# MEMO

**To:** Clint Brown, P.E., City of Jackson, MO

**From:** Cheryl Sharp, P.E., PTOE
Michelle Bresnahan

**Date:** March 5, 2021

**Subject:** Court Street Streetscape Research
Lochmueller Project No: 521-0020-00T

The City of Jackson, MO has experienced two crash incidents in the past year involving automobiles in the angled parking area of Court Street adjacent to city hall and nearby commercial businesses. The existing curb did not stop either of the vehicles from crashing into the buildings. Lochmueller Group was requested by the City to research best practices and present potential solutions in an effort to try to prevent these types of crashes from occurring in the future.

When selecting a final solution to implement, the City will need to ensure the following three overarching concerns are addressed:

1) The solution allows the buildings to be highly accessible to the street;
2) The solution will need to adhere to any aesthetic requirements that come with the Jackson Uptown Commercial Historic District designation; and
3) Treatments should be holistic in nature, with potential to be implemented anywhere in the downtown area, and not only a spot improvement in front of the buildings in question.

This memo outlines the research findings, consideration in future treatments, and an opinion on how the City should move forward.

# Existing Conditions

## Geometry

Court Street is a two-way street that provides angled parking on both sides of the street within the Jackson Uptown Commercial Historic District. The old Cape Girardeau County Courthouse is located on the east side of the street and several buildings, such as City Hall and Jones Drug Store, are located on the west side of the street.

The cross-section of Court Street is 74 feet. Included in this cross-section are two 7.5-foot sidewalks, two 2.5-ft of brick parkway, two 2.5-ft of curb and gutter, two 12.5-ft parking lanes, and two 12-ft drive lanes. The curb is 6” tall. In front of Jones Drug Store, an accessible pedestrian ramp exists in front of the store’s front door. The type and dimensions of this ramp meet ADA standards. Though it has no bearings on the issue of errant vehicles hitting buildings, it is recommended that truncated domes be added to the handicap ramp so visually impaired pedestrians know they are entering or leaving the sidewalk area.

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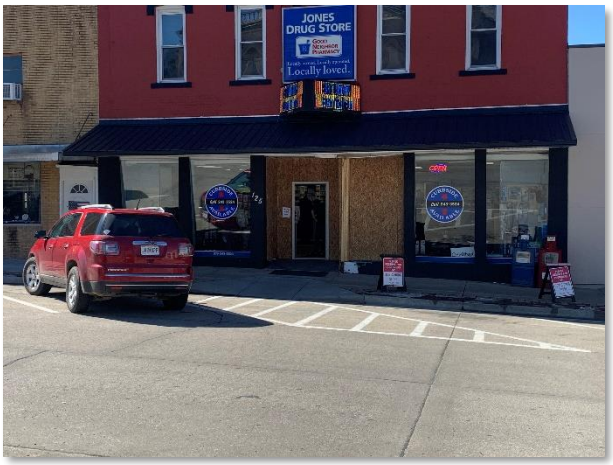


PHOTO 1. COURT STREET STREETSCAPE – WEST SIDE

PHOTO 2. COURT STREET – WEST SIDE SIDEWALK

## Crash History

Within the last year, two crashes have occurred along the west side of Court Street. Each crash involved a parked car hitting a building. In the first incident, a car hit City Hall, and in the second incident, a car hit Jones Drug Store.

In August 2020, a driver drove over the curb and ran into City Hall located at 101 Court Street. This incident occurred at approximately 11:15 am during clear and dry weather conditions. The vehicle was parked in handicap parking space on the east side of Court Street. As the vehicle was backing out, the driver struck a concrete traffic barricade at the intersection of W Main Street, continuing through the landscape. The vehicle then crashed into the windows on the southeast corner of City Hall. The driver stated that the "gas pedal was stuck."

In January 2021, a driver drove over the curb and ran into The Jones Drug Store located at 125 Court Street. This incident occurred at approximately 1:00 pm during clear and dry weather conditions. The driver stated that they did not remember what happened and that they "blacked out" thinking they may have had a seizure.

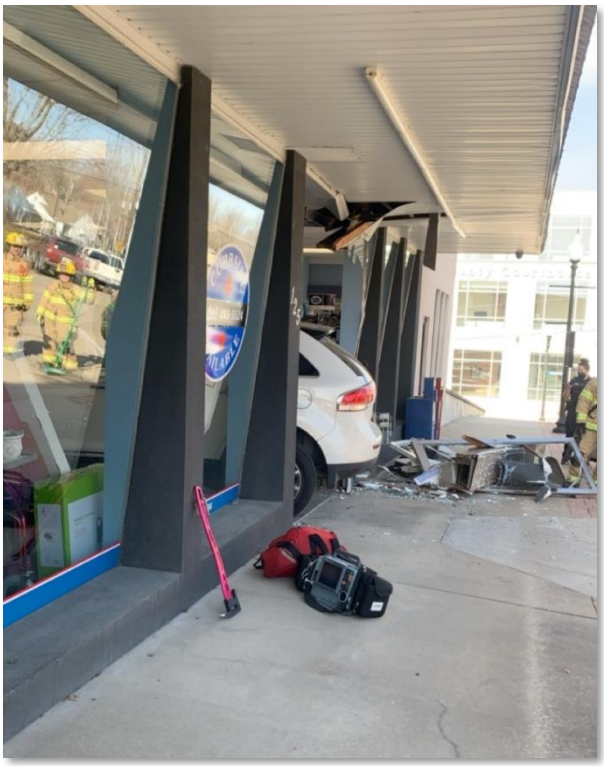

PHOTO 3. JANUARY 2021 CRASH INCIDENT

It should be noted that both incidents identify non-geometric issues as the underlying cause of the crash. However, options were reviewed to determine potential barriers to such extensive damage to buildings in the future if crashes such as these were to occur in the future.

# Potential Options

Lochmueller Group researched best practices to prevent future crash outcomes while considering the site area's location within the Jackson Uptown Commercial Historic District. The following solutions were considered:

1. Parking Curb
2. Parallel Parking
3. Bollards
4. Enhanced Guardrail / Car Bar
5. Planters

## Option 1: Parking Curb/Parking Stops

One potential option for reducing crashes along Court Street is to implement a parking curb, also known as parking stops or parking bumpers, along the existing angled parking.

OPTION 1. PARKING CURB

By adding a parking curb, a second barrier would be added between parked vehicles and the sidewalk/buildings, with the first being the curb between the travelway and sidewalk. In the case of the existing angled parking, moving forward in the space, one wheel could go over the curb, and then the second wheel. With a parking curb, both wheels would hit or be against the curb at the same time, which may help prevent a car from moving forward.

This option does not require any adjustments to the streetscape, re-striping, or geometric changes to the area. In addition, since a parking curb would be added directly on the parking space and technically be considered a traffic device, this option would be an acceptable addition to the historic district.

This solution would be low-cost as no change would be necessary to the streetscape, and have high ease of implementation. However, it would also provide the least amount of protection in comparison to the other solutions. These can be used in combination with most other potential solutions presented in this memorandum, except for parallel parking. Maintenance considerations, such as snowplowing, should also be considered before implementation. An example parking curb is shown in **Option 1.**

## Option 2: Parallel Parking

Another potential solution includes modifying the existing angled parking to parallel parking. Parallel parking may have prevented the vehicle from crashing into Jones Drug Store, but would not have prevented the crash into City Hall. This would be a cost efficient change, however the excess 4 feet (or 8 feet, if implemented on both sides of Court Street) of pavement space could contribute to speeding, as motorists would drive down a 15-16' drive aisle rather than the existing 12' lane. This could be a safety trade-off, though, as the number of conflicts between vehicles in the travelway and those with visual hindrances backing out from an angled space may be reduced. This extra space could be used for potential streetscape options discussed later in this memorandum.

Parallel parking exists along other streets in the downtown areas, so this solution should be familiar to motorists. The existing pavement markings would need to be fully removed. Remnants of striping, indentations in the pavement where markings were grinded or scarified, or "blacking out" of existing markings could lead to motorist confusion. Associated signage identifying the parallel parking would also be needed. Except for routine repainting of markings, which would be required in any scenario, this option would have little to no extra maintenance costs associated with it.

A conversion to parallel parking would result in an overall loss in the number of on-street parking spaces. Currently, on the west side of Court Street, there are 17 angled parking spaces over about 260' distance. That same 260' would accommodate 11-12 parallel parking spaces, reducing the parking supply by 5-6 spaces.

## Option 3: Bollards

Another potential option for reducing crashes along Court Street are bollards. Similar to parking curbs, bollards provide a barrier between parked vehicles and the sidewalk/buildings. A bollard would likely provide a more prominent barrier than a parking curb, however a bollard would be required at each parking spot. This has a slight impedance for pedestrians accessing the buildings as people will need to navigate around the bollards.

OPTION 2. BOLLARDS

Design and placement of this solution would have to be carefully planned, because unless this solution is used in conjunction with parking curbs, these have the potential to be hit by vehicles with long front ends extending over the curb on an every day basis. This would ultimate cost the City additional funding for maintenance and replacements.

Unlike parking stops, the bollards would be placed on the sidewalk which would narrow the walkable sidewalk width. Bollards would require an approved design to assure it is aesthetically appropriate and consistent with the historic district. An example bollard is shown in **Option 2.**

## Option 4: Enhanced Guardrail / Car Bar

Another potential option for reducing crashes along Court Street are enhanced guardrail or car bars. These options provide a significant barrier between the parked cars and the sidewalk and building, and would need to be spaced appropriately to accommodate gaps, which then reduces the effectiveness of the solution. However, this type of solution has a significant potential to impede pedestrian access to the buildings as people will need to navigate around the guardrail or car bars.

Design and placement of this solution would have to be carefully planned, because unless this solution is used in conjunction with parking curbs, these have the potential to be hit by vehicles with long front ends extending over the curb on an every day basis. This would ultimate cost the City additional funding for maintenance and replacements.

Similar to bollards, the guardrail would be placed on the sidewalk which then narrows the walkable path adjacent to the buildings. Enhanced guardrail or car bars also require an approved design to assure it is aesthetically appropriate and consistent with the historic district. An example of enhanced guardrail is shown in **Option 4A.** An example of a car bar is shown in **Option 4B.**

OPTION 4A. ENHANCED GUARDRAIL

OPTION 4B. CAR BAR

## Option 5: Planters

The final potential option for enhanced protection of buildings from errant vehicles along Court Street are planters. This option provides a substantial barrier between the parked cars and the sidewalk, and would need to be spaced far enough apart to allow pedestrian access. It also opens the door to providing other benefits, such as aesthetic enhancements and stormwater mitigation efforts. Though they provide an ideal and beautiful streetscape, planters are expense and require regular maintenance. They would be placed on the sidewalk which would reduce walkable space, unless coordinated with an overall streetscape enhancement project that incorporates both planters with parallel parking. This would also require an approved design to assure it is aesthetically appropriate and consistent with the historic district. **Option 5A** shows an example of planters that could be implemented and **Option 5B** shows an example stormwater garden.

OPTION 5A. PLANTER

OPTION 5B. STORMWATER GARDEN

# Comparison of Potential Options

Each of the previously proposed options have been evaluated to determine their ability to provide a barrier between the parked vehicles and the buildings along Court Street. Included in the evaluation are additional factors such as pedestrian access to nearby facilities, attractiveness of the potential streetscape, whether or not additional ROW will be required, whether or not the existing parking spaces and drive lanes will need to be re-striped, and a factor for the estimated.

| Option | Impedance to Pedestrian flow between Buildings and Street | Requires Historic District Approval | Effectiveness as Barrier Solution | Estimated Cost | Other Considerations |
|---|---|---|---|---|---|
| **1) Parking Curb** |  | |  | $ | |
| **2) Parallel Parking** |  | |  | $ | • Extra width may lead to speeding<br>• Loss of on-street parking spaces |
| **3) Bollards** |  | ✓ |  | $$ | • May get hit by cars with long front ends, extra maintenance |
| **4) Enhanced Guardrail / Car Bar** |  | ✓ |  | $$ | • May get hit by cars with long front ends, extra maintenance |
| **5) Planters** |  | ✓ |  | $$$ | • May get hit by cars with long front ends, extra maintenance |

# Potential Streetscape Options

Each of the previously proposed options can be implemented alone or combined to provide a new streetscape for Court Street. The only exception to this would be parking curbs with parallel parking, as this is not feasible. Several potential streetscape options are available depending on the solutions preferred. A few examples are presented below.

This first option is the existing cross-section of Court Street as shown in **Figure 7**. This same cross-section can be maintained if the only selected option is the parking curb.

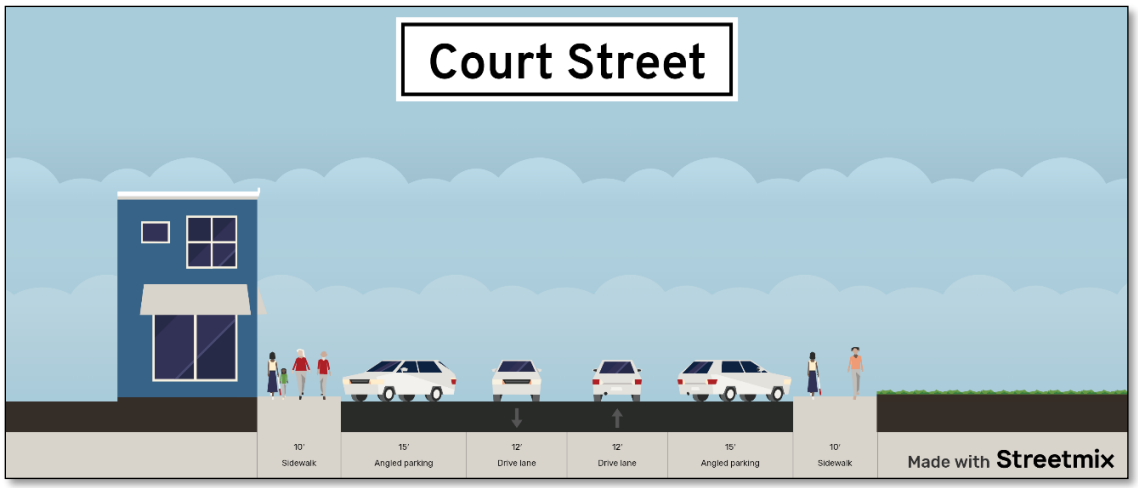


FIGURE 1. EXISTING STREETSCAPE

An additional streetscape option includes changing the existing angled parking on the west side of the street to parallel parking as shown in **Figure 8**. This option does not modify the east side of Court Street. This creates more room within the cross-section to provide barriers such as enhanced guardrails, bollards, or planters.

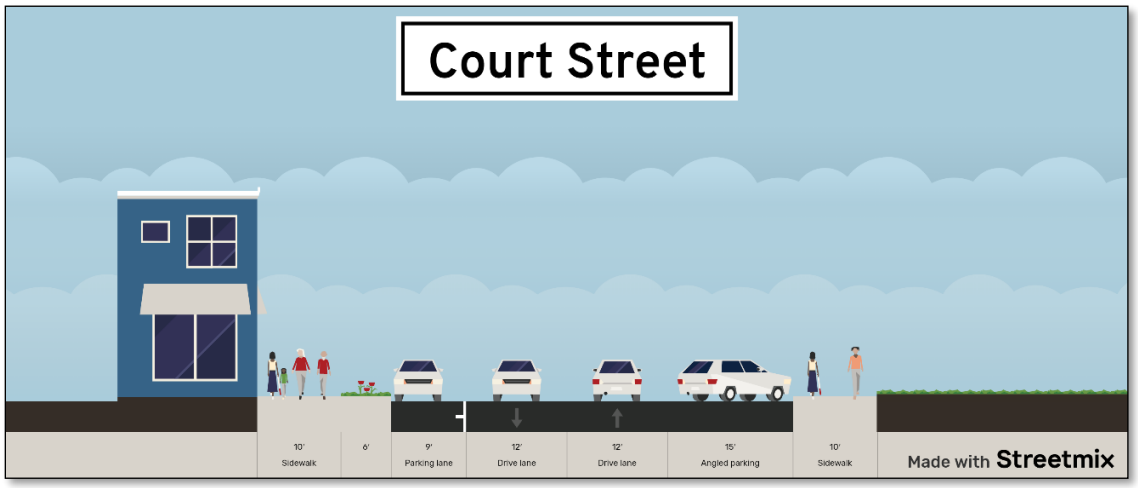


FIGURE 2. PARALLEL PARKING WITH PLANTERS

Lastly, both existing angled parking lanes could be converted to parallel parking as shown in **Figure 9.** While this would result in a loss of parking, this option creates more room within the cross-section to provide barriers such as enhanced guardrails, bollards, or planters. Changing to parallel parking allows for a completely new streetscape along Court Street that can accommodate all users in the Jackson Uptown Commercial Historic District. However, the City should identify potential locations to replace the displaced parking spaces.

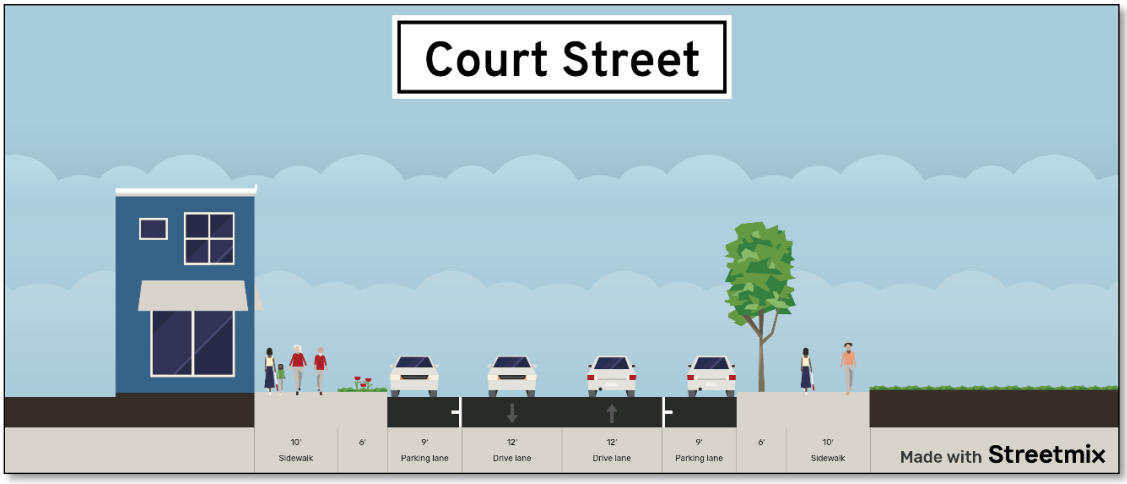


FIGURE 3. PARALLEL PARKING AND PLANTERS ON BOTH SIDES

The City of Jackson has a variety of options which can be implemented to provide the ideal streetscape for Court Street. The above options are only a select few which the City can pursue. The more drastic the change, the more design, time, and budget would be needed before implementation. The final solution should be one that can reasonably be accommodated on neighboring streets, and complies with the restrictions of the Jackson Uptown Commercial Historic District.

# Conclusion

The City of Jackson, MO has experienced two crash incidents in the past year involving automobiles in the angled parking area of Court Street adjacent to City Hall and the nearby pharmacy. Lochmueller Group was requested to research best practices and present potential solutions in an effort to try to prevent these crashes from occurring in the future.

The assessment concluded the following:

- Parking curbs would be the quickest and cheapest option to implement. However, it also provides the least amount of protection of the presented options.
- Bollards, enhanced guardrail / car bars, and planters each provide superior barriers between parking vehicles and the surrounding buildings. These provide a higher amount of protection, but also begin to have a higher associated cost. The identified trade-offs should be carefully considered before implementing these solutions.
- Parallel parking provides the highest likelihood of preventing buildings from being hit by errant vehicles for the lowest implementation cost. If the loss of on-street parking on this segment of

Court Street is acceptable to the City, and unless the City undertakes a significant streetscape project, then this option is recommended as the most cost-efficient solution that can be quickly implemented.

We trust that you will find this information useful in the evaluation of the prevention in crashes along Court Street in Jackson, MO. Please contact our office at (314) 446-3793 with any questions or comments concerning this memorandum.