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Main Street Corridor Pedestrian Safety Study

Final Report

City of Jackson, Missouri

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Introduction

Main Street is an integral link in the City of Jackson's transportation network, providing residents and visitors access to Uptown Jackson and many nearby destinations. There are, however, numerous challenges along the corridor that deter pedestrian activity and access to nearby retail, employment, and educational opportunities. In 2022, the City of Jackson applied for and was awarded a MoDOT Traffic Engineering Assistance Program (TEAP) grant to examine conditions along the corridor and develop recommendations to create a safer, more accessible, and more attractive pedestrian environment. The study area extends along Main Street from SR 72 (West Jackson Boulevard) to the west, through Uptown Jackson, to US 61 (Hope Street) to the east, as shown in **Figure 1.**

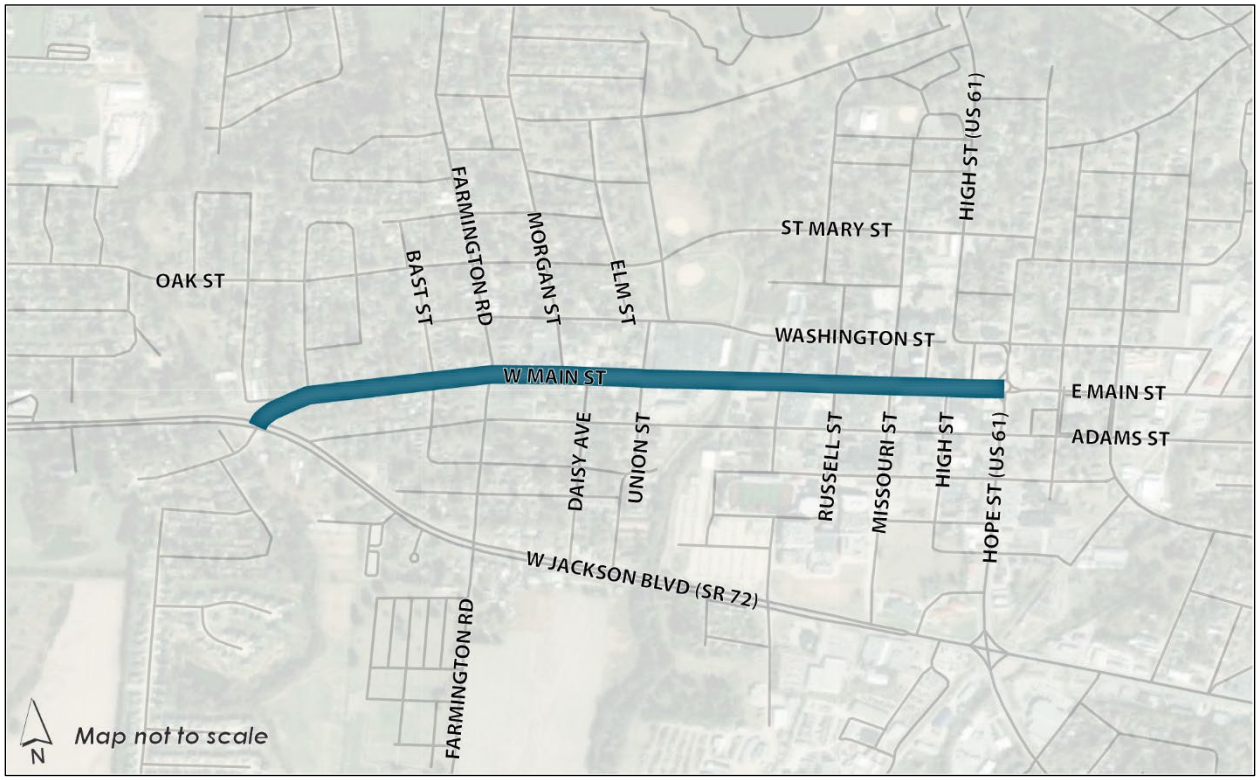

Figure 1. Study Corridor

Purpose and Study Objective

The purpose of this study is to evaluate traffic conditions and recommend strategies to reduce traffic speeds in the corridor with an overarching goal of improving safety and fostering a more welcoming environment for pedestrians and non-motorized users. The recommendations range from low-cost improvements for immediate implementation to long-term opportunities that may require greater planning, design, community engagement, and funding.

Relevant Plans and Studies

The City of Jackson and the Southeast Metropolitan Planning Organization (SEMPO) have completed several plans and studies that include analysis and recommendations for transportation improvements relevant to this study. From the City's Comprehensive Plan and City Wide Transportation Master Plan to the SEMPO Metropolitan Transportation Plan (MTP), these plans provide overarching goals, specific recommendations, and key policies to shape the future of transportation in Jackson and the surrounding region. Many of these documents stress the importance of pedestrian safety and mobility, not just as key components of the larger multimodal transportation system, but also as substantive contributors to the economic development, community health, and overall quality of life. In the City of Jackson's 2009 Comprehensive Plan, for example, pedestrian infrastructure and amenities are identified as key objectives that fall under multiple themes and goals, including city image and identity, residential neighborhoods, commercial and retail areas, environmental features and open space, and transportation and circulation. Specific recommendations include sidewalk connectivity, streetscape enhancements, and the elimination of dangerous and unnecessary curb cuts (driveways) along commercial corridors like Main Street. The 2018 SEMPO Regional Bicycle and Pedestrian Plan also includes specific recommendations for enhancements to Main Street, namely new sidewalks along Main Street from SR 72 to Farmington Road.

In 2020, SEMPO completed an ADA Transition Framework Plan for the cities of Cape Girardeau and Jackson. The plan provided a self-evaluation of non-MoDOT Public Rights-of-Way (PROW) within the two cities to assist them in creating a full ADA Transition Plan. A full ADA Transition Plan requires the additional steps of a self-evaluation of all public buildings and properties, the creation of a schedule and implementation plan, adoption of a grievance policy, and a public engagement period. However, the plans funded by SEMPO provide them with a significant step forward.

Applicable local and regional plans, along with the date and/or year of adoption are listed below:

- City of Jackson Comprehensive Plan – December 2009
- Jackson Parks Master Plan – 2014
- Jackson Emergency Operations Plan – July 2018
- Jackson City Wide Transportation Plan – January 2018
- SEMPO ADA Transition Framework Plan – December 2020
- SEMPO Regional Bicycle and Pedestrian Plan – April 2018
- SEMPO Metropolitan Transportation Plan – 2021

Any pedestrian and safety improvements proposed for the Main Street corridor would align with the goals previously set in the before mentioned plans.

Existing Study Area

In order to evaluate traffic conditions and recommend strategies to reduce traffic speeds in the corridor, it was first necessary to understand the current context and conditions along Main Street, including land use, roadway geometry, traffic, and operating conditions.

Land Use Context

As the western entrance to Uptown Jackson, Main Street gradually transitions from lower density residential and services to higher density commercial, office, and institutional uses in the heart of Uptown. This transition is shown in the Corridor Context Map (**Figure 2**) on page 4, which also displays a quarter-mile buffer around the study corridor and highlights schools, churches, parks, and other prominent destinations within walking distance of Main Street.

From West Jackson Boulevard to Bast Street, Main Street is lined with single family residences zoned R-2 Single Family Residential. From Bast Street east to Union St, single family homes are interspersed among local businesses, including Bollinger Auto Repair, Southern Bank, Ford and Sons Funeral Home, SEMO Specialties & Sports, Fuel Bar + Taco, Willis Insurance Services, Farmers Insurance, and Jackson Family Dental. Most businesses supply off-street parking for patrons and employees. All parcels along this segment of Main Street are zoned C-3 Central Business District.

From Union Street to Missouri St, large lot commercial and industrial line the corridor and are zoned either C-3 Central Business District or I-1 Light Industrial. Businesses along this section of the corridor include Elite Trends Salon, Str8 Edge Barber Shop, The Busy Bee, Dollar General, Westrock Orthodontics, Southeast HealthPoint Plaza, Jackson Deli, Subway, NLC Lenco Automotive, and First State Community Bank. Nearly all businesses along the corridor supply off-street parking for patrons and employees. Frequent and sometimes very wide ingress and egress drives to adjacent parcels increase pedestrian exposure to motor vehicle traffic accessing businesses along the corridor.

The eastern-most segment of the corridor from Missouri Street to Hope Street embodies the Uptown Jackson urban form, with two-story office and mixed-use buildings with minimal to no setbacks from the sidewalk lining both sides of Main Street. Parcels along this segment are all zoned C-3 Central Business District. Businesses and services along the corridor include Jackson City Hall, Strickland Engineering, Jackson Audio & Music Supply (JAMS), Fringe Boutique, Cape Girardeau County Historical Society, and the historic county courthouse. There are also numerous retail, restaurant, and professional services along Court Street and High Street.

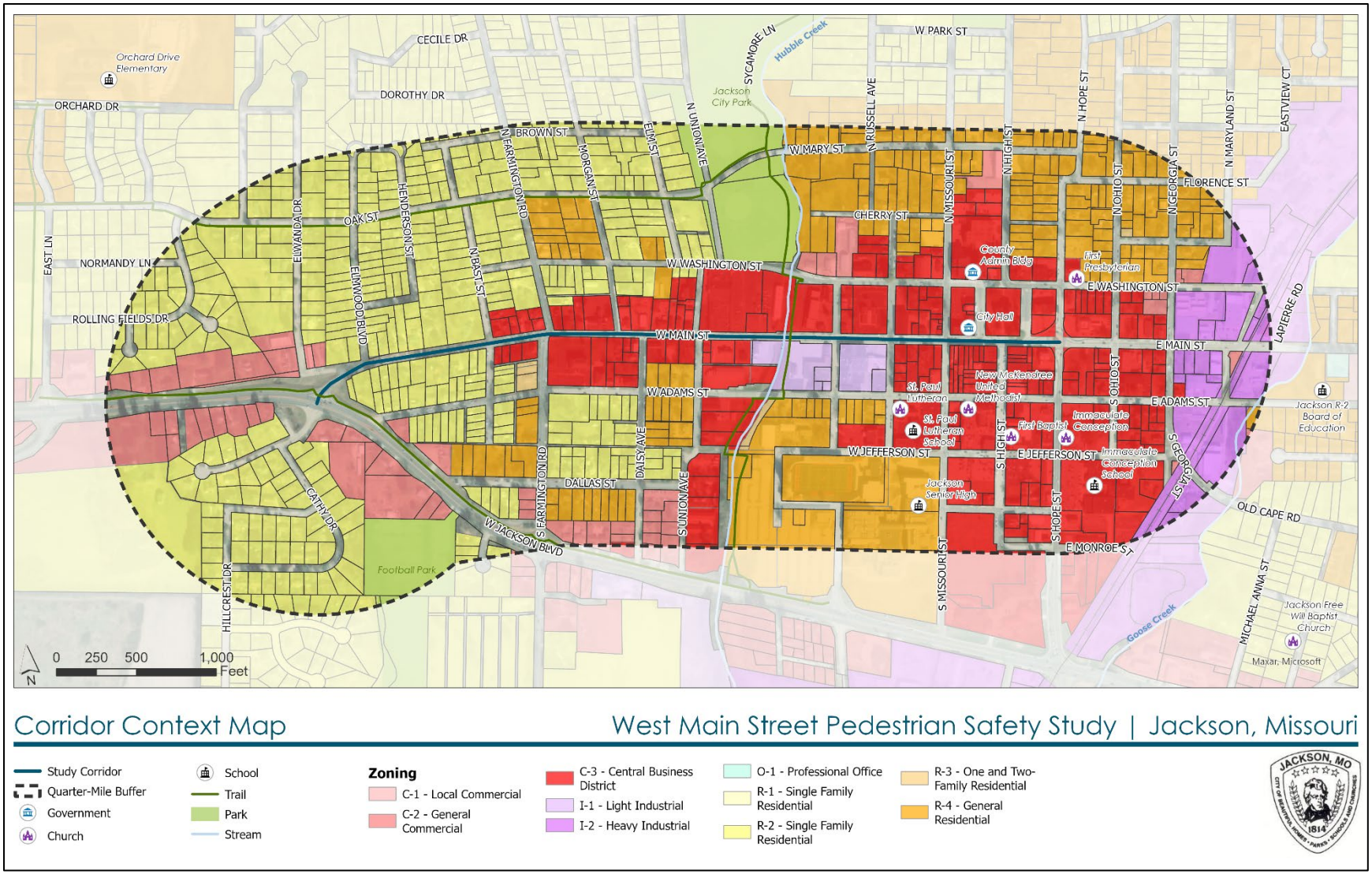

Figure 2. Corridor Context Map

Existing Roadway Network

Main Street is functionally classified as a minor arterial with a posted speed limit of 30 miles per hour (mph) along the study corridor. The speed limit decreases to 20 mph east of Russell Street. Main Street serves several commercial businesses on both sides of the road. However, there are posted signs restricting truck traffic except for local deliveries along Main Street beginning at SR 72. Along this corridor, Main Street consists of one lane in each direction. East of Farmington Road, Main Street widens to provide on-street parking. On-street parking spaces are marked east of Russell Street. There are no signalized intersections along the study corridor, with the exception of SR 72 and Main Street.

SR 72 (West Jackson Boulevard) is MoDOT owned and maintained principal arterial with a posted speed limit of 40 mph within the study area. SR 72 has two lanes in each direction with a physical median. The intersection of SR 72 and Main Street is signalized. The eastbound and westbound approaches along SR 72 consist of one left-turn lane, one through lane, and one shared through/right-turn lane. The northbound and southbound approaches along Main Street consist of one left-turn lane and one shared through/right-turn lane. The right turn for all approaches is channelized.

Farmington Road is functionally classified as a minor arterial with a posted speed limit of 30 mph within the study area. Similar to Main Street, Farmington Road has posted signs restricting truck traffic except for local deliveries. Farmington Road typically has one lane in each direction. The intersection of Farmington Road and Main Street is all-way stop controlled. The eastbound and westbound approaches along Main Street consist of one shared lane. The northbound approach along Farmington Road consists of one left-turn lane and one shared through/right-turn lane. The southbound approach along Farmington Road consists of one shared lane.

Union Avenue, Oklahoma Street, Russell Street, Missouri Street, Court Street, and High Street are all functionally classified as local roads. Each of their intersections with Main Street are side-street stop controlled where traffic traveling along Main Street travels freely. All of the approaches consist of a single shared lane. It should be noted that High Street is one-way southbound.

US 61 (Hope Street) is functionally classified as a minor arterial with a posted speed limit of 30 mph within the study area. Within the study area, US 61 typically consists of one lane in each direction. The intersection of US 61 and Main Street is a single-lane roundabout. The posted speed through the roundabout is 15 mph. The roundabout provides a wide mountable apron for trucks to navigate through. However, there are posted signs restricting truck traffic except for local deliveries.

Figure 3 depicts the existing lane configuration and traffic control for the main intersections along the study corridor.

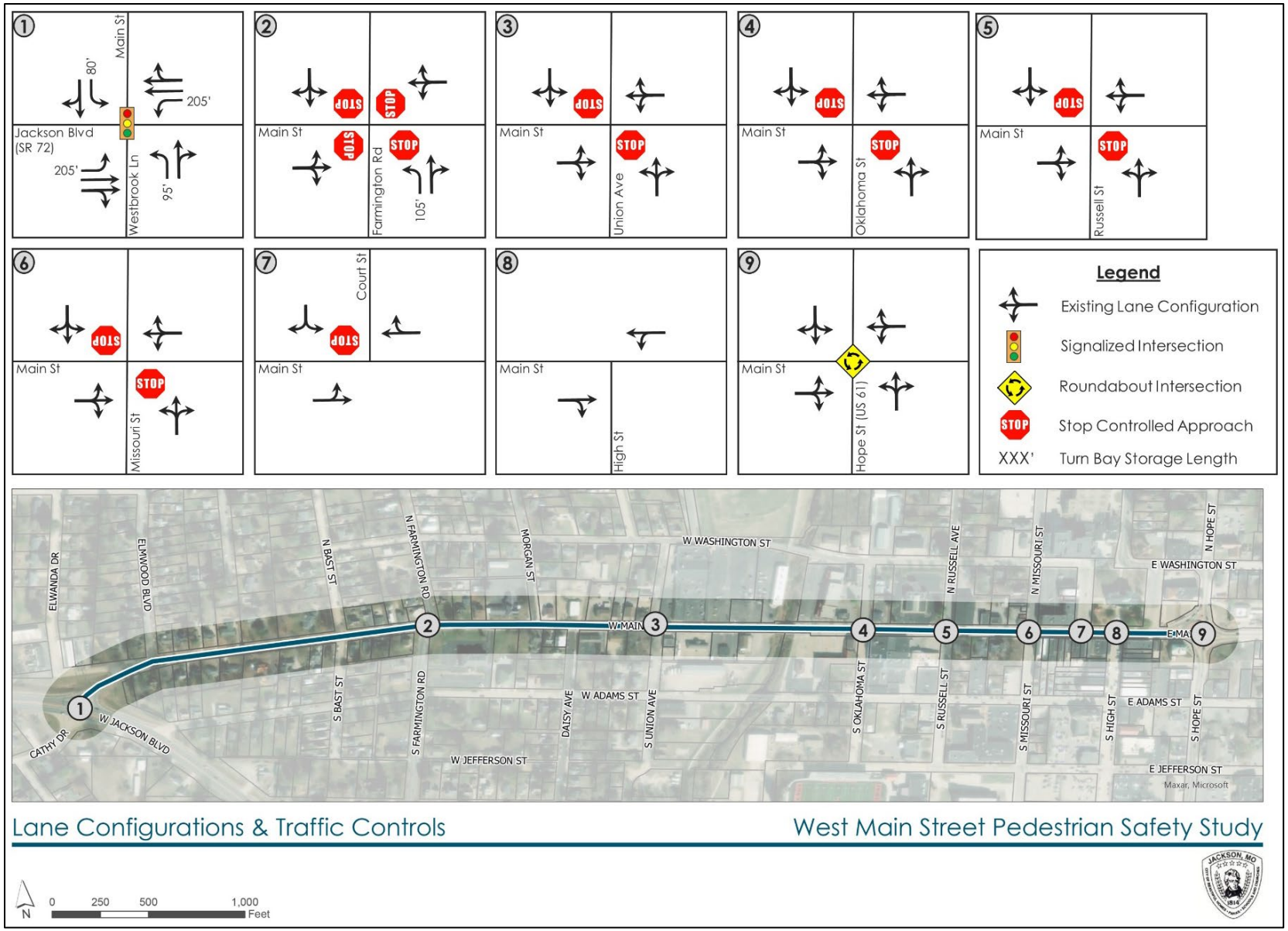

Figure 3. Existing Lane Configuration and Traffic Control

The presence of on-street parking along the corridor varies in relation to land use and available roadway width. As mentioned above, parking is not permitted west of Farmington Road East of Farmington Road, parking is permitted on every block, though it is only striped from Missouri Street to Hope Street. In total, there are approximately 111 parking spaces along the corridor. Twenty-eight of these are marked parking spaces east of Missouri Street, and the remaining 83 are unmarked parking spaces located west of Missouri Street. **Figure 4** below depicts the location and number of parking spaces by block.

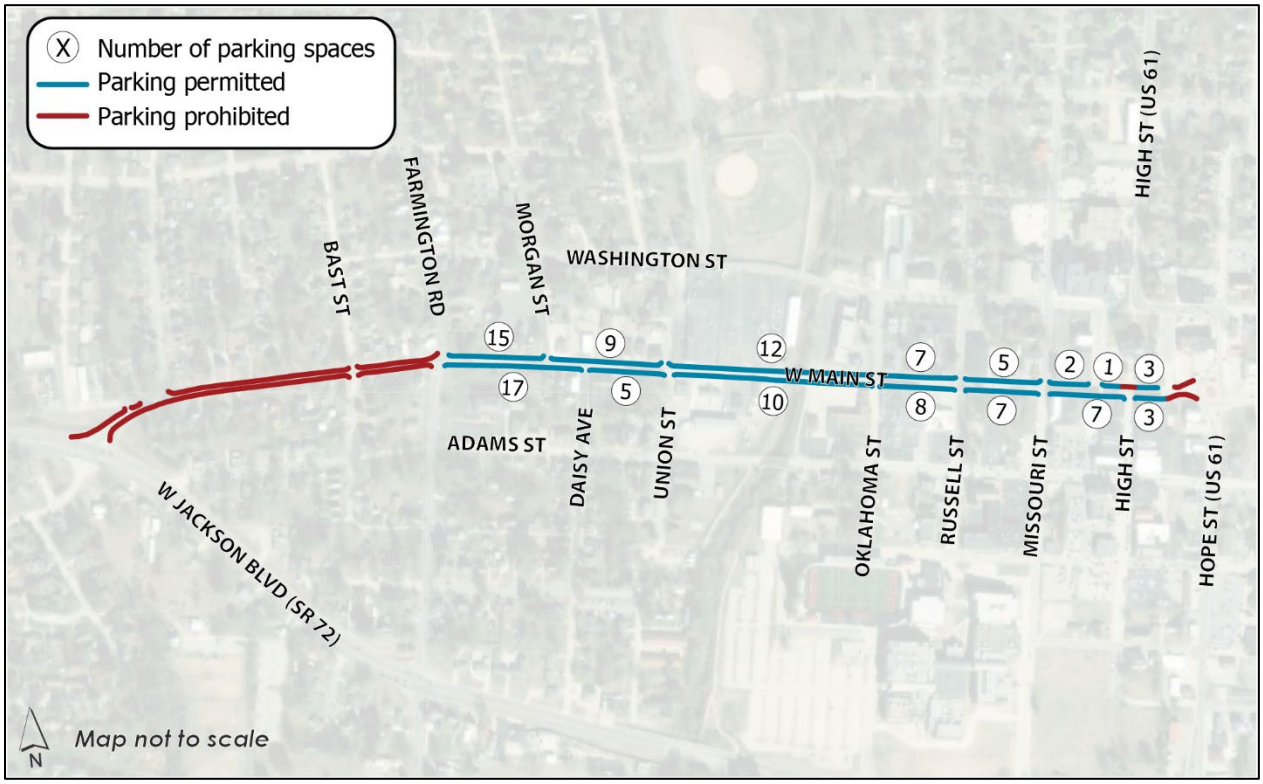

Figure 4: On-Street Parking

Existing Multimodal Accommodations

As previously noted, Main Street serves several commercial uses and provides a connection to the Hubble Creek Recreation Trail. In addition, Jackson City Park is located approximately two blocks north of Main Street. Given Main Street's proximity to businesses as well as parks and trails, safe multimodal accommodations are necessary to promote walking and biking throughout this corridor.

At the SR 72 intersection, a continental crosswalk is provided across the westbound Main Street approach to support safe crossings for pedestrian traveling along the pedestrian path on the north side of SR 72. There are, however, no crosswalks to support pedestrian movements across SR 72. There are no sidewalks or bicycle facilities provided along Main Street between SR 72 and Farmington Road. East of Farmington Road, Main Street has sidewalks on both sides of the street. There is no pedestrian crossing at the intersection of Main Street and Farmington Road, where the crosswalks begin on the east side of the intersection. The first marked pedestrian crossing is located at Union Street where a diagonal continental striped crosswalk is provided. Pedestrian crossing signs are also provided along eastbound Main Street for this crossing. Union Street is not aligned at Main Street and jogs to the left, which resulted in the requirement for a diagonal crossing.

There is a pedestrian hybrid beacon located along Main Street at the Hubble Creek Recreation Trail. Signs and push buttons as well as a continental striped crosswalk are provided at this location. Continental striped crosswalks are provided along both sides of Main Street at Oklahoma Street. However, standard striping is provided along both sides of Oklahoma Street. The same crosswalk striping is provided at Main Street and Russell Street, where continental striping is provided along both sides of Main Street and standard striping is provided along both sides of Russell Street. Standard striped crosswalks are provided along all four legs of Main Street and Missouri Street. In addition, dyed or stamped concrete has been used in the crosswalks to further demarcate the pedestrian space. Pedestrian crossing signs are provided along eastbound Main Street in anticipation of the crossing at Missouri Street.

There are dyed or stamped concrete crosswalks provided along the west side and north side of Main Street's intersection with Court Steet. There is a triangular stamped crosswalk provided at Main Street and High Street which provides a direct connection to the Courthouse. Pedestrian crossing signs and dyed or stamped crossings are provided at the entrances to the roundabout at US 61.

While pedestrian crossings are provided at the major intersections along Main Street, there are curb cuts throughout Main Street providing access to residential housing as well as the commercial businesses. Pedestrians and bicyclists must regularly cross these curb cuts as they walk along Main Street, putting them in conflict with vehicles.

Existing Traffic Calming Implementations

Jackson, MO has made efforts to provide traffic calming measures throughout the city, specifically along Main Street. There are curb bump-outs provided at High Street where it intersects with Main Street. There are also curb bump-outs along Court Street where it intersects with Main Street. Additionally, as previously noted several crosswalks along the corridor are stamped to help enhance visibility. A pedestrian hybrid beacon is provided where Main Street intersects the Hubble Creek Recreation Trail, and pedestrian crossing signs are provided in anticipation of some pedestrian crossings.

Existing Traffic Volumes

Traffic volumes were collected over a 48-hour period in February 2023 at the following sections along Main Street:

- State Route 72 to Farmington Road
- S. Missouri Street to US 61
- Hubble Creek to S. Missouri Street
- Farmington Road to Hubble Creek

The composition of vehicle classification along the study corridor is shown in **Figure 5**. As shown, approximately 58% of the vehicles along the study corridor are passenger vehicles, followed by vans and pickups which make up approximately 38% of all vehicles. Buses and trucks as well as tractor trailers each represent approximately 2% of total vehicles. Overall, the study corridor is comprised of approximately 4% heavy vehicles.

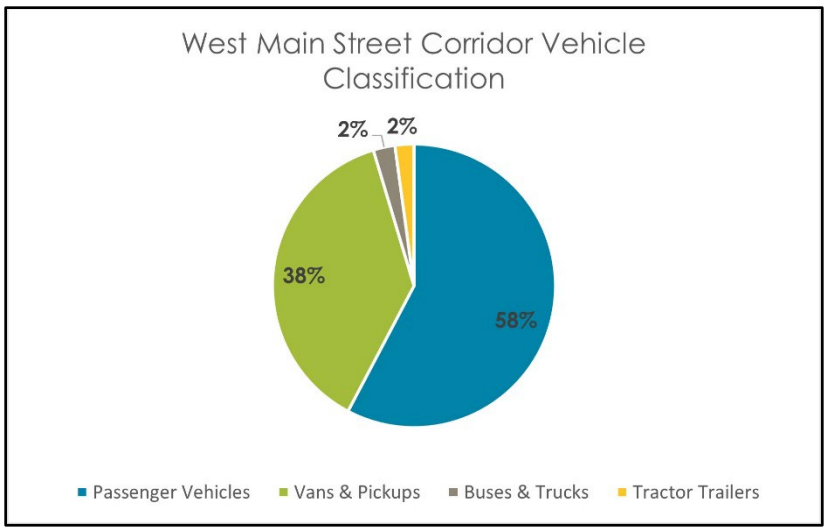

Figure 5. Main Street Corridor Vehicle Classification

The existing traffic counts are summarized in **Figure 6**. Based upon a review of the traffic data, it was determined that the AM peak hour occurred between 7:00 AM – 8:00 AM and the PM peak hour occurred between 3:00 PM – 4:00 PM. It should be noted that traffic counts are only provided for the eastbound and westbound directions of each respective section along Main Street. As shown, the S. Missouri Street to US 61 section experiences the highest traffic volumes and the State Route 72 to Farmington Road section experiences the lowest traffic volumes.

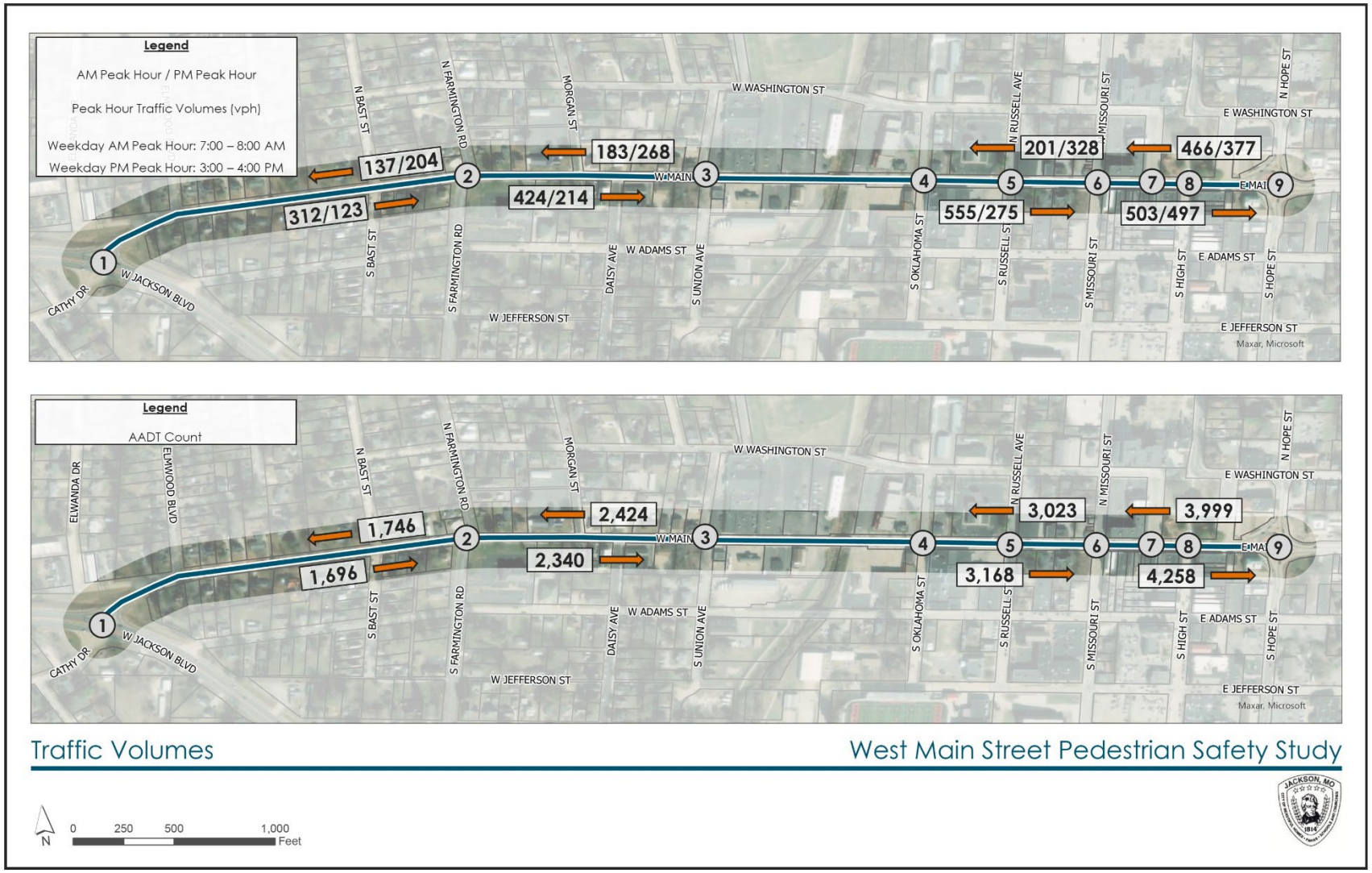

Figure 6. 2023 Existing Traffic Volumes

Intersection Sight Distance and Visibility

While no sight distance calculations were performed as part of this analysis, there are several intersections of note in which there are sight distance concerns. Several intersections, such as Main Street and High Street, Main Street and Missouri Street, and Main Street and Oklahoma Street have buildings near the corner of the intersection, blocking the view of vehicles along Main Street. While the buildings cannot be moved to provide better sight distance, care should be taken to ensure that vehicles can safely maneuver despite the limited sight distance.

In addition, there is a vertical curve along Main Street beginning near Oklahoma Street through US 61/Hope Street. This curve also creates sight distance issues for vehicles along this corridor. Similar to the buildings creating sight distance issues, the vertical curvature of the roadway cannot be changed. Main Street runs east-west. The rising sun may create visibility issues for eastbound vehicles, especially along the vertical curve. In 2022 there was a pedestrian crash and part of the cause was due to the visibility issues caused by the sun blinding the driver. Therefore, care should be taken to ensure that vehicles can safely maneuver despite the limited sight distance caused by the vertical curve.

Vehicle Speeds

Vehicle speeds were collected along the same four segments of Main Street as the traffic counts over a 48-hour time period in February 2023.

The posted speed limit along Main Street is 30 mph west of Russell Street and 20 mph east of Russell Street. As shown in **Table 1**, the average speed throughout the corridor does not stray too far from the posted speed limits. Where the posted speed limit is 30 mph, the average speed is 30.8 mph. Where the posted speed limit if 20 mph, the average speed is 22.5 mph. The 85th percentile speed represents the speed at which 85 percent of all vehicles travel under during free-flowing conditions. The 85th percentile speed where the posted speed limit is 30 mph is 35.7 mph and the 85th percentile speed along the 20-mph section of the corridor is 27.5 mph.

The section of Main Street which has a posted speed limit of 20 mph experiences the highest deviation in vehicle speeds. This section does not appear to have significant changes in the roadway which would encourage lower speeds. However, there is a vertical curve beginning near Oklahoma Street, which is one block west of where the speed limit drops, that may encourage lower speeds.

It should be noted that approximately 1% of all vehicles along the Main Street corridor travel at a speed of 55 mph or over. These high speeds pose safety concerns along the corridor.

Table 1. Main Street Corridor Vehicle Speeds

Main Street Segment	Direction	Average Speed (mph)	85th Percentile Speed (mph)	Vehicles traveling over 55 mph
30 mph Posted Speed Limit				
State Route 72 to Farmington Road	Eastbound	31	35	0.21%
	Westbound	34	39	0.17%
Farmington Road to Hubble Creek	Eastbound	30	34	1.56%
	Westbound	28	33	0.92%
	Eastbound	29	34	0.91%

Hubble Creek to S. Missouri Street	Westbound	33	39	1.62%
Average		**30.8**	**35.7**	**0.90%**
20 mph Posted Speed Limit				
S. Missouri Street to US 61	Eastbound	22	28	1.05%
	Westbound	23	27	0.71%
Average		**22.5**	**27.5**	**0.88%**

Crash History

Crash data for the study area was obtained from 2013 through 2022. Crashes selected for this analysis include crashes occurring along Main Street as well as crashes occurring on intersecting streets within 132 feet of Main Street, thereby qualifying as an intersection-related crash. A total of 183 crashes occurred in the study area during the ten-year period. The number of crashes annually varied over the ten-year period, from a low of eight in 2016 to a high of 27 in 2017. A crash dashboard, shown in **Figure 7**, was created to analyze trends in crash type, contributing circumstances, time-of-day occurrence, and lighting conditions that would be indicative of potential correctable safety issues.

Crash Location

For 85 of the 183 crashes examined, the travelway on which the crash occurred was documented as Main Street. The remaining 98 crashes list Main Street as the nearest street and occurred in the intersection or approach to the intersection with Main Street. When examining crash distribution and clustering along the corridor, the Main Street and Hope Street intersection experienced the greatest concentration of crashes with 63 individual crash records accounting for 34% of all crashes. It should be noted that the roundabout at this intersection was constructed in 2016 and opened in October 2016. Prior to its installation, the intersection was all-way stop-controlled. From 2013 through 2015, there was an average of slightly more than 4 crashes per year at this intersection. From 2017 through 2022, there was an average of 8 crashes per year here, nearly doubling after the installation of the roundabout. None of the crashes that occurred at this intersection following the installation of a roundabout resulted in an injury. Main Street's intersection with Missouri Street experienced the second highest concentration of crashes (27 crashes, 15%), followed by Main Street's intersection with Farmington Road (20 crashes, 11%).

Crash Severity

Of the 183 total crashes, two crashes resulted in a disabling or suspected serious injury, nine crashes resulted in minor injury, and 172 crashes resulted in property damage only. No fatal crashes were recorded in the study area during the ten-year period. The low speed limits along Main Street may help to reduce the number of disabling and suspected serious injury crashes.

Crash Type

Fifty-two crashes, representing 28% of total crashes, stemmed from rear end collisions. Rear end crashes were the most common crash classification. This is not unexpected given the close spacing of intersections and urban character of the study area. Rear end crashes are typically the result of distracted drivers not observing stopped traffic ahead or speeding. Angle or turning crashes represented a small percentage of the total, suggesting that intersection traffic control (signal, turn phasing) is appropriate for conditions.

Right angle crashes accounted for approximately 15% of all crashes. Right angle crashes typically occur when vehicles on perpendicular streets collide at an intersection. Limited sight distance and not completely stopping a stop sign are common causes for right angle crashes. The right angle crashes within the study area are likely due to the vertical curve along the Main Street corridor and the limited visibility due to buildings.

Pedestrian- and Bicyclist-Involved Crashes

From 2013 through 2022, there was one crash involving a pedestrian and one crash involving a bicyclist (pedalcyclist). The bicyclist-involved crash occurred at the Hope Street intersection on a Saturday afternoon in January 2014 at the intersection of Main Street and Hope Street (prior to the installation of the roundabout in Fall 2016). The crash resulted in property damage only and no injuries to the bicyclist or occupant(s) of the motor vehicle. The pedestrian-involved crash occurred at 7:30 AM on a Monday morning in February 2022 and involved a juvenile crossing Main Street at Russell Street.

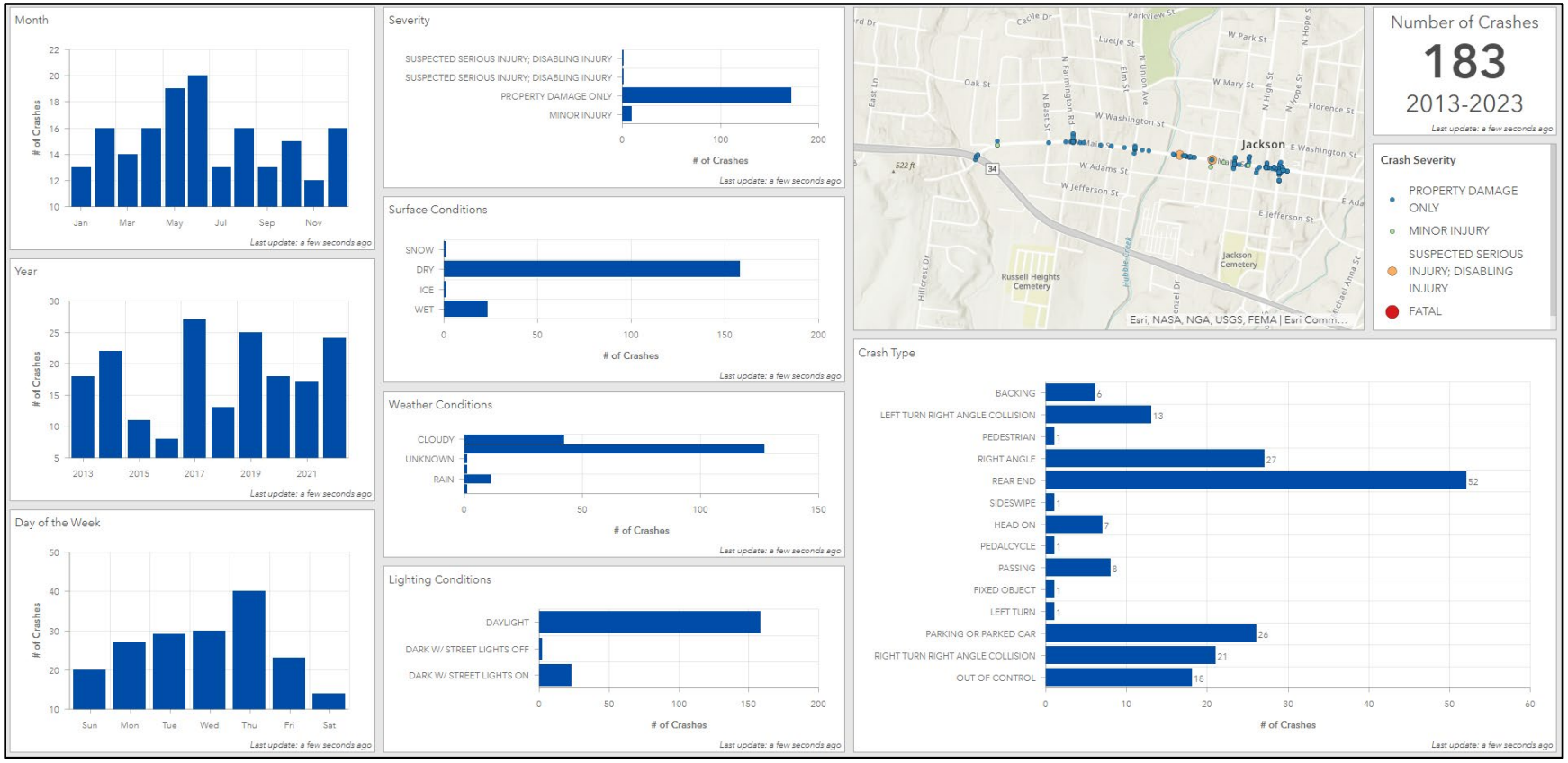

Figure 7. Main Street Crash Dashboard

Key Opportunities

Based on the analysis of existing conditions, the following opportunities should be considered in the development of concepts and recommendations to improve pedestrian safety along Main Street:

- **Sidewalk Infill.** Fill gaps in the sidewalk network to create a contiguous pedestrian pathway along the corridor.
- **ADA Improvements.** Continue to improve accessibility for pedestrian mobility to better support the needs of people with limited mobility.
- **Pedestrian Crossing Enhancements.** Enhance pedestrian crossing safety through high-visibility crosswalk markings, signage, flashing beacons, and other design elements that increase motor vehicle drivers' awareness of pedestrian activity along the corridor.
- **Traffic Calming.** Identify specific traffic calming measures to reduce vehicle speeds, limit pedestrian conflicts with motor vehicles, and reduce crash frequency and severity.
- **Intersection Reconfiguration.** Implement recommended reconfiguration to the Main Street and Farmington Road intersection identified in the 2020 City Wide Transportation Master Plan to improve intersection safety, operations, and efficiency.
- **Access Management.** Address the frequency and design of driveways along the corridor to reduce pedestrian exposure to motor vehicles.
- **Curbside Management.** Identify opportunities to reallocate curbside space to increase sightline distances and visibility and support multimodal needs and adjacent land uses.
- **Aesthetics & Beautification.** Incorporate street trees, landscaping, pedestrian-scale lighting, and pedestrian amenities to create a more attractive and welcoming public realm.
- **Branding and Identity.** Reinforce transition into Uptown Jackson through gateway features, pedestrian-scale lighting and banners, street furniture, and other elements that increase drivers' situational awareness and location within the Uptown Jackson central business district.

Safety & Traffic Calming Countermeasures

The purpose of this study is to evaluate traffic conditions and recommend strategies to reduce traffic speeds in the corridor with an overarching goal of improving safety and fostering a more welcoming environment for pedestrians and non-motorized users. Therefore, several countermeasures have been developed for potential implementation along Main Street. These countermeasures were selected specifically for Main Street's unique context and characteristics and take into account roadway geometry, traffic conditions, and adjacent land uses. The recommendations range from low-cost improvements for immediate implementation to long-term opportunities that may require greater planning, design, community engagement, and funding.

The countermeasures presented below are grouped into three categories: Horizontal Deflection, Vertical Deflection, and Programming & Policy. The posted speed limit along Main Street varies between 20 mph to 30 mph. Given those low speeds, the horizontal and vertical deflection countermeasures would be applicable to the corridor. Additionally, the traffic volumes are low along the corridor. Typically, horizontal deflection countermeasures would be best suited for AADTs lower than 10,000 and vertical countermeasures would be best suited for AADTs lower than 6,000 vehicles. The highest AADT counted along this corridor was 4,258 vehicles, well below the recommended AADTs to implement horizontal and vertical deflection countermeasures.

Horizontal Deflection

Pedestrian Islands / Medians

Pedestrian Islands and Medians help provide a safe space in the middle of a roadway for pedestrians while they wait for traffic to clear. An example of a median provided by the Federal Highway Administration (FWHA) is shown in **Figure 8.**

Figure 8. Pedestrian Medians

Curb Extensions (Bump-Outs)

Curb extensions, sometimes referred to as “bump-outs”, help to reduce the pavement width at an intersection, thereby reducing speeds, enhancing the visibility of pedestrians and bicyclists, and shortening pedestrian crossing distances (and exposure to motor vehicles). When located midblock, curb extensions are often referred to as “chokers” or “pinch points”. An example of a curb extension provided by the National Association of City Transportation Officials (NACTO) is shown in **Figure 9.**

Figure 9. Curb Extension

Chicanes

Chicanes are a series of alternating curves which help to reduce vehicles speeds. Typically, chicanes are installed mid-block and away from crosswalks. An example of a chicane provided by NACTO is shown in **Figure 10.**

Figure 10. Chicane

Vertical Deflection

Speed Humps / Speed Cushions

Speeds humps and speed cushions help to reduce vehicle speeds along a roadway. Speed humps are raised sections which are approximately 10–14 feet long and 3–4 inches high. Whereas speed cushions are typically smaller and installed in groups of two or more. An example of a speed cushion provided by NACTO is shown in **Figure 11.**

Figure 11. Speed Cushion

Raised Crosswalks

Raised crosswalks are ramped speed tables spanning the entire width of the roadway, often placed at midblock crossing locations to increase visibility of pedestrians and bicyclists, reduce vehicle speeds, improve motorist yielding, and reduce pedestrian-related crashes. The raised crosswalk is flush with height of the sidewalk, reinforcing the pedestrian space and creating a more comfortable environment for people walking and bicycling across the street. An example of a raised crosswalk from Pedsafe.org is shown below in **Figure 12**.

Figure 12: Raised Crosswalk

Raised Intersections

Raised intersections help to increase visibility, specifically the visibility of pedestrians and bicyclists. They help to reduce vehicle speeds as vehicles navigate the raised section, which is approximately 3–6 inches high. An example of a raised intersection provided by Lochmueller Group is shown in **Figure 13.**

Figure 13. Raised Intersection

Rumble Strips

Rumble strips serve to alert drivers. They can be used in a variety of cases to increase drive awareness, whether it be because the driver is approaching a pedestrian crossing or that the driver is leaving their designated lane. An example of rumble strips provided by Crossroads is shown in **Figure 14.**

Figure 14. Rumble Strips

Programming and Policy

Posted Signage

Several neighborhoods have posted signs encouraging lower speeds and increased driver awareness. These signs involve the community and bring a personal aspect to traffic calming. An example of posted neighborhood signage is shown in **Figure 15**. If there is a designated school walking route that crosses Main Street, school crossing signage should also be considered to increase driver awareness of pedestrian activity.

Figure 15: Posted Neighborhood Signage

Dynamic Speed Display Devices (DSDD)

DSDD bring awareness to driver speeds. As vehicles pass, their speeds are displayed next to the posted speed limit sign. These signs help to encourage adherence to the posted speed limit. An example of a DSDD is shown in **Figure 16.**

Figure 16. Dynamic Speed Display Devices (DSDD)

Law Enforcement Presence

The presence of law enforcement typically encourages drivers to drive safely. If there is an increase in law enforcement presence, it is likely that vehicle speeds and erratic behavior along the corridor would decrease.

Curbside Management

Curbside management practices optimize and allocate curb space to maximize safety, mobility, and access for a wide variety of curb demands, including vehicle storage, pedestrian and crossing infrastructure, local businesses, green infrastructure, parklets, emergency services, mobile vendors, special vendors, and flex space. Given the presence of off-street parking, particularly west of Russell Street, there may be opportunities along the corridor to reallocate curbside space to increase safety and create a more vibrant and active environment for road users and adjacent land uses.

Access Management

Access management seeks to balance access to land development in manner that preserves safe and efficient movement of people and goods. Common access management techniques include access spacing, driveway spacing, safe turning lanes, median treatments, and right-of-way management. As redevelopment occurs along Main Street, the City should consider driveway spacing, design, and operational requirements to reduce curb cuts and limit pedestrian exposure to motor vehicle conflicts.

Countermeasures Summary

As shown in **Table 2**, the proposed traffic calming countermeasures for consideration along the Main Street Corridor are summarized. It should be noted that the Uptown Jackson area has historical significance and some of these countermeasures may be subject to approval.

Table 2. Summary of Traffic Calming Countermeasures

Option	Traffic Calming Effectiveness	Impedance to Traffic flow	Estimated Cost
Pedestrian Islands/Medians			$$
Curb Extensions			$$$
Chicanes			$$$
Speed Humps/Cushions			$$
Raised Crosswalks			$$
Raised Intersections			$$$
Rumble Strips			$
Posted Signage			$
DSDD			$$
Law Enforcement Presence			$
Access Management			$
Curbside Management			$

Recommended Improvements for Main Street

Each of the countermeasures detailed previously was evaluated specifically for implementation along Main Street. The recommended countermeasures were determined through discussions with City staff as well as through a feasibility evaluation of each countermeasure's implementation and the impact it would have on improving the pedestrian and bicycle connectivity and multimodal safety along the Main Street corridor. The following improvements are recommended for Main Street:

- Provide centerline striping throughout the Main Street corridor. It is also recommended that all on-street parking spaces along this corridor be striped to clearly show where parking is allowed.
    - The estimated cost for this centerline striping is approximately $30,000.
- Install a crosswalk on the east side of Jackson Boulevard with a future pedestrian connection to the neighborhood south of the intersection.
    - All crosswalks should be painted with slip-resistant material to ensure safe pedestrian crossings, especially during wet weather conditions.
- Install 5' wide sidewalk along both sides of Main Street between Jackson Boulevard and Farmington Road.
    - The estimated cost for this sidewalk as well as the crosswalk on the east side of Jackson Boulevard is approximately $1,560,000.
- Improve the intersection of Main Street and Farmington Road per the Jackson Citywide Transportation Plan and install continental crosswalks on all four legs.
    - The estimated cost for this intersection improvement is approximately $500,000.
- Consolidate curb cuts along the north side of Main Street, specifically along the curb east of the Dollar General where a former building was located and consider restriping the parking lot to allow better traffic flow.
    - The estimated cost for this improvement is approximately $36,000.
- Add curb extensions to the trail crossing along Main Street and consider raising the crosswalk. Include transverse milled rumble strips along Main Street at this location to help warn vehicles of the trail crossing.
    - The estimated cost for each curb extension is approximately $13,500. It should be noted that this cost is conservative and is based on the largest intersection size along Main Street. The cost could be reduced if earthen filled curb extensions are implemented.
    - The estimated cost for a raised crosswalk is approximately $50,500.
    - The estimated cost for rumble strips is approximately $15,600.
- Add transverse milled rumble strips at the divide between Downtown and Uptown Jackson to slow vehicles down prior to entering Uptown Jackson.
    - The estimated cost for rumble strips is approximately $15,600.
- Provide pedestrian scale lighting along Main Street within the borders of Uptown Jackson.
    - The estimated cost for pedestrian scale lighting is approximately $629,250.
- Consider making either Main Street and Missouri Street or Main Street and Russell Street an all-way stop-controlled intersection or add curb extensions to improve visibility.

  - The all-way stop control would only be implemented at one of the above-mentioned intersections and would be based on which, if any, intersection would experience the most benefits from the all-way stop.
  - It should be noted that an additional study is required in order to determine if an all-way stop controlled intersection is warranted and feasible at either location, and the implementation of an all-way stop controlled intersection is not guaranteed.
- Raise the intersection of Main Street and High Street with three separate crosswalks. Consider adding westbound transverse milled rumble strips just east of High Street before the pedestrian crossing.
  - The estimated cost for this raised intersection is approximately $106,000.
- Add a curb extension to Barton Street to shorten the pedestrian crossing.
  - As previously noted, the estimated cost for each curb extension is approximately $37,500. It should be noted that this cost is conservative and is based on the largest intersection size along Main Street. The cost could be reduced if earthen filled curb extensions are implemented.
- Strategically remove some on-street parking spaces to improve intersection sight distance. These spaces are largely located between High Street and Court Street where buildings are set on the corner of the intersection and visibility is limited.

An engineer's opinion of probable costs is provided in the Appendix. It should be noted that these estimated construction costs are planning level in nature and do not include right-of-way (ROW) or utility relocation estimates. Because these costs are for planning level purposes, a 30% contingency has been added for each estimate to include any unforeseen items that could be determined through project engineering.

These countermeasures are depicted in the schematic drawings shown in **Figure 17** through **Figure 21.**

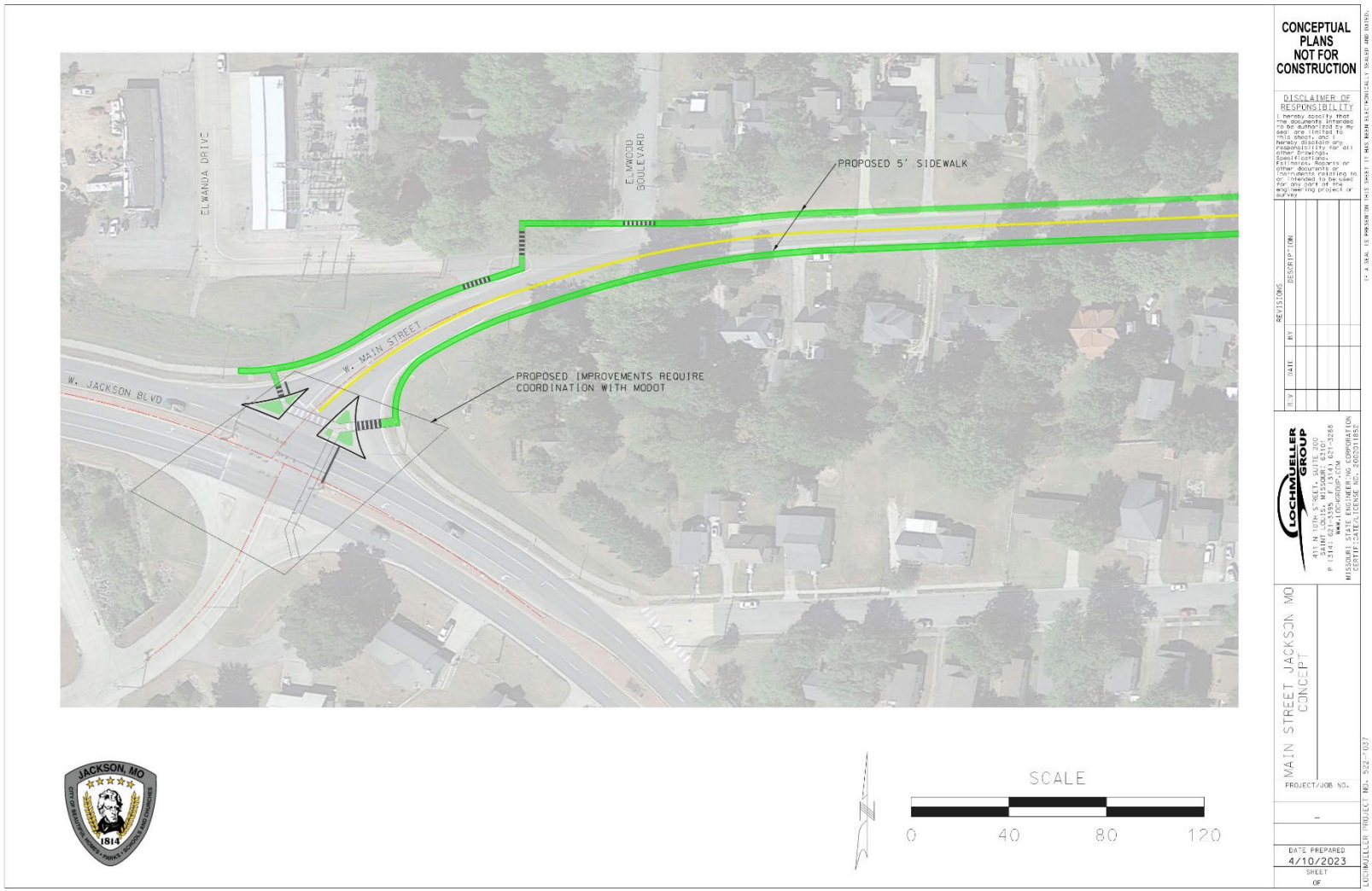

Figure 17. Recommended Improvements - Sheet 1 of 5

Figure 18. Recommended Improvements - Sheet 2 of 5

Figure 19. Recommended Improvements - Sheet 3 of 5

Figure 20. Recommended Improvements - Sheet 4 of 5

Figure 21. Recommended Improvements - Sheet 5 of 5

Conclusion

Main Street is an integral link in the City of Jackson's transportation network, providing residents and visitors access to Uptown Jackson and many nearby destinations. There are, however, numerous challenges along the corridor that deter pedestrian activity and access to nearby retail, employment, and educational opportunities. The purpose of this study was to evaluate traffic conditions and recommend strategies to reduce traffic speeds in the corridor with an overarching goal of improving safety and fostering a more welcoming environment for pedestrians and non-motorized users. The recommendations range from low-cost improvements for immediate implementation to long-term opportunities that may require greater planning, design, community engagement, and funding.

This report provides the foundational understanding of existing conditions impacting pedestrian mobility and safety along the Main Street Corridor, identifies opportunities to enhance mobility and safety for all roadway users, and presents potential traffic calming design elements that can be applied to specific locations throughout the study area. Through a feasibility evaluation and discussions with City staff, the following improvements to Main Street were recommended:

- Provide centerline striping throughout the Main Street corridor.
- Install a crosswalk on the east side of Jackson Boulevard with a future pedestrian connection to the neighborhood south of the intersection.
- Install 5' wide sidewalk along both sides of Main Street between Jackson Boulevard and Farmington Road.
- Improve the intersection of Main Street and Farmington Road per the Jackson Citywide Transportation Plan and install continental crosswalks on all four legs.
- Consolidate curb cuts along the north side of Main Street.
- Add curb extensions to the trail crossing along Main Street and consider raising the crosswalk. Include transverse rumble strips along Main Street at this location to help warn vehicles of the trail crossing.
- Add transverse milled rumble strips at the divide between Downtown and Uptown Jackson to slow vehicles down prior to entering Uptown Jackson.
- Provide pedestrian scale lighting along Main Street within the borders of Uptown Jackson.
- Consider making Main Street and Missouri Street an all-way stop-controlled intersection or add curb extensions to improve visibility.
- Raise the intersection of Main Street and High Street with three separate crosswalks. Consider adding westbound transverse rumble strips just east of High Street before the pedestrian crossing.
- Add a curb extension to Barton Street to shorten the pedestrian crossing.
- Strategically remove some on-street parking spaces to improve intersection sight distance. These spaces are largely located between High Street and Court Street where buildings are set on the corner of the intersection and visibility is limited.

Please contact our offices at (314) 446-3791 with any questions or comments concerning this report.

Completed by Lochmueller Group, Inc

Appendix

Appendix A: Cost Estimate

Estimate of Project Costs

Project Sponsor:	**City of Jackson, MO**
Project Title:	Main Street Pedestrian Study
Date:	5/1/2023

Bumpouts (EACH)

Item	Quantity	Unit	Unit Price	Amount
Pavement Removal	100	SY	$30.00	$3,000.00
Sidewalk Removal	33	SY	$10.00	$330.00
Type 5 Aggregate Base (4")	33	SY	$20.00	$660.00
Concrete Sidewalk, 4 In	22	SY	$60.00	$1,320.00
Concrete Curb Ramps	11	SY	$250.00	$2,750.00
Truncated Domes	20	SF	$40.00	$800.00
Pavement Markings, 24" White (Stop Bar/Crosswalk)	100	SF	$10.00	$1,000.00
Traffic Control	1	LS	$500.00	$500.00
Contingency	1	EA	30%	$3,108.00
			SUBTOTAL	**$13,468.00**

Centerline Striping

Item	Quantity	Unit	Unit Price	Amount
Pavement Markings, 4" Yellow (Centerline Striping)	10,000	LF	$2.00	$20,000.00
Pavement Markings, 24" White (Stop Bar)	100	SF	$10.00	$1,000.00
Traffic Control	1	EA	$2,000.00	$2,000.00
Contingency	1	EA	30%	$6,900.00
			SUBTOTAL	**$29,900.00**

Rumble Strips

Item	Quantity	Unit	Unit Price	Amount
Transverse Rumble Strip	2	EA	$5,000.00	$10,000.00
Traffic Control	1	EA	$2,000.00	$2,000.00
Contingency	1	EA	30%	$3,600.00
			SUBTOTAL	**$15,600.00**

Consolidate Parking

Item	Quantity	Unit	Unit Price	Amount
Pavement Marking Paint, White 4"	3,000	LF	$2.00	$6,000.00
Concrete Median	111	SY	$100.00	$11,100.00
Entrance Removal	111	SY	$30.00	$3,330.00
Type 5 Aggregate Base (4")	111	SY	$20.00	$2,220.00
Traffic Control	1	EA	$5,000.00	$5,000.00
Contingency	1	EA	30%	$8,295.00
			SUBTOTAL	**$35,945.00**

Raised Intersection

Item	Quantity	Unit	Unit Price	Amount
Concrete Pavement	400	SY	$100.00	$40,000.00
Pavement Removal	400	SY	$30.00	$12,000.00
Type 5 Aggregate Base (4")	400	SY	$20.00	$8,000.00
Pavement Markings, 24" White (Stop Bar/crosswalk)	300	SF	$10.00	$3,000.00
Traffic Control	1	LS	$10,000.00	$10,000.00
Contingency	1	EA	30%	$21,900.00
Inflation (6% at 2 years)	1	LS	$11,000.00	$11,000.00
			SUBTOTAL	**$105,900.00**

Sidewalk				
Item	**Quantity**	**Unit**	**Unit Price**	**Amount**
Concrete Sidewalk, 4 In	2,000	SY	$60.00	$120,000.00
Concrete Curb Ramps	200	SY	$250.00	$50,000.00
Truncated Domes	300	SF	$40.00	$12,000.00
Barrier Curb and Gutter	2,600	LF	$45.00	$117,000.00
Gutter Removal	2,600	LF	$10.00	$26,000.00
Paved Approach	433	SY	$70.00	$30,310.00
Concrete Median	100	SY	$100.00	$10,000.00
Pavement Removal	100	SY	$30.00	$3,000.00
Type 5 Aggregate Base (4")	3,600	SY	$15.00	$53,995.00
Excavation	1,541	CY	$30.00	$46,230.00
Retaining Wall (< 4')	7,800	SF	$60.00	$468,000.00
Drainage improvements	1	LS	$100,000.00	$100,000.00
Pavement Markings, 24" White (Stop Bar/crosswalk)	300	SF	$10.00	$3,000.00
Traffic Control	1	LS	$30,000.00	$30,000.00
Contingency	1	EA	30%	$320,860.50
Inflation (6% at 2 years)	1	LS	$167,000.00	$167,000.00
			SUBTOTAL	**$1,557,395.50**

Farmington Intersection Realignment				
Item	**Quantity**	**Unit**	**Unit Price**	**Amount**
Coldmilling Bituminous Pavement for Removal of Surfacing	2,341	SY	$10.00	$23,410.00
Bituminous Pavement Mixture 3" Surface	393	TON	$150.00	$58,950.00
Bituminous Pavement Mixture 9" (Base)	67	TON	$150.00	$10,050.00
Pavement Removal	154	SY	$30.00	$4,620.00
Type 5 Aggregate Base (4")	631	SY	$20.00	$12,620.00
Excavation	316	CY	$30.00	$9,480.00
Concrete Sidewalk, 4 In	22	SY	$60.00	$1,320.00
Concrete Curb Ramps	43	SY	$250.00	$10,750.00
Truncated Domes	80	SF	$40.00	$3,200.00
Pavement Markings, 24" White (Stop Bar/crosswalk)	550	SF	$10.00	$5,500.00
Pavement Markings, 4" Yellow (Centerline Striping)	1,000	LF	$2.00	$2,000.00
Curb and Gutter	1,300	LF	$60.00	$78,000.00
Drainage improvements	1	LS	$100,000.00	$100,000.00
Traffic Control	1	LS	$20,000.00	$20,000.00
Contingency	1	EA	30%	$101,970.00
Inflation (6% at 2 years)	1	LS	$53,000.00	$53,000.00
			SUBTOTAL	**$494,870.00**

Raised Crosswalk				
Item	**Quantity**	**Unit**	**Unit Price**	**Amount**
Raised Crosswalk	1	EA	$30,000.00	$30,000.00
Traffic Control	1	LS	$5,000.00	$5,000.00
Contingency	1	EA	30%	$10,500.00
Inflation (6% at 2 years)	1	LS	$5,000.00	$5,000.00
			SUBTOTAL	**$50,500.00**

*No ROW or Utility Relocation is included

Pedestrian Scale Lighting				
Item	**Quantity**	**Unit**	**Unit Price**	**Amount**
Pedestrian Lighting Pole, Fixture and Base	65	EA	$5,500.00	$357,500.00
2" Conduit and associated cabling	4,400	LF	$15.00	$66,000.00
Power Supply and Lighting Controller	2	EA	$4,500.00	$9,000.00
Contingency	1	EA	30%	$129,750.00
Inflation (6% at 2 years)	1	LS	$67,000.00	$67,000.00
			SUBTOTAL	**$629,250.00**