

# MISSOURI BOULEVARD PEDESTRIAN, BICYCLE, AND TRANSIT SAFETY ASSESSMENT

## *Summary Report*



5/26/2016

JEFFERSON CITY, MISSOURI

A summary report of the Missouri Boulevard Safety Assessment in Jefferson City, MO. The report includes an overview of the assessment process and findings, including: safety conditions, access issues, design challenges, opportunities, and next steps. Data collected will be used to better plan for improvements to Missouri Boulevard.



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# Missouri Boulevard Pedestrian, Bicycle, and Transit Safety Assessment

## JEFFERSON CITY, MISSOURI

### INTRODUCTION

In September 2014, United States Department of Transportation Secretary, Anthony Foxx, launched **Safer People, Safer Streets** with the goal of reducing the growing number of pedestrian, transit user, and bicyclist injuries and fatalities across the United States. As part of this ongoing initiative, US Department of Transportation field offices are convened transportation agencies to conduct road safety assessments in every state, launching a *Mayors' Challenge for Safer People and Safer Streets*, and working with University Transportation Centers (UTCs) and other stakeholders to identify and remove barriers to improving non-motorized safety. At this time, Jefferson City joins Kansas City as being the first two cities in the state to have conducted a this type of safety assessment as part of the *Safer People, Safer Streets* initiative.

Safety Assessments are a formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential safety issues and identifies opportunities for improvements in safety for all road users. Benefits of such a study include: promotion of safety design practices, considering human factors in all facets of design, and integrate multimodal safety concerns. The Missouri Boulevard Safety Assessment follows a model used by federal partners who have conducted similar assessments across the United States.

The Assessment was a collaborative effort by the Capital Area Metropolitan Planning Organization (CAMPO) and several planning partners, including; Jefferson City Police Department, Jefferson City Public Works, JEFFTRAN (Jefferson City Transit), Missouri Department of Transportation (MoDOT), Federal Transit Administration (FTA), Federal Highway Administration (FHWA), National Highway Traffic Safety Administration (NHTSA), Capital Region Medical Center, and Mid-America Regional Council. Twenty-four individuals participated in the assessment. Those participants are listed below.

#### Participants:

Aaron Bartlett – MARC	Mike Latuszek – FHWA	Sgt. Doug Ruediger - City of Jefferson
James Beattie – MoDOT	Cary Maloney – CAMPO	Sonny Sanders – CAMPO
Mark Bechtel – FTA	Brad McMahon – FHWA	Mary Schantz – Citizen
Ron Effland – MoDOT	Mark Mehmert – JEFFTRAN	Ray Shank – MoDOT
Tia Griffin - City of Jefferson	Daniel Nguyen – FTA	Britt Smith - City of Jefferson
Jeff Halloran – NHTSA	Randall Potts – MoDOT	Susan Summers-Harmon – MoDOT
Mike Henderson – MoDOT	Erin Reinkemeyer – MoDOT	Ashley Varner – CRMC
Jenni Jones – MoDOT	Alex Rotenberry – CAMPO	Katrina Williams – CAMPO

## BACKGROUND

Missouri Boulevard, also known as US Business 50, is a four to five lane roadway that provides access to numerous retail, restaurant, and commercial establishments, drawing a high number of pedestrians and motorists. The assessment corridor includes multiple transit stops and is close to high density residential areas, including areas of government assisted housing and multi-family housing. Nationally, pedestrian fatalities occur disproportionately in low-income areas which often have fewer sidewalks than upper income areas. High-income areas have half as many pedestrian deaths as low-income areas where people are more likely to rely on walking, bicycling and transit to access jobs, school, retail and health care. Lower income neighborhoods are less likely to have sidewalks and other pedestrian infrastructure.

### The Assessment Corridor

The Missouri Boulevard Safety Assessment Corridor stretches 3.4 miles from W. Main Street to S. Ten Mile Drive. MoDOT is responsible for most of Missouri Boulevard, however the city is responsible for the small downtown portion between US 50/63 and W. Main Street. The corridor features multiple private drives, accesses, and cross streets and is crossed by one State Highway and three US Highways; US 50/63 is an eight lane “at-grade” crossing. This section of Missouri Boulevard was chosen for study by the CAMPO Board of Directors due to the following:

- A high concentration of automobile crashes.
- High density of retail and commercial area.
- JEFFTRAN route, with the highest ridership of all routes within Jefferson City.

#### Assessment corridor



At the far eastern end of the assessment corridor, between Main Street and US 50/63, there are several large parking lots that were created as part of previous urban renewal efforts. These parking lots are owned by the state and used by a large number of state workers. Due to Jefferson City being home to the Missouri state capital, traffic volumes change dramatically along Missouri Boulevard and several nearby downtown cross streets depending on time of day and time of year.

The middle portion of the assessment corridor, between US 50/63 and Dix Road, includes a high density of cross streets and small businesses. Although a high amount of street access points present a problem along much of Missouri Boulevard, this section of the assessment corridor has the highest density. Also included within this section is a large vacant hospital property that will be redeveloped, most likely creating more traffic and congestion. The hospital property, formerly St. Mary's Hospital, spans both sides of Missouri Boulevard and may be developed into multiple businesses.

The western portion of the assessment corridor, between Dix Road and S. Ten Mile Drive, includes several big box stores such as Target, Wal-Mart, Sam's Club, Menards, and a handful of other medium sized retail establishments and restaurants. These stores generate the highest number of trips along the corridor. This portion of the corridor also includes a major intersection that connects Missouri Boulevard, MO 179, and US 50. This is a complicated intersection with no pedestrian facilities.

## Area Statistics

From 2011 to 2014 there were 1,084 crashes on Missouri Boulevard between W. Main St. and S. Ten Mile Dr. Included in the total crashes were six crashes involving pedestrians and bicyclists of which three resulted in disabling injuries.

Pedestrian-motor vehicle crashes tend to be more severe than other crashes. In Jefferson City, between 2009 and 2014, there were 46 pedestrian-motor vehicle crashes (one fatality and 45 serious, disabling, or minor injuries), representing 0.64 percent of all crashes during that period.

### Missouri Fatalities

According to preliminary crash data, in 2015 in the State of Missouri, there were 871 traffic fatalities; of those 104 were pedestrian fatalities and nine were bicycle fatalities. Pedestrians and bicyclists represent 13% of all people killed in motor-vehicle crashes in Missouri in 2015.

## THE ASSESSMENT

Assessment participants met at the MoDOT Central District Office located on Missouri Boulevard. A briefing was given by Mark Bechtel and Daniel Nguyen, FTA Region VII, providing participants with a background on why the Assessment was being conducted and how that day's event would proceed.

Participants were split into three teams, a bicycle team and an eastern and western team, assessing pedestrian, and transit conditions. Jeff Halloran, NHTSA, led the three-member bicycle team, Brad McMahon and Michael Latuszek, both with FHWA, led the 10-member eastern transit and pedestrian team, and Mark Bechtel and Daniel Nguyen, both with FTA, led the ten member western transit and pedestrian team.

Each team was given reporting forms to collect data along the assessment corridor. The forms were pre-filled with streets names and questions pertaining to the type of assessment category. The Transit and Pedestrian teams had three forms looking at transit conditions, pedestrian conditions, and general observations, while the bicycle team only used one form.

### The Bicycle Team

The bicycle team assessed the full length of the corridor, completing a seven mile loop, looking at both the north and then south sides of the corridor. The bicycle team also had time to ride the Jefferson City Greenway Trail, which parallels a portion of Missouri Boulevard, running directly behind several businesses.

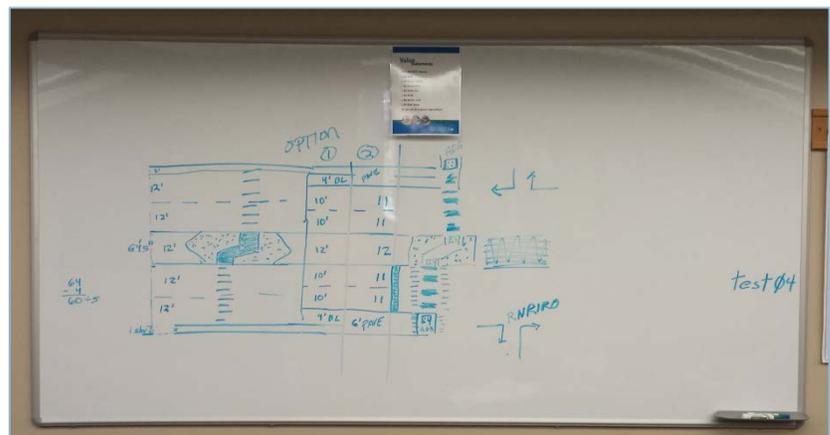
### The Transit and Pedestrian Teams

The transit and pedestrian teams included a team walking west from MoDOT and a team walking east from MoDOT. Teams covered three to four miles each while assessing both the north and south sides of the corridor. Both teams used wheelchairs and digital levels as a part of their assessment of sidewalks, curb cuts, ramps, and transit facilities.

## Wrap-up and reporting

All teams reconvened for lunch at the MoDOT Central District Office and gave verbal reports on basic findings. Discussion included recommendations, challenges in design, opportunities, and next steps that may be undertaken by MoDOT, Jefferson City, or CAMPO. The group was also joined by Sgt. Ruediger of the Jefferson City Police Department who fielded questions regarding crash data and enforcement along the Missouri Boulevard and elsewhere in the city. All teams submitted their written notes back to CAMPO staff to aid in the development of this report. Please visit the [Safety Assessment Story Map](#) on the CAMPO website for a detailed look at photos and locations of observed conditions.

**Assessment participants discussed possible design improvements such as traffic calming measures and pedestrian refuges.**



## FINDINGS

Findings from the Assessment are divided into the three categories of Pedestrian, Transit, and Bicycle.

### Pedestrian

- Overall, the teams did not feel safe walking on multiple portions of the boulevard due to the lack of continuous sidewalks, lack of crosswalks running east to west and north to south at intersections, and numerous issues with curb cuts, excessive slope, and stormwater drainage issues.
- Sidewalks are not continuous throughout most of the assessment corridor, with many sections having no sidewalk.
- Most newly constructed sidewalks had widths and buffer distances that meet AASHTO standards.
- A wheel chair users would have great difficulty traveling on much of Missouri Boulevard, as traffic conditions and the lack of infrastructure would make doing so dangerous.
- Sidewalks were continuous from Stadium to MoDOT Central HQ along the south side. There are crosswalks running east to west at intersections, including median refuges and pedestrian push button signalization.
- Various sections of sidewalk on the eastern end of the corridor, between MoDOT Drive and W. Main Street, are in poor condition. Vertical differentials (sidewalk sections & ramps) are sometimes several inches high. Many areas have crumbling concrete. Multiple obstacles were observed in the pedestrian path (signs, trees, light poles).
- There is an absence of marked crosswalks and extreme fading of existing painted crosswalks.
- There are limited pedestrian crossing signals. Pedestrian signal time lengths are not long enough for all users.
- There are a large number of access breaks (driveways) to individual commercial properties.
- Instances of parked vehicles extending over the sidewalk were observed, specifically between Virginia Street and US 50/63.
- Multiple properties displayed unique State right-of-way line placement that will likely require MoDOT to acquire additional real property interests from the property owner in order to implement sidewalk improvements.
- There is a need for more traffic controls between W. Stadium Boulevard and Dix Road. This section includes a long stretch of roadway with a significant hill that that encourages speeding.

***Sidewalk obstacles on the eastern end of the Missouri Boulevard create serious barriers to mobility.***



## Transit

- 75% of transit stops included bus shelters which were observed to be clean and in good condition.
- There was a general lack of continuous sidewalk connectivity to and from transit stops and bus shelters. Sidewalks that are present often only serve a particular business.
- In areas where sidewalks have been improved, continuous sidewalk connections to transit stops and bus shelters allow safe pedestrian access.
- Due to a lack of safe north to south pedestrian crossings, mid-block transit stops encouraged unsafe crossings.
- Sidewalk panels are uneven near transit stops.



*A transit user is seen exiting bus and then crossing traffic to grocery store.*

*There is no designated crosswalk at this location.*



## Bicycle

- There is a need for infrastructure changes to facilitate road sharing along Missouri Boulevard.
- There is a lack of “Share the Road” signage.
- The Greenway Trail provides opportunity for business access, but there are several areas where access is impeded by obstacles (curbs, fences, railing).
- Signage using cyclist images demonstrating best practices should always have helmeted characters.
- Timing of traffic lights are on very short cycles. Bicyclists cannot cross intersections before the light turns red.
- Several stormwater drains and grates present a hazard for pedestrians, wheelchair users, and bicyclists.



*The Bicycle Team assessed issues concerning safety, access, and design.*



## SUGGESTED SOLUTIONS

The following points were provided by federal partners in their write up of both pedestrian groups experiences on Missouri Boulevard.

- Construct sidewalks in sufficient Right-of-Way to provide continuous sidewalk system on the north side.
- Use the south side pedestrian infrastructure, between Dix Road and Stoneridge Parkway, as a template for improvements on the north side.
- Provide north to south crosswalks and pedestrian refuge islands at signalized intersections.
- Construct future bus stops and shelters closer to intersections to avoid mid-block pedestrian crossings.
- Install wayfinding signage on the Greenway Trail making users aware of nearby businesses and services on Missouri Boulevard.
- Install wayfinding signage along Missouri Boulevard making users aware of nearby Greenway Trail.
- Promote multimodal transportation.
  - Install bike lanes and “road diet” designs such as traffic calming barriers or medians. This will improve safety for all modes of transportation, including motorists.
  - Reinstatement of the Jefferson City Police Department’s Bike Patrol Team.
- Use federal funding mechanisms, including FTA 5307 formula program for sidewalk and bikeway improvements in the FTA defined “catchment” area, such as FHWA Complete Streets and NHTSA’s safety programs.
- Improve shading and aesthetics through tree and vegetation plantings, particularly, on west segment.
- Increase education and enforcement of cycling laws.
- Review timing of traffic signals at vehicle and pedestrian crossings

## CURRENT IMPROVEMENTS

The Missouri Department of Transportation (MoDOT) is currently in the process of constructing ADA improvements along Missouri Boulevard. Improvements to the section between Virginia Street and US 50/63 will be completed in Fall 2016 and include: new and replacement sidewalks, ramps and curb cuts, and signalized pedestrian crossings. Bike lanes will be painted on a small section of Dunklin Street between the Greenway Trailhead and Missouri Boulevard, providing a linkage to future bike lanes on Bolivar Street. Bolivar Street will be striped by the City with bicycle “advisory lanes” later in 2016. This will provide connectivity between the Greenway Trail and the Missouri River pedestrian bridge that connects with the Katy Trail and the City of Holts Summit.

After the Safety Assessment was completed, Jefferson City Public Works staff immediately addressed an identified issue with the signalized pedestrian crossing at W. Main Street and Missouri Boulevard. The signal was re-timed to allow a longer period of time for pedestrians and other users to cross. Public Works is also working with JEFFTRAN to construct more transit shelters. Missouri Boulevard is one of several areas slated to have more shelters constructed as funding allows.

## CONCLUSIONS

Missouri Boulevard, also known as US Business 50, is a high traffic business route connecting areas residents and visitors to several businesses and services. The boulevard originated as a two-lane local road and then progressed to a state highway in the nineteen-fifties, to a four lane in the nineteen-sixties, and then to the current five lane business route. Development along this major thoroughfare was incremental and planning was minimal. The shift from an originally rural agricultural area to a dense commercial district has created a complex set of challenges in terms of accessibility, design, and planning.

The Safety Assessment revealed several deficiencies and opportunities along Missouri Boulevard. Points made by both pedestrian teams show that there is poor pedestrian and transit connectivity along multiple portions of Missouri Boulevard. The entirety of the north side, as well as both sides on the eastern end between MoDOT Drive and W. Main Street are in need of upgrades to ADA compliance and design improvements. Transit users on the north side are isolated not only from locations adjacent to transit stops or bus shelters, but also from the south side of the street as well. Bicyclists can navigate the roadway within the travel lane, but there is little to no room in the shoulder due to several infrastructure impediments.

Improvements to connectivity of sidewalks, transit stops, and the nearby Greenway Trail would significantly enhance safety and access in the area. Increased signage and changes in design will also improve safety and access. Continued communication and collaboration between MoDOT and Jefferson City staff will be imperative to the improvement of Missouri Boulevard.

