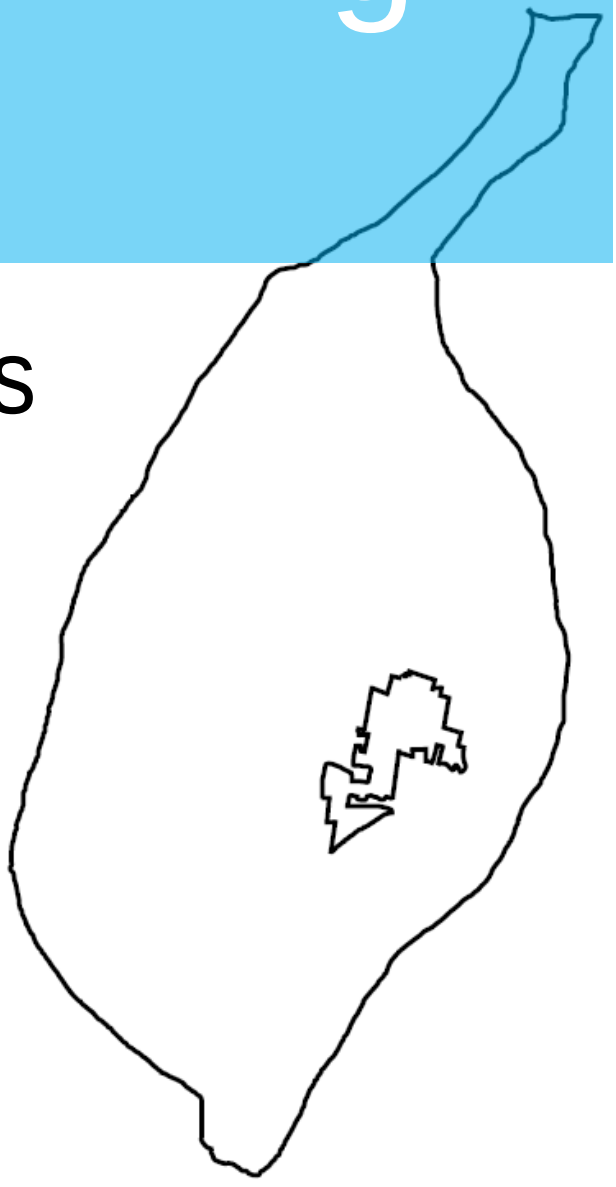
Neighborhood Traffic Calming Study

City of St. Louis Ward 6

Prepared for:

City of St. Louis Board of Public Service

November 2016



TRANSPORTATION ENGINEERS+PLANNERS

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Executive Summary

Study Background

During the fall of 2015, CBB was hired by the City of St. Louis to complete a neighborhood traffic study for Ward 6, primarily focusing on the Compton Corridor and the neighborhood streets. The goal of this study is to enhance safety within the neighborhood for all users, including bicyclists, pedestrians and motorists. Located near the central corridor within the City, Ward 6 has routes that move motorists throughout Ward 6 as well as throughout the City overall. Additionally, Compton runs parallel to Grand and is viewed by residents as a cut thru street for motorists to avoid traffic on Grand as a result of the recent South Grand Road Diet. The result of this study is a plan for calming traffic on the residential streets within Ward 6, to enhance pedestrian and bicycle safety, while still moving vehicles throughout the neighborhoods.

The study involved meeting with the City elected officials and staff, as well thorough public engagement process to solicit resident input and feelings on travel patterns and behavior in the ward. An online survey was conducted, as well as two public meetings with the neighborhood residents. The data from the survey and first public meeting was used to develop a data collection plan that was used to develop alternatives and draft recommendations. The recommendations presented in this report are developed in a way, such that the neighborhood can make immediate, short term recommendations, or plan for corridor wide, larger projects. Recommendations have been provided in terms of general traffic calming options, as well as options for each intersection, ranging from lower to higher cost. The traffic calming recommendations are intended to be used as a 'menu' of items to choose from when making improvements. For example, at one location it may be appropriate to implement all recommendations, whereas at another location, it may be suitable to 'test' one of the options to understand changed behavior and added safety.

Traffic calming is defined by the Institute of Transportation Engineers (ITE) as the "combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users." The traffic calming recommendations provided in this plan focus primarily on the Compton corridor, as that was indicated a priority for the Ward 6 residents. We have developed a set of eight intersection plans – four listed as priority locations, based on public engagement; three listed as secondary locations; and one option location (to provide treatments at consistent, quarter-mile spacing). These recommendations are intended to slow traffic, increase stop-sing compliance, and enhance safety for pedestrians and bicyclists when navigating the Compton corridor.

Priority locations for treatments include: (1) Compton and Lafayette, (2) Compton and Russell, (3) Compton and Shenandoah; and (4) Compton and Arsenal. Recommendations at these intersections involve low-cost immediate options; planter boxes, flexible tubular markers, painted medians and bump-outs, continental crosswalks, painted stop-bars, and in some cases upgraded ADA ramps and sidewalk improvements. It is recommended these options be tested to determine what works well in the neighborhood before installing more permanent higher cost options. Higher cost options for these locations include vertical bump-outs, ADA upgrades, and pedestrian scale lighting. We have also identified the intersections at Compton and Lafayette and Compton and Russell as good locations

for possible mini-roundabouts. An extension of bike lanes on Lafayette is to be considered as well, as this is a Bike St. Louis route, with lanes that extend East of Jefferson through Lafayette Square.

Secondary recommendation locations include: (1) Compton and Chouteau, (2) Compton and Park, (3) Compton/Wyoming/Gravois; and (4) Compton and Magnolia (optional location). For the lower cost options at Compton and Chouteau, we have recommended painted treatments such as bump-outs, continental crosswalks, and bike boxes on Chouteau. Chouteau recently installed a lane diet and added bike lanes as part of the Bike St. Louis Route and this location is a good treatment to give cyclists priority at the signal. Higher cost improvements at this location include vertical elements, such as bump-outs, extended islands and center median. At Compton and Park we recommend a sidewalk extension, where there is none right now, as well as planter boxes and painted treatments for the low cost option. For the high cost option, vertical elements should be included, as well as Rectangular Rapid Flashing Beacon (RRFB) for enhanced pedestrian safety near the Head Start Center. This intersection is also a good candidate for a mini-roundabout. The intersection at Compton/Wyoming/Gravois is about to undergo an intersection reconstruction as part of MoDOT project, and our recommendation is to coordinate improvements at that location. Similar to Chouteau bike lanes will be added and this is an ideal location for the bike box treatment. This intersection could also benefit from either painted or raised bump-outs. The intersection at Magnolia could be improved with planter boxes and painted treatments such as bump-outs and continental crosswalks for a lower cost option or raised bump-outs and pedestrian scale lighting for higher cost options.

The recommendations included in this document serve as a plan for Ward 6 moving forward. You will find the recommendations offer a complete menu for implementation, as well as feasible options for immediate change, and a plan for long term change. Through the implementation of these traffic calming measures, we are certain your neighborhood quality of life will be enhanced, and continue to be a great place to live within the City of St. Louis. Our vision from this plan is to provide you with the tools to create and foster a safe environment for all users to your local neighborhood streets, and create a high quality, and safe experience when travelling through your neighborhood.

Introduction

Study Background

The City of St. Louis is rich with tradition and many unique and historic neighborhoods. Throughout this long history, these neighborhoods have experienced change in growth and development, which can be of significant impact to the community. Ward 6 encompasses nine City neighborhoods, stretching north of Interstate 64, and south of Interstate 44 to Gravois. While these neighborhoods have different characteristics, they all share significant corridors for moving traffic within and through Ward 6.

Figure 1: Layfayette Avenue at Compton Avenue

In April 2014 Alderwoman Christine Ingrassia became the first Board of Aldermen member in the City of St. Louis to practice 'participatory budgeting'. This process aims to give residents a say in how taxpayer money is spent, and enables residents to identify, discuss and prioritize local projects. Alderwoman Ingrassia formed committees to identify a list of projects and then held a public election. Of the twelve projects identified, one was a traffic calming study for Ward 6, focused on the Compton Avenue corridor. In recognition of the frequent residential concerns regarding traffic in that corridor, the residents decided to spend a portion of their Capital Improvement Money toward this study. At Alderwoman Ingrassia's request, the City of St. Louis Board of Public Service engaged CBB in July, 2015, as the study consultant.

With the recent road diet on South Grand, and the high level of activity in Grand Center, Ward 6 residents believe vehicular traffic has increased within their neighborhoods, specifically on Compton Avenue. Because Grand Boulevard (classified as a Principal Arterial) and Compton Avenue (classified as a Minor Arterial) are parallel to each other, the perception is that motorists are trying to avoid slow moving traffic or congestion on Grand Boulevard by utilizing Compton Avenue. A significant portion of the Compton corridor is residential, and Ward 6 constituents are concerned for safety of pedestrians, bicyclists and motorists within the corridor.

The goal of this study is to develop a traffic calming plan for Compton Avenue, focusing on the segment between Choteau Avenue and Gravois Avenue. Alderwoman Ingrassia and the Ward 6 residents have indicated a desire to enhance traffic and pedestrian safety within the neighborhoods, as well as the livability of the Ward. Recommendations for reducing travel speeds and improving traffic control compliance within residential areas will conform to the City of St. Louis Complete Streets Ordinance (#68663) as well as the Bike Saint Louis Plan.

The study process included public engagement, City and stakeholder coordination, thorough data collection, an infrastructure inventory and analysis of key intersections. This information was used to develop recommendations that may be implemented within Ward 6 in the coming years through the use of Ward Capitol Improvement funds. Recommendations are made for a hierarchy of projects that can be implemented in the short, medium, and long term to make use of the limited funding as it becomes available.

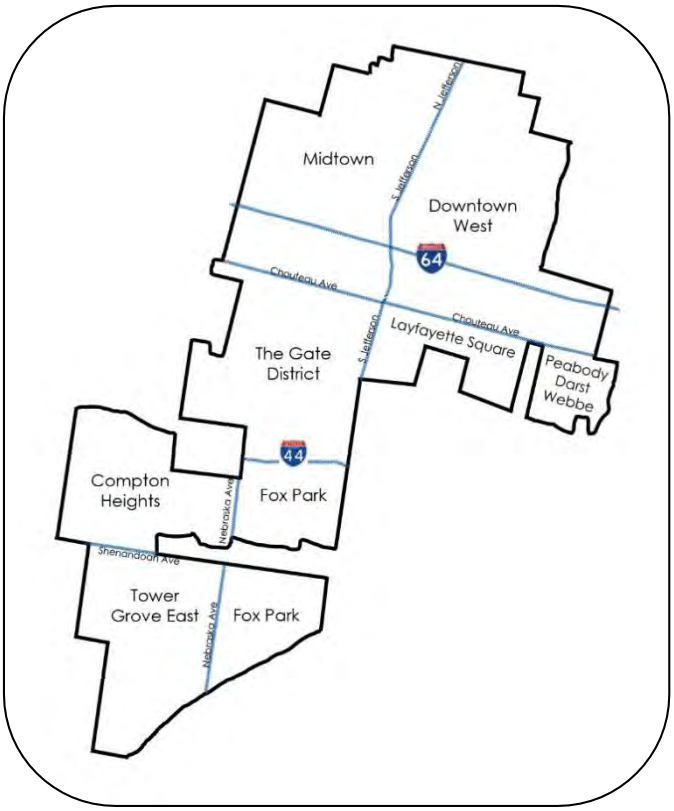


Figure 2. Ward 6 Limits and Neighborhoods

Study Area

The project is located within Ward 6 of the City of St. Louis, shown in Figure 2. This Ward encompasses nine different City neighborhoods including: Compton Heights, Downtown West, Fox Park, JeffVanderLou, Lafayette Square, Midtown, Peabody Darst Webbe, The Gate District and Tower Grove East. The general study area, shown in Figure 3, is bounded by Spruce Street on the north, Jefferson Avenue to the east, Gravois Avenue to the south and Grand Avenue to the west.

Ward 6 includes multiple primary arterial routes, as well as two interstate crossings (Interstate-44 and Interstate-64). Additionally, the Ward connects many City attractions from Grand Center to Tower Grove Park, Saint Louis University and Compton Hill Reservoir Park. Although many of the Ward 6 routes are heavily-traveled, the study focused exclusively on the Compton Avenue Corridor and its connecting routes of: Lafayette Avenue, Russell Boulevard, and Shenandoah Avenue. These particular cross streets were selected due to the number of reported neighborhood concerns.

Study Process

The study began with a kick off meeting on July 29, 2015, attended by representatives from the City of St. Louis Board of Public Service, City of St. Louis Street Department, 6th Ward Alderwoman Christine Ingrassia, and the consultant (CBB). At this meeting, Alderwoman Ingrassia noted specific concerns of the neighborhood to help focus the study efforts. Based on this discussion, the City of St. Louis Board of Public Service and project team were able to more clearly define the scope of services involved with the process. During the meeting, an overall schedule was determined that planned for field data collection in September (to capture traffic volumes while schools are in session) and an initial neighborhood meeting in October where a neighborhood survey would also debut both in-paper and on-line.

Figure 3. General Study Area and Specific Corridors

The first public meeting was held on Tuesday, October 6TH, 2015, at Employment Connection. At this meeting, the project team presented materials on the study process, launched the study survey, and solicited feedback on specific areas of concern from the residents to assist with focusing the study moving forward. Neighborhood concerns were gathered during an open Q&A session and with interactive boards and comment cards. The consultant analyzed the public meeting feedback and presented a memorandum to the City outlining the specific details. The survey remained active until the middle of November to allow Alderwoman Ingrassia to share the information and solicit feedback during individual neighborhood meetings. During this time, CBB continued to monitor the response and note areas of concern.

With the survey information in-hand, the project team developed a plan to collect additional traffic data based on public input. Data collection in November/December, 2015, included: peak period observations, manual traffic counts, automated machine traffic and speed data collection, and an infrastructure inventory.

The stakeholder/public engagement comments and existing conditions data were used to formally identify the neighborhood "issues" for which mitigation alternatives would be developed. The project team spent time during December in the neighborhoods examining specific areas of concern and making notes about potential improvements. All of the compiled information, investigations, analyses, and some potential alternatives were synthesized into a draft report submitted to the City of St. Louis Board of Public Service at the end of December to gather feedback from City staff and Alderwoman Ingrassia.

The project team continued to investigate potential alternatives and recommendations. A second public meeting was then held February 1, 2016, to share the findings and proposed recommendations with Ward 6 residents and gather additional feedback. Again using public input, the final recommendations were adjusted to reflect residential needs and concerns.

Finally, the process was compiled into this report that can be used as a planning document for Ward 6 in future years when determining where to spend Ward Capitol Improvement Funds. The report documents each step of the process and culminates with recommendations and conclusions. Appendices at the end are various documents that were compiled throughout the study process and serve as a frame of reference when working through the various recommendations.

Stakeholder Engagement

Meeting with City Officials

The study began with a kick off meeting on July 29, 2015 with representatives from the City of St. Louis Board of Public Service, City of St. Louis Street Department, the 6th Ward Alderwoman Christine Ingrassia, and the consultant (CBB). At this meeting it was indicated that residential traffic concerns are primarily focused on Compton Avenue and its intersections. Longstanding residential complaints include speeding on Compton, poor compliance with stop-signs, and pedestrian and bicyclist safety. It was agreed that data collection (traffic volumes and speeds) would be critical to the investigation and that the data collection should be scheduled after area schools resumed. A general schedule was determined that included an initial public meeting and survey to gather input from residents in October/November. Data collection and evaluations, based on that input, would be collected in November/December. A second neighborhood meeting would be held in early 2016 to present the data, analyses, and recommendations and again gather feedback from residents. The project would be finalized with that feedback.

Neighborhood Survey

In conjunction with Alderwoman Christine Ingrassia and the City of St. Louis Street Department CBB developed a survey to be distributed online to gain feedback related to the Ward 6 Traffic Study. The goal of this survey was to solicit input from neighborhood residents about traffic concerns in the area and identify existing issues. Additionally, the study outlined specific traffic calming measures to determine what neighborhood residents were comfortable with and would be interested in seeing implemented within their neighborhood.

The survey launched at the Ward 6 public meeting (October 6, 2015, at Employment Connection) when the online link was distributed and hard copies of the survey were available. At the time the survey closed, 267 respondents participated. A copy of the survey is included with this report as Appendix A. The full documentation of survey responses is also attached as Appendix B, and the final survey summary memorandum is Appendix C.

Demographics

Ninety – two (92) percent of survey respondents live within Ward 6, with the remaining eight (8) percent being a mix of business owners (only) or both business owners and residents. Ninety (90) percent of those that live in the ward own their house. This indicates they will be more inclined to reside in their neighborhood for longer periods of time and therefore may be more invested in the neighborhood potential and/or have a higher sense of neighborhood pride.

The response breakdown by neighborhood is shown in Figure 4. Thirty-four (34) percent of respondents live in the Tower Grove East Neighborhood and thirty-three (33) percent of respondents live in the Compton Heights neighborhood. Therefore, the majority of respondents live in the neighborhoods nearest Compton Avenue, echoing the level of concern for that corridor.

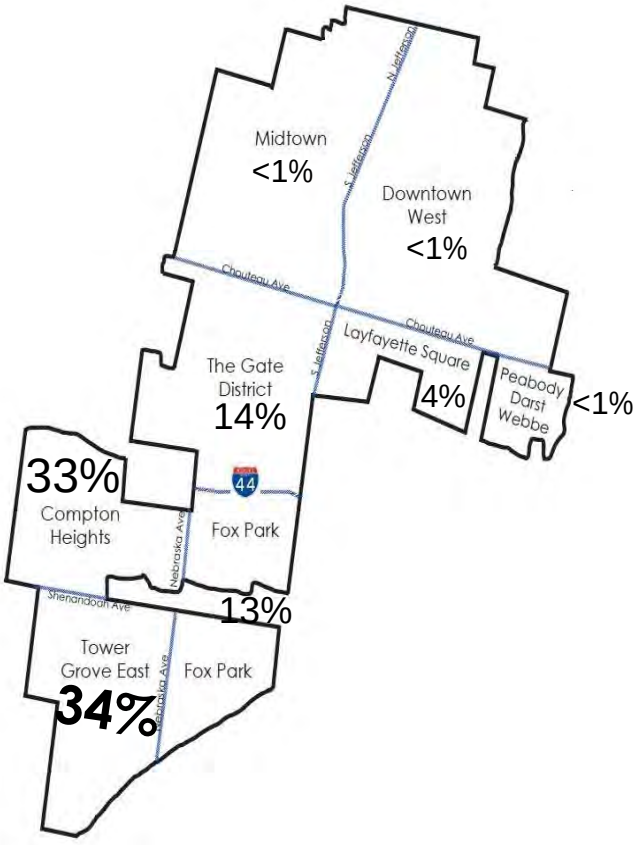


Figure 4. Percentage of Survey Respondents by Neighborhood

Thirty (30) percent of the respondents are in the age range 30 – 39; twenty-two (22) percent are in the age range 40 – 49, followed by seventeen (17) percent in the age range 60 – 69. The majority of the respondents are Millennials and Gen-Xers, with the next largest group being the aging population. Given that breakdown, and the general trends in millennial transportation habits (e.g. increased usage of transit and a preference for active transportation), the data again reinforces the neighborhood desire to focus on pedestrian safety within the Ward.

Concerns, Experience and Importance

The survey confirmed that many residents are concerned about speeding within their neighborhood (68%). Survey respondents also indicated they are very concerned with pedestrian safety (55%), traffic (45%) and unkempt properties (42%). The concerns with speed, pedestrian safety, and traffic indicate that neighborhood residents do not feel they live in a pedestrian safe environment and pedestrians and motorists are in conflict in the existing system. The concern for the properties within the neighborhoods demonstrates a high level of pride in the area, and the desire to keep the neighborhood a great place to be.

Currently residents think that most motorists do not obey the traffic rules within the Ward, but feel average about their driving experience and safety. Respondents also felt average about their experience interacting with pedestrians and bicyclists, as well as their own experience as a pedestrian or bicyclist.

The issues identified as important by the survey respondents also indicate a desire to keep the neighborhood a great place to be (detailed in Figure 5). They are most concerned with park maintenance and street lighting, demonstrating a desire to keep the neighborhood safe and resources well maintained. The concern for sidewalks reinforces the desire to foster a pedestrian-

friendly environment. The concerns about speeding/speed limits are reinforced by the fact that it is the third most important element. Traffic flow and stop sign location preferences indicate a concern for the way traffic moves through their neighborhood. Finally, concerns over traffic congestion demonstrates that residents are worried about the volumes of traffic moving through their neighborhood. This reinforces the idea that many residents want more local and residential streets as opposed to the higher-speed thoroughfares they feel their streets are becoming.

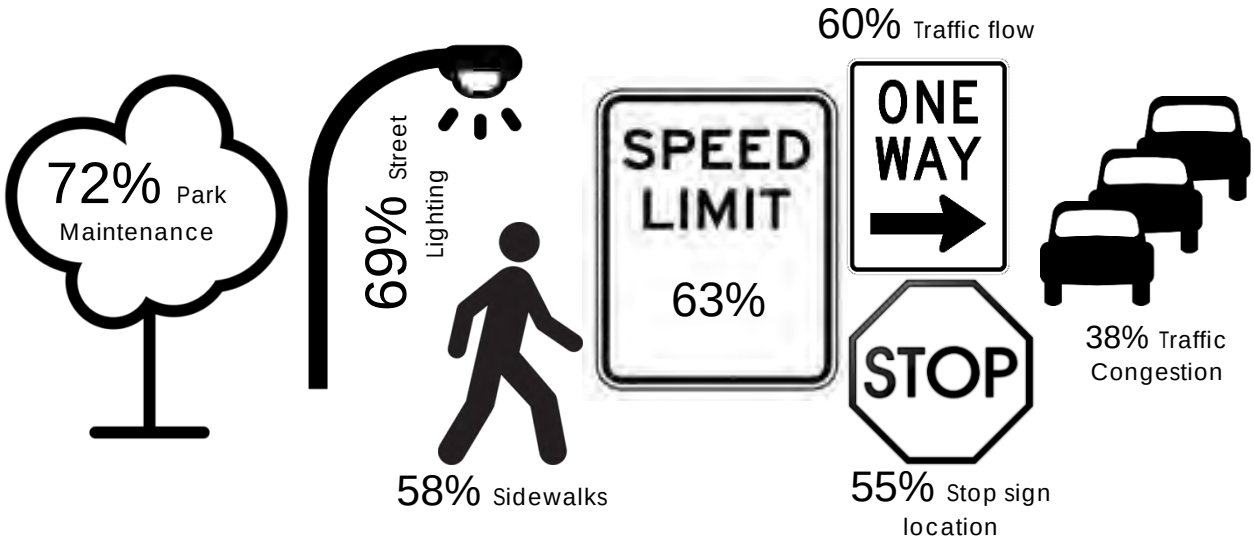


Figure 5. Issues Identified as Important by Survey Respondents

Preferred Traffic Calming Measures

Survey respondents are most interested in speed tables (40%) and bump-outs (39%). While 40% of residents are interested in speed humps, 44% are not – indicating it might not be the right calming measure for the entire neighborhood and they should be installed with attention to the surrounding land use and to their design. It should be noted that many residents posted comments on their desire that the number and location of existing stop signs be assessed. There is a general concern for speeding and running stop signs, and they believe that the existing volume and/or spacing of stop signs may be a contributing factor.

Concern by Intersection

Residents are most concerned about speeding on Compton Avenue, Russell Boulevard and Shenandoah Avenue, and pedestrian issues on Gravois Avenue. There is a general concern for the number of signs on Compton Avenue (too many stop signs). Specific intersections of concern are listed below.

- Compton Avenue and Shenandoah Avenue
- Compton Avenue and Russell Boulevard
- Compton Avenue and Lafayette Avenue
- Compton Avenue and Park Avenue
- Russell Boulevard near Compton Hill Reservoir Park
- Sidney Street and Pennsylvania Avenue
- Russell Boulevard and Nebraska Avenue

First Public Meeting

In conjunction with Alderwoman Christine Ingrassia, the project team held a public meeting for Ward 6 residents to discuss the traffic study efforts within the neighborhoods. The meeting planning process, the information presented, and a meeting summary follows.

Meeting Preparation

Alderwoman Ingrassia worked with the project team to select a date and location (Tuesday October 6, 2015; Employment Connection: 2838 Market Street) for the Ward 6 public meeting. Alderwoman Ingrassia coordinated with other neighborhood representatives to advertise the meeting via social media. CBB developed a survey that could be completed at the meeting or after via an on-line link. A presentation about the study process, participant activities, and comment cards were developed to inform the participants and gather their feedback.

Public Meeting: October 6, 2015

The meeting started with a presentation about the Ward 6 study. Participants were connected with the origins of the study and its ultimate goal: to enhance the traffic and pedestrian safety and livability of the neighborhoods within the Ward. An overview of the study process highlighted its four primary steps: (1) Stakeholder outreach, (2) Field Data, (3) Evaluate Conditions & Develop Recommendations, and (4) Summarize Recommendations and Prepare Documentation. The presentation concluded with next steps for the study, as well as how residents can be active participants of the process. Survey information was given out, questions were answered and concerns were discussed. Following the presentation, residents participated in various exercises that would provide additional input on neighborhood concerns. The activities are documented below.

- Aerial Maps – The project team laid out four aerial maps of Ward 6, an example is shown in Figure 6. Post it notes, sharpies, stickers and other materials were provided for residents to note specific concerns or ideas. Attendees were able to notate specific intersections or corridors where they had concerns, as well as put notes about any ideas they had for various areas of the neighborhoods. Comments on the maps were documented as part of the public feedback.

Figure 6: Aerial Map Exercise

- Dot Exercise - Two boards, each presenting five different traffic calming techniques (10 total), were posted; one of these boards is shown in Figure 7. When residents entered the meeting they were given three blue dots. With these dots, residents were asked to indicate the traffic calming measures they would be most interested in seeing within their neighborhood. They could put all dots on one technique they really liked, or they could choose to not place any dots on the board. The ten techniques listed on the boards (and included on the survey) were: speed humps, roundabouts, chokers, dividers, stop signs, bump-outs, speed tables, one-way direction change, and an option indicating no interest in any of the measures. The project team compiled this information in a spreadsheet. Some post it notes were placed on the board with alternate ideas that were noted as well.

  The exercise determined that Bump-outs were the most popular traffic calming technique with 18 dots, followed by speed humps with 14 dots, and finally speed tables with 13 dots. People added comments related to speed enforcement, traffic lights, and stop sign location assessment.

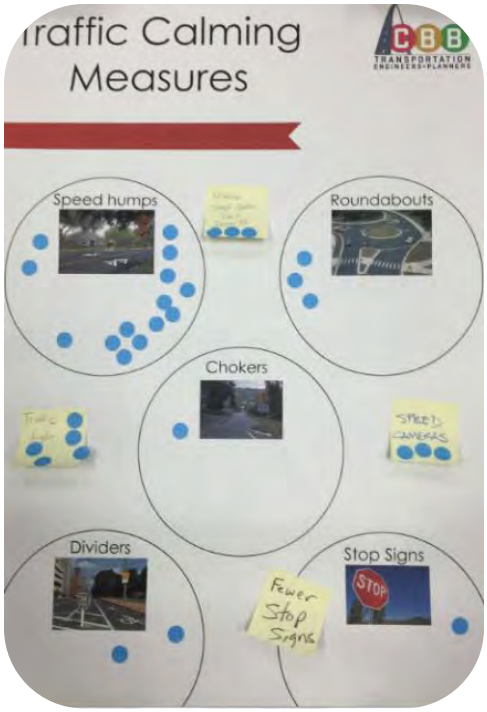


Figure 7: Dot Exercise

- Vision for the Compton Corridor - This exercise was included because a transportation system can greatly affect how a community grows. In addition to specific traffic concerns residents have for Compton Avenue, the project team wanted to understand more about the quality of life within the community and what residents feel is important to them. The question was posed to the participants on a feedback board where attendees were encouraged to write or post their thoughts, as shown in Figure 8. This information was documented with the public meeting feedback.

  Many of the comments revolved around making Compton Avenue have a more residential and local focus. Residents feel that the corridor has turned into a North/South thoroughfare and want to see less and slower traffic. Ideas generally indicated a desire for a more vibrant atmosphere for pedestrians, and potentially adding bicycle lanes.

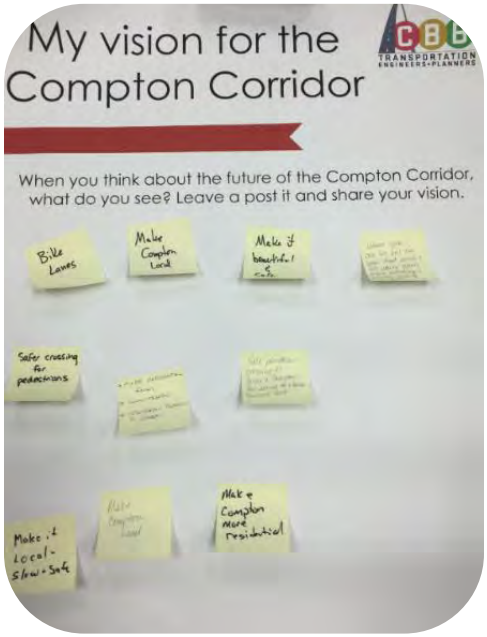


Figure 8: Vision Exercise

- Comment Cards and Surveys – Residents were encouraged to fil out hard copy comment cards and surveys at the public meeting. The surveys were entered online (to be compiled with those responses) and the comments from the comment cards were compiled with the public meeting feedback.

All the information obtained at the public meeting was documented in a memorandum to City staff and Alderwoman Ingrassia. The full summary is attached as Appendix D. Information was used in conjunction with survey information to focus data collection efforts.

Second Public Meeting

Upon completion of a draft report submitted to the City with various traffic calming recommendations, the project team made preparations for a public meeting planned by Alderwoman Christine Ingrassia. CBB planned a presentation for the neighborhood residents to outline the survey results and findings, as well as detail data collection efforts and provide initial recommendations for traffic calming measures to be implemented within their neighborhood. The process of meeting preparation is outlined in this memo, as well as information on feedback gained.

Meeting Preparation

Alderwoman Ingrassia selected the date and location for the second public meeting (Monday, February 1, Employment Connection at 2838 Market) of the Ward 6 Traffic Study. Alderwoman Ingrassia worked with other neighborhood representatives to advertise the meeting via social media. The purpose of the second neighborhood meeting was to identify initial recommendations from the draft traffic study and get input from the residents. CBB compiled the study process information into a presentation (survey results, data collection efforts & recommendations) to be delivered at the meeting. Comment cards were developed to gather any final input about the study and recommendations.

Public Meeting: February 1, 2016

Figure 9. Second Public Meeting Registration Table

There were twenty-two attendees at the meeting. The meeting opened with a presentation by the study team that lasted approximately an hour and was followed by an hour open discussion around the table. The project team's presentation outlined the data that was collected and an explanation of its significance. Then, building on the existing conditions, CBB presented various alternatives for the corridor (linking back to the feedback gathered from residents during the First Public Meeting). Finally, the recommendations were explained and questions and comments from the residents were explored. Residents offered feedback and discussed ideas that they liked, as well as those they did not agree with. Additionally, residents gave their input on where various calming measures might work, as well as different measures to use. Residents were encouraged to write the comments down and leave cards, or contact CBB or the alderwoman to voice concerns. Only two comment cards were submitted at the meeting and the general reaction to draft recommendations was welcoming. Two additional comments were received by CBB after the public meeting.

All the information obtained at the public meeting was documented in a memorandum to City staff and Alderwoman Ingrassia. The full summary is attached as Appendix E.

Existing Conditions

Study Corridor Descriptions

Roadway Functional Classification

When evaluating roadway operations, it is important to consider how the facility works (or is intended to work) within the surrounding street network. The "hierarchy" of roadways and their usage is described by their "functional classification".

The purpose of roadway functional classification is to formally describe how travel is channelized through our roadway network and to determine project eligibility for federal funds. Roadways are classified according to their urban or rural setting and the type of service they provide based on considerations such as: connectivity, mobility, accessibility, vehicle miles traveled, average annual daily traffic, and abutting land use. In the St. Louis region, the East-West Gateway Council of Governments is responsible for maintaining and updating the region's Roadway Functional Classification System mandated under federal law.

For nomenclature purposes, those roadways that provide a high level of mobility are called "arterials"; those that provide a high level of accessibility are called "locals"; and those that provide a more balanced blend of mobility and access are called "collectors". Context sensitivity and livability form the environment through which mobility and access should be considered. For this reason, arterials typically are roadways with high traffic volumes and are frequently the route of choice for intercity buses and trucks.

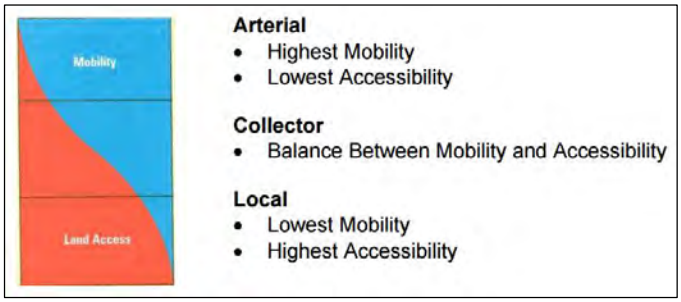


Figure 10. Relationship Between Mobility and Accessibility

Minor arterials provide service for trips of moderate length, serve geographic areas that are smaller than their higher ("major") arterial counterparts and offer connectivity to the higher arterial system (major arterials, expressways, freeways, interstates). In an urban context, they interconnect and augment the higher arterial system, provide intra-community continuity and may carry local bus routes. The general range for daily traffic volumes on a minor arterial is 3,000-14,000 vehicles per day (vpd).

As their name implies, collectors "collect" traffic from local roads and connect traffic to arterial roadways. Collector routes are typically shorter than Arterial routes but longer than local roads. Collectors often provide traffic circulation within residential neighborhoods as well as commercial, industrial or civic districts. The general range for daily traffic volumes on a major collector is 1,100 – 6,300 vpd. Minor (or "residential") collectors are characterized by on-street parking, direct access to residential driveways and average daily volumes typically less than 5,000 vpd. If total daily traffic increases to more than 5,000 vpd, the character of the road may shift to that of a major (or "system") collector roadway. In general, a system collector has fewer curb cuts and restrictions for on-street parking to encourage better traffic flow. With lower traffic volumes, collectors may serve the bicycles routes of a community well.

Locally classified roads account for the largest percentage of all roadways in terms of mileage. They are not intended for use in long distance travel, except at the origin or destination end of the trip, due to their provision of direct access to abutting land. Bus routes generally do not run on local roads. They are often designed to discourage through traffic. As public roads, they should be accessible for public use throughout the year. The general range of daily traffic volumes on a local road is less than 1,000 vpd. Cyclists may choose to use local roads on trips as the traffic volumes are low.

Compton Avenue

Compton Avenue is classified as a minor arterial by the East-West Gateway Council of Governments. The corridor traverses the Ward north-south, intersecting principal arterials such as MO Route D/Page Avenue (north of Ward 6) and US 30/Gravois Boulevard (the southern border of Ward 6) as well as two Interstates: -64 and -44 (both within Ward 6 where they cross Compton Avenue). Compton Avenue forms portions of the western Ward 6 boundary and borders or bisects six of the Ward neighborhoods. Daily traffic volumes in the study corridor are 13,800 vpd at the north end of the corridor (near Spruce Street) and 3,100 vpd at the south end (near Gravois Avenue).

No MetroBus routes currently utilize Compton Avenue, although bus routes cross the corridor on Park Avenue (#80), Russell Boulevard (#8), Arsenal Street (#30) and Gravois Avenue (#10).

Compton Avenue is designated as part of the Bike St. Louis network. Dedicated bike lanes are proposed for the segment between Spruce Street and Choteau Avenue, and shared bike lanes are proposed between Choteau Avenue and Gravois Avenue. Currently there is official "Bike St. Louis" signage and some limited pavement markings in place south of Lafayette Avenue.

The cross-section of Compton Avenue changes throughout the corridor, as discussed on the following pages.

Spruce Street to Choteau Avenue: At the north end, near Spruce Street, the roadway is approximately 44-feet wide with four 11-foot wide lanes (two lanes per direction) and no median or shoulders. There are sidewalks adjacent to both travel lanes (i.e. no buffer or separation). There is no posted speed limit within this segment, but it is assumed to be 35 MPH as that limit is posted north of Spruce (on the Interstate-64 overpass). Most of this segment is elevated (bridge) structure with no access points. The pavement, curbs, and sidewalk are severely deteriorated.

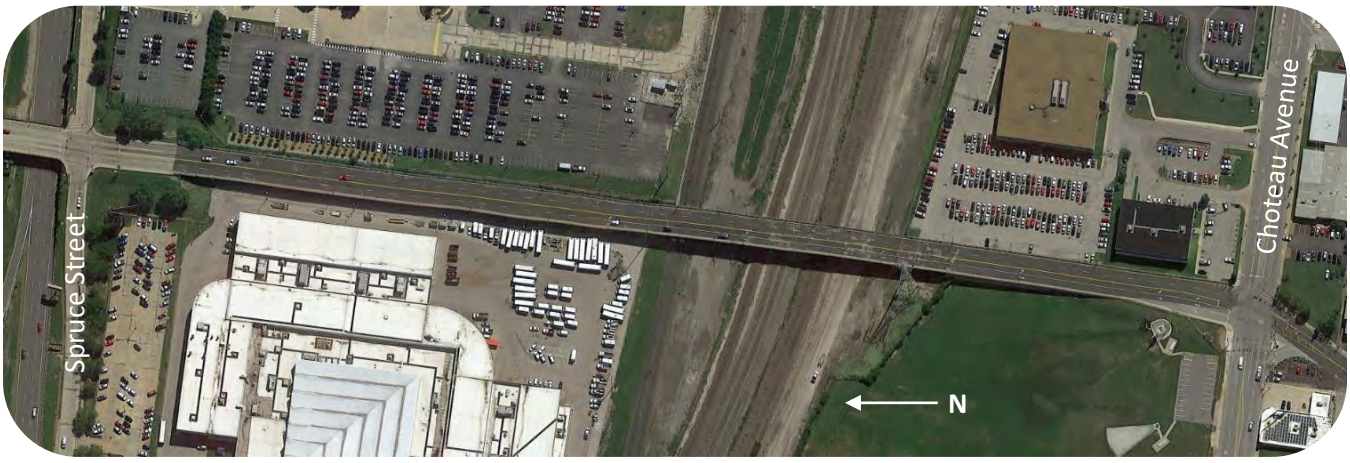


Figure 11. Aerial View of Compton Avenue between Spruce Street and Choteau Avenue

Figure 12. Street View of Compton Avenue between Spruce Street and Choteau Avenue (facing south)

Choteau Avenue to Park Avenue: South of Choteau Avenue, the street width narrows to approximately 34-feet wide, with only two driving lanes (one per direction). The centerline is offset so that the northbound lane is 12-feet wide and the southbound lane is 22-feet wide. Parking is allowed at the west curb (adjacent to the southbound lane) but not at the east curb (adjacent to the northbound lane). There are sidewalks throughout the segment on both sides of Compton Avenue. There is no posted speed limit, but due to the street width and surrounding land uses (mixed-use, including commercial and religious and academic institutions, with no residential fronting the street), it is assumed to be 35 MPH like the segments to the north. The street pavement within this segment is also severely deteriorated; as are segments of the sidewalk. Portions of the sidewalk are missing between Rutger Street and Park Avenue.

Figure 13. Aerial View of Compton Avenue between Choteau Avenue and Park Avenue

Figure 14. Street View of Compton Avenue between Choteau Avenue and Park Avenue (facing south)

Park Avenue to Lafayette Avenue: South of Park Avenue, Compton narrows further to 30-feet wide, with the same offset centerline forming a 12-foot wide northbound lane and an 18-foot wide southbound lane; parking is still only permitted at the west curb. There are sidewalks along both sides of the street, although a portion of the walk is missing on the west side north of Eads Avenue. Again, there is no posted speed limit. With the narrower width than the previous segment and the presence of homes fronting the street for one block opposite a neighborhood park, the speed limit is assumed to match the segment to the south at 30 MPH. There is a private school at the northeast corner of the intersection with Lafayette Avenue. The street pavement within this segment is also severely deteriorated; as are segments of the sidewalk. Portions of the sidewalk are missing between Park and Eads Avenues.

Figure 15. Aerial View of Compton Avenue between Park Avenue and Lafayette Avenue

Figure 16. Street View of Compton Avenue between Park Avenue and Lafayette Avenue (facing south)

Lafayette Avenue to Gravois Avenue: South of Lafayette Avenue, the road widens again to a 36-foot width, with the centerline striping in the middle of the street forming two 18-foot lanes. Parking is permitted on both sides of the street, and there are sidewalks on both sides for the full length of this segment – with the exception of the Compton Avenue overpass of Interstate-44, which is 30-feet wide with no parking permitted, but with sidewalks on both sides. The posted speed limit is 30 MPH (with the exception of one sign posted for northbound traffic as 25 MPH). This segment is mostly residential in nature, with homes fronting the streets and very few driveway connections (parallel alleys provide nearly all residential access). There are a limited number of businesses near the intersections of Lafayette Avenue, Shenandoah Avenue and Arsenal Street. There is a temple at the southwest corner of the Russell Boulevard intersection with a driveway connection (to a parking lot) to Compton Avenue south of the intersection. Roosevelt High School (St. Louis Public Schools) fills two full blocks northwest of the intersection with Gravois Avenue and has a driveway connection (to a surface parking lot) opposite Juniata Street. The street and sidewalk pavements in this segment of Compton Avenue are generally in better condition than the segments north of Lafayette Avenue; though there are some deteriorated areas. There are no segments of missing sidewalk.

Figure 17. Aerial View of Compton Avenue between Lafayette Avenue and Russell Boulevard

Figure 18. Street View of Compton Avenue between Lafayette Avenue and Russell Boulevard (facing south)

Figure 19. Aerial View of Compton Avenue between Russell Boulevard and Shenandoah Avenue

Figure 20. Street View of Compton Avenue between Russell Boulevard and Shenandoah Avenue (facing south)

Figure 21. Aerial View of Compton Avenue between Shenandoah Avenue and Magnolia Avenue

Figure 22. Street View of Compton Avenue between Shenandoah Avenue and Magnolia Avenue (facing south)

Figure 23. Aerial View of Compton Avenue between Magnolia Avenue and Arsenal Street

Figure 24. Street View of Compton Avenue between Magnolia Avenue and Arsenal Street (facing south)

Figure 25. Aerial View of Compton Avenue between Magnolia Avenue and Arsenal Street

Figure 26. Street View of Compton Avenue between Arsenal Street and Gravois Avenue (facing south)

Russell Boulevard

Russell Boulevard is also classified as a minor arterial. It is situated in an east-west orientation and intersects four principal north-south arterials including Grand Boulevard (the western boundary of Ward 6 at Russell Boulevard) and Jefferson Avenue (the eastern boundary of Ward 6 at Russell) as well as Interstate-55 (east of Ward 6). Daily traffic volumes are 3,400 vpd at the west end of the study corridor (near Grand Boulevard) and 4,800 vpd at the east end (near Jefferson Avenue).

MetroBus Route #08 ("Bates-Morganford") travels Russell Boulevard through the study area. Bus #08 circulates through several south St. Louis neighborhoods, connecting riders to local businesses and job centers. Bus #08 also serves the Civic Center Transit Center, connecting riders to MetroLink in addition to other MetroBus routes.

Russell Boulevard is designated as part of the Bike St. Louis network. There are dedicated bike lanes between Grand Boulevard and Nebraska Avenue, and shared bike lanes between Nebraska Avenue and Jefferson Avenue.

Russell Boulevard's cross-section and character can be better defined in two segments, as presented on the following pages.

Grand Boulevard to Nebraska Avenue: Between Grand Boulevard and Nebraska Avenue, Russell Boulevard is 50-feet wide, with the centerline in the middle of the roadway, but no median. Each direction includes an 11-foot wide driving lane, 5-foot bike lane, and 9-foot parking lane. However, a recent project installed diagonal parking along the north curb lane between Grand Boulevard and Compton Hill Place (for Compton Hill Reservoir Park). There are sidewalks for the full length of this segment on both sides of Russell Boulevard. The surrounding land use is mixed with a park, historical properties, a temple, and mixed residential.

Figure 27. Aerial View of Russell Boulevard between Grand Boulevard and Nebraska Avenue

Figure 28. Street View of Russell Boulevard between Grand Boulevard and Nebraska Avenue (facing east)

Nebraska Avenue to Jefferson Avenue: East of Nebraska Avenue, Russell Boulevard is also 50-feet wide, but the cross-section changes to incorporate a 10-foot wide median. There is no striping in the roadway pavement, however parking is permitted along the outside curbs; therefore, the assumption is a single driving lane and a parking lane comprise each 20-foot wide portion of pavement. The segment is fronted for nearly all of its length by residential homes, with very few driveway connections (most are served by rear alleys). There is a church and daycare center near the intersection with Jefferson Avenue.

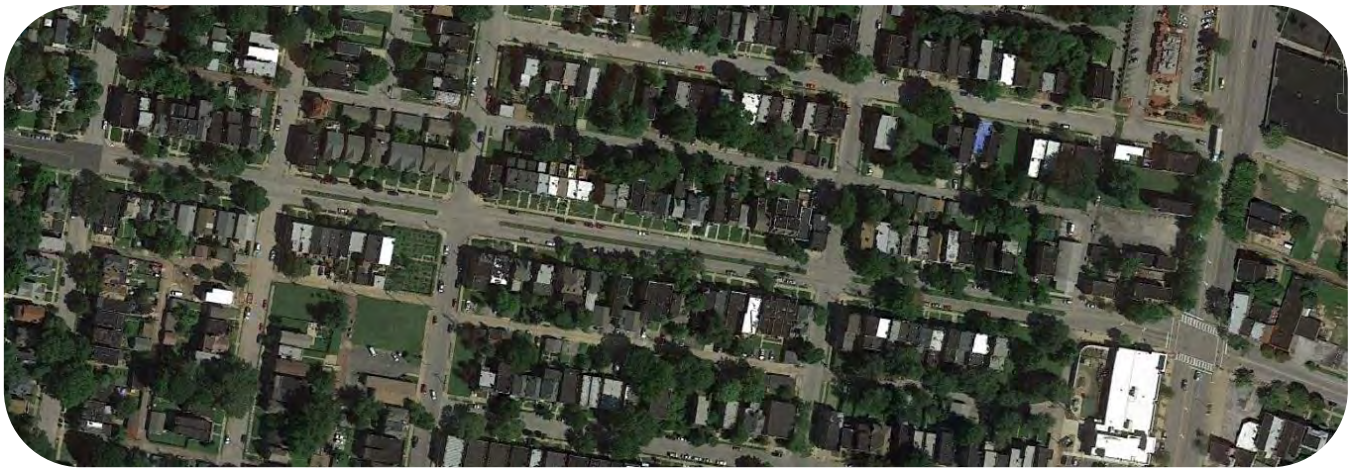


Figure 29. Aerial View of Russell Boulevard between Nebraska Avenue and Jefferson Avenue

Figure 30. Street View of Russell Boulevard between Nebraska Avenue and Jefferson Avenue (facing east)

Lafayette Avenue

Lafayette Avenue is classified as a major collector and lies parallel to Russell Boulevard, north of Interstate-44. Lafayette Avenue intersects the same four principal arterials as Russell Boulevard as well as Interstate-55 (east of Ward 6) and Interstate-44 (adjacent to Ward 6). Lafayette Avenue forms a portion of the Ward 6 boundary between Compton and Nebraska Avenues. Daily traffic volumes are 10,700 vpd at the west end of the study corridor (near Grand Boulevard) and 3,400 vpd at the east end (near Jefferson Avenue).

Lafayette Avenue is designated as part of the Bike St. Louis network, providing shared bike lanes between Compton Avenue and Jefferson Avenue. Currently there is official "Bike St. Louis" signage though this segment but no associated pavement markings.

The cross-section and character of Lafayette Avenue can be defined in two segments as discussed on the following pages.

Grand Boulevard to Louisiana Avenue/Interstate-44 Exit Ramp: A westbound Interstate-44 exit ramp connects to Lafayette Avenue across from Louisiana Avenue, approximately ¼-mile east of Grand Boulevard. The segment between these cross-streets is characterized on the north side by driveway connections (five commercial and two residential), mixed parking (metered, permitted, and restricted segments), and a sidewalk for the full length. On the south side of the street, there is metered parking, but no sidewalks. The land use is mostly institutional (Saint Louis University and St. Dominic Priory) and associated parking. The roadway is 50-feet wide, with 20-feet for the eastbound direction and 30-feet for the westbound direction. The eastbound lanes are not striped but assumed to be split between single driving and parking lanes. The westbound direction is striped for two driving lanes (10-feet wide each), with the remaining width for parking. The segment approaching Grand Boulevard is striped as three lanes (left, thru, right) with no parking.

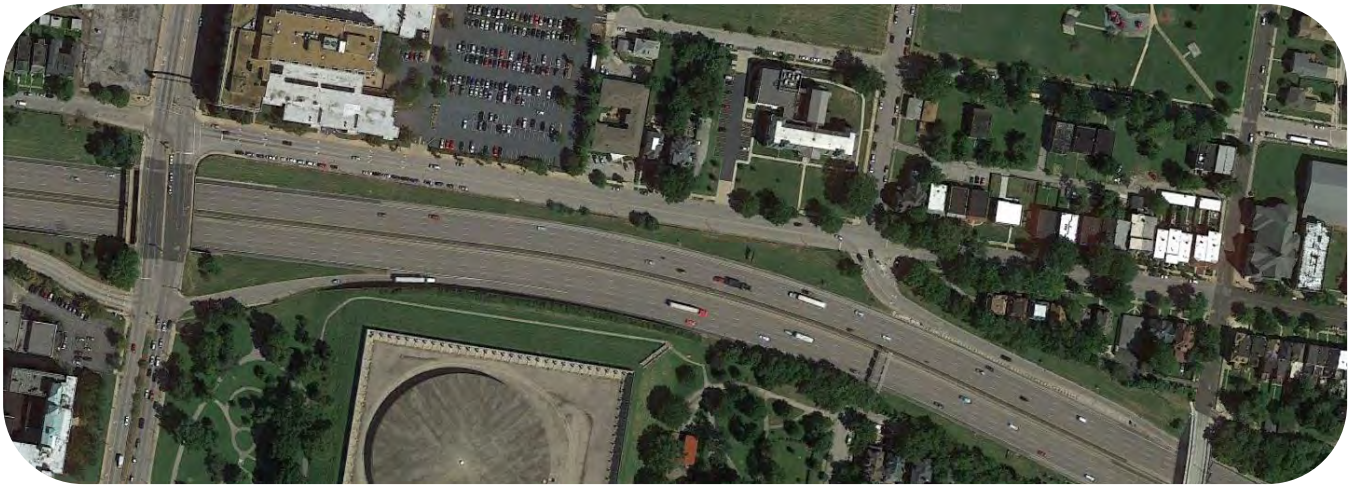


Figure 31. Aerial View of Lafayette Avenue between Grand Boulevard & Louisiana Avenue/I-44 Exit Ramp

Figure 32. Street View of Lafayette Ave. between Grand Blvd. and Louisiana Ave/I-44 Exit Ramp (facing west)

Louisiana Avenue/Interstate-44 Exit Ramp to Jefferson Avenue: East of Louisiana Avenue, the roadway is still 50-feet wide, but incorporates a 10-foot wide center two-way-left-turn-lane (TWLTL). There is parking allowed on both sides of the street, essentially leaving a single driving lane in each direction. There are sidewalks along both sides of the street. The surrounding land use is more residential in nature, with homes fronting the street (access is provided via rear alleys) although mixed overall with a school at the Compton Avenue intersection (St. Louis Christian Academy), churches, and some commercial business. The volume of residential decreases near the east end of the study limits and there is a hotel, gas station, and public library at the intersection with Jefferson Avenue.

Figure 33. Aerial View of Lafayette Avenue between Louisiana Avenue/I-44 Exit Ramp and Jefferson

Figure 34. Street View of Lafayette Ave. between Louisiana Ave/I-44 Exit Ramp and Jefferson (facing west)

Shenandoah Avenue

Shenandoah Avenue is classified as a local street; however, due to its geometry, surrounding road network, and daily traffic volumes, it could be considered to function as a collector. The corridor intersects three principal arterials: Grand Boulevard and Jefferson Avenue (which both form borders of Ward 6 at Shenandoah Avenue) and Gravois Boulevard (east of Ward 6 on Shenandoah Avenue). Shenandoah Avenue forms two segments of the Ward 6 boundary: between Grand Boulevard and Arkansas Avenue and between Compton and Jefferson Avenues. Daily traffic volumes are 2,300 vpd at the west end of the study corridor (near Grand Boulevard) and 1,900 vpd at the east end (near Jefferson Avenue).

Shenandoah Avenue is designated as part of the Bike St. Louis network, with shared bike lanes on the segment between Grand Boulevard and Ohio Avenue. Currently there is official "Bike St. Louis" signage and some limited pavement markings in place within this corridor at the intersections with Grand Boulevard and Compton, Nebraska, and Ohio Avenues.

The roadway character of Shenandoah Avenue is fairly consistent through the study corridor. The roadway is between 36- and 38-feet wide, with a centerline strip in the middle of the pavement. There is parking permitted along both curbs and sidewalks along both sides of the street. The land use is mixed with homes fronting the street (with access provided by rear alleys), some commercial near intersections, an elementary school (Shenandoah Elementary, St. Louis Public Schools), and a local park (Fox Park).

Figure 35. Aerial View of Shenandoah Avenue between Grand Boulevard and Jefferson Avenue

Figure 36. Street View of Shenandoah Avenue between Grand Boulevard and Jefferson Avenue

Traffic Data Collection

The project team collected traffic volume and speed data at selected locations during the peak periods in order to identify the prevailing traffic and pedestrian conditions and behaviors. Count types and locations were determined based on input from the: Alderwoman during the project kick-off meeting, participants of the First Public Meeting and Resident Survey. Several types of count data were collected:

- Automatic machine traffic counters were placed at twelve different locations for seven days. These counters measured both through traffic volumes (to be summarized both hourly and daily) and travel speeds. This data is summarized in Figure 37. The machine counters ("tubes") were placed at the following locations:
    - Compton Avenue between Spruce Street and Choteau Avenue
    - Compton Avenue between Lasalle Street and Rutger Street
    - Compton Avenue between Lafayette Avenue Russell Boulevard
    - Compton Avenue between Russell Boulevard and Longfellow Boulevard
    - Compton Avenue between Sidney Street and Magnolia Avenue
    - Compton Avenue between Gravois (MO 30) and Juniata Street
    - Russell Boulevard between Compton Hill Place and Compton Avenue
    - Russell Boulevard between Jefferson and Ohio Avenue
    - Shenandoah Avenue between Texas and Ohio Avenue
    - Shenandoah Avenue between Vanderburgh and Tennessee Avenue
    - Lafayette Avenue between Louisiana Avenue and Grand Boulevard
    - Lafayette Avenue between Jefferson Avenue and Ohio Avenue

- Manual traffic/pedestrian counts were collected at seven intersections of Compton Avenue. Vehicular turning movement, pedestrian, and bicycle volumes were all counted for six peak hours of a typical weekday. The count periods were two hours in the morning peak: 7:00 – 9:00 AM and four hours in the afternoon peak: 2:00 – 6:00 PM. The afternoon count period was extended to capture any potential peaks associated with school times. The intersections counted were:
    - Compton Avenue and Park Avenue (all-way stop-controlled)
    - Compton Avenue and Lafayette Avenue (all-way stop-controlled)
    - Compton Avenue and Russell Boulevard (all-way stop-controlled)
    - Compton Avenue and Shenandoah Avenue (all-way stop-controlled)
    - Compton Avenue and Sidney Street (all-way stop-controlled)
    - Compton Avenue and Magnolia Avenue (all-way stop-controlled)
    - Compton Avenue and Arsenal Street (all-way stop-controlled)

  The manual data was analyzed to identify the peak hour volume for the AM, afternoon, and PM periods. The afternoon summary period is intended to capture the typical school dismissal volumes. The automobile traffic volumes for these peak hours is summarized in Figure 38, the pedestrian and bicycle traffic volumes are summarized in Figure 39.

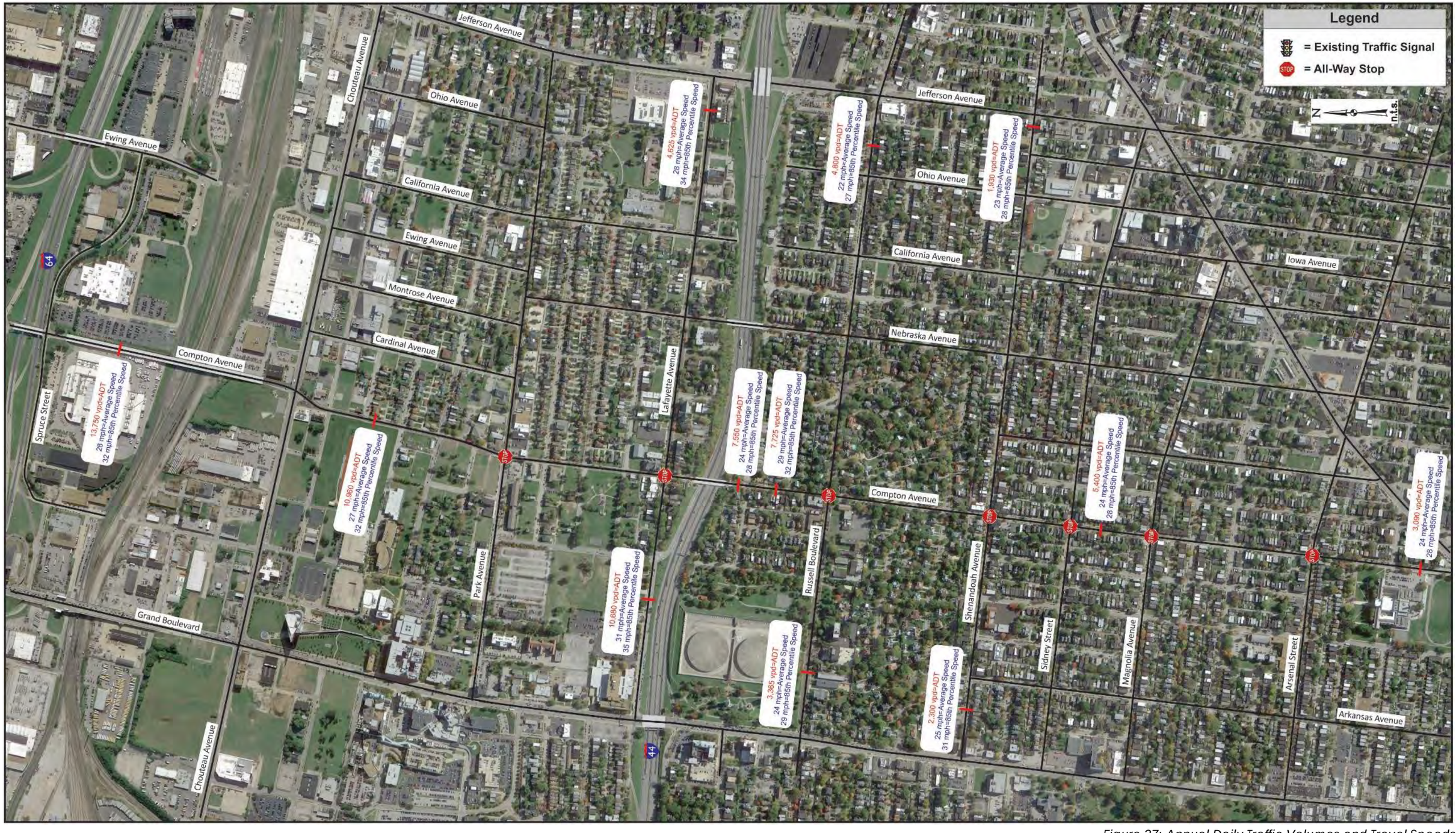


Figure 37: Annual Daily Traffic Volumes and Travel Speeds

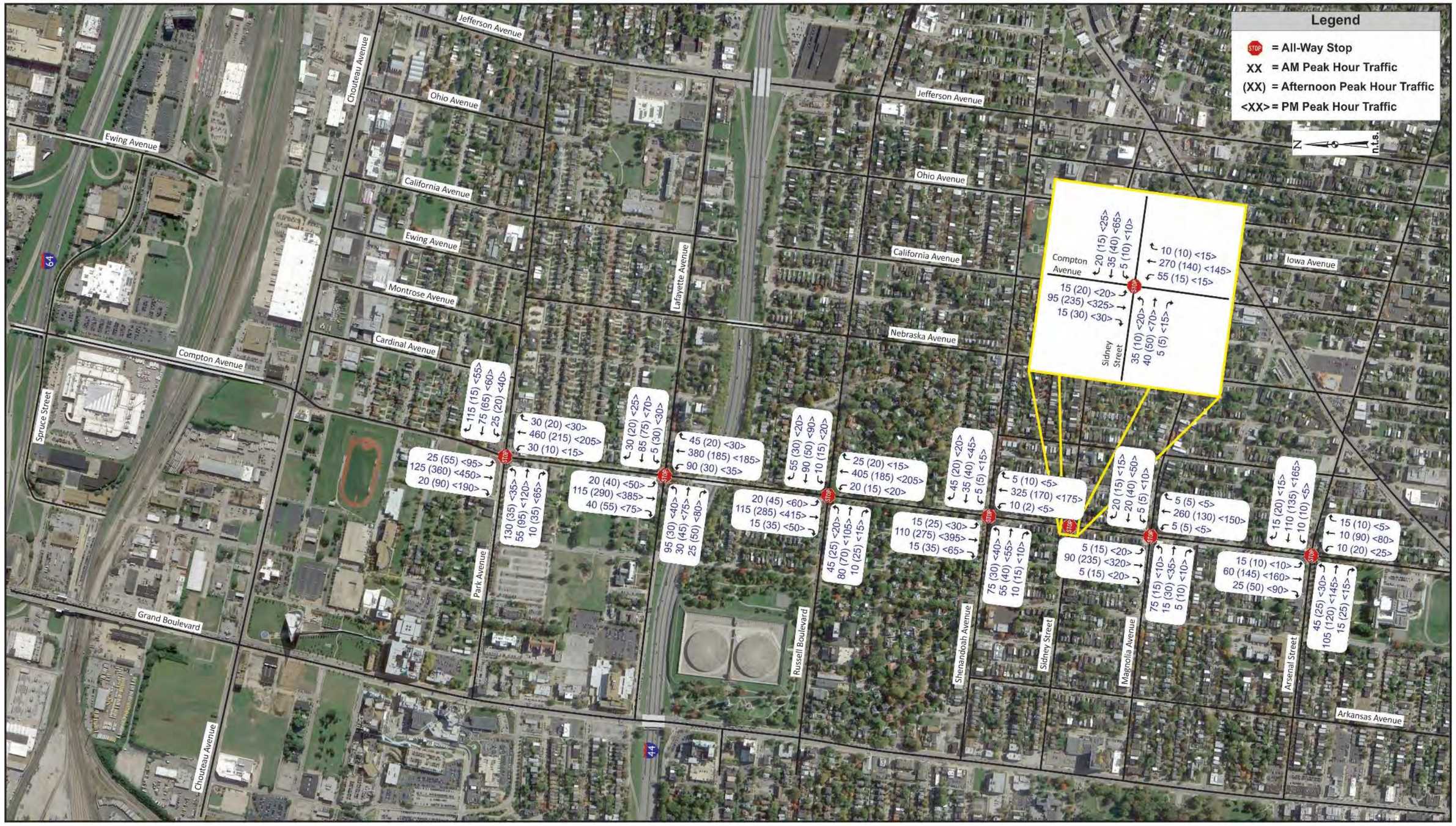


Figure 38: Vehicular Peak Hour Turning Movement Volumes

Figure 39: Compton Intersection Pedestrian and Bicycle Traffic

Traffic Volumes and Speeds

The machine volume and speed data was used to compute daily traffic volumes and the prevailing speeds for segments of roadways in Ward 6 (shown on Figure 37). This data was then evaluated by comparing actual traffic conditions to the street's intended purpose, current posted speed limit and general character. The following tables identify the average daily traffic volume (ADT), 85th percentile travel speed, 50th percentile travel speed, and additional data.

Traffic engineering experience maintains that most drivers will travel at an operating speed that they consider both comfortable and safe based upon street geometrics and surrounding conditions. The 85th percentile speed is the speed that 85% of drivers will voluntarily travel at or below in free-flow traffic conditions and is one of the primary factors used in engineering studies to determine appropriate speed limits.

Compton Avenue

A summary of Compton Avenue volumes and speeds is shown in Table 1. Compton Avenue is classified as a minor arterial (as discussed earlier, the general range of volumes for a minor arterial is 3,000 – 14,000 vpd). The average weekday traffic volumes along Compton Avenue ranged from near 14,000 vpd on the north end near Spruce and to 3,000 vpd on the south end near Gravois Avenue. The weekend volumes were lower than weekday volumes.

As indicated previously, speeding is primary concern on Compton. The posted speed limit is 35 MPH in the north end of the corridor near Spruce Street and transitions to 30 MPH at the south end of the corridor near Gravois Avenue. The 85th percentile speed varied from 28 MPH to 36 MPH. The average speed ranged from 24 MPH to 33 MPH. The percent of vehicles exceeding 30 MPH south of Russell Boulevard was generally less than 12%. However, data validates the concerns that speeding is an issue on Compton Avenue north of Russell Boulevard.

Table 1 - Existing Traffic Volume and Speed Data for Compton Avenue

Roadway Segment	Average Weekday Daily Traffic	Daily 85th Percentile Travel Speed (MPH)	Daily 50th Percentile Travel Speed (MPH)	% Vehicles Exceeding 30 MPH	% Vehicles Exceeding 40 MPH
400 Block of S. Compton (btwn Spruce & Chouteau) 35 MPH posted	13,750 vpd	32	28	82%	22%
Northbound	7,030	28	24	77%	9%
Southbound	6,720	36	33	87%	36%
1100 Block of S. Compton (btwn LaSalle & Rutger) 35 MPH assumed	10,960 vpd	32	27	33%	3%
Northbound	5,380	32	27	33%	3%
Southbound	5,680	33	28	39%	4%
1700 Block of S. Compton (btwn Lafayette and Russell) 30 MPH	7,725 vpd	32	29	44%	3%
Northbound	3,745 vpd	32	29	62%	5%
Southbound	4,980 vpd	33	29	28%	1%
2100 Block of S. Compton (btwn Russell & Longfellow) 30 MPH	7,550 vpd	28	24	8%	1%
Northbound	3,630	28	24	7%	1%
Southbound	3,920	29	25	9%	1%
2700 Block of S. Compton (btwn Sidney & Magnolia) 30 MPH	5,400 vpd	29	24	10%	1%
Northbound	2,400 vpd	29	24	10%	1%
Southbound	3,000 vpd	29	24	10%	1%
3100 Block of S. Compton (Btwn Gravois & Juniata) 30 MPH	3,090 vpd	28	24	9%	1%
Northbound	1,440 vpd	29	25	12%	1%
Southbound	1,650 vpd	28	24	5%	1%

Residents indicated that vehicular speeds on Compton Avenue are especially problematic during the overnight and peak commute hours. The hourly speed breakdown for the critical segment between Lafayette Avenue and Russell Boulevard was investigated. The posted speed limit at this location is 30 MPH. As shown in Table 2, below, approximately 20% or more of the traffic on Compton Avenue is traveling over 35 MPH in this segment between, roughly, midnight and noon. In addition, over 10% of the traffic is traveling at greater than 40 MPH between 3:00 AM and 7:00 AM, confirming neighborhood observations.

Table 2 – Daily Speed Breakdown Investigation

Compton - between Lafayette and Russell			
% Over 30 MPH	% Over 35 MPH	% Over 40 MPH	
48%	19%	6%	12:00 AM
52%	21%	7%	01:00 AM
54%	24%	6%	02:00 AM
47%	24%	10%	**03:00 AM**
70%	39%	18%	**04:00 AM**
54%	27%	9%	**05:00 AM**
65%	34%	12%	**06:00 AM**
61%	27%	7%	07:00 AM
58%	20%	3%	08:00 AM
60%	22%	3%	09:00 AM
58%	21%	4%	10:00 AM
54%	19%	4%	11:00 AM
48%	17%	3%	12:00 PM
44%	15%	2%	01:00 PM
47%	16%	3%	02:00 PM
42%	14%	2%	03:00 PM
39%	12%	2%	04:00 PM
33%	9%	1%	05:00 PM
23%	6%	1%	06:00 PM
32%	8%	1%	07:00 PM
35%	10%	2%	08:00 PM
36%	11%	3%	09:00 PM
34%	12%	2%	10:00 PM
44%	15%	4%	11:00 PM

Russell Boulevard

Russell Boulevard is also classified as a minor arterial. The average weekday traffic volumes along Russell Boulevard ranged from 3,365 vpd to 4,800 vpd with slightly lower volumes on the weekends. The posted speed limit is 30 MPH, the 85th percentile speed varied from 26 MPH to 29 MPH. The average speed ranged from 21 MPH to 24 MPH. There were less than 13% of vehicles exceeding 30 MPH. Based on the machine data, Russell Boulevard does not appear to have speed issues. The weekday ADT and speed information are summarized in Table 3.

Table 3 - Existing Traffic Volume and Speed Data for Russell Boulevard

Roadway Segment	Average Weekday Daily Traffic	Daily 85th Percentile Travel Speed (MPH)	Daily 50th Percentile Travel Speed (MPH)	% Vehicles Exceeding 30 MPH
3400 Block of Russell (west)	3,365 vpd	29	24	6%
Eastbound	1675 vpd	29	24	13%
Westbound	1690 vpd	29	24	4%
2600 Block of Russell (east)	4,800 vpd	27	22	6%
Eastbound	2,540 vpd	26	21	5%
Westbound	2,260 vpd	28	23	7%

Lafayette Avenue

Lafayette Avenue is characterized as a major collector. The average weekday traffic volumes along Lafayette Avenue ranged from 4,600 vpd to nearly 11,000 vpd with slightly lower volumes on the weekends. The posted speed limit is 30 MPH, and the 85th percentile speed was generally 34 to 35 MPH. The average speed ranged from 28 MPH to 31 MPH. The percentage of vehicles exceeding 35 MPH was greater on the west end (west of the freeway ramp), where the percentage of vehicles exceeding 35 MPH ranged from 17% to 25%, and was 8% to 15% on the east end. This is potentially due to the freeway ramp connection and the less residential character of the area, which could encourage higher speeds. The weekday ADT and speed information are summarized in Table 4.

Table 4 - Existing Traffic Volume and Speed Data for Lafayette Avenue

Roadway Segment	Average Weekday Daily Traffic	Daily 85th Percentile Travel Speed (MPH)	Daily 50th Percentile Travel Speed (MPH)	% Vehicles Exceeding 30 MPH (SL=30)	% Vehicles Exceeding 35 MPH (SL=30)
3400 Block of Lafayette (west)	10,680 vpd	35	31	72%	24%
Eastbound	1,320	35	31	64%	17%
Westbound	9,360	35	32	73%	25%
2600 Block of Lafayette (east)	4,625 vpd	34	28	44%	12%
Eastbound	2,010	34	28	40%	8%
Westbound	2,615	34	28	47%	15%

Shenandoah Avenue

Shenandoah Avenue is classified as a local street. The average weekday traffic volumes along Shenandoah Avenue ranged from 1,900 vpd to 2,300 vpd with slightly lower volumes on the weekends. The posted speed limit is 25 MPH on the west end between Grand Boulevard and Arkansas, which transitions to a 20 MPH school zone between Arkansas and Louisiana, then increases to 30 MPH east of Louisiana. The 85th percentile speed varied from 28 MPH to 31 MPH. The average speed ranged from 23 MPH to 25 MPH. There were 5% to 7% exceeding 30 MPH (posed speed) on the east end, and 16% to 26% exceeding 30 MPH on the west end. The weekday ADT and speed information are summarized in Table 5.

Table 5 - Existing Traffic Volume and Speed Data for Shenandoah Avenue

Roadway Segment	Average Weekday Daily Traffic	85th Percentile Travel Speed (MPH)	50th Percentile Travel Speed (MPH)	% Vehicles Exceeding 30 MPH
3500 Block of Shenandoah (west)	2,300 vpd	31	25	22%
Eastbound	1,000 vpd	31	25	16%
Westbound	1,300 vpd	31	25	26%
2600 Block of Shenandoah (east)	1,930 vpd	28	23	7%
Eastbound	1,020 vpd	28	23	9%
Westbound	910 vpd	28	23	5%

Crash Data

Crash data was obtained from the City of St. Louis Traffic Division for the Compton Avenue corridor for the three full years between 2012 and 2014. It should be noted that crash data is limited to only those incidents where a police report is filed (without a report, there is no record of the incident). The data is provided by intersection and is summarized in Table 6, on the following page, for twenty-one intersections in the Compton Avenue study corridor. There were between zero and twelve crashes reported at the intersections (the range). The mode (most frequent number reported) is two crashes for the three-year period. The average number of crashes during the period (the mean) is four per intersection; the median number is four as well.

The crash history indicates six of the Compton corridor intersections have a higher than average number of crashes: Park Avenue, Lafayette Avenue, Russell Boulevard, Shenandoah Avenue, Sidney Street and Arsenal Street all have six or more crashes during the three-year period. One of those intersections, Compton and Lafayette, experienced an incident that resulted in a fatality. In addition, there was a pedestrian-related incident during the period at the Compton and Arsenal intersection (there was also a pedestrian-related incident at the intersection of Compton and Henrietta Street).

Table 6 - Crash Data for Compton Avenue

Cross Street	2014	2013	2012	*(Total)*
LaSalle	0	1	0	*1*
Hickory	0	1	1	*2*
Rutger	0	1	0	*1*
Caroline	0	0	2	*2*
Vista	0	1	1	*2*
Park	1	4	5	*10*
St. Vincent	0	0	0	*0*
Eads	0	0	0	*0*
Henrietta	3*	1	0	*4*
Lafayette	1**	6	2	*9*
Geyer	0	1	0	*1*
Russell	2	3	7	*12*
Longfellow	1	1	0	*2*
Hawthorne	0	1	1	*2*
Shenandoah	0	5	1	*6*
Sidney	2	3	5	*10*
Magnolia	1	3	0	*4*
Halliday	0	0	1	*1*
Pestalozzi	0	3	0	*3*
Arsenal	2	2	8*	*12*
Hartford	1	0	1	*2*

* pedestrian involved
**fatality

Peak Observations

CBB completed peak period observations within the Ward on December 2, 2015. Specific intersections were selected based on resident feedback. Public comments referenced running stop signs, high speeds, poorly located parking areas and low pedestrian connectivity. Notes from the field observations follow:

- Compton Avenue & Russell Boulevard – There is limited sight distance as motorists approach the intersection southbound on Compton, due to building setbacks and street trees; it is difficult to see traffic coming from either direction on Russell. In addition, cars park very close to the intersection in all directions. Heavy volumes of cars were travelling north during the AM peak and heavy volumes were travelling south during the PM peak. Numerous motorists were observed running or rolling through the stop signs (approximately 50% of the traffic on Compton). During the AM peak, a pedestrian

walking east on Russell attempted to cross Compton; three cars passed by without stopping for the pedestrian.

- Compton Avenue & Shenandoah Avenue – This intersection also has sight distance issues caused by small building setbacks and stop sign placement (in line with buildings and/or street trees). Again, parking is permitted very near to the intersection. This intersection is difficult for pedestrians to maneuver. There are no marked crosswalks, but stores and restaurants are located at this intersection. During the peak observations many motorists were observed running stop signs or rolling through as they approached the intersection. Directional volumes are also heavier northbound in the AM peak and southbound in the PM peaks.
- Compton Avenue & Layfayette Avenue – Indicated numerous times by residents (during the survey and first public meeting) as "hazardous" and "dangerous" intersection, we received reports of crashes, totaled cars and fatality (also reflected in accident data). There were no pavement markings at this intersection, including crosswalks or stop bars. Motorists very rarely were observed using their turn signal, and often running or rolling through stop signs. Cars park very near the intersection at all corners (residents specifically noted concerns related to parking and pedestrian traffic at the church, in the northwest corner of the intersection, on Sundays).
- Compton Avenue & Park Avenue – This intersection has an awkward configuration. Again, motorists were observed frequently running or rolling through stop signs. There are no pavement markings. A head start center is located at the northeast corner of the intersection, and the traffic and geometry create a challenge for adults and children accessing the center. Saint Louis University facilities are located west of this intersection, creating additional pedestrian traffic.

Peak observations confirm resident concerns. Stop sign compliance is poor and the environment within the corridor is not pedestrian-friendly. Users indicated a desire to foster a neighborhood environment on Compton Avenue and make it a safer place to be for those not traveling in a vehicle. Field observations verify the need for pedestrian enhancements.

Infrastructure Inventory

A high-level "overview" of the transportation infrastructure in the study area was performed to document the existing conditions. The inventory utilized GIS databases and other existing electronic sources, such as Google Earth, to note the general state of the infrastructure (e.g. the presence, configuration and general dimensions of roadways, sidewalks, bike lanes and pedestrian ramps). The end product is a web-based map of the study area that the project team utilized to verify field conditions while developing alternatives and recommendations. An example "screen shot" of the inventory is shown in Figure 40.

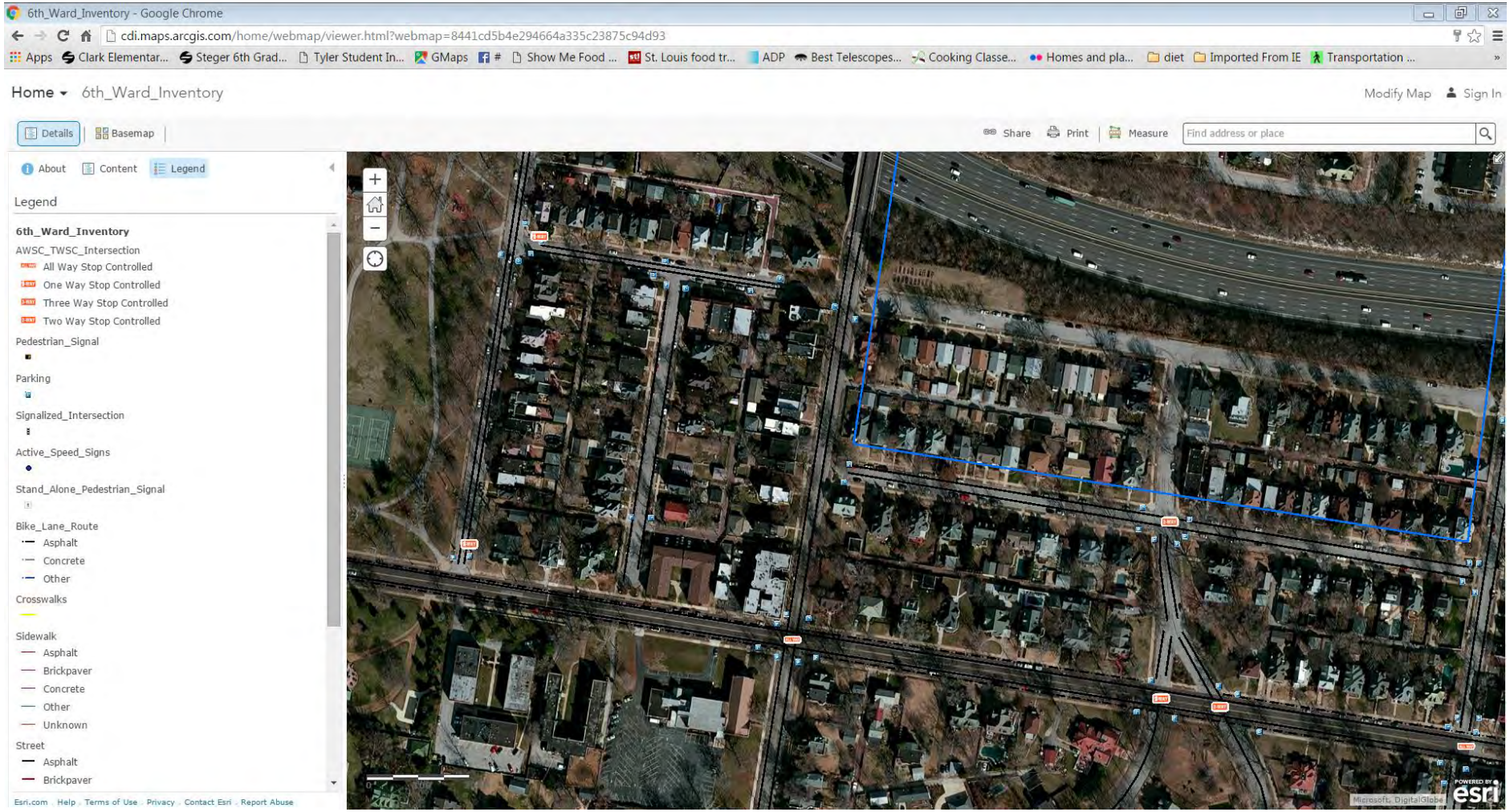


Figure 40: Compton Avenue Corridor Web-Based Infrastructure Inventory Screen Capture

Issue Identification

As indicated previously, field data and observations confirm neighborhood concerns. These concerns are discussed in the following paragraphs.

Speeding

The field data indicates that, very generally, approximately 20-percent of traffic on a number of the street segments in the study area are exceeding the posted speed limits. This is especially true for Compton Avenue, which also sees further increases in speeds during the overnight hours. Speeding vehicles create unsafe conditions as well as an unpleasant atmosphere for pedestrians and bicyclists.

A contributing factor may be the inconsistent speed limit signage. There are multiple stretches of Compton Avenue without posted speed limits and, on inconsistent limits posted for northbound travel; the existing posted speed limits are shown in Figure 41.

Figure 41: Existing Posted Speed Limits and Locations on Compton Avenue

While most people think increased enforcement mitigates speeding, studies have shown it does not have lasting effects on the driver behavior. Stop signs are sometimes installed to combat speeding, but studies have also shown that compliance may decrease when stop signs are frequent (as observed within this study area) and/or speeds may increase mid-block as drivers attempt to "make up time" lost to stop at the stop signs. Current preference is to try to use different traffic calming measures to create an environment that suggests, or even requires lower speeds. Traffic calming and various methods of application of this technique are elaborated further in the report.

Stop Sign Compliance

Figure 42. Stop sign at Shenandoah and Compton

Lack of stop sign compliance is an issue in Ward 6. This behavior is unsafe for other motorists as well as those trying to navigate the corridor on foot or by bike. Field observations confirm this behavior; with roughly 50% of the *observed* vehicles not coming to a complete stop at the stop sign (with various levels of noncompliance between running and rolling).

Lighting

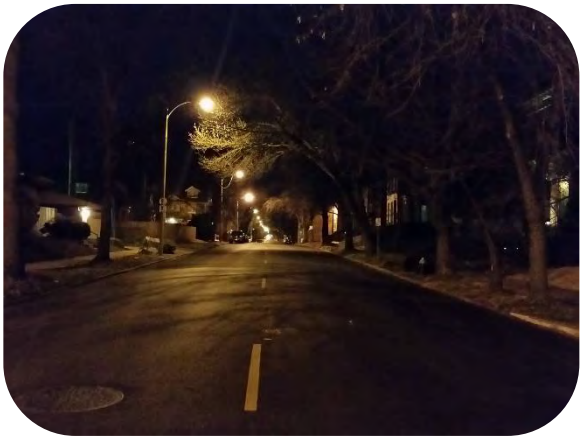


Figure 43. Street Lighting on Compton Avenue south of Interstate-44

Lighting was a high area of concern for the neighborhood. Compton Avenue currently has street lighting for the full length between Spruce Street and Gravois Avenue on the east side of the street only (north of Choteau Avenue they are placed on both sides of the street with greater spacing). The lights are spaced approximately every 150-feet and are sodium-vapor (yellow light) street lamps. The lighting provides adequate street illumination for Compton Avenue. However, due to the height and spacing of the lights and the presence of street trees and yard vegetation, there are dark spots and shadows on the sidewalks (and often in the parking lanes) between lights on the east side of the street, and the sidewalk and parking on the west side of the street are even darker. In addition, the low-pressure sodium lamps (while efficient) give off only monochromatic yellow light thereby inhibiting color vision at night. The uneven lighting and the lack of color can both erode a sense of safety.

Lacking Pedestrian Facilities

Many residents within these neighborhoods do not feel the Compton corridor is safe for pedestrians. Comments provided during the public meeting on the *Vision for the Compton Corridor* board often referred to pedestrian safety. Examples of these comments are:

- "Make Compton feel more local"
- "More residential"
- "More pedestrian friendly"
- "Beautiful and safe"
- "Safer crossings for pedestrians"

Figure 44. Pedestrian Crossing of Shenandoah

Many intersections on Compton do not have striped crosswalks or pedestrian signage. Instead, the current design demonstrates a hierarchy that pays more attention to motorists, which is very common in today's urban areas. Although sidewalks exist throughout the corridor, there are gaps in the sidewalk network at the intersections and at a few locations with missing sidewalk pavement. In addition, school zones are poorly signed (e.g. there is no signage on Compton Avenue for Roosevelt High School and only one sign posted for Shenandoah Elementary School). Finally, accessible design (e.g. curb ramps and tactile treatments) within the corridor does not reflect current standards.

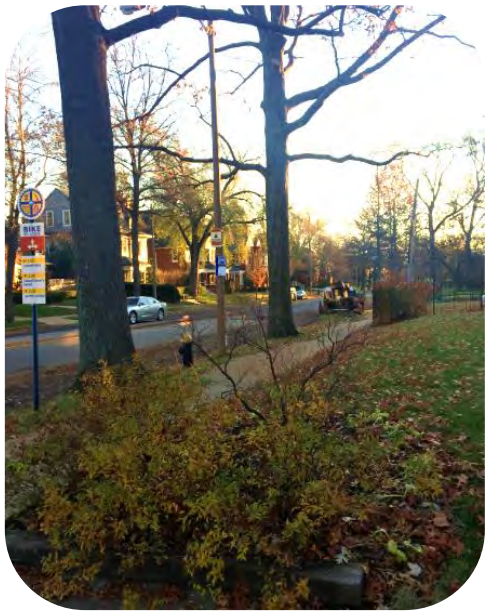


Figure 45. Poor Sight Distance, Compton at Russell

Sight Distance

Many of the intersections on Compton within the Corridor have poor sight distance due to a variety of issues, including:

- Small setbacks
- Stop sign placement
- Landscaping
- On street parking too close to the intersection
- Lighting

Potential mitigation includes landscaping maintenance, stop sign relocation, additional parking restrictions near intersections, and improved signage and striping. The sight-distance issue is compounded by the fact that motorists in the corridor frequently run or roll through stop signs.

Alternatives

As anticipated, Compton Avenue will benefit from traffic-calming strategies throughout the study corridor. The goal of traffic calming should be to change how the street functions, rather than rely on strategies such as signage or enforcement to change user behavior.

Traffic Calming Overview

The Institute of Transportation Engineers (ITE) defines traffic calming as: "The combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users." By design, traffic calming is a self-enforcing traffic management approach that forces motorists to alter their speed or direction of travel. The purpose of traffic calming is to improve safety, especially for pedestrians and bicyclists, and to improve the environment or "livability" of streets for residents and visitors. Enhanced safety is one of the most fundamental benefits of traffic calming. By decreasing volume and/or reducing speed the number and severity of accidents is greatly diminished. The objectives of traffic calming include:

- Slow vehicular travel speeds
- Increase safety for non-motorized street users
- Reduce the frequency and severity of collisions
- Increase access for all modes
- Reduce the need for police enforcement
- Enhance the street environment
- Reduce cut-through motor vehicle travel patterns

Figure 46. Street Trees for Traffic Calming

Traffic calming measures can generally be separated into three groups based on the goal they are trying to achieve: speed control, volume control, and safety enhancement. These three categories are not as distinct as they may seem – for example, speed reduction measures may divert traffic to other streets (reducing volume) and efforts to control cut-through traffic may also decrease the speeds of the traffic using the road. Similarly, certain safety enhancements have the additional benefit of raising driver awareness and slowing traffic. Effective traffic calming strategies often include using more than one of the tools. Traffic calming should be designed with a systematic approach, appropriate spacing of measures, and consideration for secondary effects of the installations. Examples include:

- Speed-Control Strategies:
  - Speed Hump
  - Speed Table
  - Raised Crosswalk
  - Raised Intersection
  - Rumble Strip
  - Textured and Colored Pavement
  - On-Street Parking
  - Modern Roundabout
  - Narrowed Lane
  - Curb Extensions, Bulbs, Bump-outs
  - Chicane
  - Median or Island
  - Landscaping, Street Trees
  - Pavement Marking
  - Signage
  - Edge Treatment
  - Reduced Corner Radii

- Volume-Control Measures
  - Roadway Closure/Diverter
  - Turn-Restriction
  - One-way Street
  - Circulation Change
- Safety Enhancements
  - Lighting
  - Dedicated Bike Lanes
  - Pedestrian Refuge Areas

A table summarizing these strategies and outlining their potential benefits and issues can be found in Appendix F. Note that the table provides a general outline, but the success of these alternatives is very site-specific. There is not a single tool to solve all traffic issues and one tool that may work well in one area for a particular issue may not be effective in another situation. The key to successful traffic calming is community acceptance and municipal support/maintenance[1].

Multiple strategies are applicable to the Compton Avenue study corridor, as discussed in the following sections. These alternatives will have varying degrees of potential benefits and costs and depend partially on their location and degree of installation. The recommendations start with intersection specific treatments, and the goals of these treatments at each location. As indicated earlier, these will include four primary intersections, and 3 secondary recommendations, with low, medium and high cost options. These strategies are a toolbox, and can be used in different variations, depending on funding availability and timing. For example, implementing the low cost option initially may be a good approach, as it is less disruptive and can test the effects at a given location. Area traffic patterns and behaviors should be observed for some time after installation of any improvement. If, after some time, additional mitigation is warranted, another strategy can be implemented as needed and as funding becomes available.

In addition to the intersection specific treatments, we offer corridor wide improvements that may be considered for implementation as a type of long range plan for these neighborhoods. The next piece of the alternatives section outlines the different traffic calming techniques and goals, and is then followed by our recommendations section.

[1] *Traffic Calming Resource Guide*: South Central Regional Council of Governments; June, 2008

Pavement Markings

Pavement markings can elevate a traveler's (of all modes) spatial and temporal awareness. At the same time, they are generally less expensive and easier to install compared with other traffic-calming options and are often more familiar to road users and less disruptive to emergency service vehicles and roadway drainage patterns than other traffic calming devices.

Longitudinal Striping

Longitudinal striping (e.g. edgeline striping) visually restricts a driver's travel path, which has been shown to reduce driver speeds particularly on long, straight roadways with wide travel lanes. The photo shows an example of edge line striping visually narrowing a roadway. Before and after studies have shown that speed reductions in the range of one to seven miles per hour are easily accomplished through roadway striping. Another advantage is that linear striping denoting other roadway uses such as parking or bike lanes define the various functions of the roadway as a multi-use neighborhood facility.

Figure 47. Example of Edgeline Striping to Visually Reduce Roadway Width

There are numerous striping alternatives that can be used for traffic calming. The basic concept of striping for traffic calming is to reduce the driver's perceived width of the roadway. By doing this, motorists tend to reduce speed and may also divert from a particular route as a result of their perception or overall lower travel speeds. There are several alternatives for striping as traffic calming[2]:

- Centerline stripe –a typical single dashed yellow line or double-yellow stripe between the travel directions
- Edge lines – white lines added to the outside of the travel lane
- Striped median – a two-way left-turn lane (TWLTL) or yellow-striped buffer
- Striped choker or chicane – although not as prominent as a raised curb, it does provide some of the operational features and/or can be installed temporarily
- Striped speed hump without the vertical displacement – especially useful where vertical displacement is undesirable

[2] *Roadway Striping as a Traffic Calming Option*: Robert Kahn, PE and Allison Kahn Godecke, MBA; 2011

Lateral Striping (Crosswalks and Stop-Bars)

Lateral striping (e.g. pedestrian crosswalks and stop-bars) breaks up long vistas and creates the perception of multiple travel segments. Crosswalks have the added benefit of making motorists and cyclists more aware of their surroundings and elevating the presence of pedestrians and cyclists within the corridor.

Very few intersections within the study corridor currently have striped crosswalks or stop-bars, although all intersections are served by sidewalks. Crosswalks are an extension of the sidewalk path and denote the dedicated pedestrian zone in a roadway. A stop bar installed before the crosswalk (in the direction of travel) notes where the driver should stop to provide a buffer to crossing pedestrians, elevating their user comfort. Providing these marked links may also increase usage of the pedestrian facilities within the corridor.

There are multiple styles of crosswalk striping. In the St. Louis area, "standard" (two parallel lines in the direction of travel) and "continental" (multiple bars perpendicular to the direction of travel) are typically used. The continental crosswalks provide higher visibility than standard crosswalks and offer the potential to last longer.

Figure 48. ***Example of "Continental" Striped Crosswalk*** *(foreground); Standard Crosswalk (background); and Stop Bar (right side)*

Horizontal Deflection

This category of traffic-calming techniques includes all those that reduce the area of the street designated exclusively for motor vehicle travel and/or which require the drivers to stray from the perceived path to complete their movement. "Reclaimed" space from area reductions is typically used for pedestrian or cyclist amenities, parking, and/or landscaping.

Curb Bulbs, Bump-outs, or Extensions

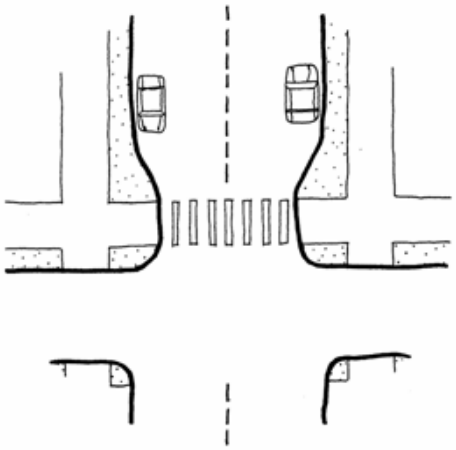


Figure 49. Curb Extensions

Curb bulbs are extensions or enlargements of the sidewalks at intersections or mid-block locations that narrow the street. In mid-block locations they are typically called chokers and can narrow the street to two narrow lanes or even a single lane. Curb extensions can be installed as vertical curbs or as striped or painted areas. Vertical curb extensions work well with speed humps, speed tables and raised median islands; however they should be carefully considered for streets with bike lanes as cyclists do not like to be forced into the vehicular lanes. Designing for appropriate roadway drainage is a key consideration for vertical curbs; although some installations utilize a channel for drainage, these can be very difficult to maintain (i.e. they can easily fill with debris and must be manually cleaned out). Curb extensions for a crosswalk will reduce the pedestrian crossing width and increase their visibility (as they are nearer to the driving lanes when standing at the curb edge). Therefore, curb extensions offer the potential to both increase pedestrian safety and decrease travel speeds by physically narrowing the roadway. Finally, curb extensions can also offer an opportunity for landscaping and decorative elements.

Chicanes

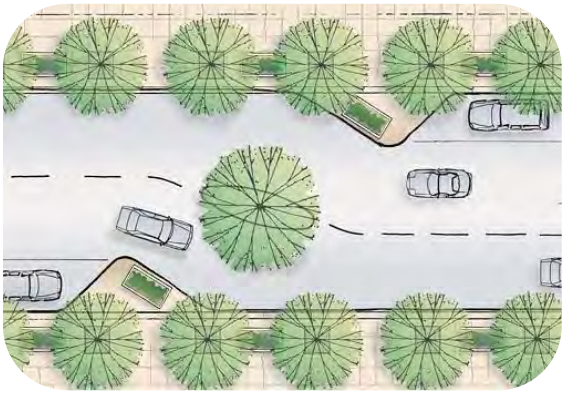


Figure 50. Chicane

Chicanes utilize curb extensions or on-street parking to curve or alter the driver's path, often creating s-shaped curves within a mid-block segment. The intent of a chicane is to reduce vehicle speeds, although they must be carefully designed or drivers can cut straight paths across the centerline.

Narrowed Lanes

Twelve-foot driving lanes have been utilized in the past as a measure of safety; providing ample room for vehicles and accommodating small deviations (errors) in path. However, the additional room for error has also encouraged higher speeds on our roads. Narrowed lanes encourage drivers to reduce speeds and be more attentive to driving behaviors. Narrowed lanes can also reduce pedestrian crossing distances and provide dedicated space for cyclists, parking, and landscaping. It is not uncommon for local streets to be as narrow as 28-feet with parking on both sides. These are sometimes referred to as "queuing streets" as two vehicles cannot pass side-by-side where cars are parked on both sides. These streets have been demonstrated to be as safe (or safer) than wider streets.

On-Street Parking

The sense of enclosure resulting from parked cars, the varied appearance of parked cars, the entry/exit vehicle maneuvers, and the pedestrian traffic generated by occupants of parking and departing vehicles all contribute to traffic calming on streets with parking. Curbside parking can be parallel or diagonal, but all types should be considered in the context of bicycle use of the street as parking maneuvers and door openings are obstacles to bicyclists.

Figure 51. Narrowed Lanes with Parallel Parking

Vertical Deflection

This category includes all traffic-calming devices raised above pavement level, requiring drivers to slow down to navigate them comfortably.

Speed Humps

Figure 52. Speed Hump

Speed humps are rounded, raised areas of pavement placed across the roadway perpendicular to the flow of traffic. Speed hump heights are 3 to 4 inches at their peak. They are typically used on local streets (avoiding transit and primary emergency service corridors) and are placed mid-block (not at intersections), and work well with mid-block curb extensions. Speed humps are typically marked with striping and advance warning signage. Speed humps are often used to reduce speeds but, like stop signs, can sometimes cause an increase in speeds between successive installations. Speed humps are typically unpopular with cyclists and can potentially increase traffic noise due to braking and acceleration of vehicles (especially buses and trucks); their design also needs to carefully consider roadway drainage patterns.

Speed Tables / Raised Crosswalk

Speed tables are similar to speed humps, but have a flat section in the middle and tapered approaches (i.e. are wider in the direction of travel). The flat "top" of a speed table is roughly 10-feet, or as wide as the wheelbase of a passenger car, with ramp 6-foot wide ramp approaches. Like speed humps, they are designed to be 3 to 4 inches tall and need to carefully consider roadway drainage in their design. Speed tables work well with curb extensions and are often combined with crosswalks to elevate the pedestrian and increase their visibility (increasing the likelihood that a driver will yield). As raised crosswalks, they elevate the visibility of pedestrians while also proving them a continuously level crossing path (benefitting accessible-design).

Figure 53. Speed Table as Raised Crosswalk

Traffic Diversion

Traffic diversion is, historically, one of the most widely applied traffic-calming concepts. Includes all devices that cause motor vehicles to slow and change direction to travel around a physical barrier. Physical barriers used to divert traffic can range from trees planted in medians to, roundabout intersections to full street closures.

Traffic Diverters

Traffic diverters are physical barriers installed at intersections that restrict motor vehicle movements in certain directions. They may be designed to prevent left- or right-hand turns or to block through travel. The "pots" frequently utilized in the St. Louis area would be considered traffic diverters. As with all traffic-calming strategies, accommodations for pedestrians and cyclists (as well as transit routes and access) should be carefully considered when designing with diverters.

Roundabouts or Traffic Circles

Modern roundabouts are a channelized intersections in which all traffic moves counterclockwise around a central traffic island. Traffic approaching the intersection is "deflected" to approach the circular roadway at an angle, which slows traffic speeds during the approach. The center islands may be painted or raised and may include landscaping or other improvements. Roundabouts are designed to move traffic at speeds of, roughly, 15 mph through the intersection.

Figure 54. Roundabout Intersection Conversion

Roundabouts are different from traditional traffic circles which have small (typically less than ten feet in diameter), usually raised, center islands and are mainly placed in the intersection of two local streets for traffic calming, with no modifications to the approaching roadway geometry. Modern roundabouts are used on all classifications of streets. They have proven to be effective in reducing motor vehicle speeds and the number and severity of intersection crashes versus signalized intersections as well as being less costly to maintain. Modern roundabouts can have larger or smaller ("mini") center islands depending on the size of the intersection and the number of intersecting roadways. However, roundabouts typically require more right-of-way than traditional intersections and, for this reason, can be difficult to implement in developed areas. Roundabouts can also be tricky for pedestrians and cyclists to navigate.

Safety Enhancements

The term traffic calming is applied to many design interventions that make streets safer by reducing opportunities for speeding and aggressive driving. There are additional strategies in the traffic calming toolbox that are aimed at improving safety for pedestrians. Like other strategies, many of these can overlap multiple goals – contributing towards reductions in vehicular speeds and volumes as well.

Mid-Block Crossings

Mid-block crossings provide additional roadway crossing points for pedestrians. Mid-block crossings can also be safer than intersection crossings because they are free of vehicle turning movements. These crossings are most effective when placed in locations where pedestrians are already crossing without dedicated or marked facilities. Marked mid-block crosswalks should be accompanied by signage or dedicated signals to help ensure motorists yield to pedestrians.

Pedestrian Refuge Areas

The goal of pedestrian refuge areas are to support pedestrians and cyclists trying to cross a busy roadway. They are often provided in street medians or near the curb, and reduce the amount of time a pedestrian is exposed to potential vehicular conflicts. This is especially important to elderly and disabled persons, as well as those traveling with small children

Figure 55. Mid-Block Crossing with Pedestrian Refuge Areas

Lighting

Lighting can affect the apparent width, and feel, of the roadway in several ways: by the size and placement of the poles, by the height and pattern of the light when illuminated, and through the sense of "enclosure" created by overhead lights. Pedestrian-scale lighting provides illumination for the sidewalk as well as the roadway, signifying an area of special concern where pedestrians may be present. Pedestrian-scale lighting discourages crime and makes it more inviting to walk at night. The streetlamps also function as street furniture and can contribute to a more pleasant atmosphere even during the day. Pedestrian scale lighting is defined by lamp heights of 12-15 feet, with a longitudinal spacing of approximately 50- to 75-feet.

Street Furniture

Street furniture also creates a sense of enclosure and "passive" activity in the corridor. This category includes elements such as signs, signals, lights, walls, gateways, fencing, and pedestrian furnishings. Street furniture can both provide separation for the pedestrian pathway and traffic, and create "passive" activity in the corridor, encouraging slower speeds.

Figure 56. Street Furniture

Street Trees

Tree trunks lining the roadside create a sense of enclosure and contribute to a reduced apparent width. The overhead tree canopy further ads to the perception of a narrowed road since the light/shade patterns created on the pavement create a sense of texture. Street trees enhance the pedestrian environment by creating shade and more comfortable temperatures.

Recommendations

Intersection Specific Recommendations

This section provides a menu of traffic calming options that may be considered at each priority intersection. Alternatives are provided for both lower and higher cost improvements, and may be implemented either alone or in combination with other improvements. Combined, these projects offer a traffic calming plan for the Compton corridor. In addition to providing recommendations at the priority intersections (Lafayette, Russell, Shenandoah, and Arsenal) and secondary intersections (Choteau, Park, and Wyoming/Gravois), recommendations are also offered for the intersection with Magnolia. While Magnolia did not surface as a problematic intersection during the study, including this intersection in the overall plan results in treated intersections approximately every one-quarter mile, increasing driver awareness as they travel the length of the neighborhood.

Specific recommendations for lower cost improvements are also provided for each intersection. Generally, these recommendations include the use of planter boxes, flexible tubular markers, painted medians and bump-outs, continental crosswalks, painted stop-bars, and in some cases upgraded ADA ramps and sidewalk improvements. More discussion of the use of planter boxes and flexible tubular markers as traffic calming devices can be found in Appendix G.

***Figure 57.** "Inboxia" **Planter Boxes on** South Grand*

It should be noted that some intersections may require resurfacing before any improvements can be added. The pavement at some intersections on the Compton corridor is deteriorated so severely, the City of St. Louis Street department may require mill and resurface or complete a Micro-seal treatment before new paint can be applied. Mill and overlay treatments can cost on the order of $100,000 per intersection (for some of the study's smaller intersections) to $175,000 (for some of the larger study intersections). Micro-seal treatment can range between $20,000 and $40,000 per intersection. Also note that mill and overlay treatments may require update of curb ramps to meet ADA compliance.

The overall traffic calming plan is illustrated in Figure 58.

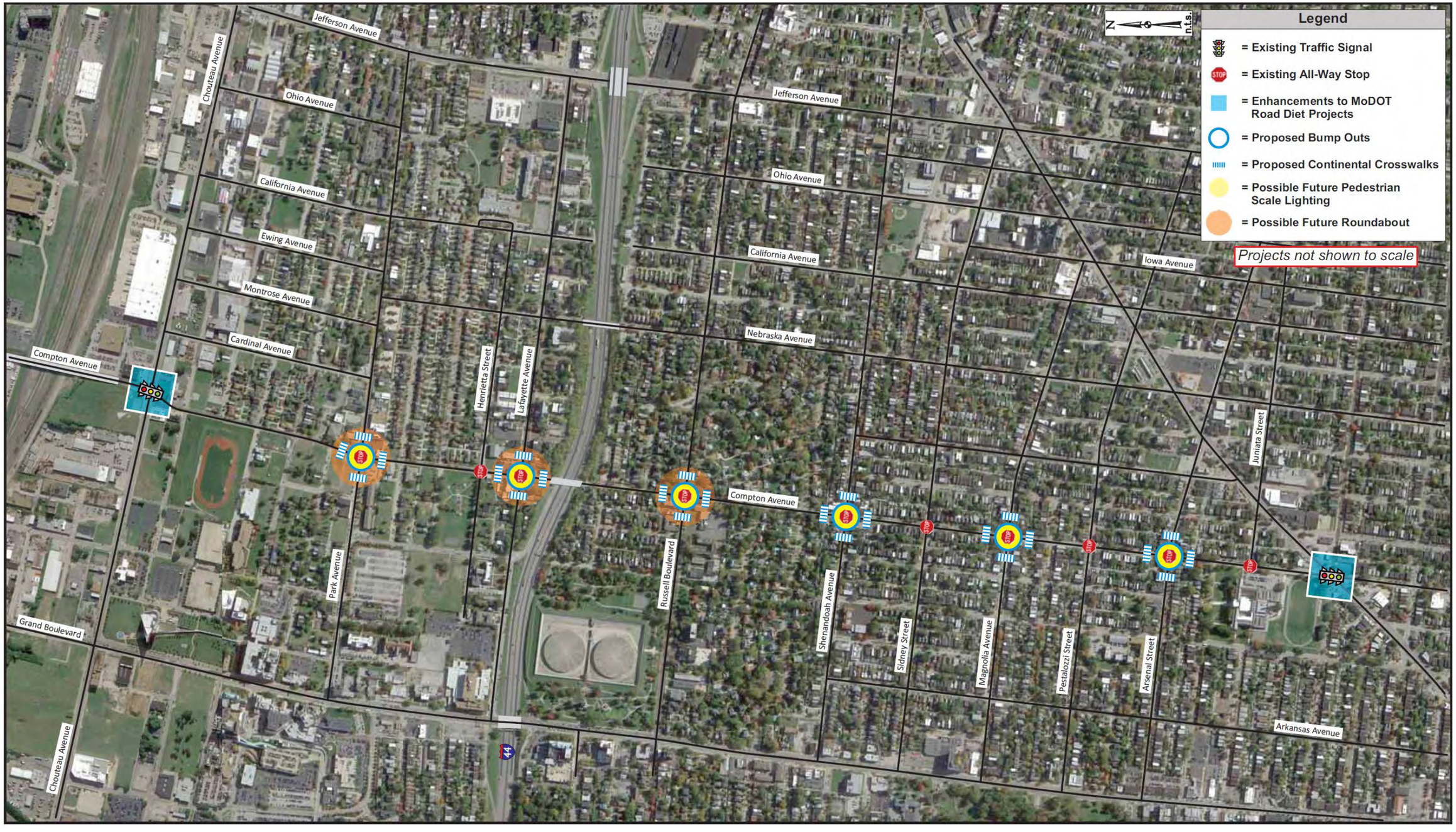


Figure 58: Intersections Recommended for Improvements

Priority Locations

As indicated previously, four priority locations were selected based upon feedback from the public engagement process. All of these recommendations use treatments from the traffic calming toolbox (descriptions referenced in the alternatives section, as well as in Appendix F), and can implemented together or as separate projects depending on budget and resources.

1. Compton and Lafayette

   Compton and Lafayette received the highest amount of responses as a problem intersection. In addition to being a high crash location (including one fatality), residents provided feedback that cars speed down Compton, run the stop sign, and hit parked cars. The treatments at this intersection are intended to slow traffic, increase the compliance of stop signs, and create a safer environment for pedestrians and bicyclists, as well as motorists. The treatments will narrow Lafayette and enhance safety at the intersection.

   Low Cost Improvements: A range of reasonable improvements are shown in Figure 59. These options are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, 3) improve pedestrian visibility, and 4) improve stop sign compliance. Included in the low cost option is a painted median on Lafayette because the current street width encourages higher speeds. Due to the four-way stop configuration and low volume turning left turn movements from Lafayette to Compton, a new median could replace the Lafayette left turn lanes without having a significant impact on traffic. This option also includes continental crosswalks and stop bars, edge line striping and painted bump-outs with flexible bollards. Basic improvements at this intersection can be completed for approximately $25,000 and are listed below with descriptions.

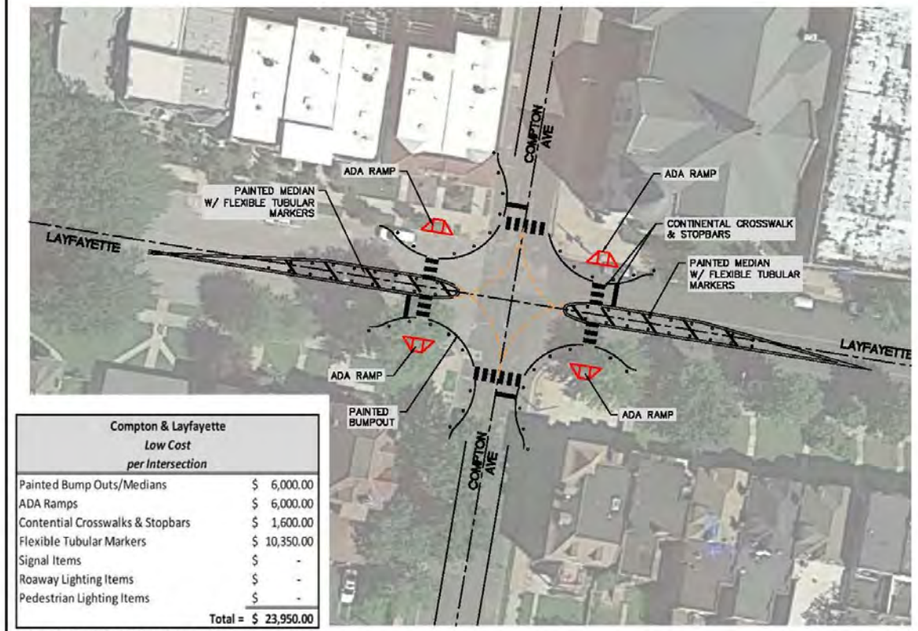
   - Painted center median on Lafayette – the goal of a painted median on Lafayette is to narrow the travel lanes and reduce speeds as drivers approach the intersection. This painted median also reduces the distance for pedestrians to cross Lafayette and allows the crossing to be made in two stages. There are different options for median painting, but one may be to use a decorative treatment to enhance neighborhood pride and sense of place. One enhancement that can be provided (beyond basic striping changes) is to install flexible bollards further emphasize the center island.
   - Painted bump-outs with flexible bollards – Bump-outs visually and physically narrow the roadway, enhance pedestrian visibility, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. One enhancement that can be provided (beyond basic striping changes) is to install flexible bollards further emphasize the bump-outs.
   - Continental crosswalks – These high visibility (ladder striped) crosswalks enhance pedestrian safety when traversing an intersection, due to the prominence displayed to motorists. It is a clear indicator there may be a pedestrian crossing and gives the cue for motorists to yield to right of way pedestrians.
   - Stop bars – The goal of the stop bar is to increase awareness of the upcoming stop for the motorists. It identifies where the motorist will stop, and placed in advance of the crosswalk can increase safety for the crossing.

- Edge line striping –The use of the edge line striping visually narrows lanes with the goal of slowing down traffic. It is important to slow down traffic on Compton so residents feel safe walking within the neighborhood.
- ADA upgrades – These improvements may require reconstruction of some pedestrian ramps to be compliant with ADA standards.

Higher Cost Improvements: The improvements listed above can be enhanced by adding vertical enhancements (curbs and medians). These improvements (shown in Figure 59) are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, 3) improve pedestrian visibility, and 4) improve stop sign compliance. In addition, pedestrian scale lighting and the use of a mini-roundabout is presented. The cost implement all of these improvements (without the mini-roundabout) would be on the order of $210,000. The cost to implement the mine-roundabout is on the order of and additional $35,000.

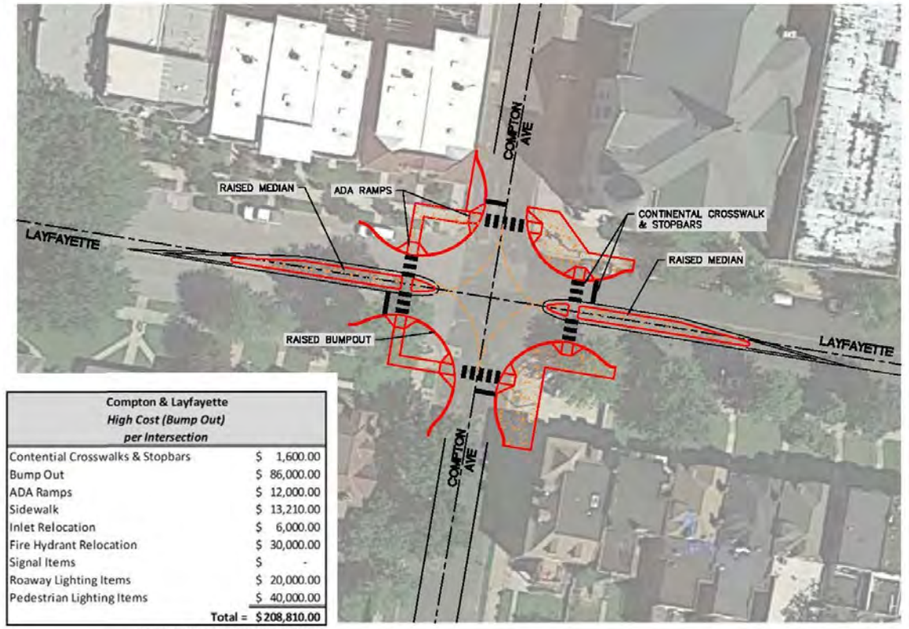
- Raised median on Lafayette – The high cost option includes the raised median on Lafayette as opposed to the painted median. The raised median narrows the roadway and slows speeds at the intersection approach. Additionally, the raised median can be used as a pedestrian refuge for enhanced crossing safety.
- Vertical bump-outs – Bump-outs visually and physically narrow the roadway, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. The high cost option will physically alter the intersection and extend the curb. This may require reconstruction of ADA ramps and adjustments to underground utilities such as fire hydrants.
- ADA Upgrades – ADA compliant intersections are a necessity for pedestrians to travel safely and comfortably. Enhancing ADA upgrades increase equity in mobility and provide important opportunities to residents with education, employment, health care, and many other essential functions. These updates increase access within the neighborhood and to local goods and services.
- Mini roundabout – Mini roundabouts lower speeds at minor intersection crossings. These intersections require a larger intersection "foot-print" and cannot be implemented at all intersections. However, because of the relatively wider width of Lafayette, this treatment is an ideal treatment for this location. The motorists will lower speed as they approach to safely maneuver around the intersection. Implementation could include signage and landscaping.
- Pedestrian scale lighting – Pedestrian scale lighting can enhance security and pedestrian experience within the neighborhood. Smaller scale lighting is a design element that emphasizes pedestrian activity for more walkable neighborhoods.

Recommended Improvements: Recommended lower-cost improvements (shown in Figure 60), include the use of planter boxes, flexible tubular markers, painted medians and bump-outs, continental crosswalks, painted stop-bars, and upgraded ADA ramps. The estimated cost for these improvements is $32,950. Note that these drawings show projected truck turning paths (completed in AutoTurn). More discussion of the use of planter boxes and flexible tubular markers as traffic calming devices can be found in Appendix G).



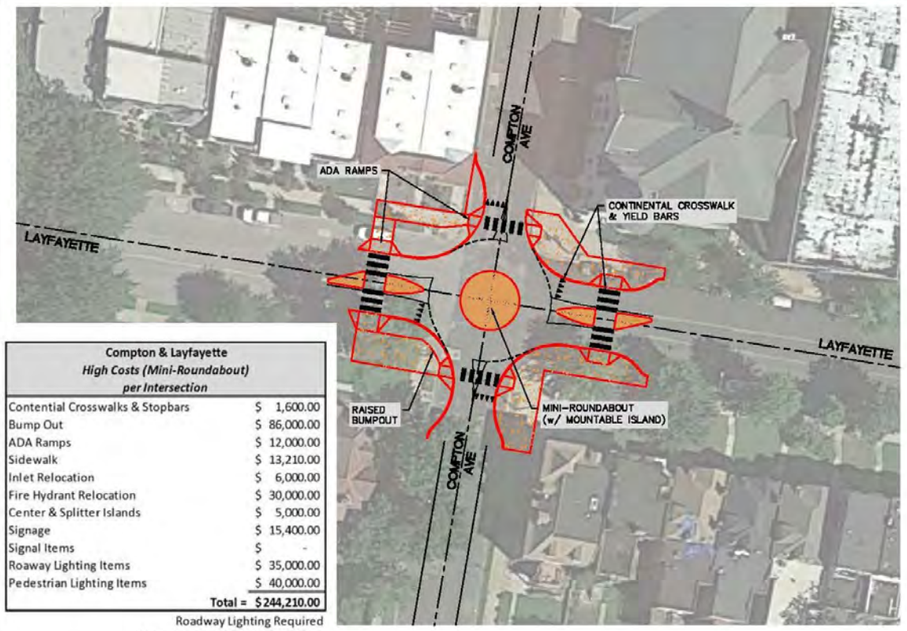
Compton & Layfayette *Low Cost per Intersection*	
Painted Bump Outs/Medians	$ 6,000.00
ADA Ramps	$ 6,000.00
Contential Crosswalks & Stopbars	$ 1,600.00
Flexible Tubular Markers	$ 10,350.00
Signal Items	$ -
Roaway Lighting Items	$ -
Pedestrian Lighting Items	$ -
Total =	$ 23,950.00

Consider Flexible Tubular Markers w/ Painted Bump-outs



Compton & Layfayette *High Cost (Bump Out) per Intersection*	
Contential Crosswalks & Stopbars	$ 1,600.00
Bump Out	$ 86,000.00
ADA Ramps	$ 12,000.00
Sidewalk	$ 13,210.00
Inlet Relocation	$ 6,000.00
Fire Hydrant Relocation	$ 30,000.00
Signal Items	$ -
Roaway Lighting Items	$ 20,000.00
Pedestrian Lighting Items	$ 40,000.00
Total =	$ 208,810.00

Consider Pedestrian Scale Lighting



Compton & Layfayette *High Costs (Mini-Roundabout) per Intersection*	
Contential Crosswalks & Stopbars	$ 1,600.00
Bump Out	$ 86,000.00
ADA Ramps	$ 12,000.00
Sidewalk	$ 13,210.00
Inlet Relocation	$ 6,000.00
Fire Hydrant Relocation	$ 30,000.00
Center & Splitter Islands	$ 5,000.00
Signage	$ 15,400.00
Signal Items	$ -
Roaway Lighting Items	$ 35,000.00
Pedestrian Lighting Items	$ 40,000.00
Total =	$ 244,210.00

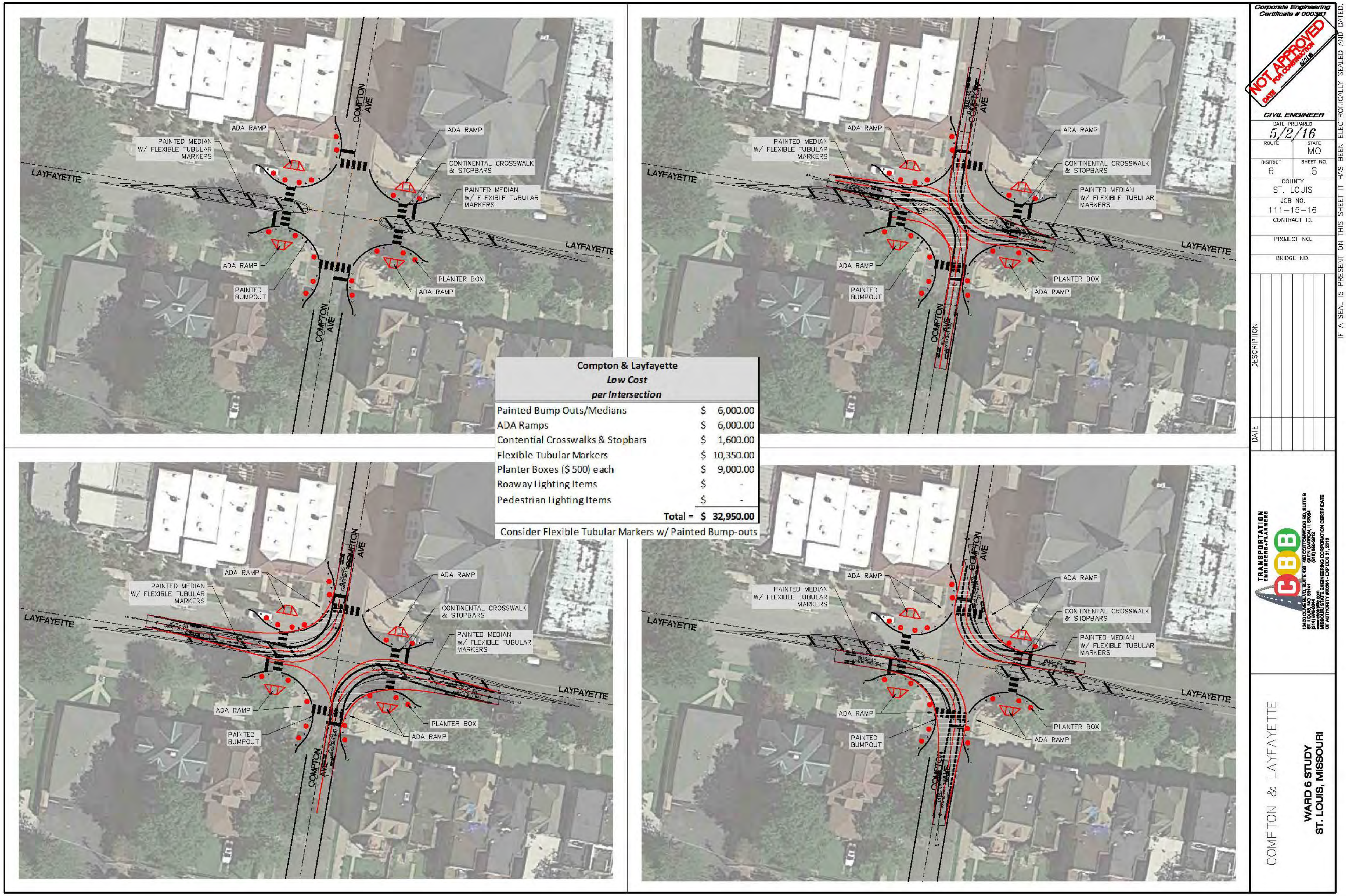
Roadway Lighting Required
Consider Pedestrian Scale Lighting

Corporate Engineering Certificate # 000581
NOT APPROVED for construction
CIVIL ENGINEER
DATE PREPARED 5/2/16
ROUTE | STATE MO
DISTRICT 6 | SHEET NO. 6
COUNTY ST. LOUIS
JOB NO. 111-15-16
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
DESCRIPTION
DATE
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED

TRANSPORTATION INFRASTRUCTURE

COMPTON & LAYFAYETTE
WARD 6 STUDY
ST. LOUIS, MISSOURI

Figure 59: Reasonable Improvements at Compton and Lafayette


LAYFAYETTE
COMPTON AVE
ADA RAMP
PAINTED MEDIAN W/ FLEXIBLE TUBULAR MARKERS
CONTINENTAL CROSSWALK & STOPBARS
PLANTER BOX
PAINTED BUMPOUT
NOT APPROVED FOR CONSTRUCTION
CIVIL ENGINEER
DATE PREPARED 5/2/16
STATE MO
DISTRICT 6
SHEET NO. 6
COUNTY ST. LOUIS
JOB NO. 111-15-16
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
DESCRIPTION
DATE
TRANSPORTATION ENGINEERS • PLANNERS
COMPTON & LAYFAYETTE
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ST. LOUIS, MISSOURI
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

Compton & Layfayette *Low Cost* *per Intersection*		
Painted Bump Outs/Medians	$	6,000.00
ADA Ramps	$	6,000.00
Contential Crosswalks & Stopbars	$	1,600.00
Flexible Tubular Markers	$	10,350.00
Planter Boxes ($ 500) each	$	9,000.00
Roaway Lighting Items	$	-
Pedestrian Lighting Items	$	-
Total =	**$**	**32,950.00**

Consider Flexible Tubular Markers w/ Painted Bump-outs

Figure 60: Recommended Improvements at Compton and Lafayette

2. Compton and Russell

The intersection of Compton and Russell is recommended as the second priority intersection for traffic calming treatments. Based on input from the residents, this intersection received the second highest rate of complaints. Field observations confirm motorists travel through the intersection without fully complying at stop signs or yielding to pedestrians. The goal of the treatments at this intersection is to slow traffic and enhance safety for the pedestrians. Additionally, these treatments are meant to raise awareness of the non-motorized travelers within the neighborhood for increased safety.

Low Cost Improvements: These options (shown in *Figure 61*) are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, 3) improve pedestrian visibility, and 4) improve stop sign compliance. This option also includes continental crosswalks and stop bars, edge line striping and painted bump-outs with flexible bollards. These improvements can be completed for approximately $10,000.

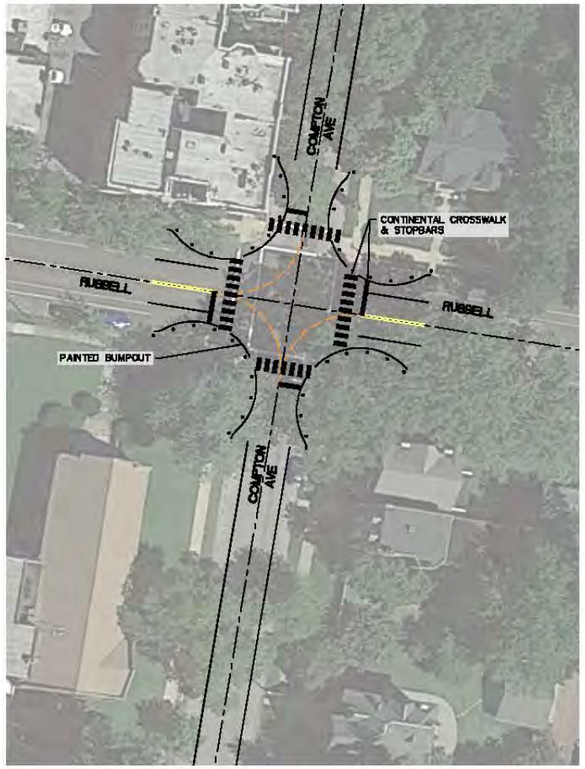
- Painted bump-outs with flexible bollards – Bump-outs visually and physically narrow the roadway, enhance pedestrian visibility, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. One enhancement that can be provided (beyond basic striping changes) is to install flexible bollards further emphasize the bump-outs.
- Continental crosswalks – These high visibility (ladder striped) crosswalks enhance pedestrian safety when traversing an intersection, due to the prominence displayed to motorists. It is a clear indicator there may be a pedestrian crossing and gives the cue for motorists to yield to right of way pedestrians.
- Stop bars – The goal of the stop bar is to increase awareness of the upcoming stop for the motorists. It identifies where the motorist will stop, and placed in advance of the crosswalk can increase safety for the crossing.
- Edge line striping – Identifying the edge of the road through the use of the edge line striping will visually narrow the lanes with the goal of slowing down traffic. It is important to slow down traffic on Compton so residents feel safe walking within the neighborhood.

Higher Cost Improvements: As illustrated in *Figure 61*, the improvements listed above can be enhanced by adding vertical enhancements (curbs). Again, these improvements are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, 3) improve pedestrian visibility, and 4) improve stop sign compliance. In addition, the implementation of pedestrian scale lighting and use of a mini-roundabout is presented. The cost implement all of these improvements (without the mini-roundabout) would be on the order of $210,000. The cost to implement the mine-roundabout is on the order of and additional $60,000.

- Vertical bump-outs – Bump-outs visually and physically narrow the roadway, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. The high cost option will physically alter the intersection and extend the curb. This may require reconstruction of ADA ramps and adjustments to underground utilities such as fire hydrants.

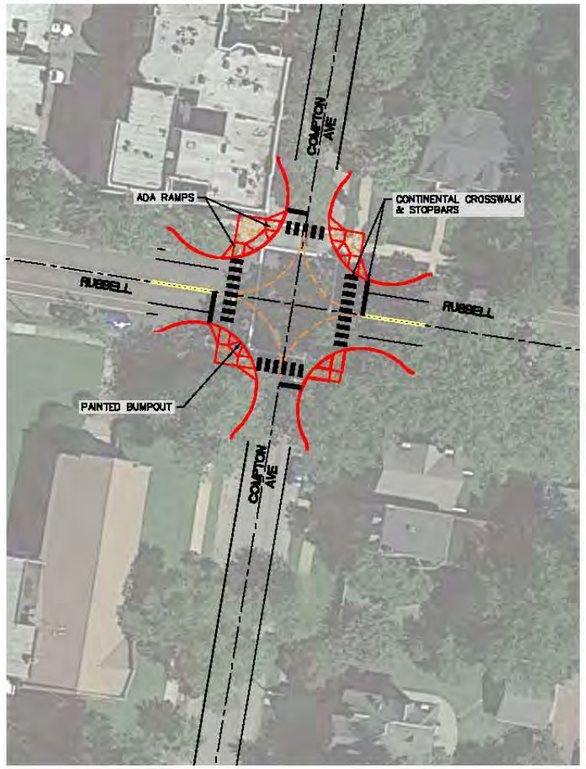
- ADA Upgrades – ADA compliant intersections are a necessity for pedestrians to travel safely and comfortably. Enhancing ADA upgrades increase equity in mobility and provide important opportunities to residents with education, employment, health care, and many other essential functions. These updates increase access within the neighborhood and to local goods and services.
- Mini roundabout – Mini roundabouts lower speeds at minor intersection crossings. These intersections require a larger intersection "foot-print" and cannot be implemented at all intersections along the corridor. However, because of the relatively wider width of Russell, this treatment is an ideal treatment for this location. The motorists will lower speed as they approach to safely maneuver around the intersection. For the high cost option this circle may include signage and landscaping.
- Pedestrian scale lighting – Pedestrian scale lighting can enhance security and pedestrian experience within the neighborhood. Using smaller scale lighting is a design element that emphasizes pedestrian activity over automobile activity within the neighborhood.

Recommended Improvements: Recommended lower-cost improvements (shown in Figure 62), include the use of planter boxes, flexible tubular markers, painted bump-outs, continental crosswalks, and painted stop-bars. The estimated cost for these improvements is $17.050. Note that these drawings show projected truck turning paths (completed in AutoTurn). More discussion of the use of planter boxes and flexible tubular markers as traffic calming devices can be found in Appendix G).



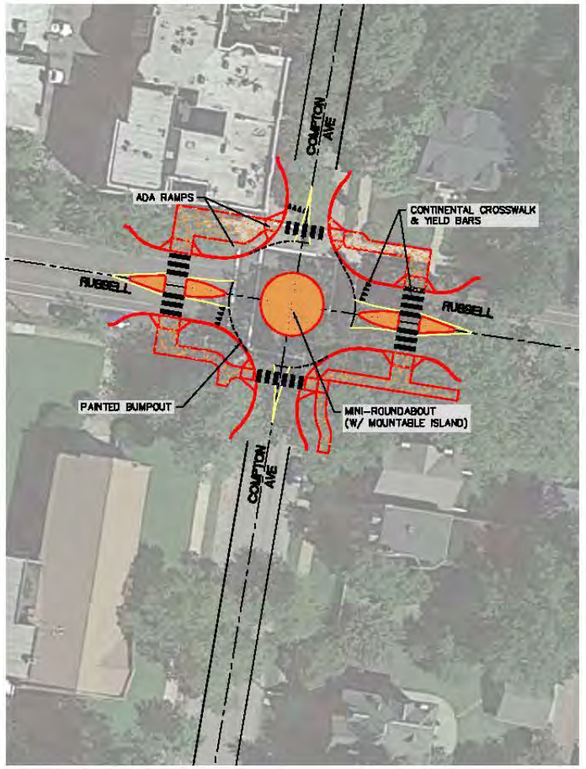
Compton & Russell *Low Cost per Intersection*	
Painted Bump Outs	$ 2,000.00
Contential Crosswalks & Stopbars	$ 1,800.00
Flexible Tubular Markers	$ 5,250.00
Signal Items	$ -
Roaway Lighting Items	$ -
Pedestrian Lighting Items	$ -
Total =	**$ 9,050.00**

Consider Flexible Tubular Markers w/ Painted Bump-outs



Compton & Russell *High Cost (Bump Out) per Intersection*	
Contential Crosswalks & Stopbars	$ 1,800.00
Bump Out	$ 86,000.00
ADA Ramps	$ 12,000.00
Inlet Relocation	$ 3,000.00
Fire Hydrant Relocation	$ 45,000.00
Signal Items	$ -
Roaway Lighting Items	$ 20,000.00
Pedestrian Lighting Items	$ 40,000.00
Total =	**$ 207,800.00**

Consider Pedestrian Scale Lighting



Compton & Russell *High Costs (Mini-Roundabout) per Intersection*	
Contential Crosswalks & Stopbars	$ 1,800.00
Bump Out	$ 86,000.00
ADA Ramps	$ 12,000.00
Inlet Relocation	$ 3,000.00
Fire Hydrant Relocation	$ 45,000.00
Sidewalk	$ 12,075.00
Center & Splitter Islands	$ 5,500.00
Signage	$ 16,600.00
Signal Items	$ -
Roaway Lighting Items	$ 45,000.00
Pedestrian Lighting Items	$ 40,000.00
Total =	**$ 266,975.00**

Roadway Lighting Required
Consider Pedestrian Scale Lighting

Corporate Engineering Certificate # 000381

NOT APPROVED FOR CONSTRUCTION

CIVIL ENGINEER

DATE PREPARED 5/2/16

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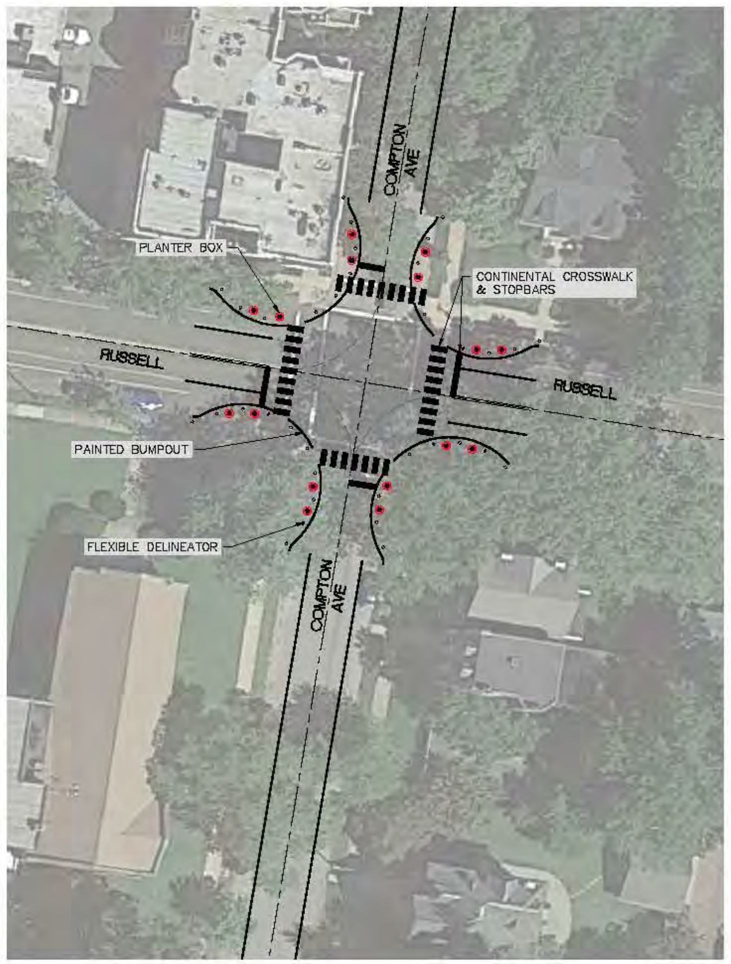
TRANSPORTATION

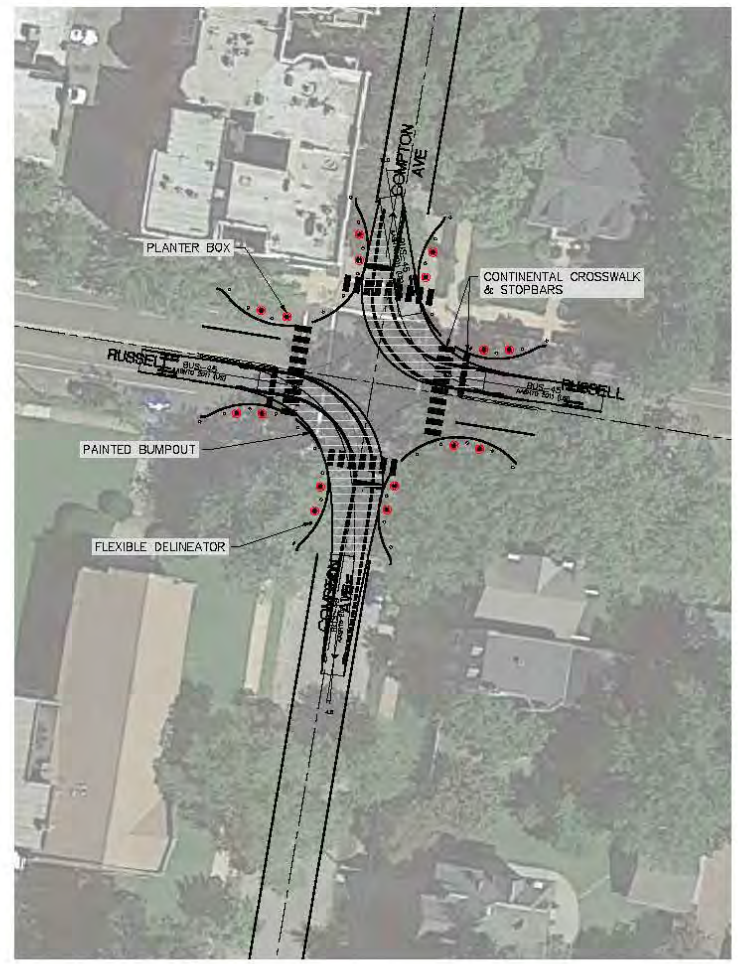
CBB

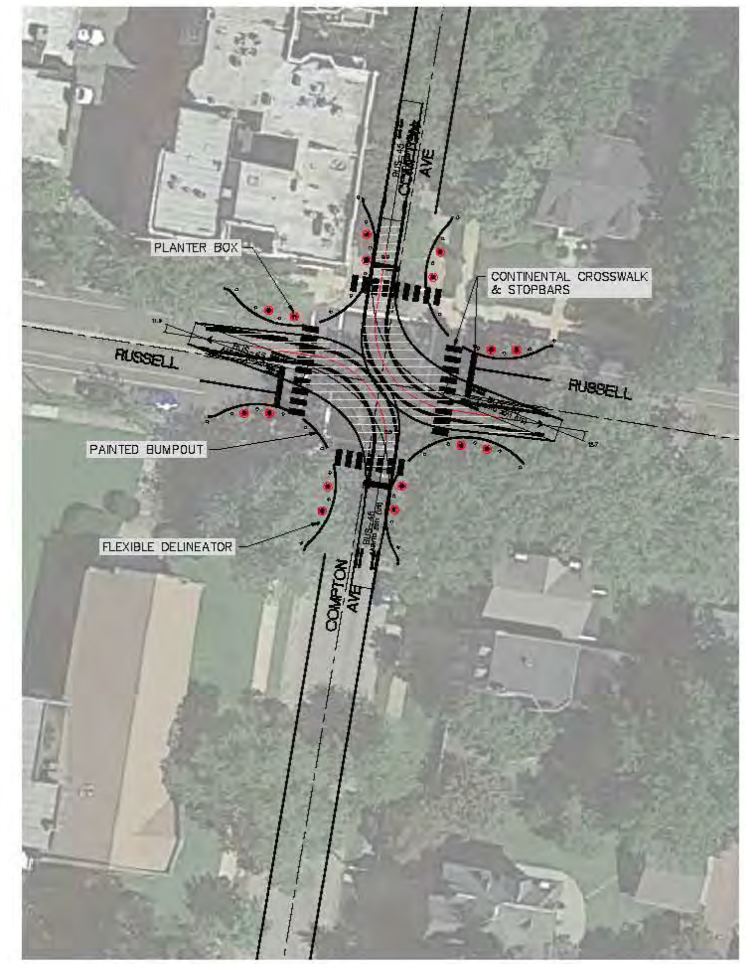
COMPTON & RUSSELL

WARD 6 STUDY
ST. LOUIS, MISSOURI

Figure 61: Reasonable Improvements at Compton and Russell







Compton & Russell ***Low Cost*** ***per Intersection***		
Painted Bump Outs	$	2,000.00
Contential Crosswalks & Stopbars	$	1,800.00
Flexible Tubular Markers	$	5,250.00
Planter Boxes ($ 500 each)	$	8,000.00
Roaway Lighting Items	$	-
Pedestrian Lighting Items	$	-
Total =	**$**	**17,050.00**

Consider Flexible Tubular Markers w/ Painted Bump-outs

Corporate Engineering Certificate # 000381

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DATE 5/2/16

CIVIL ENGINEER

DATE PREPARED 5/2/16

ROUTE

STATE MO

DISTRICT 6

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COUNTY ST. LOUIS

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COMPTON & RUSSELL

WARD 6 STUDY
ST. LOUIS, MISSOURI

Figure 62: Recommended Improvements at Compton and Russell

3. Compton and Shenandoah

The third most discussed intersection at the public meeting and within the survey is at Compton and Shenandoah; our third priority location for traffic calming treatments. The intersection is important for pedestrian traffic with small shops and businesses located on all corners of the intersection. Additionally, it is important to slow speeds on Compton as motorists travel through the neighborhood. The purpose of the recommended treatments at this intersection is to narrow the roadway as motorists approach the intersection, and shorten crossing distances for pedestrians to increase safety.

Low Cost Improvements: These options (shown in Figure 63) are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, 3) improve pedestrian visibility, and 4) improve stop sign compliance. This option also includes continental crosswalks and stop bars, edge line striping and painted bump-outs with flexible bollards. These improvements can be completed for approximately $10,000.

- Painted bump-outs with flexible bollards – Bump-outs visually and physically narrow the roadway, enhance pedestrian visibility, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. One enhancement that can be provided (beyond basic striping changes) is to install flexible bollards further emphasize the bump-outs.
- Continental crosswalks – These high visibility (ladder striped) crosswalks enhance pedestrian safety when traversing an intersection, due to the prominence displayed to motorists. It is a clear indicator there may be a pedestrian crossing and gives the cue for motorists to yield to right of way pedestrians.
- Stop bars – The goal of the stop bar is to increase awareness of the upcoming stop for the motorists. It identifies where the motorist will stop, and placed in advance of the crosswalk can increase safety for the crossing.
- Edge line striping – Identifying the edge of the road through the use of the edge line striping will visually narrow the lanes with the goal of slowing down traffic. It is important to slow down traffic on Compton so residents feel safe walking within the neighborhood.

Higher Cost Improvements: As illustrated in Figure 63, the improvements listed above can be enhanced by adding vertical enhancements (curbs). Again, these improvements are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, 3) improve pedestrian visibility, and 4) improve stop sign compliance. In addition, the implementation of pedestrian scale lighting is presented. The cost implement all of these improvements would be on the order of $210,000.

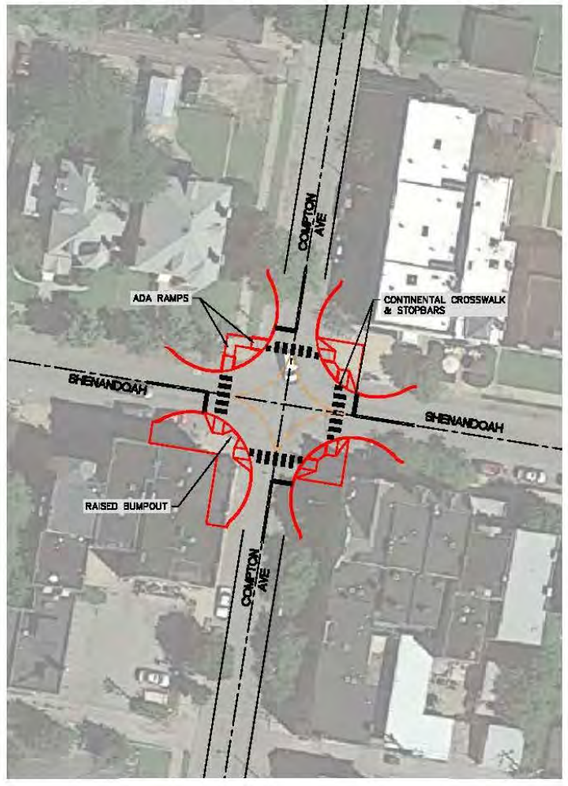
- Vertical bump-outs – Bump-outs visually and physically narrow the roadway, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. The high cost option will physically alter the intersection and extend the curb. This may require reconstruction of ADA ramps and adjustments to underground utilities such as fire hydrants.

- ADA Upgrades – ADA compliant intersections are a necessity for pedestrians to travel safely and comfortably. Enhancing ADA upgrades increase equity in mobility and provide important opportunities to residents with education, employment, health care, and many other essential functions. These updates increase access within the neighborhood and to local goods and services.
- Pedestrian scale lighting – Pedestrian scale lighting can enhance security and pedestrian experience within the neighborhood. Using smaller scale lighting is a design element that emphasizes pedestrian activity over automobile activity within the neighborhood.

Recommended Improvements: Recommended lower-cost improvements (shown in Figure 64), include the use of planter boxes, flexible tubular markers, painted bump-outs, continental crosswalks, and painted stop-bars. The estimated cost for these improvements is $16,990. Note that these drawings show projected truck turning paths (completed in AutoTurn). More discussion of the use of planter boxes and flexible tubular markers as traffic calming devices can be found in Appendix G).

Compton & Shenandoah *Low Cost per Intersection*	
Painted Bump Outs	$ 2,000.00
Contential Crosswalks & Stopbars	$ 1,440.00
Flexible Tubular Markers	$ 5,550.00
Signal Items	$ -
Roaway Lighting Items	$ -
Pedestrian Lighting Items	$ -
Total =	$ 8,990.00

Consider Flexible Tubular Markers w/ Painted Bump-outs



Compton & Shenandoah *High Cost (Bump Out) per Intersection*	
Contential Crosswalks & Stopbars	$ 1,440.00
Bump Out	$ 86,000.00
ADA Ramps	$ 12,000.00
Inlet Relocation	$ 3,000.00
Fire Hydrant Relocation	$ 45,000.00
Signal Items	$ -
Roaway Lighting Items	$ 20,000.00
Pedestrian Lighting Items	$ 40,000.00
Total =	$ 207,440.00

Consider Pedestrian Scale Lighting

Corporate Engineering Certificate # 000981

NOT APPROVED FOR CONSTRUCTION

CIVIL ENGINEER

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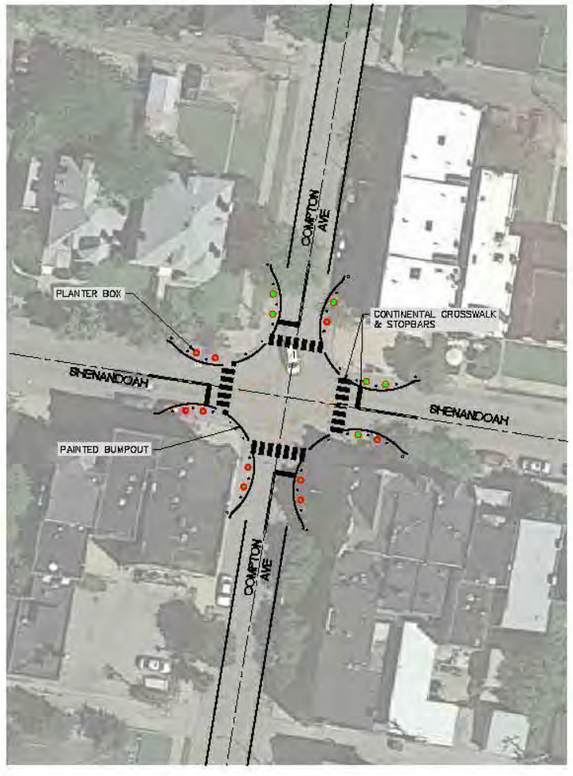
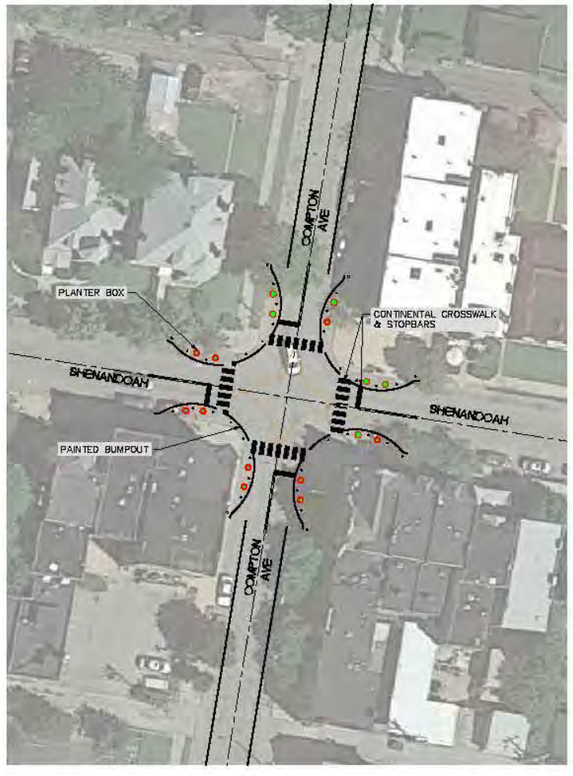
TRANSPORTATION ENGINEERING PLANNING

COMPTON & SHENANDOAH

WARD 6 STUDY
ST. LOUIS, MISSOURI

Figure 63: Reasonable Improvements at Compton and Shenandoah





Compton & Shenandoah *Low Cost* *per Intersection*		
Painted Bump Outs	$	2,000.00
Contential Crosswalks & Stopbars	$	1,440.00
Flexible Tubular Markers	$	5,550.00
Planter Boxes ($ 500 each)	$	8,000.00
Roadway Lighting Items	$	
Pedestrian Lighting Items	$	-
Total =	**$**	**16,990.00**

Consider Flexible Tubular Markers w/ Painted Bump outs

Corporate Engineering Certificate # 000381

NOT APPROVED FOR CONSTRUCTION

DATE

CIVIL ENGINEER

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COUNTY ST. LOUIS

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TRANSPORTATION ENGINEERS & PLANNERS

COMPTON & SHENANDOAH

WARD 6 STUDY
ST. LOUIS, MISSOURI

Figure 64: Recommended Improvements at Compton and Shenandoah

4. Compton and Arsenal

The fourth location for our priority intersections is Compton and Arsenal. It is one of the southernmost intersections within the corridor. This, coupled with the fact that Arsenal serves as a primary east-west route within the City, makes it important to slow speeds of traffic within the neighborhood. The recommended traffic calming treatments at this location are intended to increase awareness of pedestrians within the neighborhood with enhanced pedestrian facilities and slow speeds for motorists as they drive through this residential area. This is a location where mill and resurface may be required, as well as ADA ramp upgrades.

Low Cost Improvements: These options (shown in Figure 65) are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, and 3) improve pedestrian visibility. This option also includes continental crosswalks and stop bars, edge line striping and painted bump-outs with flexible bollards. Additionally, these improvements include the construction of an ADA compliant ramp in the northeast corner of the intersection. These improvements can be completed for approximately $10,000-$15,000.

- Painted bump-outs with flexible bollards – Bump-outs visually and physically narrow the roadway, enhance pedestrian visibility, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. One enhancement that can be provided (beyond basic striping changes) is to install flexible bollards further emphasize the bump-outs.
- Continental crosswalks – These high visibility (ladder striped) crosswalks enhance pedestrian safety when traversing an intersection, due to the prominence displayed to motorists. It is a clear indicator there may be a pedestrian crossing and gives the cue for motorists to yield to right of way pedestrians.
- Stop bars – The goal of the stop bar is to increase awareness of the upcoming stop for the motorists. It identifies where the motorist will stop, and placed in advance of the crosswalk can increase safety for the crossing.
- Edge line striping – Identifying the edge of the road through the use of the edge line striping will visually narrow the lanes with the goal of slowing down traffic. It is important to slow down traffic on Compton so residents feel safe walking within the neighborhood.
- ADA Upgrades – Currently, there is a need for a new ADA ramp at the northeast corner of the intersection. We recommend that this ADA ramp be constructed as a part of the low cost option.

Higher Cost Improvements: As illustrated in Figure 65 the improvements listed above can be enhanced by adding vertical enhancements (curbs). Again, these improvements are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, and 3) improve pedestrian visibility. In addition, the implementation of pedestrian scale lighting is presented. The cost implement all of these improvements would be on the order of $185,000 and are described below.

- Vertical bump-outs – Bump-outs visually and physically narrow the roadway, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. The high cost option will physically alter the intersection

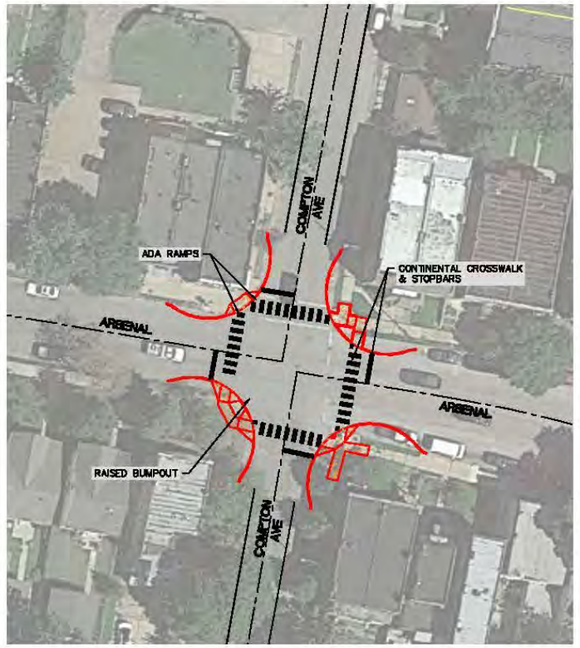
and extend the curb. This may require reconstruction of ADA ramps and adjustments to underground utilities such as fire hydrants.

- ADA Upgrades – ADA compliant intersections are a necessity for pedestrians to travel safely and comfortably. Enhancing ADA upgrades increase equity in mobility and provide important opportunities to residents with education, employment, health care, and many other essential functions. These updates increase access within the neighborhood and to local goods and services.
- Pedestrian scale lighting – Pedestrian scale lighting can enhance security and pedestrian experience within the neighborhood. Using smaller scale lighting is a design element that emphasizes pedestrian activity over automobile activity within the neighborhood.

Recommended Improvements: Recommended lower-cost improvements (shown in Figure 66), include the use of planter boxes, flexible tubular markers, painted bump-outs, continental crosswalks, painted stop-bars, and upgraded ADA ramps. The estimated cost for these improvements is $20,700. Note that these drawings show projected truck turning paths (completed in AutoTurn). More discussion of the use of planter boxes and flexible tubular markers as traffic calming devices can be found in Appendix G).

Compton & Aresenal *Low Cost per Intersection*	
Painted Bump Outs	$ 2,000.00
Contential Crosswalks & Stopbars	$ 1,600.00
Flexible Tubular Markers	$ 5,100.00
ADA Ramp	$ 3,000.00
Roaway Lighting Items	$ -
Pedestrian Lighting Items	$ -
Total =	$ 11,700.00

Consider Flexible Tubular Markers w/ Painted Bump-outs



Compton & Aresenal *High Cost (Bump Out) per Intersection*	
Contential Crosswalks & Stopbars	$ 1,600.00
Bump Out	$ 86,000.00
ADA Ramps	$ 12,000.00
Inlet Relocation	$ 3,000.00
Fire Hydrant Relocation	$ 30,000.00
Roaway Lighting Items	$ 10,000.00
Pedestrian Lighting Items	$ 40,000.00
Total =	$ 182,600.00

Consider Pedestrian Scale Lighting

Corporate Engineering Certificate # 000381

NOT APPROVED FOR CONSTRUCTION

CIVIL ENGINEER

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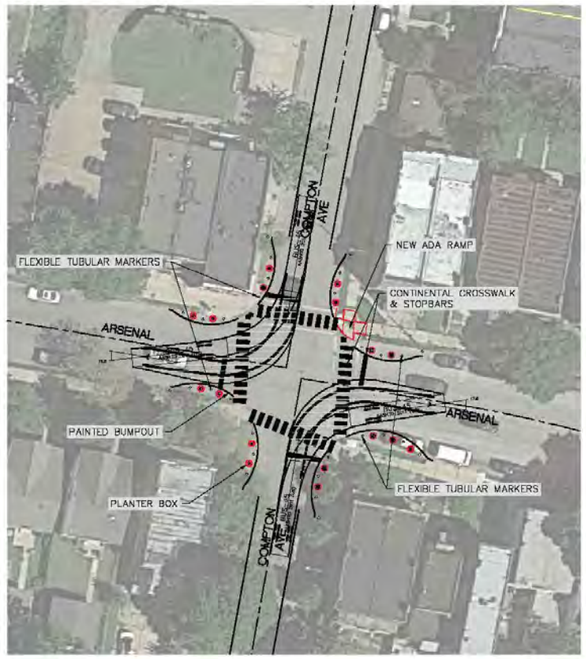
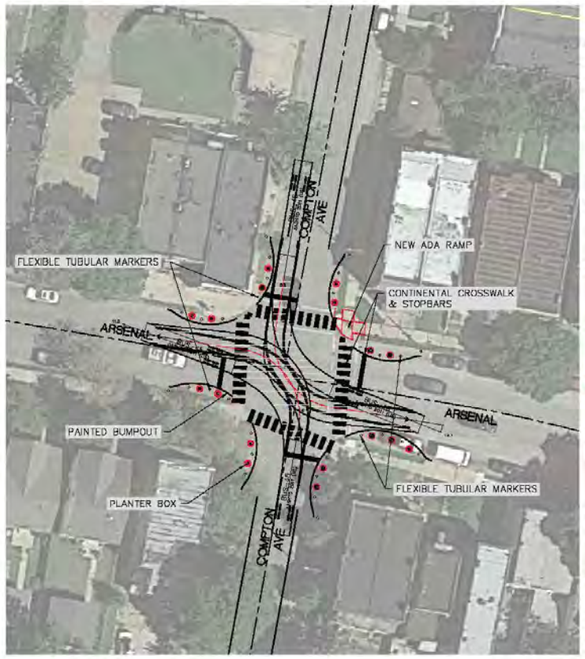
COMPTON & ARSENAL

WARD 6 STUDY
ST. LOUIS, MISSOURI

Figure 65: Reasonable Improvements at Compton and Arsenal





Compton & Arsenal *Low Cost* *per Intersection*		
Painted Bump Outs	$	2,000.00
Contential Crosswalks & Stopbars	$	1,600.00
Flexible Tubular Markers	$	5,100.00
ADA Ramp	$	3,000.00
Planter Boxes ($ 500 each)	$	8,500.00
Roaway Lighting Items	$	-
Pedestrian Lighting Items	$	-
Total =	**$**	**20,200.00**

Consider Flexible Tubular Markers w/ Painted Bump-outs

Corporate Engineering Certificate # 000981

NOT APPROVED FOR CONSTRUCTION

DATE

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TRANSPORTATION ENGINEERING PLANNERS

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COMPTON & ARSENAL

WARD 6 STUDY
ST. LOUIS, MISSOURI

Figure 66: Recommended Improvements at Compton and Arsenal

Secondary Locations

These locations are identified as secondary locations for traffic calming treatments. Three secondary locations were identified from feedback received at the public meeting and online survey. Similar to the primary locations, it is important to remember our recommendations serve as a toolbox for calming traffic in Ward 6. All or part of these may be implemented depending on budget and resources, but we are providing effective options that are both lower and higher cost.

1. Compton and Choteau

   The primary goals for treatments to this intersection are to enhance pedestrian and bicycle safety and enhance user experience for non-motorists. Currently, the intersection is difficult to navigate as a pedestrian with broken pushbuttons, lacking ADA facilities on the north leg of the intersection, and heavy vehicular traffic volumes. During the process of this study Choteau was a corridor in the City that received a lane diet, and now has dedicated bicycle lanes. As a primary east-west connecting route, it is imperative that bicyclists be given safety moving along the corridor. For this intersection, we have developed a two phased approach that may be used as a plan for implementation or to get any future funding dedicated to neighborhood improvements.

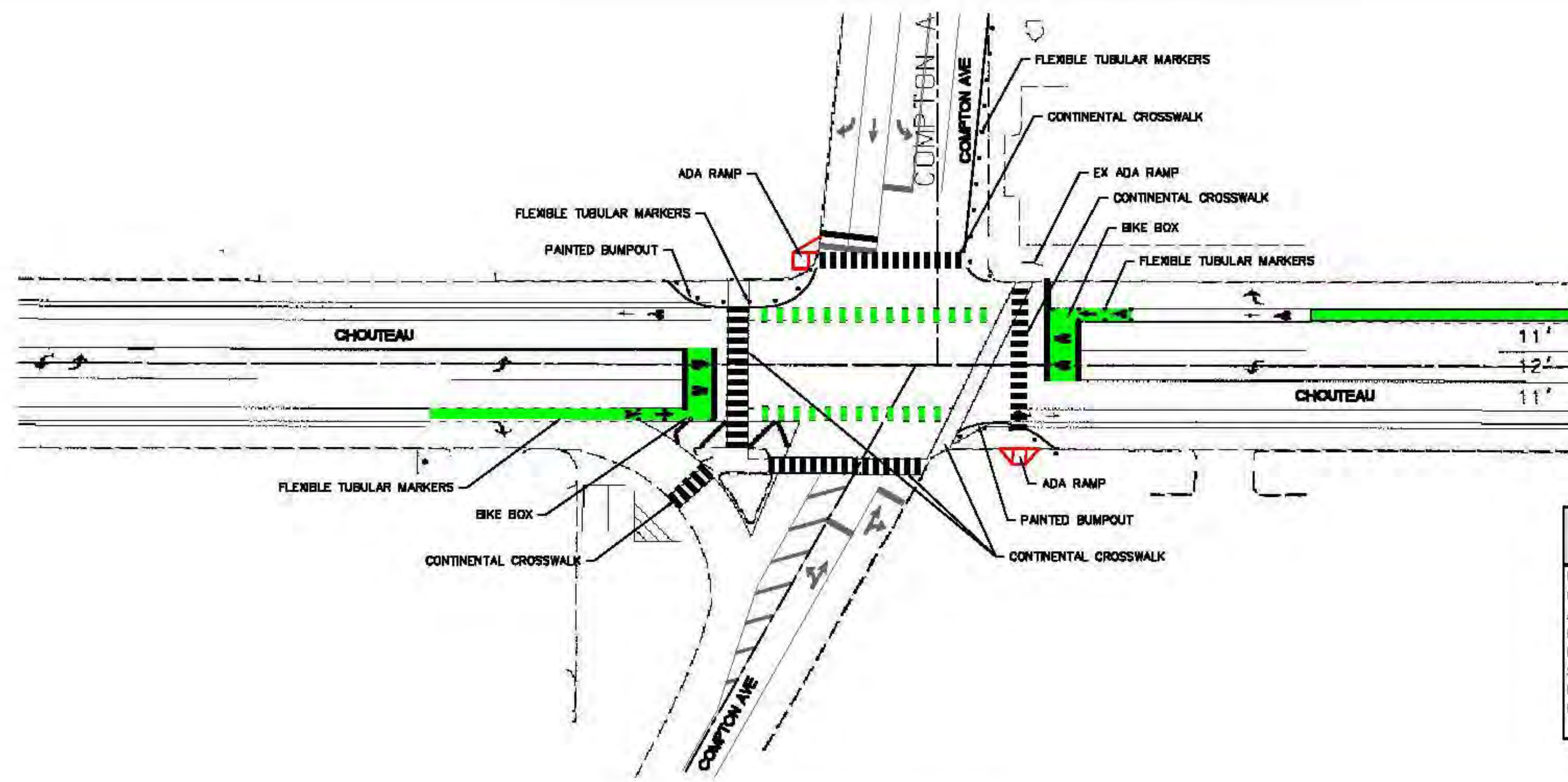
   Low Cost Improvements: As with the previous intersections, a menu of low cost improvements is shown for the Compton and Choteau intersection in Figure 67. These options are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, 3) improve pedestrian visibility, and 4) improve bicycle accommodations. This option also includes continental crosswalks and painted bump-outs with flexible bollards. These improvements can be completed for approximately $35,000.

   - Pedestrian signal upgrades – This signal will be improved to allow pedestrians to cross the north leg of the intersection. Traffic signal improvements, new ADA accessible pedestrian ramps, and the implementation of a continental crosswalk are required for this improvement. This improvement will require the construction of ADA compliant ramps on the northeast and northwest quadrants of the intersection.
   - Bike Boxes on Choteau – The recent road diet on Choteau added bicycle lanes and this route now serves as primary biking route. Bike boxes enhance bicyclist safety because they provide a safe and visible way for bicyclists to get ahead of the traffic during the red signal phase. This gives priority when the signal is green and enhances visibility when travelling through the intersection.
   - Painted bump-outs with flexible bollards – Bump-outs visually and physically narrow the roadway, enhance pedestrian visibility, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. One enhancement that can be provided (beyond basic striping changes) is to install flexible bollards further emphasize the bump-outs.
   - Continental crosswalks – These high visibility (ladder striped) crosswalks enhance pedestrian safety when traversing an intersection, due to the prominence displayed to motorists. It is a clear indicator there may be a pedestrian crossing and gives the cue for motorists to yield to right of way pedestrians.

Higher Cost Improvements: As illustrated in Figure 67, the improvements listed above can be enhanced by adding vertical enhancements (curbs). Again, these improvements are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, 3) improve pedestrian visibility, and 4) improve bicycle accommodations. In addition, the implementation of pedestrian scale lighting is presented. The cost implement all of these improvements would be on the order of $150,000-$160,000.

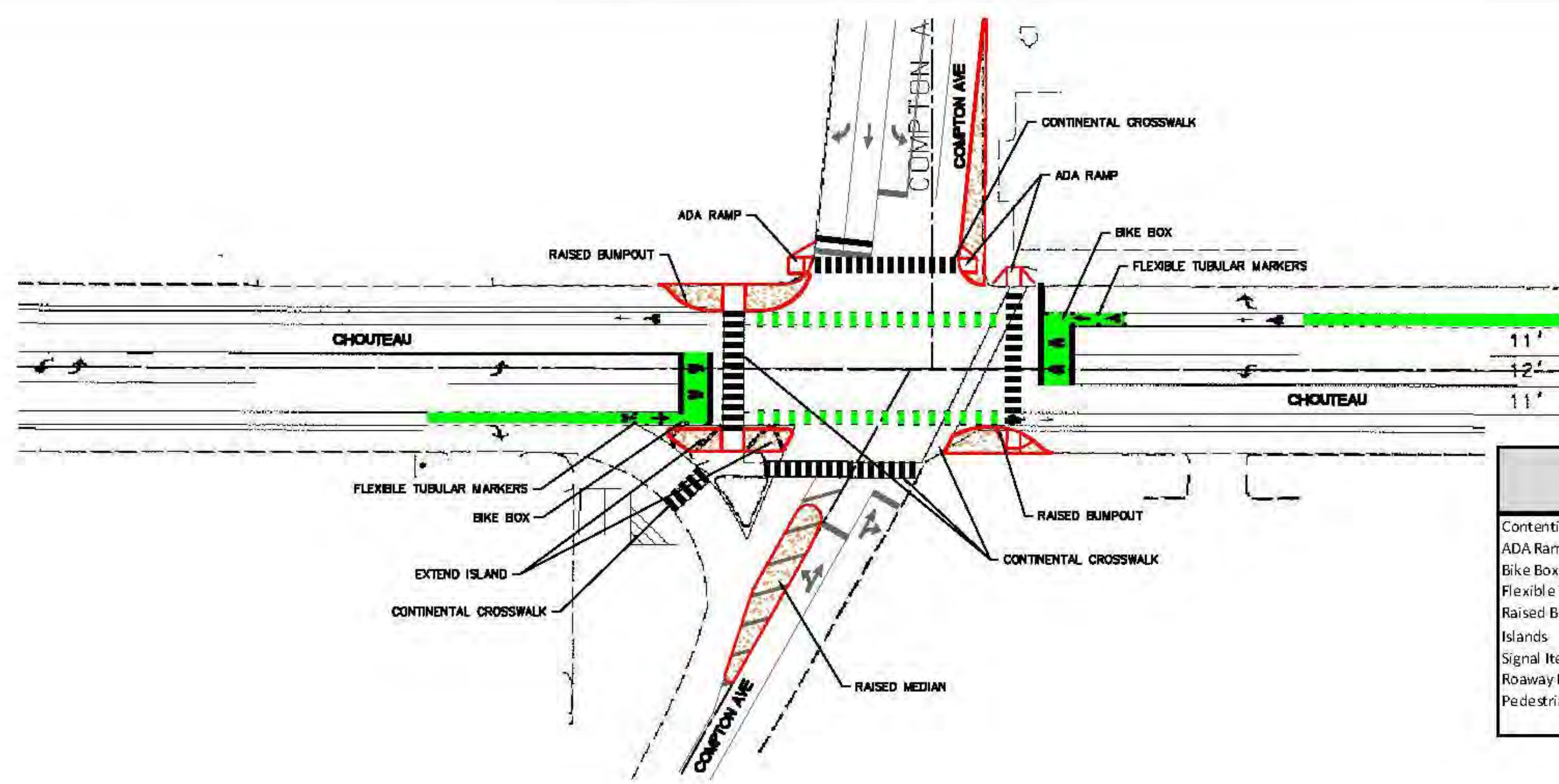
- Extended Islands – The recent road diet project has resulted in a number of painted islands in the intersection. These improvements would extend the existing islands to include the painted islands (were feasible) in order to enhance pedestrian safety by physically shorten the crossing distances. Additionally, these improvements will narrow the roadway so motorists approach the intersection at slower speeds and are more aware of pedestrian activity in and around the crosswalks.
- Center Median – The center median on Compton south of Choteau physically narrows the roadway for motorists travelling through the intersection. This may slow down speeds of traffic turning right on to Compton as they enter the neighborhood.
- Vertical bump-outs – Bump-outs visually and physically narrow the roadway, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. The high cost option will physically alter the intersection and extend the curb. This may require reconstruction of ADA ramps and adjustments to underground utilities such as fire hydrants.
- Pedestrian scale lighting – Pedestrian scale lighting can enhance security and pedestrian experience within the neighborhood. Using smaller scale lighting is a design element that emphasizes pedestrian activity over automobile activity within the neighborhood.

Recommended Improvements: Choteau Avenue, is a State Road (Missouri Route 100). Choteau Avenue was recently restriped/reconfigured by MoDOT. It is recommended that future improvements at this intersection be coordinated between the City of St. Louis and MoDOT and include consideration of the improvements discussed in this section.



Compton & Chouteau *Low Cost* *per Intersection*	
Painted Bump Outs	$ 2,000.00
Contential Crosswalks & Stopbars	$ 3,900.00
ADA Ramps	$ 3,000.00
Bike Boxes	$ 9,950.00
Flexible Tubular Markers	$ 5,550.00
Signal Items	$ 10,000.00
Roaway Lighting Items	$ -
Pedestrian Lighting Items	$ -
Total =	**$ 34,400.00**

Consider Flexible Tubular Markers w/ Painted Bump-outs
Consider Leading Pedestrian Interval



Compton & Chouteau *High Cost (Bump Out)* *per Intersection*	
Contential Crosswalks & Stopbars	$ 3,900.00
ADA Ramps	$ 4,500.00
Bike Boxes	$ 9,950.00
Flexible Tubular Markers	$ 1,950.00
Raised Bump Outs	$ 43,000.00
Islands	$ 9,190.00
Signal Items	$ 28,000.00
Roaway Lighting Items	$ 15,000.00
Pedestrian Lighting Items	$ 40,000.00
Total =	**$ 155,490.00**

Consider Leading Pedestrian Interval
Consider Pedestrian Scale Lighting

Figure 67: Compton and Choteau

2. Compton and Park

The recommended treatments at this intersection are intended to increase pedestrian safety. The head start school at the northeast corner of Compton and Park is an important place for pedestrians, especially those travelling with small children. As one of the southern most points of the neighborhood and the Compton corridor, it is important motorists are aware of pedestrian and bicycle activity within the neighborhood. These treatments will give visual cues for increased awareness and added safety. This is an intersection where mill and resurface will be required, and ADA upgrades made at curb ramps.

Low Cost Improvements

As with the previous intersections, a menu of low cost improvements is shown in Figure 68. Again, these options are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, 3) improve pedestrian visibility, and 4) improve stop sign compliance. This option also includes continental crosswalks and stop bars, edge line striping and painted bump-outs with flexible bollards. These improvements can be completed for approximately $35,000-$40,000. Note that almost $30,000 of this cost is to extend the sidewalk on the west side of Compton between Park and Rutger. The proposed improvements are described below.

- Sidewalk extension – Extend the sidewalk on the west side of Compton (between Park and Rutger) to fill a missing link in the local sidewalk system. This improvement adds a facility for pedestrians to safely traverse the neighborhood. Pedestrian features such as this are an important component to increase equity in mobility for those travelling without a vehicle and provide important neighborhood connections.
- Painted bump-outs with flexible bollards – Bump-outs visually and physically narrow the roadway, enhance pedestrian visibility, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. One enhancement that can be provided (beyond basic striping changes) is to install flexible bollards further emphasize the bump-outs.
- Continental crosswalks – These high visibility (ladder striped) crosswalks enhance pedestrian safety when traversing an intersection, due to the prominence displayed to motorists. It is a clear indicator there may be a pedestrian crossing and gives the cue for motorists to yield to right of way pedestrians.
- Stop bars – The goal of the stop bar is to increase awareness of the upcoming stop for the motorists. It identifies where the motorist will stop, and placed in advance of the crosswalk can increase safety for the crossing.
- Edge line striping – Identifying the edge of the road through the use of the edge line striping will visually narrow the lanes with the goal of slowing down traffic. It is important to slow down traffic on Compton so residents feel safe walking within the neighborhood.

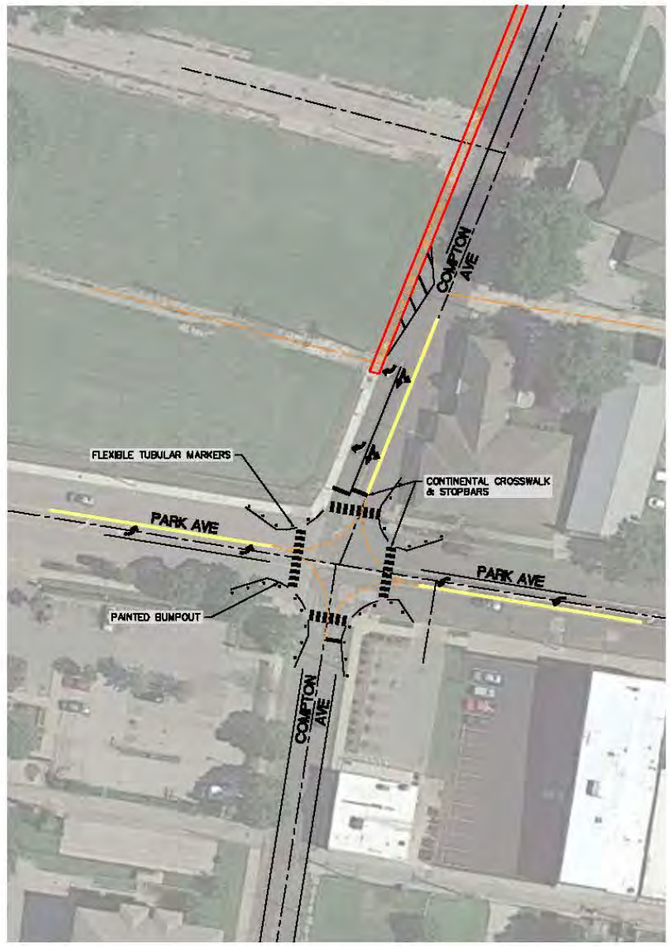
Higher Cost Improvements

As illustrated in Figure 68 the improvements listed above can be enhanced by adding vertical enhancements (curbs). Again, these improvements are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, 3) improve pedestrian visibility, and 4) improve stop sign compliance. Additionally, pedestrian scale lighting can be added here on the

Compton corridor as well as a Rectangular Rapid Flashing Beacon (RRFB) on Park east of Compton for enhanced crossings to the head start center. Finally, the potential for the use of a mini-roundabout is presented in Figure 69. The cost implement all of these improvements (without the mini-roundabout) would be on the order of $215,000 - $220,000. The cost to implement the mine-roundabout is on the order of and additional $35,000.

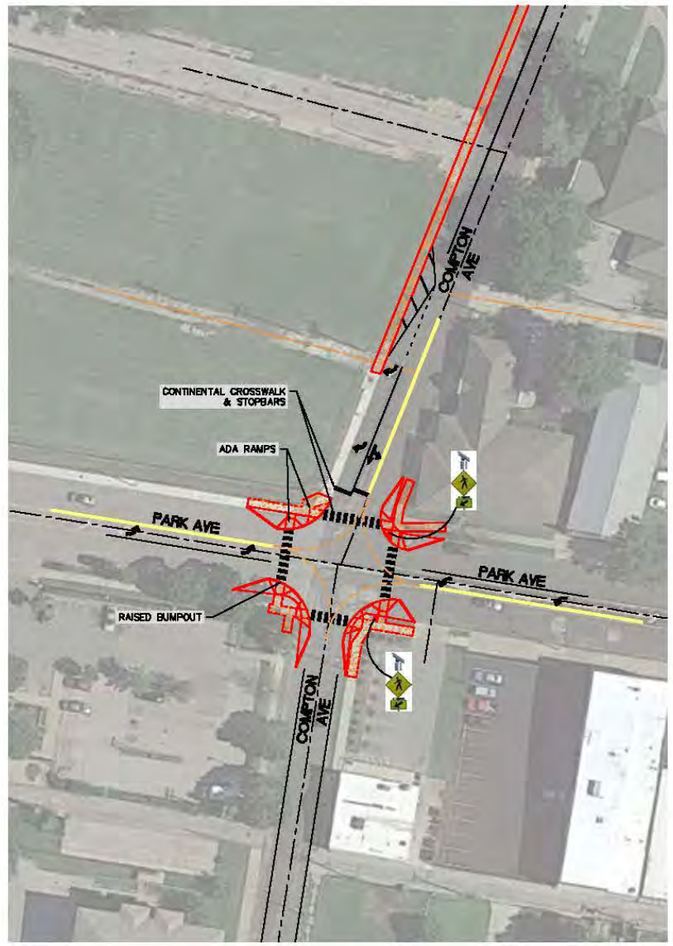
- Rectangular Rapid Flashing Beacon (RRFB) – RRFBs can enhance safety by reducing crashes between vehicles and pedestrians at unsignalized intersections. This treatment is particularly important for this intersection due to the location of the head start center at Park and Compton.
- Vertical bump-outs – Bump-outs visually and physically narrow the roadway, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. The high cost option will physically alter the intersection and extend the curb. This may require reconstruction of ADA ramps and adjustments to underground utilities such as fire hydrants.
- ADA Upgrades – ADA compliant intersections are a necessity for pedestrians to travel safely and comfortably. Enhancing ADA upgrades increase equity in mobility and provide important opportunities to residents with education, employment, health care, and many other essential functions. These updates increase access within the neighborhood and to local goods and services.
- Pedestrian scale lighting – Pedestrian scale lighting can enhance security and pedestrian experience within the neighborhood. Using smaller scale lighting is a design element that emphasizes pedestrian activity over automobile activity within the neighborhood.
- Mini roundabout – Mini roundabouts lower speeds at minor intersection crossings. These intersections require a larger intersection "foot-print" and cannot be implemented at all intersections along the corridor. However, because of the relatively wider width of Park Avenue, this treatment is an ideal treatment for this location. The motorists will lower speed as they approach to safely maneuver around the intersection. For the high cost option this circle may include signage and landscaping.

Recommended Improvements: Recommended lower-cost improvements (shown in Figure 70), include the use of planter boxes, flexible tubular markers, painted bump-outs, continental crosswalks, painted stop-bars, a sidewalk extension in the northwest quadrant of the intersection, and upgraded ADA ramps. The estimated cost for these improvements is $43,550. Note that these drawings show projected truck turning paths (completed in AutoTurn). More discussion of the use of planter boxes and flexible tubular markers as traffic calming devices can be found in Appendix G).



Compton & Park *Low Cost per Intersection*	
Painted Bump Outs	$ 2,000.00
Flexible Tubular Markers	$ 4,200.00
Contential Crosswalks & Stopbars	$ 1,600.00
Sidewalk/ADA Ramp (Park to Rutger)	$ 28,750.00
Signal Items	$ -
Roaway Lighting Items	$ -
Pedestrian Lighting Items	$ -
Total =	$ 36,550.00

Consider Flexible Tubular Markers w/ Painted Bump-outs



Compton & Park *High Cost (Bump Out) per Intersection*	
Contential Crosswalks & Stopbars	$ 1,600.00
Sidewalk/ADA Ramp (Park to Rutger)	$ 28,750.00
Bump Out	$ 86,000.00
ADA Ramps	$ 12,000.00
RRFB	$ 8,000.00
Inlet Relocation	$ 4,500.00
Fire Hydrant Relocation	$ 15,000.00
Signal Items	$ -
Roaway Lighting Items	$ 20,000.00
Pedestrian Lighting Items	$ 40,000.00
Total =	$215,850.00

Consider Pedestrian Scale Lighting

NOTE:
CONSIDER RESURFACING AND ASSOCIATED ADA UPGRADE FOR THE INTERSECTION AS THE EXISTING PAVEMENT CONDITION IS POOR.

Corporate Engineering Certificate # 000387

NOT APPROVED FOR CONSTRUCTION

CIVIL ENGINEER

DATE PREPARED 5/2/16

ROUTE | STATE MO

DISTRICT 6 | SHEET NO. 7

COUNTY ST. LOUIS

JOB NO. 111-15-16

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION | DATE

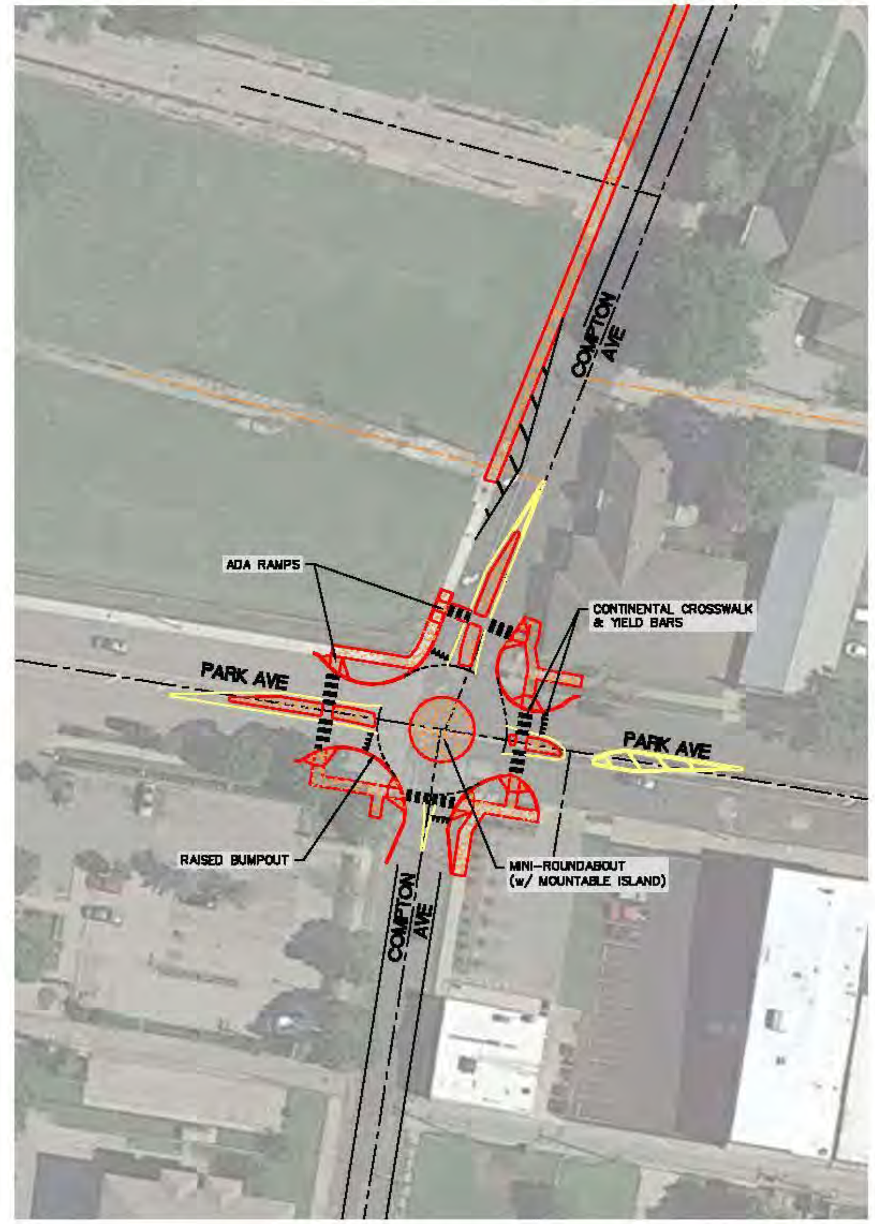
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

TRANSITSTUDY CBB

COMPTON & PARK

WARD 6 STUDY
ST. LOUIS, MISSOURI

Figure 68: Reasonable Improvements at Compton and Park



Compton & Park *High Costs (Mini-Roundabout)* *per Intersection*	
Contential Crosswalks & Stopbars	$ 1,600.00
Sidewalk/ADA Ramp (Park to Rutger)	$ 28,750.00
Bump Out	$ 86,000.00
ADA Ramps	$ 12,000.00
Sidewalk	$ 8,575.00
Inlet Relocation	$ 4,500.00
Fire Hydrant Relocation	$ 15,000.00
Center & Splitter Islands	$ 3,800.00
Signage	$ 16,100.00
Signal Items	$ -
Roaway Lighting Items	$ 35,000.00
Pedestrian Lighting Items	$ 40,000.00
Total =	$251,325.00

Roadway Lighting Required
Consider Pedestrian Scale Lighting

NOTE:
CONSIDER RESURFACING AND ASSOCIATED ADA UPGRADE FOR THE INTERSECTION AS THE EXISTING PAVEMENT CONDITION IS POOR.

NOT APPROVED

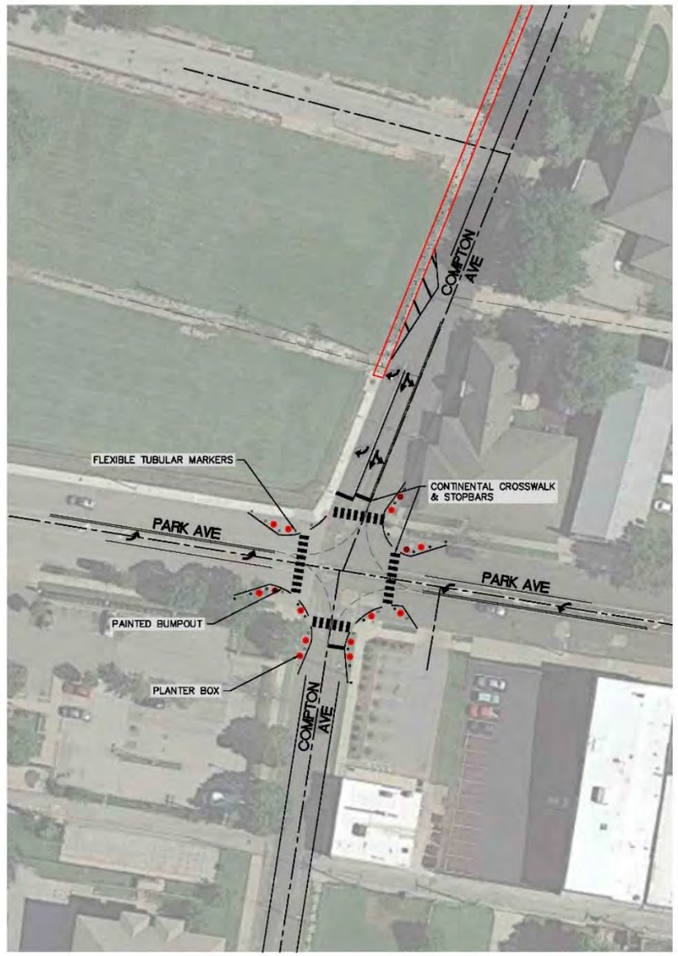
CIVIL ENGINEER

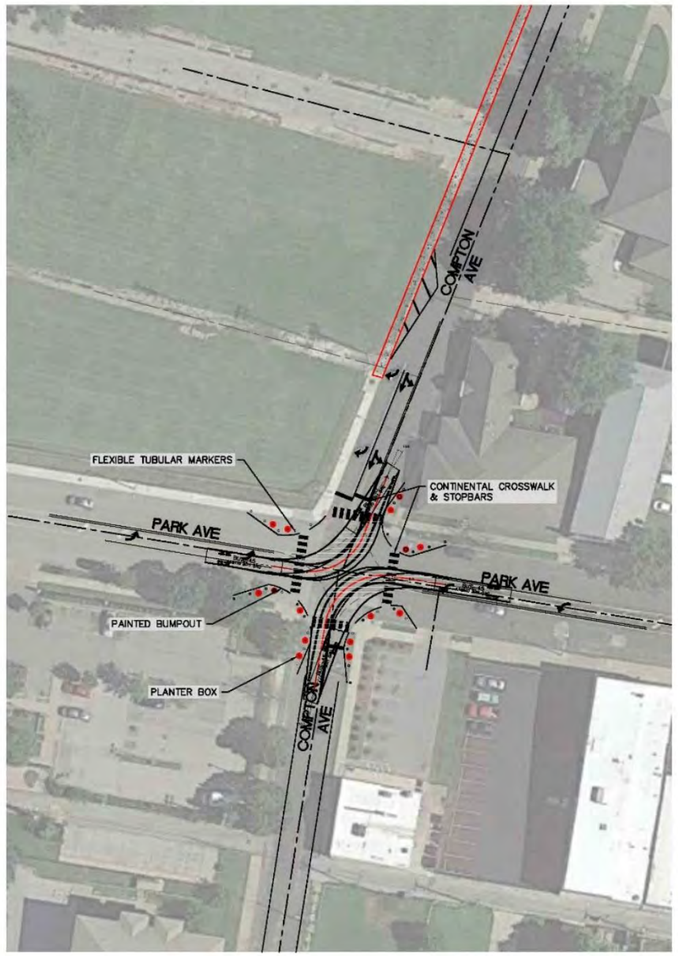
DATE PREPARED	5/2/16
ROUTE	
STATE	MO
DISTRICT	6
SHEET NO.	8
COUNTY	ST. LOUIS
JOB NO.	111-15-16
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
DATE	DESCRIPTION

COMPTON & PARK
WARD 6 STUDY
ST. LOUIS, MISSOURI

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

Figure 69: Compton and Park Mini Roundabout





Compton & Park *Low Cost* *per Intersection*	
Painted Bump Outs	$ 2,000.00
Flexible Tubular Markers	$ 4,200.00
Contential Crosswalks & Stopbars	$ 1,600.00
Sidewalk/ADA Ramp (Park to Rutger)	$ 28,750.00
Planter Boxes ($ 500 each)	$ 7,000.00
Roaway Lighting Items	$ -
Pedestrian Lighting Items	$ -
Total =	**$ 43,550.00**

Consider Flexible Tubular Markers w/ Painted Bump-outs

Corporate Engineering Certificate # 000381

NOT APPROVED FOR CONSTRUCTION

DATE

CIVIL ENGINEER

DATE PREPARED 5/2/16

ROUTE | STATE MO

DISTRICT 6 | SHEET NO. 7

COUNTY ST. LOUIS

JOB NO. 111-15-16

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION | DATE

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TRANSPORTATION ENGINEERING PLANNING

CBB

COMPTON & PARK

WARD 6 STUDY
ST. LOUIS, MISSOURI

Figure 70: Recommended Improvements at Compton and Park

3. Compton/Wyoming/Gravois

Compton and Gravois is southern limit for the Ward 6 traffic study. This location was determined as a secondary location as it serves as an entry point to the neighborhoods located within Ward 6. Gravois serves as a major route for traffic travelling from St. Louis County to St. Louis City, and thus experiences problems of speeding as cars commute through the area. The goal of the treatment at this location is to slow down traffic for increased safety at the intersection. Additionally, this intersection serves as an important location for pedestrians and bicyclists entering the neighborhood, so another goal is to increase pedestrian and bicycle safety. The location of Jefferson High School plays an important factor in identifying this location so that students can travel to and from school safely, in a vehicle via other modes. Finally, it is important to note Gravois is state route and is therefore maintained by the Missouri Department of Transportation (MoDOT). In conjunction with neighborhood groups and City officials, MoDOT recently developed a lane diet plan for Gravois that will be implemented in 2016 and includes signal upgrades (including at this intersection), repaving, crosswalk enhancements, and buffered bike lanes. Thus, the recommended improvements should be considered as enhancements to MoDOT's planned project.

Low Cost Improvements: A menu of low cost options is shown in Figure 71. These options should be considered as enhancements to the proposed MoDOT project. These options are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, 3) improve pedestrian visibility, and 4) improve bicycle accommodations. This option also includes continental crosswalks and painted bump-outs with flexible bollards. These improvements can be completed for approximately $20,000-$25,000.

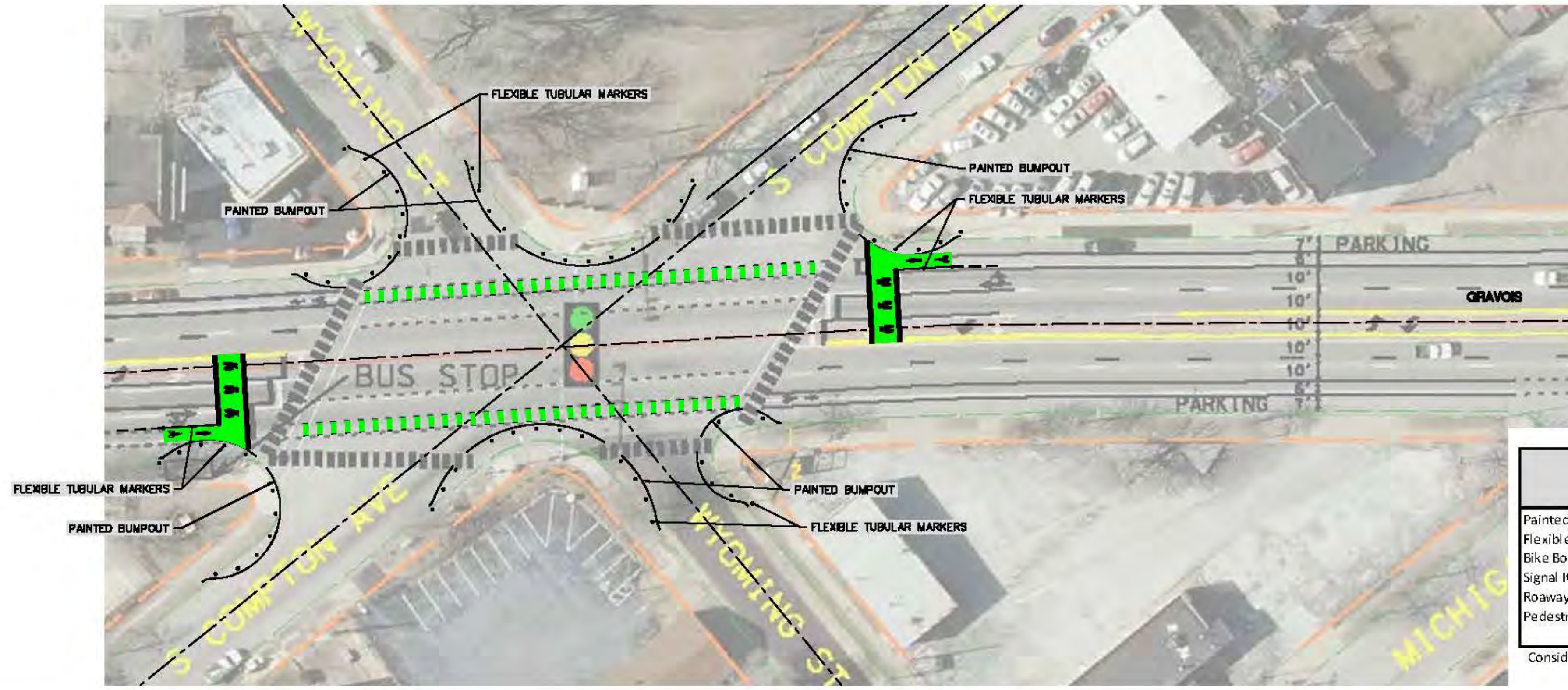
- Bike Boxes on Gravois – The proposed road diet on Gravois will add bicycle lanes and will make Gravois a primary biking route. Bike boxes enhance bicyclist safety because they provide a safe and visible way for bicyclists to get ahead of the traffic during the red signal phase. This gives priority when the signal is green and enhances visibility when travelling through the intersection.
- Painted bump-outs with flexible bollards – Bump-outs visually and physically narrow the roadway, enhance pedestrian visibility, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. One enhancement that can be provided (beyond basic striping changes) is to install flexible bollards further emphasize the bump-outs.
- Continental crosswalks – These high visibility (ladder striped) crosswalks enhance pedestrian safety when traversing an intersection, due to the prominence displayed to motorists. It is a clear indicator there may be a pedestrian crossing and gives the cue for motorists to yield to right of way pedestrians.

Higher Cost Improvements: As illustrated in Figure 71 the improvements listed above can be enhanced by adding vertical enhancements (curbs). Again, these improvements are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, 3) improve pedestrian visibility, and 4) improve bicycle accommodations. In addition, the implementation of

pedestrian scale lighting is presented. The cost implement all of these improvements would be on the order of $290,000.

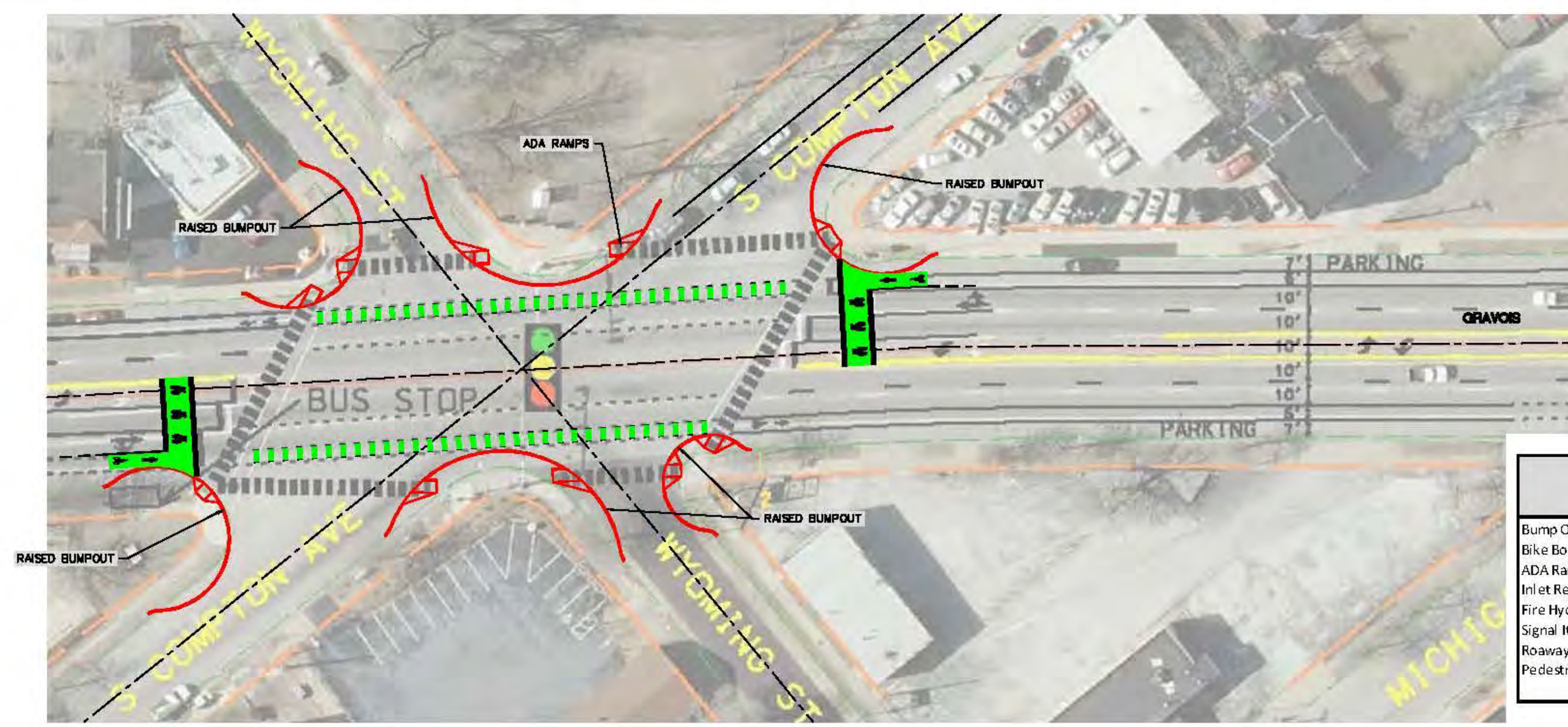
- Vertical bump-outs – Bump-outs visually and physically narrow the roadway, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. The high cost option will physically alter the intersection and extend the curb. This may require reconstruction of ADA ramps and adjustments to underground utilities such as fire hydrants.
- Pedestrian scale lighting – Pedestrian scale lighting can enhance security and pedestrian experience within the neighborhood. Using smaller scale lighting is a design element that emphasizes pedestrian activity over automobile activity within the neighborhood.

Recommended Improvements: Gravois Road is a State Road (Missouri Route 30). Gravois Road is due to be restriped/reconfigured by MoDOT in 2017. It is recommended that improvements at this intersection be coordinated between the City of St. Louis and MoDOT and include consideration of the improvements discussed in this section.



Compton & Gravois/Wyoming *Low Cost* *per Intersection*	
Painted Bump Outs	$ 3,000.00
Flexible Tubular Markers	$ 10,200.00
Bike Boxes	$ 9,365.00
Signal Items	$ -
Roaway Lighting Items	$ -
Pedestrian Lighting Items	
Total =	$ 22,565.00

Consider Flexible Tubular Markers w/ Painted Bump-outs
Consider Leading Pedestrian Interval



Compton & Gravois/Wyoming *High Cost (Bump Out)* *per Intersection*	
Bump Out	$ 193,500.00
Bike Boxes	$ 9,365.00
ADA Ramps	$ 15,000.00
Inlet Relocation	$ 7,500.00
Fire Hydrant Relocation	$ 15,000.00
Signal Items	
Roaway Lighting Items	$ 5,000.00
Pedestrian Lighting Items	$ 50,000.00
Total =	$ 295,365.00

Consider Leading Pedestrian Interval

Figure 71: Compton/Wyoming/Gravois

Optional Location

The intersection of Compton and Magnolia is proposed for optional improvements because of its strategic location in the corridor. This location was not identified as a priority or secondary location during feedback received at the public meetings, the online survey, or input from the Alderwoman. However, the intersection is located approximately one-quarter mile (and midway) between the Arsenal and Shenandoah intersections. All other intersections recommended for treatments are located with approximately one-quarter mile spacing between the intersections. There is approximately one-half mile between the Arsenal and Shenandoah intersections, and treating the Magnolia intersection would provide consistent one-quarter mile spacing between treated intersections. This spacing will help to control mid-block traffic speeds. Similar to the primary locations, it is important to remember our recommendations serve as a toolbox for calming traffic in Ward 6. All or part of these may be implemented depending on budget and resources, but we are providing effective options that are both low and high cost.

1. Compton and Magnolia

   Low Cost Option: As with the previous intersection, a menu of low cost improvements is shown in Figure 72. Again, these options are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, 3) improve pedestrian visibility, and 4) improve stop sign compliance. This option also includes continental crosswalks and stop bars, edge line striping and painted bump-outs with flexible bollards. These improvements can be completed for approximately $10,000.

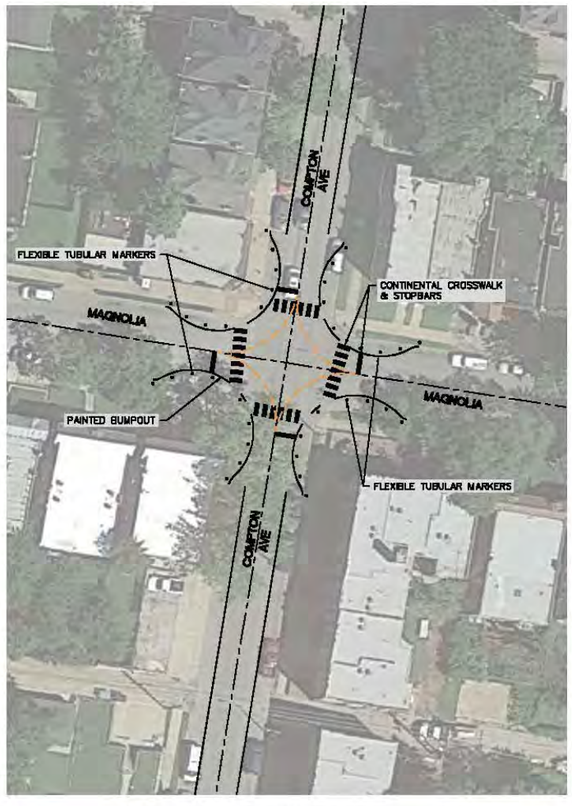
   - Painted bump-outs with flexible bollards – Bump-outs visually and physically narrow the roadway, enhance pedestrian visibility, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. One enhancement that can be provided (beyond basic striping changes) is to install flexible bollards further emphasize the bump-outs.
   - Continental crosswalks – These high visibility (ladder striped) crosswalks enhance pedestrian safety when traversing an intersection, due to the prominence displayed to motorists. It is a clear indicator there may be a pedestrian crossing and gives the cue for motorists to yield to right of way pedestrians.
   - Stop bars – The goal of the stop bar is to increase awareness of the upcoming stop for the motorists. It identifies where the motorist will stop, and placed in advance of the crosswalk can increase safety for the crossing.
   - Edge line striping – Identifying the edge of the road through the use of the edge line striping will visually narrow the lanes with the goal of slowing down traffic. It is important to slow down traffic on Compton so residents feel safe walking within the neighborhood.

   Higher Cost Option: The improvements listed above can be enhanced by adding vertical enhancements (curbs). As shown in Figure 72, these improvements are intended to 1) slow traffic, 2) shorten pedestrian crossing distances, 3) improve pedestrian visibility, and 4) improve stop sign compliance. In addition, the implementation of pedestrian

scale lighting is presented. The cost implement all of these improvements would be on the order of $215,000.

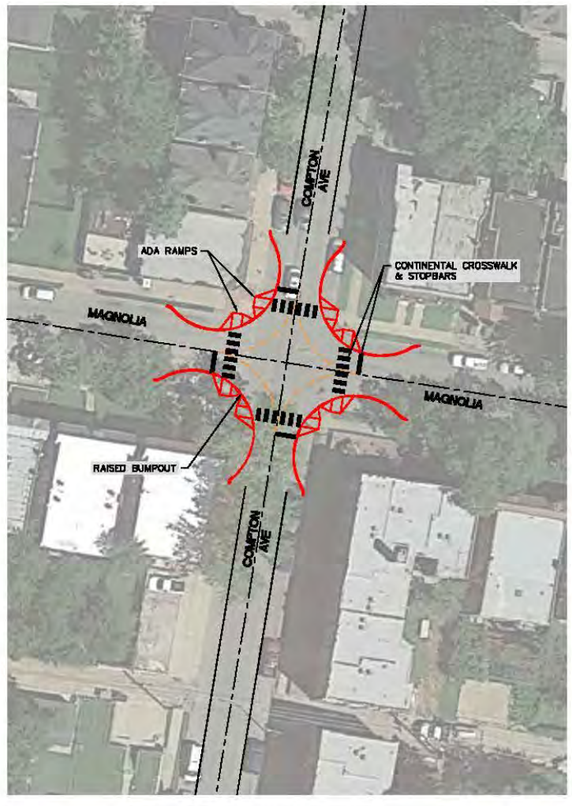
- Vertical bump-outs – Bump-outs visually and physically narrow the roadway, and create shorter crossing distances for pedestrians. The shorter crossing distances enhances safety, and allows for space on the side for landscaping and upgrades to enhance neighborhood sense of place. The high cost option will physically alter the intersection and extend the curb. This may require reconstruction of ADA ramps and adjustments to underground utilities such as fire hydrants.
- ADA Upgrades – ADA compliant intersections are a necessity for pedestrians to travel safely and comfortably. Enhancing ADA upgrades increase equity in mobility and provide important opportunities to residents with education, employment, health care, and many other essential functions. These updates increase access within the neighborhood and to local goods and services.
- Pedestrian scale lighting – Pedestrian scale lighting can enhance security and pedestrian experience within the neighborhood. Using smaller scale lighting is a design element that emphasizes pedestrian activity over automobile activity within the neighborhood.

Recommended Improvements: Recommended lower-cost improvements (shown in Figure 73), include the use of planter boxes, flexible tubular markers, painted bump-outs, continental crosswalks, and painted stop-bars. The estimated cost for these improvements is $17,000. Note that these drawings show projected truck turning paths (completed in AutoTurn). More discussion of the use of planter boxes and flexible tubular markers as traffic calming devices can be found in Appendix G).



Compton & Magnolia *Low Cost per Intersection*	
Painted Bump Outs	$ 2,000.00
Contential Crosswalks & Stopbars	$ 1,600.00
Flexible Tubular Markers	$ 5,400.00
Signal Items	$ -
Roaway Lighting Items	$ -
Pedestrian Lighting Items	$ -
Total =	**$ 9,000.00**

Consider Flexible Tubular Markers w/ Painted Bump-outs

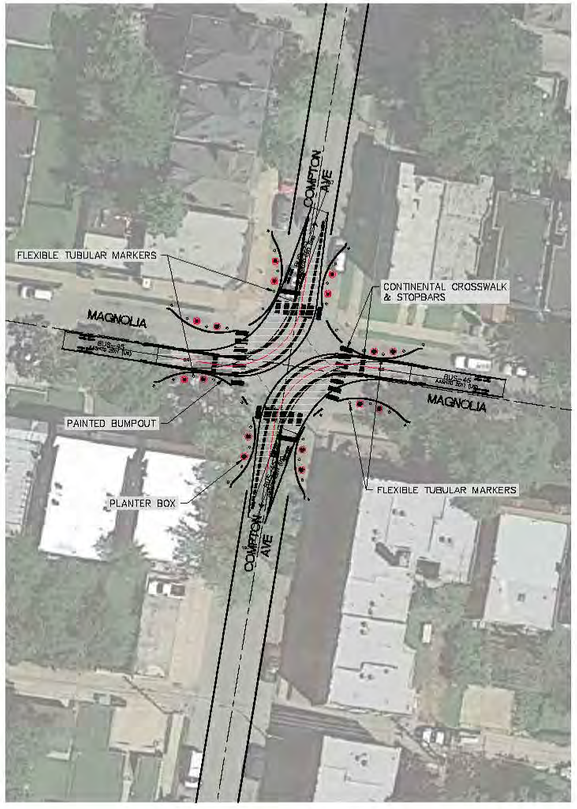


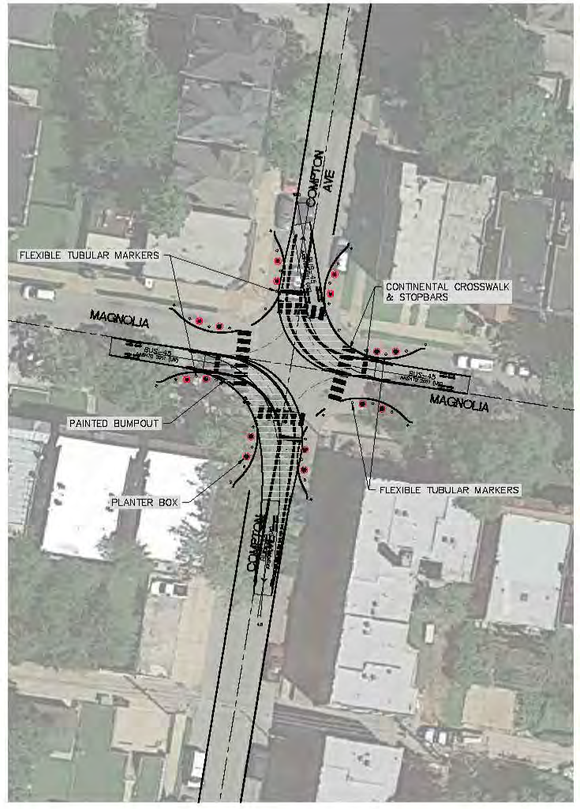
Compton & Magnolia *High Cost (Bump Out) per Intersection*	
Bump Out	$ 86,000.00
ADA Ramp	$ 12,000.00
Contential Crosswalks & Stopbars	$ 1,600.00
Inlet Relocation	$ 4,500.00
Fire Hydrant Relocation	$ 60,000.00
Signal Items	$ -
Roaway Lighting Items	$ 10,000.00
Pedestrian Lighting Items	$ 40,000.00
Total =	**$ 214,100.00**

Consider Pedestrian Scale Lighting

Corporate Engineering Certificate # 000387
NOT APPROVED FOR CONSTRUCTION
CIVIL ENGINEER
DATE PREPARED 5/2/16
ROUTE | STATE MO
DISTRICT 6 | SHEET NO. 3
COUNTY ST. LOUIS
JOB NO. 111-15-16
CONTRACT ID.
PROJECT NO.
BRIDGE NO.
DESCRIPTION
DATE
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.
TRANSPORTATION
CBB
COMPTON & MAGNOLIA
WARD 6 STUDY
ST. LOUIS, MISSOURI

Figure 72: Reasonable Improvements at Compton and Magnolia





Compton & Magnolia *Low Cost per Intersection*		
Painted Bump Outs	$	2,000.00
Contential Crosswalks & Stopbars	$	1,600.00
Flexible Tubular Markers	$	5,400.00
Planter Boxes ($ 500 each)	$	8,000.00
Roaway Lighting Items	$	-
Pedestrian Lighting Items	$	-
Total =	**$**	**17,000.00**

Consider Flexible Tubular Markers w/ Painted Bump-outs

Corporate Engineering Certificate # 000981

NOT APPROVED Not Construction Plans

CIVIL ENGINEER

DATE PREPARED 5/2/16

ROUTE | STATE MO

DISTRICT 6 | SHEET NO. 3

COUNTY ST. LOUIS

JOB NO. 111-15-16

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

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TRANSPORTATION ENGINEERS | PLANNERS

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COMPTON & MAGNOLIA

WARD 6 STUDY
ST. LOUIS, MISSOURI

Figure 73: Reasonable Improvements at Compton and Magnolia

Corridor Wide Recommendations

This section of the document identifies corridor wide recommendations that may be used as a plan moving forward when updating the entire length of Compton. These recommendations have also been identified by lower to higher cost to assist with the development of an implementation strategy.

Crosswalks and Stop-Bar Striping

It is recommended that continental crosswalks and vehicle stop-bars be installed at every intersection within the corridor. This recommendation is intended to increase pedestrian safety by promoting awareness of pedestrian corridors as well as defining the pedestrian "zones" within the street. The lateral striping is also aimed at breaking up the drivers' vista and adding (passive) activity to the street to encourage slower speeds. This treatment would cost on the order of $1,500 to $2,000 to implement per intersection.

It is further recommended that thermoplastic striping be utilized for the pavement markings. Thermoplastic striping offers greater visibility, especially in dark and/or wet conditions, and typically lasts longer than paint applications.

It is important to note that the pavement in many segments of Compton Avenue in the study corridor is in such poor condition that resurfacing may be necessary before any kind of pavement marking is installed. If paint or thermoplastic striping is applied on deteriorated pavement, the new markings will decline and disappear rapidly. This is especially true of the intersection of Compton and Park Avenues. Mill and overlay treatments can cost on the order of $100,000 per intersection (for some of the study's smaller intersections) to $175,000 (for some of the larger study intersections). Micro-seal treatment can range between $20,000 and $40,000 per intersection. Also note that mill and overlay treatments may require update of curb ramps to meet ADA compliance. Therefore, the need for pavement rehabilitation will make a striping project at that intersection more costly and time-consuming (although safer for pedestrians). Likewise, before striping projects are planned at the other corridor intersections, the City Streets Department should be consulted regarding the current condition of the pavement in each location.

Roadway Edge line Striping

The following roadway striping additions are recommended for Compton Avenue within the study area:

- White edge lines are recommended to be installed 10-feet from the centerline on both sides of the street between Lafayette and Gravois Avenues. 10-foot lanes would require the approval of the City of St. Louis Streets Department (they have been approved and are in use in other locations). It is felt that this narrower width is appropriate in this highly residential area.
- A single white edge line installed between Choteau Avenue and Lafayette Avenue
    - Between Choteau Avenue and Park this line will be 10-feet from the west curb (thereby creating two 12-foot travel lanes and a single 10-foot wide parking lane).

- Between Park and Lafayette Avenues, the line would be 8-feet from the west curb (thereby creating two 11-foot travel lanes and a single 8-foot wide parking lane).

Restriping of the centerline of Compton Avenue is not recommended at this time. Recent field studies have found that the lack of a striped centerline makes drivers more cautious and, therefore, can reduce speeds and improve awareness. As with all recommendations in this report, the street operations should continue to be monitored and centerline striping should be considered if particular situations should warrant it within the corridor. This treatment would cost on the order of $20,000 to implement along the entire length of the study area.

Painted Bump-Outs

Painted bump-outs are recommended for consideration throughout the corridor to promote pedestrian safety and further narrow the vehicular traveled way. This strategy can be beneficial at every intersection within the study corridor, although intersections are identified in the preceding section for priority installation.

Figure 74. Striped/Painted Curb Extensions in Austin, TX

In addition to installation at the intersections within the corridor, painted bump-outs can be considered for mid-block locations, especially those that see any volume of crossing pedestrians or where geometry would warrant installation. Geyer Avenue would be an ideal location for mid-block curb extensions due to the sidewalks and parks on each side of Compton Avenue, but also the higher speeds within that segment of the corridor.

Painted bump-outs are a low cost treatment which can also provide an opportunity to showcase the character of the surrounding neighborhoods. This treatment can be implemented for on the order of $10,000 to $20,000 per intersection. The design of such an installation would need to be coordinated with and approved by the City of St. Louis Streets Department. These treatments can also be enhanced through the use of flexible bollards further emphasize the bump-outs and center island.

Mid-Term / Mid-Range Recommendations

Sidewalk Improvements

As noted in the corridor description, there are segments of sidewalk missing between Rutger and Eads Avenues. These segments of sidewalk should be replaced to maintain a well-connected pedestrian system within the corridor. Investing in the pedestrian network encourages use of the system overall and contributes to the overall look and character of the neighborhood (an area of interest noted in the neighborhood survey). In addition, the sidewalk system should be monitored for any other issues that arise (such as major cracks or breakage)

that make the facilities difficult to navigate. Any such issues should be addressed as soon as funding is available. Enhanced pedestrian facilities on this corridor will be very beneficial to the overall environment and the quality of life within the community. Walkable neighborhoods foster vibrant atmospheres, promote better public health, drive economic development, and enhance the quality of life overall.

Lighting

As noted previously, lighting in the corridor was a significant area of concern for the neighborhood survey respondents. Although Compton Avenue currently has adequate lighting for vehicular operations, the current lighting is not appropriate for pedestrian movements both in the coverage and the color. As an initial step to approach the lighting concerns, it is recommended that the Alderwoman approach the City of St. Louis Streets Department in regards to changing the bulbs for the existing lighting to white-light bulbs, similar to those used on Lafayette Avenue between Louisiana Avenue/I-44 Exit and Grand Boulevard. The white light offers brighter lighting levels and true colors, improving the sense of security in the corridor.

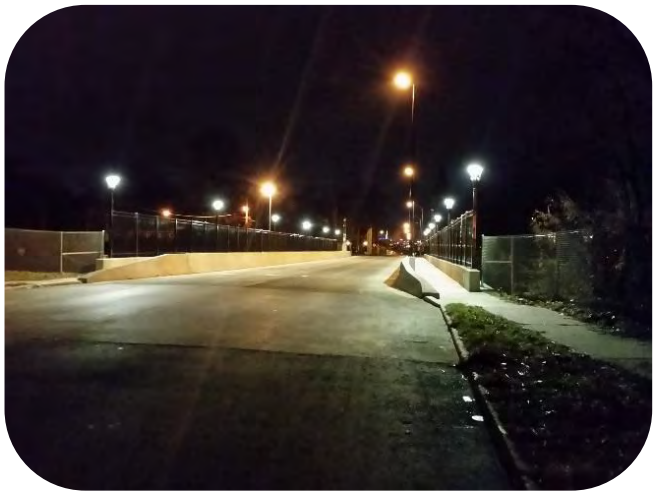


Figure 75. Pedestrian Lighting on Compton Avenue Bridge over Interstate-44

In addition, it is recommended that residents consider leaving front porch lights and/or yard lighting on through the overnight hours to provide some measure of sidewalk and pedestrian lighting (many porch lights were unlit during evening field observations).

Long-Term / Higher Cost Recommendations

Raised Curb Extensions

As discussed previously, bump-outs are recommended for consideration throughout the corridor. While paint and flexible bollards can be used for this treatment, raised curb extensions provide a much more permanent treatment. Similar to a resurfacing project, construction of a curb extension project will require that pedestrian facilities be improved to meet current ADA standards. In addition, as noted previously, the addition of curb extensions may require alterations to drain inlets and piping. Fire hydrants can also require relocation outside of the extended area. Situations such as these depend on the project area and can increase the cost of the project dramatically, so

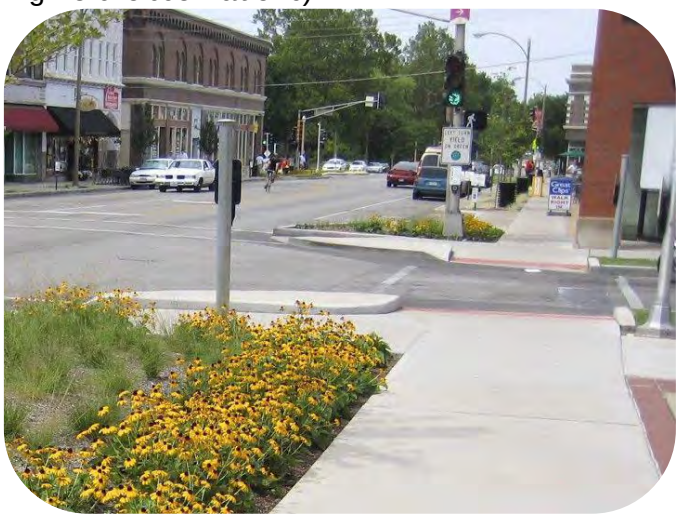


Figure 76. Curb Extensions on South Grand Boulevard

it will be important to coordinate with the City of St. Louis Streets Department throughout the conceptual and final design of any curb extension project. This treatment can cost on the order of $200,000 to $250,000 per study intersection.

Lighting

To address the lighting coverage of the Compton Avenue sidewalks, it is recommended that the installation of pedestrian-scale lighting be considered. This lighting would be similar to that currently existing on the Compton Avenue Bridge over Interstate-44, which are at a pedestrian height and utilize a light source.

The ease or difficulty of installation of such lighting would depend on the current conduit, wiring, connections, and capacity within the corridor. The pedestrian lighting could potentially be added in phases and might be installed only at (selected) intersections initially.

Pedestrian-scale lighting reinforces the fact that pedestrians may be present (even at night), and elevates the presence of roadway striping. In addition, lighting up the street frontage adds passive activity in the driver's field of vision. Not only will the additional lighting improve the comfort and safety of pedestrians using the corridor, it will encourage slower vehicle speeds.

Project Funding

There are potential federal funding sources that can be applied for to support the installation of these recommendations. The programs are managed by The East-West Gateway Council of Governments (EWGCOC) and the project sponsor would be the City of St. Louis. The Transportation Alternatives Program (TAP) provides funding for on- and off-road pedestrian facilities and would be a potential source of funding for traffic calming projects, providing up to 80-percent of the necessary funding if selected. More information can be found on the EWGCOC website at: http://www.ewgateway.org/TransAlternatives/transalternatives.htm. Because Compton Avenue is classified as a minor arterial, it is also potentially eligible for funding through the Surface Transportation Program-Sub allocated (STP-S). STP-S funds can be used for various project types including pedestrian facilities, safety, and pavement preservation. More information on this program can be found on the EWGCOC website at: http://www.ewgateway.org/TIPAppInfo/tipappinfo.htm

Appendices

Appendix A: Survey

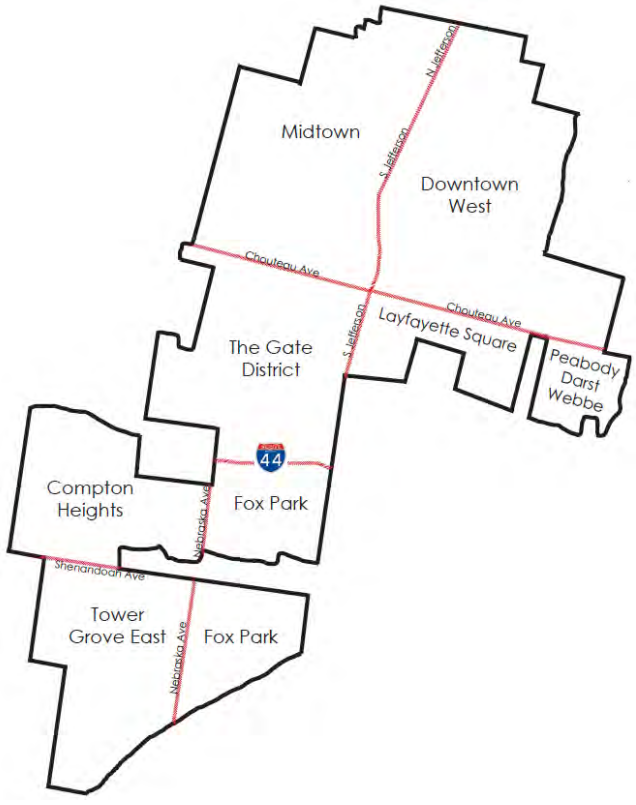
You are invited to participate in a traffic study for Ward 6. The goal of this is to use your feedback enhance traffic and pedestrian safety within Ward 6 neighborhoods. In this survey, you will be asked about your current experiences within the study area, and how you'd like to see it change in the future. Your participation in this survey is greatly appreciated and will have an important impact on the future of these neighborhoods. Your responses will be kept confidential.

For more information about the project, as well as details on how to get involved, visit https://www.facebook.com/ChristinefortheSixthWard?fref=ts. If you have any questions about this survey, please contact Alderwoman Ingrassia at ingrassiac@stlouis-mo.gov.

1. Do you live or own a business within Ward 6?
    a. Live
    b. Own a business
    c. Both

2. If you live within the Ward, do you rent or own?
    a. Rent
    b. Own
    c. N/A

3. In which neighborhood do you live and/or own a business within Ward 6?
    a. Compton Heights
    b. Downtown West
    c. Fox Park
    d. Layfayette Square
    e. Midtown
    f. Peabody Darst Webbe
    g. The Gate District
    h. Tower Grove East



4. What is your age?
   a. 15 – 19
   b. 20 – 29
   c. 30 – 39
   d. 40 – 49
   e. 50 – 59
   f. 60 – 69
   g. 70 or greater

5. Do you have children under the age of 18 that live in your household?
   a. Yes, I have children under the age of 18 in my household
   b. No, I do not have children under the age of 18 in my household

6. How would you describe the 'atmosphere' of your neighborhood?
   a. Well kept
   b. Mediocre
   c. Run down
   d. Other: _____

7. Please indicate the concerns you have for your neighborhood.

	Very Concerned	Somewhat Concerned	Not Concerned	N/A
Bicycle Lanes				
Parking				
Pedestrian Safety				
Roads				
Sidewalks				
Speeding				
Street Lighting				
Traffic				
Unkept Properties				

8. Please indicate your experience driving within the study area.

	Above Average	Average	Below Average	N/A
Most motorists obey traffic rules within the study area				
Signage is easy to understand and helps to guide you around safely				
Traffic circulates efficiently				
I feel safe driving on the streets within Ward 6				

9. Please indicate your experience biking within the study area.

	Above Average	Average	Below Average	N/A
Most bicyclists obey traffic rules within the study area				
Signage is easy to understand and helps to guide you around safely				
Bike lanes are clearly marked and provide a connected path throughout the study area				
I feel safe biking on the streets within Ward 6				

10. Please indicate your experience walking within the study area.

	Above Average	Average	Below Average	N/A
Pedestrians follow typical rules, such as crossing at designated crosswalks				
Signage is easy to understand and helps to guide you around safely				
Crosswalks are clearly marked and sidewalks provide a well connected path throughout the study area				
I feel safe walking in Ward 6				

11. Please indicate the importance of each of these below.

	Important	Somewhat Important	Not Important	N/A
Bicyle Lanes				
Congestion				
One-way Street Location				
One-way Street Direction				
Park Maintenance				
Parking				
Sidewalks				
Signage				
Speed Limit				
Street Lighting				
Stop Sign Location				
Traffic Flow				

12. Please indicate which traffic calming measures you would be interested in seeing implemented in your neighborhood

	Interested	Somewhat Interested	Not Interested	N/A
Speed Humps				
Roundabouts				
Chokers				
Dividers				
Bumpouts				
Speed Tables				
Stop Signs				
One-way direction change				
Road Closures				

13. Are there specific intersections or streets you would like to see addressed? Please indicate those areas and issues you see currently at the location(s).

14. Do you have any other comments or suggestions for the Ward 6 Traffic Study?

Thanks for your time! Your input has been extremely important to us. Be sure to check in for more updates and information about the study.

Appendix B: Survey Responses

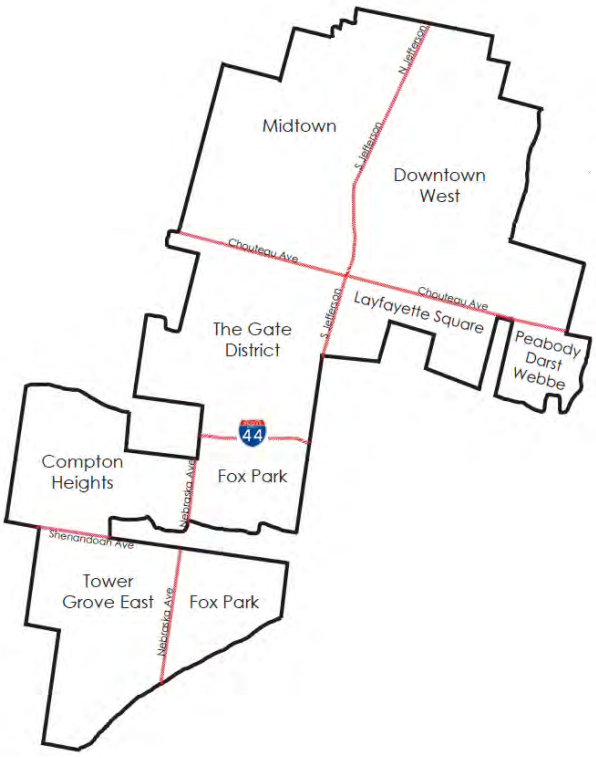
You are invited to participate in a traffic study for Ward 6. The goal of this is to use your feedback enhance traffic and pedestrian safety within Ward 6 neighborhoods. In this survey, you will be asked about your current experiences within the study area, and how you'd like to see it change in the future. Your participation in this survey is greatly appreciated and will have an important impact on the future of these neighborhoods. Your responses will be kept confidential.

For more information about the project, as well as details on how to get involved, visit https://www.facebook.com/ChristinefortheSixthWard?fref=ts. If you have any questions about this survey, please contact Alderwoman Ingrassia at ingrassiac@stlouis-mo.gov.

1. Do you live or own a business within Ward 6?
    a. Live – 92%
    b. Own a business – 2%
    c. Both – 6%

2. If you live within the Ward, do you rent or own?
    a. Rent – 3%
    b. Own – 97%
    c. N/A

3. In which neighborhood do you live and/or own a business within Ward 6?
    a. Compton Heights – 33%
    b. Downtown West – <1%
    c. Fox Park – 13%
    d. Layfayette Square – 4%
    e. Midtown – <1%
    f. Peabody Darst Webbe – <1%
    g. The Gate District – 15%
    h. Tower Grove East - 34%



4. What is your age?
   a. 15 – 19 – 0
   b. 20 – 29 – 12%
   c. 30 – 39 – 30%
   d. 40 – 49 – 22%
   e. 50 – 59 – 14%
   f. 60 – 69 – 17%
   g. 70 or greater – 5%

5. Do you have children under the age of 18 that live in your household?
   a. Yes, I have children under the age of 18 in my household – 18%
   b. No, I do not have children under the age of 18 in my household – 82%

6. How would you describe the 'atmosphere' of your neighborhood?
   a. Well kept – 60%
   b. Mediocre – 27%
   c. Run down – 2%
   d. Other: _____ - 11%

   *Other comments at the end of the survey

7. Please indicate the concerns you have for your neighborhood.

	Very Concerned	Somewhat Concerned	Not Concerned	N/A
Bicycle Lanes	21%	42%	35%	2%
Parking	8%	26%	65%	0
Pedestrian Safety	55%	32%	13%	0
Roads	34%	44%	22%	0
Sidewalks	38%	40%	22%	0
Speeding	65%	26%	9%	0
Street Lighting	37%	41%	22%	0
Traffic	45%	29%	27%	0
Unkept Properties	42%	40%	18%	0

8. Please indicate your experience driving within the study area.

	Above Average	Average	Below Average	N/A
Most motorists obey traffic rules within the study area	3%	41%	56%	0
Signage is easy to understand and helps to guide you around safely	12%	72%	14%	0
Traffic circulates efficiently	9%	66%	25%	0
I feel safe driving on the streets within Ward 6	15%	58%	27%	0

9. Please indicate your experience biking within the study area.

	Above Average	Average	Below Average	N/A
Most bicyclists obey traffic rules within the study area	9%	52%	23%	16%
Signage is easy to understand and helps to guide you around safely	8%	57%	15%	20%
Bike lanes are clearly marked and provide a connected path throughout the study area	15%	37%	26%	22%
I feel safe biking on the streets within Ward 6	3%	33%	31%	33%

10. Please indicate your experience walking within the study area.

	Above Average	Average	Below Average	N/A
Pedestrians follow typical rules, such as crossing at designated crosswalks	14%	62%	23%	0
Signage is easy to understand and helps to guide you around safely	13%	69%	14%	4%
Crosswalks are clearly marked and sidewalks provide a well connected path throughout the study area	10%	54%	36%	0
I feel safe walking in Ward 6	11%	56%	33%	0

11. Please indicate the importance of each of these below.

	Important	Somewhat Important	Not Important	N/A
Bicyle Lanes	39%	42%	19%	0
Congestion	38%	35%	27%	0
One-way Street Location	26%	34%	34%	0
One-way Street Direction	26%	33%	35%	6%
Park Maintenance	72%	22%	4%	1%
Parking	25%	43%	30%	0
Sidewalks	58%	38%	4%	0
Signage	35%	54%	11%	0
Speed Limit	63%	31%	5%	0
Street Lighting	69%	28%	2%	0
Stop Sign Location	55%	37%	9%	0
Traffic Flow	60%	31%	9%	0

12. Please indicate which traffic calming measures you would be interested in seeing implemented in your neighborhood

	Interested	Somewhat Interested	Not Interested	N/A
Speed Humps	40%	16%	44%	0
Roundabouts	34%	22%	42%	2%
Chokers	27%	22%	45%	6%
Dividers	21%	23%	53%	3%
Bumpouts	39%	25%	36%	1%
Speed Tables	40%	21%	32%	7%
Stop Signs	31%	35%	34%	1%
One-way direction change	14%	21%	60%	5%
Road Closures	11%	16%	71%	2%

13. Are there specific intersections or streets you would like to see addressed? Please indicate those areas and issues you see currently at the location(s).

14. Do you have any other comments or suggestions for the Ward 6 Traffic Study?

Thanks for your time! Your input has been extremely important to us. Be sure to check in for more updates and information about the study.

Question 6 comments

6. How would you describe the 'atmosphere' of your neighborhood?
    a. Mixed
    b. Peaked 10 years ago, fading
    c. Mixed
    d. Quite mixed, some streets are well kept and others are run down
    e. above medicore, and below well kept
    f. Well-kept save for the errant garbage that gets tossed from cars
    g. It has potential
    h. Half the neighborhood block I live is well kept and the houses are new, while the other half is very run down, vacant houses with overgrown yards.
    i. parts of neighborhood are nice others are run down
    j. Some parts are nice others need help. Mostly there is just a lot of trash on the sidewalks near the convenience stores that don't care about the neighborhood (i.e. Arsenal Market).
    k. CH - Well Kept; Fox Park – Mediocre
    l. It seems there are a few new homes and rehabs in the area (Gate District), which are great. However, the abandon buildings, graffiti, tall grass, and trash need to be addressed or property values in the Gate District will never reach those in Compton Heights or Lafayette Square. The 44 exit at Jefferson needs an overhaul as well.
    m. Fairly well-kept with some exceptions.
    n. Mostly well-kept but some are run down
    o. nice overall, immediate neighbors bad
    p. Very mixed
    q. Between well-kept and mediocre
    r. Varies by resident
    s. Better than mediocre less than well kept
    t. Gentrifying
    u. Generally well kept, but there are problem properties and a lot of littering
    v. Patchy – some dwellings well maintained, others not
    w. Mixed
    x. Mostly well kept
    y. Historically noble, worn down by time but definitely not mediocre, needs more trees
    z. Decent

Appendix C: Survey Summary Memo

Memorandum

December 14, 2015

City of St. Louis Board of Public Service
RE: Ward 6 Traffic Study: Task 1.3 Deliverable – Resident Survey Summary

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In conjunction with Alderwoman Christine Ingrassia and the City of St. Louis Street Department CBB developed a survey to be distributed online (http://www.questionpro.co/s/1-2581462-4315105) to gain feedback related to the Ward 6 Traffic Study.

The survey launched at the Ward 6 public meeting (October 6 at Employment Connection) when the online link was distributed and hard copies of the survey were available. At the time the survey closed, 267 respondents participated.

Attachment A of this summary is a copy of the survey with the percent responses to each question (rounded to the nearest whole percentage). Attachment B includes the entire list comments on specific intersections of interest or concern. Attachment C includes the entire list of general comments about the survey and other ideas for traffic related issues in the neighborhood.

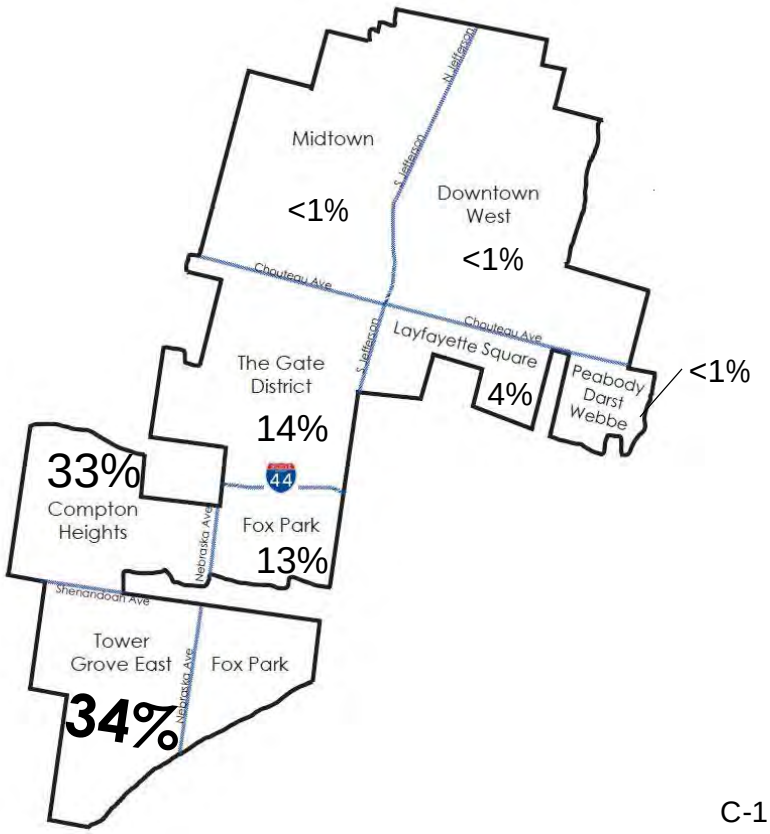
Below you will find a summary of the most defining points of the survey responses. These highlight overarching themes found in the answers and comments, as well as feedback from the first public meeting. Taking these ideas into consideration when identifying high priorit ps in the planning process.

Survey Summary

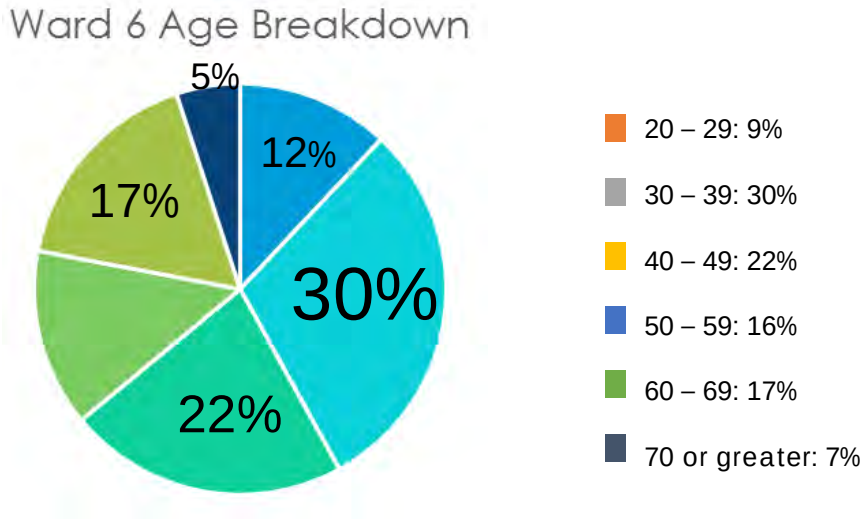
Demographics:

More information about the residents of Ward 1

- 92% of the respondents live in the neigh
- 90% of those that live in the neighborho
- Where do they live?



- What is their age?



- 79% of households DO NOT have children under the age of 18
  - Millennials and Gen X (64%) without children make up a majority of the survey respondents
  - Baby Boomers make up the second largest group at 33%
  - IMPLICATIONS: Planning for Baby Boomers and Millennials, keeping in mind both groups transportation preferences; maybe a preference to not drive or limited ability to drive.
- 60% of residents describe their neighborhood as well kept

Neighborhood Concerns:

- Very Concerned:
  - 65% Speeding
  - 55% Pedestrian Safety
  - 45% Traffic
  - 42% Unkept properties

Residents of Ward 15 are very concerned about speeding, pedestrian safety and traffic in the neighborhood. This identifies a conflict between motorists within the neighborhood and those not using a vehicle. This indicates the need to enhance pedestrian safety and do a better job managing traffic. Additionally most residents want a more residential feel on major roads. There is also neighborhood pride as the next main concern was unkempt properties at 40%.

Neighborhood Experience:

Motorists obey traffic rules:
Below Average

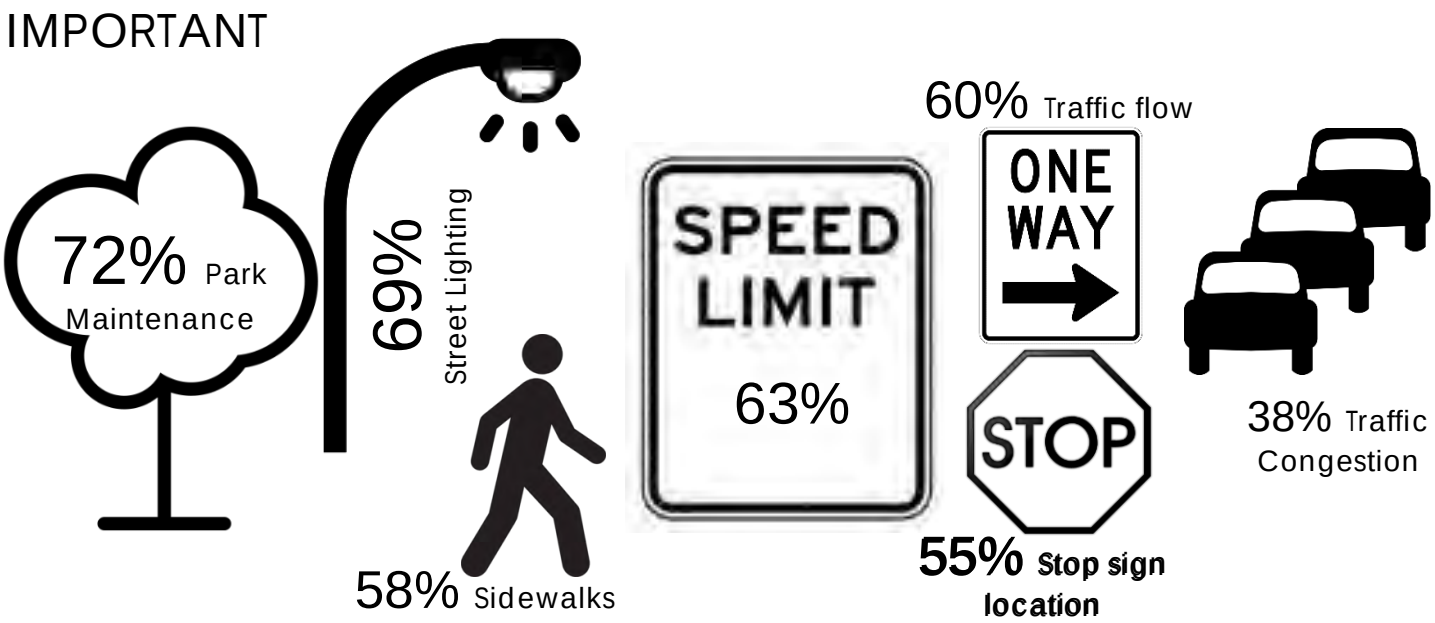
Signage is easy to understand // traffic circulates efficiently // I feel safe driving
Average

Most bicyclists obey traffic rules // Signage is easy to understand // bike lanes are clearly marked and provide a well-connected path // I feel safe biking
Average

Pedestrians follow rules // Signage is easy to understand // crosswalks are clearly marked and provide a well-connected path // I feel safe walking
Average

Residents feel safe driving, biking and walking, and feel good about the facilities available in the neighborhood. However, there is a general perception that motorists are not obeying the rules of the road.

Important in your neighborhood:



Residents of the neighborhood are most concerned with elements that make their neighborhood a great and safe place to be, especially as a pedestrian. They are most concerned with park maintenance and street lighting. These two items demonstrate a desire to keep the neighborhood safe and resources well maintained. The concern for sidewalks reinforces the desire to foster a pedestrian friendly environment. The concerns about speed limit are reinforced noting that it is the third most important element. Additionally Traffic flow and stop sign location indicate a concern for the way traffic moves through their neighborhood. Finally, Traffic congestion demonstrates a concern they are worried about the volumes of traffic moving through their neighborhood. This reinforces the idea that many residents want more local and residential streets as opposed to the thoroughfares they feel their streets are becoming.

Traffic Calming:

Survey respondents are most interested in speed tables (40%) and bumpouts (39%). While 40% of residents are interested in speed humps, 44% are not indicating it might not be the right calming measure for the entire neighborhood. It should be noted that in the comments many residents would like to assess current stop sign location. There is a general concern for speeding and running stop signs, so they indicated examining where they are might help that issue.

By Location:

Where are specific areas of interest for the residents of the neighborhood?

- Speeding: Compton // Russell // Shenandoah
- Pedestrian: Gravois
- Signs: too many stop signs on Compton // why was light at Arsenal & Compton removed?
- Intersections (general): Compton // Compton & Shenandoah // Compton and Russell // Compton & Layfayette // Russell near Compton Hill Reservoir Park (new parking) // Sidney and Pennsylvania // Russell and Nebraska

Attachment B: Specific Intersections or Concerns (Survey Question 13)

Are there specific intersections or streets you would like to see addressed? Please indicate those areas and issues you see currently at the location(s).

1	Are the stop signs on Compton at Henrietta justified by data?
2	Mindset needs to change from preventing traffic to making it flow logically. Designing streets like Compton and Arsenal to manage heavier traffic flow, and removing at least half the stop signs, would be big improvements.
3	Compton and Henrietta should have the stop sign removed. The backup it causes leads to increased traffic at Compton and Park leading people to use the right turn lane to bypass traffic and cause near misses. The Compton train track overpass is the worst one I've ever driven on in the state. The surface is miserable and it's a shame that we allow this in our tourist and residential areas. Russell was recently given parking spots near Compton Heights Reservoir Park but they face the opposite way of traffic. This seems unusable and a waste. Jefferson needs some light synchronization to improve the flow of traffic. Lights should allow people to drive through them efficiently. When every light is red people will attempt to speed or run lights to get ahead. This issue is present along Forest Park Ave between Spring and Boyle as well.
4	All longer, wider, and double blocks are a problem for speeders. Laws are in place but are routinely ignored by motorists and bikes.
5	Compton @ arsenal. Why is the traffic light gone? As a pedestrian, there is no safe way to cross arsenal between grand and gravois. Removal of the stoplight only allowed traffic to speed up along arsenal. There is no reason for this. We should rather be slowing traffic down.
6	Gravois and everything
7	Lafayette and Compton, very busy, children present, many people run stop signs.
8	All intersections with compton. People most frequently are driving east on Sidney and do not even pause when they get to compton.
9	Compton and Sidney Compton and Shenandoah Compton and Magnolia
10	Make Compton a more local/residential street . It is currently a N-S thoroughfare.
11	would like to see safe places for pedestrians to cross. If it's going to continue to essentially function as a highway, I would like to be able to access it safely from my neighborhood, Tower Grove East. There are no safe or legal places to turn Northeast onto Gravois.
12	Compton at Pestelozzi stopsign is consistently ignored by speeding vehicles. In 10 years I have never seen an officer stop one of these cars.
13	Compton Hill, Geyer and Virginia within Compton Heights/Reservoir Square need to be repaved - it's like driving over the rocky mountains. It's atrocious. You also can't safely see when trying to exit CHRS - with the new parking that was installed on Russell, great how we accommodated something and in doing so made it increasingly more dangerous - also interesting given this survey.

14	S Compton & Shenandoah intersection. Very busy.
15	Based on the study found on the page that the Choker link above references (http://library.ite.org/pub/e271b7f3-2354-d714-518b-58ef17953fd3) it seems that studies reinforce what we experience -- an excess of stop signs only seems to encourage people to run them. We see this all the time on Compton. Just a couple of years ago a stop sign was installed at Halliday where there wasn't one before. There has been no noticeable impact on vehicle speeds, and it just created one more intersection where you have to worry about getting t-boned. Let's look at other traffic calming measures. Also, why was the traffic light at Compton and Arsenal removed?
16	Would like to see Gravois have a serious road diet with dedicated bike lanes and dedicated lanes for future Bus Rapid Transit or Light Rail.
17	Compton and Russell. cars constantly speeding or rolling through stop signs. Driving with impatient attitude. Too much traffic on Compton during rush hours. Also has become a main thoroughfare. Don't like walking dog on sidewalk with so much traffic going by. I avoid walking alone or with dog on Compton. Times have certainly changed. The neighborhood is not as quiet there as it was. Especially compared to Russell and other streets in Compton Heights Reservois Square.
18	All along Compton
19	Gravois is a pedestrian nightmare and almost worse for driving. Why can't I turn left??
20	Speeding cars on Michigan Ave. Need protected bike lanes on Grand Ave. Need enforcement of existing traffic laws in tower grove east.
21	I am always particularly cautios at Russell & Nebraska b/c I have seen multiple cars run the stop sign on Russell without even slowing down. Also Sydney & Pennsylvania. It is extremely difficult/dangerous turning out of Pennsylvania b/c cars park too close to the corner on Sydney making it impossible to see traffic on Sydney without pulling way out into the intersection
22	Compton, Russell and Shenandoah streets all have a high occurrence or people running stop signs and speeding.
23	Compton and Sidney. There have been many accidents at this intersection due to people running the stop signs.
24	Limit side street access to Gravois, Let access points be where there are signal lights for safety.
25	The speed and volume of traffic on Nebraska and Compton. Nebraska feels like a highway and at time Compton does to. Since Compton goes through the neighborhood might be nice to limit/slow down that volume.
26	Compton is a race track for about 10 to 20% of the drivers. for the others it is fine to a degree Russell is the same but not as bad
27	Less stop signs on Compton as at Halliday, Sydny Pestalozzi,Shenendoah, Magnolia, etc. All are unnecessary and just spread traffic out making egress difficult. The city has way too many stop signs. Don't impede traffic, smooth it.
28	In general, less stop signs and more use of traffic bumps, roundabouts. Sidewalk upgrades. upgraded & additional street lighting and signage for more pedestrian friendly use to ease traffic on main thoroughfares especially Compton Ave.
29	Hawthorne eastbound from Grand is wide and gets speeders.

30	Compton Avenue, especially I 44 to Russel. Lots of speeding and noise issues.
31	magnolia and Compton seem to have many accidents
32	Sydney and Compton, a lot of running the stop signs.
33	Compton, between Russell and Shenandoah. Speeding, noise, congestion are horrible.
34	Shenandoah and Compton - people regularly blow through the stop sign and there is usually plenty of pedestrian traffic in the area. There are many other intersections like this and the biggest concern is for pedestrian safety, especially as school children are walking home or for people out walking their dogs.
35	South Compton from Russell to Gravois. Speeding. If you drive the speed limit, cars will pass on the left at the risk of meeting on-coming traffic. Is it possible to designate streets for bikes and other streets for cars? May be a ridiculous idea, but many bikers use South Compton and the street isn't wide enough for a bike lane.
36	All along Compton Ave.
37	Compton & Russell. Too much traffic redirected from Grand onto Compton - a RESIDENTIAL street in a Historic neighborhood. Many babies in strollers on Compton. In four contiguous houses, there are three infant – Preschool age and six primary – middle school age. Several school children also in apartments at NW corner of Compton & Russell.
38	Speeding on Compton between Lafayette and Shenandoah
39	Compton between Lafayette and Shenandoah.
40	S. Compton & Geyer: we need a lighted pedestrian crossing there for people trying to access the park. There used to be pedestrian x-ing signs, but they were ineffective because hard to see and did not require cars to stop for pedestrians. They were removed after recent paving: why, we do not know.
41	Compton & Russell
42	Poor condition of potholes and excessive speed on Compton Ave.
43	The pavement on Russel from Compton to Jefferson needs attention. I was at the meeting on Market and heard some comments about their house shaking with the traffic. If pavement is smoother then less shaking.
44	VAST majority of speeders in Compton Hills come from apartments located on corner of Compton and Russell. They fly down Compton Hill place like it was the Indy 500. If the barriers were removed to allow them access to their parking lot from Compton directly, it would greatly reduce speeding within the Compton Hill neighborhood. Failing that, I would like to see speed humps or other impediment, but am afraid that the speeders would simply swerve around or hit the hump at an unsafe speed, making a bad situation worse.
45	Compton heights bridge area
46	More street trees. More rain gardens.
47	The intersection at Compton and Lafayette in the Gate District has seen 11 traffic accidents since 2013, one fatality, and two parked vehicle were involved in hit and runs. This intersection is deemed very dangerous, as I believe the signage going West on Lafayette is compromised by overgrown trees upon nearing the intersection. A blinking red light or more signs before approaching the intersection (i.e. Stop sign ahead) would help the visibility for drivers.
48	Grand and Russell, Compton and Russell
49	Compton Av., from I-44 bridge south to Arsenal
50	speeding on Compton and lRussell, not obeying stop signs

51	Compton and Park. Compton and Russell. Compton and Lafayette.
52	The four-way stop at Compton and Lafayette is very dangerous. My home sits on that corner and there are frequent accidents. We see drivers run through those stop signs regularly.
53	Lafayette and Compton. Drivers blow through the stop signs and speeding occurs every single day. I have almost been hit several times while crossing through the intersection (driving and walking). There have been several accidents and deaths in recent years.
54	On S. Compton between Lafayette and Russell (where I live), the traffic is horrible. People speed down the street at unsafe speeds. I constantly see people passing people on this neighborhood street. The cross walk at Geyer is invisible. The signs are covered and it is unsafe for someone to cross. People have died at the intersection of Compton and Lafayette. The traffic conditions have gotten out of control.
55	On S. Compton, the northbound traffic in the AM is very unyielding to pedestrians moving in and out of parked vehicles. Probably related to excessive speed on the road.
56	I would like to see an analysis of accidents at Compton and Lafayette. I have lived at this intersection for 5 months and have seen hit and runs and multiple accidents.
57	The speeding on the 1900 block of S Compton (between Russell & Lafayette) needs to be addressed - its way too fast & dangerous. People rolling through or just driving through stop signs at Russell & Compton. While heading S on Compton - at Park, there is a turn lane for turning right - when there is backed up traffic to go straight through the intersection, people continuously use that right turn lane, drive up to the intersection, then drive straight through the intersection & cut off everyone who is waiting to go straight.
58	Compton North and south of Russell. Too much speeding. Not safe for walkers crossing the street or cyclists. I have been rear ended at the intersection by a speeding car, too.
59	S Compton the rate of speed and the volume is out of control. We have had fatal accidents and there seems to be a total disregard for lane usage and speed limits. Bus will pass cars that are allready going fast and cars are passing on the right and left and running stop signs at high speeds at all times of the day and night.
60	Lafayette to Shenandoah
61	Compton between Park and Russell. High speed, high congestion,illegal passing of cars , improper lane useage, poorly marked pedesterian crosswalks and no bike lanes. The high speed is the most important as it goes on 24 hours.
62	Compton and Russell
63	The stop light down by the health center is poorly timed and not done to correspond to volume of traffic
64	Compton and Russell. Compton and Shenandoah.
65	Compton & Park Ave and Compton & Chouteau Ave - southbound motorists on Compton often use the right turn lane at these intersections to speed around people going straight. From Compton & Lafayette to Compton & Russell - cars will speed through this section of Compton at very high rates of speed. This section of Compton also bottle necks during rushhour where cars are bumper to bumper on Southbound Compton.

66	The only intersections that I think should be looked at for road closures are the three way stoplight intersections on Gravois. I think that some of them (not all) are unnecessary and clog the entire system (for example, Pennsylvania). Closing those small side roads would turn that into a normal intersection that is safer to drive through and safer for pedestrians to cross (knowing better where the cars are coming from). I would also like to see a few adjustments in the placement of stop signs and street signs. The one at Sydney and Ohio is hard to see. The one just north of that could use a 'cross traffic doesn't stop' mini-sign. Otherwise, I have no other concerns with traffic on Jefferson or Gravois. I would be AGAINST any speed bumps or those stupid rumple ridges. In my experience those destroy your car suspension system while providing very little actual traffic calming measures. For example, the ones in Tower Grove Park are so high, they should be illegal. And, rumple ridges look fine at first, but then the pavement around them will degrage without being repaired, which then causes them to turn into mini-speed bumps. They should not be used. Thanks!
67	The intersections of Compton & Longfellow is particularly problematic from a speed standpoint. Stop signs and other traffic calming measures are of great interest to me (such as texture change, speed humps, etc). It is doubly problematic when pushing a stroller or wagon because the only ADA ramps face onto Compton (and not Longfellow) so you have to push children onto Compton whether you want to or not in order to cross the street even if only crossing the side street. It seems more sensible to introduce speed-calming initiatives at Longfellow & Compton rather than Hawthorne and Compton bc Longfellow is closer to the midpoint between Russell and Shenandoah (both of which are already stopping points).
68	
69	Shenandoah Speeding and running stop signs
70	The long stretch of Compton Ave between Russell and Shenandoah. There are no stop signs or speed measures to keep motorists from barreling down Compton Ave. Very dangerous for the many young children who live in the area.
71	I am seeing more and more drivers running the stop sign at Park Avenue and Ohio Avenue. It seems more so in the evenings or on the weekends. is there anything you can do to enforce this because I believe a pedestrian will be hit trying to cross the street because of a careless driver.
72	I live on Lafayette near Nebraska. More than 50% of cars do not actually stop at the stop sign on either of those streets. There was recently an accident when two cars collided and ended up on the sidewalk. Also, 40+ MPH seems to be the norm.
73	Compton Ave needs resurfacing.
74	Pennsylvania & Henrietta too much drug dealing, car parking and speeding off
75	Many vehicles do not stop at the stop signs at California and Park
76	Compton and Henrietta - a lot of cars run this stop sign, particularly at night.
77	compton /lafayette. compton over 44. people drive too fast and disobey stop signs.
78	Congestion at Jefferson and Lafayette. Something needs to be done with the light sequencing there and Jefferson and hwy 44.
79	The intersection of Compton and Shenadoah. My children wait there at the bus stop daily and it is an unsafe intersection. There are often people who ignore the stop signs, and feel Compton Ave is an speedy alternative to congested grand avenue. A great place to start would be painted cross walks in the intersection as many cars don't seem to notice where to stop in the intersection.

80	Maybe it's just because I live there, but Magnolia and Louisanna as well as Louisiana and Sydney are definitely locations for higher speed rolling stops. Not sure what can be done.
81	A lot of speeding down Nebraska between Lafayette to Park.
82	Better enforcement of speed and stops would help. Compton is a secondary arterial street. The people who live on Compton have to realize there is going to be traffic.
83	Compton and Russell Blvd.
84	Put the traffic light back up at the corner of Compton and Arsenal, as well as other corners along Compton.
85	Sidewalks on California around the empty lots across from the parks between Park and Chouteau are terrible and need maintenance. This is prime land now more then ever and the sooner it is made presentable and promoted the sooner it will develop.
86	Compton should be three lanes (one North bound, two Southbound from Chouteau to Lafayette. LOTS of people ignore 'right turn only' sign on Southbound Compton at Park.
87	Intersection of Compton Ave. and Shenandoah has a lot of people blow through it without stopping.
88	Speeding on Compton Ave.
89	S. Compton Nebraska Layfayette
90	Compton & Sidney - despite being a 4 way stop, rarely do cars come to a stand still,..time of day is irrelevant
91	The corner of Caroline and Cardinal has a stop sign that is ignored by many drivers. This particular corner is used for pick-ups and drop-offs for students on buses. Maybe a speed hump might slow the traffic down.
92	As a resident who's property borders on Compton Ave, I am intimiately familiar with the speeding situation on Compton. After much thought I believe the best solution to slowing down traffic on Compton and to make the street seem 'more residential' would be to install an approximately 5 feet wide 'planted' median on Compton between Longfellow and Hawthorne Blvds. Note that virtually nobody ever parks on the street in this location. In addition I would install parking bumpouts on both sides of Compton between Longfellow/Russell andbetween Hawthorne/Shenendoah. I hope this makes sense and there no doubt in my mind that the traffic on Compton would be slowed down. I also think it would be very attractive. Another suggestion I have is to install speed bumps on Hawthorne between Grand and Compton. I can personally attest that the vast majority of speeders do not live in the neighborhood! Thanks, Kelly
93	Specifically South Compton has it is becoming too congested and drivers are frequently not obeying the stop signs.
94	Gravois - taking a left onto from side streets, people from opposite directions coming into the center lane to turn (and colliding), Congestion of Compton,
95	Sidney / Jefferson / Gravois intersection almost everytime I am there someone is running the light / almost hitting a pedestrain. consideirng there are several bus stops here. Needs to be fixed ASAP to be pedestrian and bike friendly and clearer traffic flow.
96	Compton and Lafayette is terrible on Sundays with illegal parking, making the intersection impossible to navigate safely. Could we talk to the congregation about this? Other churches on Compton further north do not illegally park at all.

97	All of Gravois (only partially in the 6th Ward), Compton between Choteau and Lafayette (cars move too quickly, no bike lanes), I would love to see roudabouts in the area where stop signs are currently (there's a really good one at Westminster and Newstead in the CWE).
98	I doubt this can be addressed but it is unfortunate that 18 wheelers and other large trucks must use Dolman St. to access delivery at Zumwalt company. There are many very young children on this street and these trucks do not go slowly and often back up three blocks to gain access back to park/Truman. Also really is tearing up the new crossing plaza at park and dolman.
99	Chokers and bumpouts can be done so cheaply. We need fewer stop signs and more traffic calming devices. There seems to be no rhyme or reason to where stop signs are placed. On streets like Compton where there is not room for a bike lane, sharrows could be used WITHIN intersections to remind drivers to watch out for bikes and to give bikes a route through the intersection. Like so: http://cyclfac_toolbox-3wc.thecyclistwebhouse.com/sharrows/Images/intersections-signalized_route/DSCN0806.JPG Bumpouts are needed at all major intersections to provide shorter ped crossing distances and to slow down cars which improves ped crossing safety.
100	Compton between Sydney and Russell. Speeding, running stop signs, loud loud stereos, littering from vehicles, breaking of numerous basic driving rules. Compton seems to be a 'cut through' where high rates of speed are a daily occurrence.
101	Improve stop sign weirdness at Gravois/Magnolia/Ohio Add traffic calming measures along entire length of Jefferson
102	Speeding along Compton between LaFayette and Russell is very dangerous.
103	Compton and Hawthorne / Longfellow and Nebraska between Russell and Shenandoah
104	The problem is that some motorists and almost all cyclists do not obey signs and conventional rules. Double blocks w/o stop signs cause speeding - I'd love to reduce stop signs, but fear it will cause an increase in speed/accidents.
105	Arkansas & Shenandoah needs a stop sign for Shenandoah traffic. Arkansas & Magnolia needs a police officer - people routinely blow off the stop signs, to an alarming degree.
106	The distance between Lafayette and Compton and Russel and Compton is apparently long enough for motorists to generate high speeds. I'd like to see something implemented between the two that force motorists to slow down.
107	Compton & Longfellow, Compton & Hawthorne Excessive speeding and impared drivers. Very dangerous to pedestrians and property
108	Compton between Russell and Shenandoah are downright hazardous. Cars speed through this section regularly and I've seen children/animals nearly hit. I can't count the number of accidents in my 8 year tenure in the neighborhood that have happened at Longfellow and Compton. Something needs to happen to slow cars down. Additionally, cars regularly ignore the one way streets through Compton Heights creating pedestrian safety issues.

109	All of California, north-bound mainly, from Gravois to Russell. The speeding (highway speeds) is rampant and in the summer, turns onto Russell were regularly taken without stopping/looking for other cars, much less pedestrians. Numerous children now in that area causes great concern. I understand that Nebraska is ripe for speeding as well.
110	Magnolia & Compton - lots of stop sign runners, despite a daycare on the corner. Basically all of Sidney between Tennessee and Ohio - high speed traffic, blown stop signs. At least install sharrows for bicycle safety. I've been threatened far too many times. Compton could use a dedicated lane from market to gravois. Fix the Compton bridge over the train yard. It's terrifying. I know it will cost a lot of money, but it's deteriorating. Speed tables are wonderful things for low traffic roads often used by speeders. I moved from DC, and these are frequently seen there in neighborhoods like TGE. Instal bump outs at popular bar/restaurants with bike parking stations. Places like tick tock, shaved duck and van gohz would benefit greatly in terms of slowing traffic and making vehicles more prepared for potential cyclists and pedestrians.
111	the stretch along Compton from Louisiana to Arsenal/Gravois is a speed zone with a lot of pedestrian traffic. I would love to see several roundabouts along this stretch to deter people from taking this route
112	There is absolutely no need for a 'no right turn on red' order at Spruce and Compton. Indeed, there is no need for anything but a stop sign at this location. Vehicles can easily assess the safety of making a right turn from Spruce at this location and shouldn't be forced to choose between pointlessly sitting for a very long light or breaking the law at this location. I am also concerned about the four way intersections at Lafayette and Compton, Russell and Compton, and Shenandoah and Compton. I routinely see people blow through these intersections at full speed without ever touching their brakes. I am not exaggerating. THE STOP SIGNS ARE NOT ENOUGH.
113	Compton and Shenandoah intersection is terrible. People fly down Nebraska, Compton and Shenandoah and it needs to stop
114	Roundabouts on Gravois.
115	The whole neighbor in general.
116	Compton and Russell intersection Compton and Hawthorne Compton and Longfellow Along Russell between Compton and Nebraska
117	Depending on time of day it can be difficult to turn left onto Grand or Gravois- but usually if I'm worried about it I'll just drive to a traffic light. I think once you're familiar with the neighborhood this isn't so much an issue because you know what to expect. Grand can get pretty congested at peak commute times, but thats to be expected.
118	Traffic at the intersection of Compton and Shenandoah is congested enough to warrant a stop light, at least one that is activated during hours of high activity. Also I'm very concerned with speeding on Nebraska and Compton. Many cars blow through stop signs and drive way too fast in between stop signs.
119	What is up with people rolling through stop signs on the regular? OMG.
120	Grand Ave and now Compton
121	South Compton ave has a large amount of traffic and the amount of stop signs impedes flow.
122	Between Market and Russell is really bad. I get passed all the time by people speeding and moving into the right turn lane in order to pass at the stop sign. It is really annoying and dangerous. We love walking up to Grand station and mostly feel safe. As a female I wouldn't feel safe walking alone at night.

123	The 'roundabout' at Pestalozzi and Virginia is ineffective and dangerous. Apparently 90% of the people who pass through that intersection don't realize that you're supposed to move around the outside of it, rather than making a really shallow turn into oncoming traffic. Traffic along Compton moves way too fast (lots of stop signs ran), but I don't know what would check that outside of increased enforcement.
124	Montevideo at Caroline, Rutger, and Hickory. Drivers speed down Montrose and often don't stop at stop signs.
125	Too much speeding down Arsenal.
126	Pedestrian crossing just south of 44 on Compton is poorly marked Speeding along Compton between Layfayette to Shenandoah (maybe further, but this is my pathway) is terrible. People pass on the left into oncoming traffics and run stop signs consistently.
127	Condition of Jefferson. The number of large trucks is taking its toll on the road. Fox Park would like to see development and properties on the street to be taken care of. If you own a vacant building you should need to follow the laws and keep it up and have someone available in the city to take calls and manage.
128	Improve the flow of traffic on Jefferson and Grand (timed lights, etc.) and traffic will decrease on side streets such as Compton.
129	Compton and Russell. Compton and Shenandoah. Longfellow and Hawthorne at Compton,. to stop unwanted traffic on these streets(longfellow and Hawthorne) make them one way both exits on Compton
130	Traffic calming on Shenandoah, Nebraska and Russell (if possible).
131	Poor alignment and striping on Compton at Chouteau. People speeding and passing on Compton between Chouteau and Park. People disobeying turn lanes and passing at Park and Compton. People ignoring stop signs on Russell and Lafayette at Nebraska.
132	Remove stop signs on Compton and Henrietta. Coordinate the traffic signal on Compton and Spruce with the light at Compton and Market. Adjust the timing of the traffic light on northbound Compton at Chouteau. A 120 second red light at 6:30AM is ridiculous for only 6 cars travelling on Chouteau.
133	Minnesota between Magnolia and Gravois is absurd. I feel like it is a major thoroughfare for people to speed through after committing crimes. It may be coincidence, but nearly every day I hear or see a car speed excessively down the street and shortly thereafter hear sirens. I would LOVE to see speed tables put in. I am close to just building one myself.
134	There are already too many one way, roundabouts, closures, bike paths and 4 lane roads turned into two lane. This is causing traffic to back up and creating problems. Who on earth is in charge of this b.s? Traffic should be allowed to flow freely, not be bottled up.
135	I live on Compton and a couple of times a month I am passed illegally by a speeding vehicle driving to or from Market street. I've been passed on the left and right both driving the speed limit and stopped at a stop sign. I've sat at a stop sign and been passed on the right by a car that didn't slow down with a pedestrian narrowly escaping from being hit. To put it mildly, certain people have complete disregard for the safety of others in the neighborhood and are driving down Compton like it's a major roadway.
136	Bike lane down Sidney.
137	Jefferson and Chouteau; also the intersections of Jefedrson with both I44 and I64
138	Everywhere in the area, people drive way too fast and flat out ignore stop signs. I drive all of 3 minutes to and from work each day and, without fail, encounter at least 1-2 people each day that do not even think about stopping at a stop sign. Not one corner in particular. It is throughout the neighborhood.

139	Stop sign needed at Arkansas and Halliday.
140	Compton heights bridge and street needs to be repaved. It is covered in pot holes and the side walks on the street aren't any better. It's also very narrow and biking can be a hassle and dangerous.
141	Between Russell and Shenandoah off Compton, same at Nebraska.
142	I am concerned about the speed of traffic along Compton. Might be a good idea to put either stop signs or pedestrian signs in the intersections at lifellow and hawthorn.
143	What is going on with our streets is nuts. Turning 4 to 6 lane Chouteau and Grand Ave into pedestrian and bike ways is 'consultant' driven make work projects with no thought to the economic consequence of added pollution and delay. This is just a trend that will be reversed in 10 years when the next great idea gets turned on in the academic world of city planning. Grand at 44 is a choke point now with essentially only one lane going north and south now.
144	It intersection of Compton and Shenandoah needs to be updated with lighting and speed humps. The intersection acts like a thoroughfare between Gravois and Grand and people are moving too quickly.
145	rush hour traffic on Compton is an issue -- going north in the morning and south in the afternoon. It gets very congested at those times and I would adjust stoplights and/or figure out other ways to allow more free flow of traffic. For example: a stoplight at Park and Compton; or adjusting stoplights at Compton and 64 to work together better.
146	The intersection at Chouteau and Mississippi is very difficult for pedestrians to cross. The street light at Jefferson and Chouteau (when on Chouteau) is too short and you can spend up to 20 minutes waiting for the light to change. The intersection at Jefferson and Russell is difficult for pedestrians to cross because once the light changes cars turn onto Jefferson and don't always wait for pedestrians because the light changes too quickly. The intersection at Russell and Gravois is difficult for pedestrians because the diagonal street makes it difficult to tell which direction traffic is going to come from.
147	I live near Compton Ave and use Compton on a daily basis. It is a major street that runs north and south through Tower Grove East. I would like to see fewer stop signs to allow the flow of traffic to continue with fewer interruptions. Utilize stop signs at major intersections only (Arsenal, Magnolia, Shenendoah, Russell, Lafayette, and Park). This would be a great street to install speed tables and bumpouts, and to clearly define the bike path along the entire stretch. I love the neighborhood, and I'm excited to see the recent developments and improvements. Please keep it going. It has the potential to be the envy of St Louis.
148	Layfayette and Nebraska. Layfayette and Compton. Drivers often do not stop at the stop signs.
149	The intersection of Jefferson and Lafayette appears to have a pedestrian crosswalk implemented, which is critical. This is not yet working. This intersection is dangerous and congested during rush hour and needs to be improved for the safety, especially considering that a public library is at the corner. Sidewalks in The Gate District need to be improved. I think there are initiatives to do so, but if not, the sidewalks should be improved dramatically. They are cracked or nonexistent in many areas of The Gate District.
150	Speed and noise of vehicles traveling on Compton Ave Between Park and Lareyette
151	Speeding on Compton needs to be addressed- cars often speed around cars going the speed limit. Often cars seem to go down Virginia to avoid traffic/stop signs in Compton. I live on Halliday at Virginia and listen as cars fly through my intersecting all day/night. I never see any enforcement of speed limit or stop signs along Virginia.

152	Traffic speed and congestion: on Compton between Lafayette Avenue and Park Avenue
153	Walk / Don't walk signs need to be functional at Jefferson and Lafayette. Barely enough time for a family to cross Jefferson at Lafayette. Also, Southbound Jefferson at Lafayette sometimes has an extended green and sometimes it does not. There are no warnings for northbound drivers turning left on Lafayette about the extended green!!...and the fact that is varies according to the time of day just makes this an accident waiting to happen. Also, the yellow arrow on the center traffic light for Northbound Jefferson at Lafayette has been burned out for 2 months.
154	Jefferson from Market to Russell especially at rush hour times. The lights impede the flow of heavy traffic.
155	Missouri and Mackay Avenues both are one way going north, this has a negative impact on traffic flow in NWQ; drivers are increasingly driving the wrong way or using alleys to get to and from.
156	Every intersection with a stop sign should also have clearly marked cross walks, so pedestrians feel comfortable stepping into the street and motorists know where to stop at an intersection; this also reinforces the stop sign with another visual cue. Shenandoah & Compton; Compton & Arsenal; and Shenandoah & Nebraska intersections should be beautified with bump-outs, benches, crosswalk markings, and plantings. The odd intersections at Minnesota & Magnolia/Pestalozzi should also be regularized (especially Minnesota & Magnolia, which looks like a mess).
157	Chouteau has become more conjested
158	Stop weekend drag racing on Chouteau.
159	Compton Bridge between Market and Choteu
160	The stop sign on Russell at Oregon is ridiculous. Oregon is only 2-3 blocks long on each side on the stop sign. I dont think it really needs a stop sign. People talk about slowing the traffic on Compton but I think its a bad idea. If you drive through during rush hour it gets really backed up. The problem is that compton intersects many neighborhhods that are closed off and have one way streets such as the Gate District and Compton Hill/heights. If people want to slow traffic on Compton they should open their own streets up to traffic. This would help alleviate the traffic on Compton. Also, arent we beyond the days of closing off neighborhoods to the outside world?
161	Intersection of Spruce/Compton had a traffic light added when I-64 was under construction. It wasn't necessary prior to that and does not adapt to traffic needs at night in particular, nor is a right turn allowed on red from EB Spruce to SB Compton. This would be an excellent location for a roundabout and would still allow truck/bus traffic to flow.
162	Compton between Chouteau and Park gets so congested during rush hour!
163	Compton Ave going north needs to be repaved. Very bumpy.
164	Cars travel much too quickly on Nebraska between Russell and Shenandoah. There are no stop signs and it feels unsafe exiting vehicles and crossing the street. Park has numerous pot holes and could use bike lanes to connect S. Grand and Lafayette.

165	The light at Chouteau and Compton is too long for Chouteau and too short for Compton. Traffic backs up during rush hour on Compton while there is very little traffic on Choteau. The left turn from Compton south bound to Choteau east bound should be lengthened during the evening rush. The lane markings for Park west bound at Jefferson were messed up when Lafayette square was re surfaced. The lack of lane markings cause confusion for traffic and the opposing traffic cannot tell who is turning or going straight. It is dangerous and needs to be repainted. The intersection of Jefferson and Choteau is very dangerous because it is completely blind for South bound Jefferson traffic crossing the intersection. Not sure how to improve this but anything would help.
166	There is no marked crosswalk on Jefferson crossing park. Cars do not stop far enough back from the intersection to allow pedestrians to cross and they often have to cross behind cars. There should be a 'stop here on red' sign. It is also difficult to walk across Jefferson on park with all of the cars turning from park onto Jefferson and no crosswalk signal.
167	I have noticed that there are several intersections, particularly along Shenandoah, where the stop signs are difficult to see due to long tree limbs. Some intersections, particularly Arkamsas going onto Shenandoah, have low visibility due to how close to the corner cars are allowed to park. Not sure if mirrors at intersections are an option to maintain spaces for residents & safety for those driving, biking & walking.
168	The only street I've seen to be a consistent problem is Compton. It backs up from Lafayette to Market. However, I've seen some changes in the traffic lights and so I assume you are aware.
169	There's a large pothole in the intersection of Compton and Shenandoah. It would be nice if that were removed.
170	It seems that people drive really fast down the block of streets between Pestalozzi and Arsenal. I've witnessed it on Virginia, Compton, Michigan, etc.
171	Compton and Magnolia. There is a daycare on this corner and people run the stop signs constantly. I'm surprised children haven't been hurt yet.
172	All intersections/side streets that do not have a traffic signals on Gravois should have restricted access or blocked off. There are plenty of signaled streets that provided safe navigation options. I am tired of bad drivers pulling out into the traffic flow of Gravois or pulling out blocking traffic to cross and make left turns.

Attachment C: General Comments (Survey Question 14)

Comments or suggestions for the study?

1	Changes to traffic flow should be data driven and made because of proven effectiveness.
2	The excessive number of stop signs make it impossible to reach the speed limit if one drives legally, and encourages drivers (including city employees and police officers) to ignore traffic signs. Yield signs, 2 way-stops, lights, and crosswalks, should be added, and at least half of the stop signs removed.
3	Most of our traffic works as it should in the areas connecting Tower Grove East to Midtown. I think it's important that all our sidewalks are even and able to be used by children and the disabled so trees and their damage to our sidewalks should be considered. I don't find speeding to be a problem but find that passing is. If roads had better street markings to indicate driving v parking this might improve. Most cars committing traffic offenses have expired temp tags or Illinois plates but live in the neighborhood and have not registered their vehicle in Missouri. I'd like to see enforcement of this.
4	Opening the grid is worth exploring. Traffic calming is needed but no ugly pots. Speed bumps and bumpouts are a good idea.
5	Rip up gravois, put in an el, and turn the road into a greenway.
6	I do not think that closures on Gravois going into TGE would help our neighborhood.
7	Please, please, please do not close any streets.
8	I drive arsenal to Lafayette daily. I honestly don't want anything to change on this stretch. Walking feels safe. The number of stop signs keeps traffic slow. There are speeders on the double blocks. Maybe a speed bump would help.
9	General stop light timing is something that needs to be addressed in this city. Also, a moratorium on street-closures and a real study of re-opening closed streets is needed.
10	No road closures please. I am vehemently opposeded to any road closures. One way streets are unnecessary. Also, do not remove parking for bike lanes. Please clearly run any changes by the community first.
11	I think our neighborhood is pretty heavy on stop signs, and wonder if yield signs could be as effective. I know people complain about Compton Ave, but I think it's useful to have another North-South road that moves well besides Grand. We don't have a good East-West road - there's a stop sign on every block of Arsenal, Magnolia, and Russell.
12	Speed bumps please
13	Another issue generally is that people park very close to intersections and impede visibility -- especially SUVs.
14	Thank you for this study.
15	Listen to my neighbors. They have knowledge and good ideas about lighting, landscapes, and ways to slow down the speeding in natural ways. These are smart folks, I know.

16	I have only lived here on corner of Compton Hill and Copelin for one month. Just last night we had a large school bus speeding down the street so fast it got my attention to go outside my backyard to see where she was going to go once she realized she was at the end of street. She turned into park maintenance road backed up and then proceeded to speed back up towards Russell. I was glad to see no one was on the bus. wayland school I believe bus # 51 I have also observed the UPS truck drives down and around our curve too fast to deliver to my neighbor here on copelin. I would like to see the issue the neighbors are concerned with resolved to their satisfaction, but would really be disappointed if speed bumps are put in. I believe some of the traffic will begin to diminish due to our calling on our local police dept. often since our moving in to discourage people 'parking' in their cars here at this end of the street after park hours. We have phoned at least a dozen times now, concerned about suspicious activity. I apologize I was unable to attend the meeting last night and appreciate the concerns being addressed.
17	Thank you for doing this. Anything to improve the Compton situation is welcomed
18	Don't drive traffic to Compton's neighboring streets.
19	I wish Compton was more a local, neighborhood street and not an artery.
20	close Hawthorne/Longfellow at grand. that will cut down on the drive through traffic
21	Without adding speed bumps or stop signs, find a way to keep motorists from going 'wide open throttle' from stop sign to stop sign. I dont own a radar gun but I can assure you multiple times a day cars drive by my house going at least 50 mph.
22	just ticket speeders
23	Block grand at Hawthorne/Longfellow
24	Do not create blocks that are half one-way. Do not close streets as that has been a historic failure in the city, increases crime on blocks with closures by creating dead zones, reduces the efficiency of the grid by creating bottleknecks, and lowers property values by creating unsightly, unmaintained and just plain weird unconventional use of concrete barricades and weed filled concrete sewer pipe barrels.
25	Street closures are bad for cities and divides neighborhoods that need each other. Makes maintenance harder for street crews and leaves some streets in disrepair.
26	The street sings are often hard to see and the new lower case lettering makes it even worse. Some intersections I have not been able to see while sitting at the intersection!
27	Please do not consider speed bumps or rumble strips -- too noisy and damaging.
28	The most effective measure would be speed cameras and chokers along Compton, to make the street unattractive for speeders
29	Enforce the school buses to obey the speed limit.
30	Traffic volume is increased by people seeking to bypass the congestion on Grand. Grand avenue needs to be addressed.
31	Compton is a very high traffic street. Many people and emergency vehicles use this as a cut-through. While speed humps or other similar calming measures would help, it may also impeded emergency vehicles. I regularly worry about speeding vehicles up and down this street and am actually surprised more accidents have not occurred. Definitely things to consider and take into account for the safety of residents.
32	My major issue is how many people don't stop for stop signs. Can we do an citizens arrest, or turn in some license numbers or something?
33	Stop diverting traffic onto Compton, a residential street, from the other major streets in the area. The narrowing of Grand and construction on other streets have encouraged non-residents to use Compton as a cut-through.

34	Bicyclists need to be taught and enforced to follow the same rules as all other wheeled vehicles. Bikes regularly run (no slowing, no looking, no possibility of stopping) the stop signs, posing a danger to themselves and to others.
35	Compton is a residential street. It should be adapted to discourage heavy north/south traffic.
36	Please feel free to use roundabouts, bumpouts, and chokers. We are open to new, alternative means of squeezing and slowing traffic!
37	The new angle, 'right rear wheel against the curb' parking on Russell is problematic. Drivers of cars heading east will have a hard time backing into the slots, as they will have to cross westward traffic and maneuver car backwards into the slot. This will be hard for many drivers to accomplish. So far, most parkers are going front end first, despite the signs telling them not to. Drivers heading west will have an easier time backing in, but when they exit might not have a clear view of oncoming traffic if other parked cars are in the way.
38	Speed bumps
39	No -- thanks for this survey
40	I am NOT in favor of traffic calming but better enforcement of speed limits and stop signs.
41	The problem isn't the streets or the signage, but the DRIVERS. Some have little concern for the safety of pedestrians and a general disregard for the traffic laws. Care must be taken in the placement of driving impediments to avoid situations where a car can avoid a speed hump by driving near the sidewalk at a high rate of speed, further endangering pedestrians. Speeding along Compton and Russell is bad, but I'd rather have the trafffic there than in the neighborhoods.
42	Compton Hill Place road is in abysmal shape--people have to swerve to avoid bumps and bad places. Sidewalks are in terrible shape throughout the ward.
43	The medians on Russell are dangerously long. When you bike through there, it is impossible for cars to pass you, and it can be very scary. Medians shouldn't be raised anyway. They should be sunken to allow runoff to collect.
44	Nope, this is the major intersection that concerns me at this time.
45	Posting of speed limit signs along Compton, from Market St. to Russell, is practically non-existent. I believe posting more signs--and occasional Police enforcement-- would improve compliance.
46	I am VERY surprised that on traffic calming measures, enforcement is not even an option. I know that when there was a police presence at Compton and Russell, traffic stopped at the intersection. Once the police presence was gone for awhile the criminal activity started up again. We have laws and should NOT be AFRAID to enforce them.
47	The neighborhood has asked for speed bumps on Compton to help slow the traffic, but as this is an emergency vehicle route, the request has been denied. Something needs to change or more people will get hurt. Bump outs...maybe roundabouts.
48	I think that only the enforcement of our current traffic laws (i.e. issuing tickets) will change driver's behavior. And with the PD being understaffed, I think that cameras are the only way to go. I know that they are not 'legal', but I know that the city is putting infrastructure in place (fiber optics) for speed cameras, red light cameras, & crime cameras. I wish city officials would start to work on changing minds / laws when it comes to using cameras for law enforcement.
49	I really think the answere is consistent law enforcement to reduce the speed and illegal passing and lane useage. There are areas in the city where there has been consistent law enforcement and everyone knows to only go the speed limit or you will receive a ticket.

50	I think a lot of the excessive speeding is due to stop lights that your literally sitting there and there is no oncoming traffic. If the lights were timed better and less stop signs it might actually prevent passive aggressive speeding drivers. I know there is a lot of public popularity toward more stop signs but roads still need to be driveable. Maybe a painted crosswalk at shenandoah and compton.
51	Crosswalks need those 'State Law--Stop for Pedestrian in Crosswalk' (ESPECIALLY ON SOUTH GRAND--I understand this might not be specifically ward 6, but it is a boundary for TGE)
52	None
53	Parking by Hodgson school is problematic because people park in no parking areas
54	Thank you for making this a priority!
55	My concern about roundabouts is that people don't know how to use them. I don't think the proxy roundabout at Louisanna and Pestalozzi works.
56	Too many one lane roads. Causing accidents or near accidents.
57	The paving on Russel need some attention from Grand to Jefferson.
58	Install traffic lights.
59	I used to zoom down Compton all the time, why, because there are terrible many long red lights on Jefferson or Grand or Gravois and going up and down Compton was way faster -especially when visiting friends in Fox park, Benton Park West and Gravois park or even going as far south as Dutchtown. New ideas for speeding up blvds might decrease use of Compton. Regardless what happens short of blockage, (which would be insanity since its a needed corridor) criminals and the unruly are going to run all the stops on Compton no matter what new system is in place. The Bumpouts on Grand make Grand even slower and more difficult to cross on foot unless at a light and increases the traffic on Compton. Roundabouts can still be zoomed around so im in favor of them (in designs that allow one to see across them only so you can see cars, and also big enough to understand. The single or quad street block pot roundabouts in Tower Grove East, for example, confuse most people as to how to get around them since they aren't normal ground structures with flowing signs) I could zoom around them however it will stop people from actually recklessly speeding cause its not a straight away. The Speed table idea looks doable also, but doesn't actually solve the straight away factor, I'd imagine criminals zooming anyway and perhaps flying off them. I think all the other options are annoying and difficult and not suited for these city streets.
60	Excessive amount of stop signs in city in general is one of the causes of air pollution that harm our environment.
61	no
62	Feed safe walking at day but not safe walking at night
63	Need to slow traffic
64	Bumpouts & throughout & perhaps a roundabout
65	See above.
66	None that I can think of right now.
67	No - thanks for the work you do
68	The only thing that bothers me about traffic in Fox Park (and TGE) is how often people run stop signs. It's my primary safety concern. That's an enforcement issue, not a signage or speed bump issue.
69	I just want a fair chance at all of these intersections; clear sight lines to see people coming are critical. Illegally parking too close to intersections has to stop.

70	Don't overstudy, just drop in cheap temporary bumpouts (that are short enough so they don't impede vision) and see how they work. Also we need zebra crosswalks! They are more visible.
71	More traffic enforcement. I've seen changes for the good on Compton between Russell and Choteau with police presence and enforcement of traffic laws.
72	The main issue is a lack of enforcement of traffic laws. Drivers fly down neighborhood residential streets with impunity. If STL city police actually issued speeding tickets or stop sign violations (ha), safety would be greatly improved.
73	Thank you for doing this study to keep us safe.
74	I'm in favor of an experiment to reinstate the full grid - remove everything: pots, barriers and 1-ways. But, there can be no NIMBYisms for this experiment to work - no aldermanic, business, religious, or any exceptions...
75	I think that the amount of streets in the city that are blocked off is ridiculous. This seems like a band aid solution that limits the use of streets that we already have and causes more inconvenience and silo-ed streets and neighborhoods.
76	Is the highway-speed speeding a factor of kids/stolen cars? If so, I don't know that speed humps/tables will make that much difference. Also, Russell, eastbound at Calif., seems to be a magnet for cars (which I presume are stolen) crashing into parked cars. See comment above. Any thought to moving the Harmon bed for 2600 - 2800 Russell? I think they look good, but not necessarily bike-friendly.
77	Roundabouts are a bad idea. People in this town are not very good at navigating them or understanding who has right of way. I've been hit by motorists twice in St Louis roundabouts. Food for thought: create bicycle highways out of under-utilized side streets. Enforce stop signs more.
78	the city has created an environment along grand that is a traffic nightmare as it approaches 44 from both directions. this has effectively re-directed traffic to Compton. this is evident by the fact that Police, Fire and EMS all utilize Compton as the most expeditious path.
79	My biggest concern is about people completely ignoring stop signs. I am not talking about people 'rolling' stop signs. I am talking about people speeding through intersections as if no stop sign were present. Mostly this is intentional behavior perpetrated by reckless criminals with no regard for human life or concept of the social contract. That said, there are many intersections where tree growth and/or the locations of (technically illegally parked) vehicles obscure the presence of stop signs. Enforcement of parking regulations pertaining to where parking is allowed(i.e. not under stop signs) in addition to trimming of trees could help alleviate this issue in some cases. My only other major concern is drag racing along Chouteau. I have seen, with my own eyes, five or more cars traveling eastbound on Chouteau at Compton at night in all lanes racing at 70 MPH plus. This is an absolutely terrifying scene and a phenomenon that, if not stopped, will end up with both the innocent and the guilty dead. Cameras at this intersection to capture images of the perpetrators would be very welcome.
80	Put speed bumps in everywhere! Please!
81	Roundabouts on Gravois.
82	A lot of people in this neighborhood do not obey stop signs. They speed through them. I'm surprised more people aren't getting t-boned and pedestrians hit.
83	Speed tables would be great on Compton between Hawthorne and Longfellow. It would not impact residents that much, but would slow those using Compton as a thoroughfare.

84	Occasionally we get people really speeding on our street (Humphrey), but I suspect this happens occasionally, everywhere. MOST of the time people are driving slowly. Speed humps/tables might help or they might not. Our particular block is really nice, but I think in TGE there is a huge amount of variability block-by-block. Wyoming, across the alley from us- does not seem as nice.
85	Let's see some traffic improvements! Thanks for conducting this study.
86	I am passionate about making Ward 6 more bike friendly.
87	O something about speeders and people texting.
88	I know most Americans hate them but traffic circles drastically improve the flow of traffic without adding the expense of yet another stop light. Most people don't like them due to inexperience using them. In Europe they have made an amazing difference and education would help.
89	I would like the city to reconsider back in angle parking. Since it has been instituted I see more cars parking with the left front wheel to the curb. If the back in with right wheel to curb is safer because of the driver being able to see traffic, The left front wheel to the curb is the least safe.
90	Home owners should not have to stand in street (Montrose) to retrieve their mail from cluster mailboxes. Cluster mailboxes should be eliminated!
91	NO ONE STOPS at posted stop signs. Very dangerous..... Rolling stops are better than no stop at all...
92	Safety issues walking and biking mainly concern crime and illegally operated vehicles.
93	I think making improvements to Jefferson and rebuilding this area is more important than Compton. Compton Heights is already protected by design. Lets address the graffiti and crime that come with buildings that are vacant.
94	all of Compton. people drive like they are in the Indy 500. passing on the right-blind side- running stop signs, even passing like Compton is a highway. we need to slow the cars down, not the speed limit. bump out at the intersections would be wonderful as long as those residents on Compton can park close/in front of their homes
95	Change should be based on sound traffic flow principles and based on traffic data
96	I think traffic lights at Park and at Lafayette (or roundabouts) would help to ease traffic on Compton a bit. I also think strategically placed speed humps and tables around the neighborhood are not just a good idea but a necessity. Additionally, dead end streets and one way streets are antiquated thought and need to be removed yesterday. It's also of utmost importance to make this neighborhood better lit and safer for pedestrians and bikers.
97	Why on earth are there bike lanes every where. I rarely see a bicycle on them. More often I see a mom jogging with her child in a stroller. Why is this city making bike paths a priority over traffic flowing easily. Also why is there a middle lane for turning all the way down Chouteau. Why would this help traffic flow. The medians and the roundabouts are bad for good traffic flow. If there is a car stalled on Park between Tucker and Truman, no one can get through. The roundabout is dangerous during traffic hour because few people yield their vehicles. Why would anyone do this to the flow of traffic. Streets are made for the flow of traffic. This is the city ....not the county with cul de sacs everywhere. When will city hall get it right and make streets for vehicles to flow easily and quickly?
98	I would be open to any ideas to slow traffic or traffic calming measures stated above. I'd rather be slightly inconvenienced on my commute, than have people flying through the neighborhood. Hopefully it will encourage people to choose to drive Jefferson or Grand which have a much better flow of traffic.

99	Too many stop signs.
100	Thank you for helping to make our neighborhood safer!
101	When will compton bridge be repaired. Hope it will include bike lane.
102	Look at traffic lights as well.
103	Either traffic lights to be synced (which might be opposite of your goals) you shorter change cycle, especially during non rush hour.
104	I suggest enforcing the speed limit and eliminating stop signs that have been put up over the years by every alderman caving to neighbors demands. Take certain roads, say Park Ave, Magnolia, 18th Street and designate them bike friendly streets. Choking traffic is only going to cause to go into neighborhood streets where it is not wanted, ie NW quadrant of LS
105	no
106	Also, please repave Arsenal between Grand and Jefferson as soon as possible. It needs some TLC.
107	Fix side walks in the gate. Dangerous for pedestrians. And the street lights
108	Make Compton one way with more speed bumps
109	I'm in favor of precautions to make things safer on Compton, but I'm not in favor of slowing traffic down on this street. It provides a very useful alternative to the congestion of Grand and Jefferson.
110	Traffic calming measures can have the impact of creating an unsafe driving, walking, biking experience by slowing navigation too much making people vulnerable to crimes against persons. Please, no more stop signs.
111	Very tired of street closures in general. I am very grateful that our alderwoman is taking this matter seriously and handling it so professionally.
112	Minnesota, Michigan, Nebraska and Shenandoah are is desperate need of tree plantings. Driving down Shenandoah is depressing because of the random and often gnarled treescape. The street needs tall shade trees.
113	Concerned about traffic flow when QuickTrip opens
114	Sidewalks are abysmal on and around Compton near the SLU Med Campus. Missing sidewalks, broken and overgrown sidewalks, and SO MUCH broken glass!
115	Streets south of Shenandoah need to be more well kept. I do not feel safe walking on most Fox Park/TGE streets south of Victor or Shenandoah.
116	Study the relationship between bike traffic on Compton/Nebraska/Park. Why where the angled parking spots installed on Russell? They cause biking to feel unsafe especially because the speed limit was not reduced for the share-road and because cars still park front first.
117	Assess intersections for curb cuts to ensure accessibility of the neighborhoods. Some are in disrepair or non-existent.
118	The new paving on Compton & Lafayette makes a huge difference & looks great! Will it be extended further north on Compton? The potholes are pretty bad closer to Chouteau & that bridge is still atrocious!
119	I really don't think traffic is that big of an issue in Ward 6. It'd be nice to have better pedestrian/biking infrastructure.
120	This is, of course, not an easy fix. But it saddens my spouse and I that we don't feel safe walking or running at night. We felt there was less risk doing so when we lived in other parts of the city. We do love our neighborhood, but we're particularly sensitive to the situation now because it's dark when we arrive home from our jobs.
121	Please do not increase the number of one way streets and dead ends. Time and time again that has proven to be ineffective and unappealing. More rules does not equal more rule following.

122	I feel like cutting off the street and making them dead-ends is not the right idea. For those of us who live in the 6th Ward and walk/drive around it, dead ends and one ways make it very difficult to get around efficiently. Also I feel like creating a dead end is essentially creating a 'dead zone'...a place where more mischief can happen...I happen to live in one. Cul de sacs are for the suburbs - not for the city. Plus the barricades are always hideous. Cutting off neighbors from neighbors is also *not* neighborly. It creates a disconnect between us. Please dont cut off the streets.
123	Don't like one-way streets. Get rid of many stop signs. Fix roads and potholes.
124	Please reduce gravois side street access.

Appendix D: First Public Meeting Summary

Memorandum

October 26, 2015

City of St. Louis Board of Public Service
RE: Ward 6 Traffic Study: Task 1.2 Deliverable – Neighborhood Meeting Summary

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In conjunction with Alderwoman Christine Ingrassia, CBB planned and attended a neighborhood meeting for Ward 6 residents to discuss our current traffic study efforts within the neighborhoods. The process of planning for the meeting, as well as a summary of the meeting and information presented at the meeting is below.

Meeting Preparation

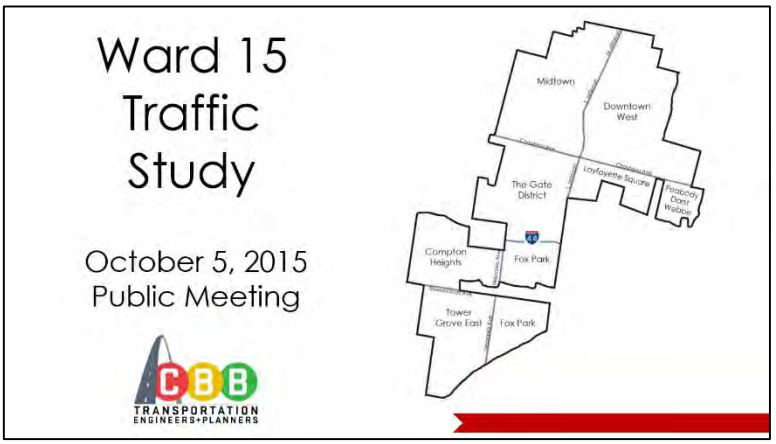
Alderwoman Ingrassia worked with CBB to select a date and location (Tuesday October 6, Employment Connection at 2838 Market) for the Ward 6 public meeting. Alderwoman Ingrassia worked with other neighborhood representatives to advertise the meeting via social media. CBB was made aware of the fact that the main purpose of this study is to review the Compton Corridor, as that is where she has heard most of the neighborhood concerns. CBB developed a survey to be handed out at the public meeting, as well as a link to be distributed after the meeting kick off. CBB put together a presentation about the study process, as well as activities for participants placed around the room, and developed comment cards to be filled out on site.

Public Meeting: October 5, 2015, Carpenter Branch Library

CBB set up the room so that residents entered to a registration table with an information handout about the traffic study, as well as signed up for a record of how many attended the meeting. Attendees also picked up comment cards and surveys here and any necessary items for activities to be later completed in the evening. Twenty four attendees signed in and the meeting started with Ms. Carrie Falkenrath, CBB, presenting on the process for the Ward 6 traffic study.

- The Presentation

  Carrie started by highlighting that CBB was working to complete a traffic circulation study and traffic calming plan for the streets within the residential areas of Ward 6. She outlined the goals to enhance the traffic and pedestrian safety and livability of the neighborhoods within the Ward. Carrie moved into the process highlighting the four steps: (1) Stakeholder outreach, (2) Field Data, (3) Evaluate Conditions & Develop Recommendations, and (4) Summarize Recommendations and Prepare Documentation. Carrie moved into next steps for the study and how residents can be active participants. She indicated the survey information and answered questions related to concerns that were already existing. Carrie then turned it over to Ms. Jacque Lumsden, CBB, to outline the participation activities planned for the evening.

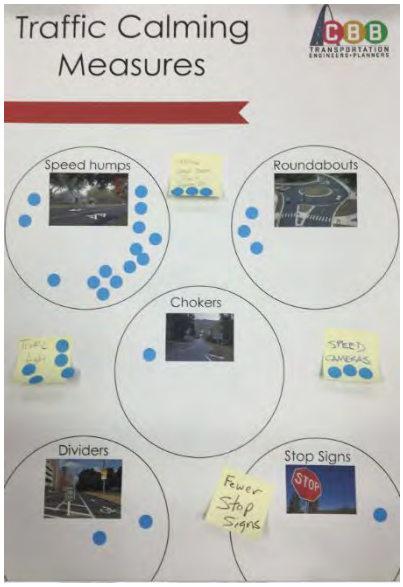


Presentation Intro Slide

- The Activities
  CBB planned three activities for meeting attendees. These activities were placed on 3 x 5 posters in the back of the room.

- *Aerial Maps:* CBB laid out four aerial maps of Ward 6. We placed post it notes, sharpies, stickers and other materials on the table for residents to note specific concerns or ideas. Attendees were able to notate specific intersections or corridors where they had concerns, as well as put notes about any ideas they had for various areas of the neighborhoods. CBB documented the maps as a part of the public feedback.

Completed Map Exercise

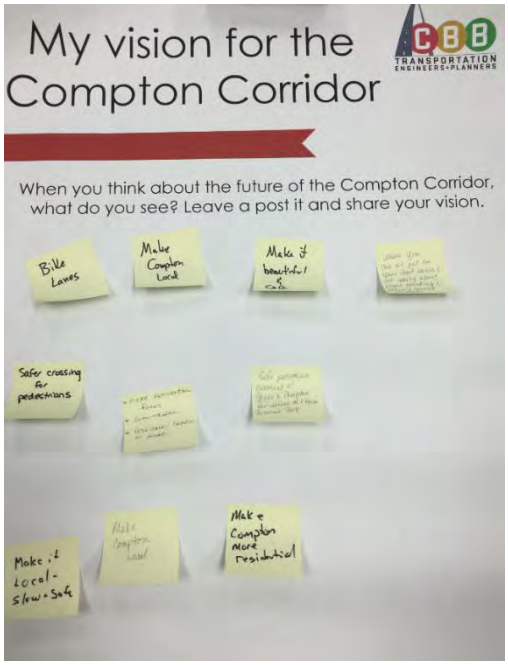


Completed Dot Exercise

- *Dot Exercise:* CBB had two boards with five different traffic calming techniques (10 total) listed. When residents entered the meeting they were given three blue dots. With these dots, residents were asked to indicate the traffic calming measures they would be most interested in seeing within their neighborhood. They could put all dots on one technique they really liked, or they could choose to not place any dots on the board. The ten techniques listed on the boards were (also included on the survey): speed humps, roundabouts, chokers, dividers, stop signs, bumpouts, speed tables, one-way direction change, and an option indicating no interest in any of the measures. CBB compiled this information in a spreadsheet. Some post it notes were placed on the board with alternate ideas that were noted as well.

- *My Vision for the Compton Corridor:* CBB chose this exercise because a transportation system can greatly affect how a community grows. In addition to specific traffic concerns residents have for Compton, CBB wanted to understand more about the quality of life within the community and what residents feel is important to them. This information was documented with the public meeting feedback.

- *Comments Cards and Surveys:* CBB had hard copy comment cards and surveys available for residents to fill out at the public meeting. The surveys were entered online and the comments from the comment cards were compiled with the public meeting feedback.



Completed Vision Exercise

The Summary

CBB documented all of the information obtained from the public meeting in a spreadsheet indicating information by exercise. This information will be compiled with the final report, but below is a brief summary of this information.

Aerial Maps:

The data from the aerial maps was compiled with survey data to determine where to collect data, and what data to collect.

Dot Exercise:

Bumpouts were the most popular traffic calming technique with 18 dots, followed by speed humps with 14 dots, and finally speed tables with 13 dots. People added comments related to speed enforcement, traffic lights, and stop sign location assessment.

Vision for the Compton Corridor:

Many of these comments revolved around making Compton have a more residential and local focus. Residents do not like that the corridor has turned into a North/South thoroughfare and want to see less and slower traffic. Comments indicated creating a more vibrant atmosphere for pedestrians, and potentially adding bicycle lanes.

All of the public meeting feedback will be compiled with survey data to determine next steps to address traffic concerns within the neighborhood, as well as traffic calming measures neighborhood residents are interested in. Photos were also taken of all the activity boards and the complete sign in list is also available.

Sincerely,

Carrie A. Falkenrath, PE, PTOE, PTP
Project Manager
CBB

Jacque Lumsden
Project Planner
CBB

Appendix E: Second Public Meeting Summary

Memorandum

February 10, 2015

City of St. Louis Board of Public Service
RE: Ward 6 Traffic Study: Task 4.2 – Second Neighborhood Meeting

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Upon completion of a draft report submitted to the City with various Traffic Calming Recommendations, CBB made preparations for a public meeting planned by Alderwoman Christine Ingrassia. CBB planned a presentation for the neighborhood residents to outline the survey results and findings, as well as detail data collection efforts and provide initial recommendations for traffic calming measures to be implemented within their neighborhood. The process of meeting preparation is outlined in this memo, as well as information on feedback gained.

Meeting Preparation

Alderwoman Ingrassia selected the date and location for the final public meeting (Monday, February 1, Employment Connection at 2838 Market) of the Ward 6 Traffic Study. Alderwoman Ingrassia worked with other neighborhood representatives to advertise the meeting via social media. The purpose of the second neighborhood meeting was to identify initial recommendations from the draft traffic study and get input from the residents. CBB compiled the study process information into a presentation (survey results, data collection efforts & recommendations) to be delivered at the meeting. Comment cards were developed to gather any final input about the study and recommendations.

Public Meeting: February 1, Employment Connection

CBB set up the room so that residents entered to a registration table with an agenda for the evening, as well as a sign in sheet for a record of attendance. Attendees also picked up comment cards. Twenty two attendees signed in and the meeting started with Ms. Carrie Falkenrath, CBB, presenting on the process for the Ward 6 traffic study.

- The Presentation

  Carrie started the presentation by informing residents about the Ward 6 Traffic Study. Many of the attendees had attended our first meeting, so she re-introduced CBB as well as the goals and objective for the traffic calming study. She outlined the process for the study and indicated to the residents we are in the final phase of summarizing recommendations and submitting a final report. The presentation then moved to the different sections about the process for the ward study.

  - Public Engagement

    Carrie turned the presentation to Ms. Jacque Lumsden to present the audience on information about the public engagement process for the Ward 6 Traffic Study. Jacque started by highlighting the study kick-off meeting that was held on October 6th at the same location. She discussed the format for the night and gave information on the feedback received. There were three board activities for which we collected feedback and input, as well as comment cards. Jacque highlighted the tree activities:

    - Aerial Maps: specific reoccurring areas of concern from the maps were indicated at Compton and Lafayette, Compton and Shenandoah, and a high level of concern for speeding, pedestrian issues and cut-thru traffic.

- Traffic Calming Preference: The dot exercise for traffic calming preference indicated that 75% of meeting attendees were interested in bumpouts, 58% interested in speed humps, and 54% interested in speed tables.
- Compton Corridor Vision: residents indicated they wanted Compton to feel more local and residential, more beautiful and safe, with a focus on pedestrian and bicycle safety.

Jacque then moved into giving information on the survey responses. Ward 6 had 267 responses and gave great input about thoughts on specific issues within the neighborhood. Jacque gave demographic information, current concerns and experience as identified in the survey, ranking of importance related to specific neighborhood items (park maintenance, sidewalks, lighting, etc), calming preference, and specific locations of concern. The public engagement section of the presentation was finalized with a summary of what residents want to see in their neighborhood – which is a focus on walkability, quality of life and slowing down traffic in natural ways.

- Field Data

  Carrie moved into presenting the field data collection efforts for the Ward 6 Traffic Study. She highlighted that we collected traffic volumes and speeds, accident data, field observations, as well as completed a thorough infrastructure inventory. Carrie identified where we collected speeds and thru volumes, intersection turning movements, as well as pedestrian and cyclists counts. Carrie then discussed the various routes where we collected traffic volumes and speeds: Compton, Russell, Lafayette, and Shenandoah. She discussed their functional classification as well as patterns that were observed. Carrie concluded the field data section of the presentation with detailed information on accident data received from the City.
- Issue Identification

  Carrie started by indicating where we had observed problems after analyzing our field data and completing field observations. She indicated that speeding is an issue on Compton, Lafayette and Shenandoah. Stop sign compliance was also a big problem, as nearly 50% of motorists approaching stop signs at certain locations do not come to a complete stop. Lighting, lacking pedestrian facilities and sight distance were also observed problems.
- Traffic Calming Strategies

  Before moving into recommendations, Carrie defined various traffic calming strategies. She discussed strategies in three groups: speed control, volume control and safety enhancement, and further elaborated on different measures within those three categories.
- Recommendations

  Recommendations were grouped into three categories as outlined below and presented to the residents for input and feedback.
  - Near Term / Lower Cost: These recommendations can be implemented with lower costs and soon after the study is complete to help with traffic calming. Recommendations indicated that pavement condition may need to be taken into consideration before implementation. The recommendations include:
    - Crosswalks and Stop Bar Striping – phase 1 at Compton and Park, Lafayette, Russell and Shenandoah; and phase 2 at all Compton Intersections.
    - Roadway and Edgeline Striping – both sides of Compton between Lafayette and Gravois.
  - Mid Term / Mid-Range Costs: These recommendations are more expensive and may take a little bit longer to implement.
    - Sidewalk Improvements – replace missing segments between Rutger and Caroline and Park and Eads
    - Lighting – replace existing high-mast roadway lighting with white lamps and encourage residents to leave porch or yard lighting on overnight

- Long Term and Higher Costs: These recommendations are expensive and will likely be more easily implemented with funding from an alternate source besides Ward Capital Funds.
    - Curb Extensions – phase 1 at Compton and Lafayette, Russell and Shenandoah; and phase 2 at all Compton intersections. Possibility of constructing these extensions or even using paint and flexible bollards (lower cost option).
    - Lighting – install pedestrian scale lighting at selected Compton locations.

  Upon completing a thorough outline of our recommendations Carrie briefly discussed funding to get the residents thinking about creative ways to try and implement some of these within their neighborhood.
- Next Steps

The presentation lasted approximately an hour and was followed by an hour open discussion around the table. Residents offered feedback and discussed ideas form the recommendations that they liked, or those they did not agree with. Additionally, residents gave their input on where various calming measures might work, as well as different measures to use. Residents were encouraged to write the comments down and leave cards, or contact CBB or the alderwoman to voice concerns. Only 2 comment cards were submitted and the general reaction to draft recommendations was welcoming. The comments and input will be compiled and included in the final report.

Sincerely,

Carrie A. Falkenrath, PE, PTOE, PTP
Project Manager
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Jacque Lumsden
Project Planner
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Appendix F: Traffic Calming Strategies Summary

The South Central Regional Council of Governments; June, 2008

(Please note that cost estimates in this table may not be applicable for the St. Louis region in Year 2015).

Measure	Description	Issue	Best For	Not Used For	Costs	Considerations
Speed Hump	Raised area of roadway typically 12 to 22 feet in length	Speed Reduction	• Neighborhood streets	• Arterials, highways, other main roadways	$1,000 - $12,000 each	Can interfere with transit, snow plow, and emergency vehicle operations. Speed humps increase roadway noise and wear on vehicle suspensions. Highly visible warning signage required.
Speed Table	Elongated speed hump 22 feet in length or greater	Speed Reduction	• Neighborhood streets	• Arterials, highways, other main roadways	$2,000 - $15,000 each	Can interfere with transit, snow plow, and emergency vehicle operations. Speed tables increase roadway noise and wear on vehicle suspensions. Highly visible warning signage required.
Raised Crosswalk	Elongated speed hump which features a flat top at the same elevation as adjacent sidewalks	Pedestrian Safety Speed Reduction	• Areas where pedestrian traffic takes priority over vehicular traffic	• Arterials, highways, other main roadways	$2,000 - $15,000 each	Raised crosswalks can decrease pedestrian caution before stepping into roadway.
Raised Intersection	Similar to raised crosswalks, except the entire intersection is at sidewalk grade	Pedestrian Safety Speed Reduction	• Areas with heavy pedestrian traffic, such as shopping areas and college campuses.	• Arterials, highways, other main roadways	$50,000 - $200,000 each	Raised intersections provide a barrier-free crossing for pedestrians and slow all vehicles, including emergency vehicles and transit buses.
Rumble Strip	Raised buttons or grooves closely spaced on the roadway travel lane or shoulder surface to create noise and vibration	Speed Reduction	• Transitions between higher-speed and lower-speed sections of a roadway	• Areas that are highly noise sensitive	$7 - $10/foot	Only effective through the noise and vibration they create. They are not favored in residential areas due to noise impacts.
Textured and Colored Pavement	Used to delineate an area with high pedestrian activity	Pedestrian Safety Speed Reduction	• Areas with heavy pedestrian traffic, such as neighborhood shopping areas and college campuses	• Arterials, highways, other main roadways	Moderate to high	Maintenance and life cycle should be considered when selecting materials. Only certain techniques allowed on state roads with municipal - state agreement.
On-Street Parking	Parallel and angled parking can be used to narrow travel lane width and provide a buffer between motorists and pedestrians	Pedestrian Safety Speed Reduction	• Village environments • Wide roadways	• Arterials, highways, and other main roadways	Low	Angled parking creates more right-of-way impacts than parallel parking, but also accommodates more parked vehicles per block. Drivers have reduced visibility backing out of angled parking spots, posing a greater accident risk.
Modern Roundabout	A modern roundabout is a large raised island in the center of an intersection. All entering traffic circles to the right and yields to vehicles already in the roundabout. Left-turning movements are eliminated. They are used in place of traffic signals at high volume arterials.	Crash Reduction	• Intersections on high volume arterials with a history of high crash rate or long queues • Intersections with more than 4 approaches • Intersections with heavy left-turn volume	• Smaller or low-volume intersections • Intersections with disproportionate volume on approaches	$80,000 - $800,000 each, depending on diameter, right-of-way, number of lanes, landscaping	Modern roundabouts require more right-of-way than traditional intersections. This additional right-of-way may require eliminating existing on-street parking. They require more maintenance than traditional intersections, and are more difficult to navigate for large vehicles such as fire trucks and transit buses.
Traffic Circle	Much smaller than modern roundabouts, traffic circles are installed inside existing intersections and require motorists to slow down to navigate around them.	Speed Reduction	• Neighborhood streets that have a history of high speeds and high crash rates at intersections	• Multi-lane roadways	$6,000 - $12,000 each	Can provide a gateway or neighborhood identity.
Narrowed Lane	Roadway lanes are narrowed from typical cross-sections of 12-15 feet to 11 or fewer feet per lane through the use of painted lane markers, new parking lanes, new bicycle lanes, or relocated curbing.	Speed Reduction	• Minor arterials • Collectors • Local roads	• Heavily traveled or high speed roadways	$1,000 - $10,000/ mile	Narrowing traffic lanes make slower speeds seem more natural to drivers and less of an artificial imposition compared to other physical calming treatments. Adequate width for emergency vehicle access must still be provided.

Measure	Description	Issue	Best For	Not Used For	Costs	Considerations
Neckdown/ Bulb Out/Curb Extension	Briefly narrow the roadway by extending the curb at intersections or mid-block locations	Pedestrian Safety Speed Reduction	• Areas with pedestrian traffic and wider roadway cross-sections • Village environments	• Arterials • Narrow streets	$2,000 - $20,000 each, depending upon size and material	May require elliminating some on-street parking and may hinder street plowing and sweeping operations
Chicane	Sets of two or more alternating curb bulb outs or extensions that narrow and realign the roadway	Speed Reduction and Cut-Through Traffic	• Neighborhood streets that experience high speeds or heavy cut-through traffic volume	• Arterials, highways, other main roadways	$10,000 - $30,000	Concrete chicanes complicate street maintenance and drainage and may require additional right-of-way to construct. Chicanes created through pavement striping are cost-effective and easy to implement. On-street parking can be alternated from side-to-side along the street.
Traffic Islands and Medians	Concrete or landscaped islands and medians slow travel speeds by narrowing lanes and also improve pedestrians accommodation by providing a pedestrian refuge at crossings.	Pedestrian Safety Speed Reduction	• Roadways with wide rights-of-way that would benefit from slower speeds and improved pedestrian safety	• Already narrow roads, or roadways with frequent driveways	Varies depending on length, materials, and right-of-way availability	Islands and medians can provide a visual enhancement or gateway to promote neighborhood identity. They may reduce parking and driveway access and may increase motor vehicle conflicts with bicycles.
Landscaping	The use of plantings such as trees to visually alert drivers to slow down	Speed Reduction	• Residential or village environments		Moderate to high	Maintenance requirements
Gateway	Signage, landscaping, or art that alerts drivers of upcoming village, neighborhood, or danger	Speed Reduction	• Residential or village entrances	• Highways	Varies	An excellent opportunity to add character or identity to a community.
Stationary Radar Sign/ Speed Display Board	Dynamic signs that advise motorists of their speed and the posted speed limit	Speed Reduction	• Any roadway from neighborhood street to limited-access freeway where observed speeds consistently exceed the speed limit - they are particularly popular in school zones.		$5,000 - $15,000 each	Radar signs have proven to slow down traffic, even years after their initial installation. They are particularly effective on high volume arterials and highways, where physical measures would restrict traffic flow.
Pavement Marking	Painted markings or warnings on roadway surface	Speed Reduction	• Areas where signage alone can benefit from additional warning reinforcement		Low	Easily wears off and requires regular maintenance
Signage	Standard or customized signs alerting drivers; often complements other traffic calming tools.	Speed Reduction	• Areas where inadequate signage is present		Low (varies depending on type and amount of signage)	Limited traffic-calming effect when used alone - complements other traffic-calming strategies
Edge Treatment	Raised curb installations signal a lower design speed to drivers	Speed Reduction	• Areas with adequate right-of-way	• Highways or anywhere the curbing would create a hazard.	Moderate to high	Raised curbs allow placing trees and street furniture closer to the roadway, producing an additional calming effect.
Reduced Corner Radii	Corner curb is squared off requiring motorists to slow to navigate a tighter turn with a smaller radius.	Pedestrian Safety Speed Reduction	• Typically used in conjunction with other calming methods in areas with high pedestrian activity.	• Arterials, highways, other main roadways	$2,000 - $20,000	The reduced turning radius can limit truck and bus turning, complicating emergency vehicle, delivery truck, and transit operations. Careful design is required.

Measure	Description	Issue	Best For	Not Used For	Costs	Considerations
Roadway Closure	The most extreme form of traffic diversion, roadway closures interrupt the traffic grid pattern by creating dead-end or cul-de-sac street segments.	Cut-Through Traffic	• Neighborhood streets where all other calming attempts have failed	• Arterials, highways, other main roadways, transit routes, and anywhere street continuity is desired	Low, varies depending on materials, landscaping	Street closures divert all through traffic onto other nearby roadways in the network.
Diverter	Several types of diverters, such as semi-diverters and diagonal diverters, may be used to restrict traffic flow and discourage cut-through traffic	Cut-Through Traffic	• Neighborhood streets that experience high cut-through traffic volume	• Arterials, highways, other main roadways and transit routes	$15,000 - $45,000	Diverters reduce through traffic without preventing pedestrian access. They can also be designed to allow bicycle traffic.
Turn Restriction	Restricting certain turns at intersections to influence travel patterns	Cut-Through Traffic	• Low-volume turning movement	• High-volume intersections and turning movements	Low	Can be difficult to enforce
One-way Street/ Circulation Change	Used to reduce traffic volume on specific roads within a network. Strategies include changing one or more segments of two-way roads to one-way and restricting certain turning movements at intersections.	Cut-Through Traffic	• Low volume neighborhoods with comprehensive grid network • High cut-through neighborhoods	• Isolated higher-volume arterials • Transit routes or major emergency response routes	Varies - relatively low	Circulation changes will have secondary impacts on adjacent roadways that must be considered.
In-pavement Lighting	Crosswalk with embedded lights along its length that is activated by a pedestrian	Pedestrian Safety	• High pedestrian activity areas • School campuses • Transit centers	• Rural or highway settings	$35,000	Snow-covered roads can cover lights and/or activation sensors.
Bike Lane	Designating a portion of the roadway cross-section exclusively for bicycle use	Speed Control	• Urban arterials • Collectors • Local roads	• Highways	Low	Requires regular paint maintenance

Appendix G: Traffic Calming Materials and Methods Workshop

Thursday, June 9, 2016

Ward 6 Traffic Calming Materials and Methods Workshop

Ward 6
Traffic Calming
Materials and Methods
Workshop

Thursday, June 9, 2016

Workshop Purpose

- Interactive working discussion about materials and methods for "low cost" traffic calming treatments.
- Intended to be specific to Ward 6 Study, but idea may have applicability on other projects.
- No CBB recommendations in the PPT. Rather intent is to display range of options.
- Not all ideas show are "FHWA Approved". Some photos/products from Europe intended to display general concepts.
- Costs are "order of magnitude" and based on "material" costs (not installed costs).
- Other costs to consider:
  - ADA Ramps ($1,500 each)
  - Painted Crosswalks ($1,500 – $2,000 per intersection)

Combinations: Memphis, Tennessee

Textured Pavement

- Unit cost: $10 / SF
- Material cost per intersection: $30,000
- Pros: Multiple looks; can be plowed and swept; can be used with other methods; easy fire hydrant access;
- Cons: Cars may ignore it or it may be difficult for them to see (without additional measures)

Shaw Neighborhood, Saint Louis

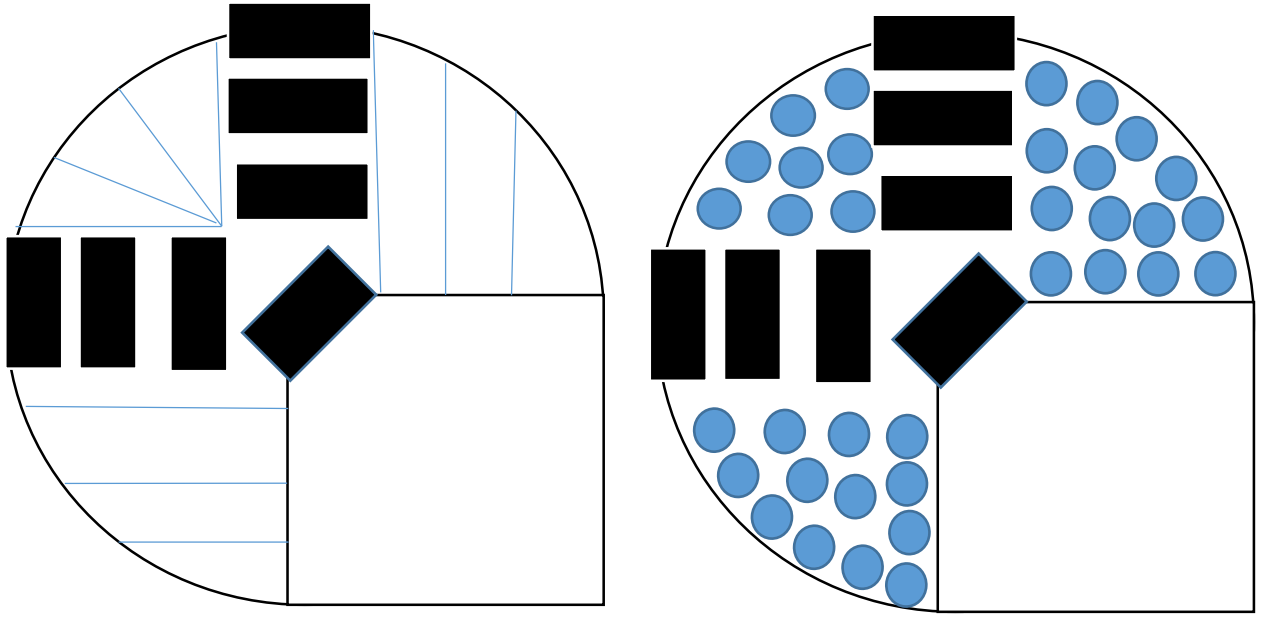
Paint

- Material cost per intersection: $2,500 - 10,000
- Pros: “place making” ability; can be plowed and swept; can be used with other methods;
- Cons: 1-3 year maintenance; may be ignored or difficult to see if not used with other methods

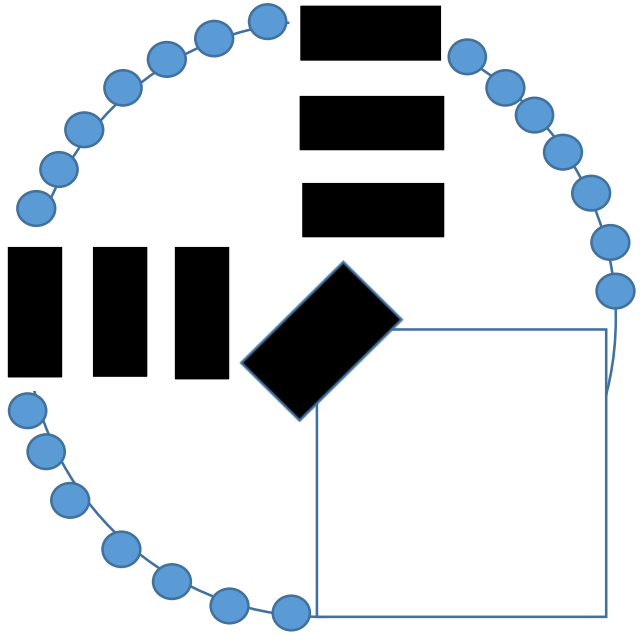
Memphis

Pavement Bumps: Rumble Strips, Raised Pavement Markers, and Alley Bumps,

“Fill-in” the bump out



“Outline” the bump out

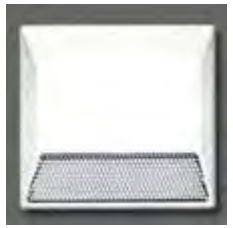


Speed/Alley Bumps

- Unit Cost: $50-200 each
- Material cost per intersection:
  - $2,500 - $5,000 to line the bump ou
  - $5,000 - $10,000 within bump out
- Pros: Likely to stop cars; not as detrimental as curbs
- Cons: harder to see

Raised Pavement Markers

- Round markers:
  - Unit cost: under $1 each (with adhesive)
- Square markers:
  - Unit cost: under $1-2 each (with adhesive)
- Material cost per intersection:
  - $ 2,500-$5,000 within bump out
  - $ 250-500 to line the bump out
- Pros: Uncomfortable for drivers; can be plowed and swept
- Cons: noisy; may have to be replaced often



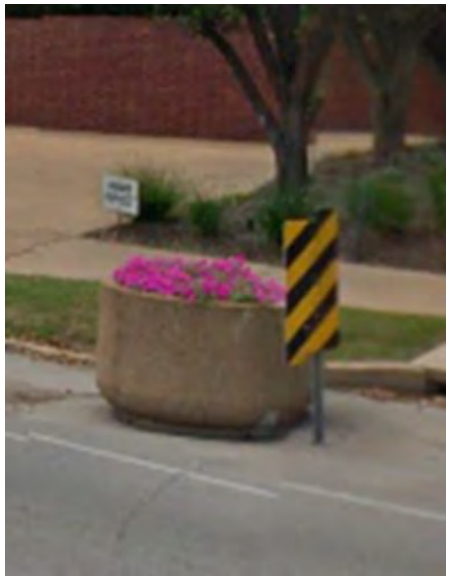
Rumble Strips

- Unit Cost: $1 per foot
- Material cost per Intersection:
  - $ 500-1000 (within bump out)
  - $ 250-500 (edge line of bump out)
- Pros: easy to install; can be plowed and swept
- Cons: noisy; may make it difficult for ADA users

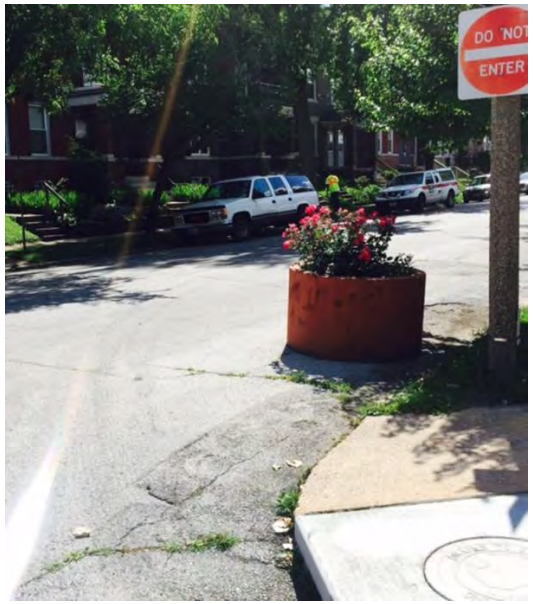
Barriers

Planters

- Unit Cost: $400 - $2000
- Material cost per intersection: $6,000 - $10,000 (assuming 3-5 planters per corner, $500 each)
- Pros: Aesthetics, durable
- Cons: Landscaping needs to be maintained



Skinker Road



Schoemehl Pots,
Juniata & Louisiana

Inboxias (Planters on South Grand)

Examples of Planters

$400 (S. Grand)

$380
Durable, reinforced concrete construction
Dimensions: 32.5 diam. x 11.5H inches, 153 lbs.

$342
Dimensions: 46L x 17W x 20H in.
Poly-Crete material

$561
Dimensions: 34” diameter, 32” height
Made of real crushed stone, reinforced with fiberglass

Jersey Barriers

- Unit Cost: $250 (plastic) to $1000 (concrete)
- Material cost per Intersection:
  - $5,000 - $7500 (Plastic)
  - $20,000 - $30,000 (Concrete)
- Pros: Effective stop for cars; easy to see
- Cons:
  - Aesthetics/sterile feel
  - Likely to scrap cars and plow blades
  - Access to fire hydrants
  - High Cost

Bollards

- Unit Cost: $300 - $500 each
- Material cost per intersection: $ 12,000 (assuming 6 for each quadrant)
- Pros: Durable; effective in keeping people out of the intersection; various color and design options
- Cons: May have to be replaced in event of a crash

DeTonty & Thurman

Examples of Bollards

$639
- 24”Lx24”Wx40”H
- Solid concrete

$880
Baseball Concrete Bollards.
- 36”Diameter
- Rugged steel reinforced construction

$302
- Powder coated finish on steel
- 8” diameter; 3 ft. height
- Surface mount

$352
- Powder coated finish on steel
- 6” diameter; 3 ft. height
- Surface mount

Flex-strips and Temporary Bollards

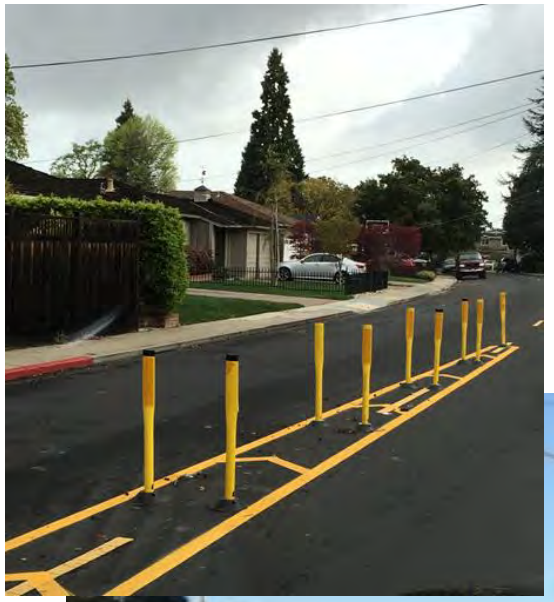
Unit Cost: $50-200

Material cost per intersection: $2,500 to $10,000

Pros: Easy to see; work well with other methods

Cons: May have to be replaced often

$35, with reflectors, strengthening brad, and adhesive



Broadway and Cerre, Saint Louis

$281
32"H FlexBollard™

Fencing/Railings

- Material cost per Intersection: $10,000
- Pros: Could be made very visible.
- Cons: May be used as bike racks

Marne River, France

Other ….

Curbs

Poured Concrete with Channelization

- Cost per Intersection: $100,000
- Pros: Permeant Treatment
- Cons: Requires Landscaping

Shaw/Lawrence, Saint Louis

Ruth Porter Mall and Maple, Saint Louis

Temporary Curbs

- Unit Cost: $100 per curb
- Material cost per intersection: $5,000-$7,000
- Pros: Visible
- Cons:
  - Straight design will be hard for bump-out curves
  - Hard for snow plows to see

Flexible Curbs

- Unit Cost: $50 to $100 per curb (without flex strips)
- Material cost per Intersection: $3,500 to $7,000
- Pros: Able to make any shape
- Cons: Fill

Rubber/ Plastic Wheel Stops

- Unit Cost: $50 to $100 per curb (without flex strips)
- Material cost per Intersection: $6,000 to $10,000 (with flex strips)
- Pros: Visible
- Cons: Durability

Combinations and Examples

Austin, Texas

University City, Missouri

San Francisco, California

Chicago, Illinois

Memphis, Tennessee

DUMBO Triangle,
New York City, New York

Seattle,
Washington