Omaha Urban Core

Street Reconfiguration Study

Project Number MAPA-28 (157) - CN 22916

OPW 54512

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Acknowledgements

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Executive Summary

The City of Omaha evaluated the feasibility of street reconfigurations in the downtown area with the intent to improve safety, accessibility, and operations for all modes of travel. The changes considered as part of this evaluation included:

- **Reconfiguration of one-way streets for two-way operation**
- **Narrowing or reducing the number of vehicle lanes to support bike lanes**
- **Enhancements to on-street parking, sidewalks and crossings**
- **Freeway ramp removal and reconfiguration**

The study area included streets east of Saddle Creek Road between Leavenworth Street and Cuming Street. Altogether there were 59 corridors identified in the study area for consideration as part of the study. These streets were screened and grouped into three specific tiers:

Tier 1	Candidate street corridors for potential reconfiguration from one-way to two-way operation.
Tier 2	Candidate street corridors for potential lane reduction or lane narrowing to accommodate bike lanes and other uses.
Tier 3	Lower volume candidate street corridors that could benefit from potential changes.

The study effort included determining if street changes would be feasible. This assessment process included existing conditions analysis, a safety and crash history evaluation, and testing future traffic demand.

The Streetcar corridors, Farnam and Harney Streets, were not included as part of this study because Streetcar and the accompanying protected bikeway project were active and ongoing.

The Dodge and Douglas Street one-way pairs are part of the State Highway System and were not considered candidates for two-way operation or lane reduction. These streets are being maintained as arterial corridors to support motor vehicle mobility and transit, which includes ORBT routes.

Planning level street concepts were developed for the selected Tier 1 and Tier 2 street corridors. The project Steering Committee supported the concept refinement process which resulted in a set of 25 street corridor reconfiguration concepts.

A comparative benefits assessment was performed to develop a general priority order for future implementation of the Tier 1 and Tier 2 corridors. Planning level cost estimates were prepared to support the benefits comparison and provide a starting place for developing budgetary project costs.

The project Steering Committee included representatives from Omaha Public Works, Omaha Planning, MAPA, Metro Transit and NDOT. The committee was engaged throughout the study including involvement with concept reviews.

A freeway ramp removal evaluation was conducted to determine the feasibility of removing or reconfiguring the freeway ramps that serve the urban core. This evaluation determined if any freeway on or off ramp that serves downtown is removed, there is not sufficient capacity in the remaining ramps and adjacent streets to meet the demand and prevent over-capacity conditions. Essentially, removing a ramp in one location requires a new ramp in the same general area to prevent over-capacity conditions at other ramp terminal locations. The evaluation did identify some options for reconfiguring ramps that would allow for additional redevelopment areas.

How to use this feasibility study:

The information provided in this feasibility study is intended to support future decision-making for urban core roadway enhancements. Key items to know:

1. Reconfiguration concepts for 25 urban core streets are developed and included.
2. Street reconfiguration cost estimates show an average cost of about $270k per city block (not including pavement rehabilitation or replacement).
3. Engineering design is required for each project selected to move forward.
4. For projects involving reconfiguration from one-way to two-way operation, completing one-way couplets together is a preferred approach.
5. While a project benefits ranking was performed, projects can be implemented in any order, at the City's discretion.
6. Some reconfiguration projects may move forward based on needs related to redevelopment projects or along with street rehabilitation activities.

Reconfiguring the urban core streets requires a long-term strategy and flexibility. There will be multiple paths and opportunities for implementation as the City continues urban core investment.

1 Introduction

The City of Omaha evaluated the feasibility of street reconfigurations in the downtown area with the intent to improve safety, accessibility, and operations for all modes of travel. The area included in this study is generally bounded by Saddle Creek Road and the Missouri River (west to east) and Leavenworth Street and Cuming Street (south to north). This study area is referred to as the "urban core" throughout this report document *(see Figure 1).*

This urban core street reconfiguration evaluation was conducted to identify feasible street configuration changes that support enhanced travel accessibility for all types of travelers in the downtown area. The following changes were considered as part of this feasibility study:

- Reconfiguration of one-way streets for two-way operation
- Narrowing or reducing the number of vehicle lanes to provide opportunity for bike lanes and other travel amenities in conformance with the City's Complete Streets Policy
- On-street parking enhancements, sidewalk features, street crossing enhancements, and landscaping areas
- Elimination and realignment of freeway ramps in the downtown area

The study identifies streets in the urban core where street reconfiguration is feasible. Street reconfiguration concepts were developed to test improvement options and also to allow for a comparative ranking process. The information provided in this feasibility study is intended to support future decision making related to possible urban core roadway enhancements.

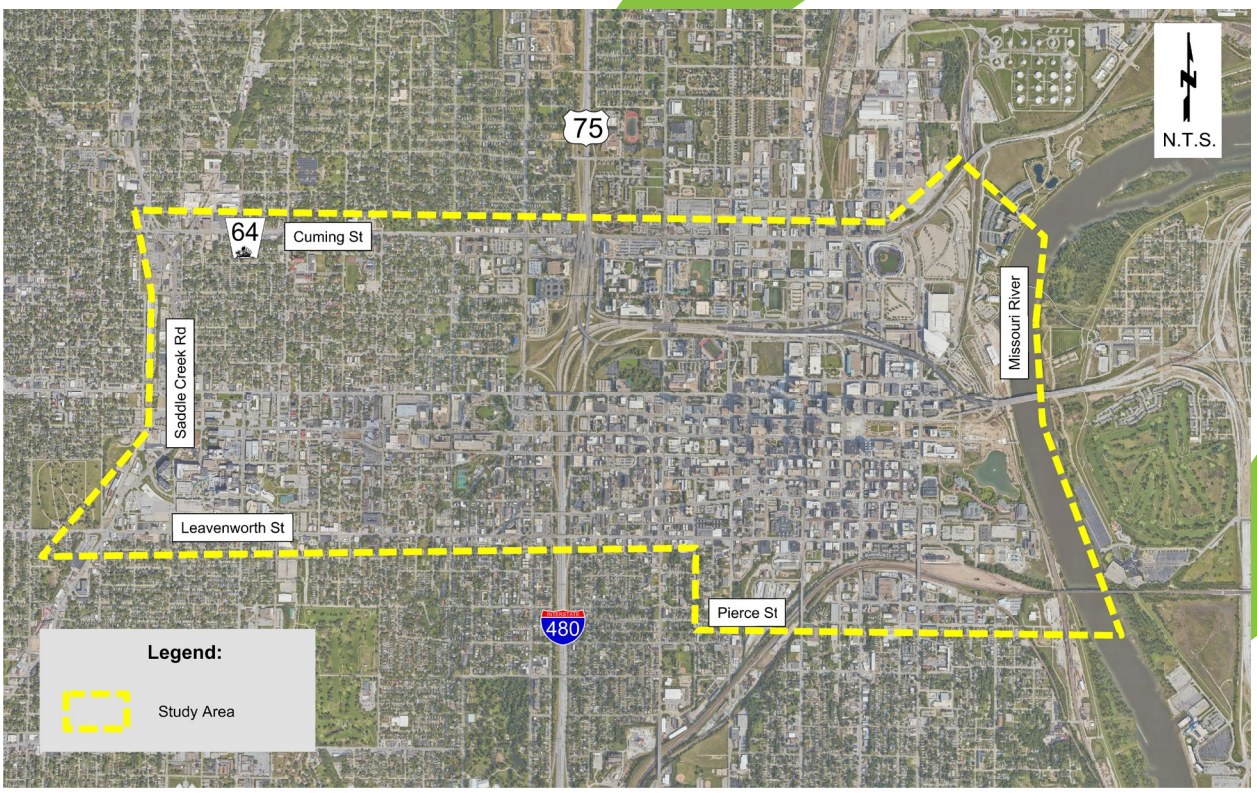

Figure 1: Study Area

1.1 Report Organization

The remainder of the report is organized in the following chapters:

- 2 Corridor Screening & Grouping
- 3 Existing Conditions
- 4 Concept Development & Evaluation
- 5 Ramp Analysis
- 6 Recommended Concepts
- 7 Corridor Cost Estimates
- 8 Corridor Benefits Scoring & Ranking
- 9 Findings & Application

2 Corridor Screening & Grouping

This chapter documents the procedures for screening study area street corridors to determine which streets in the study area were best suited for potential street reconfiguration.

2.1 Corridor Tier Classification

The urban core study area included 59 street corridors initially identified for consideration in the evaluation. Altogether this added up to over 110 miles of urban streets. One of the initial study steps was to screen and classify the street corridors into defined tiers. There were three specific corridor tiers identified as part of the study scope of work. The corridor groupings were noted as Tier 1, Tier 2 and Tier 3 corridors and were defined as:

- **Tier 1 –** Candidate street corridors for potential conversion from one-way to two-way operations.
- **Tier 2 –** Candidate street corridors for potential lane reduction or lane narrowing to accommodate other multi-purpose uses such as transit lanes, bicycle lanes, parking areas, and curbside operations.
- **Tier 3 –** Lower volume candidate street corridors with cross-sections of three lanes or less that could benefit from potential changes including lane configuration modifications, on-street parking, and pedestrian enhancements.

The screening process was performed to identify corridor groupings that fit into each of the defined tier categories.

2.2 Initial Screening Process

Initial screening steps included a review of volume-to-capacity (v/c) ratios for all corridors under a potential two-way configuration or with reduced lane capacities representing a reduction or repurposing of lanes. A method to correlate planning level v/c ratios to Level of Service (LOS) was utilized. This v/c to LOS relationship was based on the Omaha Master Plan – Transportation Element (2012) and is summarized in *Table 1.* Additional screening steps included a review of highway system roads, available pavement width on the corridors as well as consideration for concurrent projects.

Table 1: Level of Service Relationship to Volume-to-Capacity

Level of Service	Volume-to-Capacity
LOS A-B	Ratios less than 0.5
LOS C	Ratios 0.5 to 0.7
LOS D	Ratios 0.7 to 0.85
LOS E	Ratios 0.85 to 1.0
LOS F	Ratios 1.0 or greater

The capacity thresholds were defined based on the MAPA Capacity Demand Model Appendix Two: Capacities assuming heavy access conditions to correlate with the urban core area. These capacities are summarized in *Table 2.*

Table 2: MAPA Planning Level Road Capacity Thresholds

Number of Lanes	Turn Lanes	Capacity (ADT)
2 Lanes Undivided	No turn lanes	11,600
	With turn lanes	13,600
3 Lanes	Center turn lane	15,400
4 Lanes Undivided	No turn lanes	24,400
	With turn lanes	30,200
5 Lanes	Center turn lane	32,200

Capacity Screening: For the initial screening of potential two-way and reduced cross-section configurations, it was determined a v/c ratio near or greater than 0.85 (LOS E) would remove the road corridor from reconfiguration consideration. This screening step resulted in three street segments being removed:

- Cuming Street from Saddle Creek Road to 27th Street
- Dodge Street from Saddle Creek Road to 31st Street
- Saddle Creek Road from Cuming Street to Leavenworth Street

It is important to note the Cuming Street corridor from 10th Street to 27th Street was specifically not screened, though it fell outside the v/c thresholds. Cuming Street was included to allow consideration of access management concepts.

System Screening: Dodge Street from Saddle Creek Road to 31st Street and the Dodge and Douglas Street one-way couplet from 31st Street east are part of the State Highway System (US Highway 6). It was determined these streets should not consider lane reductions or two-way conversion in order to best maintain their primary functionality of supporting motor vehicles and transit (ORBT) through the urban core. NDOT indicated changes to these routes may require relinquishment of the highway designation. Maintaining Dodge Street and Douglas Street keeps the highway as an effective alternate route in the urban core when other streets are reduced in capacity either by temporary or permanent restrictions.

Pavement Width Screening: Existing pavement widths were reviewed to determine if sufficient width was available to allow removal of traffic lanes to support enhancements such as bicycle lanes and additional parking. Minimum vehicle lane widths of 11 feet were considered in the assessment and if a street corridor did not have excess pavement to support changes, the corridor was removed from further screening.

Concurrent Projects Screening: Ongoing projects, such as the Streetcar (Farnam Street/ Harney Street) and Central 24th Street projects, were identified to avoid overlapping study efforts. Corridors where there are other active projects or focused planning efforts in process were removed from further screening.

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The application of these initial screening points resulted in the removal of several corridors from further conceptual screening. The list of screened corridors is summarized in *Tables 3* and *4.* A more detailed summary of the corridor segments removed with explanations is included in *Appendix B.*

Table 3: Corridors Removed Due to Pavement Width

Corridors			
11th Street	35th Avenue	39th Street	Dewey Avenue
25th Avenue	36th Street	Saddle Creek Road	Davenport Street
26th Street	37th Street	Pierce Street	Cass Street
26th Avenue	38th Street	Mason Street	California Street
35th Street	38th Avenue	Jones Street	Burt Street

Table 4: Corridors Removed Due to Concurrent Projects

Corridor	Beginning Cross Street	End Cross Street	Project Overlap
8th Street	Capitol Avenue	Harney Street	Omaha Streetcar
10th Street	Cuming Street	Harney Street	Omaha Streetcar
15th Street	Capitol Avenue	Farnam Street	Project Beacon
24th Avenue/ 25th Street	Dodge Street	Leavenworth Street	24th St Multimodal Study
24th Street	Dodge Street	Pierce Street	24th St Multimodal Study
24th Street	Cuming Street	Dodge Street	Creighton 24th St Enhancement Project
42nd Street	Dodge Street	Leavenworth Street	Future UNMC Project
Burt Street	30th Street	17th Street	Future Creighton Bikeway Project, Planned Street Vacation
Capitol Avenue	10th Street	8th Street	Omaha Streetcar
Cuming Street	Saddle Creek Road	27th Street	NW Radial Highway Project
Emile Street	Saddle Creek Road	39th Street	UNMC Bike Trail Project, Street Vacation
Farnam Street	Saddle Creek Road	8th Street	Omaha Streetcar Study
Harney Street	42nd Street	10th Street	Future Federal Project and Study, Omaha Streetcar Study
Leavenworth Street	Saddle Creek Road	31st Street	Leavenworth St Lane Configuration Project
Leavenworth Street	13th Street	7th Street	Leavenworth St Lane Configuration Project
Mike Fahey Street	17th Street	10th Street	Private Plans Project
Pierce Street	8th Street	6th Street	Future Neighborhood Project

2.3 Corridor Tier Identification

An evaluation method was developed to assist in the "Tier" identification of the remaining corridors deemed feasible for conceptual reconfiguration. Multiple data sources were considered to develop a scoring system that would support the tier classification effort. The data types and sources are summarized in *Table 5.*

Table 5: Tier Classification Evaluation Data Inputs

Data Source	Data Items
City of Omaha	○ Traffic Volumes ○ Average Speed* ○ 85th Percentile Speed* ○ AADT
2023 Vision Zero Omaha Action Plan	○ High Risk Segment Score ○ Corridor Project Priority
2024 ConnectOmaha: Active Mobility Plan	○ Pedestrian Latent Demand ○ Bicycle Latent Demand ○ Pedestrian LOS ○ Bicycle LOS

** Speed data provided by Omaha Public Works*

Overall, this data was sorted into five categories: Traffic Volume, Speed Data, Vision Zero, Bicycle Data, and Pedestrian Data. Each criteria set was assigned point ranges for scoring with a maximum of 100 points possible per corridor. To simplify presenting the Tier scoring process summary, the scoring criteria is shown in two parts. *Table 6* includes the summary for Traffic Volume, Speed, and Vision Zero scoring criteria. *Table 7* includes the summary of the bicycle and pedestrian data scoring method. A detailed description of the scoring methodology is included after each table.

Table 6: Traffic, Speed and Vision Zero Evaluation Criteria

Traffic Volume Analysis - 15 Points

Minimum AADT	Maximum AADT	Points Awarded
10,000	*	**15**
8,000	9,999	**12**
6,500	7,999	**10**
5,000	6,499	**8**
3,500	4,999	**6**
2,000	3,499	**4**
1,000	1,999	**3**
500	999	**2**
0	499	**1**

Corridor ADTs were averaged along the length of each corridor. Between 1 and 15 points were awarded for the calculated average AADT along the individual corridor. A higher number of points was awarded to streets with heavier travel demand and lower points for less busy streets.

Speed Data Analysis - 20 Points

Average Speed	Points Awarded	85th Percentile Speed	Points Awarded
>10 MPH Above Speed Limit	**10**	>10 MPH Above Speed Limit	**10**
5-10 Above Speed Limit	**8**	5-10 Above Speed Limit	**8**
0-5 Above Speed Limit	**6**	0-5 Above Speed Limit	**6**
At Speed Limit	**5**	At Speed Limit	**5**
0-5 Below Speed Limit	**4**	0-5 Below Speed Limit	**4**
5-10 Below Speed Limit	**2**	5-10 Below Speed Limit	**2**

Speeds were averaged along the length of each corridor. Between 1 and 10 points were awarded for the average speed along the individual corridor. A higher number of points was given to the streets with average speeds above the posted speed limit to help identify safety issue areas.

Between 1 and 10 points were awarded for the average corridor 85th percentile speed along the individual corridor. Similarly, a higher number of points was given to the streets with 85th percentile speed above the posted speed limit to help identify safety issue areas.

(table continued on next page)

Vision Zero Data Analysis - 25 Points

High-Risk Score		
Min Score	Max Score	Points Awarded
8.00	10.00	**20**
7.00	7.99	**18**
6.50	6.99	**15**
6.00	6.49	**12**
5.50	5.99	**10**
5.00	5.49	**8**
4.00	4.99	**6**
3.00	3.99	**4**
2.00	2.99	**2**

Vision Zero Corridor Project Priority	Points Awarded
4 or 5	**3**
3	**2**
1 or 2	**1**

Vision Zero Road Diet Candidate	Points Awarded
Highly Feasible	**2**
Possibly Feasible	**1**

Between 2 and 20 points were awarded for the average "High-Risk" score along the individual corridor. Individual "High-Risk" scores for certain blocks/corridors were scored in Vision Zero Omaha on a 1 to 10-point scale, with 10 points being the highest and 1 point being the lowest possible score.

Up to 3 points were awarded for the highest Vision Zero corridor project priority along the individual corridor. A score of 5 is the highest project priority a corridor can receive, with 1 being the lowest. This candidacy was previously determined in the Vision Zero Omaha Plan. If the individual corridor was not listed, it received 0 points

Up to 2 points were awarded for the highest Vision Zero Road Diet Candidacy located along the individual corridor, with 2 points awarded for "Highly Feasible" corridors and 1 point awarded for "Possibly Feasible" corridors. This candidacy was previously determined in the Vision Zero Omaha Plan. If the individual corridor was not listed, it received 0 points.

The summary of the Bicycle and Pedestrian Data scoring approach is summarized in *Table 7.*

Table 7: Bicycle and Pedestrian Corridor Evaluation Criteria

Bicycle Data Analysis - 20 Points			
Latent Demand Score	**Points Awarded**	**Bike Trail Priority**	**Points Awarded**
Very High	**5**	1 or 2	**3**
High	**4**	3	**2**
Medium	**3**	4 or 5	**1**
Low	**2**	N/A	**0**
Very Low	**1**		
N/A	**0**		
Highest LOS	**Points Awarded**	**Lowest LOS**	**Points Awarded**
F	**6**	F	**6**
E	**5**	E	**5**
D	**4**	D	**4**
C	**3**	C	**3**
B	**2**	B	**2**
A	**1**	A	**1**
N/A	**0**	N/A	**0**

Up to 5 points were awarded for the highest Bicycle Latent Demand Score (BLDS) along the individual corridor. BLDS is an active mobility measurement used to estimate the latent or potential demand for bicycle travel along a corridor, with classifications ranging from "Very High" to "Very Low." If the individual corridor did not have a listed BLDS, it received 0 points.

Up to 3 points were awarded for the highest Bike Trail Priority along the individual corridor. City of Omaha corridors were previously studied and assigned a Bike Trail Priority value on a 1 to 5 scale, with 1 being the highest and 5 being the lowest, based on existing or proposed bike facilities, expected bicycle demand in the area, and adjacency to the City of Omaha's overall bike network. If the individual corridor did not have a listed Bike Trail Priority score, it received 0 points.

Up to 6 points were awarded for both the highest and lowest bike LOS segment values along the corridor. LOS values were gathered from the Connect Omaha: Active Mobility Plan. If there were no listed LOS values along any corridor segments, it received 0 points.

(table continued on next page)

Pedestrian Data Analysis - 20 Points

Latent Demand Score	Points Awarded	Pedestrian Priority	Points Awarded
Very High	**5**	1 or 2	**3**
High	**4**	3	**2**
Medium	**3**	4 or 5	**1**
Low	**2**	N/A	**0**
Very Low	**1**		
N/A	**0**		

Highest LOS	Points Awarded	Lowest LOS	Points Awarded
F	**6**	F	**6**
E	**5**	E	**5**
D	**4**	D	**4**
C	**3**	C	**3**
B	**2**	B	**2**
A	**1**	A	**1**
N/A	**0**	N/A	**0**

Up to 5 points were awarded for the highest Pedestrian Latent Demand Score (PLDS) along the individual corridor. PLDS is an active mobility measurement used to estimate the latent or potential demand for pedestrian use along a corridor, with classifications ranging from "Very High" to "Very Low." If the individual corridor did not have a listed PLDS, it received 0 points.

Up to 3 points were awarded for the highest Pedestrian Priority along the individual corridor. City of Omaha corridors were previously studied and assigned a Pedestrian Priority value on a 1 to 5 scale, with 1 being the highest and 5 being the lowest, based on existing pedestrian facilities and expected pedestrian and other multimodal volumes in the area. If the individual corridor did not have a listed Pedestrian Priority score, it received 0 points.

Up to 6 points were awarded for both the highest and lowest pedestrian LOS segment values along the corridor. LOS values were gathered from the Connect Omaha: Active Mobility Plan. If there were no listed LOS values along any corridor segments, it received 0 points.

2.4 Study Corridors

The screening process summarized in Section 2.3 was applied to all remaining eligible study corridors. Once the corridors were scored they were sorted into their appropriate tier category. The corridors are listed in *Tables 8, 9,* and *10*, beginning with Tier 1. An overall corridor score is provided, along with the five subcategory scores. The order of listing is highest scoring corridor to lowest for each Tier. A fully detailed breakdown of the scoring is included in *Appendix C.*

Table 8: Tier 1 Corridors (Candidate Streets for One-Way to Two-Way Reconfiguration)

Corridor	Beginning Cross Street	End Cross Street	Overall Score	Traffic Volume Score	Speed Score	Vision Zero Score	Bicycle Score	Pedestrian Score
St. Mary's Ave[1]	16th St	31st St	**63**	12	11	17	11	12
Leavenworth St	13th St	31st St	**57**	10	11	17	7	12
13th St	Jackson St	Cass St	**53**	8	10	11	13	11
Turner Blvd	Harney St	Dodge St	**53**	6	10	15	14	8
20th St	South of Leavenworth St	Cass St	**51**	4	12	13	11	11
19th St[2]	South of Leavenworth St	Cass St	**48**	4	10	13	11	10
17th St (North)	Capitol Ave	Cass St	**46**	4	12	9	10	11
Park Ave	St. Mary's Ave	Dodge St	**45**	4	6	13	10	12
14th St	Leavenworth St	Capitol Ave	**40**	6	8	9	9	8
15th St	Leavenworth St	Farnam St	**40**	3	10	11	9	7
17th St (South)	Jackson St	Farnam St	**39**	3	8	9	12	7
31st St[3]	Leavenworth St	Harney St	**29**	4	2	9	7	7

[1] *Includes Howard Street (17th to 18th Street)*

[2] *Includes Chicago Street (15th Street to 19th Street)*

[3] *Includes Turner Boulevard (Leavenworth Street to Harney Street) and 30th Street (Farnam Street to Dodge Street)*

Table 9: Tier 2 Corridors (Candidate Streets for Lane Modifications Supporting Multi-Modal)

Corridor	Beginning Cross Street	End Cross Street	Overall Score	Traffic Volume Score	Speed Score	Vision Zero Score	Bicycle Score	Pedestrian Score
Cuming St	13th St	27th St	**73**	15	11	19	14	14
13th St (South)	Pierce St	Jackson St	**72**	15	16	14	15	12
28th St	Dewey Ave	Dodge St	**71**	15	20	8	12	16
10th St	Pierce St	Harney St	**61**	10	11	12	15	13
30th St	Dodge St	Cuming St	**59**	10	7	14	14	14
13th St (North)	Cass St	Cuming St	**53**	8	8	10	13	14
Capitol Ave	10th St	19th St	**48**	4	10	10	13	11
14th St	Cass St	Cuming St	**46**	6	10	6	13	11
Jackson St	13th St	17th St	**46**	4	8	6	16	12
29th St	Harney St	Dodge St	**45**	6	10	6	9	14
40th St	Dewey Ave	Cuming St	**44**	6	8	4	13	13

Table 10: Tier 3 Corridors (Low Volume Candidate Streets for Modification)

Corridor	Beginning Cross Street	End Cross Street	Overall Score	Traffic Volume Score	Speed Score	Vision Zero Score	Bicycle Score	Pedestrian Score
16th St	Leavenworth St	Harney St	**42**	4	8	10	11	9
17th St	Cass St	Cuming St	**39**	4	2	12	9	12
Turner Blvd	Leavenworth St	Harney St	**39**	4	8	4	12	11
Pacific St	6th St	13th St	**35**	4	8	4	7	12
15th St	Chicago St	Mike Fahey St	**34**	4	4	6	9	11
Chicago St	15th St	17th St	**18**	4	12	2	0	0
33rd St	Harney St	Dodge St	**16**	6	8	2	0	0
7th St	Leavenworth St	Jones St	**12**	4	8	0	0	0
12th St	Dodge St	Mike Fahey St	**12**	2	8	2	0	0
22nd St	Leavenworth St	Howard St	**8**	2	2	4	0	0
18th St	Dodge St	Capitol Ave	**7**	3	2	2	0	0
18th St	Jackson St	Howard St	**6**	2	2	2	0	0
18th St	Farnam St	Douglas St	**5**	3	2	0	0	0
34th St	Farnam St	Dodge St	**5**	1	2	2	0	0
16th St*	Farnam St	Capitol Ave	**3**	1	2	0	0	0

** This street connection does not exist today*

The Tier 1 and 2 corridors are shown in *Figure 2.* Tier 3 corridors are shown in *Figure 3.* These figures are included in *Appendix C* at a larger scale.

The establishment of the tier corridor study groups was an important initial process step. The tiered grouping provided the framework necessary to move into more detailed analysis and ultimately conceptual development of feasible street alternatives.

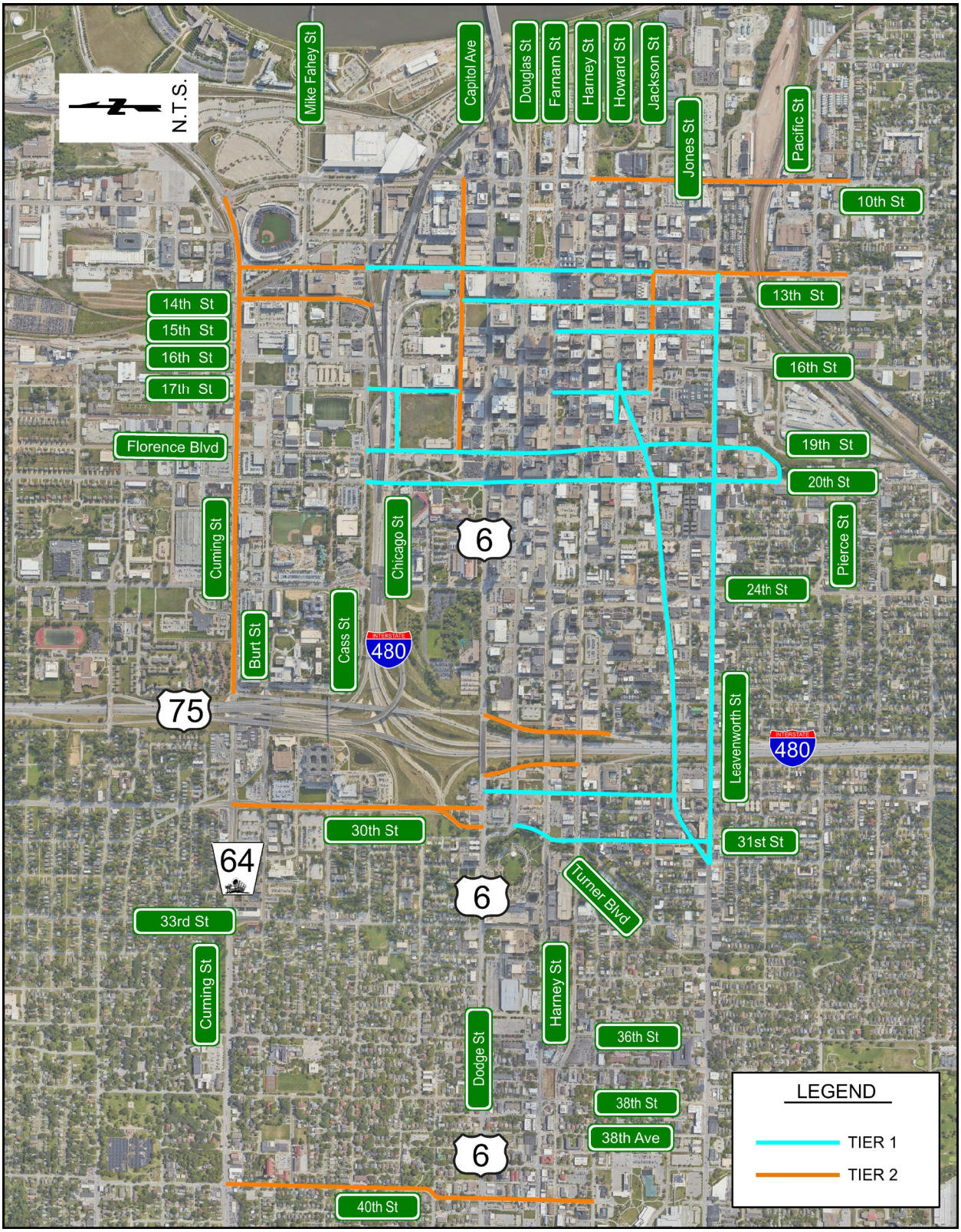


Figure 2: Tier 1 & 2 Corridors

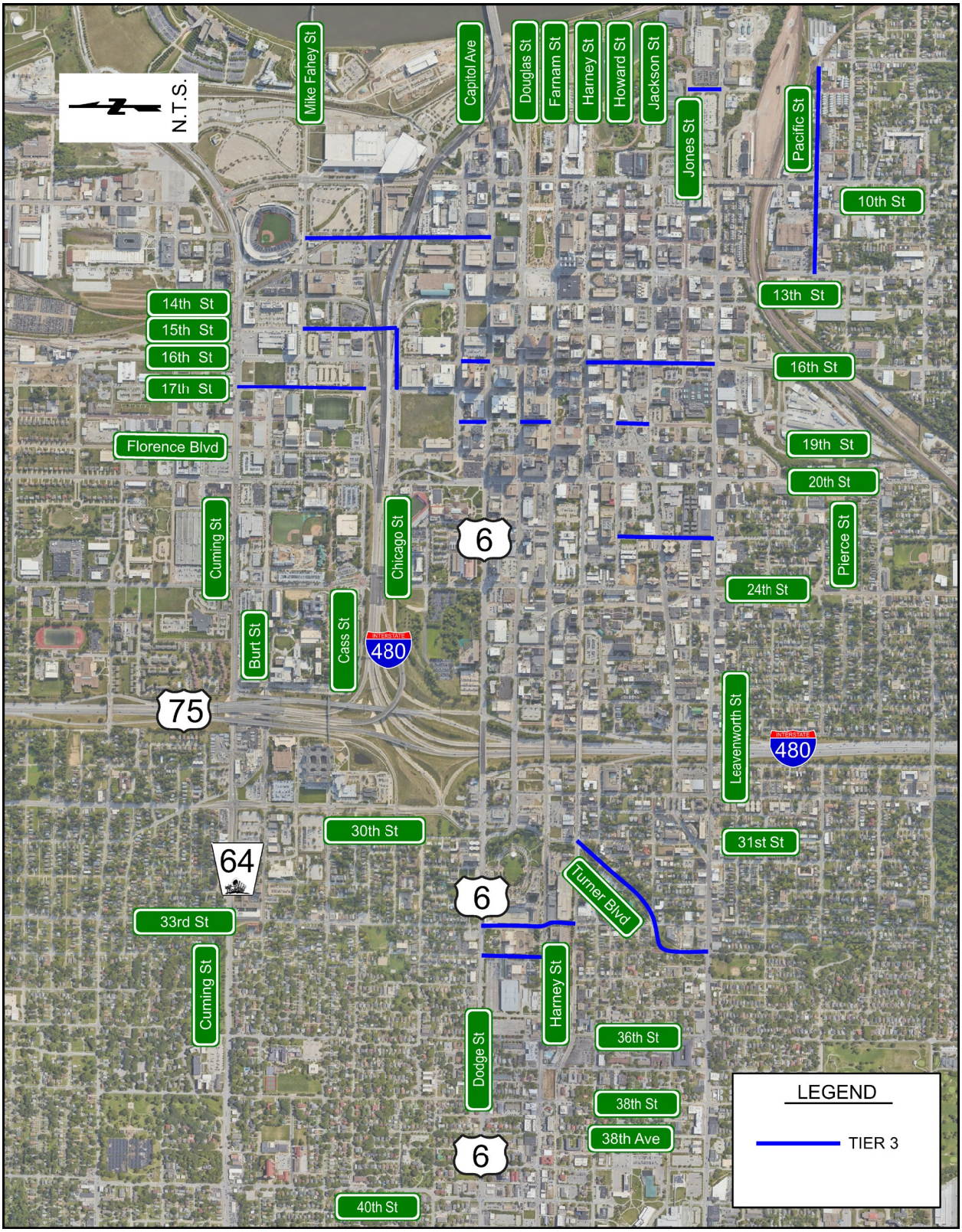


Figure 3: Tier 3 Corridors

3 Existing Conditions

This chapter provides a summary of existing conditions for the identified study corridors. The existing conditions assessment included summarizing street and intersection geometry, traffic volumes, and traffic operations analysis.

3.1 Existing Geometry

The study corridors existing geometry configurations are each summarized in their Tier category groupings.

Tier 1

St. Mary's Ave – 16th Street to 31st Street

St. Mary's Ave is a one-way westbound street with a two-lane cross-section from 17th Street to 24th Street and a three-lane cross section from 24th Street to 31st Street. This is a truck route. Parallel parking is provided along most of the corridor. A buffered bike lane is provided from 17th Street to 24th Street, and a regular bike lane is marked west of 24th Street. The intersections along the street include a mix of signalized control for major intersections and unsignalized control for minor intersections. The posted speed limit of 30 mph.

Leavenworth Street - 13th Street to 31st Street

Leavenworth Street is an eastbound one-way street with two-lane cross-section. It is truck route with a posted speed limit of 30 mph. A buffered bike lane is marked on the south side from 31st Street to 13th Street. The intersections along the street include signalized and unsignalized control. The section of Leavenworth from 31st Street to Saddle Creek Road was screened from the Tier evaluation.

13th Street – Jackson Street to Cass Street

13th Street is a one-way northbound street with a four-lane cross-section to Harney and then three-lane cross-section to Cass Street. This is a truck route. Parallel parking is provided for much of the corridor on both sides, except for north of Capitol Avenue where there is no parking. A northbound buffered bicycle lane is provided from Leavenworth Street to Capitol Street on the east side. Intersection control is signalized and the posted speed limit is 25 mph.

Turner Boulevard – Harney Street to Dodge Street

Turner Boulevard is a one-way southbound three-lane cross-section between Dodge Street and Harney Street. Intersections are signalized. There is limited on-street parking on this section of Turner Boulevard. The posted speed limit is 25 mph.

20th Street – Mason Street to Cass Street

20th Street is a southbound one-way street with cross-sections varying from a two-lane to a four-lane cross-section with turn lanes at major intersection from Mason Street to Cass Street. On the north, there is an I-480 off-ramp connection serving the downtown. On-street parallel parking is provided for much of the corridor. The intersections along the street include signalized and unsignalized control. The posted speed limit is 25 mph north of Leavenworth Street and 30 mph south of Leavenworth Street.

19th Street – Mason Street to Cass Street

19th Street is a northbound one-way street with two-lane cross-section between Mason Street and Harney Street. From Harney Street north it varies from three-lane and two-lane configuration with turn lanes at major intersections. On-street parking is provided on both sides of the street on most blocks. This is a truck route. There is a bike lane between Leavenworth Street and Harney Street. The intersections along the street include signalized and unsignalized control. The posted speed limit is 25 mph.

17th Street – Capitol Street to Cass Street

This section of 17th Street is a northbound one-way street with a three-lane cross-section and on-street parking consisting of diagonal pull-in on the west and a few parallel spots north of Davenport Street. An I-480 on-ramp connects at Chicago Street. The corridor mainly consists of signalized intersections. The posted speed limit is 25 mph.

Park Avenue – St. Mary's Ave to Dodge Street

Park Avenue is a one-way northbound two-lane undivided cross-section from St. Mary's Ave to Dodge Street. On-street parking is provided on both sides south of Harney Street and one side north of Harney Street. The study intersections mainly include signalized intersection control. The posted speed limit is 30 mph.

14th Street – Leavenworth Street to Capitol Street

This section of 14th Street is a southbound one-way street with a three-lane cross-section from Capitol Avenue to Jackson Street and a two-lane section south of Jackson Street to Leavenworth Street. This is a truck route. On the north, there is an I-480 off-ramp connection serving downtown. A southbound bike lane exists on the east side of the street between Capitol Street and Leavenworth Street. On-street parallel parking is included for most of the corridor. The street includes signalized and unsignalized intersections. The posted speed limit is 25 mph.

15th Street – Leavenworth Street to Farnam Street

15th Street is a northbound one-way street with a two-lane cross-section and mostly angled on-street parking. The corridor has a combination of signalized and unsignalized intersections. The surface is brick between Leavenworth and Jackson Streets. The posted speed limit is 25 mph.

17th Street – Jackson Street to Farnam Street

This section of 17th Street is a southbound one-way street with a three-lane cross-section and on-street parking. Intersections are signalized and there are bike lanes along the section of the corridor. The posted speed limit is 25 mph.

31st Street – Leavenworth Street to Harney Street

31st Street between St. Mary's Ave and Harney Street is a southbound one-way street with a two-lane cross-section and a posted speed limit of 25 mph. On-street parking is provided on the east side of the street except for the area between St. Mary's Ave and Jackson Street where parking is on both sides. The intersection control includes both unsignalized intersections and traffic signal controlled intersections. Chicago Street – 15th Street to 17th Street Chicago Street from 15th Street to 19th Street Chicago Street is predominantly a two-way street with turn lanes at intersections. From 17th Street to 19th Street, it is a westbound one-way street with a two-lane cross section. On-street parallel parking is provided on both sides of the street. At 17th Street, there is an I-480 on ramp connection. The corridor includes signalized and unsignalized intersections. The posted speed limit is 25 mph.

Chicago Street - 17th Street to 19th Street

Chicago Street from 17th Street to 19th Street Chicago Street in this area is a eastbound one-way street with a two-lane cross section. On-street parallel parking is provided on both sides of the street. At 17th Street, there is an I-480 on ramp connection. The corridor includes a signalized (17th Street) and unsignalized (19th Street) intersections. The posted speed limit is 25 mph.

Howard Street - 16th Street to 18th Street

In this location Howard Street is a one-way westbound, three-lane cross-section between 16th Street and 17th Street, with a 1-lane cross-section from 17th Street to 18th Street. On-street parking is provided on both sides of the street. The posted speed limit is 25 mph. This area includes signalized and unsignalized intersection control.

Tier 2

Cuming Street – 10th Street to 27th Street

This area of Cuming Street is two-way and from 10th Street to 15th Street it is a wide five-lane divided street with additional turn lanes. On-street parallel parking is provided between 14th Street and 15th Street. From 15th Street to 27th Street the road is a five-lane cross-section with turn lanes marked at major intersections. The Metro Transit bus barn is located between 21st and 23rd Streets. The intersections along the street include signalized and unsignalized control. Cuming Street is a truck route and the posted speed limit for the corridor is 35 mph. Cuming Street from 27th Street to Saddle Creek Road was not included in the Tier evaluation.

13th Street – Pierce Street to Jackson Street

This segment of13th Street is a four-lane undivided two-way cross-section from Pierce Street to Jackson Street, with a five-lane cross-section in front of the post office. This is a truck route. From Pierce Street to Leavenworth Street there is no on-street parking. Between Leavenworth Street and Jackson Street parallel parking is provided on both sides. The corridor includes signalized and unsignalized intersections. The posted speed limit is 30 mph south of Leavenworth Street and 25 mph north of Leavenworth Street.

28th Street – Dewey Street to Dodge Street

This area of 28th Street is one-way northbound street with a three-lane cross-section between Harney Street and Dodge Street. This is a truck route. The street serves as a frontage road providing access from I-480 northbound off ramps with a posted speed limit of 25 mph. The intersections along the street include signalized and unsignalized control. Parking is allowed on east side of the street north of Leavenworth to Howard Street.

10th Street – Pierce Street to Harney Street

This segment of 10th Street is a three-lane cross-section with a Two-Way Left-Turn Lane (TWLTL) between Pierce Street and Jackson Street. From Jackson Street north the street varies between four-lane and five-lane configurations with dedicated turn lanes at major intersections. On-street parallel parking is provided on both sides of the street on most blocks. The intersections along the street include signalized and unsignalized control. The posted speed limit is 30 mph south of Jackson Street and 25 mph north of Jackson Street.

30th Street – Dodge Street to Cuming Street

This segment of 30th Street is a four-lane divided two-way street with turn lanes at major intersections between Cuming Street and the I-480 on/off ramps. This area has a posted speed limit of 35 mph. Near Dodge Street, 30th Street splits into Turner Blvd which is a three-lane southbound segment and the northbound segment continues as 30th Street with two-lane cross section terminating at Farnam Street. This is a truck route north of Dodge Street. The corridor includes signalized and unsignalized intersections.

13th Street – Cass Street to Cuming Street

This segment of 13th Street is a two-way four-lane undivided cross-section from Cass Street to Mike Fahey Street and a five-lane cross-section from Mike Fahey Street to Cuming Street. This is a truck route. Some parallel parking is provided between Mike Fahey Street and Cuming Street. Intersection control is signalized and the posted speed limit is 25 mph.

Capitol Avenue – 10th Street to 19th Street

This area of Capitol Avenue is a two-way five-lane cross section with turn lanes at major intersections from 10th Street to 18th Street. From 18th Street to 19th Street, it is a four-lane divided cross-section. On-street parking is provided on both sides of the street for most blocks. The intersections along the street include signalized and unsignalized control. Capitol Avenue has two I-480 off-ramp connections serving the downtown area. The posted speed limit is 25 mph.

14th Street – Cass Street to Cuming Street

This segment of 14th Street is a two-way street with a three-lane cross-section from Cass Street to Cuming Street. This is a truck route. Parallel parking is provided on both sides for most of this short segment. Intersections are signalized and the posted speed limit is 25 mph.

Jackson Street – 13th Street to 17th Street

This segment of Jackson Street is a two-way two-lane cross-section from 13th Street to 17th Street, with three-lane segment in front of the Omaha Fire Department Headquarters. A westbound bike lane is provided from 15th Street to 16th Street and an eastbound bike lane from 17th Street to 13th Street. On-street parking on both sides is provided, except on the north side adjacent to the Omaha Fire Department Headquarters (between 15th and 16th Streets). The posted speed limit is 25 mph and intersection control is signalized.

29th Street – Harney Street to Dodge Street

This 29th Street segment is a one-way southbound street with a three-lane cross-section from Harney Street to Dodge Street and transition into a two-lane cross-section south of Harney Street. This is a truck route and serves as a frontage road providing access to the I-480 southbound on ramps. The posted speed limit is 25 mph. The intersections along the street include signalized and unsignalized control. On-street parallel parking is allowed on both sides south of Harney Street.

40th Street – Dewey Avenue to Cuming Street

This 40th Street segment is a two-way two-lane undivided cross-section from Dewey Street Cuming Street, with a three-lane segment between Harney Street and Davenport Street. On-street parallel parking is provided on both sides of the street north of Davenport Street and on one side south of Harney Street. The corridor includes signalized and unsignalized intersections. The posted speed limit is 30 mph north of Harney Street and 25 mph south of Harney Street.

Tier 3

16th Street – Leavenworth Street to Harney Street

This segment of 16th Street has a two-way four-lane undivided cross-section from Leavenworth to Howard Street, and it transitions to a two-lane two-way cross-section north of Howard to Harney Street. On-street parallel parking is provided on both sides of the street. The corridor includes both signalized and unsignalized intersections with a northbound drop right-turn lane at Howard Street and a southbound left-turn lane at Leavenworth Street. The posted speed limit is 25 mph.

17th Street – Cass Street to Cuming Street

This segment of 17th Street is a two-way three-lane cross-section with some pockets of pull-in angled parking. Intersections control is unsignalized and the posted speed limit is 25 mph.

Turner Boulevard – Leavenworth Street to Harney Street

This segment of Turner Boulevard is a two-way two-lane section. A southbound marked bike lane is provided and the northbound bike lane is designated as a shared traffic lane. The Leavenworth Street intersection and the Harney Street intersections are traffic signal controlled. Other intersections are unsignalized. The posted speed limit is 25 mph.

Pacific Street – 6th Street to 13th Street

This segment of Pacific Street is a two-way two-lane cross-section from 6th Street to 13th Street with on-street parking on both sides that varies between parallel and pull-in angle parking. East of 13th Street, the existing intersections are unsignalized with two-way stop control. The posted speed limit is 25 mph.

15th Street – Chicago Street to Mike Fahey Street

This segment of 15th Street is a two-way two-lane cross-section from Chicago Street to Mike Fahey Street. On-street parking is provided on both sides, except on the west side between California and Mike Fahey Streets. The intersections are unsignalized and the posted speed limit is 25 mph.

Chicago Street – 15th Street to 17th Street

This area of Chicago Street from 15th Street to 17th Street is predominantly a two-lane two-way street with turn lanes at intersections. At 17th Street, there is an I-480 on ramp connection. The corridor includes signalized and unsignalized intersections. The posted speed limit is 25 mph.

33rd Street – Harney Street to Dodge Street

The 33rd Street segment between Harney Street and Dodge Street is a two-way three-lane cross-section with a continuous TWLTL on the east side of the old Mutual of Omaha building. A northbound and southbound shared lane bike route is provided for bicyclists. The street corridor mainly includes signalized intersection control. The posted speed limit is 25 mph.

7th Street – Leavenworth Street to Jones Street

This segment of 7th Street is a two-way four-lane divided cross-section with a posted speed of 25 mph. Existing intersections in the study area are unsignalized with all-way stop control.

12th Street – Dodge Street to Mike Fahey Street

This segment of 12th Street is in the northeast part of the urban core study area near Charles Schwab Field. The street is a two-way three-lane cross-section with continuous TWLTL. On-street parking is provided on the west side of the street south of Mike Fahey Street. The corridor intersections include both signalized and unsignalized control. The speed limit is 25 mph.

22nd Street – Leavenworth Street to Howard Street

This 22nd Street segment is a two-way two-lane cross-section with parallel on-street parking. Existing intersections include two unsignalized with two-way stop control and one signalized intersection. The posted speed limit is 25 mph.

18th Street – Dodge Street to Capitol Avenue

This18th Street segment includes a two-way three-lane cross-section with on-street parking on both sides. The Dodge Street intersection is signalized while Douglas Street is stop controlled. The posted speed limit is 25 mph.

18th Street – Jackson Street to Howard Street

This 18th Street segment is a two-way two-lane cross-section from Jackson Street to Howard Street. On-street parallel parking is provided in both sides of the street. The intersections are unsignalized and the posted speed limit is 25 mph.

18th Street – Farnam Street to Douglas Street

This 18th Street segment includes a two-way four-lane divided cross-section at the Tower Park Garage. Some parallel on-street parking is provided on the northern portion of the block. Farnam Street and Douglas Street are both signalized intersections. The posted speed limit is 25 mph.

34th Street – Farnam Street to Dodge Street

The 34th Street segment between Farnam Street and Dodge Street is a two-way two-lane cross-section. The T-intersection of 34th Street and Farnam Street is signalized. The intersection with Dodge Street is a full movement unsignalized intersection. The northbound and southbound 34th Street approaches operate with stop control. The posted speed limit is 25 mph.

16th Street – Dodge Street to Capitol Avenue

This segment of 16th Street does not exist. A hotel occupies the area where 16th Street would be to provide connectivity between Dodge Street and Capitol Avenue. If the street did pass through it would be two-way to match existing 16th Street north and south of this one block segment.

3.2 Existing Transit Routes

There are a number of Metro Transit routes covering the urban core area. Route paths for ORBT, Streetcar and all other bus routes are shown in *Figure 4.*

Metro Transit currently operates 21 bus routes in the downtown area that could be affected by street reconfigurations in the identified study corridors.

3.3 Existing Traffic Volumes

The City of Omaha provided peak hour turning movement counts for the intersections within the urban core. The year of counts ranged from 2012 to 2024. Intersections with dated traffic volumes or in some cases no data, were balanced and interpolated with the more recent counts and MAPA AADT volumes. Weekday peak hour volumes were used for the study intersections during the AM (7-9 am) and PM (3-6 pm) peak periods. Note that counts from March 2020 to Spring 2021 were not used as those were COVID-impacted traffic counts. A detailed report of the traffic count data is provided in *Appendix D.*

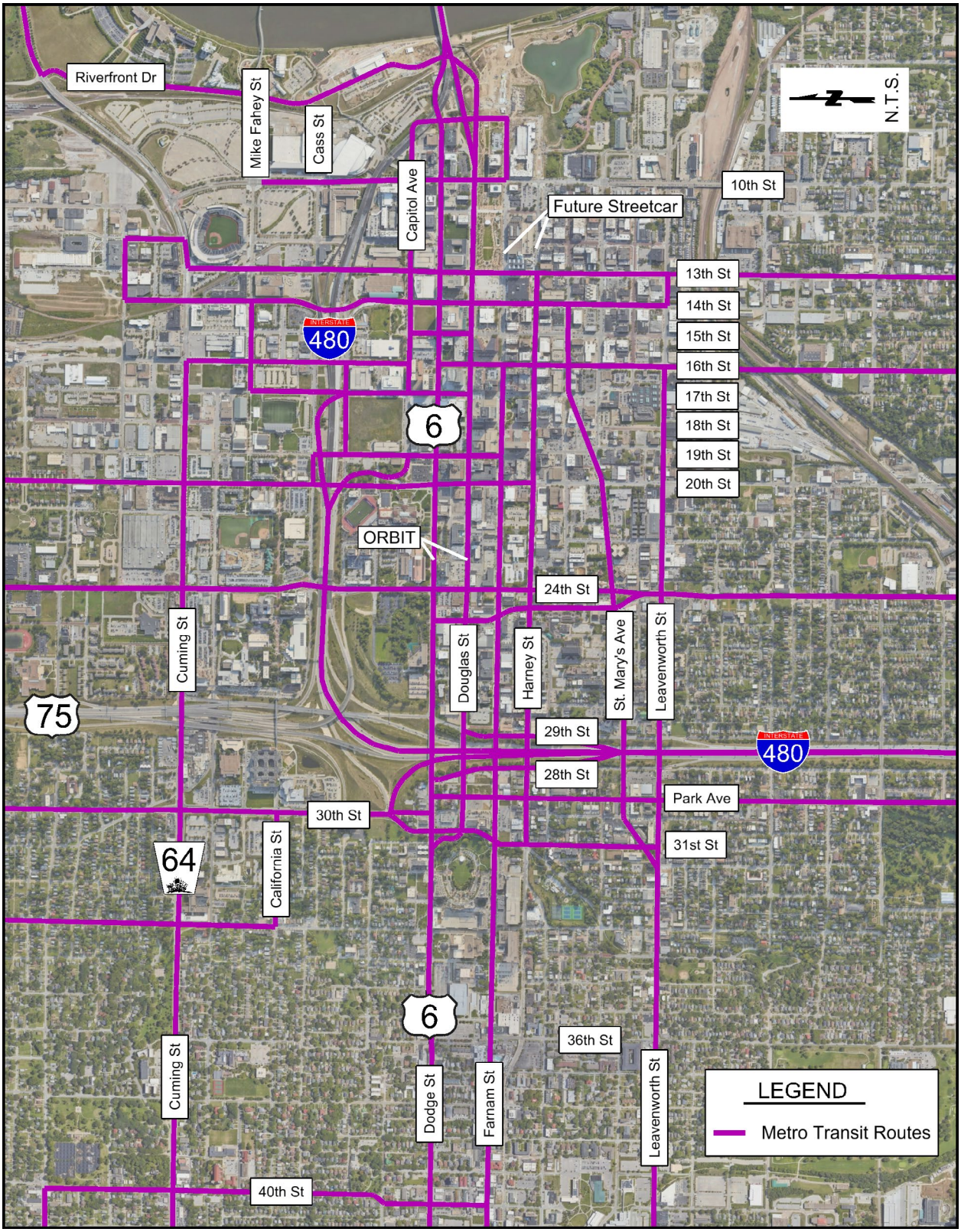


Figure 4: Metro Transit Bus Routes

3.4 Existing Operations Analysis

Existing conditions were analyzed using procedures outlined in the Highway Capacity Manual, 7th Edition (HCM). Per the HCM, Level of Service (LOS) is represented as a letter grade (A through F) based on the calculated average control delay for an intersection or movement during a specific time period (such as the AM and PM peak hours). LOS A represents free flow movement with little to no delay, while LOS F represents congested flow at or exceeding the capacity of the street. Additional details for HCM LOS intersection grading are summarized in *Table 11.*

Table 11: Intersection Level of Service (LOS) Interpretation

		Delay (seconds per vehicle)	
LOS	Description	Signalized Intersections	Stop-Controlled Intersections
A	Free-flow operations. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	< 10	< 10
B	Reasonably free flow. The ability to maneuver within the traffic stream is only slightly restricted.	>10 and < 20	>10 and < 15
C	At or near free flow. Freedom to maneuver within the traffic stream is noticeably restricted.	>20 and < 35	>15 and < 25
D	Speeds begin to decline slightly. Freedom to maneuver within the traffic stream is noticeably limited.	>35 and < 55	>25 and < 35
E	At capacity. Maneuverability within the traffic stream is extremely limited.	>55 and < 80	>35 and < 50
F	Breakdown. Vehicles are jammed. Generally, queues form behind the breakdown condition.	> 80	> 50

Source: Highway Capacity Manual, 7th Edition, A Guide for Multimodal Mobility Analysis, Transportation Research Board, Washington, D.C.

The existing weekday AM and PM peak hour traffic conditions were analyzed using Synchro 12 software. Synchro analysis sheets are provided in *Appendix E.*

Based on the results of the capacity analysis, most study intersections operate at an acceptable LOS D or better. There were a handful of intersections and intersection movements that were shown to operate below acceptable levels. These intersection summaries are shown in *Table 12.*

Table 12: Existing Condition Critical Intersection Summary

		Weekday AM Peak				Weekday PM Peak			
Intersection	Critical Movement	LOS	v/c	Queue	Overall LOS	LOS	v/c	Queue	Overall LOS
10th St & Harney St	SB Thru	A	0.401	<25′	**A**	F	1.088	484′	**D**
13th St & Leavenworth St	EB Left-Turn	F	1.467	50′	**E**	F	2.100	83′	**F**
24th St & Cuming St	SBT	E	0.796	198′	**C**	D	0.581	177′	**B**
29th St & Leavenworth St	EB	C	0.674	45′	**C**	F	1.074	298′	**E**
29th St & St. Mary's Ave*	SB	D	0.236	<25′	**A**	F	0.337	35′	**A**

**Unsignalized intersection*

It is expected a street reconfiguration with reduction of lanes and/or signal timing updates will have potential impacts to LOS at the critical signalized intersections. As for the unsignalized intersections, it is generally understood that minor street stop-controlled approaches to major arterials tend to have increased delays during peak commuting hours.

The findings from the existing conditions analysis indicated the majority of study intersections within the Tier 1 and 2 corridors are mostly operating at acceptable level of service. This finding allowed the study team to move forward with concept development while paying particular attention to the identified critical intersections during the concepting process.

4 Concept Development & Evaluation

This section documents the procedures for concept development including safety analysis, complete street analysis, access review, traffic volume development, and traffic operation analysis.

4.1 Safety Analysis

A crash review was completed for the Tier 1 and Tier 2 study corridors. Crash data was provided by the City from 2017 through 2023. During this data period, there was a total of 4,130 reported vehicular crashes that resulted in 4 fatalities and 1,065 injuries (76 of these were serious injuries). Vulnerable road user (i.e. pedestrian and bicycle) related crashes were also reviewed. A total of 161 vulnerable road user crashes were reported during this period resulting in 3 fatalities and 145 injuries (27 of these were serious injuries).

The Vision Zero Omaha Action Plan identified the city's High Injury Network as well as a Pedestrian High Injury Network. Both of these networks are over-represented in the urban core transportation system.

Overall, the crash review for the corridors showed angle (37%), sideswipe same side (21%), and rear end (20%) crashes were the prevalent crash types. A detailed summary of intersection and segment crashes for Tier 1 and Tier 2 study corridors is provided in *Appendix F.*

The fatal and injury crashes were geolocated along the Tier 1 and Tier 2 corridors. A heat map was prepared to identify these crash hot spots which represent areas with higher safety risks. The heat map is shown in *Figure 5.* The spatial crash data view shows fatal and injury crashes are more concentrated around the freeway on and off ramps, Dodge/Douglas Street corridors, and St. Mary's Ave between 24th and 25th Street.

A heat map was also prepared utilizing the vulnerable road user crash data for fatal and injury crashes. This map is shown in *Figure 6.* Generally pedestrian/bicycle crashes are spread throughout the study corridors with a higher density near 13th and 14th Streets in the vicinity of Capitol Avenue, Dodge Street, and Douglas Street.

In preparation for the conceptual development of the Tier 1 and Tier 2 study corridors, the hot spot maps were reviewed to help identify areas of focus. In addition, countermeasures with potential safety benefit were reviewed. Crash modification/reduction factor (CMFs) from the Crash Modification Factor Clearinghouse were utilized to help assess the potential positive benefits of different improvement strategies. The CMFs that were identified as likely to apply to the study corridors are summarized in *Table 13.*

Table 13: Countermeasures Toolbox

Countermeasure	Crash Type	Crash Severity	Area Type	Predicted Crash Reduction Factor (%)
Installing TWLTL on a two-lane road	All	All	All	20%
Lane Reconfiguration (convert four-lane undivided road to a two-lane plus turning lane)	All	All	Urban	29%
Convert a TWLTL to a raised median	All	All	All	47%
Install a separated bicycle lane	All	All	All	25-54%
Reduced crossing distance with curb extensions	All	All	Urban	20-40%

Street reconfiguration and safety: A key part of the concept development was the development of two-way reconfigurations for some of the one-way streets. There are no CMFs to clearly predict safety outcomes of these reconfigurations. Generally, it is recognized in the transportation industry reconfiguring one-way streets to two-way lowers speed due to increased traffic friction while also reducing confusion for motorists unfamiliar with the area. One-way to two-way conversions are also viewed as providing improved access to businesses, residential areas, and local attractions. The disadvantages include the potential loss of on-street parking to provide turn lanes, increase of conflict points for vehicles and pedestrians, and impacts to existing access points.

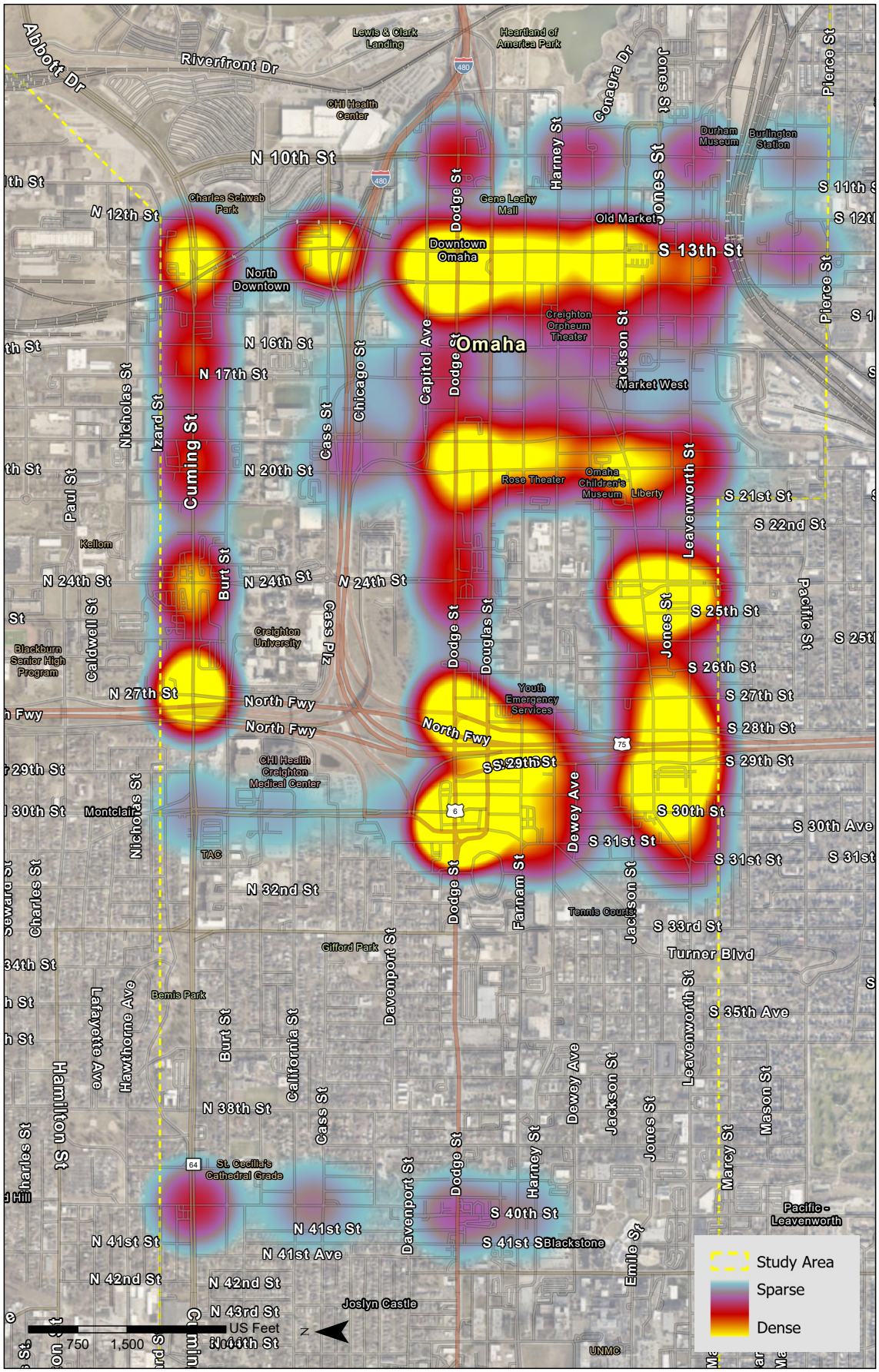


Figure 5: Fatal and Injury Crashes Heat Map (2017-2023 data)

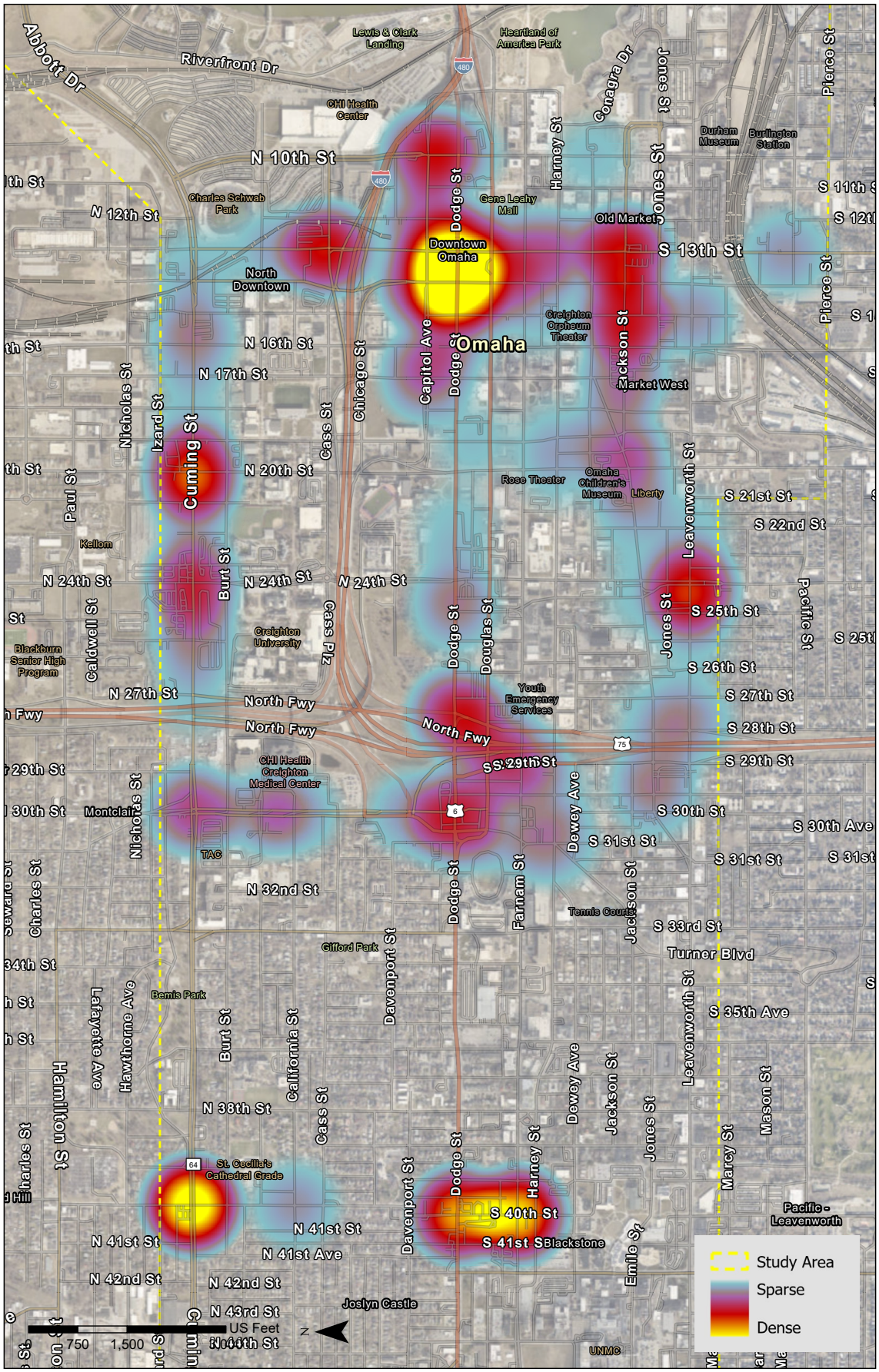


Figure 6: Vulnerable Road User Fatal & Injury Crashes Heat map (2017-2023 data)

4.2 Complete Street Application

The City's 2019 Complete Streets Guide was utilized to identify potential street cross-sections supporting the goals of this reconfiguration study. Based on the study corridors it was determined the street types of General Urban, Main Street, and Neighborhood Residential were the most common in the study corridors.

Based on these street types, lane widths, bikeway type and on-street parking parameters can be identified for application in the conceptual corridor reconfigurations. Parameters for the street types are summarized in *Table 14.*

Table 14: Street Type for Study Corridors

Street Type	# of Through Lanes	Lane Width (feet)	Bikeway Type	On-Street Parking
General Urban	2 to 4	11	Bike Lanes	Recommended; delineated
Main Street	2	11	Bike Lanes	Delineated
Neighborhood Residential	No Centerline	Min - 25	None	Non-delineated

Source: City of Omaha, 2019, Complete Street Design Guide

Existing bicycle facilities in the urban core were reviewed. The area has 12 streets with bike facilities. This includes the one-way bike lane on Leavenworth Street and St. Mary's Ave as well as the bike lanes on 13th Street and 14th Street. The Farnam/Harney protected bikeway pilot project is expected to become permanent in the future.

The Connect Omaha: Active Mobility Plan identifies bike lane priorities within the urban core. The plan recommends facilities on several corridors including: 10th Street, 13th Street, 14th Street, 16th Street, 17th Street, 19th Street, 20th Street, 24th Street, and Jackson Street. Conceptual development will include the identified bike lane objectives wherever they can be feasibly included.

Metro Transit currently operates 21 bus routes in the downtown area that would be affected by street reconfigurations in the identified study corridors. Potential bus island platform locations were identified in the conceptual corridor development in an effort to support the transit mode. Final location and design details will need to be refined during each corridor design process. Reconfigurations from one-way to two-way operation will require detailed coordination with Metro Transit.

4.3 Pedestrian and Bicycle LOS

To support the development of street concepts it was important to understand the LOS conditions for both pedestrians and bicycles along the study corridors. The Connect Omaha: Active Mobility Plan included an existing conditions LOS for the study corridors on a segment-by-segment basis. These operational conditions were reviewed and are summarized in *Table 15.* Areas where low LOS was identified were of particular interest and concept development choices were informed through this data review effort.

Table 15: Pedestrian and Bicycle Level of Service

Corridor	Beginning Cross Street	Ending Cross Street	Pedestrian LOS	Bicycle LOS
Tier 1				
St. Mary's Ave	16th St	31st St	LOS A to C	LOS A to B
Leavenworth St	13th St	31st St	LOS B	LOS A
13th St	Jackson St	Cass St	LOS A to B	LOS A to D
Turner Blvd	Harney St	Dodge St	LOS A to B	LOS C
20th St	South of Leavenworth St	Cass St	LOS A to B	LOS A to C
19th St	South of Leavenworth St	Cass St	LOS A to B	LOS A to C
17th St	Capitol Ave	Cass St	LOS A to B	LOS B to C
Park Ave	St. Mary's Ave	Dodge St	LOS B	LOS A
14th St	Leavenworth St	Capitol Ave	LOS A to B	LOS A to C
15th St	Leavenworth St	Farnam St	LOS A	LOS A to C
17th St	Jackson St	Farnam St	LOS A	LOS A to C
31st St	Leavenworth St	Harney St	LOS A	LOS A
Tier 2				
Cuming St	13th St	27th St	LOS B to D	LOS D to E
13th St (South)	Pierce St	Jackson St	LOS A to C	LOS C to D
28th St	Dewey St	Dodge St	LOS C to E	LOS C to D
Dodge St	10th St	31st St/Turner Blvd	LOS A to C	LOS B to D
Douglas St	10th St	31st St/Turner Blvd	LOS A to D	LOS B to D
10th St	Pierce St	Harney St	LOS B to C	LOS C to D
30th St	Dodge St	Cuming St	LOS B to D	LOS B to D
13th St (North)	Cass St	Cuming St	LOS B to D	LOS B to C
Capitol Ave	10th St	19th St	LOS A to B	LOS B to C
14th St	Cass St	Cuming St	LOS A to B	LOS B to C
Jackson St	13th St	17th St	LOS B	LOS B to F
29th St	Harney St	Dodge St	LOS B to D	LOS A to C
40th St	Dewey Ave	Cuming St	LOS B to C	LOS B to C

4.4 Access Review

Corridor access points were reviewed for potential operational and safety impacts from street reconfiguration. This included identifying locations affected by reconfiguration from one-way to two-way operation, redundant access areas, and noting opportunities to combine or eliminate access. There were many minor access modifications shown in the concepts and there were a handful of significant access changes as well. These more significant access changes included:

- **Leavenworth Street/St. Mary's Ave and 31st Street:**
  To support two-way operation, the merging of St. Mary's Ave with Leavenworth Street was removed by ending St. Mary's Ave as a T-intersection at 31st Street.
- **St. Mary's Ave/Howard Street and 17th Street:**
  In order to support two-way operation, the five-leg intersection was modified to show Howard Street connecting to St. Mary's Ave by dead-ending Howard Street on the west intersection leg.
- **13th Street and Cass Street:**
  With the reconfiguration of 13th Street to two-way, lane geometry includes two northbound lanes with one of these lanes becoming the left-turn I-480 on-ramp access.
- **Turner Boulevard/31st Street and Harney Street:**
  The two-way reconfiguration of Turner Boulevard was supported by closing the south leg of 31st Street at the intersection with Harney Street.
- **19th Street/Jackson Street and St. Mary's Ave:**
  The two-way reconfiguration of 19th Street and St. Mary's Ave was supported at this intersection by closing Jackson Street between 19th Street and 19th Avenue.

Additionally, Cuming Street was identified as a corridor that would benefit from access management between 27th Street and 10th Street. Each of these conceptual reconfigurations are shown in the Final Concept Exhibits.

4.5 On-going Projects

Through coordination with the City and the 2022 Urban Core Strategic Plan, there were several traffic studies and developments planned that would impact the traffic patterns and possibly influence conceptual development efforts within the urban core. A list of known projects can be found in *Appendix G* Traffic Studies and Development. A summary of these projects is provided here:

Leavenworth Street: 7th Street to 13th Street

This study was completed in 2018. The study identified a lane reconfiguration for Leavenworth Street between 7th Street and 13th Street where it would be changed to a two-lane section with an eastbound bike lane striped with parallel parking on the south side along with parallel and angle parking where they fit along the north side. The changes extends the bike facility to 7th Street to provide a connection from the Riverfront to the Conagra campus.

Union Omaha Soccer Stadium

A new soccer stadium on a 20 acre mixed use site will be built north of Cuming Street near 10th and 12th Streets. The stadium will seat about 7,000 people and is planned to be ready for the 2028 season. The Cuming Street concepts could be affected by this development.

13th Street Walkability Study

The Walkability Study for 13th Street from I-80 to I-480 and 14th Street from Leavenworth Street to I-480 was prepared in 2018. The goal of this study was to improve the corridors for all modes of transportation. The study is being updated and will consider concepts identified in this street reconfiguration study.

Saddle Creek Road UNMC Development Traffic Impact Study

The Traffic Impact Study for Saddle Creek Road was prepared in 2021. The study identified improvements necessary to support a proposed mixed-use development bounded by Farnam Street to the north, Saddle Creek Road to the east, and 48th Street to the west. Six intersections were recommended to be improved to keep acceptable intersection operations. A center median along Saddle Creek Road from Leavenworth Street to Emile Street will be required in addition to the improvements at the study intersections.

Central 24th Street Multimodal Transportation Corridor Study

The 2021 study evaluated Central 24th Street from Cass Street to Mason Street, including the one-way pair from Dodge Street to St. Mary's Avenue, to improve multimodal mobility and safety. Five alternatives were developed, with Alternative 5 selected as the preferred concept.

The recommended design converts portions of 24th Street to two-way traffic with 2- to 3-lane sections, adds on-street parking with loading zones, and enhances bicycle and pedestrian facilities. The parallel 24th Avenue/25th Street corridor is reconfigured to a single southbound lane with added greenspace and a high-quality bicycle facility.

Implementation is organized into targeted projects focused on corridor safety, connectivity, and supporting adjacent redevelopment.

Key Recommendations:

- Convert corridor to two-way traffic with 2–3 lane sections to improve operations and safety
- Add multimodal facilities, including bike lanes/cycle tracks and enhanced pedestrian infrastructure
- Incorporate on-street parking and loading zones to support adjacent land uses
- Reconfigure 24th Ave/25th St to one southbound lane with expanded greenspace and bike facilities
- Implement targeted intersection, streetscape, and connectivity improvements (e.g., Cass roundabout, Dodge upgrades, Landon Court extension)

Project Beacon Traffic Impact Analysis

The 2022 traffic study analyzed traffic impacts from a proposed high-rise office building located between Douglas Street on the north, 14th Street on the east, Farnam Street on the south, and 15th Street on the west. The study recommended removing on-street parking to construct an exclusive westbound right-turn lane along Farnam Street between 15th and 14th Street and an exclusive northbound right-turn lane along 15th Street between Farnam and Douglas Street. The northbound approach at 15th Street and Douglas Street should include a through lane, shared through-right lane, and an exclusive right-turn lane. The only access to the high-rise is off 15th Street. Due to volume and single access, two-way operation is not feasible on 15th Street north of Farnam Street.

Metro Area Bike Map

The Metro Area Bike Map, developed in 2023, proposed trail network locations at the east side of The Heartland of America Park at The Riverfront going south to Hickory Street along the BNSF Railroad. It is recommended to add a trail along Burt Street from N 21st Plaza to N 20th Street, going south along N 20th Street to Mike Fahey Street, then heading east along Mike Fahey Street to 10th Street.

MetroNEXT

MetroNEXT (2022) identifies the need to improve transit performance and accessibility within Omaha's urban core by prioritizing reliable, frequent service and better integration of transit into street design. For downtown corridors, the plan emphasizes reallocating right-of-way to support transit, improving stop amenities, and enhancing first/last-mile connections. The goal is to create streets that move people more efficiently while supporting walkability and economic activity.

Key Recommendations (Relevant to Urban Core):

- Prioritize frequent, reliable transit service on key urban corridors
- Incorporate transit-supportive street design (e.g., dedicated space, queue jumps, signal priority where feasible)
- Upgrade bus stop amenities (shelters, ADA access, lighting, real-time info)
- Improve pedestrian connectivity to transit (safe crossings, sidewalks, short walking distances)
- Enhance first/last-mile connections, including bike facilities and micromobility integration

Parking and Mobility Strategic Plan

The Omaha Parking and Mobility Strategic Plan, created in early 2021, aims to develop new strategic approaches to address existing and future conditions that help support the downtown and urban core development. Strategic recommendations were broken into three elements. The first element involves Operations and Finance with core strategies to develop a mission statement and create a downtown parking collaborative. The second element involves Regulatory and Operational Context with a strategy to implement a coordinated and focused marketing and communications campaign. The last element includes Park Omaha's Role in Economic Development with a strategy to articulate and publicize baseline Park Omaha standards for parking and agreement terms.

Farnam/Harney Street Streetcar

The Omaha Streetcar is a new approximately 3-mile modern streetcar line under construction that will connect downtown Omaha to the Blackstone District in midtown along South 10th, Farnam, and Harney Streets. The route runs east–west on Farnam and Harney and includes short north–south links downtown via 8th and 10th Streets, serving about 13 stops along the alignment. The corridor is being redesigned as a multimodal street, accommodating streetcar vehicles, regular traffic lanes, buses, sidewalks, and a permanent protected bikeway adjacent to the streetcar alignment. The bikeway will be placed opposite the track alignment in segments and includes medians, buffers, and pedestrian facilities. On-street parking will remain in portions of the corridor, integrated with the multimodal design, though configurations vary by block. Street sections will carry cars, streetcars, cyclists, and pedestrians, providing a complete street environment.

Civic Auditorium Site Redevelopment (Civic Square)

The Civic Square redevelopment will transform the nine-acre site bounded by 17th and 19th Streets and Capitol Avenue and Chicago Street — the former Omaha Civic Auditorium location — into a mixed-use urban district with housing, retail, office space, public amenities, and structured and on-street parking. The plan includes reintroducing 18th Street and portions of Davenport Street, improving connectivity and internal circulation. Its location near downtown's multimodal network — including pedestrian routes, existing transit, and proximity to the planned streetcar — will influence traffic patterns, support walkability, and enhance transit access, while parking and internal streets will shape vehicle, bike, and pedestrian flows.

40th Street & Saint Cecilia Cathedral Civil Plans

The Saint Ceilia Cathedral is planning an exterior maintenance project. The plan includes building a plaza and adding traffic calming elements on 40th Street with curb extensions on Webster Street, Page Street, and Burt Street intersections. On-street parking is planned on the east and west side of the 40th Street in front of the church plaza.

4.6 Development Volumes

Two development studies included future traffic volumes that were added to existing traffic volumes in order to develop a built-base volume condition that accounts for ongoing redevelopment in the urban core. The studies that were used to build out the urban core base volumes included Project Beacon and Civic Square. Both project studies can be found in *Appendix G.* Traffic Studies and Development.

4.7 Concept Volumes

For street concepts that involved access changes or one-way to two-way reconfigurations, traffic volumes were re-routed to match the conceptual street layouts. The rerouting approach was based on matching predominate flow patterns, utilizing available capacity as well as maintaining flows to and from interstate ramps. Good engineering judgment was applied throughout the process. Traffic volume rerouting was performed for both AM and PM peak periods to allow for operational analysis of the concept corridors. Traffic volumes maps for Tier 1 and Tier 2 are provided in *Appendix H.*

4.8 Traffic Operations Analysis

All reconfigured study corridors were analyzed to verify minimum-reasonable operations would be maintained. To evaluate traffic operations, a minimum of a two-lane or three-lane (with TWLTL) cross section was modeled for the majority of the reconfigured study corridors. For some study corridors more space was available and lane geometry was assigned accordingly. The assumed baseline geometry for the study corridors is shown in *Figure 7.*

Traffic signal changes: The following five existing signalized intersections were identified by the City for traffic signal removal:

- 12th Street & Fahey Street – change to All-Way Stop Control
- 16th Street & Cass Street – change to All-Way Stop Control
- 18th Street & Dodge Street – change to Two-Way Stop Control
- 18th Street & Douglas Street – change to Two-Way Stop Control
- 30th Street & Webster Street – change to Two-Way Stop Control

For analysis purposes, these changes to the intersection traffic control were assumed in-place. Synchro version 12 software and Highway Capacity Manual 7th edition methodology was used to perform operational analysis. The following scenarios were evaluated:

- Horizon Year No-Build – Existing geometry and known development volumes
- Horizon Year Build – Street reconfiguration and known development volumes

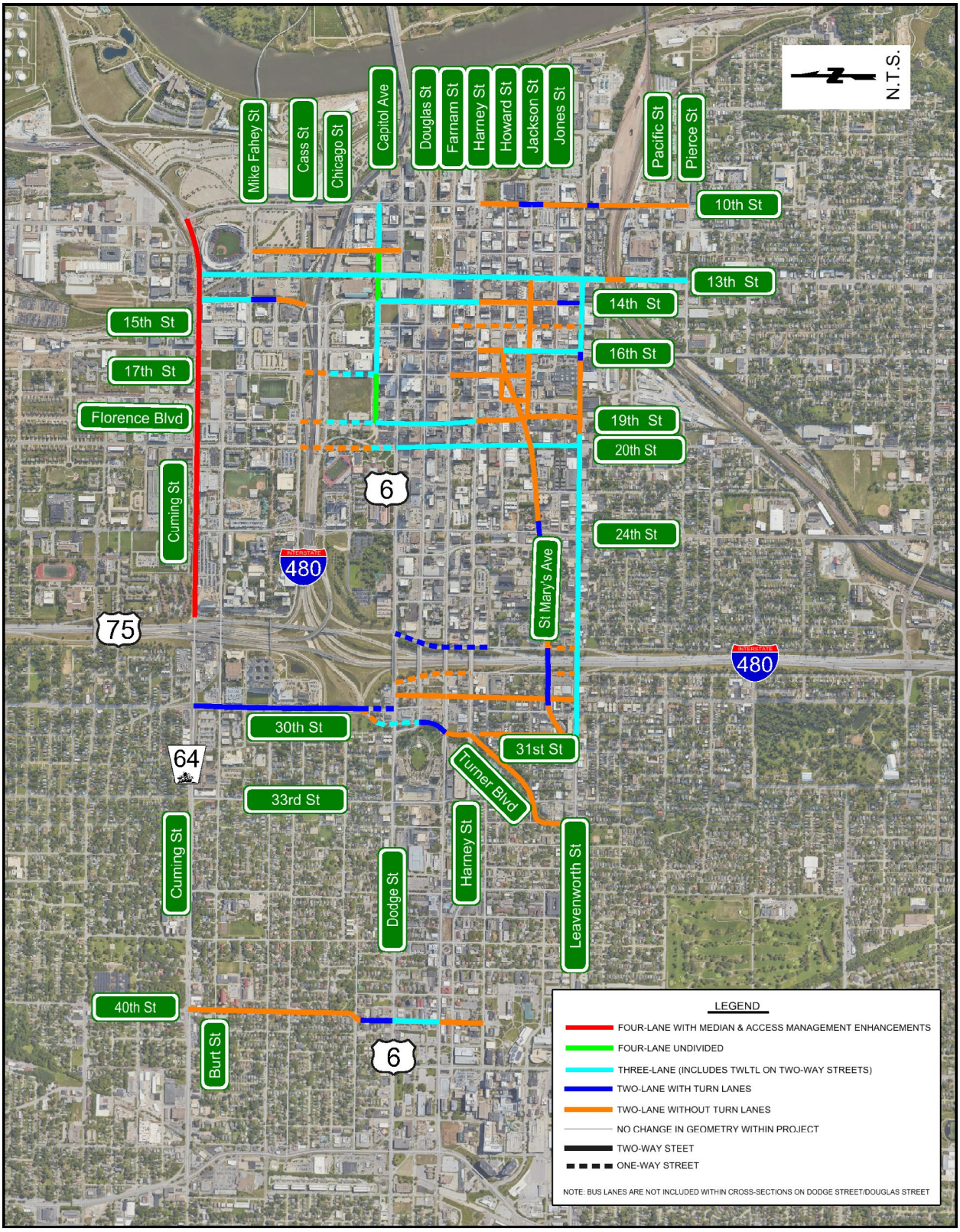


Figure 7: Horizon Year Build Baseline Lane Geometry

4.8.1 Horizon Year No-Build

The horizon year no-build AM and PM peak hour traffic condition were analyzed using the developed traffic volume and existing lane geometry. Synchro analysis sheets are provided in *Appendix I.*

Based on the results of the capacity analysis, most study intersections operate at an acceptable LOS D or better. These results are similar to the existing conditions analysis results. Note there were a handful of intersections and intersection movements that were shown to operate below acceptable levels. These intersection results are shown in *Table 16.*

Table 16: Horizon No-Build Critical Intersection Summary

		Weekday AM Peak				Weekday PM Peak			
Intersection	Critical Movement	LOS	v/c	Queue	Overall LOS	LOS	v/c	Queue	Overall LOS
10th St & Harney St	SB Thru	A	0.401	<25′	**A**	F	1.088	484′	**D**
13th St & Leavenworth St	EB Left-Turn	F	1.467	40′	**E**	F	2.100	87′	**F**
24th St & Cuming St	SBR	E	0.796	198′	**C**	D	0.581	177′	**B**
29th St & Leavenworth St	EB	C	0.710	48′	**C**	F	1.074	301′	**E**
29th St & St. Mary's Ave[1]	SB	D	0.236	<25′	**A**	F	0.337	43′	**A**

[1] *Unsignalized intersection*

It is normal to see some approaches operate poorly in dense urban areas during peak periods, particularly with horizon year traffic volumes.

4.8.2 Horizon Year Build

The horizon year build AM and PM peak hour traffic condition were analyzed. For clarity, this was re-routed horizon year traffic volumes on reconfigured street corridors. For the one-way streets reconfigured to two-way, traffic signal timing assumptions were necessary. The two-way streets in some instances needed an increase in maximum cycle time to 90 seconds in order to accommodate traffic demands. Synchro analysis sheets are provided in *Appendix I.*

Based on the results of the capacity analysis, all signalized study intersections operate at an acceptable LOS D or better. There were a handful of unsignalized intersections with movements that were shown to operate at LOS E or F. The summary of these unsignalized intersections is shown in *Table 17.*

Table 17: Horizon Build Critical Intersection Summary

		Weekday AM Peak				Weekday PM Peak			
Intersection	Critical Movement	LOS	v/c	Queue	Overall LOS	LOS	v/c	Queue	Overall LOS
29th St & St. Mary's Ave[1]	SB	**D**	0.231	<25'	**A**	**E**	0.274	30'	**A**
31st St (East) & Leavenworth St[2]	SB	**E**	0.138	<25'	**A**	**F**	0.250	<25'	**A**
31st St (West) & Leavenworth St[2]	NB	**E**	0.477	58'	**A**	**E**	0.529	65'	**A**

[1] *Unsignalized intersection*

[2] *Traffic Control changed to TWSC due to reconfiguration and/or realignment of the intersection.*

The findings from the traffic operations analysis indicates the majority of study intersections for both Tier 1 and 2 corridors will operate at acceptable levels of service for horizon year scenarios. The conceptual test of two-way operation on the Tier 1 corridors indicated there is reasonable traffic capacity and further concept development is merited.

4.9 Winter Operations Considerations

Omaha Street Maintenance has a Winter Operations Plan & Procedures document that identifies city streets where windrow plowing operations occur for snow events. In the downtown area there are three north-south streets designated for windrow plowing operations. These streets are:

- 10th St – Pacific St to Dodge St
- 13th St – Jackson St to Capitol Ave
- 14th St – Jackson St to Capitol Ave

Additionally, the Winter Operations Plan notes "Super Block" pickup areas. Two of these areas overlap with identified Tier 1 corridors. The Super Block areas of concern include:

- 17th St – Harney St to Farnam St
- 19th St – Harney St to Farnam St

Each of these five streets do overlap with Tier 1 corridors identified for concept development. While snow removal was not a direct consideration for the concepting effort, it is important to note there are overlaps that could impact current snow removal procedures or drive the need for concept refinements during the corridor engineering/design process. As projects move forward, considerations for operations and maintenance is an important future step.

5 Ramp Analysis

An evaluation was conducted to determine the feasibility of removing or reconfiguring the freeway ramps that serve the urban core. The interest in removing freeway ramps was based on previous planning studies that identified opportunities for redevelopment based on ramp removal. The corridors analyzed for the ramp elimination evaluation included:

- **17th Street Ramp to I-480**
- **19th & 20th Street Ramps from I-480**
- **Realigning 30th Street Ramps to/from I-480/US-75 at 29th Street & Dodge Street intersection**

The goal was to determine how the removal or realignment of the ramps would affect adjacent traffic with the existing and potential reconfigured street concepts. Known future development traffic volumes (Project Beacon, Civic Corner, Streetcar) and other redevelopment opportunities created by vacated ramp areas were considered in the analysis. The evaluation also needed to determine whether there was enough capacity at the remaining on/off ramps intersections at 28th/29th Street and 13th/14th Street as well as consideration for the possible realignment of the 30th Street ramps. The study ramps, planned development areas and redevelopment opportunity areas are shown in *Figure 8.*

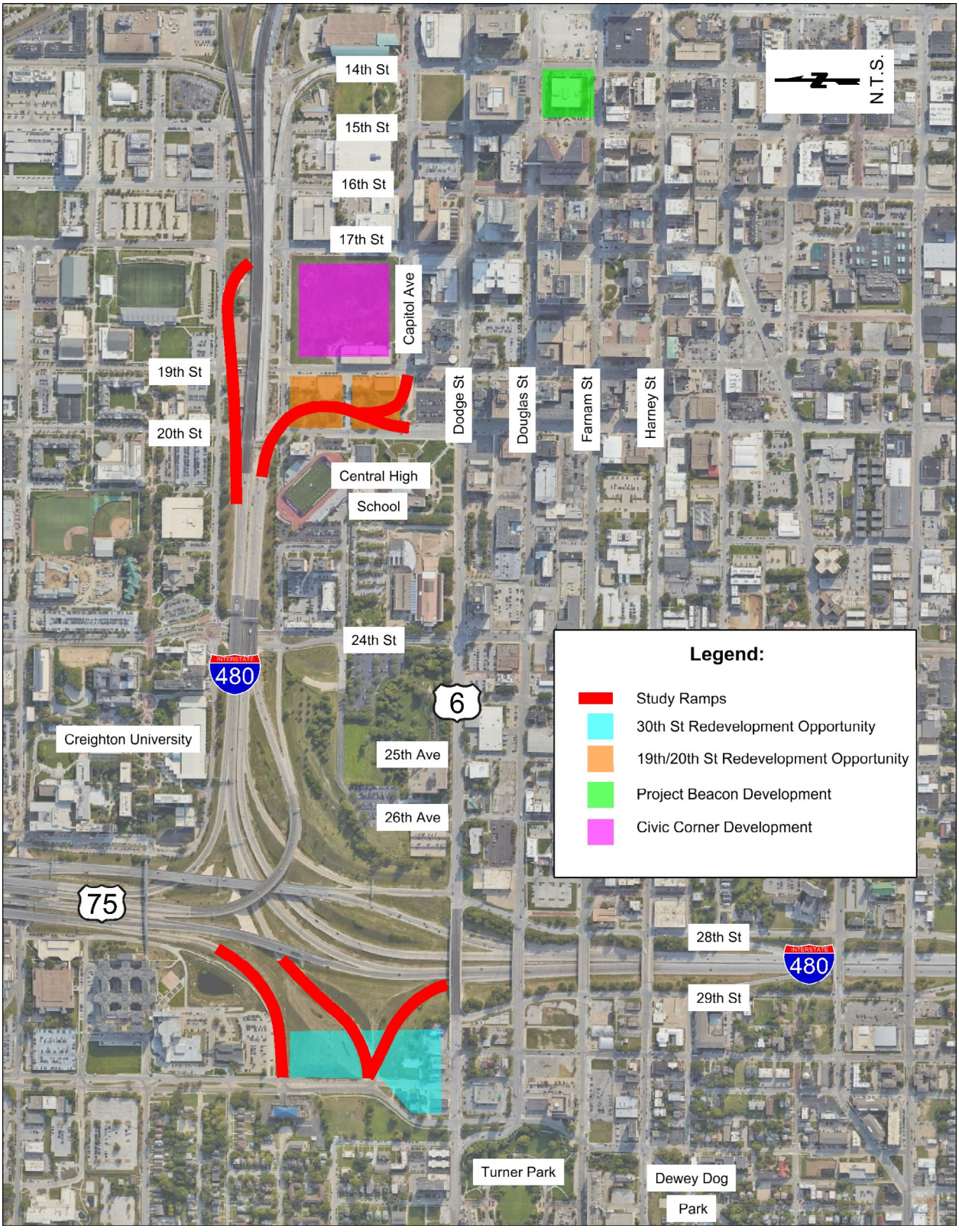


Figure 8: Study Ramps

5.1 Development Opportunities for Vacated Areas

The Urban Core Strategic Plan included a vision for the redevelopment of the urban core related to freeway ramp removal. The following ideas were identified for vacated areas if ramps were removed (See *Appendix J*):

19th & 20th Street Ramp Removal

If these ramps were removed, new residential units could be added adjacent to the Civic Auditorium redevelopment and reclaim three full blocks west of 19th Street for future development. For this analysis, it was assumed two blocks would be redeveloped, and the parking lot block owned by the Omaha Public Schools District would remain in place.

30th Street Ramp Removal/Realignment

If these ramps were removed from 30th Street and realigned at the 29th Street & Dodge Street intersection as the southbound approach, new residential units and other retail uses could be added. This would reclaim six full blocks for development. For the analysis, it was assumed five blocks would be redeveloped with the Four Points Hotel remaining in place.

16th Street Corridor Connection

The City noted a desire to connect 16th Street between Capitol Street and Dodge Street to improve connectivity. Given this, it was assumed 16th Street would be connected for all ramp removals and/or reconfiguration scenarios.

5.2 Trip Generation and Assignment

Project site trips were generated for the residential units and retail by applying trip generation rates and equations in the ITE Trip Generation Manual, 11th Edition. The following ITE Trip Generation Land Use categories were used for site trip estimation: 215 – Single-Family Attached Housing, 220 – Multifamily Housing (Low-Rise), 221 – Multifamily Housing (Mid-Rise), and 821 – Shopping Plaza (40-150k Sq Ft).

Additional known developments, such as Civic Corner and Project Beacon, were already accounted for within the analysis for each Future Build scenario along study corridors (TIS for each known development can be found in *Appendix J*). Estimated AM and PM peak hour trips for the vacated areas for inbound and outbound traffic are summarized in *Table 18.*

Table 18: Trip Generation For Vacated Areas

AM Peak Hour Trips Generated

ITE Code	Usage[1]	Assumed Size[2]	Trip Generation Unit	Directional Distribution		AM Peak Trips		
				In	Out	In	Out	Total
19th Street & 20th Street Ramp Removal								
220	Multifamily Housing (Low-Rise)	185	Dwelling Units	10%	90%	5	49	54
					Subtotal	**5**	**49**	**54**
30th Street Ramp Removal								
215	Single-Family Attached Housing	32	Dwelling Units	33%	67%	4	8	12
220	Multifamily Housing (Low-Rise)	362	Dwelling Units	10%	90%	11	98	109
221	Multifamily Housing (Mid-Rise)	72	Dwelling Units	15%	85%	3	20	23
821	Shopping Plaza	94,000	Sq. Ft.	62%	38%	61	37	98
821	Shopping Plaza Pass-By[3]	94,000	Sq. Ft.	62%	38%	40	25	65
					Subtotal	**119**	**188**	**307**
					GRAND TOTAL	**124**	**237**	**361**

PM Peak Hour Trips Generated

ITE Code	Usage[1]	Assumed Size[2]	Trip Generation Unit	Directional Distribution		PM Peak Trips		
				In	Out	In	Out	Total
19th Street & 20th Street Ramp Removal								
220	Multifamily Housing (Low-Rise)	185	Dwelling Units	90%	10%	43	5	48
					Subtotal	**43**	**5**	**48**
30th Street Ramp Removal								
215	Single-Family Attached Housing	32	Dwelling Units	63%	37%	6	3	9
220	Multifamily Housing (Low-Rise)	362	Dwelling Units	90%	10%	82	9	91
221	Multifamily Housing (Mid-Rise)	72	Dwelling Units	74%	26%	14	5	19
821	Shopping Plaza	94,000	Sq. Ft.	49%	51%	143	149	292
821	Shopping Plaza Pass-By[3]	94,000	Sq. Ft.			94	102	196
					Subtotal	**339**	**268**	**607**
					GRAND TOTAL	**382**	**273**	**655**

[1] It was assumed the setting is a Dense Multi-Use Urban for most land uses, except for the Shopping Plaza with General Urban/Suburban.

[2] Assumed size of each development is an approximation based on the Urban Core Strategy Plan rendering aerials for each project in their Big Moves section.

[3] The PM Pass-By rate for AM and PM peak hours was 40%. Additionally, it is assumed that no supermarket would be included in the development.

Traffic Assignment and Redistribution

17th Street On-Ramp Removal

For the 17th Street on-ramp removal scenarios, 52% of the existing trips were redistributed to the I-480 on-ramp at the 13th Street and Cass Street intersection. The remaining 48% of the existing trips were reassigned to the 29th Street frontage road with access to the I-480 on-ramp at Harney Street.

19th and 20th Street Off-Ramp Removal

For the 19th and 20th Street off-ramp removal scenarios, 54% to 57% of the existing trips were distributed to the I-480 off-ramp at 14th Street & Capitol Avenue. The remaining trips were split approximately 60%/40% between the I-480 off-ramp (26% to 28%) at Harney Street and North Freeway off-ramp (17% to 18%) along 30th Street. After ramp removal, the residential generated site trips were distributed and assigned to 19th Street, 20th Street, Dodge Street, Douglas Street, Farnam Street, and Harney Street corridors, then equally split between the I-480 ramps and each of the EB/WB corridors at I-480 highway interchanges.

30th Street On/Off Ramp Realignment

For the 30th Street on/off ramp realignment scenario, existing ramp volumes were shifted from 30th Street/Turner Boulevard to 29th Street frontage road with similar volume distribution to current operations. The redevelopment site trips were distributed and assigned to the arterial street network based on potential trip origins and destinations. Most trips were assigned to and from 30th Street, Dodge Street, Douglas Street, Farnam Street, Harney Street, and the I-480 ramps. The trip distributions for the downtown area, I-480 ramps, and west of the redeveloped site are approximately 30% each. The remaining 10% was assigned to 30th Street, which traveled NB/SB to Cuming Street.

5.3 Operational Analysis

Synchro version 12 software and Highway Capacity Manual 7th edition methodology were used to perform operational analysis for the ramp removal/realignment (See *Appendix J* for Traffic Volumes and Synchro Analysis Sheets). The findings from the scenario testing are summarized here:

17th Street Ramp Removal

The 17th Street ramp removal was reviewed with both existing and conceptual corridor geometry as a standalone removal and as a removal with realignment of the 30th Street ramps. *Table 19* includes a summary of the analysis findings.

Table 19: 17th Street Ramp Removal Findings

Scenario	Finding	Feasibility
Scenario 1: Only the 17th Street ramp is removed	○ The eastbound left-turn at 13th Street and Capitol Avenue is at capacity, with significant queuing during the PM peak hour, with the existing cross-section. The intersection is overcapacity with the proposed cross-section and significant queuing for the northbound through and eastbound left movement. ○ Under both scenarios, 29th Street intersections at Farnam Street and Harney Street are expected to have vehicular traffic extend past upstream intersections along the 29th Street corridor during the PM peak hour. ○ Furthermore, streetcar and bicycle track phasing along select corridors will intensify vehicle queues downtown, and therefore, traffic operations and queue issues identified would be further degraded.	**Not Feasible**
Scenario 2: The 17th Street ramp is removed, and the 30th Street ramps are realigned	○ In addition to Scenario 1, more intersections are expected to operate overcapacity with the preferred cross-section. This includes the Dodge intersection with 29th, 20th, and 19th Street. The main cause is more vehicle phasing due to two two-way operations and fewer lanes. ○ 29th Street & Douglas Street is expected to have vehicular queues spill back to Dodge Street during the PM Peak hour.	**Not Feasible**

19th & 20th Street Ramps Removal

Similar to the 17th Street ramp removal, 19th and 20th Street ramps were analyzed with existing and conceptual corridors cross-sections. *Table 20* includes the findings of the 19th and 20th Street ramp removal analysis.

Table 20: 19th & 20th Street Ramp Removal Findings

Scenario	Finding	Feasibility
Scenario 1: Only the 19th & 20th Street ramps are removed	○ The southbound right-turn at 14th Street & Capitol Avenue is over capacity and LOS F during the AM peak hour when either the 19th/20th Street ramps are removed or when both the 19th/20th Street and 30th Street ramps are removed and relocated, respectively. This intersection is expected to operate even worse with the preferred cross-section due to two-way operation and traffic signal phasing efficiency losses. ○ The eastbound and northbound through movements at the Douglas Street & 24th Street intersection are at capacity, with additional delays along the southbound left-turn movement, all during the AM peak hour for both scenarios. ○ The northbound approach to the 28th Street & Harney Street intersection is approaching capacity during the AM and PM peak hours. It has a significant queue length that is expected to extend near the gore area of I-480 during the AM peak hour under both scenarios. ○ If the 19th/20th Street ramps are removed, the US-75/North Freeway off-ramp and 30th Street intersection are expected to operate close to capacity and with significant queuing. If the ramp is relocated to 29th Street and Dodge Street instead, it is expected to operate at LOS C. ○ Streetcar and bicycle track phasing along select corridors will intensify vehicle queues downtown, and therefore, traffic operations and queue issues identified would be further degraded.	**Not Feasible**
Scenario 2: The 19th & 20th Street ramps are removed and the 30th Street ramp realign	○ In addition to Scenario 1, more intersections are expected to operate overcapacity with the preferred cross-section. This includes the Dodge intersection with 29th, 24th, 20th, and 19th Street. The main cause is more vehicle phasing due to two two-way operations and fewer lanes.	**Not Feasible**

17th, 19th & 20th Street Ramp Reconfiguration

The reconfiguration of the 17th Street ramp aligned with Cass Street and the 19th and 20th Street off-ramp aligned with Chicago Street, creating a tight diamond interchange, was reviewed. It should be noted constructability and design details were not reviewed for this realignment, and further evaluation would be required to determine detailed ramp design features, including final ramp terminal location and geometry. This analysis primarily focused on the new ramp terminal intersections as an initial test of feasibility. *Table 21* includes the summary of analysis results. A conceptual layout of this reconfiguration is shown in *Figure 9.*

Table 21: 17th, 19th & 20th Street Ramp Reconfigurations

Scenario	Finding	Feasibility
Scenario 1: Eliminating 20th Street ramp and keeping 19th Street ramp for an interim construction period	○ 19th Street & Capitol intersection is expected to operate at LOS B or above during AM and PM peak hours	**Feasible**
Scenario 2: Eliminating 19th Street ramp and keeping 20th Street ramp for an interim construction period	○ The 20th Street intersection with Dodge and Douglas Street is expected to operate at capacity and experience significant queuing at the westbound, eastbound, and southbound approaches during AM Peak hours, with the proposed cross-section for the 20th Street corridor. ○ The 19th Street & Douglas Street intersection is expected to operate above capacity and experience significant queuing at the eastbound approach during AM Peak hours, with the proposed cross-section for the 19th Street corridors. ○ It would limit the reconfiguration of the 20th Street with the 19th Street corridor	**Not Feasible**
Scenario 3: The 17th and 19th & 20th Street ramps are reconfigured at or near Cass Street and Chicago to create a diamond interchange with 17th Street	○ 17th Street & Cass and 17th & Chicago intersections are expected to operate at LOS C or above for both AM and PM peak hours. ○ Intersections downstream/upstream from the ramp intersections are expected to operate acceptably. ○ A more detailed analysis is needed to determine the design of weaving areas along the I-480 highway and on-off ramp intersections. ○ When preliminary design concepts are available, an operation analysis of the ramp location will be required	**Feasible**

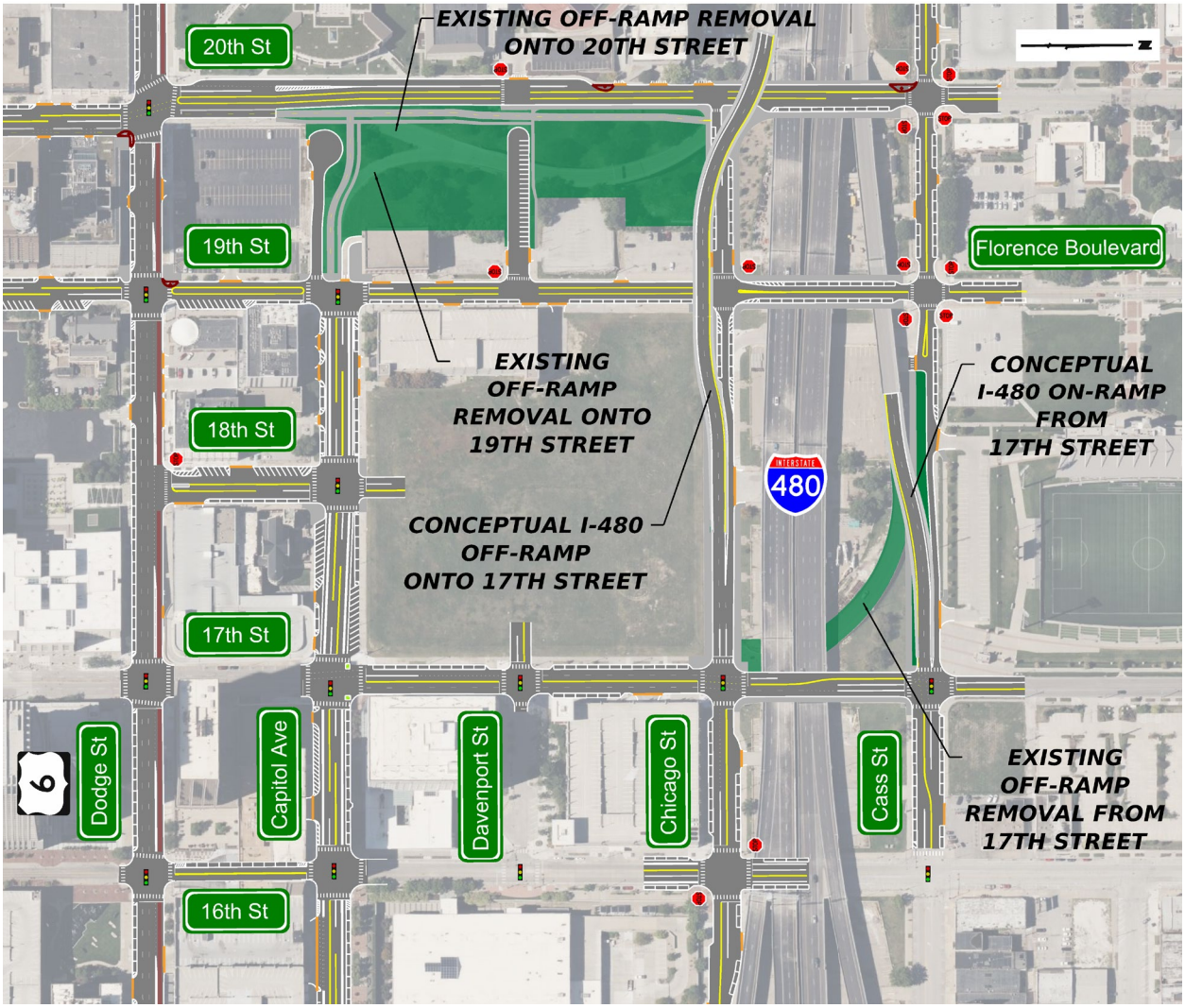


Figure 9: Conceptual 17th Street, 19th & 20th Street Ramp Reconfiguration (Scenario 3)

30th Street Ramps Removal/Realignment

A 30th Street ramp realignment was reviewed as a standalone condition, and all ramp removal was done with both existing and conceptual cross-sections. *Table 22* provides a summary of the analysis findings. A conceptual layout of the realigned 30th Street Ramps is shown in *Figure 10.*

Table 22: 30th Street Ramp Removal/Realignment Findings

Scenario	Finding	Feasibility
Scenario 1: Realignment of 30th Street Ramps	○ The southbound through movement at the 29th Street & Harney Street intersection is expected to be approaching capacity while operating with a significant queue length. ○ The expected signals between 29th Street and Park Avenue on Dodge Street would be approximately 175 feet apart. Due to this poor spacing, it is recommended these intersections be consolidated if the 30th Street ramps are realigned with further redeveloped in the area in the future.	**Feasible**
Scenario 2: Realignment of 30th Street Ramps with both 17th and 19th & 20th Street ramps removed	○ This scenario would have the same challenges as the other ramp removal tests. Vehicle operations and queues are significantly degraded.	**Not Feasible**

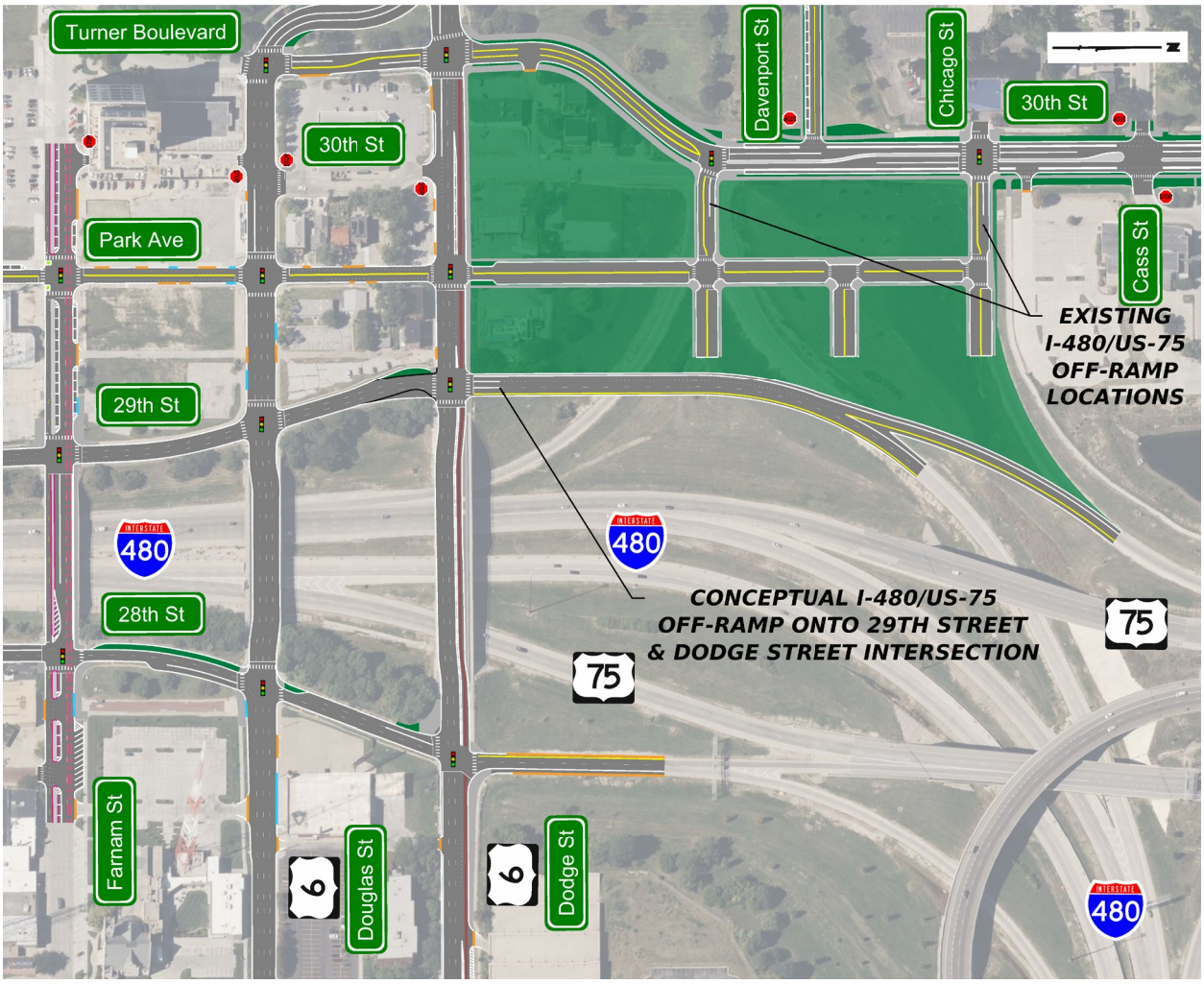


Figure 10: Conceptual 30th Street Ramp Reconfiguration (Scenario 1)

5.4 Ramp Evaluation Findings

The ramp evaluation tested the idea of reducing the number of freeway ramps serving the urban core. The finding from this analysis showed the removal of any single ramp (on or off) caused overload at the remaining ramps. Unacceptable operations included excessive delay and queue spillback through intersections as well as onto the freeway system. The analysis finding indicated the removal of a ramp would only work if the ramp was replaced in the same general area.

The evaluation identified two operationally feasible ramp reconfiguration alternatives.

- The 17th Street, 19th & 20th Street ramps on I-480 could be reconfigured as a single tight diamond interchange at 17th Street.
- Realigning the I-480 and US 75 ramps at 30th Street to connect at the 29th Street/Dodge Street intersection was identified as feasible.

Further evaluation and planning is necessary to move these conceptual alternatives forward. Also, continuing NDOT coordination and collaboration will be valuable in the process.

6 Recommended Concepts

This chapter provides potential street geometry concepts for Tier 1 and Tier 2 study corridors as well as typical cross-sections for Tier 3. Parking impacts for Tier 1 and Tier 2 corridors are summarized.

6.1 Tier 1

As mentioned in the initial corridor screening and grouping, Tier 1 corridors are candidate streets for potential conversion from one-way to two-way operations with potential for multi-modal improvements. Concepts were developed for the two-way reconfiguration within the existing curb. Some concepts included curb changes to accommodate access improvements.

The concepts are provided in the Final Concepts Exhibits for Tier 1.

6.2 Tier 2

The Tier 2 corridor are candidate streets for potential lane reduction or lane narrowing to accommodate other multi-purpose uses such as transit lanes, bicycle lanes, parking area and curbside operations. There were two special cases involving 30th Street and Cuming Street corridors. The 30th Street corridor was fully reconfigured with multi-purpose amenities for the prospective realigning of ramps to/from I-480/US-75 at the 29th Street & Dodge Street intersection. The Cuming Street corridor was considered only for access management improvements.

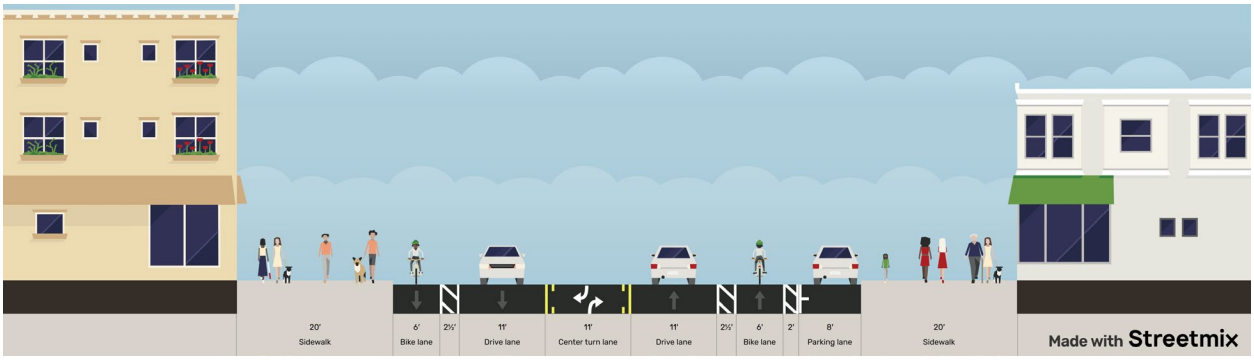
The concepts are provided in the Final Concepts Exhibits for Tier 2.

6.3 Tier 3

Typical sections were identified for the Tier 3 study corridors and are shown with the Streetmix application (Streetmix.net). The corridor concepts were developed with the intention of staying within existing right-of-way and curblines while enhancing mobility and safety for all travel modes. All bike lane configurations are conceptual options that were evaluated at a high level. When the City chooses to advance any concepts forward, analysis and design will be necessary.

16th Street – Leavenworth Street to Howard Street

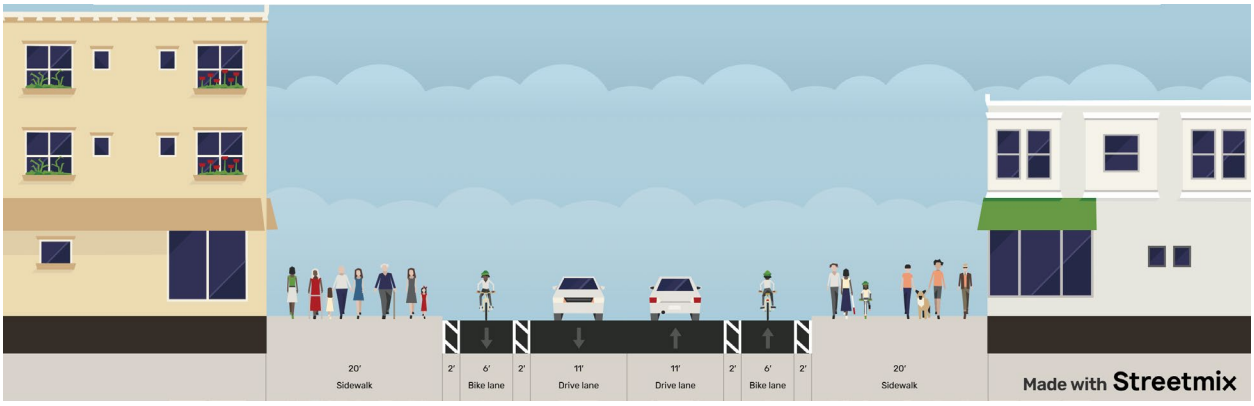
The 16th Street corridor between Leavenworth Street and Howard Street is currently a two-way, four-lane cross-section with parallel parking on both sides. This concept reconfigures the cross-section to a three-lane section (11-foot) and removes parallel parking from one side of the street. Buffered bike lanes would be added both northbound and southbound traffic.



Conceptual cross-sections created using Streetmix (https://streetmix.net). Licensed under Creative Commons CC-BY-SA.

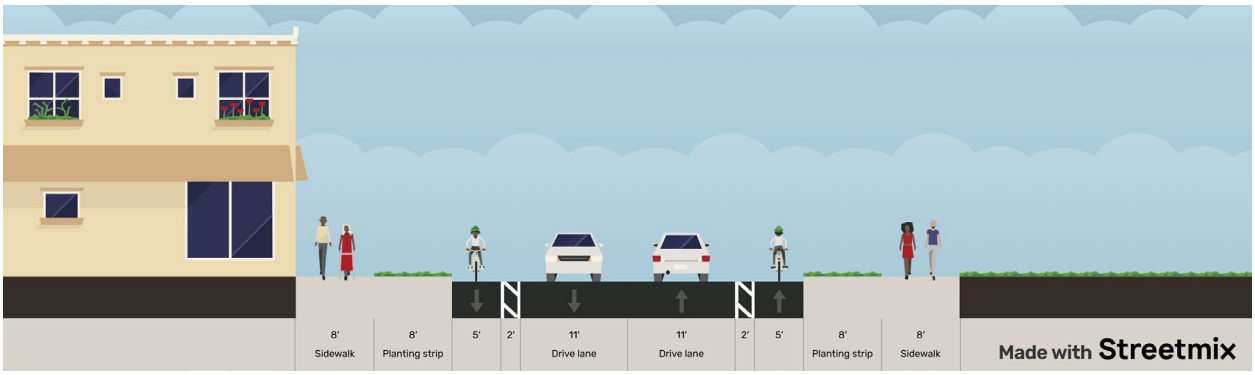
16th Street – Howard Street to Harney Street

The 16th Street corridor between Howard Street and Harney Street is currently a two-way, two-lane street with parallel parking on both sides. Reconfiguration to 11-foot travel lanes with buffered bike lanes replacing the parking. This reconfiguration helps create an uninterrupted 16th Street bike corridor from south of Leavenworth Street to the expected Market to Market protected bike corridor along Harney Street.



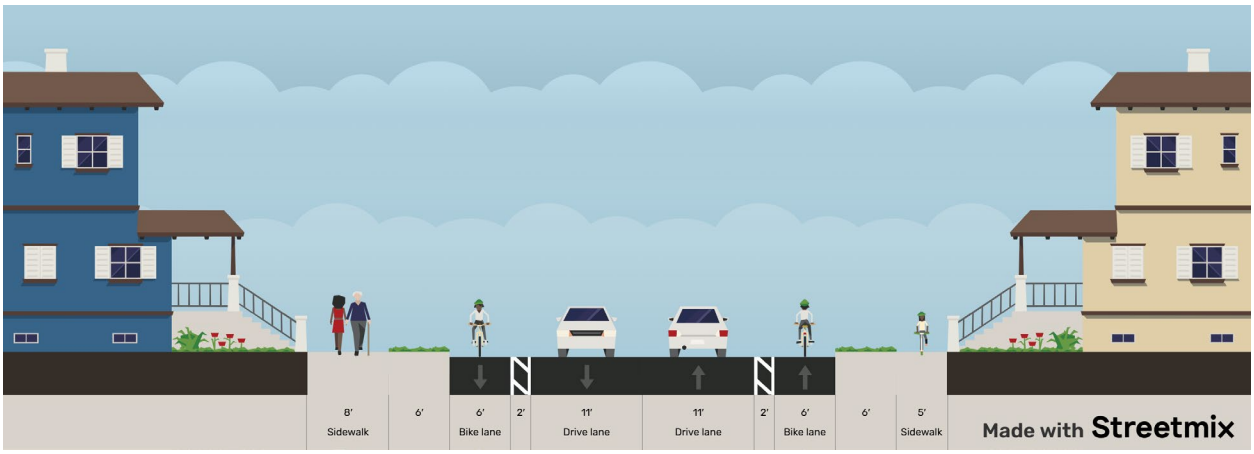
17th Street – Cass Street to Cuming Street

The 17th Street corridor between Cass Street and Cuming Street is currently a two-way, three-lane cross-section with a TWLTL and pockets of pull-in angled parking on both sides within adjacent curb extensions. Reconfiguration would include two 11-foot lanes cross-section with buffered bike lanes on each side of the corridor. The angled parking areas would be switched to back-in angled parking to improve to bike lane visibility.



Turner Boulevard – Leavenworth Street to Harney Street

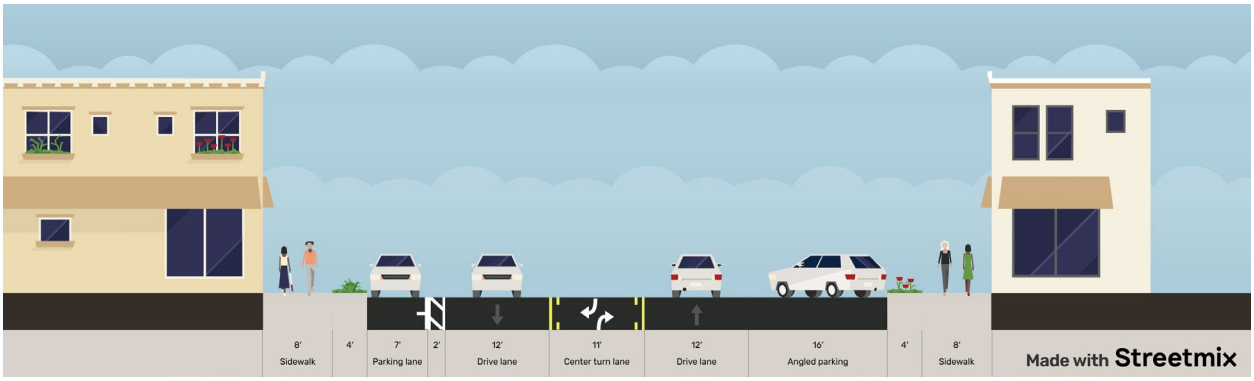
The Turner Boulevard segment between Leavenworth Street and Harney Street is currently a two-way, two-lane cross-section with a southbound bike lane on the west side with no buffer. Reconfiguration includes reducing to 11-foot lanes and including buffered bike lanes for both directions. There would continue to be no parking along the corridor.



Pacific Street – 13th Street to 10th Street

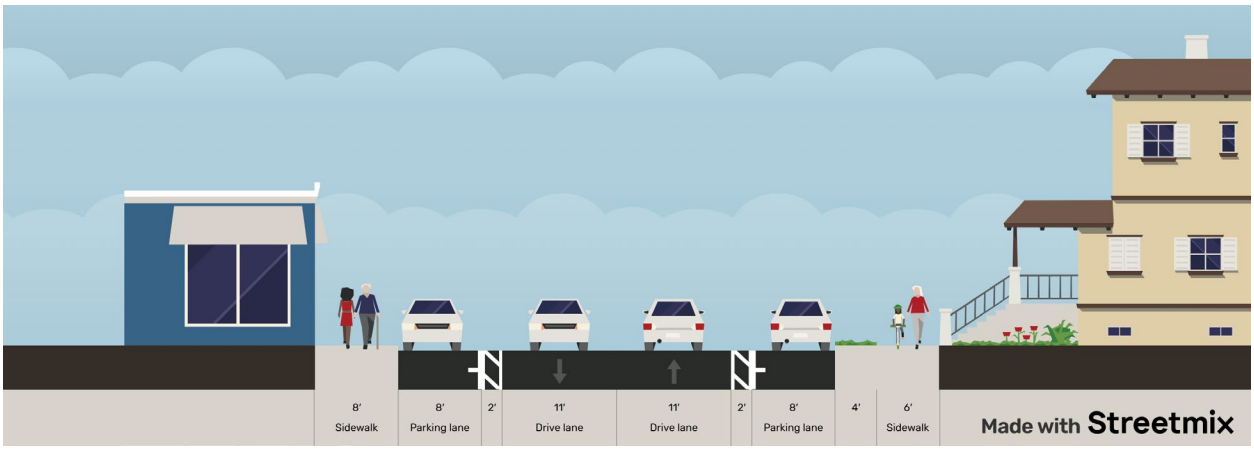
The Pacific Street segment between 13th Street and 10th Street is currently a wide, two-way, two-lane cross-section with parallel parking along some parts of the north side of the corridor and pull in angled parking along much of the south side with curb extensions. Reconfiguration would include three-lane cross section with TWLTL. Both through lanes would be 12-foot to support truck traffic in this area, while the TWLTL would have an 11-foot lane to provide access to the US Post Office facility and the adjacent street network. Parking would remain on both sides of the street, with an additional buffer added between the parallel parking on the north side and adjacent travel lane. The angled parking on the south side would be changed to back-in angle parking.

Originally, bike lanes were considered along this segment between 13th Street and 10th Street to provide a connection between recommended bike corridors along both cross streets within Tier 2 concepts. Due to the heavy truck traffic within the area, a post office drop-off zone with mailboxes located on the north side of Pacific Street, and the idea to keep as much parking along the corridor as possible, bikes lanes were replaced with the TWLTL concept to better support the identified needs.



Pacific Street – 10th Street to 6th Street

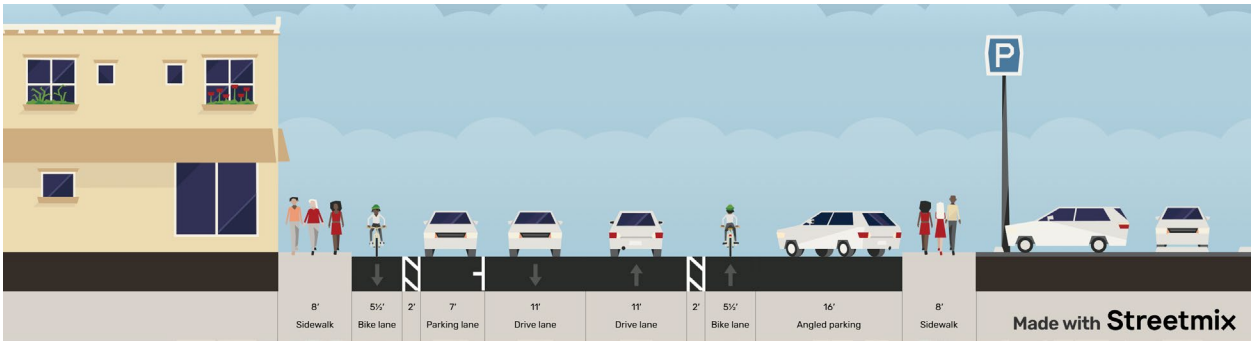
The Pacific Street segment between 10th Street and 6th Street is currently a wide, two-way, two-lane cross-section with parallel parking along both sides of the street. Reconfiguration includes restriping to 11-foot lanes with a striped buffer between the parallel parking and travel lanes.



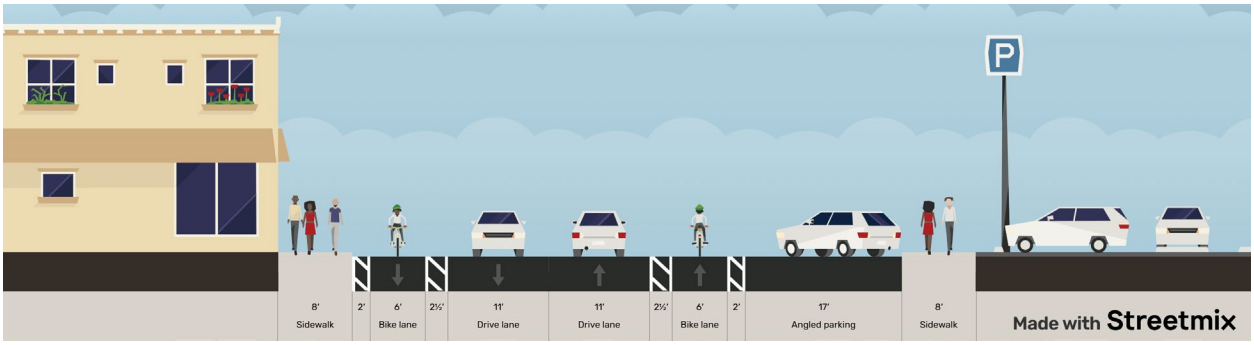
15th Street – Chicago Street to Mike Fahey Street

The 15th Street corridor between Chicago Street and Mike Fahey Street is currently a wide, two-way, two-lane street with pull-in angled parking located on the east side throughout the corridor and also at times on the west side. This concept would have lane widths reconfigured to 11-foot, with buffered bike lanes added on both sides. Due to curb extensions located on the east side at some intersections, angled parking will remain on the east side of the corridor with a change to back-in parking. Parallel parking will appear on the west side of the street within sections of the corridor where parking currently exists. In these areas the southbound bike lane will be parking protected from the travel lane (Section 1). In areas where parking does not exist on the west side it will be a buffered southbound bike lane (Section 2).

Section 1

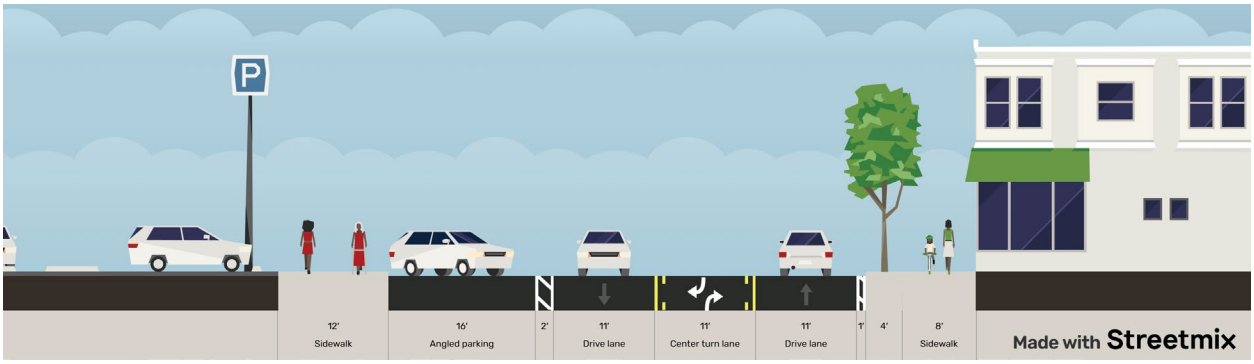


Section 2



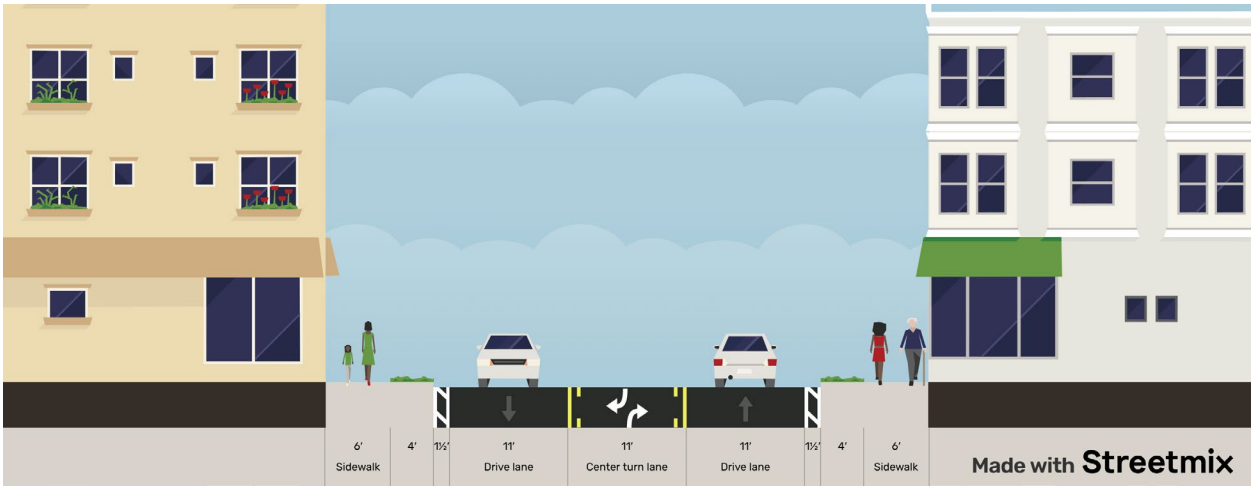
Chicago Street – 17th Street to 15th Street

The Chicago Street segment between 17th Street and 15th Street is currently a two-way, three-lane cross-section with left-turn lanes for both east and westbound traffic at the 16th Street intersection. A single lane also continues for both east and westbound traffic through this section of the corridor. Parallel parking exists within curb extensions along some areas on the south side of the corridor (not shown in Streetmix). Parallel parking also currently runs along the north side of the street. Reconfiguration would include keeping the three-lane cross-section while converting parallel parking on the north side into back-in angled parking. Note, this section of Chicago Street could remain the same for the time being. Future concept development may happen along Chicago Street if the existing 17th Street and 19th Street/20th Street I-480 ramps are relocated.



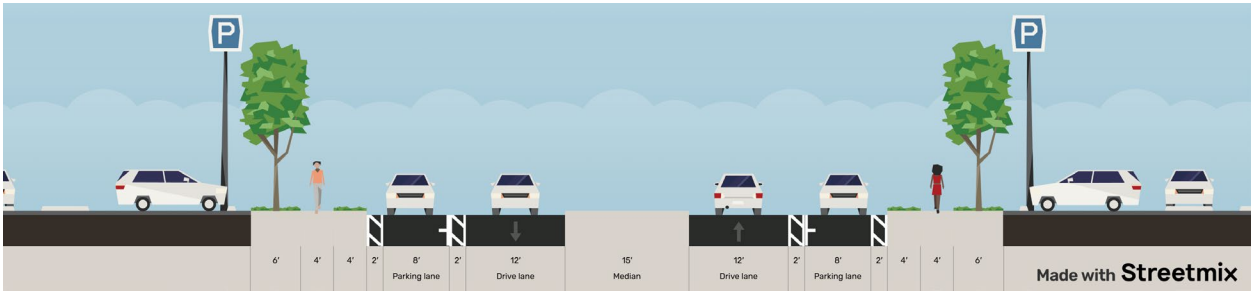
33rd Street – Harney Street to Dodge Street

The 33rd Street block between Harney Street and Dodge Street is currently a two-way, three-lane cross-section with a TWLTL. All lanes are 12-foot wide. The only reconfiguration recommendation is to reduce to 11-foot lanes for the three-lane cross section. Other than this modest change, it is recommended segment enhancements wait for any redevelopment that occurs with the relocation of Mutual of Omaha from the adjacent property.



7th Street – Leavenworth Street to Jones Street

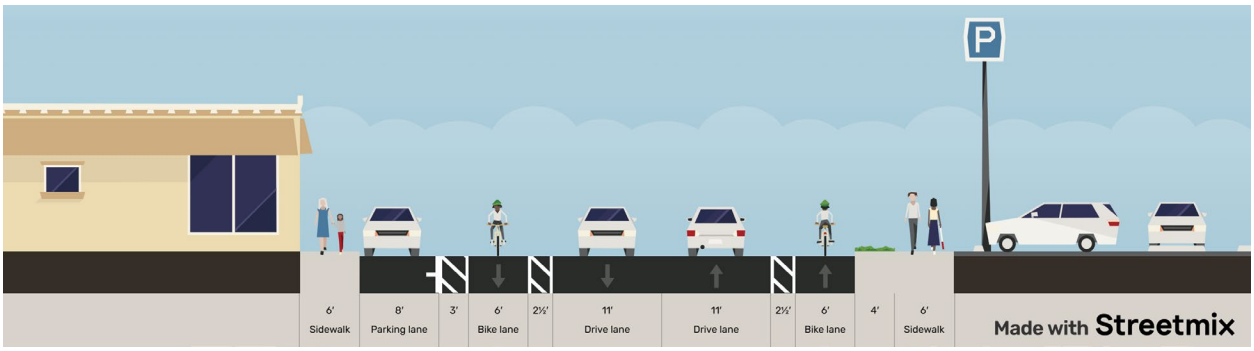
The 7th Street corridor between Leavenworth Street and Jones Street is currently a four-lane divided street with 12-foot lanes. This street could be reconfigured to one 12-foot lane in each direction, adding parallel parking in both directions with buffers along each side to protect pedestrians entering/exiting their vehicles. Parking would be striped except near the intersections and parking lot access point.



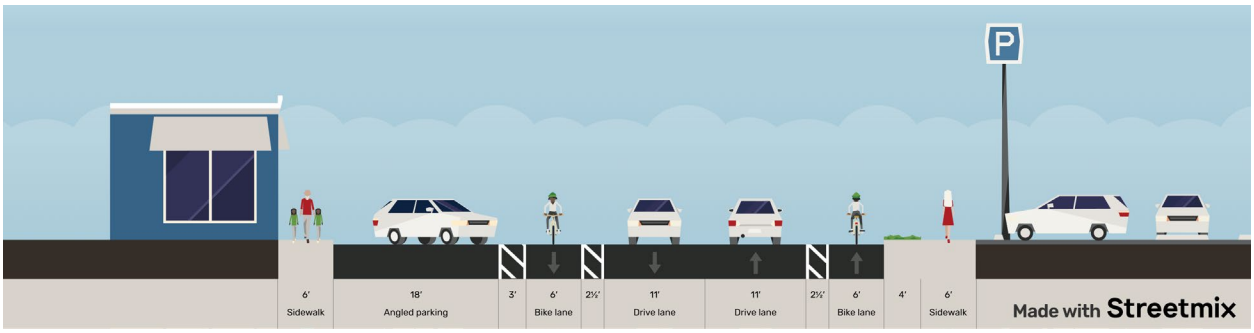
12th Street – Dodge Street to Mike Fahey Street

The 12th Street corridor between Dodge Street and Mike Fahey Street is currently a two-lane cross-section with parking on the west side of the street between Capitol Avenue and Mike Fahey Street. This parking is a mixture pull-in angled and parallel stalls. Curb extensions exist at each intersection, fully shadowing the parking. Two concepts were developed. Both reconfigure the road to a two-lane cross-section with buffered bike lanes both northbound and southbound. Parking would remain on the west side of the street for both concepts along with an additional striped buffer zone between parking and the adjacent bike lane. The first cross-section shows the parallel parking (Section 1). The second cross-section (Section 2) converts existing pull-in angled parking to back-in angled parking to provide drivers better visibility of the adjacent bike lane.

Section 1

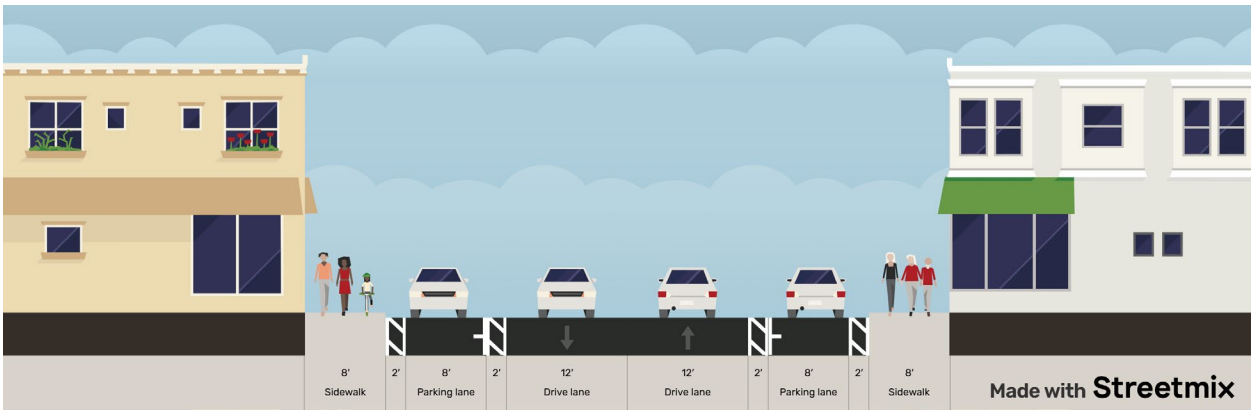


Section 2



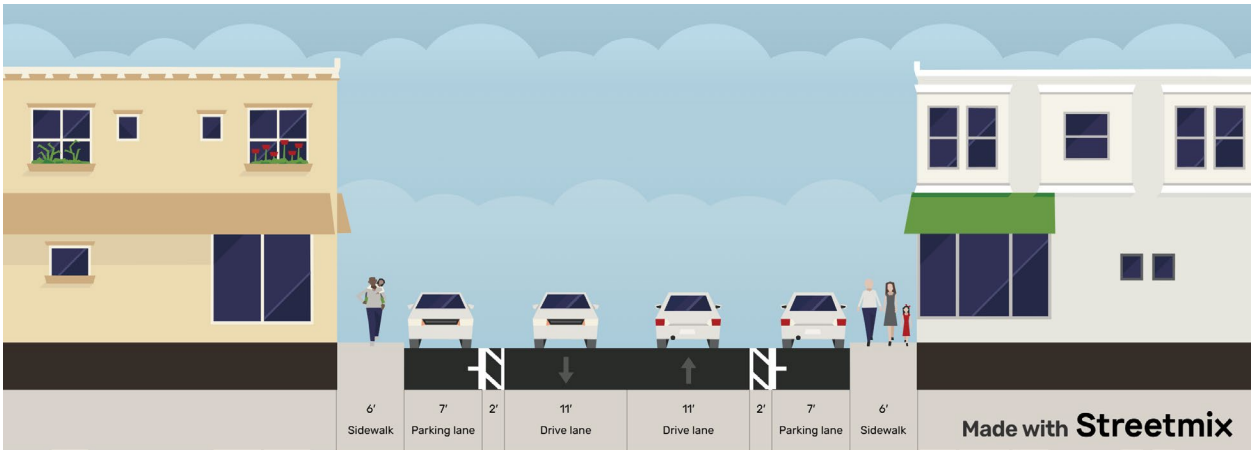
22nd Street – Leavenworth Street to St. Mary's Avenue

The 22nd Street corridor between Leavenworth Street and St. Mary's Avenue is currently a wide, two-way, two-lane street with parallel parking on both sides. Reconfiguration would include reducing to 12-foot lanes with the addition of parking nodes to reduce crossing distance and to help calm traffic. Angled parking could also be considered for one side of the street while maintaining parallel for the other side. There would be no room for a striped buffer in this scenario.



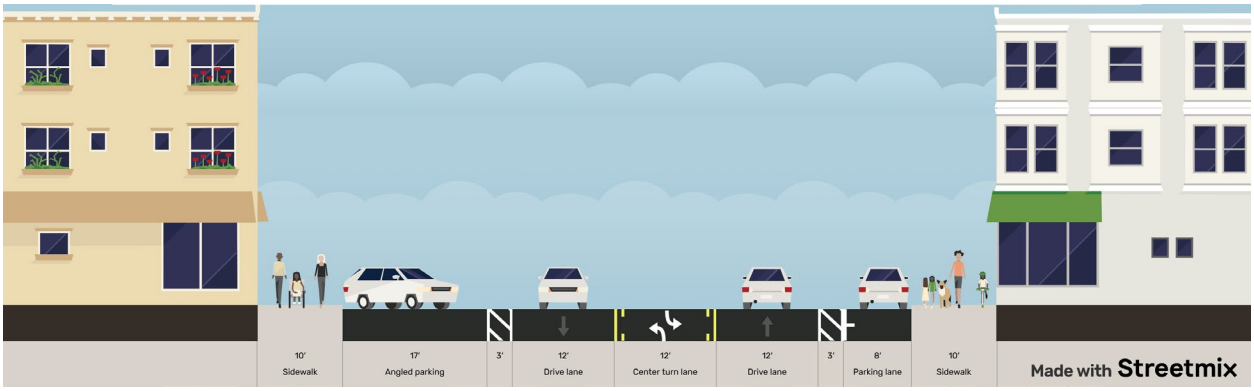
22nd Street – St. Mary's Avenue and Howard Street

The 22nd Street segment St. Mary's Avenue and Howard Street is currently a wide, two-way, two-lane street with parallel parking on both sides. Reconfiguration would include reducing to 11-foot lanes with the addition of a buffered area between travel lanes and the parallel parking. Angled parking could also be considered for one side of the street with no parking on the other side.



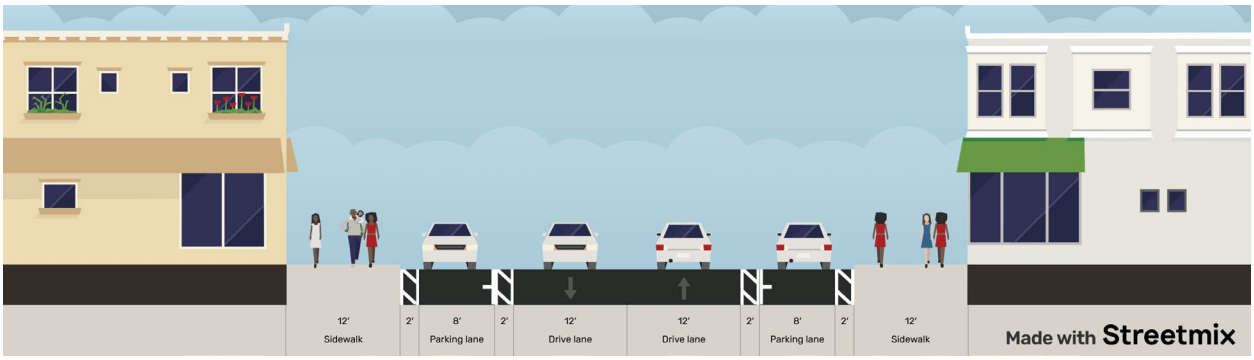
18th Street – Dodge Street to Capitol Avenue

The 18th Street segment between Dodge Street and Capitol Avenue is currently a three-lane cross-section with two northbound lanes and one southbound lane. Parallel parking is found along the east side and pull-in angled parking is found along the west side. There is also a narrow median located just north of Dodge Street separating northbound and southbound traffic. This segment would be reconfigured to a three-lane section with a center lane TWLTL. Lane widths would be 12-feet which will provide striped buffer area between vehicular lanes and parking. Parallel parking would remain on the east side and back-in angle parking would be configured for the west side.



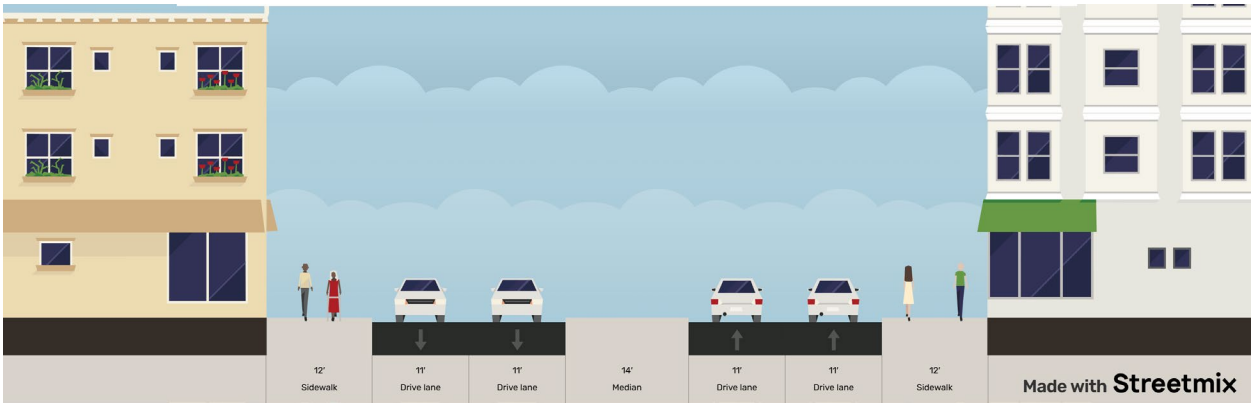
18th Street – Jackson Street to Howard Street

The 18th Street segment between Jackson Street and Howard Street is currently a wide, two-way, two-lane street with adjacent parallel parking on both sides. Reconfiguration would reduce the two travel lanes to 12-feet to add a buffer between adjacent parking on both sides. Angled parking was considered, but due to the limited spacing between adjacent intersections, it was not recommended.



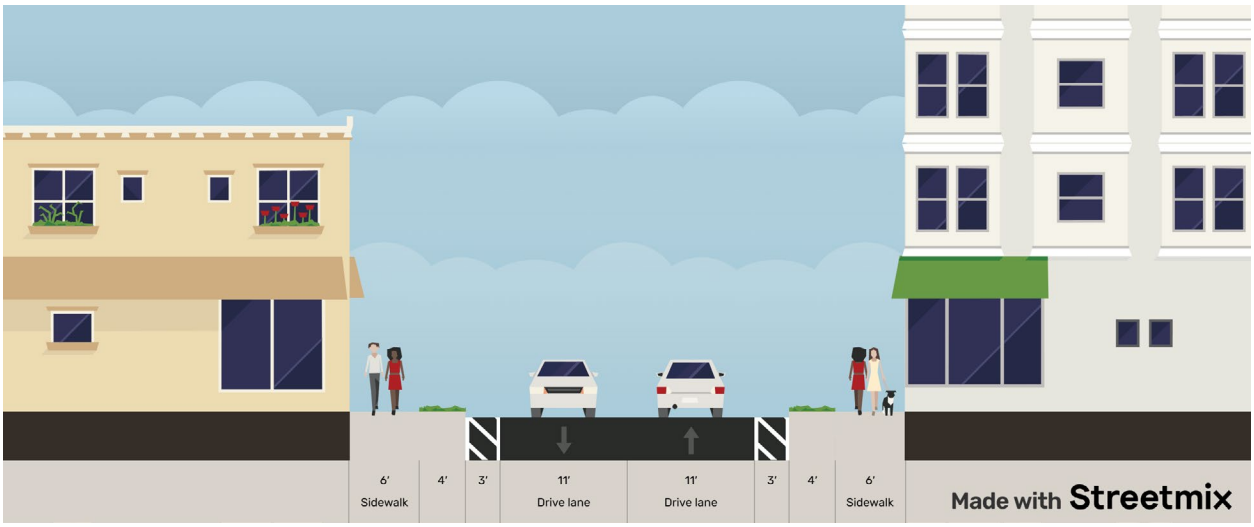
18th Street – Farnam Street to Douglas Street

The 18th Street segment between Farnam Street and Douglas Street is currently a two-way, four-lane divided cross-section with a 14-foot median. Parallel parking exists on both sides for the north half of this city block. No configuration changes are recommended due to limited benefit. Additionally, the four lanes are recommended to remain due to traffic demand to adjacent parking garages.



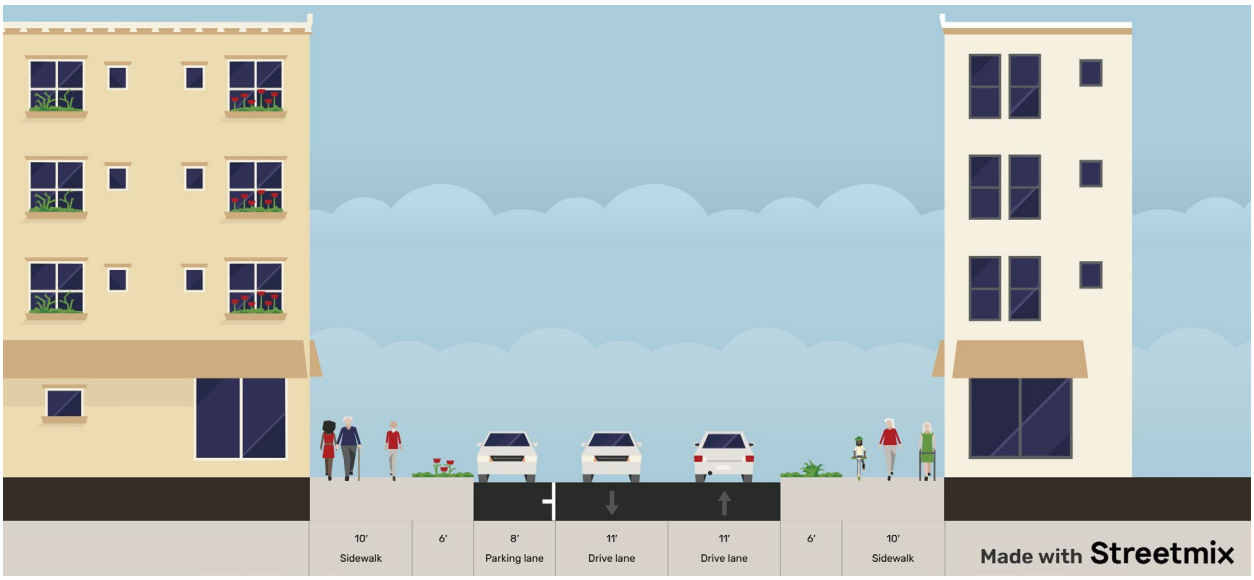
34th Street – Farnam Street to Dodge Street

The 34th Street segment between Farnam Street and Dodge Street is currently a wide, two-way, two-lane street. There is opportunity to reduce travel lanes to 11-foot creating space for curb extensions or a pedestrian crossing median. Overall, it is recommended segment enhancements wait for redevelopment that occurs with the relocation of Mutual of Omaha from the adjacent property.



16th Street – Dodge Street to Capitol Avenue

The 16th Street segment between Dodge Street and Capitol Avenue is the existing main entrance from Dodge Street to the DoubleTree Hotel area and connected parking structure. There is no current direct connection from Dodge Street to Capitol Avenue. If the business was not occupying this space and connectivity could be reestablished, a two-way, two-lane cross-section with parallel parking along one side would be recommended (see *Figure 11*). This would provide street continuity and fit in with a similar, existing 16th Street cross-section south of Dodge Street.



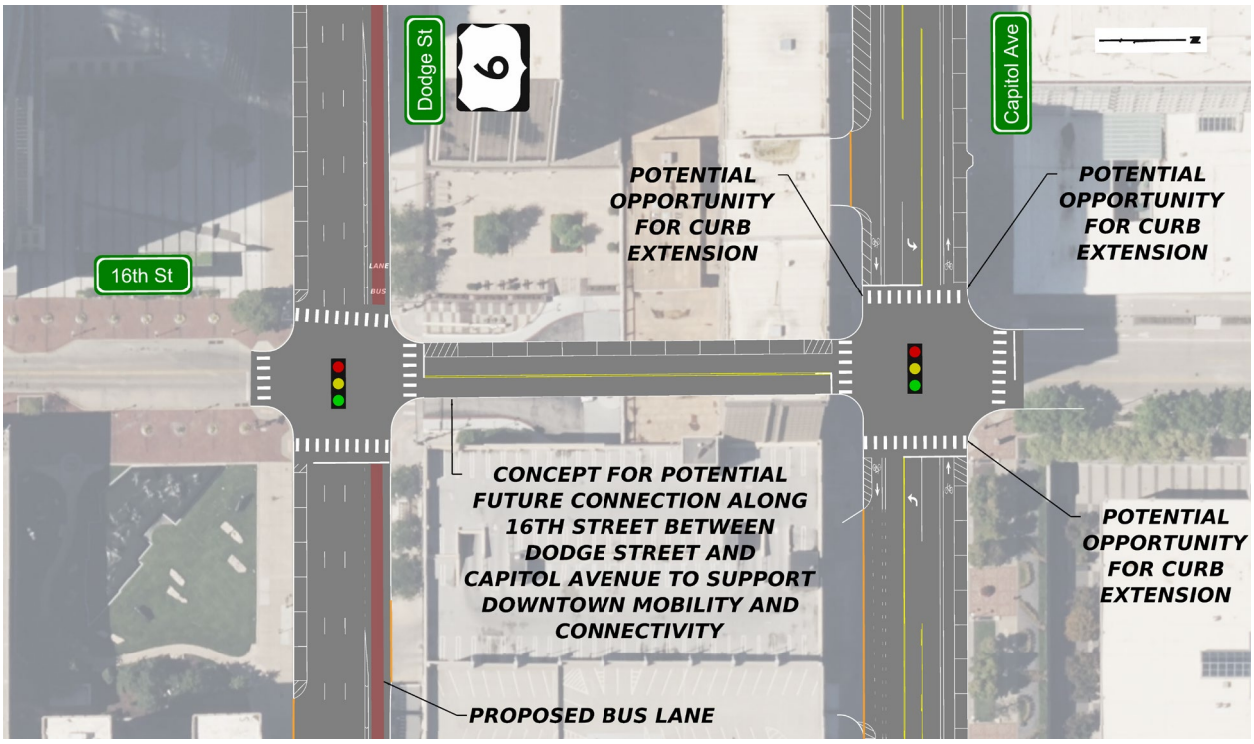


Figure 11: 16th St – Dodge St to Capitol Ave

6.4 On-Street Parking and Curbside Impacts

The addition of bike lanes, enhanced pedestrian crossing areas and reconfiguration of lanes to support two-way operation requires reallocating some of the available street width. For this feasibility study, one of the guidelines was staying within existing right-of-way and limiting pavement and curb work. The desired multi-modal enhancements require a trade-off and balance between the competing elements and it is common to see on-street parking count reductions when downtown or urban core streets go through a reconfiguration process.

An effort was made to limit curbside impacts during the conceptual development process. However, at the scale of this conceptual planning study, detailed curbside operations is addressed only at a high level. Note that each roadway corridor will go through a preliminary and final design process – at which time curbside operations would be considered in greater detail and likely through direct interaction with business stakeholders.

A summary of on-parking gains and losses by corridor was prepared to quantify parking impacts resulting from the Tier 1 and Tier 2 reconfiguration concepts. The summary is provided in *Table 23.*

Table 23: On-Street Parking Gains & Losses

Corridor	Existing Parking Stalls	Reconfigured Parking Stalls	Net Gain or Loss
Tier I			
St. Mary's Ave	186	41	-145
Leavenworth St	346	84	-262
13th St	103	44	-59
Turner Blvd	9	0	-9
20th St	123	82	-41
19th St	187	178	-9
17th St (North)	38	23	-15
Park Ave	118	49	-69
14th St	124	126	+2
15th St	130	102	-28
17th St (South)	58	42	-16
31st St	46	17	-29
Tier I Subtotal	1,468	788	-680
Tier 2			
Cuming St	24	24	0
13th St (South)	25	33	+8
28th St	-	-	-
10th St	214	129	-85
30th St	9	0	-9
13th St (North)	38	38	+0
Capitol Ave	103	121	+18
14th St	69	29	-40
Jackson St	97	77	-20
29th St	-	-	-
40th St	160	102	-58
Tier 2 Subtotal	739	553	-186
Tier I + 2 Total	**2,207**	**1,341**	**-866**

Note: Parking numbers are based on corridor conceptual designs.

7 Corridor Cost Estimates

This chapter provides conceptual cost estimates based upon design concepts for each of the individual Tier 1 and Tier 2 study corridors. Conceptual costs estimates include necessary street reconfiguration elements with the exception of street resurfacing or rehabilitation.

7.1 Tier 1 Conceptual Costs

Using the design concepts (see concept design exhibits for Tier 1), conceptual project cost estimates were prepared using the following three cost metrics:

- **Pavement Markings/Striping –** This includes all surface pavement markings and lane striping.
- **Median/Sidewalk Construction and Resurfacing + Landscaping –** This includes new sidewalk and median construction identified along the corridors. Landscape and greenery seeding were also included within this cost.
- **Signal Reconstruction –** Traffic signal replacement or modifications would be necessary along each corridor. Each intersection was evaluated to determine full signal replacement or partial replacement. Note: Streets reconfigured to two-way or streets with additional bike lane infrastructure were assumed to require full signal replacement at each intersection.

These cost metrics were combined to create a subtotal cost for each corridor. Two additional values were then applied, based on the subtotal cost:

- **Contingency –** A 30 percent contingency was applied to the subtotal cost. This value is to cover additional unknown costs and is appropriate for a conceptual level cost estimate.
- **Preliminary Engineering –** The engineering is estimated at 15 percent of the combined subtotal and contingency costs.

These values were combined to create an overall conceptual project cost estimate for each Tier 1 corridor. A summary of cost for each corridor project can be found in *Table 24.* A more detailed breakdown of individual corridor costs for Tier 1 corridors in included in *Appendix K.*

Items excluded from these estimates:

- Utility work
- Freeway ramp modifications
- Brick street repair or replacement
- Street pavement resurfacing or rehabilitation

Table 24: Tier 1 Conceptual Cost Estimates

Corridor	Pavement Markings/Striping	Median/Sidewalk Construction & Resurfacing + Landscaping	Signal Reconstruction	Subtotal Cost	Contingency	Preliminary Engineering	Total Cost
13th St	$87,900	$114,800	$1,944,000	**$2,146,700**	$644,000	$418,600	**$3,209,300**
14th St	$75,500	$4,100	$1,674,000	**$1,753,600**	$526,100	$342,000	**$2,621,700**
15th St	$30,400	$5,900	$648,000	**$684,300**	$205,300	$133,400	**$1,023,000**
17th St (South)	$34,400	$28,500	$972,000	**$1,034,900**	$310,500	$201,800	**$1,547,200**
17th St (North)*	$30,600	$24,200	$972,000	**$1,026,800**	$308,000	$200,200	**$1,535,000**
19th St**	$68,900	$40,500	$1,674,000	**$1,783,400**	$535,000	$347,800	**$2,666,200**
20th St**	$258,100	$752,300	$1,620,000	**$2,630,400**	$789,100	$512,900	**$3,932,400**
31st St	$11,900	$10,900	$0	**$22,800**	$6,800	$4,400	**$34,000**
Turner Blvd (North)	$9,500	$59,500	$864,000	**$933,000**	$279,900	$181,900	**$1,394,800**
Turner Blvd (South)	$22,200	$1,600	$432,000	**$455,800**	$136,700	$88,900	**$681,400**
Park Ave	$26,300	$21,500	$1,026,000	**$1,073,800**	$322,100	$209,400	**$1,605,300**
Leavenworth St	$123,800	$83,600	$1,944,000	**$2,151,400**	$645,400	$419,500	**$3,216,300**
St. Mary's Ave	$136,600	$315,000	$2,538,000	**$2,989,600**	$896,900	$583,000	**$4,469,500**
Chicago St*	$23,100	$26,700	$432,000	**$481,800**	$144,500	$93,900	**$720,200**

** Does not include new interchange conceptual modifications*

*** Does not include removal or modifications to existing interchange*

7.2 Tier 2 Conceptual Costs

Conceptual estimates of cost for Tier 2 corridors were prepared with the same approach as Tier 1. Tier 2 concept exhibits were used to develop project quantity estimates for use in generating conceptual cost estimate for each corridor.

A summary of cost for each corridor project can be found in *Table 25.* A more detailed breakdown of individual corridor costs for Tier 2 corridors is included in *Appendix K.*

Table 25: Tier 2 Conceptual Cost Estimates

Corridor	Pavement Markings/Striping	Median/Sidewalk Construction & Resurfacing + Landscaping	Signal Reconstruction	Subtotal Cost	Contingency	Preliminary Engineering	Total Cost
10th St	$53,500	$16,500	$756,000	**$826,000**	$247,800	$161,100	**$1,234,900**
13th St (North)	$15,400	$33,700	$702,000	**$751,100**	$225,300	$146,500	**$1,122,900**
13th St (South)	$45,800	$13,200	$864,000	**$923,000**	$276,900	$180,000	**$1,379,900**
14th St (North)	$17,900	$0	$702,000	**$719,900**	$216,000	$140,400	**$1,076,300**
28th St	$20,600	$58,700	$972,000	**$1,051,300**	$315,400	$205,000	**$1,571,700**
29th St*	$16,900	$32,000	$1,080,000	**$1,128,900**	$338,700	$220,100	**$1,687,700**
30th St**	$104,800	$573,300	$1,242,000	**$1,920,100**	$576,000	$374,400	**$2,870,500**
40th St	$22,500	$41,600	$486,000	**$550,100**	$165,000	$107,300	**$822,400**
Capitol Ave	$79,000	$4,300	$1,836,000	**$1,919,300**	$575,800	$374,300	**$2,869,400**
Cuming St	$128,600	$346,200	$1,944,000	**$2,418,800**	$725,600	$471,700	**$3,616,100**
Jackson St	$48,300	$9,800	$1,026,000	**$1,084,100**	$325,200	$211,400	**$1,620,700**

** Does not include new interchange conceptual modifications*

*** Does not include removal or modifications to existing interchange*

7.3 Tier 1 & Tier 2 Cost Per Block

In addition to the total corridor cost, a "cost per block" metric was developed for each Tier 1 and Tier 2 corridor for use in the comparative benefit scoring process (Chapter 8).

Tier 1 and Tier 2 corridor costs were divided by the number of city blocks included in each corridor to identify "cost per block" for each corridor. The method included measuring the length of each corridor in miles and dividing the value by fourteen blocks per mile. This value is in line with the typical number of city blocks traditionally found within a mile of the Omaha Urban Core area. A breakdown of these values can be found in *Table 26* and *Table 27* for each of the Tier 1 and Tier 2 corridors, respectively.

Table 26: Tier 1 Cost Per Block

Corridor	Total Cost	Corridor Length (mi)	Total Blocks on Corridor*	Cost/Block
13th St - Jackson St to Cass St	$3,209,300	0.65	9.1	**$352,700**
14th St - Leavenworth St to Capitol Ave	$2,621,700	0.6	8.4	**$312,100**
15th St - Leavenworth St to Farnam St	$1,023,000	0.35	4.9	**$208,800**
17th St (South) - Jackson St to Farnam St	$1,547,200	0.25	3.5	**$442,100**
17th St(North) - Capitol Ave to Cass St	$1,535,000	0.2	2.8	**$548,200**
19th St - Mason St to Cass St	$2,666,200	1.0	14	**$190,400**
20th St - Mason St to Cass St	$3,932,400	0.95	13.3	**$295,700**
31st St - Leavenworth St to Harney St	$34,000	0.3	4.2	**$8,100**
Turner Blvd (North) - Harney St to Dodge St	$1,394,800	0.25	3.5	**$398,500**
Turner Blvd (South) - Leavenworth St to Harney St	$681,400	0.4	5.6	**$121,700**
Park Ave - St. Mary's Ave to Dodge St	$1,605,300	0.45	6.3	**$254,800**
Leavenworth St - 31st St to 13th St	$3,216,300	1.35	18.9	**$170,200**
St. Mary's Ave - 31st St to 16th St	$4,469,500	1.15	16.1	**$277,600**
Chicago St - 20th St to 14th St*	$720,200	0.15	2.1	**$343,000**

** Based on the average distance between downtown streets, one mile is equivalent to 14 city blocks. Total blocks on corridors is based on the corridor length in miles, divided by 14 city blocks per mile.*

Table 27: Tier 2 Cost Per Block

Corridor	Total Cost	Corridor Length (mi)	Total Blocks on Corridor*	Cost/Block
10th St - Pierce St to Harney St	$1,234,900	0.65	9.1	**$135,700**
13th St (North) - Cass St to Cuming St	$1,122,900	0.3	4.2	**$267,400**
13th St (South) - Pierce St to Jackson St	$1,379,900	0.45	6.3	**$219,000**
14th St (North) - Cass St to Cuming St	$1,076,300	0.3	4.2	**$256,300**
28th St - Howard St to Dodge St	$1,571,700	0.3	4.2	**$374,200**
29th St - Dewey Ave to Dodge St*	$1,687,700	0.25	3.5	**$482,200**
30th St - Dodge St to Nicholas St**	$2,870,500	0.7	9.8	**$292,900**
40th St - Dodge St to Cuming St	$822,400	0.6	8.4	**$97,900**
Capitol Ave - 19th St to 10th St	$2,869,400	0.6	8.4	**$341,600**
Cuming St - 27th St to 10th St	$3,616,100	1.0	14	**$258,300**
Jackson St - 19th St to 13th St	$1,620,700	0.25	3.5	**$463,100**

** Based on the average distance between downtown streets, one mile is equivalent to 14 city blocks. Total blocks on corridors is based on the corridor length in miles, divided by 14 city blocks per mile.*

8 Corridor Benefits Scoring & Ranking

This chapter provides a comparative benefit evaluation and ranking for the Tier 1 and Tier 2 corridor concepts.

Six key criteria were utilized to assess the relative benefit of the corridor concepts. A description of each criteria is provided along with a breakdown of the scoring method. The criteria are combined into a scoring matrix and shown in *Table 28.*

- **Area Traffic Operations Impact (1 to 6 point scale) –** This category was scored based on a combination of multiple traffic engineering measurements (including average intersection level of service [LOS], volume to capacity [v/c] ratios, and potential queue spillbacks), as well as transit enhancements in coordination with Metro Transit, better connectivity for motorists, and any improvement to local access points.
- **Project Cost (1 to 6 point scale) –** This category was scored based on total individual project corridor costs, as well as the per block cost.
- **Constructability (1 to 5 point scale) –** This category was based on the overall difficulty of construction or disruption along a corridor. Examples include access changes, removal of curb ramps and sidewalk sections, or changes to the overall width of the street cross-section led to a reduction in points.
- **Safety Benefit (1 to 5 point scale) –** This category reflected the overall change in safety for all road users along the corridor. This includes a change in the number of conflict points for all vehicle and multimodal traffic, changes in speed, and additional protection for pedestrians, bicyclists, and other vulnerable road users.
- **Ped/Bike Connectivity Enhancements (1 to 4 point scale) –** This category reflects the need for upgraded multimodal enhancement along each corridor through added bike infrastructure and the use of curb extensions to reduce crossing distances at intersections. Corridors with greater safety benefit additions (such as parking protected bike lanes and protected bikeways) were given a higher score.
- **Redevelopment Opportunity (1 to 4 point scale) –** This category was a gauge of redevelopment efforts along each corridor. Active redevelopment scored high while corridors with low potential for redevelopment scored lower.

Table 28: Project Benefit Scoring Criteria

Criteria	Scoring	Scoring Range	Max Score
Area Traffic Operations Impact	**6** High Operations Performance vs No-Build Condition, Significant Access/Connectivity Enhancements **5** High Operations Performance vs No-Build Condition, Limited Access/Connectivity Enhancements **4** Moderate Operations Performance vs No-Build Condition, Significant Access/Connectivity Enhancements **3** Moderate Operations Performance vs No-Build Condition, Limited Access/Connectivity Enhancements **2** Low Operations Performance vs No-Build Condition, Major Access/Connectivity Enhancements **1** Low Operations Performance vs No-Build Condition, Limited Access/Connectivity Enhancements	**1 to 6**	**6**
Project Cost	**6** Lower Cost per Block, Lower Overall Project Construction Cost **5** Lower Cost per Block, Higher Overall Project Construction Cost **4** Moderate Cost per Block, Lower Overall Project Construction Cost **3** Moderate Cost per Block, Higher Overall Project Construction Cost **2** High Cost per Block, Lower Overall Project Construction Cost **1** High Cost per Block, Higher Overall Project Construction Cost	**1 to 6**	**6**
Constructability	**5** Minimal to No Constructability Challenges **4** Limited Constructability Challenges **3** Moderate Constructability Challenges **2** High Degree of Constructability Challenges **1** Not Constructable	**1 to 5**	**5**
Safety Benefit	**5** Possible Significant Increases in Safety **4** Possible Increases in Safety **3** No Change Expected in Safety **2** Possible Moderate Decreases in Safety **1** Possible Significant Decreases in Safety	**1 to 5**	**5**
Ped/Bike Connectivity Enhancements	**4** Significant Ped/Bike Infrastructure Added (Protected Bike Lanes, Elevated Bikeways, etc.) **3** Minimal Ped/Bike Infrastructure Enhancements Added (Reduced Crossing Distance, Bike Lanes, etc.) **2** No Ped/Bike Infrastructure Added **1** Removal or Negative Impact to Existing Ped/Bike Infrastructure	**1 to 4**	**4**
Redevelopment Opportunity	**4** Current/Active Adjacent Investment **3** Near-Term Redevelopment Potential **2** Long-Term Investment Potential **1** Street Alterations Will Not Affect Development Potential	**1 to 4**	**4**
		Possible Maximum Score:	**30**

The scoring method was applied to all Tier 1 corridors - comparing Tier 1 corridors against the other Tier 1 corridors. The same was done for the Tier 2 corridors. The results provide a benefits-based ranking of the Tier 1 corridors and a benefits-based ranking of the Tier 2 corridors. The ranking process did not rank Tier 1 corridors against Tier 2 corridors.

The scores and rankings are summarized in *Table 29* and *Table 30.* Note the street corridors are listed based on highest score to lowest.

Table 29: Project Benefit Scoring - Tier 1 Corridors

		Scoring Values						
Rank	Corridor	Area Traffic Operations Impact (1 to 6)	Total Cost (1 to 6)	Constructability (1 to 5)	Safety Benefit (1 to 5)	Ped/Bike Connectivity Enhancements (1 to 4)	Surrounding Area Development (1 to 4)	Total Score
1	**15th St**	3	6	5	3	3	4	**24**
2	**Leavenworth St**	6	5	3	3	3	2	**22**
T3	**20th St**	6	3	2	4	4	2	**21**
T3	**St. Mary's Ave**	5	3	3	4	4	2	**21**
T3	**14th St**	3	3	4	4	3	4	**21**
6	**17th St (South)**	4	2	3	3	4	3	**19**
T7	**13th St**	4	1	3	4	3	3	**18**
T7	**19th St**	3	5	3	3	2	2	**18**
T7	**31st St**	3	6	3	3	2	1	**18**
T7	**Turner Blvd**	2	4	5	3	3	1	**18**
T7	**Chicago St**	3	2	4	3	2	4	**18**
T12	**Park Ave**	4	4	3	3	2	1	**17**
T12	**17th St (North)**	3	2	4	3	2	3	**17**

The Tier 1 project benefit score indicates an overall ranking; however, the ranking should be treated more as a guide or indicator for project priority – not a fixed order of priority. Additional items to consider with corridor selection and implementation include:

- When considering corridors, the approach should be to execute the reconfiguration of entire corridors to build continuity into the urban corridor enhancement process.
- For Tier 1 corridors, the one-way couplets should be grouped and completed as projects together whenever feasible. The one-way couplets include Leavenworth Street/St. Mary's Avenue, 13th Street/14th Street, 19th Street/20th Street, and 31st Street/Turner Boulevard/Park Avenue. 15th Street is the only corridor with no true couplet, while 17th Street (South) could be combined with St. Mary's Avenue due to proximity. 17th Street (North) and Chicago Street could occur together with any ramp removal and/or relocation efforts within the adjacent area.

Reviewing the benefit ranking for Tier 1 corridors shows 15th Street with the highest score. This makes sense due to the minimal construction needs for the project and the relatively short length of this study corridor.

Table 30: Project Benefit Scoring – Tier 2 Corridors

		Scoring Values						
Rank	Corridor	Area Traffic Operations Impact (1 to 6)	Total Cost (1 to 6)	Constructability (1 to 5)	Safety Benefit (1 to 5)	Ped/Bike Connectivity Enhancements (1 to 4)	Surrounding Area Development (1 to 4)	Total Score
T1	**10th St**	5	6	4	3	3	2	**23**
T1	**13th St (South)**	6	6	3	3	3	2	**23**
3	**14th St (North)**	3	6	5	3	2	2	**21**
T4	**Capitol Ave**	4	1	4	4	3	4	**20**
T4	**40th St**	1	6	3	5	4	1	**20**
T6	**Cuming St**	4	3	3	5	2	2	**19**
T6	**30th St**	4	3	2	4	3	3	**19**
8	**13th St (North)**	4	4	3	3	2	2	**18**
9	**Jackson St**	3	2	4	4	3	1	**17**
10	**29th St**	3	2	4	3	2	1	**15**
11	**28th St**	3	2	3	3	2	1	**14**

Reviewing the benefits rankings for Tier 2 corridors indicates higher benefits come with 10th Street and 13th Street (South) reconfigurations. Next would be the 14th Street (North), Capitol Avenue and 40th Street corridors. Note again, the benefit rankings are not intended to be a prescriptive priority.

9 Findings & Application

9.1 Study Findings

The Urban Core Street Reconfiguration Study was conducted to identify feasible street changes within the existing right-of-way and curblines to enhance accessibility for all travel modes in the urban core study area. The changes considered as part of this study process included:

- Reconfiguration of one-way streets for two-way operation
- Narrowing or reducing the number of vehicle lanes to support multi-modal opportunities
- Enhancements to on-street parking, sidewalks and crossings
- Freeway ramp removal and reconfiguration

The notable findings from the feasibility study include:

- Traffic operations: The urban core streets generally have sufficient capacity to allow a reduction in the number of lanes or narrowing of lane widths to support the addition of bike lanes and buffer areas.
  - There are only a handful of locations for existing conditions where LOS is unacceptable.
  - This same finding is also true for the horizon year.
  - Streets identified as feasible for reconfiguration from one-way to two-way operation were found to have sufficient operational capacity in the two-way configuration.
- A freeway ramp removal evaluation was conducted to determine the feasibility of removing or reconfiguring the freeway ramps that serve the urban core.
  - This evaluation determined removal of any single ramp has unacceptable operational consequences. Essentially, removing a ramp in one location requires a new ramp in the same general area.
  - The evaluation did identify an option for reconfiguring the 17th, 19th & 20th Street ramps as a tight diamond interchange at 17th Street.
  - Reconfiguring the I-480 and US 75 ramps at 30th Street to connect to the 29th Street/ Dodge Street intersection was identified as feasible.

- Street reconfiguration will impact on-street parking
  - Tier 1 conceptual street reconfigurations result in the loss of 680 on-street parking stalls
  - Tier 2 conceptual street reconfigurations result in the loss of 186 on-street parking stalls
- Planning level costs for street reconfigurations were prepared in present day dollars. The costs include pavement markings, median and sidewalk improvements, traffic signals, and preliminary engineering. The costs for street resurfacing or rehabilitation were not included in the estimates. Each project will go through an engineering process to refine the alternative and identify pavement needs to support corridor implementation.
  - The Tier 1 corridors included 8.1 miles of urban streets with planning level costs estimated at $28.7M for conversions (not including street pavement rehabilitation).
  - The Tier 2 corridors included 5.4 miles of urban streets with planning level costs estimated at $19.9M for conversions (not including street pavement rehabilitation).
- A project benefit scoring was completed to rank Tier 1 concepts (highest benefit to lowest) and also Tier 2 concepts in the same way. These rankings were prepared as informational guidelines - not strict prioritization.
- Omaha Street Maintenance has a Winter Operations Plan for snow removal. Windrow plowing operations exist on three of the study corridors and snow storage and pickup overlap with two others. As projects move from conceptual planning to engineering, collaboration with operations and maintenance is recommended to align design and operations.

9.2 Study Application

The information provided in this feasibility study is intended to support decision-making and collaboration for the continued enhancement of Omaha's urban core transportation system. There are several useful ways the information in this study can be leveraged to support the urban core:

- Reconfiguration concepts for 25 urban core streets are included with this study. These concepts represent a good starting point for engineering design whenever future street project are initiated.
- Conceptual project costs were prepared for each of the 25 projects. This cost information along with background operations, safety, and identified mobility enhancements can be utilized to support funding pursuit. Note, the budgetary costs included for each Tier 1 and Tier 2 street do not include the pavement rehabilitation costs. As projects are developed a determination will need to be made on pavement rehabilitation needs and if those costs are part of the reconfiguration project.

- Implementation types:
  - There are generally four implementation types for how the reconfiguration projects could be completed:
    - Type 1: Cost-efficient projects with limited complexity. These projects only require markings, signage and signal modifications making implementation more efficient and straightforward.
    - Type 2: Projects more complex than Type 1 that include curb work, pedestrian ramps/sidewalk, signal replacement, and limited pavement rehabilitation.
    - Type 3: Projects requiring pavement rehabilitation could be built along with a street preservation project. These could be described as "routine accommodation" mobility projects.
    - Type 4: Grant funded projects
  - The conceptual costs provided in the study align with Implementation Type 1 and 2 projects since they do not include estimates for pavement rehabilitation.
  - CIP Process: During project programming the implementation types should be considered and the approach and funding options identified.
- For projects involving reconfiguration from one-way to two-way operation, completing one-way couplets together is a preferred approach. Project planning should include this as an objective.
- While a project benefits ranking was performed, projects can be implemented in any order, at the City's discretion.
- Some reconfiguration projects may move forward based on needs related to redevelopment projects. Having the corridor concepts available is a benefit for early coordination and aligning expectations.

The street reconfiguration concepts developed for this study will take many years to fully implement. This objective requires a long-term strategy as well as flexibility. There will be multiple paths and opportunities for implementation as the City continues investing in urban core mobility.

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