MoveRolla
TRANSPORTATION DEVELOPMENT DISTRICT

Station 1
Downtown Rolla Improvements Study
(Pine Street and Rolla Street)

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Purpose of the project:

The MoveRolla TDD will evaluate the parking, circulation and intersection control for the downtown transportation system to meet the needs of the downtown residents, visitors and business owners.

Benefits of project:

The benefits of the improvements to the downtown transportation system are a complete multi-modal transportation system that addresses the needs of all users, enhances the economic conditions of downtown businesses and maximizes the Downtown Rolla experience.

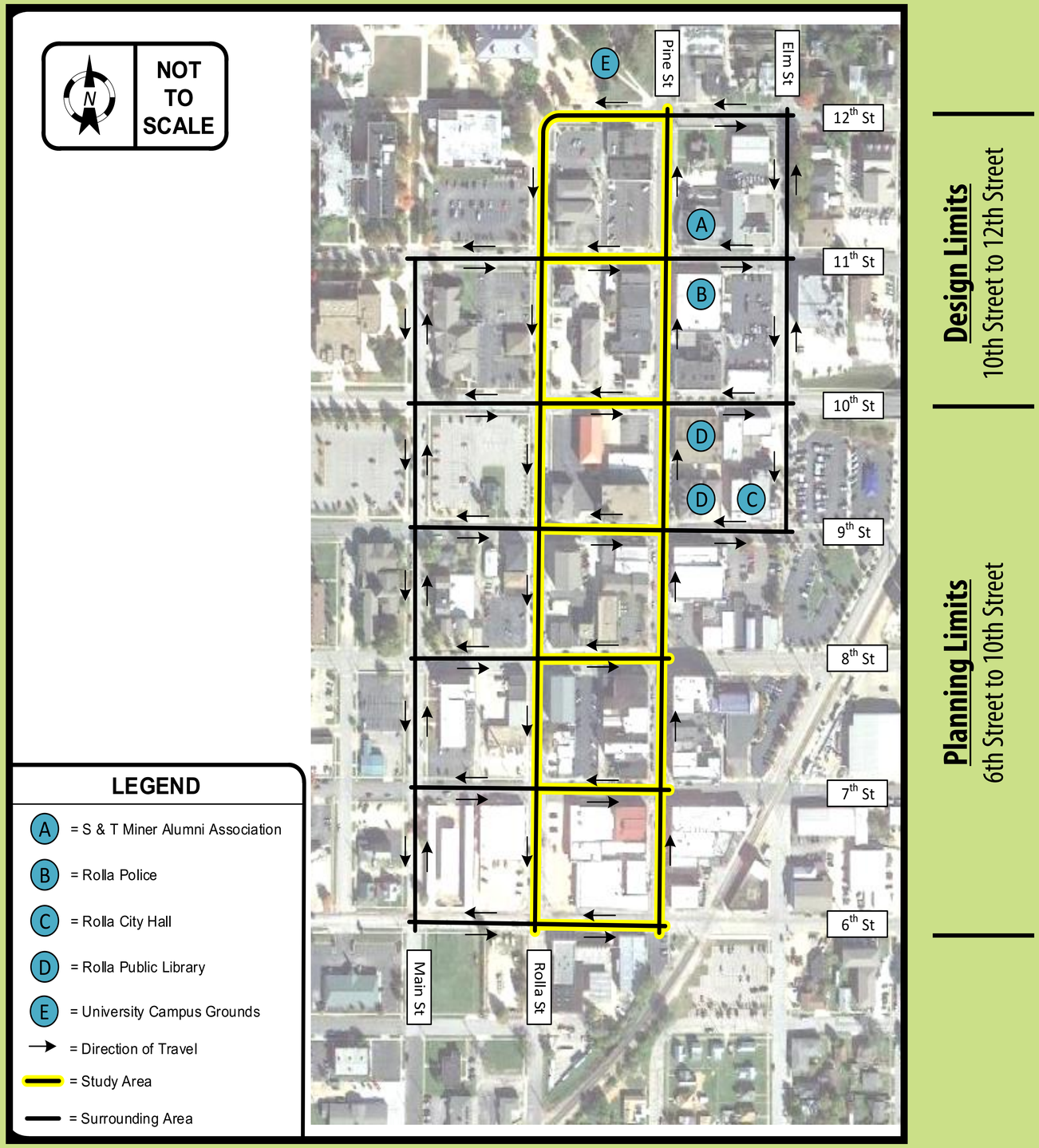
Improvements may include:

- Update traffic circulation
- Update parking configuration
- New ADA compliant sidewalks
- Update or remove traffic signals
- New curb and gutter
- Repave existing road

This study does not include analysis of urban design, streetscape, lighting or other non-transportation elements of downtown.

Schedule for project:

Downtown stakeholder meeting: Summer 2021
Public meeting: Fall 2021
Design complete: Winter 2022
Construction start: To be determined



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Station 2
Existing Conditions

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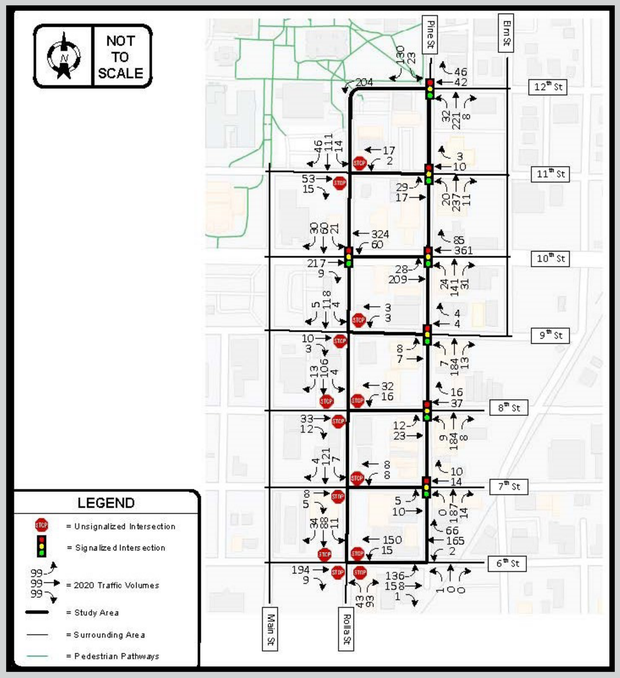
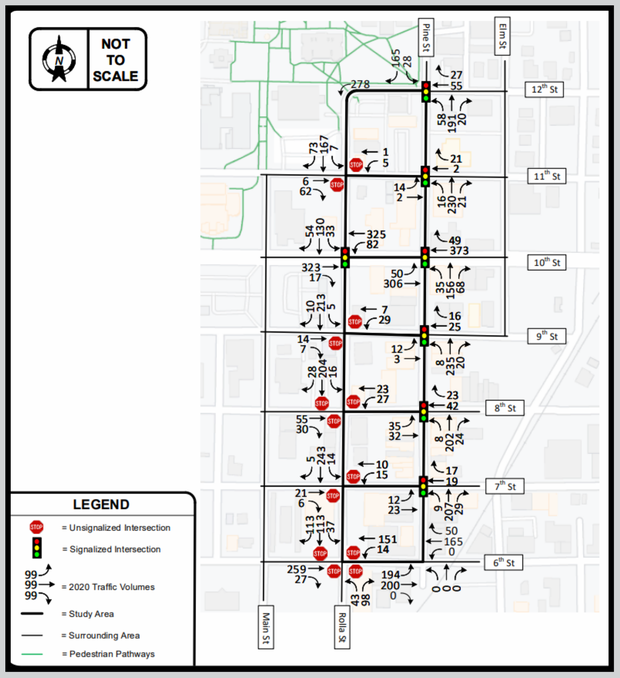
Traffic (2020)

Morning Peak Traffic Volumes

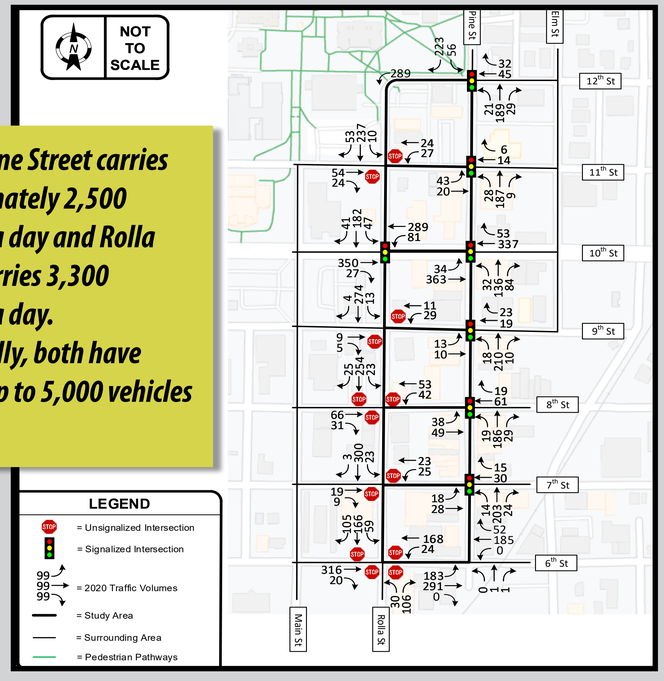


Mid-day Peak Traffic Volumes

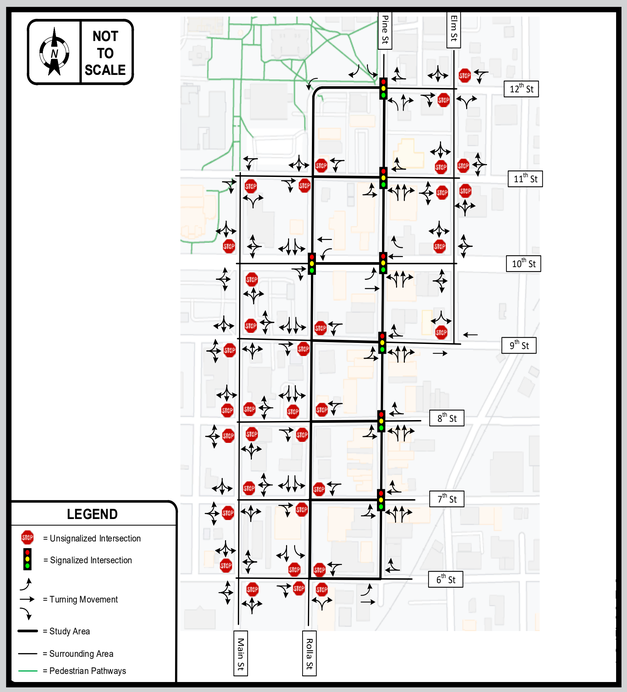


Today, Pine Street carries approximately 2,500 vehicles a day and Rolla Street carries 3,300 vehicles a day. Historically, both have carried up to 5,000 vehicles a day.

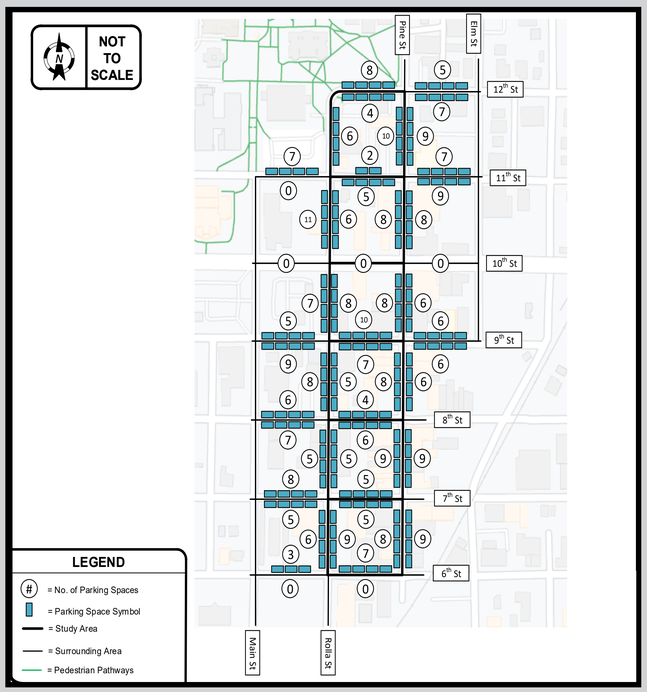
Afternoon Peak Traffic Volumes



Intersection Control



Parking



This board shows existing traffic volumes, intersection control and parking supply. Each of these transportation elements plays an important role downtown.

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Station 2
Existing Conditions

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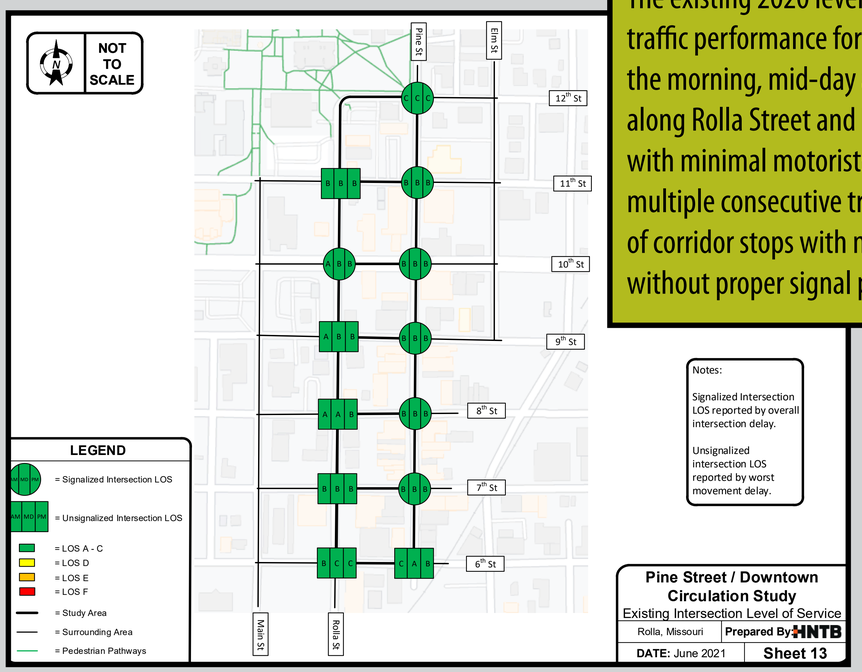
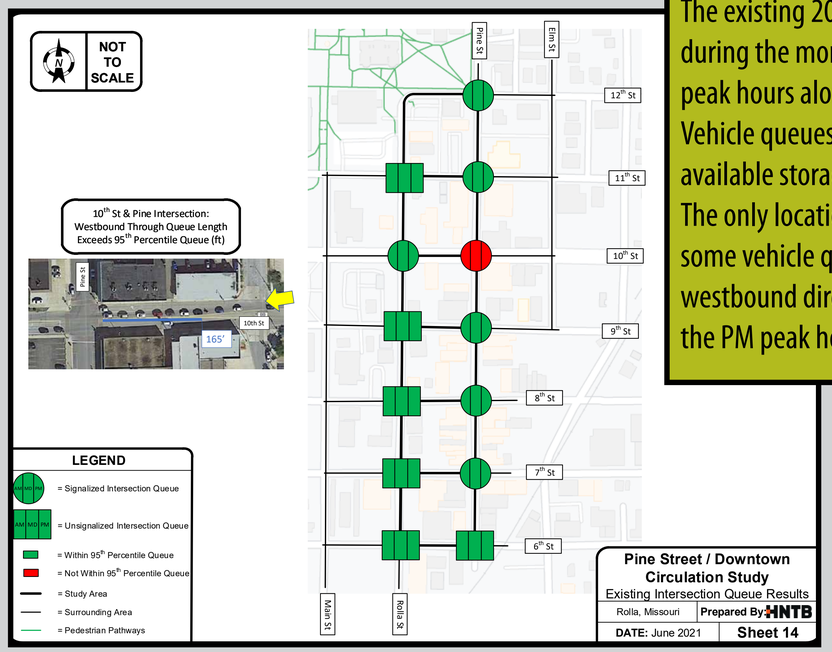
Existing 2020 Intersection Level of Service (LOS)



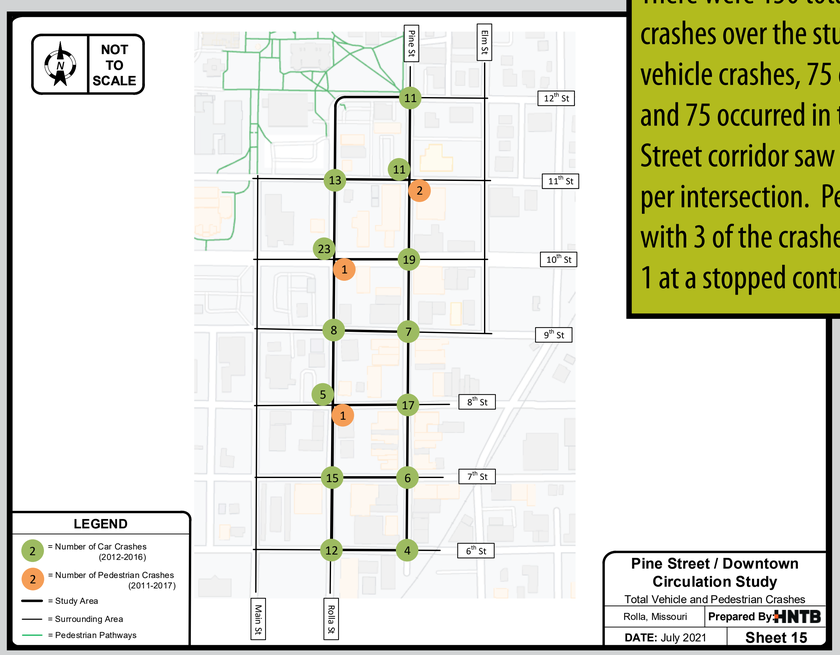
The existing 2020 level of service, which measures traffic performance for vehicular traffic during the morning, mid-day and afternoon peak hours along Rolla Street and Pine Street is very good with minimal motorists delay. However, with multiple consecutive traffic signals, a high number of corridor stops with minimal delay could occur without proper signal progression.

Existing 2020 Intersection Queue Results



The existing 2020 vehicle queues were analyzed during the morning, mid-day and afternoon peak hours along Rolla Street and Pine Street. Vehicle queues were found to be within the available storage during most peak hours. The only location that was found to have some vehicle queue storage problems was the westbound direction at 10th and Pine Street in the PM peak hour.

Safety - Crash Data



There were 150 total vehicle crashes and 4 pedestrian crashes over the study period. Of the 150 total vehicle crashes, 75 occurred in the Pine St. corridor and 75 occurred in the Rolla St. corridor. The 10th Street corridor saw the greatest number of crashes per intersection. Pedestrian crashes were spread out with 3 of the crashes occurring at a traffic signal and 1 at a stopped controlled intersection.

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Station 3
Parking

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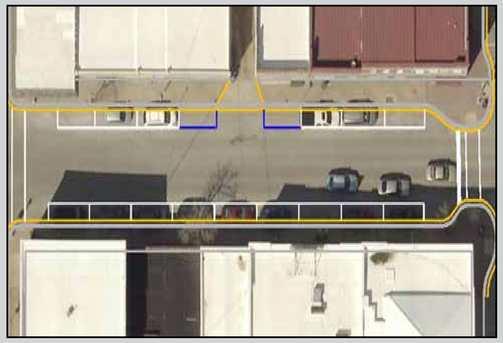
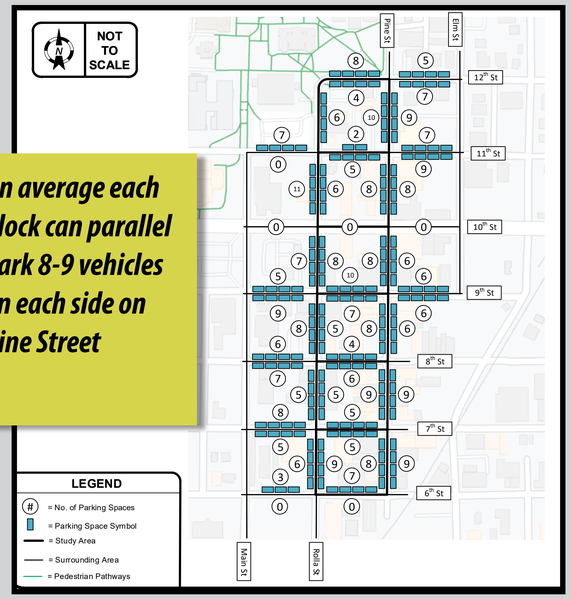
Parallel /Current Parking:

The current parallel parking configuration on Pine Street primarily allows nine parking spaces on each side of of a typical block. Some blocks have more, some blocks have less. Within the study area there are a total of 327 on-street parking spaces available today per the exhibit below.

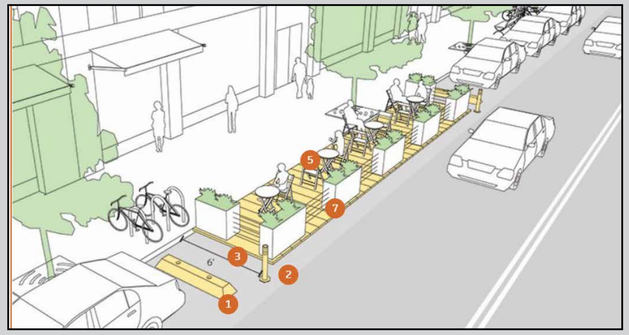




On average each block can parallel park 8-9 vehicles on each side on Pine Street

Potential Parklet Concept:

Parklets are a small public area that aim to improve pedestrian experience and create a safer, more walkable community. While parklets do use existing parking spots, they provide businesses the opportunity to create an outdoor patio experience that could be temporary based on the season.



Potential Mixed Parking (Parallel and Angle):

An additional option is to maintain parallel parking on one side of the street and modify the other side of the street to angle. This would require reducing traffic to one lane, one way and **add 5 parking spots** on a typical block. In order to increase the parking stalls, 45 degree angle parking would be utilized.

Angle parking is easier for people to pull into versus parallel parking. One drawback may be blind spots while backing out when leaving the parking spot.

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Station 4
Intersection Control

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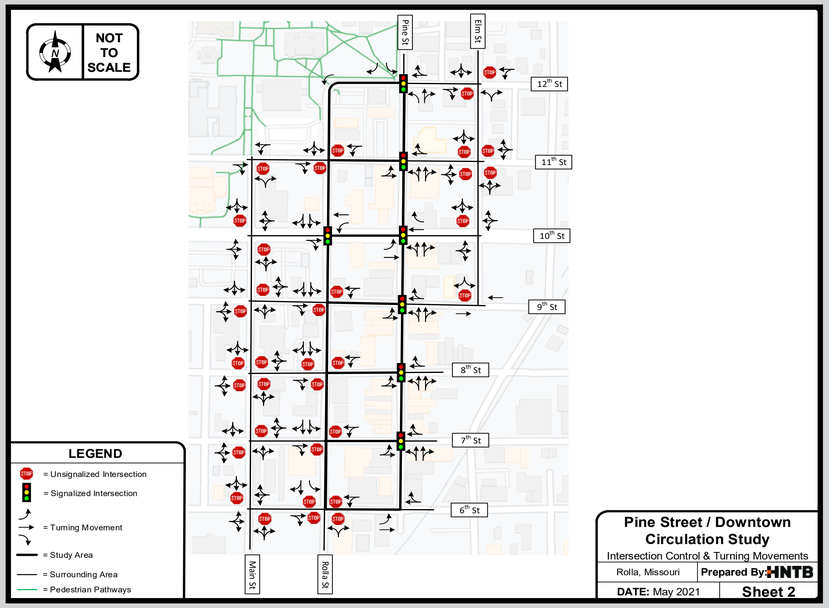
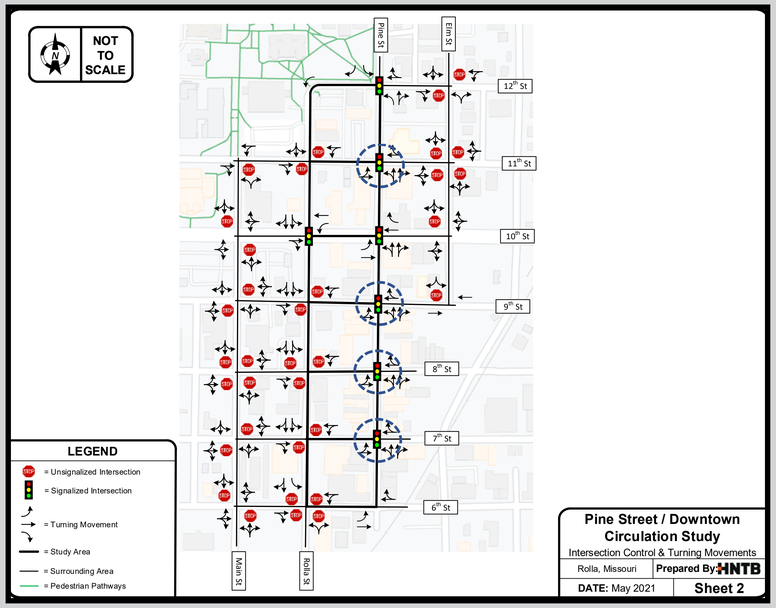
Existing Intersection Control:

Today, Pine Street has a traffic signal at every intersection between 7th Street and 12th Street. The only other traffic signal in the study area is at 10th and Rolla St.



Potential Signal Removal:

Based on reduced traffic volumes today and the goal of making downtown a more walkable area, the four intersections that are circled are locations of potential traffic signal removal.



Existing Signal Warrants (Pine Street and Rolla Street):

The locations where signals are recommended based on existing traffic and pedestrian volumes are :

- 12th Street and Pine Street
- 10th Street and Pine Street
- 10th Street and Rolla Street

Future Signal Warrants (Pine Street and Rolla Street):

When future traffic is considered, a traffic signal is also warranted and recommnded at the 6th Street and Rolla Street intersection due to anticipated traffic volumes.

Future Signal Removal Considerations:

Due to anticipated future volumes, traffic signal removals may be considered at the following intersections:

- 11th Street and Pine Street
- 9th Street and Pine Street
- 8th Street and Pine Street
- 7th Street and Pine Street

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Station 4
Intersection Control

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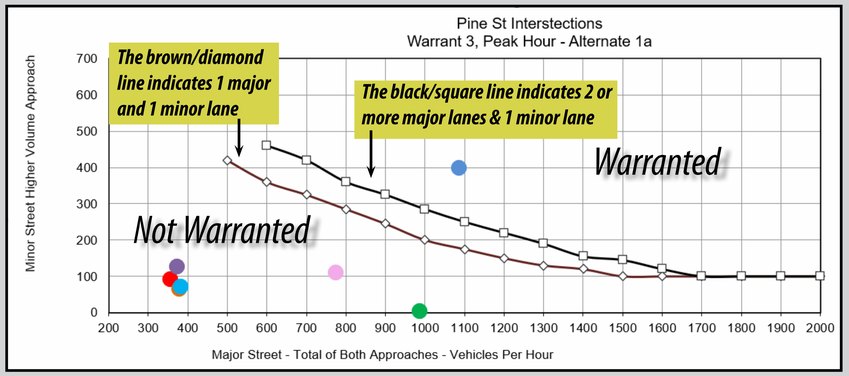
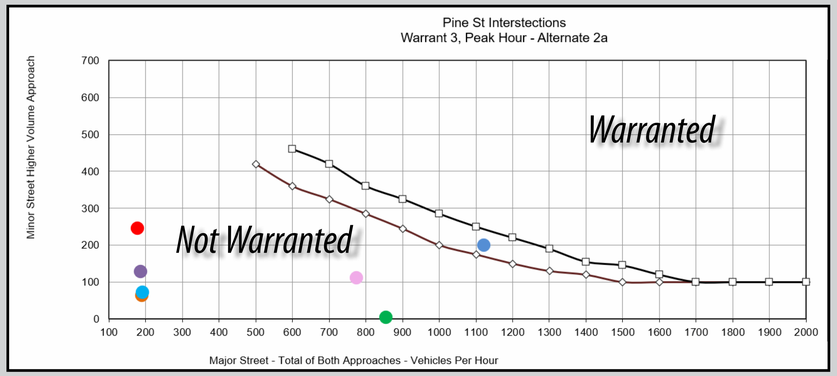
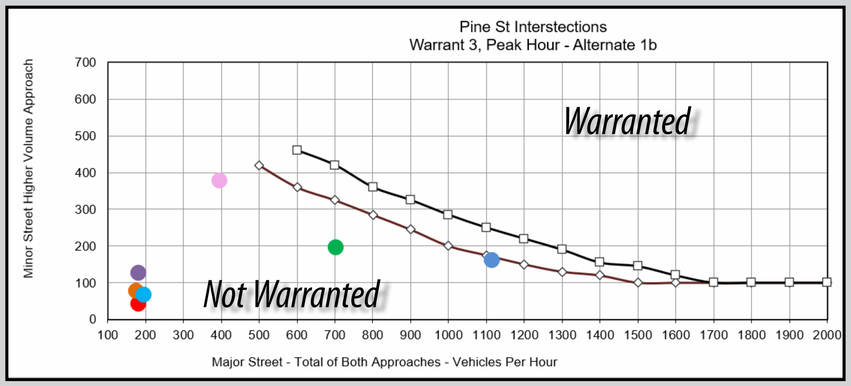
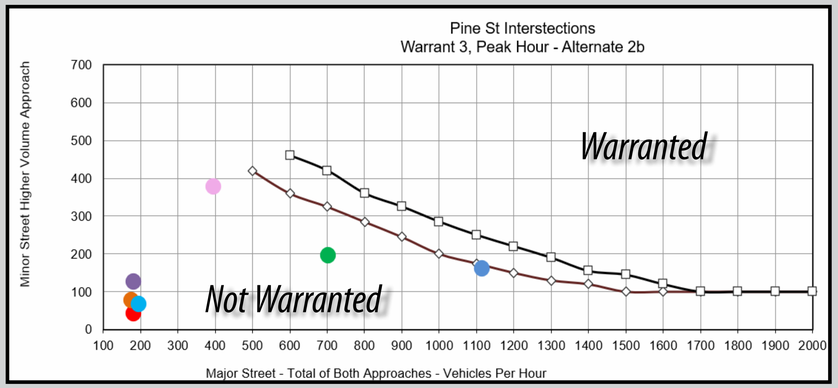
Pine Street Future Signal Warrants:

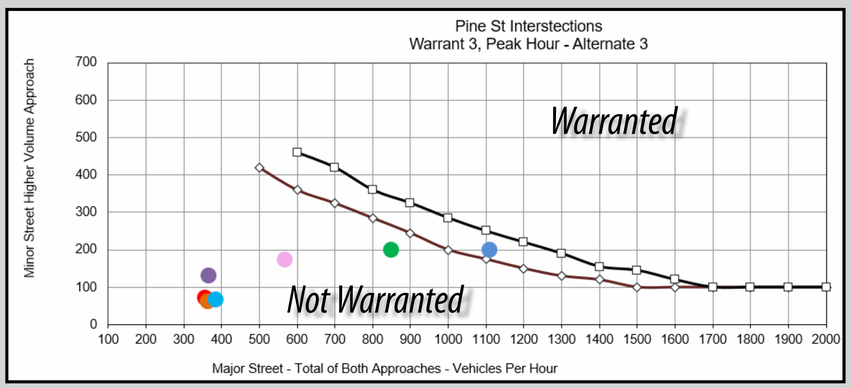
- 1 Lane Major & 1 Lane Minor
- 2 or More Lanes Major & 1 Lane Minor
- Pine & 12th PM Future
- Pine & 11th PM Future
- Pine & 10th PM Future
- Pine & 9th PM Future
- Pine & 8th PM Future
- Pine & 7th PM Future
- Pine & 6th PM Future











The graphs show if an intersection warrants a traffic signal based on future peak hour volumes using national traffic standards.

Only Pine Street and 10th Street warrants a traffic signal based on traffic demand. On Rolla Street, only 6th Street warrants a traffic signal in the future.

* Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

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Station 5
Traffic Circulation Alternatives

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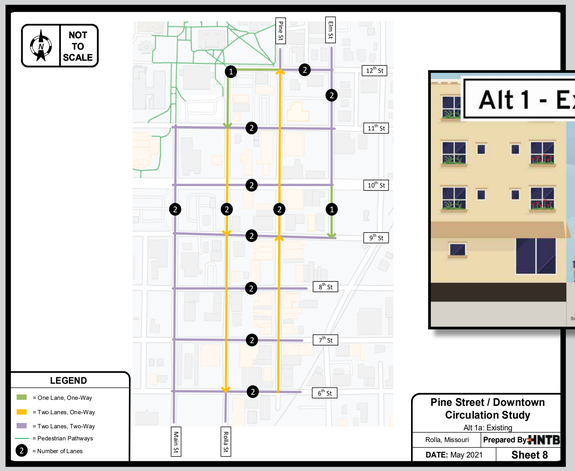
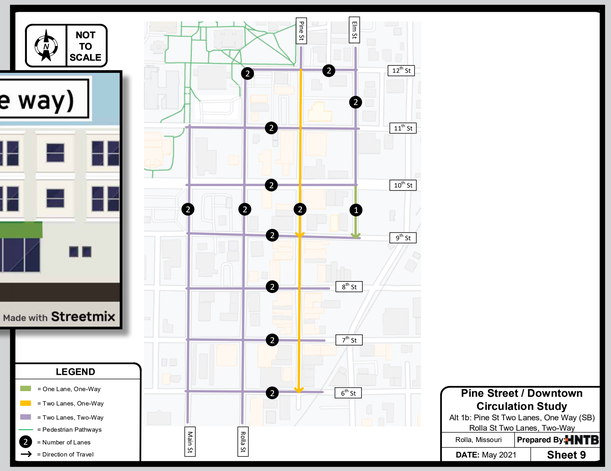
Alternative 1a (existing):

Existing circulation - Pine Street two lane, one-way northbound and Rolla Street two lane, one-way south-bound.



Alternative 1b:

Pine Street two lane, one-way southbound and Rolla Street two lane, two-way.



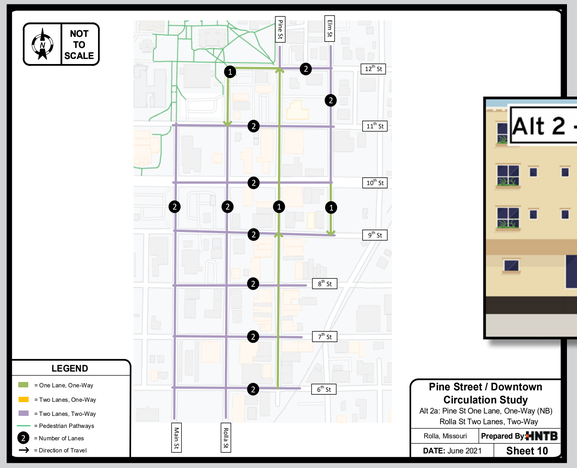
Other Considerations:

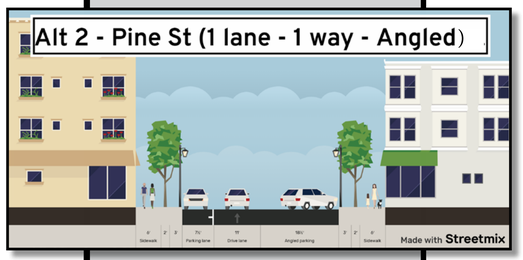
The following are additional considerations that can be incorparted into the Alternatives.

- Designated Bike Lanes
- Wider Sidewalks
- Parklets
- Back-in Parking

Alternative 2a

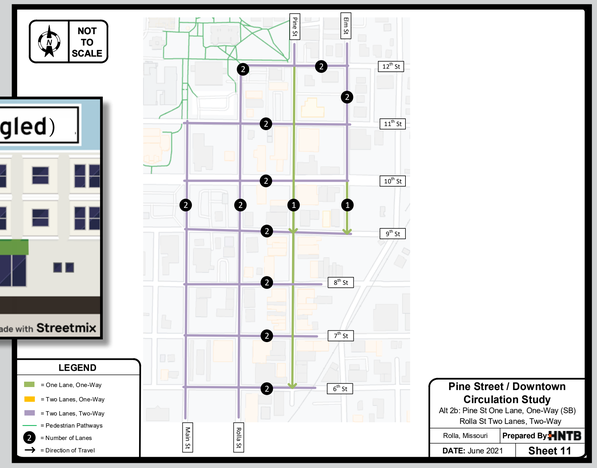
Pine Street one lane, one-way northbound and Rolla Street two lanes, two-way.





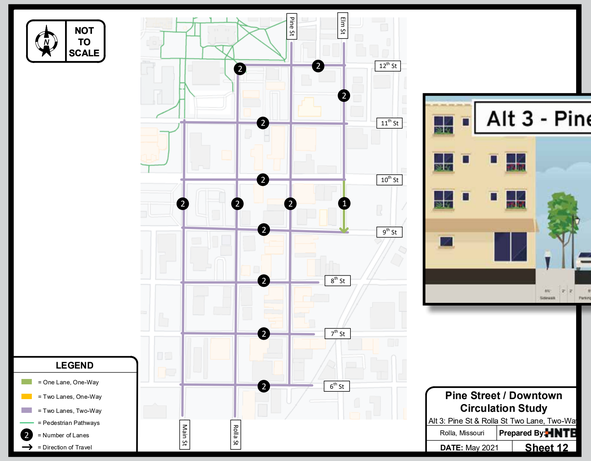
Alternative 2b:

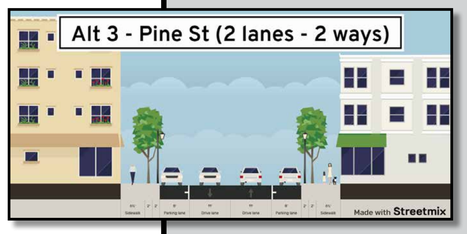
Pine Street one lane, one-way southbound and Rolla Street two lanes, two-way.



Alternative 3:

Pine Street and Rolla Street two lane, two-way.





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Station 6
Evaluation Matrix

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The following matrix evaluates the traffic, safety, economic, and construction of each of the five alternative presented. Place a green dot next to the alternative you like the best. We will then ask the public for their input at the end of August at a public open house.

Downtown Rolla Improvements

Alternatives Screening

Alternative	Transportation Evaluation											
	Traffic				Safety		Economic			Engineering	Support	
	Existing Traffic Operations	Future Traffic Operations[1]	Existing Vehicle Queues	Future Vehicle Queues	Pedestrian Impact	Vehicular Impact[2]	Parking Impact	Delivery Impact	Access to Businesses	Construction Costs	Downtown Stakeholder Input	Public Input
Alternative 1a (Existing) Pine St. 2-Lanes, 1-way NB, Rolla St. 2-Lanes, 1-way SB										$0		
Alternative 1b Pine St. 2-Lanes, 1-way SB, Rolla St. 2-Lanes, 2-way										$1,405,000		
Alternative 2a Pine St. 1-Lane, 1-way NB, Rolla St. 1-Lane, 2-way										$1,255,000		
Alternative 2b Pine St. 1-Lane, 1-way SB, Rolla St. 1-Lane, 2-way										$1,505,000		
Alternative 3 Pine St. & Rolla St. 1-lane, 2-way										$1,510,000		

High Impact/No or Low Achievement

Substantial Impact/Slight Achievement

Moderate Impact/Moderate Achievement

Slight Impact/Substantial Achievement

No or Low Impact/High Achievement

[1]Ratings assume no addition improvements or changes in traffic control, however with 11th, 9th, 8th, and 7th Street intersections on Pine converted to AWSC the operations are anticipated to stay the same or improve

[2]Converting traffic signals to stop control is assumed to increase the crash modification factor for vehicular accidents

Engineering Cost Estimate Assumptions:

1. Approximately 1,250 linear feet of curb on each side of Pine from 6th Street to 10th Street
2. Assumes no curb-line or sidewalk improvements on Rolla Street
3. Assumes no parking spot pavement marking on Rolla Street

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Station 7
Alternative Comments

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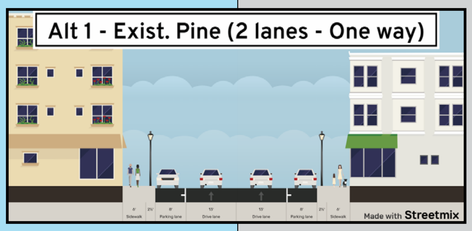
Tell us what you think about each of the five alternatives. What do you like? What do you not like? Do you have a different idea?

Alternative 1a:

Existing circulation - Pine Street two lane, one-way northbound and Rolla Street two lane, one-way southbound.

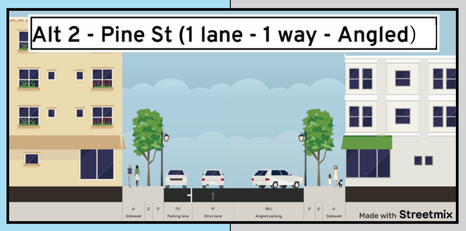


Alternative 1b:

Pine Street two lane, one-way converting to southbound and Rolla Street two lane, two-way.

Alternative 2a:

Pine Street one lane, one-way northbound and Rolla Street two lanes, two-way.



Alternative 2b:

Pine Street one lane, one-way southbound and Rolla Street two lanes, two-way.

Alternative 3:

Pine Street and Rolla Street two lane, two-way.