

Committee of the Whole
Monday, September 21, 2020 6:30 PM
Council Chambers
1369 25 Avenue
Columbus, NE 68601

1. **Statement of compliance with Open Meetings Act and roll call.**

84-1407. Act, how cited.

Sections 84-1407 to 84-1414 shall be known and may be cited as the Open Meetings Act.

84-1408. Declaration of intent; meetings open to public.

It is hereby declared to be the policy of this state that the formation of public policy is public business and may not be conducted in secret.

Every meeting of a public body shall be open to the public in order that citizens may exercise their democratic privilege of attending and speaking at meetings of public bodies, except as otherwise provided by the Constitution of Nebraska, federal statutes, and the Open Meetings Act.

84-1409. Terms, defined.

For purposes of the Open Meetings Act, unless the context otherwise requires:

(1)(a) Public body means (i) governing bodies of all political subdivisions of the State of Nebraska, (ii) governing bodies of all agencies, created by the Constitution of Nebraska, statute, or otherwise pursuant to law, of the executive department of the State of Nebraska, (iii) all independent boards, commissions, bureaus, committees, councils, subunits, or any other bodies created by the Constitution of Nebraska, statute, or otherwise pursuant to law, (iv) all study or advisory committees of the executive department of the State of Nebraska whether having continuing existence or appointed as special committees with limited existence, (v) advisory committees of the bodies referred to in subdivisions (i), (ii), and (iii) of this subdivision, and (vi) instrumentalities exercising essentially public functions.

(b) Public body does not include (i) subcommittees of such bodies unless a quorum of the public body attends a subcommittee meeting or unless such subcommittees are holding hearings, making policy, or taking formal action on behalf of their parent body, except that all meetings of any subcommittee established under section 81-15,175 are subject to the Open Meetings Act, and (ii) entities conducting judicial proceedings unless a court or other judicial body is exercising rulemaking authority, deliberating, or deciding upon the issuance of administrative orders;

(2) Meeting means all regular, special, or called meetings, formal or informal, of any public body for the purposes of briefing, discussion of public business, formation of tentative policy, or the taking of any action of the public body; and

(3) Videoconferencing means conducting a meeting involving participants at two or more locations through the use of audio-video equipment which allows participants at each location to hear and see each meeting participant at each other location, including public input. Interaction between meeting participants shall be possible at all meeting locations.

84-1410. Closed session; when; purpose; reasons listed; procedure; right to challenge; prohibited acts; chance meetings, conventions, or workshops.

(1) Any public body may hold a closed session by the affirmative vote of a majority of its voting members if a closed session is clearly necessary for the protection of the public interest or for the prevention of needless injury to the reputation of an individual and if such individual has not requested a public meeting. The subject matter and the reason necessitating the closed session shall be identified in the motion to close. Closed sessions may be held for, but shall not be limited to, such reasons as:

(a) Strategy sessions with respect to collective bargaining, real estate purchases, pending litigation, or litigation which is imminent as evidenced by communication of a claim or threat of litigation to or by the public body;

(b) Discussion regarding deployment of security personnel or devices;(c) Investigative proceedings regarding allegations of criminal misconduct; or

(d) Evaluation of the job performance of a person when necessary to prevent needless injury to the reputation of a person and if such person has not requested a public meeting.

(e) For the Community Trust created under section 81-1801.02, discussion regarding the amounts to be paid to individuals who have suffered from a tragedy of violence or natural disaster.

(f) For public hospitals, governing board peer review activities, professional review activities, review and discussion of medical staff investigations or disciplinary actions, and any strategy session concerning transactional negotiations with any referral source that is required by federal law to be conducted at arms length.

Nothing in this section shall permit a closed meeting for discussion of the appointment or election of a new member to any public body.

(2) The vote to hold a closed session shall be taken in open session. The entire motion, the vote of each member on the question of holding a closed session, and the time when the closed session commenced and concluded shall be recorded in the minutes. If the motion to close passes, then the presiding officer immediately prior to the closed session shall restate on the record the limitation of the subject matter of the closed session. The public body holding such a closed session shall restrict its consideration of matters during the closed portions to only those purposes set forth in the motion to close as the reason for the closed session. The meeting shall be reconvened in open session before any formal action may be taken. For purposes of this section, formal action shall mean a collective decision or a collective commitment or promise to make a decision on any question, motion, proposal, resolution, order, or ordinance or formation of a position or policy but shall not include negotiating guidance given by members of the public body to legal counsel or other negotiators in closed sessions authorized under subdivision (1)(a) of this section.

(3) Any member of any public body shall have the right to challenge the continuation of a closed session if the member determines that the session has exceeded the reason stated in the original motion to hold a closed session or if the member contends that the closed session is neither clearly necessary for (a) the protection of the public interest or (b) the prevention of needless injury to the reputation of an individual. Such challenge shall be overruled only by a majority vote of the members of the public body. Such challenge and its disposition shall be recorded in the minutes.

(4) Nothing in this section shall be construed to require that any meeting be closed to the public. No person or public body shall fail to invite a portion of its members to a meeting, and no public body shall designate itself a subcommittee of the whole body for the purpose of circumventing the Open Meetings Act. No closed session, informal meeting, chance meeting, social gathering, email, fax, or other electronic communication shall be used for the purpose of circumventing the requirements of the act.

(5) The act does not apply to chance meetings or to attendance at or travel to conventions or workshops of members of a public body at which there is no meeting of the body then intentionally convened, if there is no vote or other action taken regarding any matter over which the public body has supervision, control, jurisdiction, or advisory power.

84-1411. Meetings of public body; notice; contents; when available; right to modify; duties concerning notice; videoconferencing or telephone conferencing authorized; emergency meeting without notice; appearance before public body.

(1) Each public body shall give reasonable advance publicized notice of the time and place of each meeting by a method designated by each public body and recorded in its minutes. Such notice shall be transmitted to all members of the public body and to the public. Such notice shall contain an agenda of subjects known at the time of the publicized notice or a statement that the agenda, which shall be kept continually current, shall be readily available for public inspection at the principal office of the public body during normal business hours. Agenda items shall be sufficiently descriptive to give the public reasonable notice of the matters to be considered at the meeting. Except for items of an emergency nature, the agenda shall not be altered later than (a) twenty-four hours before the scheduled commencement of the meeting or (b) forty-eight hours before the scheduled commencement of a meeting of a city council or village board scheduled outside the corporate limits of the municipality. The public body shall have the right to modify the agenda to include items of an emergency nature only at such public meeting.

(2) A meeting of a state agency, state board, state commission, state council, or state committee, of an advisory committee of any such state entity, of an organization created under the Interlocal Cooperation Act, the Joint Public Agency Act, or the Municipal Cooperative Financing Act, of the governing body of a public power district having a chartered territory of more than one county in this state, of the governing body of a public

power and irrigation district having a chartered territory of more than one county in this state, of a board of an educational service unit, of the Educational Service Unit Coordinating Council, of the governing body of a risk management pool or its advisory committees organized in accordance with the Intergovernmental Risk Management Act, or of a community college board of governors may be held by means of videoconferencing or, in the case of the Judicial Resources Commission in those cases specified in section 24-1204, by telephone conference, if:

- (a) Reasonable advance publicized notice is given;
- (b) Reasonable arrangements are made to accommodate the public's right to attend, hear, and speak at the meeting, including seating, recordation by audio or visual recording devices, and a reasonable opportunity for input such as public comment or questions to at least the same extent as would be provided if videoconferencing or telephone conferencing was not used;
- (c) At least one copy of all documents being considered is available to the public at each site of the videoconference or telephone conference;
- (d) At least one member of the state entity, advisory committee, board, council, or governing body is present at each site of the videoconference or telephone conference, except that a member of an organization created under the Interlocal Cooperation Act that sells electricity or natural gas at wholesale on a multistate basis, an organization created under the Municipal Cooperative Financing Act, or a governing body of a risk management pool or an advisory committee of such organization or pool may designate a nonvoting designee, who shall not be included as part of the quorum, to be present at any site; and
- (e)(i) Except as provided in subdivision (2)(e)(ii) of this section, no more than one-half of the state entity's, advisory committee's, board's, council's, or governing body's meetings in a calendar year are held by videoconference or telephone conference; or
- (ii) In the case of an organization created under the Interlocal Cooperation Act that sells electricity or natural gas at wholesale on a multistate basis or an organization created under the Municipal Cooperative Financing Act, such organization holds at least one meeting each calendar year that is not by videoconferencing or telephone conferencing.

Videoconferencing, telephone conferencing, or conferencing by other electronic communication shall not be used to circumvent any of the public government purposes established in the Open Meetings Act.

(3) A meeting of a board of an educational service unit, of the Educational Service Unit Coordinating Council, of the governing body of an entity formed under the Interlocal Cooperation Act, the Joint Public Agency Act, or the Municipal Cooperative Financing Act, of the governing body of a risk management pool or its advisory committees organized in accordance with the Intergovernmental Risk Management Act, of a community college board of governors, of the governing body of a public power district, of the governing body of a public power and irrigation district, or of the Nebraska Brand Committee may be held by telephone conference call if:

- (a) The territory represented by the educational service unit, member educational service units, community college board of governors, public power district, public power and irrigation district, Nebraska Brand Committee, or member public agencies of the entity or pool covers more than one county;
- (b) Reasonable advance publicized notice is given which identifies each telephone conference location at which there will be present: (i) A member of the educational service unit board, council, community college board of governors, governing body of a public power district, governing body of a public power and irrigation district, Nebraska Brand Committee, or entity's or pool's governing body; or (ii) A nonvoting designee designated under subdivision (3)(f) of this section;
- (c) All telephone conference meeting sites identified in the notice are located within public buildings used by members of the educational service unit board, council, community college board of governors, governing body of the public power district, governing body of the public power and irrigation district, Nebraska Brand Committee, or entity or pool or at a place which will accommodate the anticipated audience;
- (d) Reasonable arrangements are made to accommodate the public's right to attend, hear, and speak at the meeting, including seating, recordation by audio recording devices, and a reasonable opportunity for input such as public comment or questions to at least the same extent as would be provided if a telephone conference call was not used;

(e) At least one copy of all documents being considered is available to the public at each site of the telephone conference call;

(f) At least one member of the educational service unit board, council, community college board of governors, governing body of the public power district, governing body of the public power and irrigation district, Nebraska Brand Committee, or governing body of the entity or pool is present at each site of the telephone conference call identified in the public notice, except that a member of an organization created under the Interlocal Cooperation Act that sells electricity or natural gas at wholesale on a multistate basis, an organization created under the Municipal Cooperative Financing Act, or a governing body of a risk management pool or an advisory committee of such organization or pool may designate a nonvoting designee, who shall not be included as part of the quorum, to be present at any site;

(g) The telephone conference call lasts no more than five hours; and

(h) No more than one-half of the board's, council's, governing body's, committee's, entity's, or pool's meetings in a calendar year are held by telephone conference call, except that:

(i) The governing body of a risk management pool that meets at least quarterly and the advisory committees of the governing body may each hold more than one-half of its meetings by telephone conference call if the governing body's quarterly meetings are not held by telephone conference call or videoconferencing; and

(ii) An organization created under the Interlocal Cooperation Act that sells electricity or natural gas at wholesale on a multistate basis or an organization created under the Municipal Cooperative Financing Act may hold more than one-half of its meetings by telephone conference call if the organization holds at least one meeting each calendar year that is not by videoconferencing or telephone conference call.

Nothing in this subsection shall prevent the participation of consultants, members of the press, and other nonmembers of the governing body at sites not identified in the public notice. Telephone conference calls, emails, faxes, or other electronic communication shall not be used to circumvent any of the public government purposes established in the Open Meetings Act.

(4) The secretary or other designee of each public body shall maintain a list of the news media requesting notification of meetings and shall make reasonable efforts to provide advance notification to them of the time and place of each meeting and the subjects to be discussed at that meeting.

(5) When it is necessary to hold an emergency meeting without reasonable advance public notice, the nature of the emergency shall be stated in the minutes and any formal action taken in such meeting shall pertain only to the emergency. Such emergency meetings may be held by means of electronic or telecommunication equipment. The provisions of subsection (4) of this section shall be complied with in conducting emergency meetings. Complete minutes of such emergency meetings specifying the nature of the emergency and any formal action taken at the meeting shall be made available to the public by no later than the end of the next regular business day.

(6) A public body may allow a member of the public or any other witness other than a member of the public body to appear before the public body by means of video or telecommunications equipment.

84-1412. Meetings of public body; rights of public; public body; powers and duties.

(1) Subject to the Open Meetings Act, the public has the right to attend and the right to speak at meetings of public bodies, and all or any part of a meeting of a public body, except for closed sessions called pursuant to section 84-1410, may be videotaped, televised, photographed, broadcast, or recorded by any person in attendance by means of a tape recorder, camera, video equipment, or any other means of pictorial or sonic reproduction or in writing.

(2) It shall not be a violation of subsection (1) of this section for any public body to make and enforce reasonable rules and regulations regarding the conduct of persons attending, speaking at, videotaping, televising, photographing, broadcasting, or recording its meetings. A body may not be required to allow citizens to speak at each meeting, but it may not forbid public participation at all meetings.

(3) No public body shall require members of the public to identify themselves as a condition for admission to the meeting nor shall such body require that the name of any member of the public be placed on the agenda prior to such meeting in order to speak about items on the agenda. The body may require any member of the public desiring to address the body to identify himself or herself.

(4) No public body shall, for the purpose of circumventing the Open Meetings Act, hold a meeting in a place known by the body to be too small to accommodate the anticipated audience.

(5) No public body shall be deemed in violation of this section if it holds its meeting in its traditional meeting place which is located in this state.

(6) No public body shall be deemed in violation of this section if it holds a meeting outside of this state if, but only if:

(a) A member entity of the public body is located outside of this state and the meeting is in that member's jurisdiction;

(b) All out-of-state locations identified in the notice are located within public buildings used by members of the entity or at a place which will accommodate the anticipated audience;

(c) Reasonable arrangements are made to accommodate the public's right to attend, hear, and speak at the meeting, including making a telephone conference call available at an in-state location to members, the public, or the press, if requested twenty-four hours in advance;

(d) No more than twenty-five percent of the public body's meetings in a calendar year are held out-of-state;

(e) Out-of-state meetings are not used to circumvent any of the public government purposes established in the Open Meetings Act;

(f) Reasonable arrangements are made to provide viewing at other in-state locations for a videoconference meeting if requested fourteen days in advance and if economically and reasonably available in the area; and

(g) The public body publishes notice of the out-of-state meeting at least twenty-one days before the date of the meeting in a legal newspaper of statewide circulation.

(7) The public body shall, upon request, make a reasonable effort to accommodate the public's right to hear the discussion and testimony presented at the meeting.

(8) Public bodies shall make available at the meeting or the in-state location for a telephone conference call or videoconference, for examination and copying by members of the public, at least one copy of all reproducible written material to be discussed at an open meeting. Public bodies shall make available at least one current copy of the Open Meetings Act posted in the meeting room at a location accessible to members of the public. At the beginning of the meeting, the public shall be informed about the location of the posted information.

84-1413. Meetings; minutes; roll call vote; secret ballot; when.

(1) Each public body shall keep minutes of all meetings showing the time, place, members present and absent, and the substance of all matters discussed.

(2) Any action taken on any question or motion duly moved and seconded shall be by roll call vote of the public body in open session, and the record shall state how each member voted or if the member was absent or not voting. The requirements of a roll call or viva voce vote shall be satisfied by a public body which utilizes an electronic voting device which allows the yeas and nays of each member of such public body to be readily seen by the public.

(3) The vote to elect leadership within a public body may be taken by secret ballot, but the total number of votes for each candidate shall be recorded in the minutes.

(4) The minutes of all meetings and evidence and documentation received or disclosed in open session shall be public records and open to public inspection during normal business hours.

(5) Minutes shall be written, except as provided in subsection (6) of this section, and available for inspection within ten working days or prior to the next convened meeting, whichever occurs earlier, except that cities of the second class and villages may have an additional ten working days if the employee responsible for writing the minutes is absent due to a serious illness or emergency.

(6) Minutes of the meetings of the board of a school district or educational service unit may be kept as an electronic record.

84-1414. Unlawful action by public body; declared void or voidable by district court; when; duty to enforce open meeting laws; citizen's suit; procedure; violations; penalties.

(1) Any motion, resolution, rule, regulation, ordinance, or formal action of a public body made or taken in violation of the Open Meetings Act shall be declared void by the district court if the suit is commenced within one hundred twenty days of the meeting of the public body at which the alleged violation occurred. Any motion, resolution, rule, regulation, ordinance, or formal action of a public body made or taken in substantial violation of the Open Meetings Act shall be voidable by the district court if the suit is commenced more than one hundred twenty days after but within one year of the meeting of the public body in which the alleged violation occurred. A suit to void any final action shall be commenced within one year of the action.

(2) The Attorney General and the county attorney of the county in which the public body ordinarily meets shall enforce the Open Meetings Act.

(3) Any citizen of this state may commence a suit in the district court of the county in which the public body ordinarily meets or in which the plaintiff resides for the purpose of requiring compliance with or preventing violations of the Open Meetings Act, for the purpose of declaring an action of a public body void, or for the purpose of determining the applicability of the act to discussions or decisions of the public body. It shall not be a defense that the citizen attended the meeting and failed to object at such time. The court may order payment of reasonable attorney's fees and court costs to a successful plaintiff in a suit brought under this section.

(4) Any member of a public body who knowingly violates or conspires to violate or who attends or remains at a meeting knowing that the public body is in violation of any provision of the Open Meetings Act shall be guilty of a Class IV misdemeanor for a first offense and a Class III misdemeanor for a second or subsequent offense.

Effective Date – September 1, 2019

Distributed by the League of Nebraska Municipalities



2. **Presentation on South Mobility Study**

Columbus South Mobility Study
Prepared for the City of Columbus, Nebraska
Prepared by HDR
September 2020

Revised

DRAFT

**Columbus
South
Mobility
Study**



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CHAPTER 1. INTRODUCTION

Study Purpose and Background

The purpose of the Columbus South Mobility Study was to evaluate the potential need for improvements to safely and efficiently move east-west vehicle and pedestrian traffic in the southern portion of the City of Columbus. The study was a recommended action item from the Columbus Long Range Transportation Plan (LRTP) developed in 2018 and was included in the City's 2019-2020 budget as authorized by the City Council. The study began in January 2020 and was completed in August 2020. Technical guidance for the project was provided by the following City of Columbus staff:

- Richard Bogus, City Engineer
- Tara Vasicek, City Administrator
- Trevor Harlow, City Planner

Study Goals and Objectives

Study objectives included the following:

- Inventory and evaluate existing conditions in the study area and identify deficiencies.
- Survey the general public regarding their experience traveling through the study area.
- Develop Year 2040 traffic forecasts and evaluate future traffic conditions.
- Develop improvement alternatives for the study area.
- Evaluate the improvement alternatives against various criteria.
- Obtain input from the general public regarding the improvement alternatives.
- Provide recommendations for the study area.

Study Area

The study area is shown in **Figure 1** and primarily focuses on 8th Street from 33rd Avenue (U.S. Highway 30/81) on the west to just past 3rd Avenue on the east. The northern limits of the study area extend to the Union Pacific Railroad (UPRR) tracks and the southern limits of the study area extend to the Loup River Levee.

The study further focused on the study intersections on 8th Street that area listed below and highlighted in **Figure 1**.

- 33rd Avenue & 8th Street (Signalized)
- 26th Avenue & 8th Street (All Way Stop Controlled)
- 23rd Avenue & 8th Street (Two Way Stop Controlled)
- 18th Avenue & 8th Street (All Way Stop Controlled)
- 12th Avenue & 8th Street (All Way Stop Controlled)
- 3rd Avenue & 8th Street (Two Way Stop Controlled)



Figure 1. Study Area

CHAPTER 2. EXISTING CONDITIONS

This chapter summarizes the existing conditions in the study area.

Data Collection

Data collected and reviewed as part of the study are summarized below.

Traffic Data

- Turning Movement Counts (TMCs)
 - The Nebraska Department of Transportation (NDOT) provided peak hour TMCs at 33rd Avenue & 8th Street from October 2017.
 - Miovision, a traffic count vendor, was used to collect peak hour TMCs at the remaining five study intersections in December 2019.
- Pedestrian Counts
 - Miovision was used to collect pedestrian volumes at the 18th Avenue viaduct and at all study intersections (except 33rd Avenue & 8th Street which was counted by NDOT).
 - Miovision was used to collect pedestrian counts at the pedestrian-actuated midblock signal on 8th Street between 17th Avenue and 16th Avenue as part of the 2019 Columbus Pedestrian Study.
- Average Daily Traffic (ADT)
 - NDOT ADT maps (<https://dot.nebraska.gov/travel/map-library/>)
 - Miovision counts were used to supplement locations where ADTs were missing in NDOT's database.
- Traffic Signal Timing
 - NDOT provided signal timing for the 33rd Avenue & 8th Street intersection.

GIS Data

Some data was obtained from the City's geographic information system (GIS). GIS provides a framework for gathering, managing, and analyzing many types of data. GIS analyzes spatial location and organizes layers of information into visualizations using maps and 3D scenes. The City provided the following items in GIS for use in alternatives development:

- Aerial imagery
- Parcel data
- Roadway centerlines
- Water/wastewater data including mains, inlets, manholes, curb stops, hydrants, cleanouts, and system valves
- Fiber optic lines

Desktop and Field Data

The remaining data collection items were obtained from a desktop review of available data sources (i.e. Google Earth) or during a field review.

- Intersection lane configuration
- Intersection control (stop-controlled, signalized, etc)
- Speed limits
- Pedestrian/school crossing signs and devices

- Sidewalk inventory
- Driveway inventory
- Locations of marked crosswalks
- Observations of traffic flow

Roadway Characteristics

The surrounding area and streets within the study area are primarily residential with driveways connecting directly to 8th Street for some residences while others utilize alley access. Trucks and on-street parking are not permitted on 8th Street. The speed limit on 8th Street reflects the residential nature of the study area, with a speed limit of 30 miles per hour (mph) west of 12th Avenue and 35 mph east of 12th Avenue. 8th Street is generally flat which results in street flooding during significant rain events.

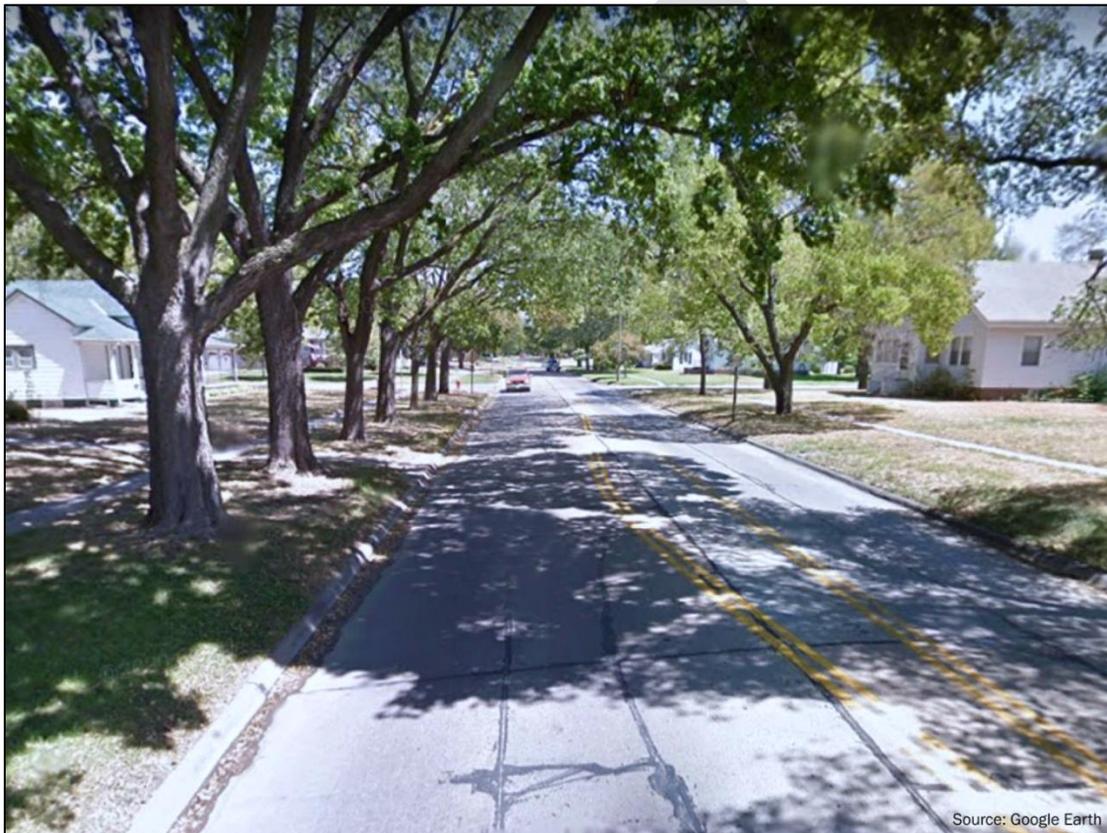


Figure 2. 8th Street between 26th Avenue and 25th Avenue (Looking East)

From 33rd Avenue to 12th Avenue, 8th Street is a two-lane roadway and is generally 33 feet wide. Exclusive left turn lanes are provided at some intersections, which results in narrowed lanes. The typical cross section for this portion of 8th Street is shown in **Figure 3**.

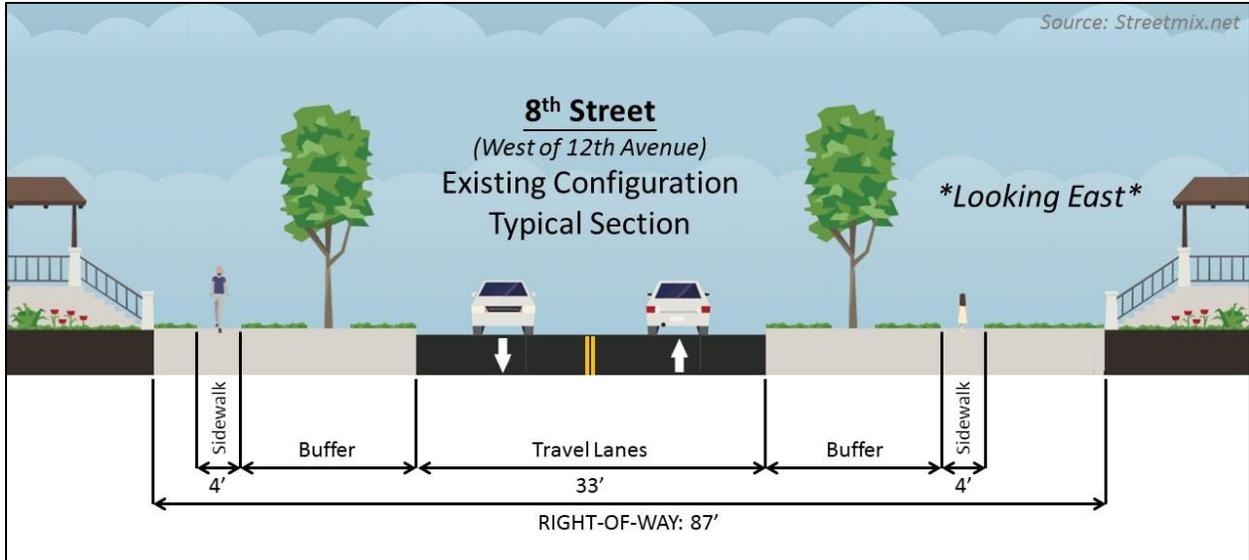


Figure 3. 8th Street Typical Cross Section, West of 12th Avenue

Between 12th Avenue and 9th Avenue, 8th Street is a three-lane roadway with the center lane marked as a two-way left turn lane (TWLTL) and is generally 33 feet wide. Between 9th Avenue and 3rd Avenue (and farther east), 8th Street is a three-lane roadway with the center lane marked as a TWLTL and is generally 41 feet wide. The typical cross section for this portion of 8th Street is shown in **Figure 4**.

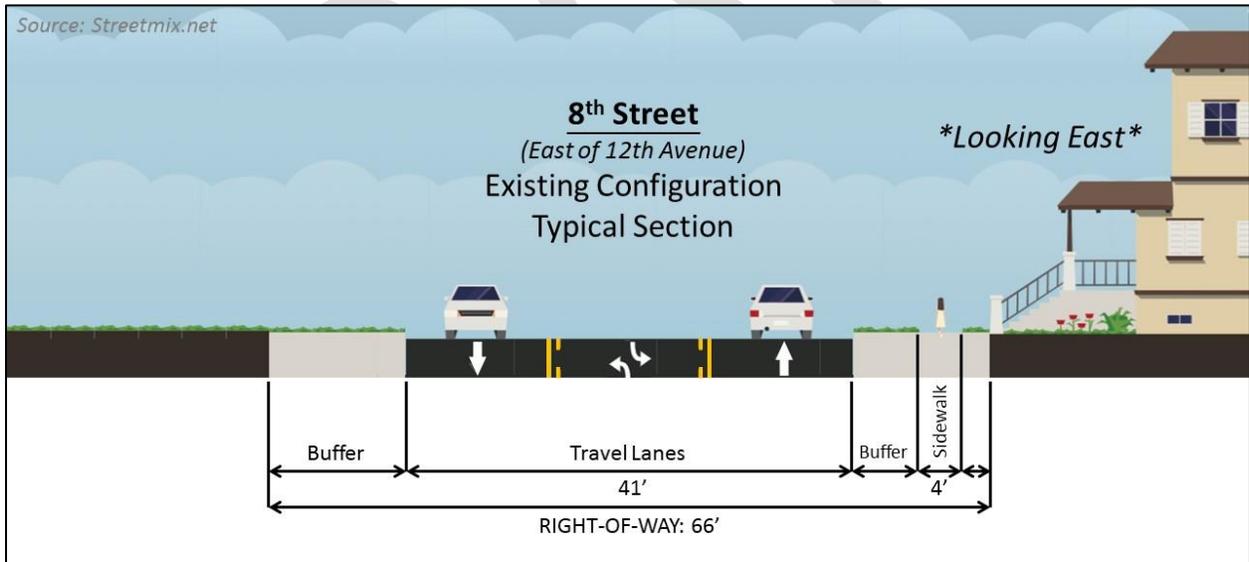


Figure 4. 8th Street Typical Cross Section, East of 9th Avenue

Traffic Volumes

The average annual daily traffic (ADT) on 8th Street ranges from 3,100 vehicles per day, east of 3rd Avenue, to 7,400 vehicles per day on the west end. The maximum acceptable daily volume for a two-lane collector street is generally about 10,000-12,000 vehicles per day.

Peak hour turning movements were developed at the six study area intersection for the AM and PM peak hours. AM peak hours were fairly consistent at all study area intersections and ranged between 7:00 AM - 8:15 AM. During the PM peak, study intersections between 26th Avenue and 12th Avenue peaked much earlier (between 3:15 PM - 4:30 PM) compared to the two intersections on the fringes of the study area (between 4:30 PM - 5:45 PM). This is likely due to the timing of school traffic compared to commuter traffic. Existing peak hour traffic volumes are shown in **Figure 5**.

Traffic Operations Analysis

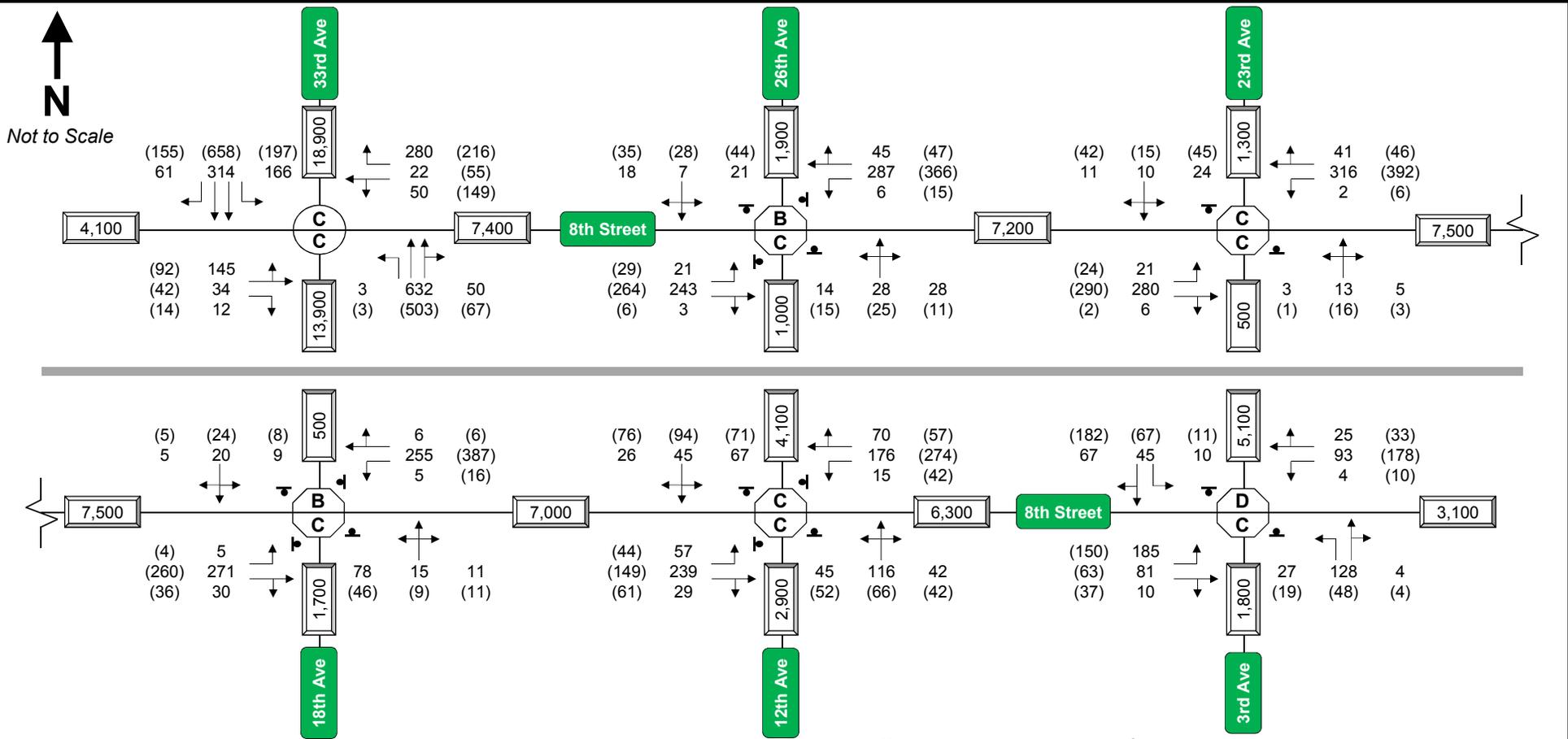
Existing traffic operations for the study intersections were analyzed using the Synchro 10 software package which replicates the procedures documented in the *Highway Capacity Manual (HCM)*. The analysis determines the quality of traffic flow or “level of service” (LOS) that the intersections provide to motorists. Levels of service are described by a letter designation of either A, B, C, D, E or F, with LOS A representing essentially uninterrupted flow, and LOS F representing a breakdown of traffic flow with noticeable congestion and delay.

Existing operational analysis results for the AM and PM peak hours are shown in **Figure 5** and are tabulated in **Table 1**. The LOS at intersections along 8th Street ranges from LOS C to LOS D.

Table 1. Existing Traffic Operations along 8th Street

North / South Cross Street Intersection	Traffic Control	Intersection Delay / LOS* AM (PM)	Approach Delay / Level of Service AM (PM)			
			EB	WB	NB	SB
33 rd Avenue	Signalized	23.4/C (21.0/C)	48.6/D (36.8/D)	17.9/B (27.3/C)	27.3/C (25.2/C)	13.0/B (13.7/B)
26 th Avenue	AWSC	14.0/B (17.9/C)	11.1/B (11.8/B)	14.0/B (17.9/C)	9.5/A (9.8/A)	9.3/A (10.4/B)
23 rd Avenue	TWSC	18.2/C (20.8/C)	0.6/A (0.6/A)	0.0/A (0.1/A)	16.5/C (17.9/C)	18.2/C (20.8/C)
18 th Avenue	AWSC	13.2/B (15.2/C)	13.2/B (11.7/B)	12.1/B (15.2/C)	10.4/B (9.8/A)	9.4/A (9.4/A)
12 th Avenue	AWSC	15.6/C (18.4/C)	15.6/C (12.6/B)	15.1/C (18.4/C)	14.1/B (12.6/B)	12.5/B (14.6/B)
3 rd Avenue	TWSC	28.2/D (21.9/C)	5.3/A (4.9/A)	0.3/A (0.3/A)	28.2/D (21.9/C)	15.8/C (16.7/C)

* All Way Stop Controlled (AWSC) and Two Way Stop Controlled (TWSC) overall intersection LOS represents the worst-case approach LOS.



LEGEND

- AM Peak Hour Signalized Intersection
- PM Peak Hour Level of Service
- AM Peak Hour Unsignalized Intersection
- PM Peak Hour Level of Service
- Average Annual Daily Traffic (AADT)
- XXX (XXX) AM and (PM) Peak Hour Volumes
- Intersection Lane Geometrics
- Stop Sign

Note:
 All Way Stop Controlled (AWSC) and Two Way Stop Controlled (TWSC) overall intersection LOS represents the worst-case approach LOS.

Sources:
 1. Traffic Volumes: Developed by HDR using Miovision Turning Movement Counts collected in December 2019*. ADTs obtained from NDOT City Traffic Flow Maps (2016).
 2. Traffic Capacity Analysis: Conducted by HDR using Synchro 10 and HCM 6th Edition methodologies (March 2020).

*33rd Avenue (US 30/81) & 8th Street volumes were obtained from NDOT and collected in October 2017.



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Traffic Signal Warrant Analysis

A traffic signal warrant analysis was performed for the study intersections along 8th Street that are currently unsignalized. The analysis utilized the Peak Hour Vehicular Volume Warrant (Warrant 3) from the *Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)*. The MUTCD notes that a traffic signal should not be installed unless one or more of the warrants described in the MUTCD are met. Improper or unjustified traffic control signals can result in excessive delay, excessive disobedience of the signal indications, increased use of less adequate routes as road users attempt to avoid the traffic signal, and significant increases in the frequency of collisions. As shown in **Table 2**, none of the study intersections that are currently unsignalized meet the peak hour warrant for a new traffic signal at existing volume levels.

Table 2. Existing Conditions Traffic Signal Warrant Analysis

Intersection of 8 th Street with:	Meet Traffic Signal Warrant?
26 th Avenue	No
23 rd Avenue	No
18 th Avenue	No
12 th Avenue	No
3 rd Avenue	No

Traffic Safety Analysis

Existing traffic safety was evaluated by segment and by intersection within the 8th Street corridor. A safety analysis was performed using recent historical crash data (2014-2018). During the five year period, a total of 181 crashes were reported in the corridor, which resulted in:

- 1 fatal crash (2017)
- 32 injury crashes
- 103 property damage only (PDO) crashes
- 45 non-reportable crashes (i.e. no property damage)

Crash Analysis – Arterial Segments

Due to the closely-spaced intersections throughout the 8th Street corridor, a heat map that graphically illustrates crash frequency was developed based on the total number of crashes from 2014–2018. **Figure 6** shows that a majority of crashes on 8th Street occur at intersections rather than at midblock locations. This is likely due to the relatively small number of access points and driveways along 8th Street. Note that the lowest crash concentration is shown in green while the highest crash concentration along 8th Street is shown in red.



Figure 6. Total Crash Heat Map (2014-2018)

Crash Analysis – Intersections

Crash rates were calculated for the six study intersections along 8th Street and are shown in **Table 3**. Crash rates account for difference in traffic volumes (i.e. exposure) at each intersection so that all intersections can be compared. Total crashes were summarized for each study area intersection using a 150 foot radius buffer around the center of each intersection.

Table 3. Crash Rates at Study Area Intersections (2014-2018)

Intersection	Number of Crashes	Entering ADT	MEV*	Crashes per MEV
33 rd Avenue	64	22,150	40.4	1.58
26 th Avenue	12	8,750	16.0	0.75
23 rd Avenue	9	8,250	15.1	0.60
18 th Avenue	11	8,350	15.2	0.72
12 th Avenue	20	10,150	18.5	1.08
3 rd Avenue	14	8,150	14.9	0.94

* Million Entering Vehicles

Observed crashes at the 33rd Avenue & 8th Street intersection occur at a greater rate per vehicle than at the other study area intersections. This is likely due to the fact that 33rd Avenue and 8th Street is the only signalized intersection within the study area which typically results in more frequent rear-end type crashes.

The study team also reviewed historical crash trends for the 8th Street corridor. The findings are summarized below:

- The 130 crashes represented at the six study area intersections represent 72% of all crashes between 33rd Avenue and 3rd Avenue.
- There were no recognizable day-of-week or seasonality crash trends.
- Accident type trends
 - Signalized intersection at 33rd Avenue & 8th Street
 - 50% were rear-end crashes
 - 22% were left-turn leaving crashes
 - 13% were angle type crashes
 - Unsignalized intersections: 26th, 23rd, 18th, 12th, 3rd Avenue & 8th Street
 - 47% were angle type crashes
 - 30% were rear-end crashes

Multimodal Review

Pedestrian infrastructure is generally provided throughout much of the study area.

Sidewalks

- Sidewalks are provided on both sides of 8th Street between 33rd Avenue and 11th Avenue.
- Sidewalks are provided on the south side of 8th Street between 11th Avenue and 3rd Avenue.
- Most sidewalks are in fair or poor condition and showing the signs of their age.

Curb Ramps

- Curb ramps are provided at a majority of intersections along 8th Street.
- ADA-compliant detectible warning tiles have recently been added at intersections on the west end of 8th Street (31st Avenue to 26th Avenue) or with newer construction (3rd Avenue).
- A majority of curb ramps between 26th Avenue and 12th Avenue are not ADA-compliant and are similar to the conditions at 19th Avenue & 8th Street shown in **Figure 7**.



Figure 7. Typical Curb Ramps along 8th Street between 26th Avenue and 12th Avenue

Pedestrian-Only Viaduct(s)

- The recently-opened pedestrian viaduct over the UPRR tracks at 18th Avenue provides north/south pedestrian mobility just east of downtown.
- If approved and constructed as planned, a proposed pedestrian viaduct over the UPRR tracks at 26th Avenue will provide additional north/south pedestrian mobility between downtown and businesses along 11th Street.

Pedestrian Midblock Signal

- A pedestrian-actuated midblock signal is provided on 8th Street between 17th Avenue and 16th Avenue.
- The 2019 Columbus Pedestrian Study recommended that this pedestrian signal be removed due to minimal usage and the fact that it does not meet warrants.

Environmental Review

The study team also performed a high-level desktop review of potential environmental constraints within the study area. This data is shown in **Figure 8** and was used to screen potential improvement alternatives discussed in **Chapter 5**.

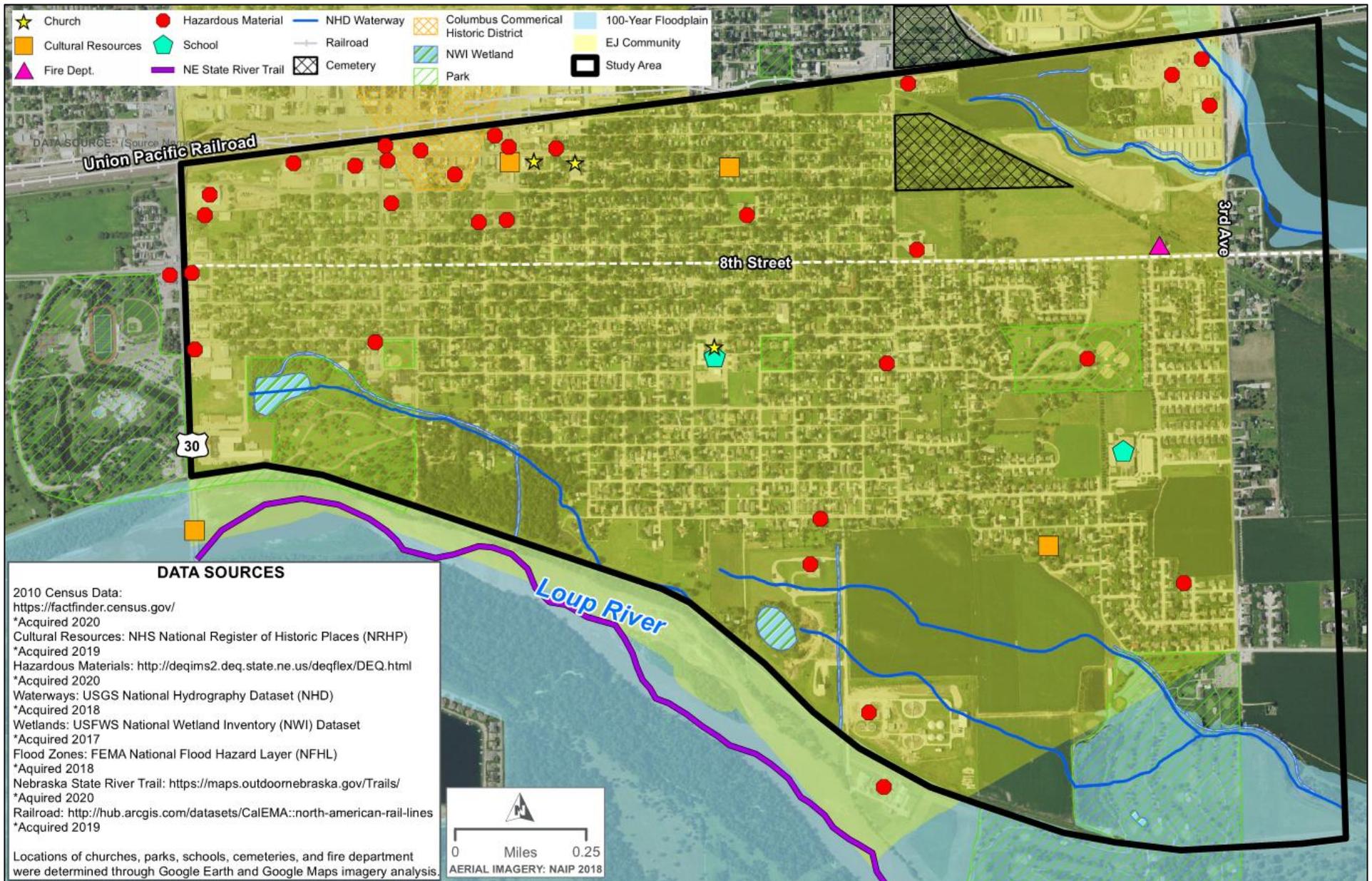


Figure 8. Environmental Constraints

CHAPTER 3. FUTURE NO-BUILD CONDITIONS

This chapter summarizes future (2040) no-build conditions in the study area assuming that no improvements are made in the 8th Street corridor.

Railroad Viaducts

Existing viaducts over the UPRR tracks (within the study area) include:

- Vehicle and Pedestrian Viaducts
 - 33rd Avenue - Open
 - 12th Avenue - Under Construction (as of August 2020)
 - 3rd Avenue - Open
- Pedestrian-Only Viaducts
 - 18th Avenue

A 2007 agreement between NDOT, UPRR and the City of Columbus proposed additional railroad viaducts at 23rd Avenue (for use by vehicles and pedestrians) and 26th Avenue (for use by pedestrians only). If approved and constructed as planned, these will likely impact traffic growth rates and traffic patterns in the study area.

Traffic Forecasts

Two data sources were used to develop traffic growth rates for the study intersections. First, historical ADTs provided by NDOT were reviewed to establish trends for the corridor. Trends at various points along 8th Street are shown in **Figure 9**. Since 2014, traffic volumes along the 8th Street corridor have grown steadily but at a modest rate. Historical traffic growth trends north and south of 8th Street along 26th, 23rd, 18th, and 12th Avenues have showed relatively flat growth.

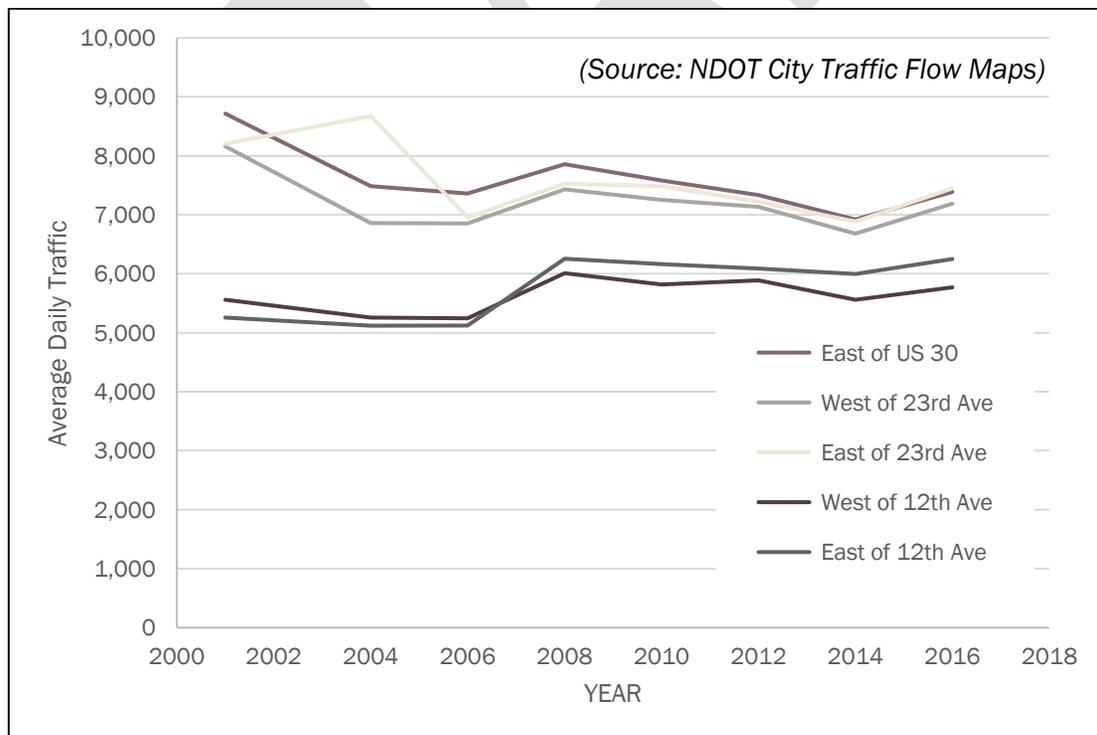


Figure 9. Historical ADTs along 8th Street

Secondly, the Travel Demand Model (TDM) for the City of Columbus was utilized to estimate future daily volume growth within the study area. NDOT provided the TransCAD TDM files developed as part of the Columbus LRTP published in 2018. Annual growth rates from the TDM are shown in **Figure 10**.

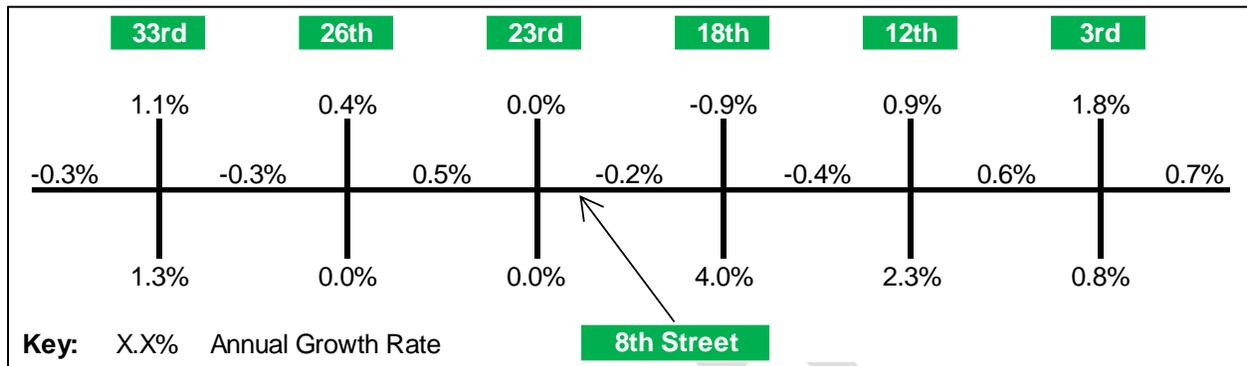


Figure 10. Annual Traffic Growth Rates from the Columbus Travel Demand Model

These two data sources were compared, combined with population and employment growth assumptions around the study area, to establish the recommended annual growth rates for 8th Street shown in **Figure 11**.

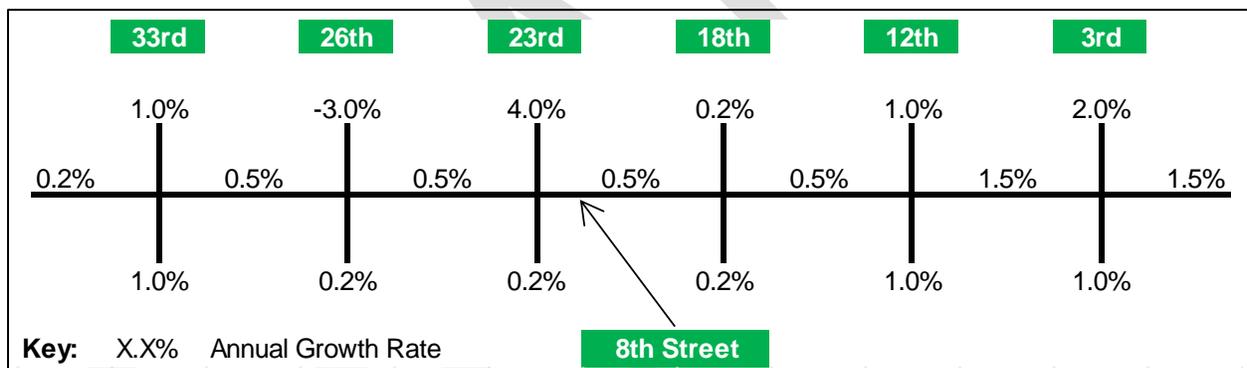


Figure 11. Recommended Annual Traffic Growth Rates

Similar to the traffic volume decrease experienced on 18th Avenue when the pedestrian-only viaduct was constructed, it is expected that traffic on 26th Avenue will shift to 23rd Avenue if a pedestrian-only viaduct is constructed at 26th Avenue and a viaduct for vehicles and pedestrians is constructed at 23rd Avenue. This assumption leads to a negative annual growth rate on 26th Avenue and a higher-than-historical, positive growth rate on 23rd Avenue. The higher growth rate on 23rd Avenue also accounts for the consolidation of traffic from nearby at-grade crossings that will likely be closed with construction of the 23rd Avenue viaduct. The annual growth rate on 8th Street, east of 12th Avenue, was adjusted upward to account for anticipated housing and industry growth on the east side of Columbus.

Future Volumes

Existing ADTs were grown from 2019 to 2040 using the growth rates shown in **Figure 11** to establish 2040 ADTs within the study area. By 2040, the ADT on 8th Street is expected to range from 4,200 vehicles per day, east of 3rd Avenue, to 8,200 vehicles per day on the west end. A comparison of existing and 2040 ADTs is shown in **Figure 12**.

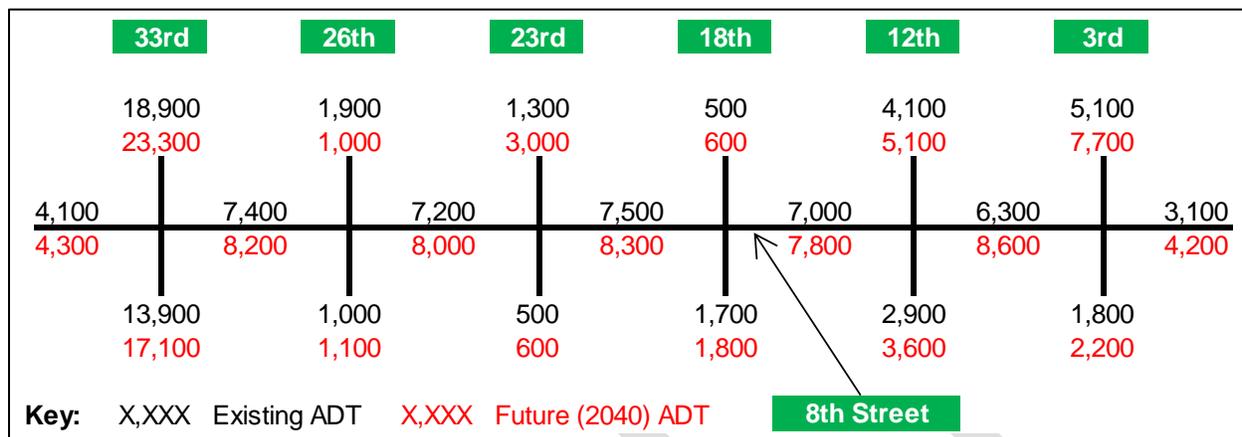


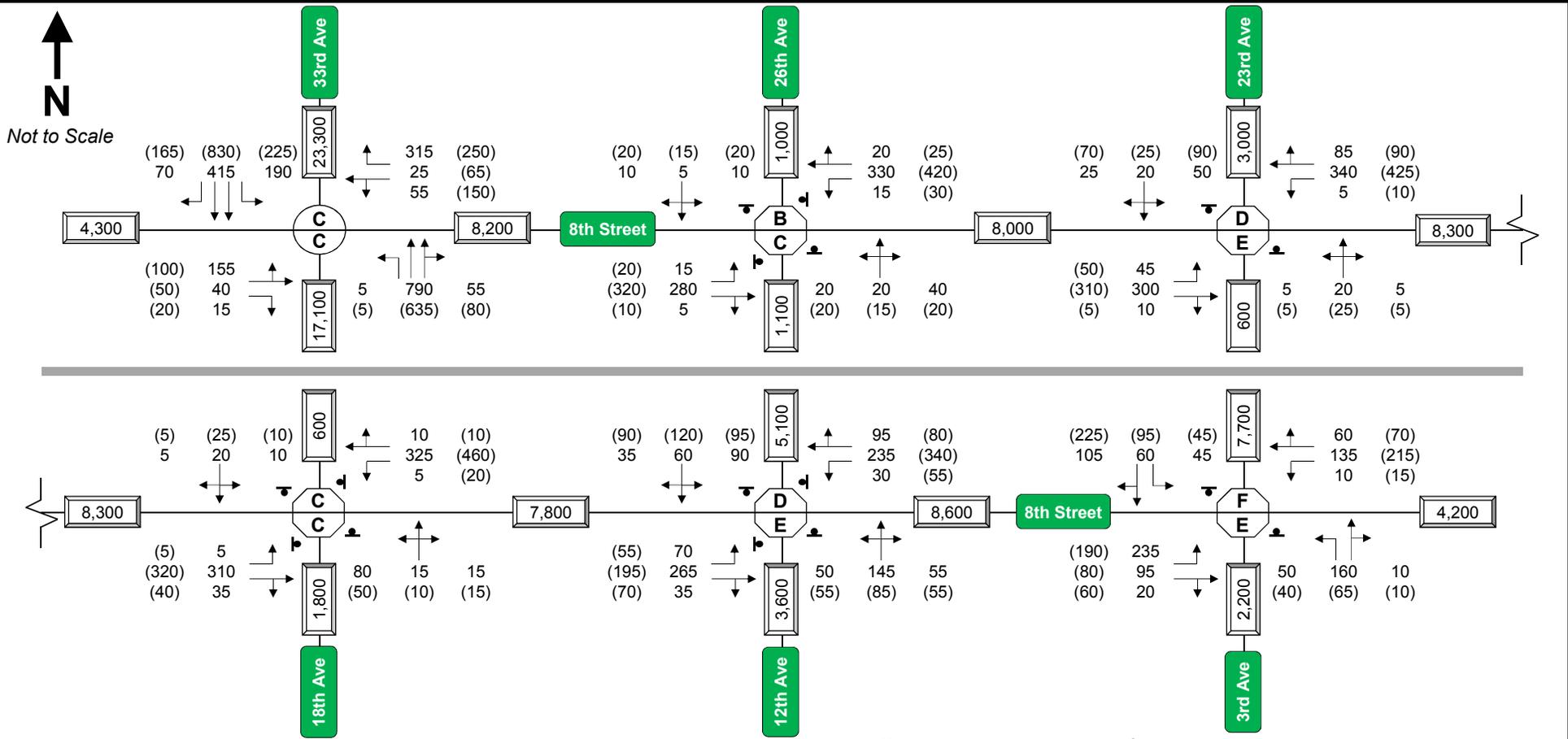
Figure 12. Existing and Future (2040) Average Daily Traffic

Peak hour turning movements were grown to reflect the daily volume growth between existing and 2040. Year 2040 AM and PM peak hour traffic forecasts are shown in **Figure 13**.

Traffic Operations Analysis

Future no-build operational analysis results for the AM and PM peak hours are shown in **Figure 13** and are tabulated in **Table 4**. The expected LOS at intersections along 8th Street in the Year 2040 assuming no improvements ranges from LOS C to LOS F. Thus, traffic flow is expected to degrade from current conditions as traffic volumes increase. However, minor changes to traffic control and lane configuration at intersections with poor LOS will improve the LOS at select locations. These include:

- LOS at 23rd Avenue & 8th Street would improve from LOS E to LOS D if stop signs are added on the 8th Street approaches to the intersection.
- LOS at 12th Avenue & 8th Street would improve from LOS E to LOS D if northbound and southbound left turn bays are added on 12th Avenue.
- LOS at 3rd Avenue & 8th Street would improve from LOS F to LOS C if stop signs are added on the 8th Street approaches to the intersection.



LEGEND

- AM Peak Hour Signalized Intersection
- PM Peak Hour Level of Service
- AM Peak Hour Unsignalized Intersection
- PM Peak Hour Level of Service
- Average Annual Daily Traffic (AADT)
- XXX (XXX) AM and (PM) Peak Hour Volumes
- Intersection Lane Geometrics
- Stop Sign

Note:
 All Way Stop Controlled (AWSC) and Two Way Stop Controlled (TWSC) overall intersection LOS represents the worst-case approach LOS.

Sources:
 1. Traffic Volumes: Developed by HDR using recommended annual growth rates developed using historical ADTs and the City of Columbus Travel Demand Model.
 2. Traffic Capacity Analysis: Conducted by HDR using Synchro 10 and HCM 6th Edition methodologies (March 2020).



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Table 4. Year 2040 No-Build Traffic Operations along 8th Street

North / South Cross Street Intersection	Traffic Control	Intersection Delay / LOS* AM (PM)	Approach Delay / Level of Service AM (PM)			
			EB	WB	NB	SB
33 rd Avenue	Signalized	28.5/C (22.2/C)	51.3/D (42.4/D)	29.9/C (27.0/C)	30.3/C (27.1/C)	18.4/B (14.7/B)
26 th Avenue	AWSC	14.0/B (17.3/C)	11.8/B (12.7/B)	14.0/B (17.3/C)	9.5/A (9.6/A)	9.1/A (9.6/A)
23 rd Avenue	TWSC	27.5/D (48.4/E)	1.1/A (1.2/A)	0.1/A (0.2/A)	20.8/C (23.2/C)	27.5/D (48.4/E)
18 th Avenue	AWSC	15.3/C (20.2/C)	15.3/C (14.1/B)	15.1/C (20.2/C)	10.8/B (10.2/B)	9.7/A (9.8/A)
12 th Avenue	AWSC	29.0/D (43.0/E)	23.6/C (18.7/C)	29.0/D (43.0/E)	20.4/C (16.6/C)	17.0/C (23.0/23)
3 rd Avenue	TWSC	81.8/F (47.7/E)	5.6/A (4.8/A)	0.4/A (0.4/A)	77.8/F (47.7/E)	81.8/F (30.3/D)

* All Way Stop Controlled (AWSC) and Two Way Stop Controlled (TWSC) overall intersection LOS represents the worst-case approach LOS.

Traffic Signal Warrant Analysis

A traffic signal warrant analysis was performed for the study intersections along 8th Street that are currently unsignalized using 2040 volumes. As shown in **Table 5**, none of the study intersections that are currently unsignalized are expected to meet the warrant for a new traffic signal in 2040. However, intersections along 8th Street will continue to be monitored by the City to determine if/when traffic signal warrants may be met.

Table 5. Year 2040 No-Build Conditions Traffic Signal Warrant Analysis

Intersection of 8 th Street with:	Meet Traffic Signal Warrant?
26 th Avenue	No
23 rd Avenue	No
18 th Avenue	No
12 th Avenue	No
3 rd Avenue	No

CHAPTER 4. PUBLIC INVOLVEMENT & SURVEY

This chapter summarizes the initial public involvement process and project kickoff online survey.

Website

The study team kept the public informed at every step of the study process, and solicited public input at key milestones. The City of Columbus used their website to host a study webpage that served as the primary resource and repository for project information and materials. The webpage, available at columbusne.us/mobilitystudy, meant that interested individuals could learn more about the project and stay up-to-date on input opportunities, including an online survey and online public meeting (see **Chapter 6** for more information about the online public meeting).

Online Kickoff Survey

Following initial data collection and the traffic and safety analysis, the study team conducted an online kickoff survey to solicit input from residents, businesses, and commuters on their experience traveling through the study area. The public was notified of the survey on Tuesday, February 18, 2020 via press release, invitation letter and social media.

The survey was available online from Tuesday, February 18, 2020 through Tuesday, March 3, 2020. The survey received a total of 258 responses.

Survey Results

Figure 14 summarizes the survey results for each question from the survey.

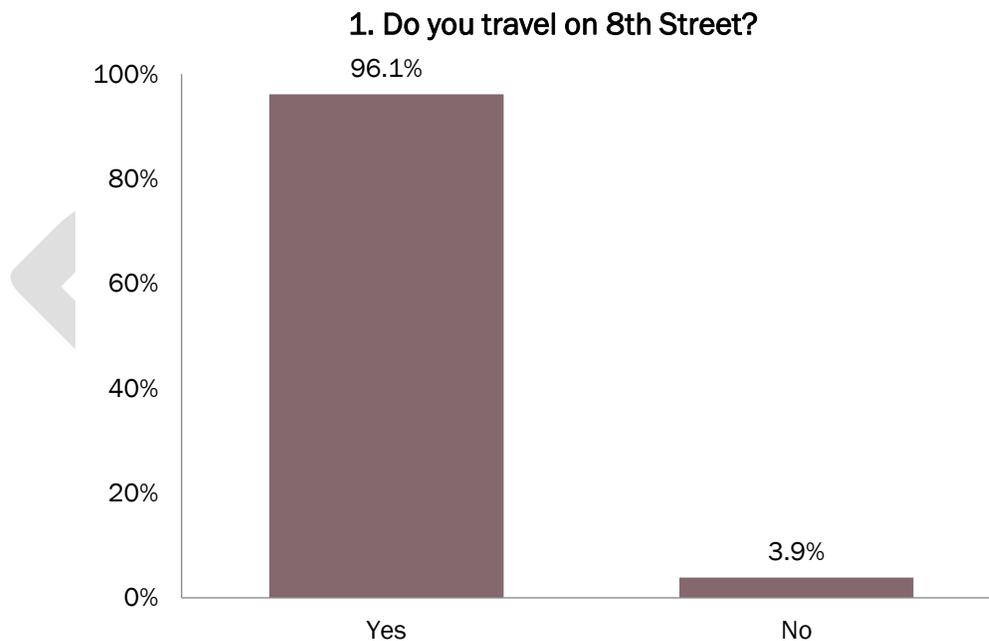
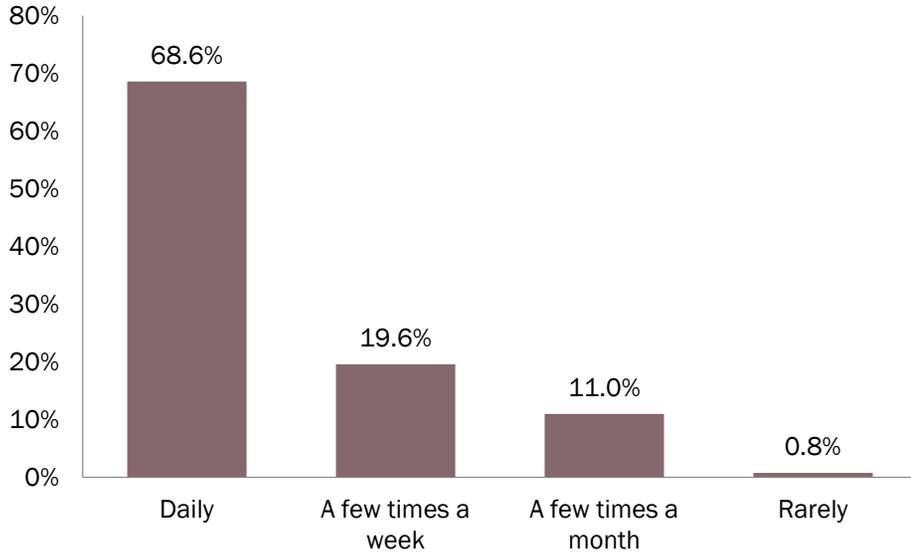
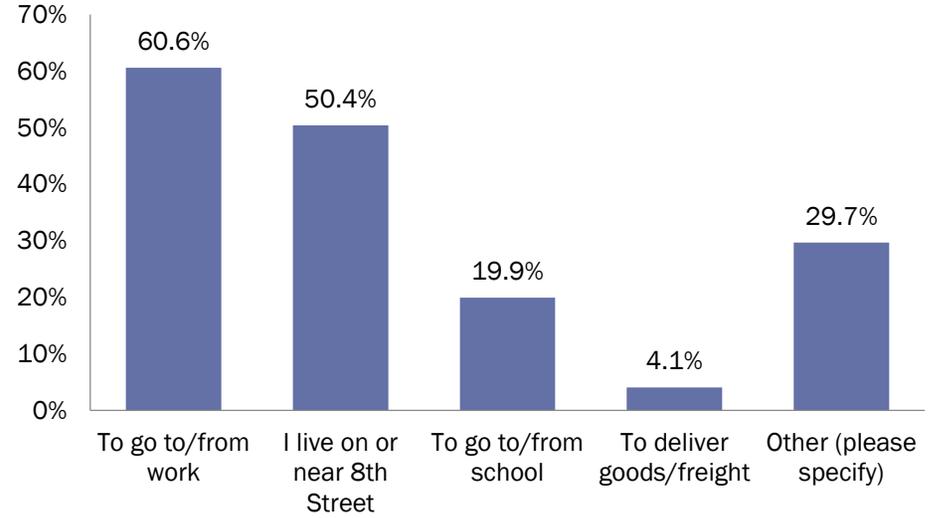


Figure 14. Online Kickoff Survey Results

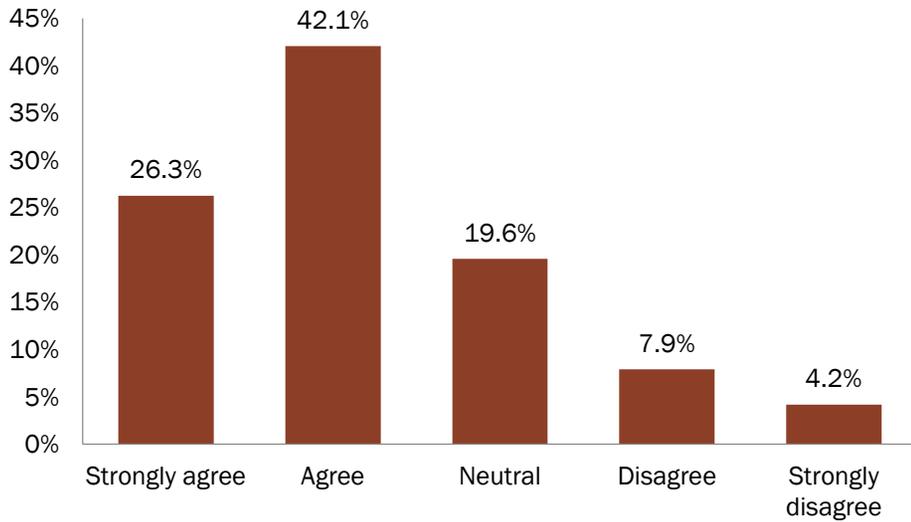
2. How often?



**3. What is the purpose of your travel on 8th Street?
(Check all that apply)**



4. I can easily access my destination (home, place of work, school, etc.) using 8th Street.



5. I feel safe driving on 8th Street.

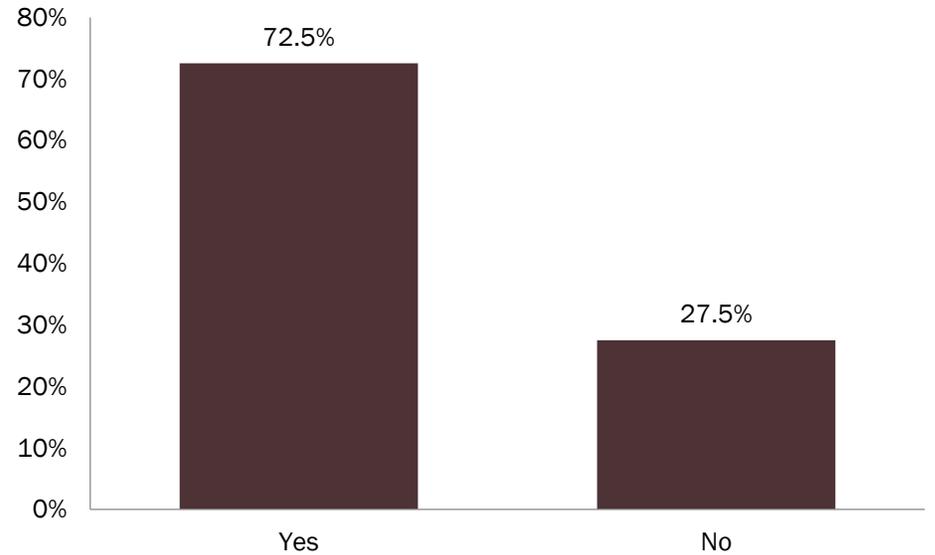
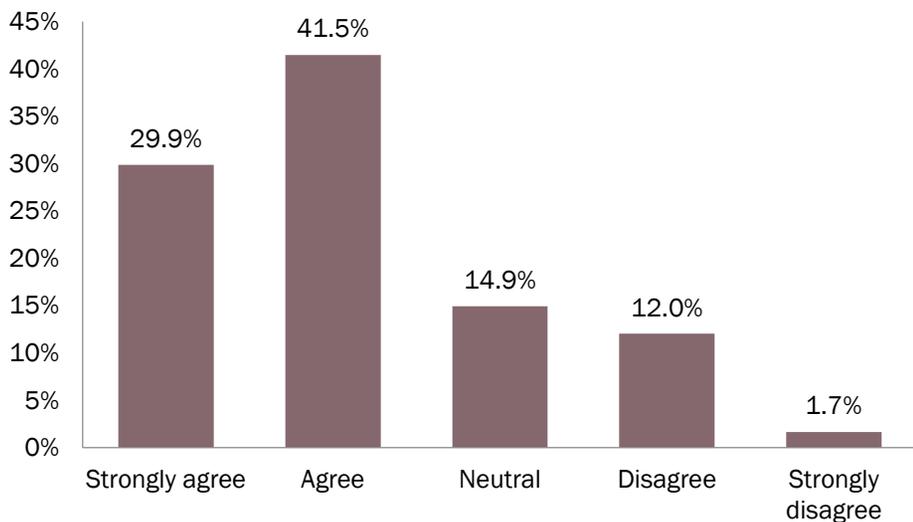
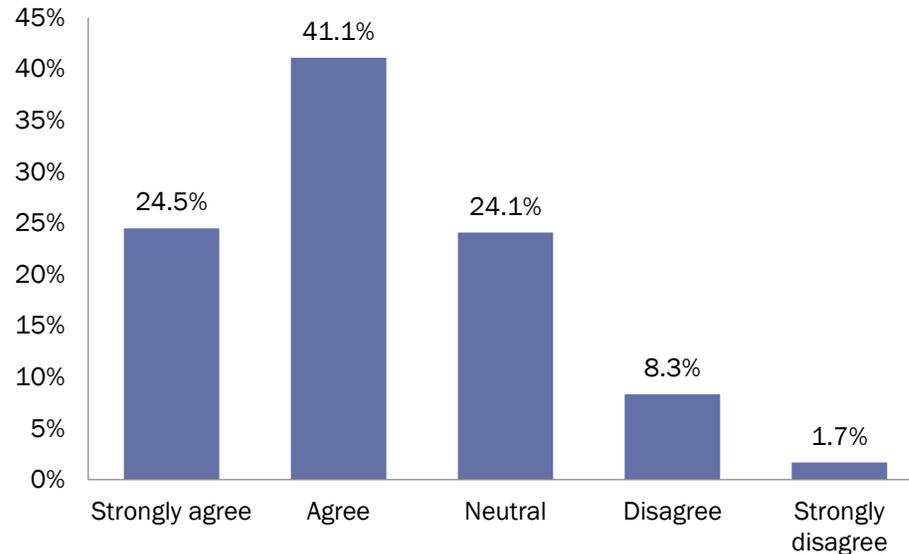


Figure 14. Online Kickoff Survey Results (Cont.)

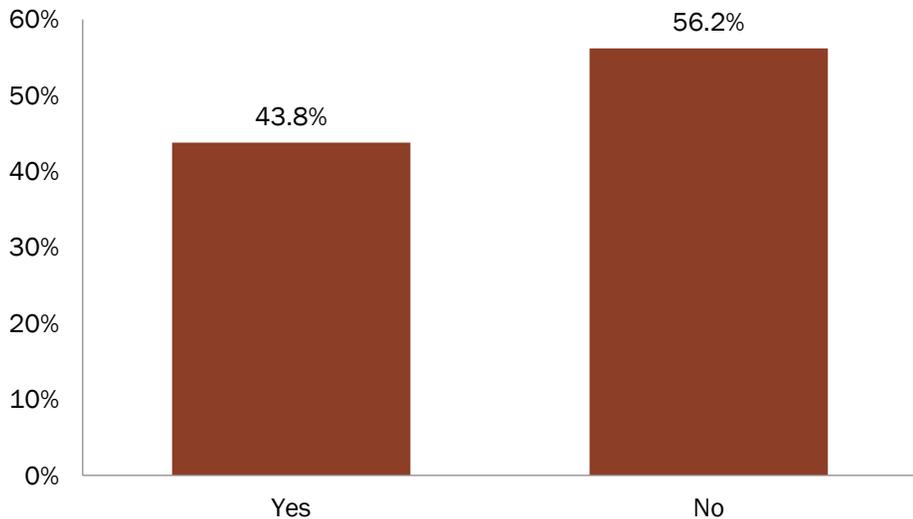
6. 8th Street is a convenient east-west connection to other destinations.



7. There is congestion along 8th Street.



8. Are current bicycle and pedestrian facilities within the study area satisfactory?



9. Are current bicycle and pedestrian facilities within the study area safe?

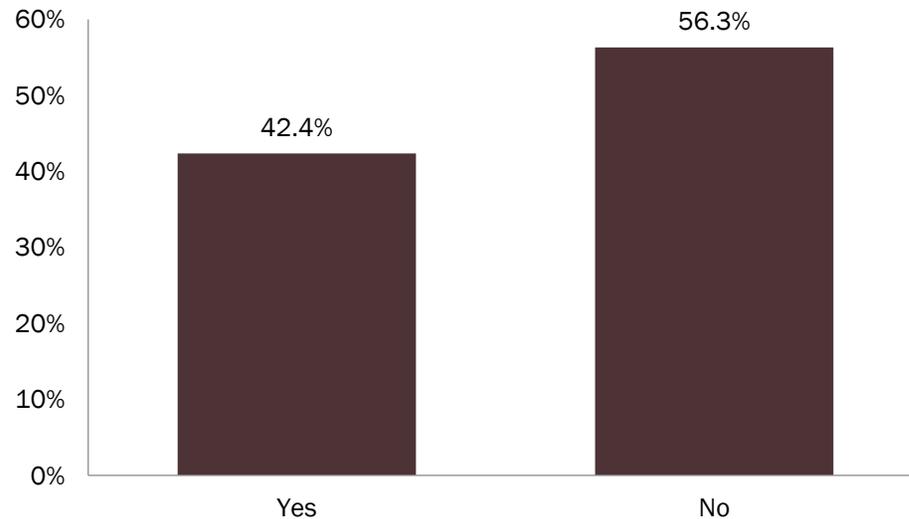


Figure 14. Online Kickoff Survey Results (Cont.)

10. Changes or improvements to 8th Street are needed.

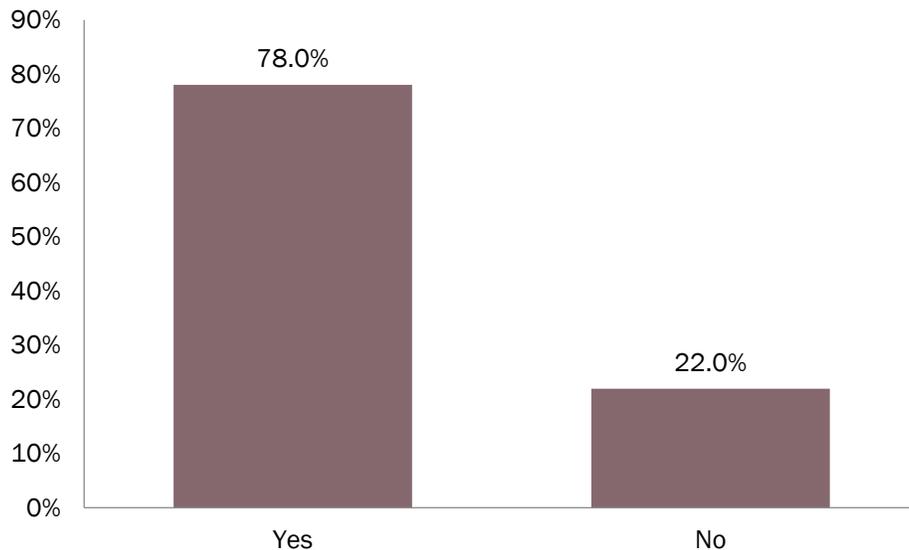


Figure 14. Online Kickoff Survey Results (Cont.)

Conclusions and Observations

Key findings from the online kickoff survey include the following:

- While the majority of commenters feel safe driving on 8th Street, some commenters noted that there are speeding issues along the corridor.
- Of commenters who indicated congestion along 8th Street, the majority of comments noted peak congestion during the following time periods:
 - 7:00 – 8:00 AM
 - 3:30 – 5:00 PM
- Some commenters identified pavement condition and drainage issues along 8th Street, and would like to see those fixed.
- For comments relating to stop signs, most commenters noted that there were too many on 8th Street. However, in general, commenters did not feel as though there were enough safe pedestrian crossings. Additionally, some commenters noted that people do not need stop signs or follow right-of-way.
- While the majority of commenters indicated they believe changes or improvements on 8th Street are needed, there was no clear consensus on what those changes or improvements should be.
- Commenters were supportive of improvements to bicycle and pedestrian facilities due to missing sidewalks in some areas along the 8th Street corridor and deteriorating conditions of existing sidewalks.

CHAPTER 5. IMPROVEMENT ALTERNATIVES

This chapter summarizes the initial and refined improvement alternatives that were considered for the study area.

Initial Alternatives

A wide variety of improvement alternatives were initially considered and are described below.

No-Build Alternative

A no-build alternative would mean there would be no change to the current configuration of the study area. The no-build alternative was evaluated as a baseline comparison for the other alternatives but could be selected by the City of Columbus as the most prudent alternative.

Mini-Roundabouts Alternative

This alternative would construct mini-roundabouts along 8th Street at 26th Avenue, 23rd Avenue, 18th Avenue, 12th Avenue and 3rd Avenue. The mini-roundabouts would be constructed within the existing right-of-way. The mini-roundabouts would facilitate more free-flowing traffic on 8th Street while providing traffic-calming benefits and improving safety.

The central island of the mini-roundabouts would be mountable/traversable to allow larger vehicles such as buses and emergency vehicles to safely navigate the mini-roundabouts. Mini-roundabouts create beautification opportunities and visually break up continuous concrete stretches in established residential areas.

In addition, the westbound exclusive left turn lane at 27th Avenue would be removed due to low usage and to provide wider lanes for the through traffic.

Widen Key Intersections Alternative

This alternative would reconstruct intersections along 8th Street at 26th Avenue, 23rd Avenue, and 12th Avenue to provide wider lanes on the approaches to the intersections. This widening would occur within the existing right-of-way.

All-way stop signs would be provided along 8th Street at 26th Avenue, 23rd Avenue, 18th Avenue, 12th Avenue and 3rd Avenue to provide safe opportunities for pedestrians to cross 8th Street and to allow adequate gaps for vehicles to turn onto or cross 8th Street.

In addition, the westbound exclusive left turn lane at 27th Avenue would be removed due to low usage and to provide a wider lane for westbound through traffic.

One-Way Couplet Alternative – Eastbound 8th Street / Westbound 9th Street

This alternative would make 8th Street eastbound and 9th Street westbound between 33rd Avenue and 10th Avenue. Two travel lanes would be provided on each street. This configuration would split the traffic volume on 8th Street between two streets and provide excess capacity for future traffic growth.

This alternative would require new reverse curve street connections on both the west end and the east end to bring the one-way streets back together – requiring significant property impacts.

Three-way stop signs would be provided at the intersections of 8th Street and 9th Street with 26th Avenue, 23rd Avenue, 18th Avenue and 12th Avenue to provide safe opportunities for pedestrians to cross the one-way streets. All-way stop signs would be provided at the intersection of 3rd Avenue & 8th Street.

One-Way Couplet Alternative – Eastbound 7th Street / Westbound 8th Street

This alternative would make 7th Street eastbound and 8th Street westbound between 33rd Avenue and 12th Avenue. Two travel lanes would be provided on each street. This configuration would split the traffic volume on 8th Street between two streets and provide excess capacity for future traffic growth.

This alternative would require a new reverse curve connection on the east end to bring the one-way streets back together – requiring significant property impacts. The eastbound one-way (7th Street) would connect directly to 33rd Avenue with a new traffic signal.

Three-way stop signs would be provided at the intersections of 8th Street and 7th Street with 26th Avenue, 23rd Avenue and 18th Avenue to provide safe opportunities for pedestrians to cross the one-way streets. All-way stop signs would be provided at the intersection of 12th Avenue & 8th Street and at 3rd Avenue & 8th Street.

Restripe 8th Street between 33rd Avenue and 12th Avenue to a Narrow 3-Lane Section

This alternative would provide a center two-way left turn lane within the existing cross section on 8th Street to accommodate left turns into driveways and minor north/south cross streets. This center two-way left turn lane could be provided on every block between 33rd Avenue and 12th Avenue or only provided for blocks with driveways fronting 8th Street. This alternative would be implemented primarily through the application of new pavement markings with no street widening required.

Widen 8th Street between 33rd Avenue and 12th Avenue to a Standard 3-Lane Section

This alternative would widen 8th Street by up to 10 feet to provide a center two-way left turn lane for left turns into driveways and minor north/south cross streets using the City's standard cross section for a 3-lane roadway. This cross section would match the cross section of 8th Street, east of 9th Avenue. This alternative could be implemented by widening all on one side or by widening on both sides.

Traffic Calming Measures at Various Locations along 8th Street

This alternative would install a combination of treatments including: chicanes, lane shifts, pinch points, medians, intersection bulb-outs, speed-activated signs and other devices aimed at calming traffic along 8th Street. This alternative is generally not compatible with higher volume streets such as 8th Street which could result in traffic diverting to other east-west residential streets.

Initial Alternative Screening

The pros and cons of the initial alternatives were identified and are summarized in **Table 6** on the following page. With input from City staff, the following initial alternatives were eliminated from further consideration:

- Restripe 8th Street between 33rd Avenue and 12th Avenue to Narrow 3-Lane Section. This alternative was eliminated due to the requirement for users to drive in flooded gutters during rain events.
- Widen 8th Street between 33rd Avenue and 12th Avenue to Standard 3-Lane Section. This alternative was eliminated due to minimal benefits compared to significant construction costs and impacts.
- Traffic Calming Measures at Various Locations along 8th Street. This alternative was eliminated due to the potential diversion of traffic from 8th Street onto other streets that do not have traffic calming measures.

Table 6. Pros and Cons of Initial Alternatives

Initial Alternative	Advantages	Disadvantages
No-Build	N/A	N/A
Mini Roundabouts at Key Intersections Along 8 th Street	<ul style="list-style-type: none"> • Removes stop signs (more free-flowing) • May “calm” traffic flow • Improves safety • Creates beautification opportunities • Visually breaks up continuous concrete stretches in established residential areas 	<ul style="list-style-type: none"> • Minor property impacts • May require storm sewer improvements • Does not address the difficulty residents experience in backing out of driveways
Widen Key Intersections Along 8 th Street to Provide Standard Lane Widths	<ul style="list-style-type: none"> • Improves intersection operations • Reduces need to drive in flooded gutters during rain events • Provides consistency with turn lane widths in other areas of Columbus 	<ul style="list-style-type: none"> • Minor property impacts • Does not “calm” traffic flow on 8th Street • May require storm sewer improvements • Does not address the difficulty residents experience in backing out of driveways
One-Way Couplet Between 33 rd Avenue and 12 th Avenue 8 th Street – EB 9 th Street – WB	<ul style="list-style-type: none"> • Splits volume between two streets • Provides excess capacity for potential future traffic growth • May provide more opportunities for residents along 8th Street to back out of driveways • Crossing pedestrians only have to look one direction 	<ul style="list-style-type: none"> • Increases traffic volume on another residential street • Increases maintenance costs on another residential street • Potentially eliminates on-street parking on another residential street • Reverse curve connections will have significant property/home impacts • More property/home impacts compared to 7th-8th Street One-Way Couplet • May increase travel speeds • May increase out-of-direction travel • May cause driver confusion • Drivers may pay less attention because there's no conflicting traffic flow • Pedestrians may feel less safe crossing one-way streets

Table 6. Pros and Cons of Initial Alternatives (Cont.)

Initial Alternative	Advantages	Disadvantages
<p>One-Way Couplet Between 33rd Avenue and 12th Avenue</p> <p>7th Street – EB 8th Street – WB</p>	<ul style="list-style-type: none"> • Splits volume between two streets. • Provides excess capacity for potential future traffic growth • May provide more opportunities for residents along 8th Street to back out of driveways • Crossing pedestrians only have to look one direction • Less property/home impacts compared to 8th-9th Street One-Way Couplet 	<ul style="list-style-type: none"> • Increases traffic volume on another residential street • Increases maintenance costs on another residential street • Potentially eliminates on-street parking on another residential street • Reverse curve connection will have significant property/home impacts • May increase travel speeds • May increase out-of-direction travel • May cause driver confusion • Drivers may pay less attention because there's no conflicting traffic flow • Pedestrians may feel less safe crossing one-way streets
<p>Restripe 8th Street between 33rd Avenue and 12th Avenue to Narrow 3-Lane Section</p>	<ul style="list-style-type: none"> • Provides sheltered zone for vehicles waiting to turn left into a driveway • Narrow lanes may “calm” traffic flow • No property impacts 	<ul style="list-style-type: none"> • Requires drivers to drive in flooded gutters during rain events • May not be enough driveways to justify • Does not address the difficulty residents experience in backing out of driveways
<p>Widen 8th Street between 33rd Avenue and 12th Avenue to Standard 3-Lane Section</p>	<ul style="list-style-type: none"> • Provides sheltered zone for vehicles waiting to turn left into a driveway • Matches cross section east of 12th Avenue (consistency) • Reduces need to drive in flooded gutters during rain events • Potentially saves trees if widened to both sides 	<ul style="list-style-type: none"> • Property impacts (no homes) • May not be enough driveways to justify • Does not address the difficulty residents experience in backing out of driveways • Likely requires storm sewer improvements • Significant tree loss if widened to one-side only • Potential utility impacts • Does not “calm” traffic flow on 8th Street
<p>Traffic Calming Measures at Various Locations Along 8th Street</p>	<ul style="list-style-type: none"> • Best option to “calm” traffic flow 	<ul style="list-style-type: none"> • May impact drainage • May divert traffic to other streets that do not have traffic calming measures

Refined Alternatives

The improvement alternatives carried forward were refined to a greater level of detail and numbered. Figures illustrating the refined alternatives are shown on the following pages.

Alternative 1 - Mini-Roundabouts



Figure 15. Alternative 1 – 26th Avenue & 8th Street

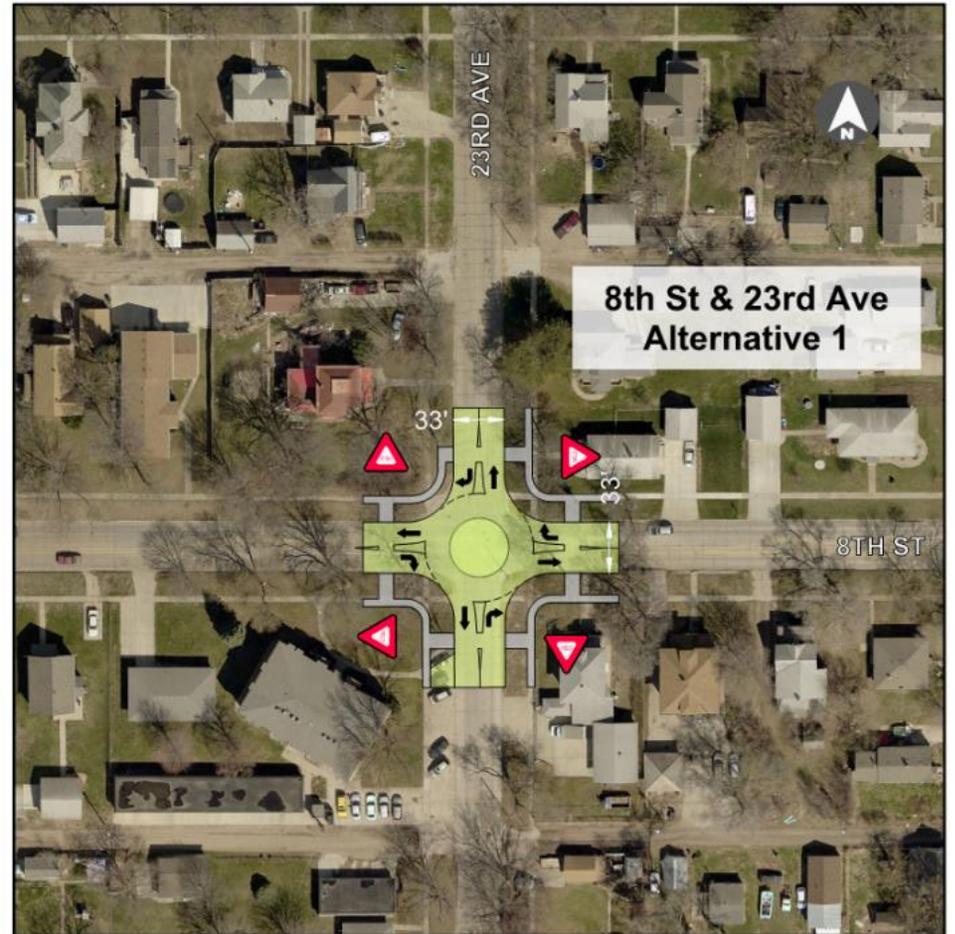


Figure 16. Alternative 1 – 23rd Avenue & 8th Street



Figure 17. Alternative 1 – 18th Avenue & 8th Street



Figure 18. Alternative 1 – 12th Avenue & 8th Street



Figure 19. Alternative 1 – 3rd Avenue & 8th Street

Alternative 2 - Widen Key Intersections

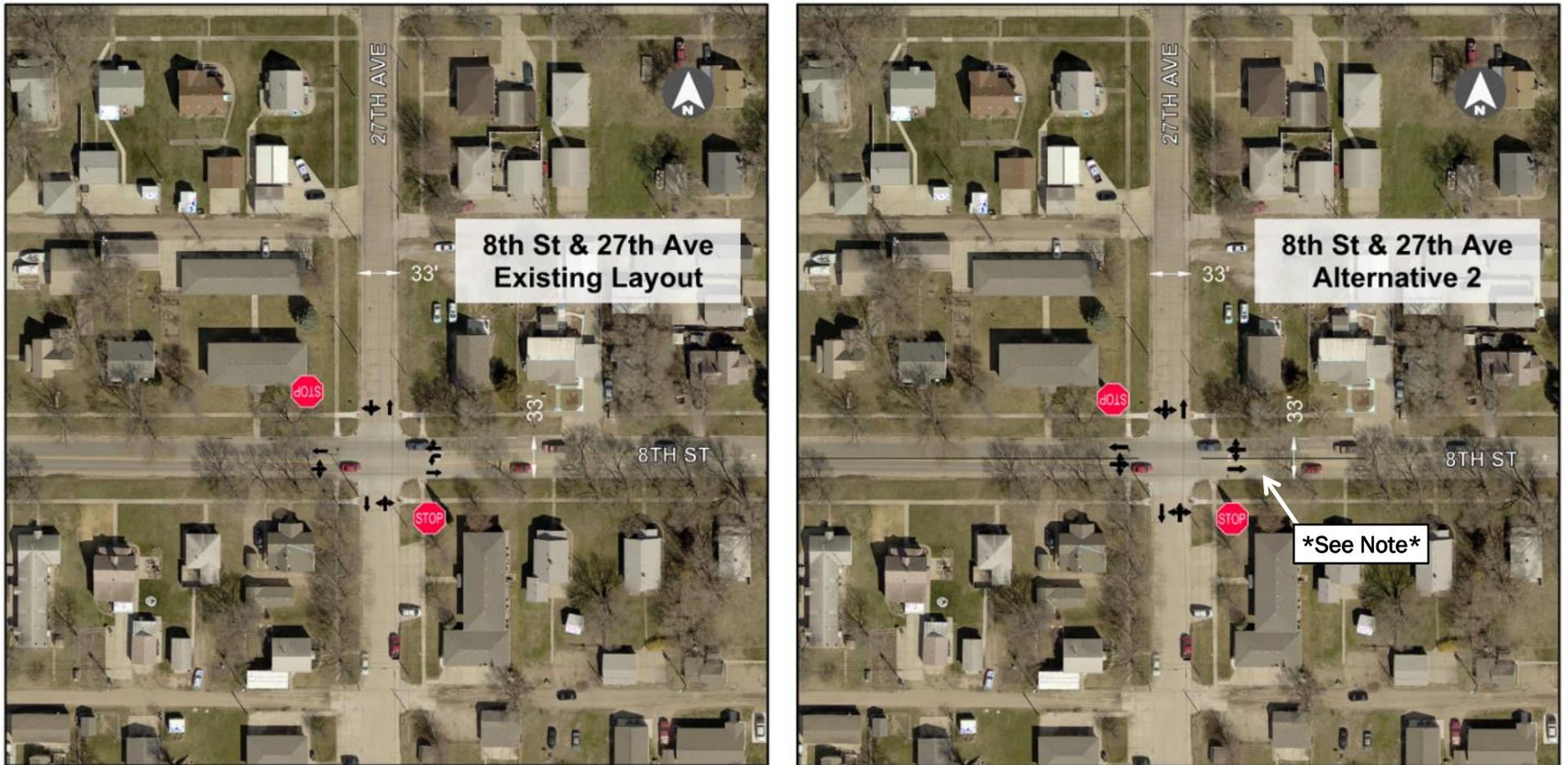


Figure 20. Alternative 2 – 27th Avenue & 8th Street

*The westbound exclusive left turn lane at 27th Avenue would be removed due to low usage and to provide a wider lane for westbound through traffic.

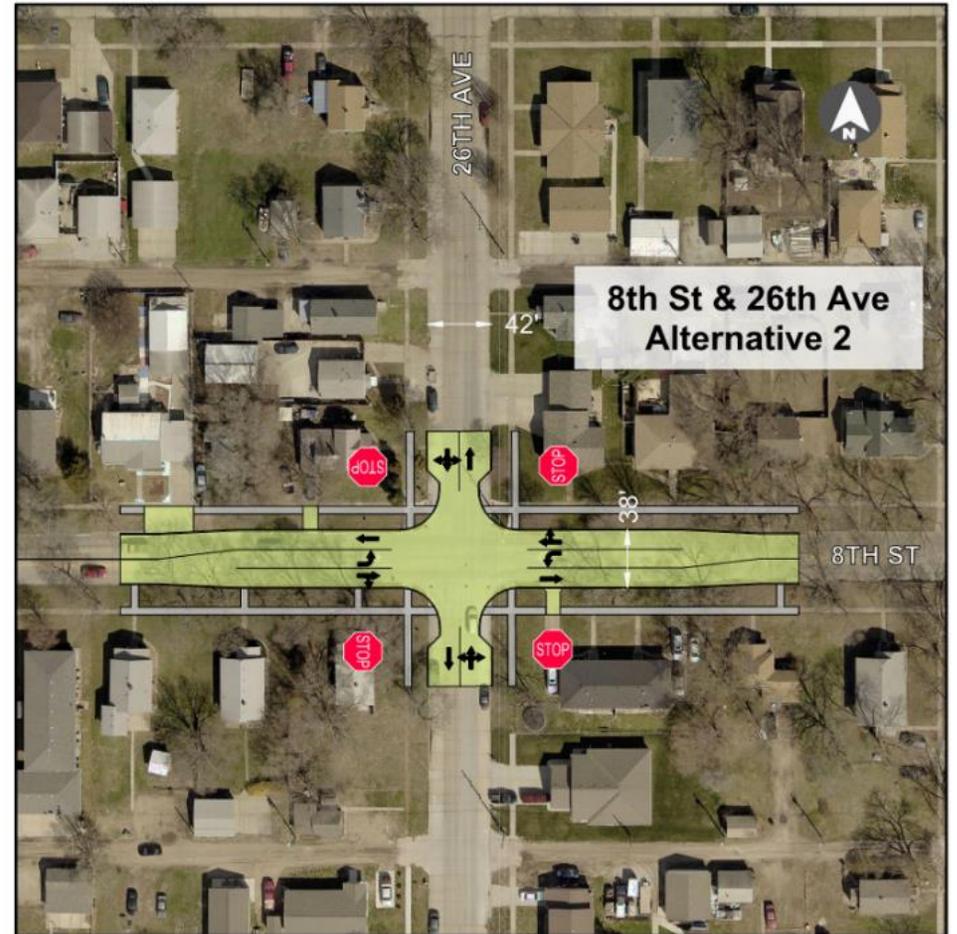


Figure 21. Alternative 2 – 26th Avenue & 8th Street



Figure 22. Alternative 2 – 23rd Avenue & 8th Street



Figure 23. Alternative 2 – 18th Avenue & 8th Street

*The eastbound and westbound exclusive left turn lanes at 18th Avenue would be removed due to low usage and to provide wider lanes for through traffic.

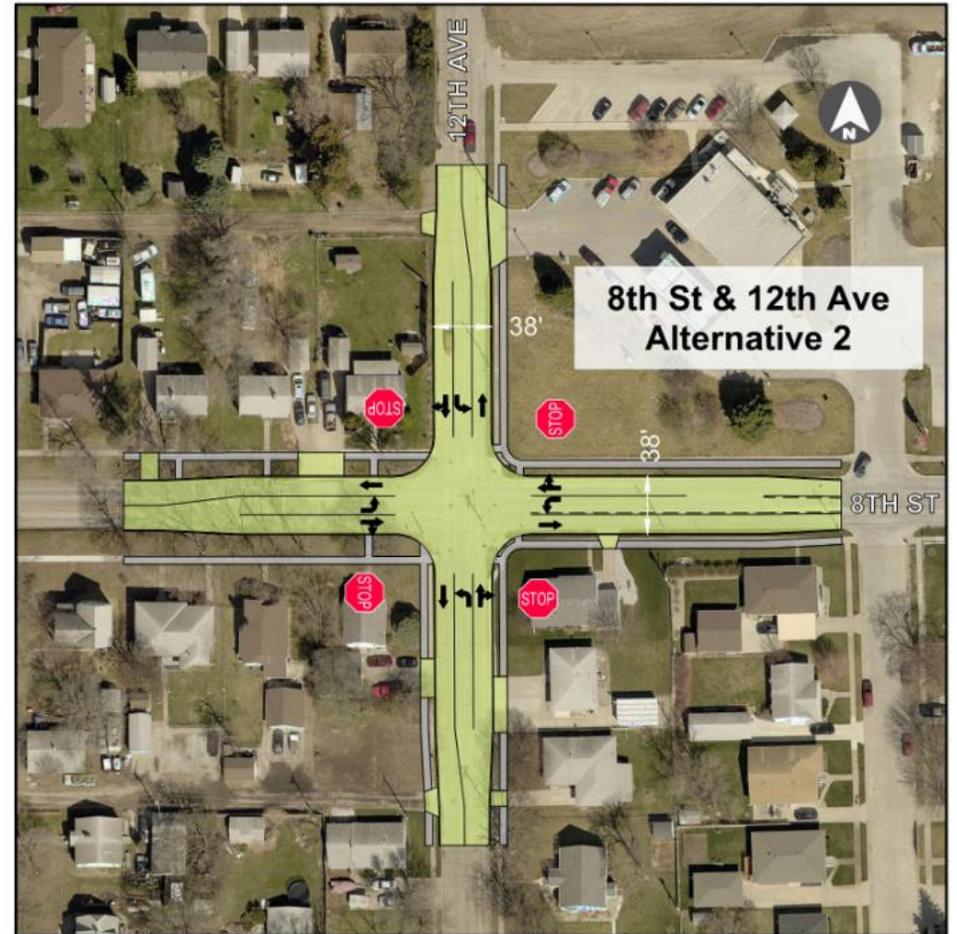


Figure 24. Alternative 2 – 12th Avenue & 8th Street



Figure 25. Alternative 2 – 3rd Avenue & 8th Street

*Stop signs would be added on the eastbound and westbound approaches to provide safe opportunities for pedestrians to cross 8th Street and to allow adequate gaps for vehicles to turn onto or cross 8th Street.

Alternative 3A - One-Way Couplet, Eastbound 8th Street / Westbound 9th Street

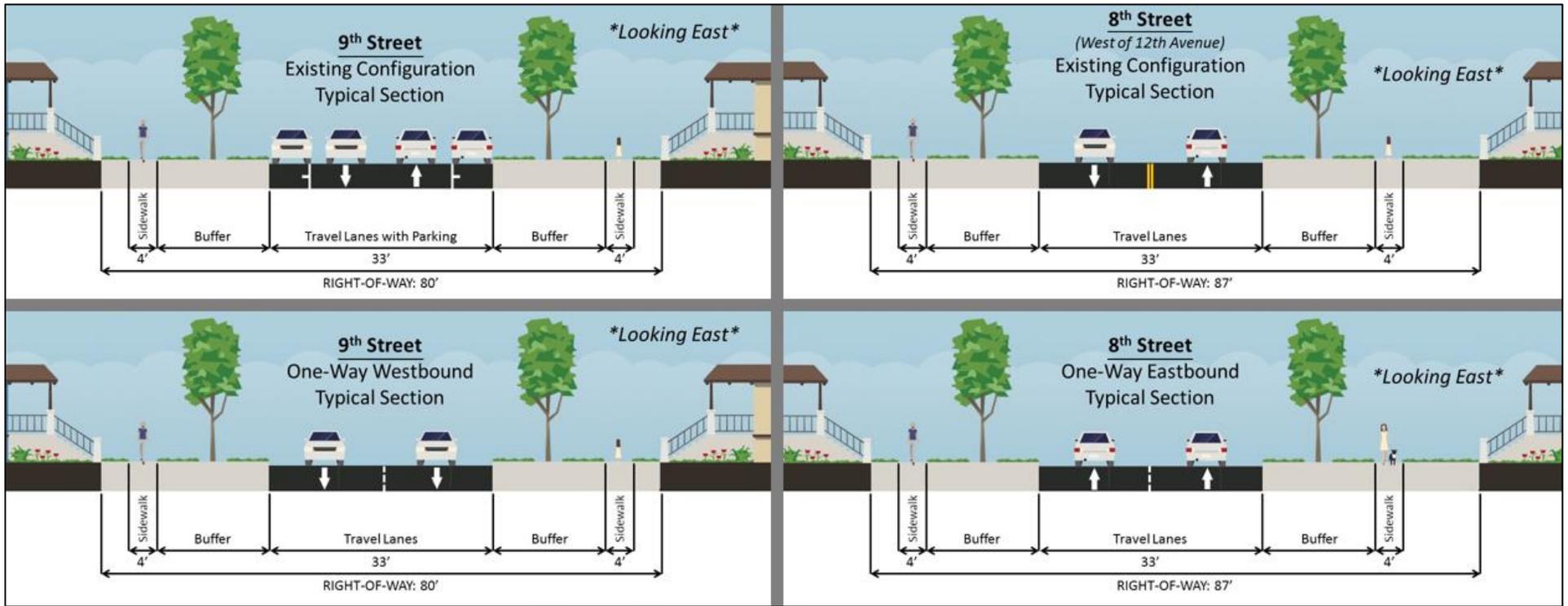


Figure 26. Alternative 3A – Typical Sections along 8th Street and 9th Street



Figure 27. Alternative 3A – 8th Street / 9th Street One-Way Pair Alignments

Alternative 3B - One-Way Couplet, Eastbound 7th Street / Westbound 8th Street

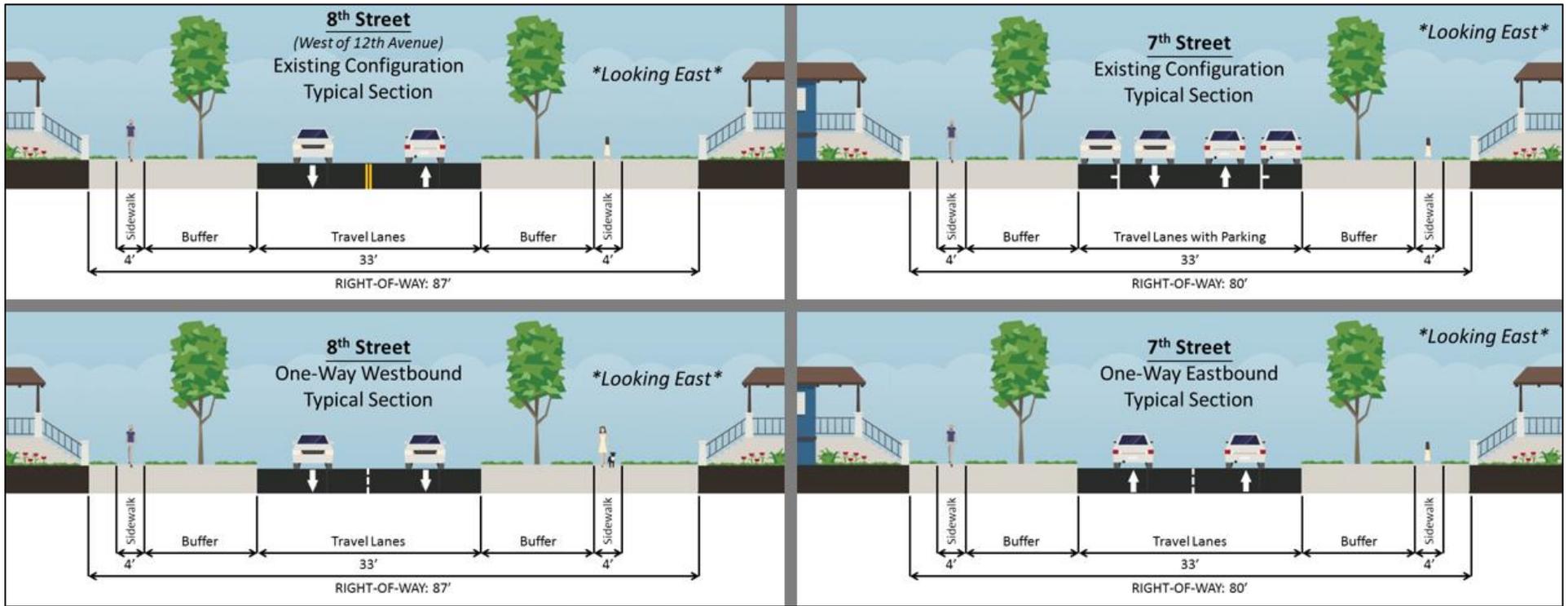


Figure 28. Alternative 3B – Typical Sections along 7th Street and 8th Street



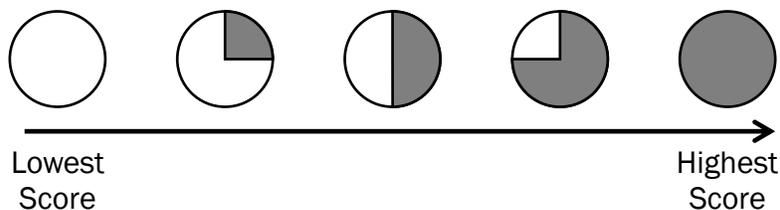
Figure 29. Alternative 3B – 7th Street / 8th Street One-Way Pair Alignments

Refined Alternative Evaluation

A high-level comparative screening evaluation of the alternatives was completed and is summarized in **Table 7**. The evaluation criteria included both qualitative and quantitative measures.

Table 7. Improvement Alternative Scoring Matrix

Evaluation Criteria	Alternatives				
	No-Build	1	2	3A	3B
Impacts to Safety					
Impacts to vehicle travel including travel efficiency, connectivity, and travel speeds					
Impacts to pedestrians and bicycle traffic					
Impacts to neighborhood quality of life					
Construction impacts including access, right-of-way, environmental, and utilities					
Feasibility, including ease of implementation					
Estimated Construction Cost	\$0	\$1.2 - \$1.4 Million	\$1.9 - \$2.1 Million	\$3.8 - \$4.6 Million	\$2.1 - \$2.6 Million



- No-Build: No change to the current configuration
- Alternative 1: Mini-Roundabouts
- Alternative 2: Widen Key Intersections
- Alternative 3A: One-Way Couplet Alternative – Eastbound 8th Street / Westbound 9th Street
- Alternative 3B: One-Way Couplet Alternative – Eastbound 7th Street / Westbound 8th Street

Optional Add-On Improvements

Two optional add-on improvements were developed to supplement the vehicular-centric improvement alternatives described in the previous section.

Optional Add-On: Shared Use Path Improvements

This optional add-on improvement, which could be a stand-alone alternative or combined with other alternatives, would construct an eight foot wide shared use path at the following locations:

- Along the west side of 18th Avenue between 8th Street and the new pedestrian UPRR viaduct.
- Along the north side of 8th Street between 33rd Avenue and 3rd Avenue. This path would connect Pawnee Park (to the west) to the recently completed shared use path along 3rd Avenue.

The location of the proposed shared use paths are shown in **Figure 30**. The proposed typical section along 18th Avenue is shown in **Figure 31**. The proposed typical section along 8th Street is shown in **Figure 32**. The approximate construction cost of the shared use path improvements is:

- Along 18th Avenue: \$90,000 - \$110,000
- Along 8th Street: \$600,000 - \$700,000



Figure 30. Optional Add-On – Proposed Shared Use Path Locations

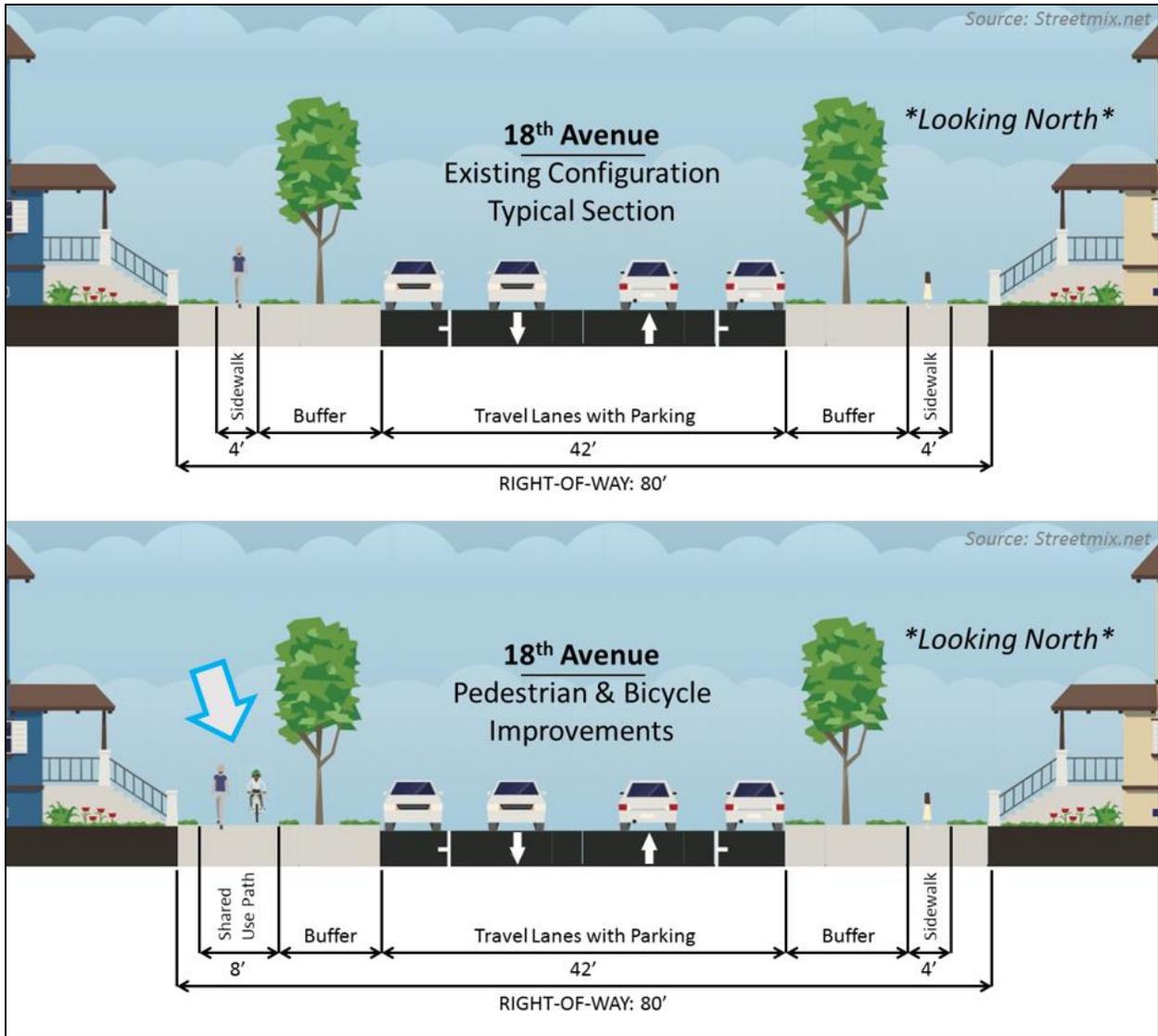


Figure 31. Optional Add-On – Proposed Shared Use Path Typical Section along 18th Avenue

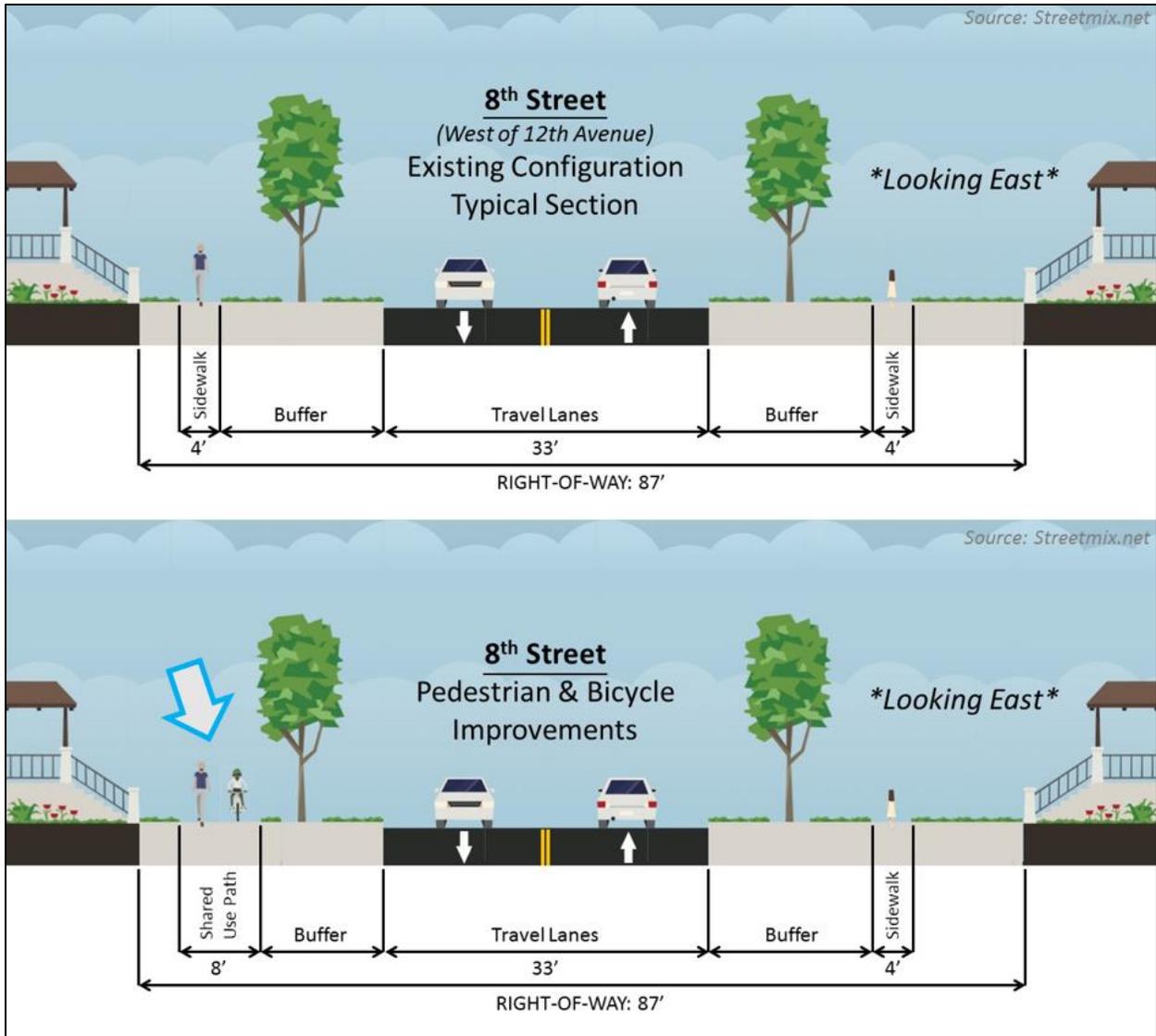


Figure 32. Optional Add-On – Proposed Shared Use Path Typical Section along 8th Street

Optional Add-On: Enhanced Crosswalk Improvements

This optional add-on improvement, which could be a stand-alone alternative or combined with other alternatives, would construct enhanced crosswalk treatments at various points along 8th Street (and along 7th Street and 9th Street in Alternatives 3A and 3B). An example of this optional improvement is shown in **Figure 33**. The approximate construction cost of these enhanced crosswalk treatments is \$140,000 - \$160,000 for the 8th Street corridor.

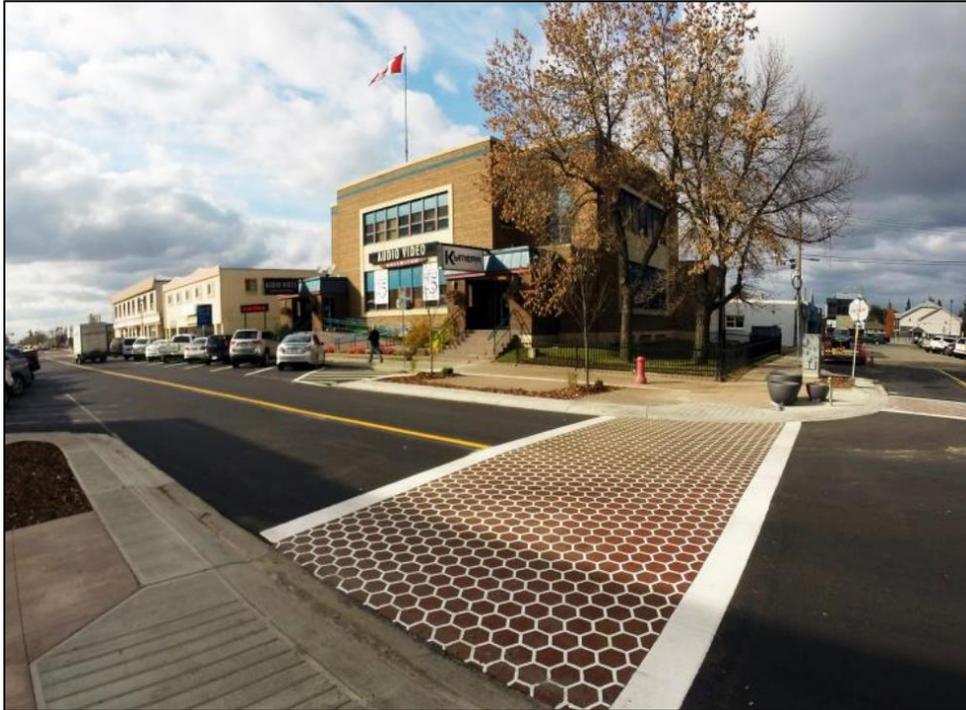


Figure 33. Enhanced Crosswalk Example

CHAPTER 6. ON-LINE PUBLIC MEETING

This chapter summarizes the online public meeting content and survey results.

Meeting Summary

The City hosted an online meeting for the public to provide feedback on the improvement alternatives at columbusne.us/mobilitystudy/alternatives, in place of hosting an in-person public meeting due to COVID-19 public gathering restrictions. The public was notified of the online meeting on Monday, June 15, 2020 via press release, invitation letter, social media, and email notification.

This self-guided online meeting was available for 15 days from Monday, June 15, 2020 through Monday, June 29, 2020. There were 745 views of the online meeting while the online meeting was available, with over 188 responses collected through the alternatives survey form and 70 contact information submissions.

Online Meeting Results

The figure below summarizes the results of the public preference survey for each improvement alternative reviewed in the online meeting.

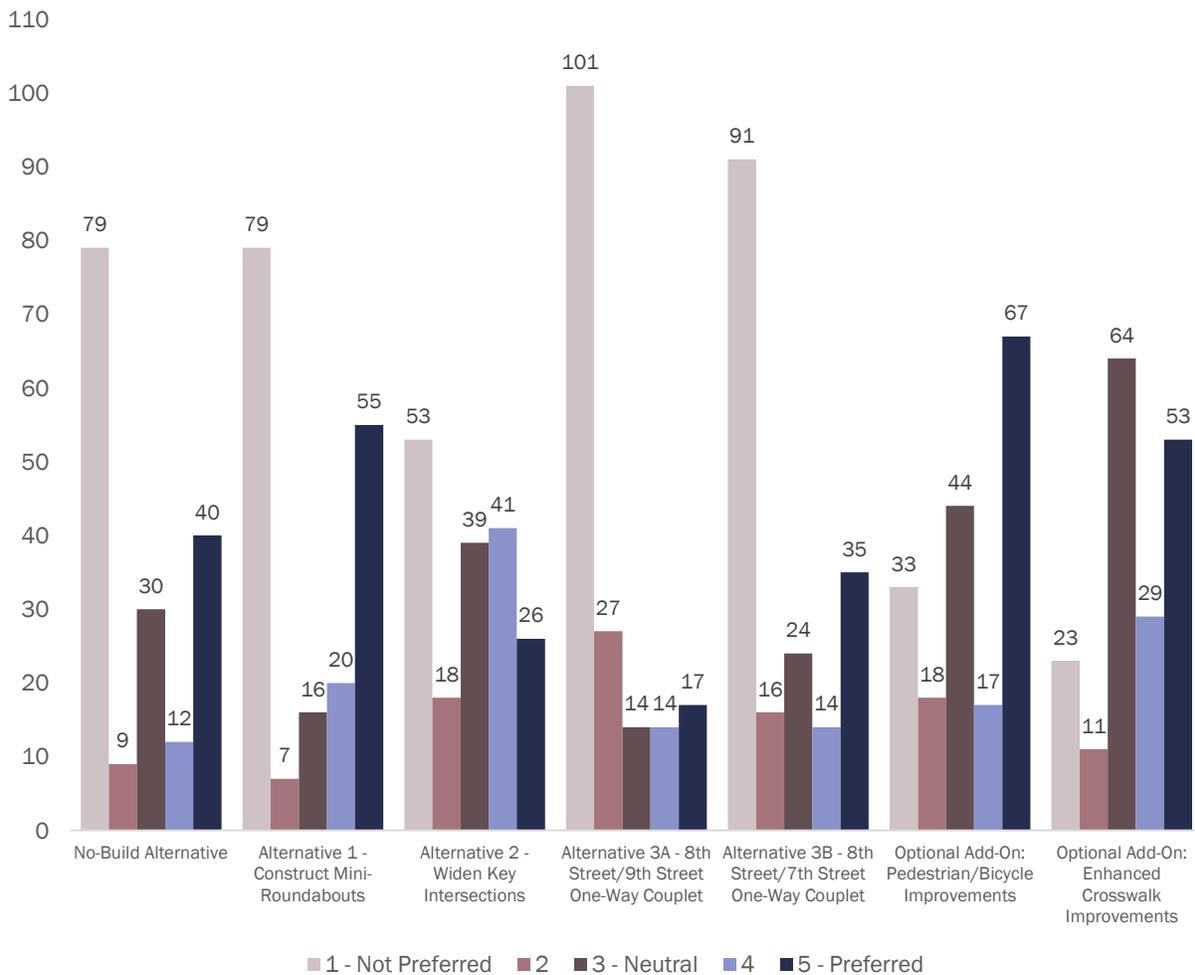


Figure 34. Online Public Meeting Preferences for Improvement Alternatives

Online Survey Conclusions and Observations

Key findings from the preference survey include the following:

- The No-Build Alternative did not receive strong support.
- While Alternative 1 – Construct Mini-Roundabouts received similar “not preferred” responses to the No-Build Alternative, it was also the most strongly preferred alternative out of the alternatives, excluding the Optional Add-On Alternatives.
- Alternative 2 – Widen Key Intersections received a wide spread of preference responses.
- Participants did not prefer the One-Way Couplet Alternatives (3A and 3B)
- Overall participants supported both Optional Add-On Alternatives for pedestrian/bicycle improvements and enhanced crosswalk improvements.

Online meeting participants were provided the opportunity to submit free-form comments on proposed alternatives. The following summarizes public input:

- The cost of alternatives, particularly Alternative 3A and 3B, were a concern for some participants.
- Some commenters, particularly those that live along 7th Street, 8th Street, or 9th Street, believe Alternative 3A and 3B are too costly and may encourage higher speeds, riskier driving behavior or conflicts with pedestrians and bicyclists.
- Commenters were evenly split between preferring or not preferring Alternative 1. Of those who did not prefer constructing mini-roundabouts, they were concerned about other driver’s ability to understand and use roundabouts safely.
- Some commenters were in favor of adding more stop signs along 8th Street, while others advocated for removal of stop signs in some or all areas that currently have them.

CHAPTER 7. SUMMARY & CONCLUSIONS

Summary

The purpose of the Columbus South Mobility Study was to evaluate the potential need for improvements to safely and efficiently move east-west vehicle and pedestrian traffic in the southern portion of the City of Columbus. The study focused on the 8th Street corridor from 33rd Avenue (U.S. Highway 30/81) on the west to just past 3rd Avenue on the east.

Study objectives included the following:

- Inventory and evaluate existing conditions in the study area and identify deficiencies
- Survey the general public regarding their experience traveling through the study area
- Develop Year 2040 traffic forecasts and evaluate future traffic conditions
- Develop improvement alternatives for the study area
- Evaluate the improvement alternatives against various criteria
- Obtain input from the general public regarding the improvement alternatives
- Provide recommendations for the study area

The existing level of service (LOS) at intersections along 8th Street ranges from LOS C to LOS D. Traffic volumes are expected to grow up to 35 percent between now and the year 2040. The expected LOS at intersections along 8th Street in the Year 2040 assuming no improvements ranges from LOS C to LOS F. Thus, traffic flow is expected to slowly degrade from current conditions as traffic volumes increase.

A wide variety of improvement alternatives were initially considered. With input from City staff, the following improvement alternatives were carried forward for further refinement and evaluation:

- **No-Build Alternative:** A no-build alternative would mean there would be no change to the current configuration of the study area.
- **Alternative 1:** This alternative would construct mini-roundabouts along 8th Street at 26th Avenue, 23rd Avenue, 18th Avenue, 12th Avenue and 3rd Avenue.
- **Alternative 2:** This alternative would reconstruct intersections along 8th Street at 26th Avenue, 23rd Avenue and 12th Avenue to provide wider lanes on the approaches to the intersections.
- **Alternative 3A:** This alternative would create a one-way couplet with 8th Street serving eastbound traffic and 9th Street serving westbound traffic.
- **Alternative 3B:** This alternative would create a one-way couplet with 7th Street serving eastbound traffic and 8th Street serving westbound traffic.

Two optional add-on improvements were developed to supplement the vehicular-centric improvement alternatives described above.

- **Shared Use Path Improvements:** This optional add-on improvement, which could be a stand-alone alternative or combined with other alternatives, would construct an eight foot wide shared use path along the west side of 18th Avenue between 8th Street and the new pedestrian UPRR viaduct and along the north side of 8th Street between 33rd Avenue and 3rd Avenue.
- **Enhanced Crosswalk Improvements:** This optional add-on improvement, which could be a stand-alone alternative or combined with other alternatives, would construct enhanced crosswalk treatments at various points along 8th Street (and along 7th Street and 9th Street in Alternatives 3A and 3B).

Conclusions

The study team has drawn the following conclusions from the study:

- Although traffic conditions are expected to slowly degrade over the next twenty years, there is not an overwhelming or urgent need for major improvements in the 8th Street corridor in the near future from an engineering perspective.
- Based on the on-line survey conducted early in the study, the majority of respondents indicated that changes or improvements on 8th Street are needed. However, there was no clear consensus on what those changes or improvements should be.
- Based on a high-level comparative screening evaluation of the alternatives, Alternative 1 (mini-roundabouts) is the study team's preferred long-term solution for the study area from an engineering perspective.
- Based on the on-line public meeting, there is no clear favorite from respondents regarding the improvement alternatives. However, Alternative 1 (mini-roundabouts) was the most strongly preferred alternative.
- Respondents also expressed strong support for the shared use path along 18th Avenue and along 8th Street and for the enhanced crosswalk improvements.

Recommendations

The study team makes the following recommendations to the City of Columbus:

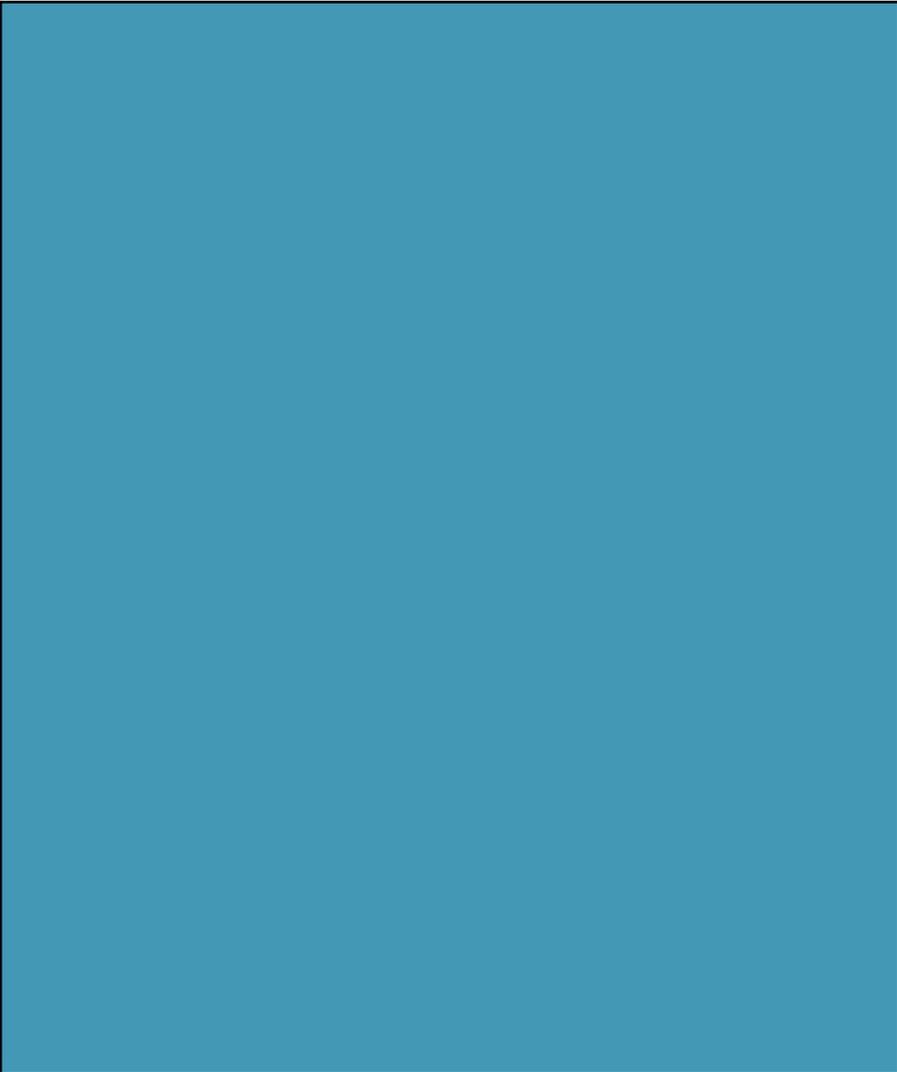
- The study team recognizes that there is not an urgent need for major improvements in the 8th Street corridor in the near future and a preferred alternative was not identified by the general public. However, the study team recommends Alternative 1 (mini-roundabouts) as the long-term solution for 8th Street and recommends that additional input should continue to be gathered from the public, the city council, and other stakeholders.
- The study team recommends that the following low-cost roadway/traffic control improvements be considered in the interim until a long-term solution is implemented:
 - 27th Avenue & 8th Street: Remove the westbound exclusive left turn lane on 8th Street to provide a wider lane for westbound through traffic.
 - 18th Avenue & 8th Street: Remove the eastbound and westbound exclusive left turn lanes on 8th Street to provide wider lanes for through traffic.
 - 12th Avenue & 8th Street: Restripe the northbound and southbound approaches to provide left turn bays.
 - 3rd Avenue & 8th Street: Add stop signs on the 8th Street approaches to the intersection.
- The study team recommends that the City continue to upgrade non ADA compliant curb ramps in the 8th Street corridor to compliant ADA ramps with detectible warning tiles.
- The study team recommends that the City pursue implementation of the enhanced crosswalk improvements in the 8th Street corridor, where appropriate.
- The study team recommends that the City pursue implementation of the shared use path along 18th Avenue and along 8th Street.

HDR

Columbus South Mobility Study

Overview, Findings, and Recommendations





01 Study Purpose & Goals

02 Existing & Future Conditions

03 Public Outreach

04 Initial & Refined Alternatives

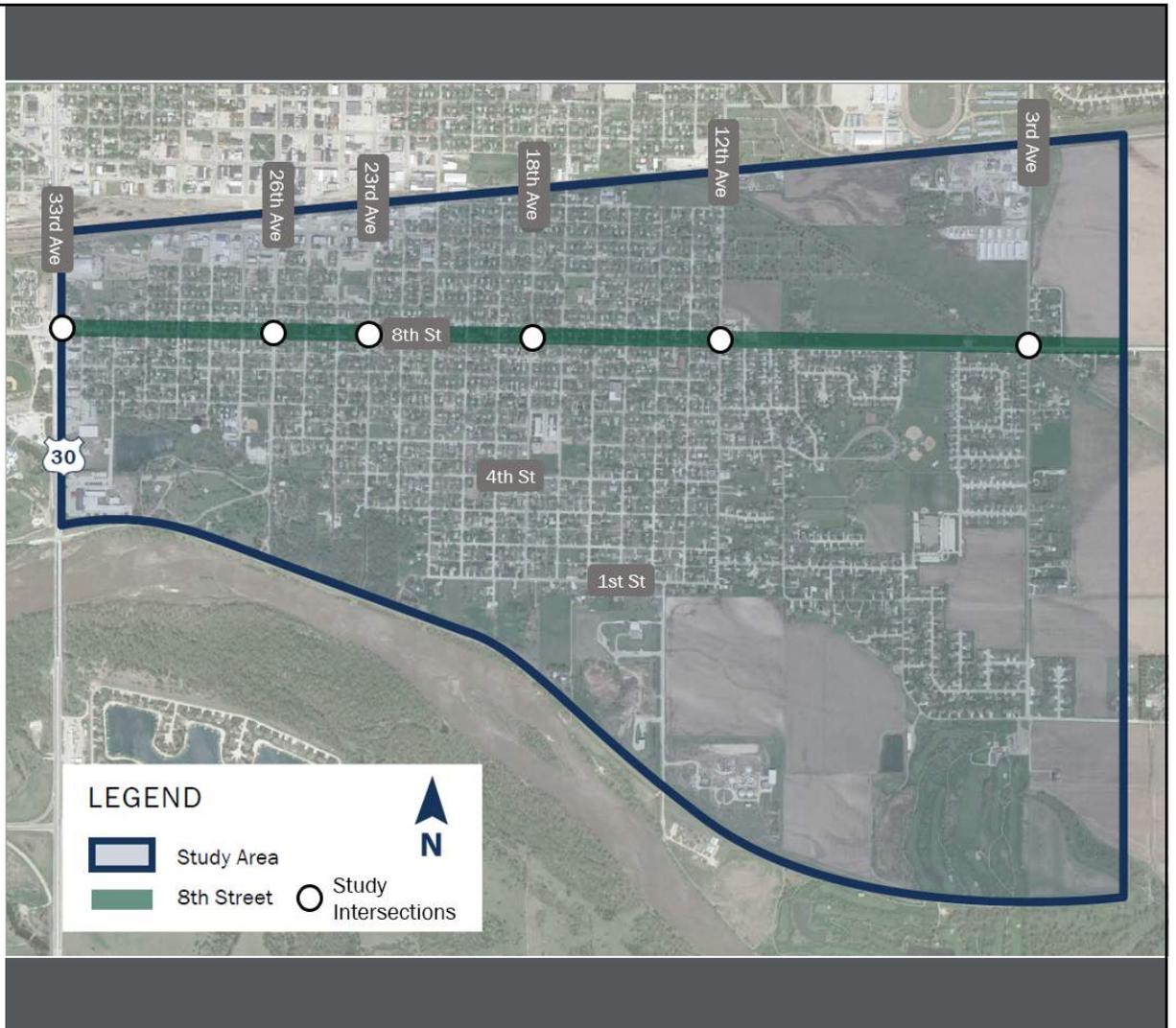
05 Conclusions & Recommendations

STUDY PURPOSE

To evaluate the potential need for improvements to safely and efficiently move east-west vehicle and pedestrian traffic in the southern portion of Columbus.

BACKGROUND

Recommended action item from the LRTP published in 2018.



GOALS & OBJECTIVES

01 Evaluate Existing & Future Conditions

02 Survey General Public

03 Develop Improvement Alternatives

04 Evaluate Improvement Alternatives

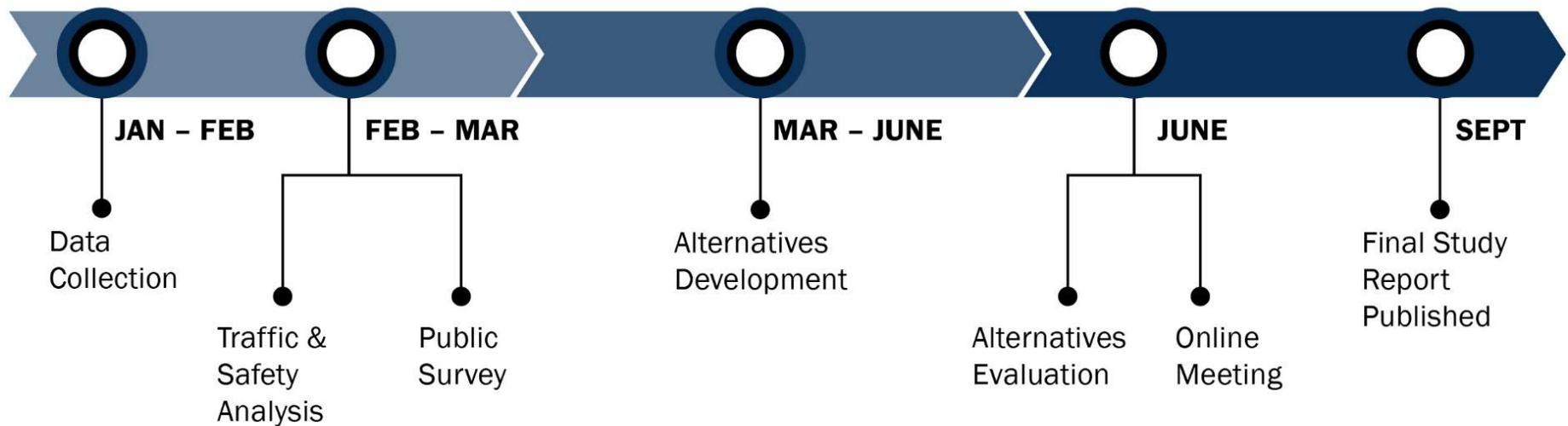
05 Obtain General Public Input on Improvement Alternatives

06 Provide Recommendations

STUDY PROCESS

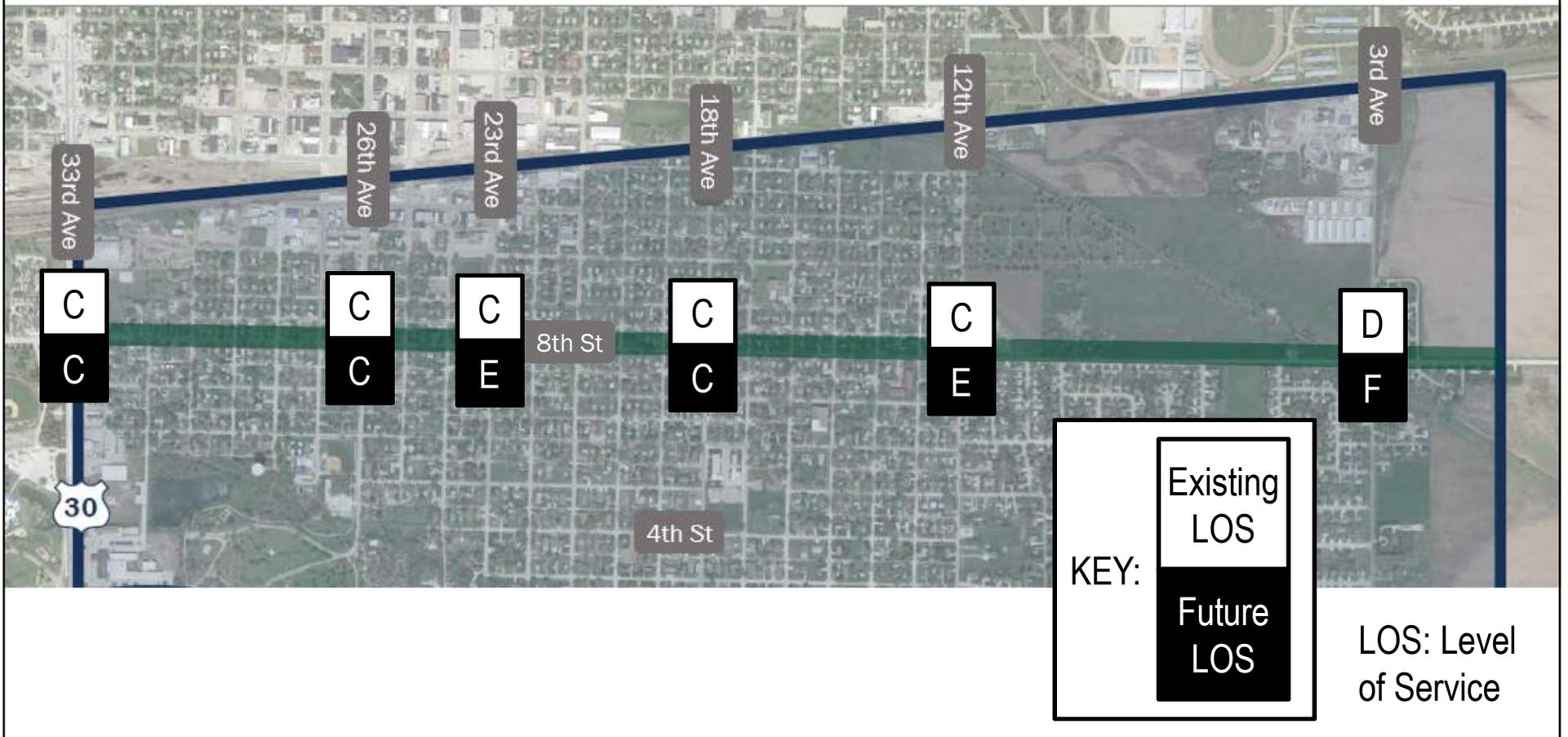
2020

WE ARE HERE



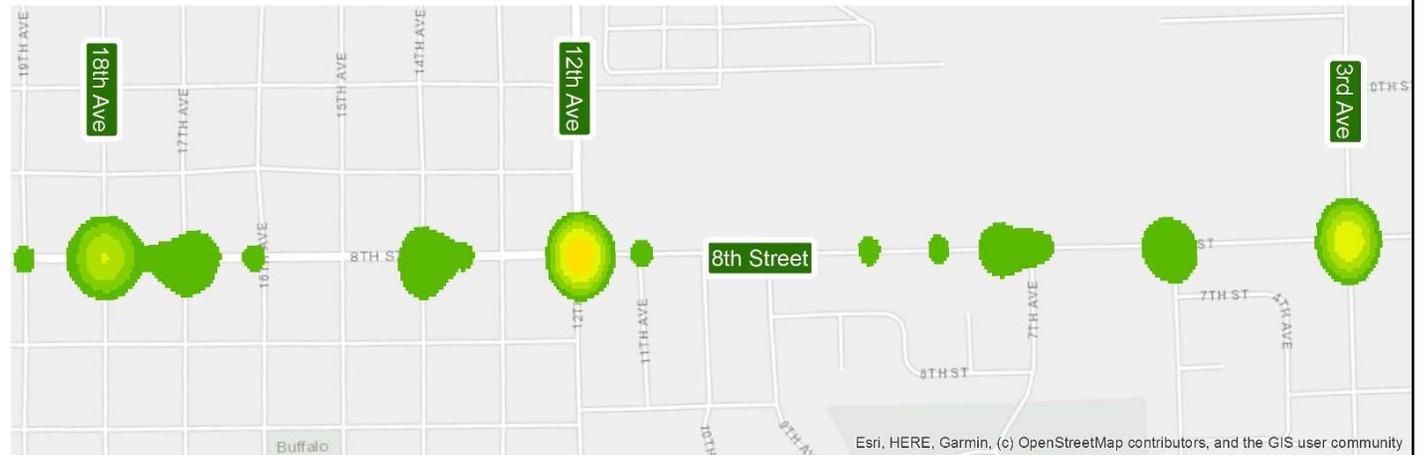
*Tentative, subject to change

EXISTING CONDITIONS



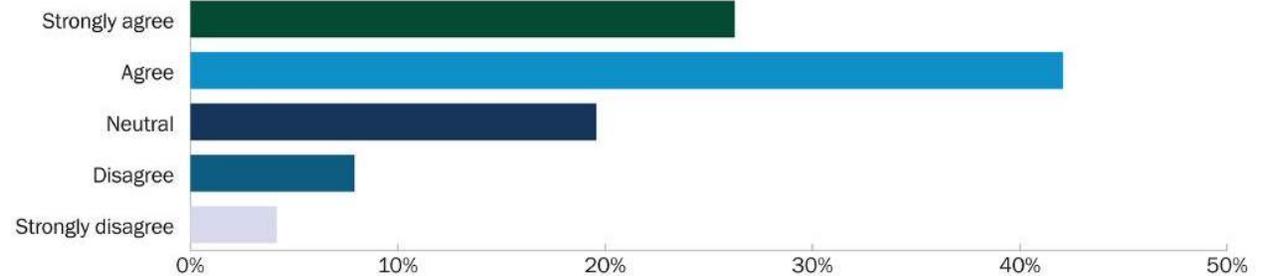
EXISTING CONDITIONS

Crash Heat Map:
Illustration of where
crashes occur most
frequently

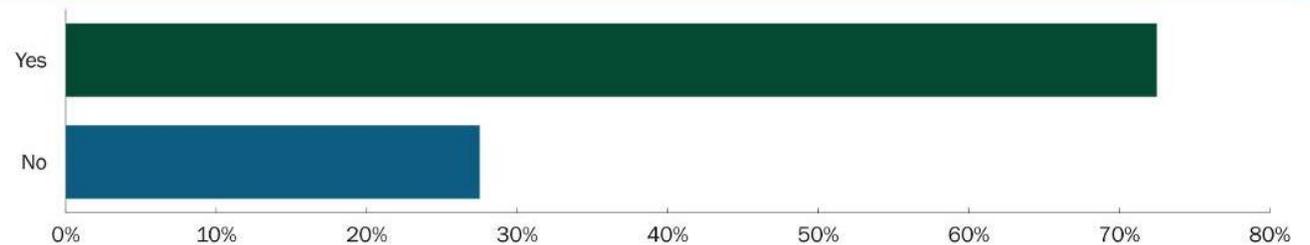


INITIAL PUBLIC OUTREACH

I can easily access my destination (home, place of work, school, etc.) using 8th Street.

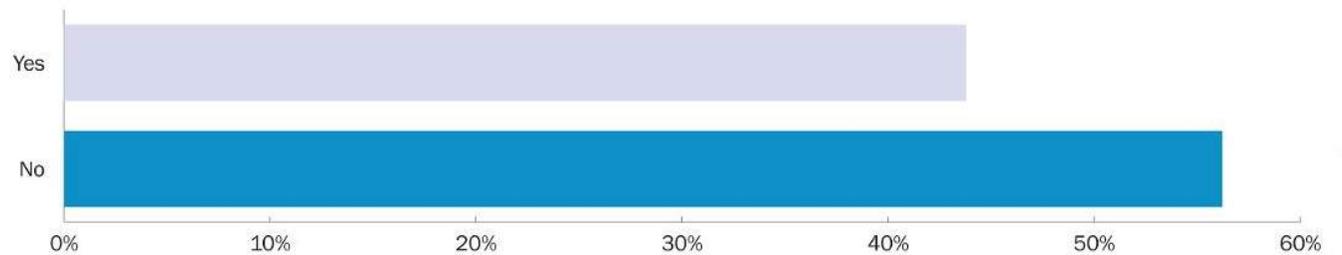


I feel safe driving on 8th Street.

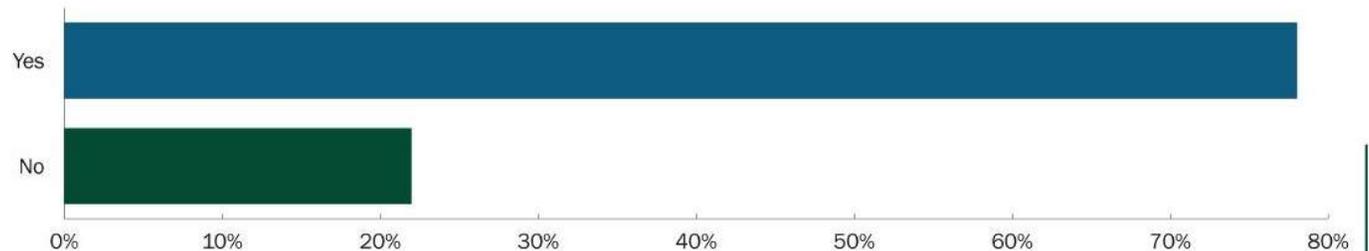


INITIAL PUBLIC OUTREACH

Are current bicycle and pedestrian facilities within the study area satisfactory?



Changes or improvements to 8th Street are needed.



INITIAL ALTERNATIVES

01 No-Build

02 Mini-Roundabouts

03 Widen Key Intersections

04 One-Way Couplet | Eastbound 8th Westbound 9th

05 One-Way Couplet | Eastbound 7th Westbound 8th

06 Restripe 8th Street to a Narrow 3-Lane Section **X**

07 Widen 8th Street to a Standard 3-Lane Section **X**

08 Traffic Calming Measures **X**

X Eliminated during Initial Alternative Screening

REFINED ALTERNATIVES



**No-Build
Alternative**



**Mini-Roundabouts
Alternative**



**Widen Key
Intersections
Alternative**

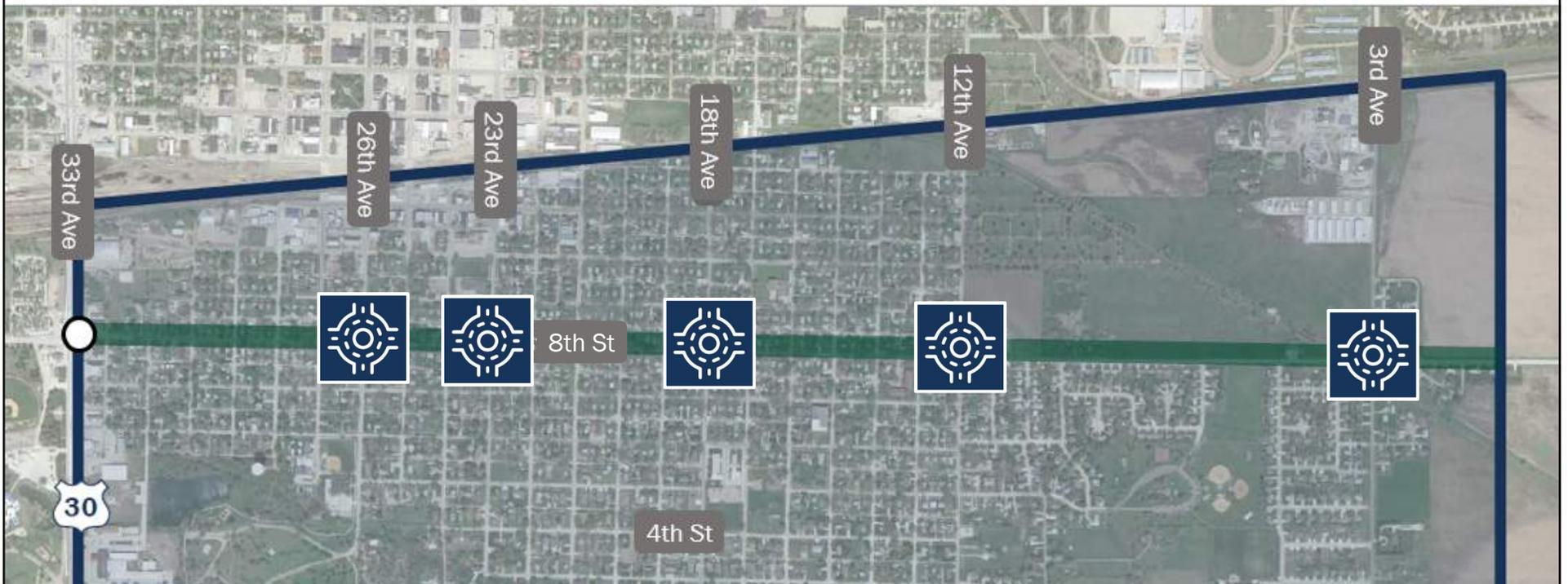


**One-way Couplet
Alternative
(two versions)**

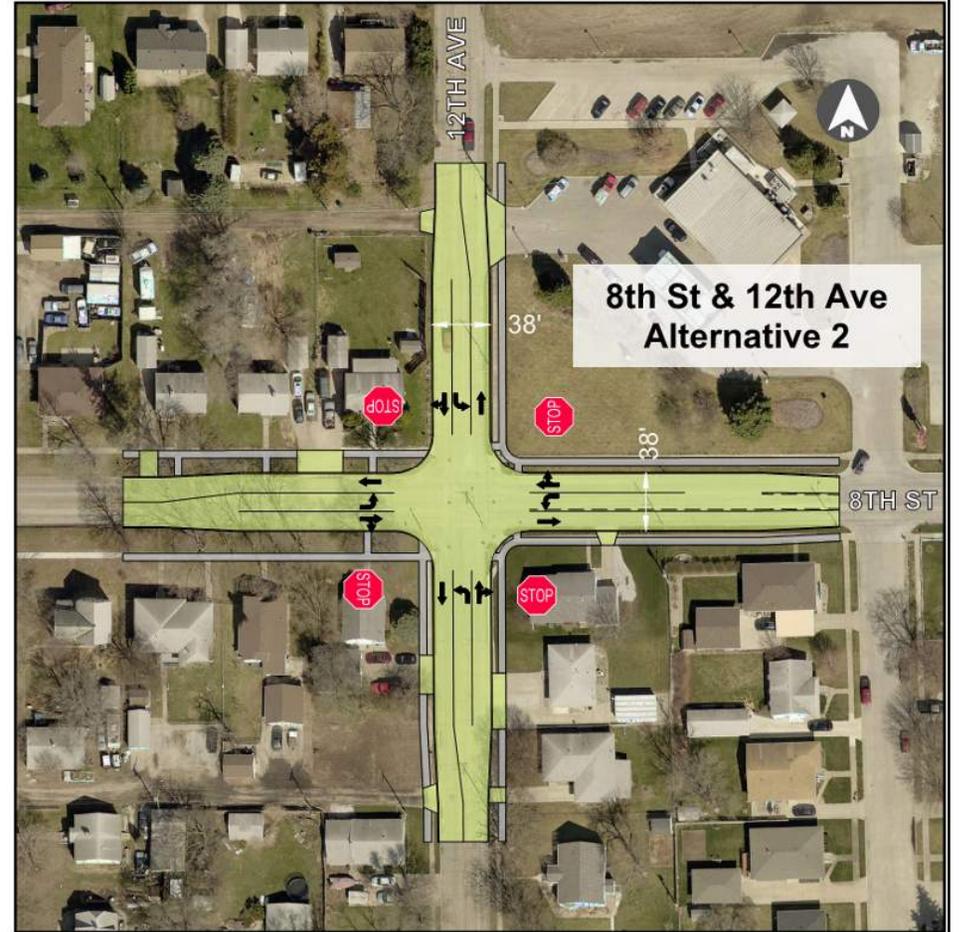
ALTERNATIVE 1: MINI-ROUNDBABOUTS



ALTERNATIVE 1: MINI-ROUNDBABOUTS



ALTERNATIVE 2: WIDEN KEY INTERSECTIONS



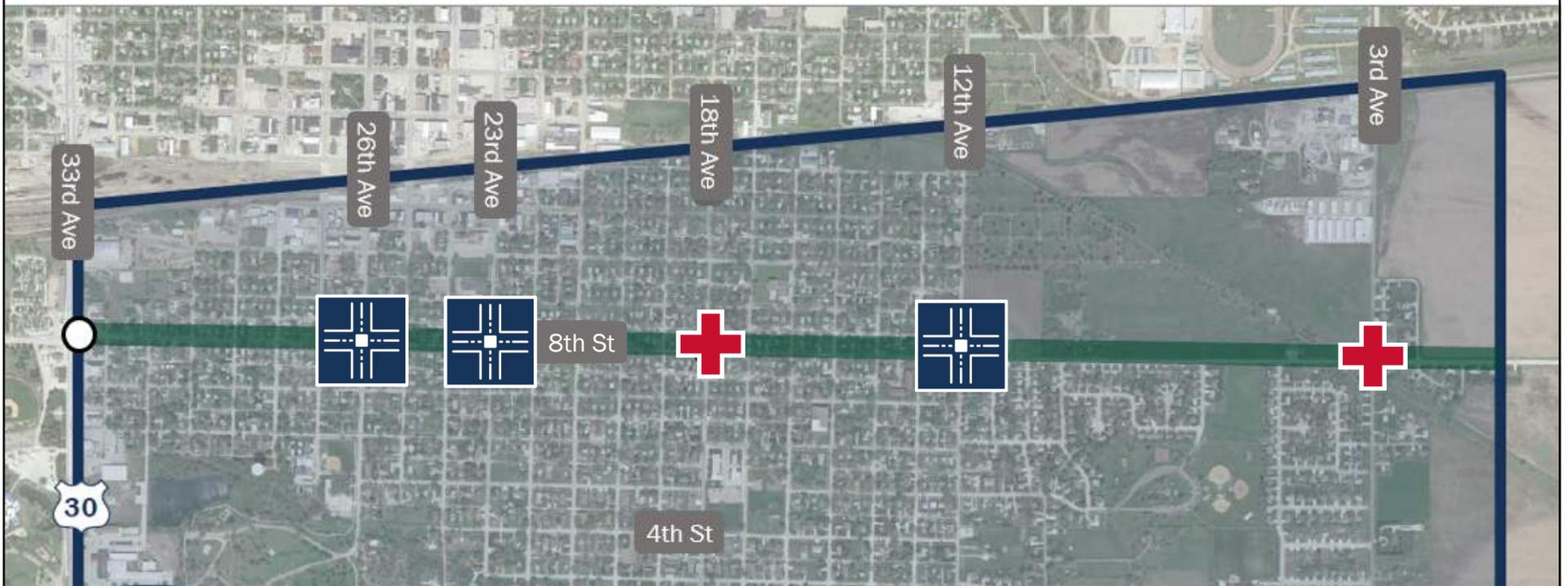
ALTERNATIVE 2: WIDEN KEY INTERSECTIONS



ALTERNATIVE 2: WIDEN KEY INTERSECTIONS



ALTERNATIVE 2: WIDEN KEY INTERSECTIONS



KEY:



Intersection Widening



Minor Improvements

Pavement Markings
Intersection Signage

ALTERNATIVE 3A & 3B: ONE-WAY COUPLET(S)



OPTIONAL ADD-ONS



**Pedestrian/Bicycle
Improvements**



**Enhanced
Crosswalk
Improvements**

SHARED USE PATH IMPROVEMENTS

Connects recent bicycle & pedestrian improvements along 3rd Avenue and 18th Avenue

Approximate Construction Costs:

- Along 18th Avenue:
\$90,000 - \$110,000
- Along 8th Street:
\$600,000 - \$700,000



ENHANCED CROSSWALKS

Provides beautification
opportunities at major
intersections

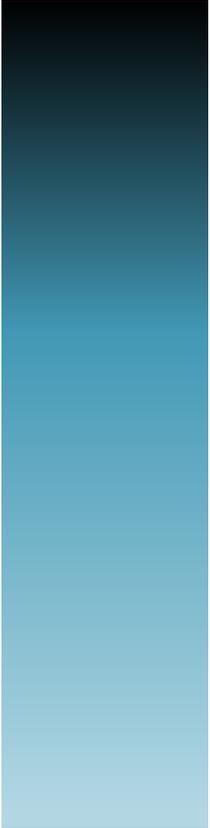
Approximate Construction Costs:
\$140,000 - \$160,000



ONLINE MEETING RESULTS

Most Preferred

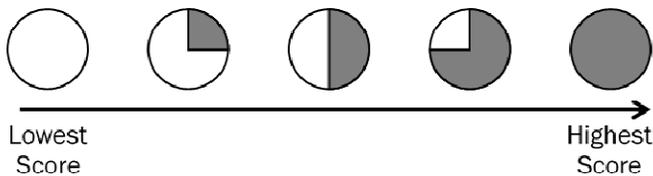
Least Preferred

- 
- **Shared Use Path**
 - **Enhanced Crosswalks**
 - **Mini-Roundabouts**
 - **Widen Key Intersections**
 - **No-Build**
 - **7th/8th One-Way Couplet**
 - **8th/9th One-Way Couplet**

ALTERNATIVES SCORING

- Alt 1: Mini-Roundabouts
- Alt 2: Widen Key Intersections
- Alt 3A: 8th/9th One-Way Couplet
- Alt 3B: 7th/8th One-Way Couplet

KEY:



Evaluation Criteria	Alternatives				
	No-Build	1	2	3A	3B
Impacts to Safety					
Impacts to vehicle travel including travel efficiency, connectivity, and travel speeds					
Impacts to pedestrians and bicycle traffic					
Impacts to neighborhood quality of life					
Construction impacts including access, right-of-way, environmental, and utilities					
Feasibility, including ease of implementation					
Estimated Construction Cost	\$0	\$1.2 - \$1.4 Million	\$1.9 - \$2.1 Million	\$3.8 - \$4.6 Million	\$2.1 - \$2.6 Million

CONCLUSIONS & RECOMMENDATIONS

▪ Long Term

- Mini-Roundabouts
- Shared Use Path Improvements
- Enhanced Crosswalk Improvements

▪ Short Term

- 27th Avenue – Remove westbound left turn lane
- 18th Avenue – Remove eastbound & westbound left turn lanes
- 12th Avenue – Restripe northbound and southbound approaches to provide left turn bays
- 3rd Avenue – Add stop signs on eastbound & westbound approaches



Questions?

3. Adjournment.