLLECTION

Following the initial kickoff meeting and a field investigation, a data collection plan was developed. This plan was based on what emerged as issues and priorities for the neighborhood, as well as possible problem locations identified by the expertise of the consultant team. The data collection plan involved collecting motorist speeds at 20 intersections and turning movement counts at 5 intersection locations. Within these counts we were also able to capture bike and pedestrian counts at intersections within the neighborhood. The 10 motorist speed intersections and 5 motorist count locations are listed in the following tables.

Locations were identified and refined by project stakeholders and the public based on feedback during meetings. Information was provided during meetings including but not limited to, 85th percentile speeds, crash locations, and general feedback from residents and stakeholders throughout the progression of the project.

MOTORIST SPEED INTERSECTIONS	
12th (Victor & Sidney)	9th (Soulard & Emmett)
12th (Ann & Shanandoah)	Russel (11th & Menard)
12th (Russell & Allen)	Russell (9th & 7th)
9th (Victor & Barton)	Geyer (10th & 9th)
9th (Allen & Russell)	Lafayette (9th & 8th)

MOTORIST COUNT LOCATIONS	
Russell & 7th	Russell & 12th
9th & Geyer	7th & Lafayette
7th & Sidney	

In addition to this traffic data, the team also analyzed the roadway functional classification, City of St. Louis snowplow routes, public transportation, and walking and biking facilities.


Soulard Traffic
Calming Study Area

INITIAL RECOMMENDATIONS

Following the data collection, CBB identified issues and developed initial recommendations for traffic calming strategies in the Soulard neighborhood. These recommendations included a neighborhood wide traffic calming plan of bumpouts, speed humps, and high visibility crosswalks. Concepts were drawn for the entire neighborhood of Soulard and reviewed internally with the City of St. Louis. Following revisions from City staff, concepts were ready to be shared with the public.

PUBLIC ENGAGEMENT

The project public meeting was held on June 16th, 2022, from 5 – 7pm at South Broadway Athletic Club. The intent of this meeting was to share information gathered during the study process, as well as get feedback on the initial recommendations for traffic calming. The meeting consisted of a formal presentation as well as open house style dialogue using informational boards and maps. Residents provided comments on sticky notes and completed a visual preference survey for their preferred aesthetic treatments of the recommended traffic calming options. Following the public meeting, the presentation and boards were made available online and broadcast to the neighborhood. Public comment was taken through July 15th, 2022, for incorporation into this study.

FINAL RECOMMENDATIONS

Following the public meeting and the close of the public comment period, initial recommendations were refined, and final recommendations made with input from the City of St. Louis. Final concept drawings were completed for the neighborhood, as well as cost estimates for the recommended treatments. These full documents are included in the study appendix. It should be noted that implementation and final placement of all traffic calming recommendations is subject to available funding, as well as approval by the elected officials, residents and the City of St. Louis staff.

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Existing Conditions & Data Collection

Traffic calming is defined as the practice of deliberately slowing motor vehicles on roadways using both speed management and volume management strategies. For the purposes of this study, as speed is a major concern from adjacent residents, speed management strategies will be the most considered options. A more comprehensive traffic calming toolbox is included in the appendix for consideration of any additional options in the future.

Traffic Calming with a focus on speed management strategies

EXISTING CONDITIONS

As a basis for this study, CBB analyzed existing conditions within the Soulard neighborhood. First, we looked at the functional classification throughout Soulard, as well as street network connectivity. We did a site investigation walking through the neighborhood to examine motorist behavior and field check existing conditions, such as posted speeds. Next, we looked at multimodal infrastructure such as public transit access, and spaces for people walking and biking. We also collected transportation usage data to better understand existing transportation conditions within the neighborhood, including speeds at 20 locations and turning movement counts at 5 intersection locations.

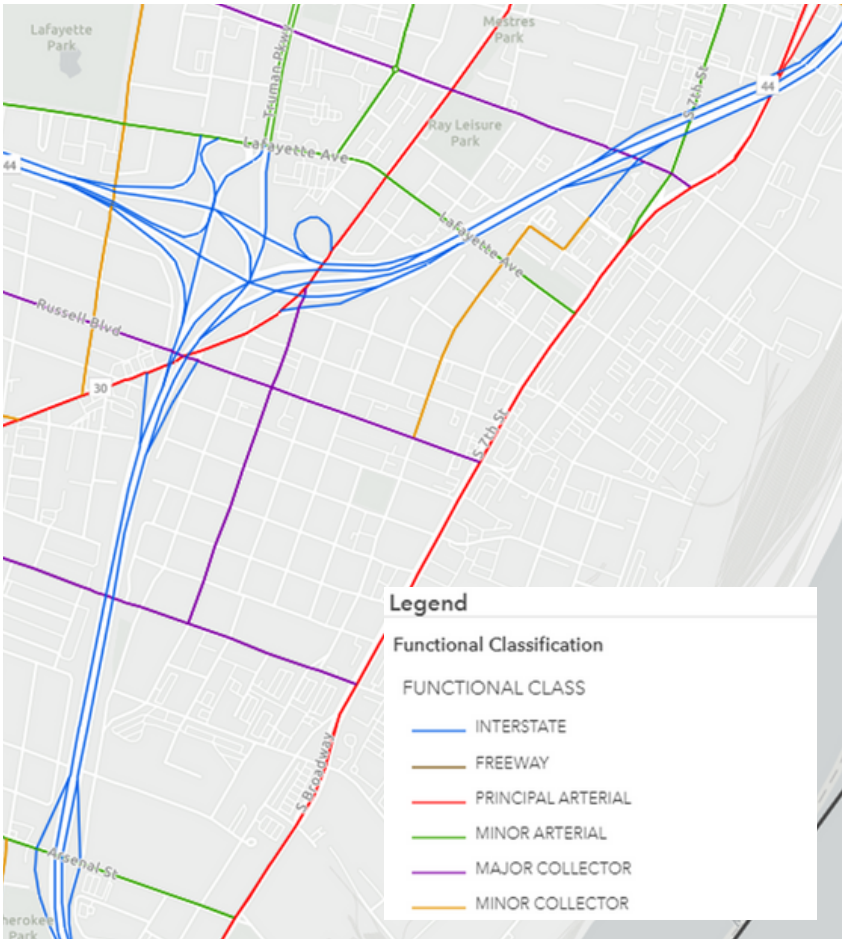
The priority focus corridors consist of:

- 9th Street corridor from Carroll Street (on the north) to Sidney Street (on the south)
- 12th Street corridor from Geyer Avenue (on the north) to Sidney Street (on the south)
- Geyer Avenue corridor from 7th Street (on the east) to 12th Street (on the west)
- Russell Avenue corridor from 7th Street (on the east) to Gravois (on the west)
- Lafayette Avenue corridor from 7th Street (on the east) to 10th Street (on the west)

A map of the priority focus corridors is featured on the following page with the corridors in red.

FUNCTIONAL CLASSIFICATION

For the purposes of transportation planning, metropolitan planning organizations maintain a database of roadway functional classification. The roadway functional classification system defines the role that each roadway plays in serving transportation needs within an urban area.



Roadways that are meant to move a lot of vehicular traffic with limited access on and off the roadways are **interstates and arterial roads.**

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Priority Focus Corridor Functional Classifications	
9th Street (Carroll Street to Russell Ave)	Minor Collector
9th Street (Russell Ave to Sidney Street)	Local Road
12th Street	Major Collector
Geyer Ave	Local Road
Russell Boulevard	Major Collector
Lafayette Ave	Minor Arterial

FUNCTIONAL CLASSIFICATION (Continued)

According to the Federal Highway Administration, 'collectors serve to gather traffic from local roads and funneling them to the arterial network'. In an urban setting, as is the case with Soulard, minor collectors provide land access and traffic circulation in lower density areas usually over a distance of less than three-quarters of a mile. Major collectors provide land access and traffic circulation in higher density areas usually over a distance of greater than three-quarters of a mile. Local roads 'are not intended for use in long distance travel, except at the orgin or destination end of the trip'. Minor arterials 'provide service for trips of moderate length, and serve smaller areas than principal arterials, offering connectivity into the higher arterial system'. In an urban setting, as is the case with St. Louis, minor arterials provide intra-community continuity and are likely to carry local bus traffic.

Other local roads include:

- Soulard Street,
- Allen Ave,
- Ann Ave,
- Victor Street,
- 13th Street,
- 11th Street,
- Shenandoah Ave,
- Lami Street,
- Barton Street,.
- Menard Street,
- 10th Street,
- 9th Street and
- 8th Street

The priority focus corridors, listed previously, intersect with these local roads. The image on the previous page depicts the functional classification map of the study area.

SOULARD DATA COLLECTION

SPEEDS

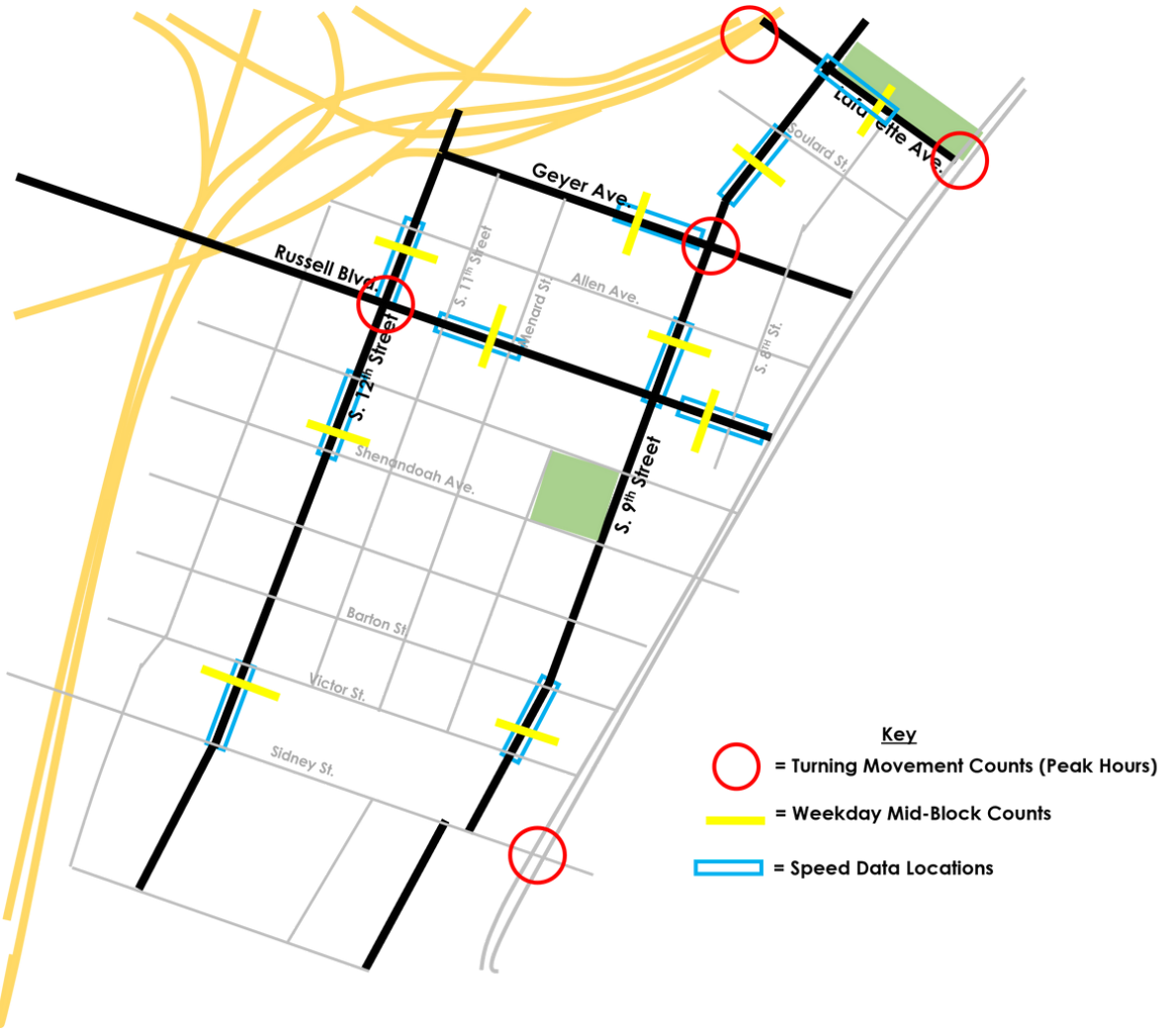
To better understand existing vehicular traffic conditions in Soulard, speed data was collected at ten (10) locations agreed upon with City Staff. These ten locations are:

- 12th (Victor & Sidney),
- 12th (Ann & Shanandoah),
- 12th (Russell & Allen),
- 9th (Victor & Barton),
- 9th (Allen & Russell),
- 9th (Soulard & Emmett),
- Russel (11th & Menard),
- Russell (9th & 7th),
- Geyer (10th & 9th),
- Lafayette (9th & 8th).

TURNING MOVEMENT COUNTS

To better understand existing vehicular traffic conditions in Soulard, turning movement data was collected at six (6) locations agreed upon with City Staff. The turning movement counts also indicate the percentage of vehicle type by size (single occupancy vehicles and large trucks, as well as people walking and biking).

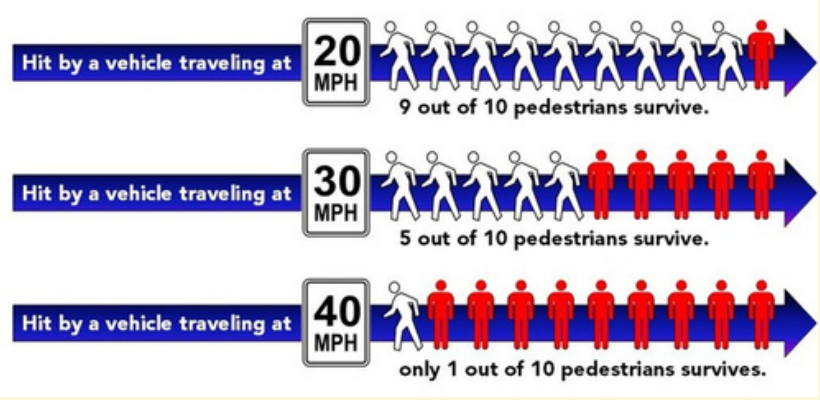
The map below indicates the speed count and turning movement locations.



The posted speed throughout the study area is 30 mph. The table below breaks down the 85th percentile speed (the speed at which 85% of motorists will travel under) as well as the percentage of motorists travelling over 30mph, and the percentage of motorists travelling over 40 mph. Speed is the number 1 determining factor in seriousness or lethality of a crash, and even 5 mph can make a big impact when a person walking is hit by a person driving.

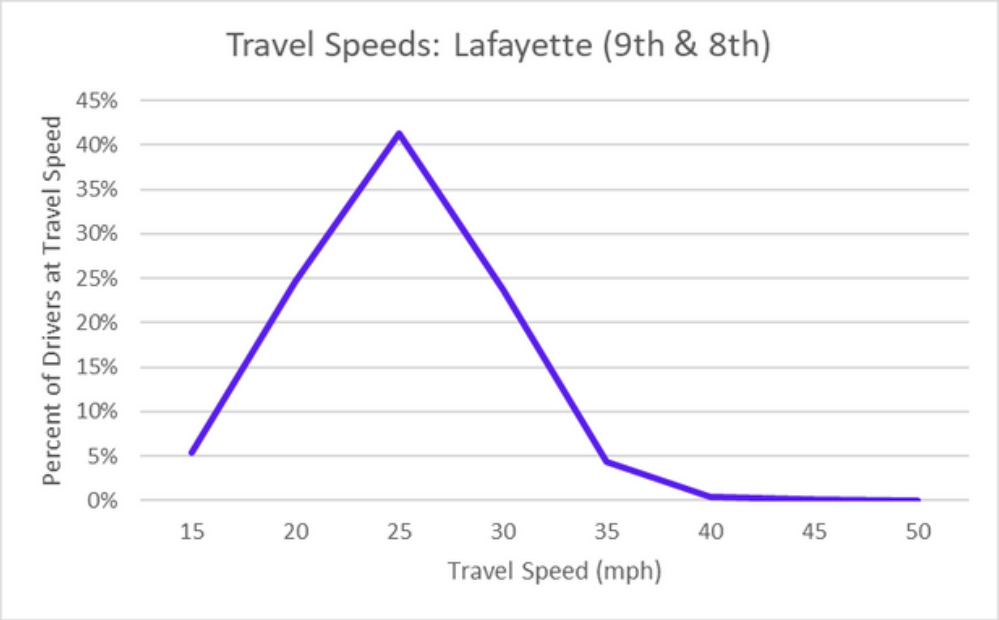
A breakdown of each location follows.

Roadway Segment	Posted Speed Limit (mph)	Daily 85th Percentile Travel Speed (mph)	% of Vehicles Exceeding 30-40 mph
12th Street Between Victor Street and Sidney Street	30 mph	30 mph	10%-15% traveling over 30 mph 1am-5am
12th Street Between Ann Ave and Shenandoah Ave	30 mph	30 mph	No excessive speeds
12th Street Between Russell Blvd and Allen Ave	30 mph	33 mph	10%-35% traveling over 35 mph10pm-5am
9th Street Between Victor Street and Barton Street	30 mph	27 mph	No excessive speeds
9th Street Between Allen Ave and Russell Blvd	30 mph	27 mph	No excessive speeds
9th Street Between Soulard Street and Emmett Street	30 mph	30 mph	No excessive speeds
Russell Blvd Between 11th Street and Menard Street	30 mph	35 mph	20%-30% traveling over 40 mph 2am-5am
Russell Blvd Between 9th Street and 7th Street	30 mph	37 mph	20%-30% traveling over 40 mph 2am-5am
Geyer Ave Between 10th Street and 9th Street	25 mph	25 mph	No excessive speeds
Lafayette Ave Between 9th Street and 8th Street	25 mph	33 mph	10%-70% traveling over 30 mph 12am-8am



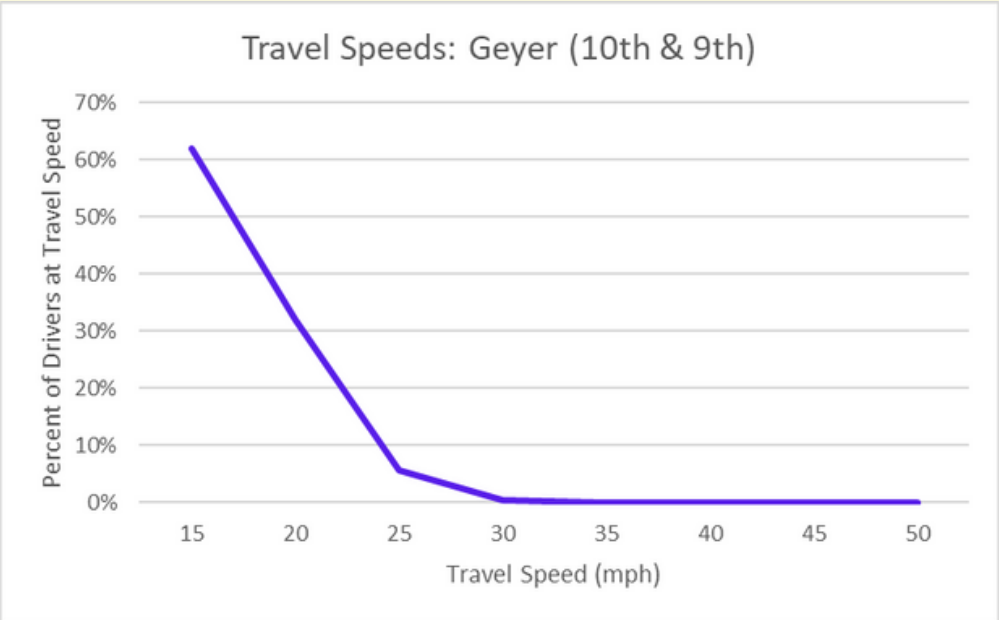
Lafayette Corridor

The posted speed at this location is 30mph. The 85th percentile speed is over the posted speed, 33 mph, and 10%-70% of the travelling motorists exceed 30mph from 12am-8am. The main problems at this location include excessive speeders (as indicated by the graph in the below exhibit), as well as poor motorist behavior in the late evening and early morning.



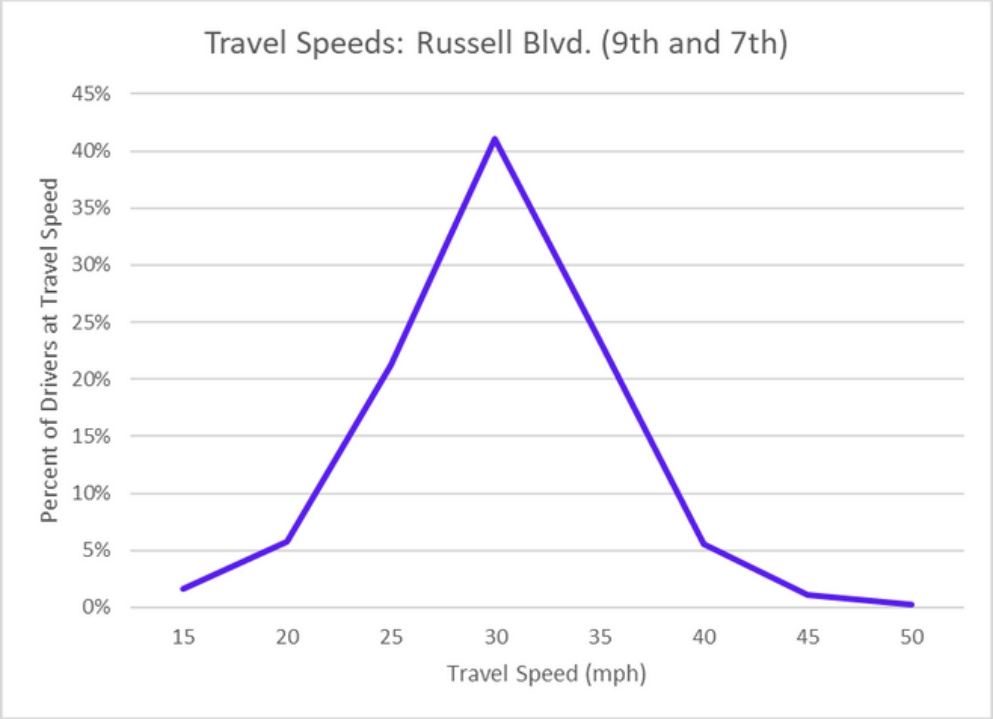
Geyer Corridor

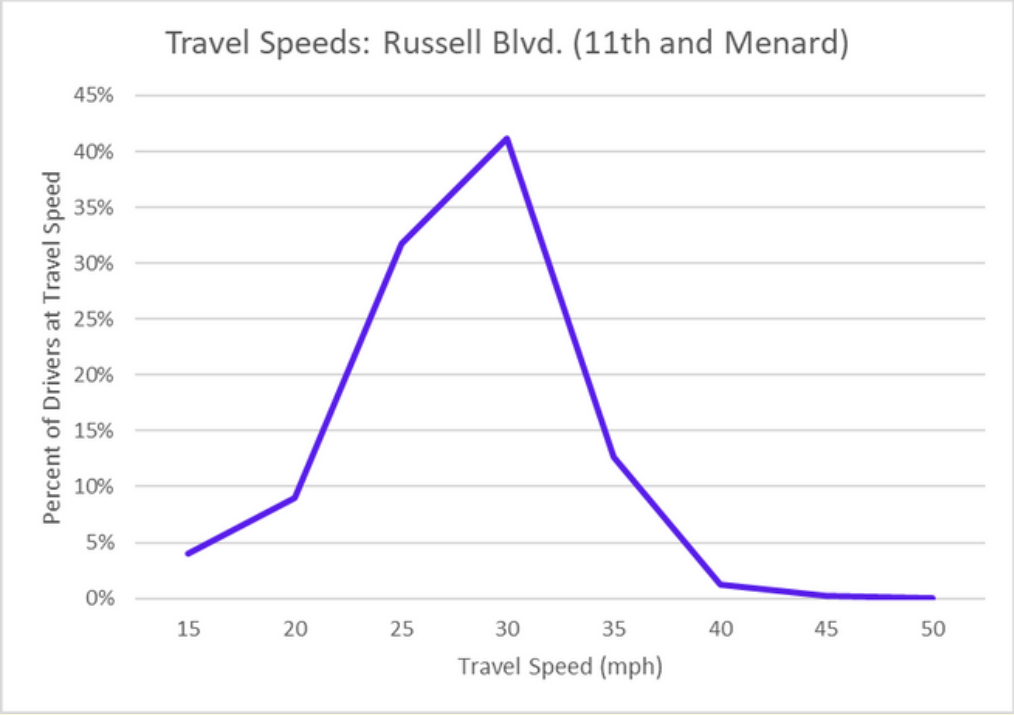
The posted speed at this location is 25mph. The 85th percentile speed is at the posted speed, 25 mph, and 2% of the travelling motorists exceed 30mph. This location never experiences over 5% of motorists travelling over 30mph as indicated by the graph in the image below.



Russell Corridor

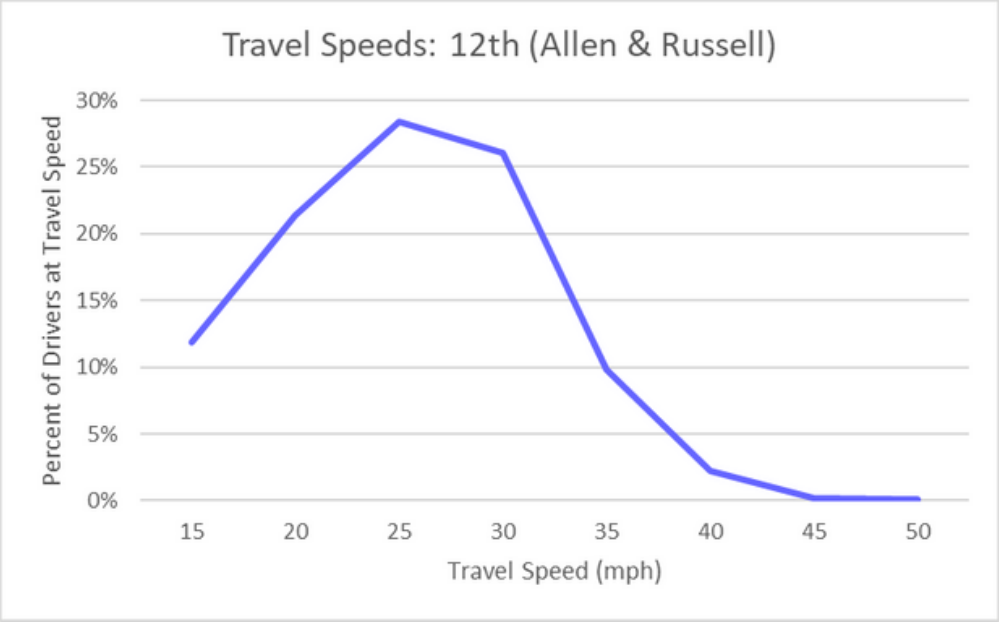
The posted speed along this corridor is 30mph. The 85th percentile speed is over the posted speed, 35mph (at 11th and Menard) and 37mph (at 9th and 8th). The main problems at this location include excessive speeders (as indicated by the graph in the below exhibit), as well as poor motorist behavior in the late evening and early morning.

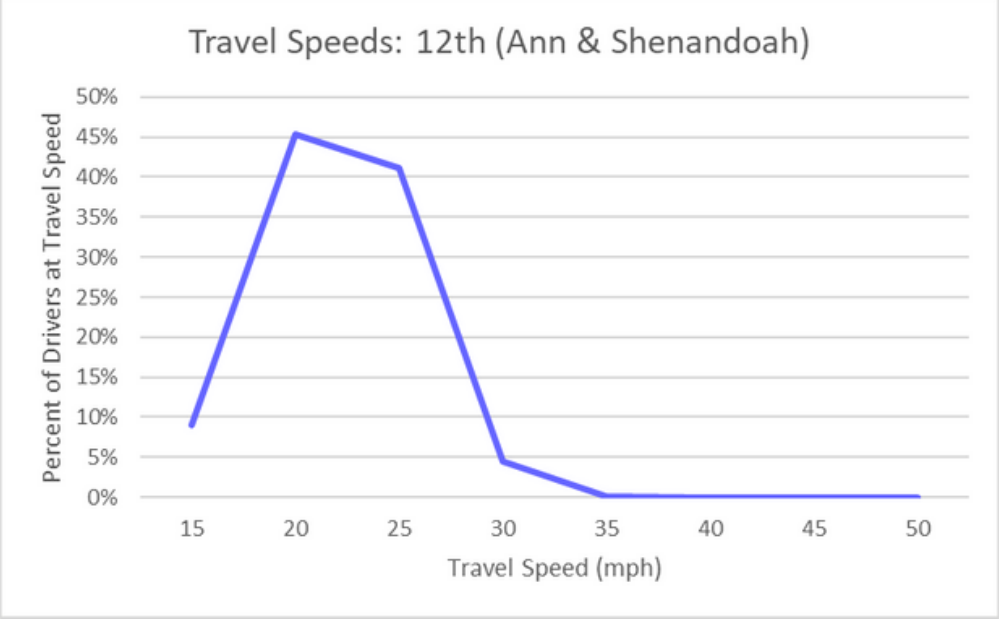


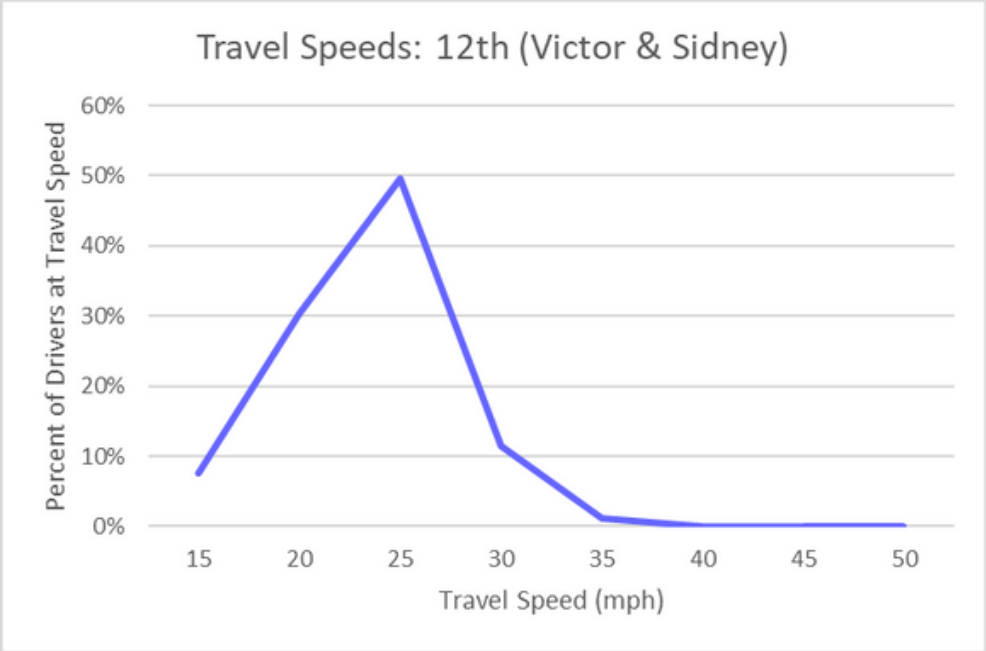


12th Street Corridor

The posted speed at this location is 30mph. The 85th percentile speed is generally around or over the posted speed, 33mph (at Allen and Russell), 30mph (at Ann and Shenandoah), and 30mph (at Victor and Sidney). The main problems at this location include excessive speeders (as indicated by the graph in the below exhibit), as well as poor motorist behavior in the late evening and early morning.

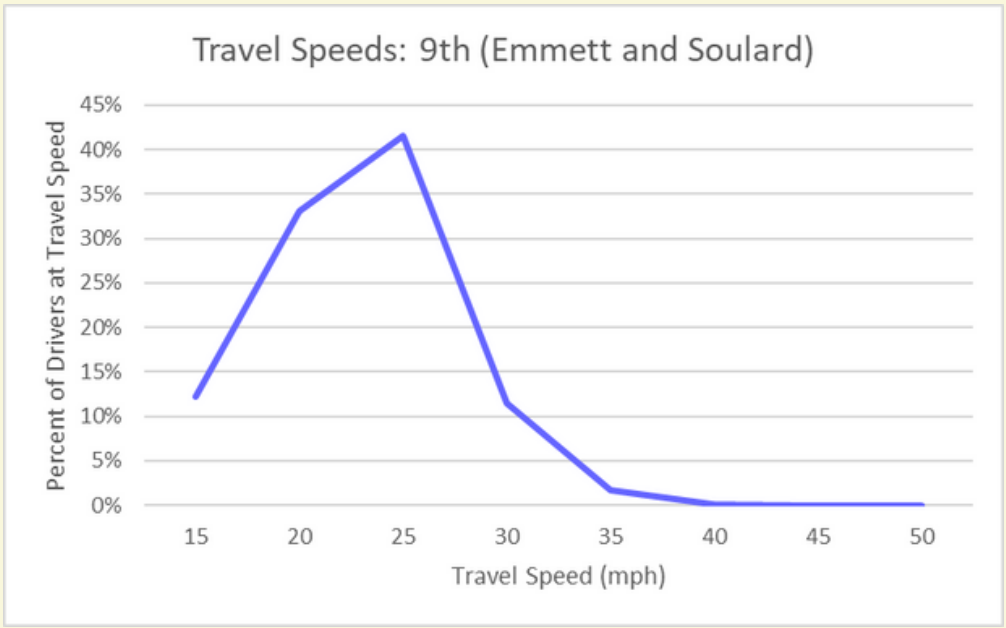


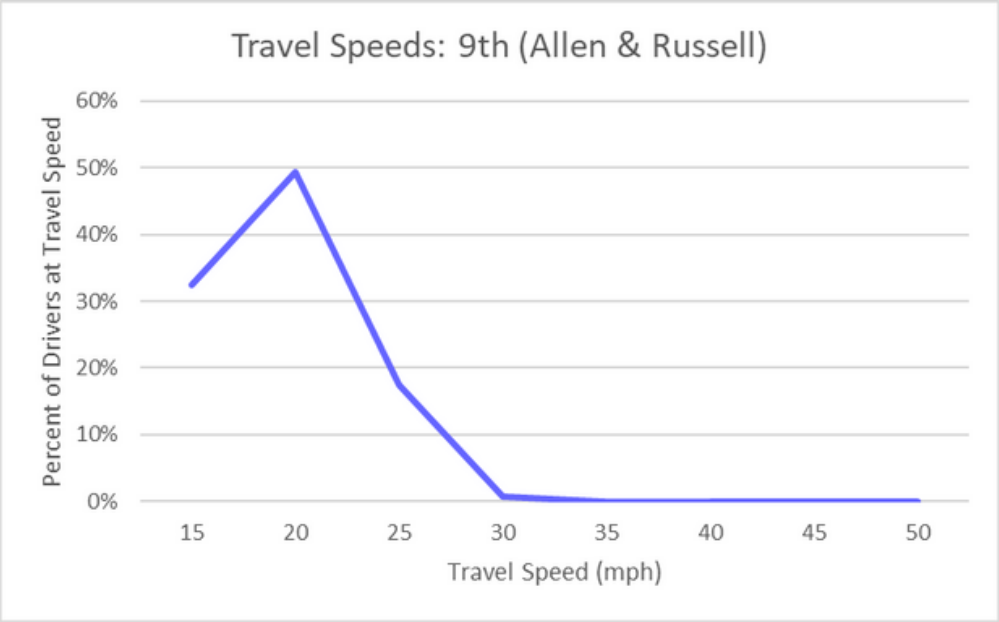


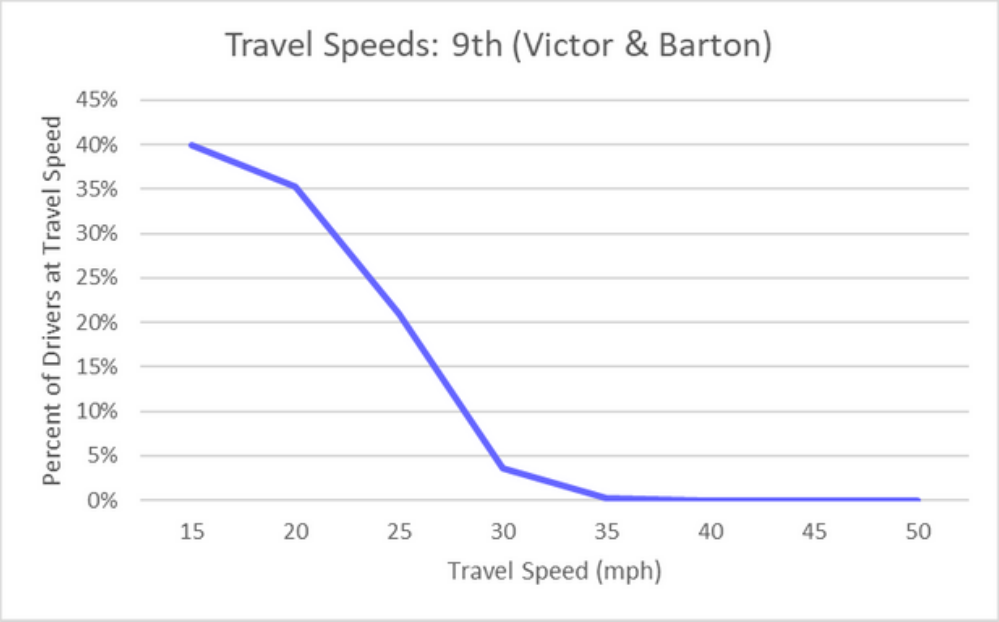


9th Street Corridor

The posted speed at this location is 30mph. The 85th percentile speed is generally around or under the posted speed, 30mph (at Emmett and Soulard), 27mph (at Allen and Russell), and 27mph (at Victor and Barton). There are no excessive speeds over night.



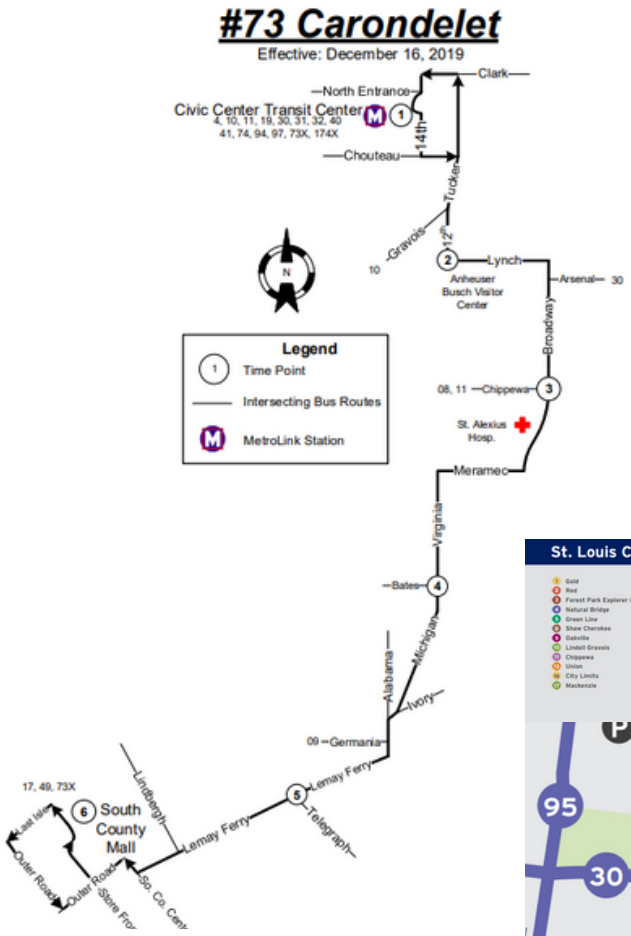

Travel Speeds: 9th (Allen & Russell)
Percent of Drivers at Travel Speed
60%
50%
40%
30%
20%
10%
0%
15
20
25
30
35
40
45
50
Travel Speed (mph)


Travel Speeds: 9th (Victor & Barton)
Percent of Drivers at Travel Speed
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
15
20
25
30
35
40
45
50
Travel Speed (mph)

PUBLIC TRANSPORTATION

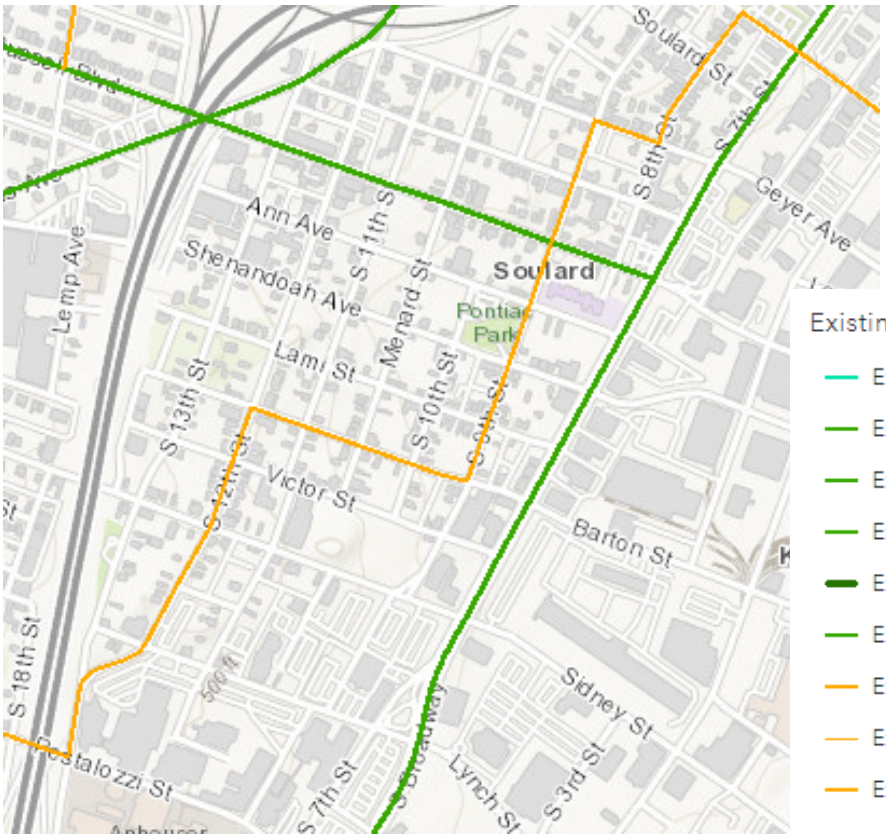
The neighborhood is serviced by multiple MetroBus lines. The 30 Arsenal runs along the eastern perimeter of the study area along 7th Street. Key stops of this route within the study corridor include the 7th Street and Lafayette Ave intersection. The 73 Carondelet runs along 12th Street. Key stops within the study corridor include Allen Ave, Russell Blvd, Barton Street, and Sidney Street at 12th Street. The 73 Carondelet is a critical north/south transit route within the City of St. Louis connecting all the way to Mehlville. A key destination outside of the study area is the Civic Center Metrolink Station.

Public transportation system maps are included below.



BICYCLE AND PEDESTRIAN ACCOMODATIONS

Within the Soulard study area there is an official Bike St. Louis route. The map below illustrates the path it takes through the neighborhood . Currently there some shared lane markings/ share the road signs. Bike St. Louis signs currently indicate the shared usage on the roads. Currently, Russell Blvd as well as 7th Street has bike lane markings on both sides of the roadway, stretching from Gravois Ave to 7th Street.



PEDESTRIAN INFRASTRUCTURE

For the most part, the pedestrian infrastructure that exists within the corridor is easy to navigate and use. Sidewalks run on all sections of the roadways. However, many sidewalks are not compliant with ADA standards. Sidewalks are often uneven and full of obstacles. Some intersections contain no ramps to travel across the road. Many intersections have faded cross walks or no crosswalks at all. Minor upgrades could be done to enhance the pedestrian experience, such as marked pedestrian crossings, tree trimming, brick replacement. More example imagery on the following pages.

The corridor consists mainly of all-way and side-street stops. Traffic signals are located at a few places on the corridor, and these locations are, Russell and 12th Street, Geyer and 12th Street, Lafayette Ave and 7th Street, Russell and 7th Street, Sidney and 7th Street.

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Traffic Calming Recommendations

This section outlines traffic calming methods that are recommended for implementation within project boundaries.

Recommendations include a combination of pinned-on concrete bumpouts, flashing beacons, speed humps, and continental crosswalks throughout the corridor. Future opportunities may also exist to add mobility hubs in partnership with Metro Transit at Metrobus route stop locations.

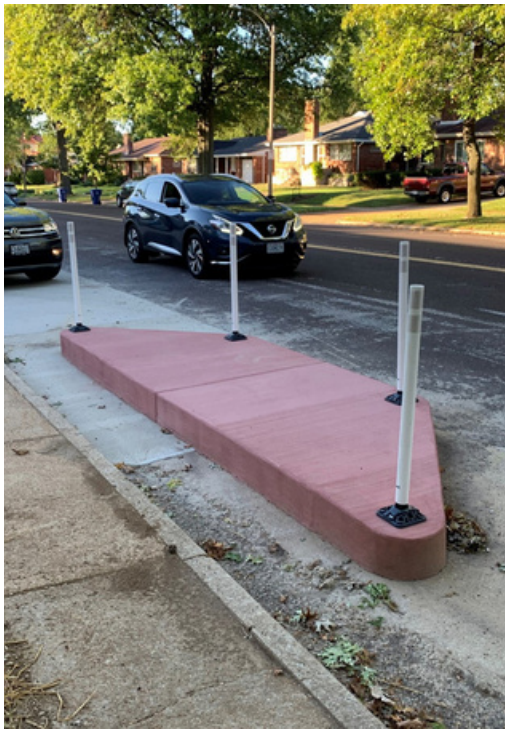
It should be noted that implementation and final placement of all traffic calming recommendations is subject to available funding, as well as approval by the elected official, residents and the City of St. Louis staff.

A safer, healthier and more vibrant Soulard

01. Pinned on bumpouts

Bumpouts extend the sidewalk visually and physically into the parking lane to narrow the roadway. When designed at intersections, they can provide additional pedestrian space and shorten the pedestrian crossing distance. Bumpouts located at strategic places within the parking lane are recommended for the Soulard Neighborhood. The size and shape of bumpouts, within the appendix exhibits, represent areas recommended for physical traffic calming in order to eliminate encroachment of vehicles. These would be placed 100 - 200ft apart to deter speeding and passing in the parking lane. Bumpouts are also recommended at intersections as well. Legal parking spots would be minimally impacted as parking is not allowed 20' from crosswalks and stop signs per City Charter. Additionally, bumpouts at intersections provide additional site distance for vehicles and pedestrians entering intersections.

We are recommending the installation of these, similar to what is pictured here. Bumpouts can also be adjusted to include full curb extensions, plantings, exposed aggregate concrete, among other options. As indicated in the appendix we are recommending the frequent spacing of these to ensure a continuous impediment to passing in the parking lane. Final spacing is subject to design and construction funding and neighborhood input, but when done correctly should minimize parking impacts for local residents. Full corridor concept plans are included in the appendix with rough cost estimates.



02. Continental Crosswalks

Marked crosswalks indicate optimal or preferred locations for pedestrians to cross and help designate right-of-way for motorists to yield to pedestrians. Pedestrians are sensitive to out-of-the-way travel, and reasonable accommodation should be made to make crossings both convenient and safe at locations with adequate visibility. Continental crosswalks are high visibility crosswalks and should be implemented where 4-way stops exist on the corridor currently to provide for safe crossing for people moving throughout Soulard. In addition to providing a safe space for people to cross, these crosswalks can serve as a visual cue to motorists to drive slow as they are located within a residential neighborhood. Full conceptual plans are included in the appendix that is attached to this document with a rough estimate of costs.

These are recommended to be located at every cross street with a four-way stop to enhance pedestrian crossings in Soulard. This includes the intersections listed in the table below.

12th Street and Victor Street	Menard Street and Shenandoah Ave	9th Street and Russell Blvd
12th Street and Shenandoah Ave	9th Street and Victor Street	9th Street and Geyer Ave
12th Street and Russell Blvd	9th Street and Barton Street	9th Street and Lafayette Ave
12th Street and Barton Street	9th Street and Shenandoah Ave	

// CITY OF ST. LOUIS

03. Speed Humps

As a compliment to corridor-wide traffic calming recommended for Soulard, CBB recommends eight speed hump locations in the neighborhood. This vertical traffic calming treatment will help slow down motorists within the neighborhood, especially when used in conjunction with the intersection bumpouts. The selected locations are critical locations due to their proximity to schools. The speed humps are intended to enhance the safety of children and families travelling to and from school. Further location details can be found in the Appendix.

Four will be located directly within the study area on Victor Street, Ann Ave, 13th Street and Lafayette Ave. The remainder will be located with three on Broadway Street and one west of the overpass on Lafayette Ave. A visual representation of locations can be found at the end of this report and in the appendix.

04. Rectangular Rapid-Flashing Beacon (RRFB)

Pedestrian activated signage that alternates a flashing yellow when a pedestrian is crossing the street.

According to the FWHA 'The RRFB is a treatment option at many types of established pedestrian crossings. Research indicates RRFBs can result in motorist yielding rates as high as 98 percent at marked crosswalks. However, yielding rates as low as 19 percent have also been noted. Compliance rates varied most per the city location, posted speed limit, crossing distance, and whether the road was one- or two-way. RRFBs are particularly effective at multilane crossings with speed limits less than 40 mph. With the many local and low speed roads, Soulard is the perfect candidate for this treatment option. A RRFB is recommended on 9th Street north of Geyer Ave, this can also be depicted in the recommendation map at the end of this section.

Gateways and Branding

Gateway and Branding enhances the sense of place within the neighborhood as a visual cue to motorists for the high level of street activity for all users. This can be done using planters, benches, paintings, scupltures, etc. These placemakers can be created at key intersections throughout the neighborhood where additional pedestrian enchancements provide gateway treatments and placemaking opportunities.

Open Streets Events

The opening of streets to people and closed to motorists during peak weekend and evening times can provide the neighborhood with additional dining, drinking and recreation opportunities. Ways to implement this involve creating traffic control plans and resdiential/business information for procedures, setting days of the month and times, and using initial events to build support for more eents in the future. The recommended area is on Geyer from 9th to 8th street.

Curb Managment

Curb spaces can be seen and used as a valuable asset for space within our cities. Managing competing uses can provide room for multiple modes of transportation in an organized manor. Curb management is created through dedicated spaces at the curb for various uses (ride-share, micro mobility, short term parking, etc.). Opportunities for temporary signage and educational campaigns can be used to lead these efforts

KEY TERMS

Ride-share: "Participate in an arrangement in which a passenger travels in a private vehicle driven by its owner, for free or for a fee, especially as arranged by means of a website or app."

Micro-Mobility: "transportation using lightweight vehicles such as bicycles or scooters, especially electric ones that may be borrowed as part of a self-service rental program in which people rent vehicles for short-term use within a town or city."

Neighborhood Implementation Interest:

- No PE needed: Speed humps (**8 total locations**; 3 on Broadway St. and 1 on Lafayette W of bridge
- #1 – Russell corridor
- #2 – 12th
- #3 – Lafayette
- #4 – 9th St.
- #5 – 9th & Barton
- Intersections

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APPENDIX

Contact

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