

VILLAGE OF DOWNERS GROVE
Report for the Village
7/5/2022

SUBJECT:	SUBMITTED BY:
Traffic Safety Improvements for Main Street and Highland Avenue	Andy Sikich Public Works Director

SYNOPSIS

A motion is requested to authorize staff to continue to pursue traffic safety improvements on Main Street and Highland Avenue near North High School. Approval of this motion will prompt staff to submit the Project Design Report to the Illinois Department of Transportation (IDOT) for their review and approval.

STRATEGIC PLAN ALIGNMENT

The goals for 2021-2023 include *Top Quality Infrastructure* and *A Safe Community*.

FISCAL IMPACT

The estimated cost to construct the project is \$2.1 million. The Village submitted a grant application for \$1.47 million of Surface Transportation Program funding for the Main Street portion of this project. A decision on the grant application is expected by September 2022. The FY23 and future budgets will be prepared to reflect the final project cost.

RECOMMENDATION

UPDATE & RECOMMENDATION

This item was discussed at the June 14th, 2022 Village Council meeting. Below is a follow-up to a question presented by Council during the discussion:

The proposed bike lanes are dedicated for use by bicycles only, but they are not physically separated or protected from vehicle traffic. The existing pavement is not wide enough to provide protected bike lanes. The bike lanes will be painted green and will be designated for bike traffic only. No parking or standing will be allowed in the bike lanes, and they will be signed as such.

Staff recommends further discussion at tonight's Council meeting.

BACKGROUND

In February 2020, the Village Council accepted the [High School Pedestrian Safety Study](#) (HSPSS). The primary goal of the HSPSS is to improve pedestrian safety in the areas surrounding both high schools. Several recommended improvements in the vicinity of North and South High Schools are included in the study. The HSPSS identifies several safety improvements along Main Street and

Highland Avenue near North High School. These includes a reduction in lanes from four lanes to three lanes, center refuge islands, curb extensions, improved lighting, traffic signal phasing modifications on Main Street, and the installation of chicanes on Highland Avenue between Lincoln Street and Grant Street.

In September 2021 the Village engaged HR Green to prepare the Phase 1 Engineering Study (also referred to as a Preliminary Design Report) for this project. HR Green completed data collection including traffic counts in October 2021 and prepared a traffic model for the proposed improvements on Main Street.

Key Findings

High Number of Vehicular and Pedestrian Crashes - In the past five years, there have been 99 crashes along this Main Street corridor. Eight of these involved pedestrians or bicyclists, with one fatality. The predominant crash types include rear end and sideswipe crashes as a result of left turns being made from the inside travel lanes rather than protected left turn lanes.

Left Turning Vehicles Impede Traffic Flow - The lack of left turn lanes contributes to poor traffic flow due to the stopping, standing, weaving and merging maneuvers required. Southbound drivers currently have to merge from two lanes into the inside lane at Franklin, but many drivers wait until the last possible opportunity to do so, due to the likelihood of being stuck behind a vehicle turning left from the inside lane.

Inefficient Traffic Signal Programming - Currently, since the left-turners are using the inside through lane, the traffic signal cannot determine whether or not a vehicle intends to turn left. Thus, the signals at the Prairie Ave intersection are programmed so that the northbound vehicles receive a left turn arrow in the morning, and the southbound vehicles receive it in the afternoon. This occurs regardless of whether or not any vehicles are waiting to turn left.

Proposed Improvements

To achieve the goal of improving pedestrian safety while providing for safe and efficient traffic flow, the plans call for several improvements on Main Street and Highland Avenue. The proposed improvements and expected results are summarized in Tables 1 and 2 below.

Table 1
Proposed Improvements and Expected Results on Main Street from Ogden to Franklin

Proposed Improvements	Expected Results
Change Lane Configuration from Two Lanes in Both Directions to One Lane in Both Directions with Protected Left Turn Lanes	<p>Peak-hour travel time between Ogden to Franklin will remain relatively unchanged</p> <p>Northbound travel time will increase by about 4 seconds</p> <p>Southbound travel time will decrease by about 12 seconds</p>

	<p>Smoother traffic flow due to one, clear merge location and separating turning vehicles from the through vehicles</p> <p>Reduction in driver confusion and delays</p>
Optimize Traffic Signal Timing at Grant, Prairie and Franklin Intersections	The signals will identify which cars are intending to turn left, and will provide a left turn arrow only when needed
Construct Northbound Dedicated Bike Lane on the East Side of Main Street and a Southbound Dedicated Bike Lane on the West Side of Main Street (South of Grant)	<p>Enhanced safety for bicyclists</p> <p>May reduce vehicle speeds due to visually narrowing the vehicle travel lane</p> <p>Curbs will remain at their existing locations</p> <p>No impacts on parkway trees</p>
Construct Curb Extensions at the Grant Street Intersection	<p>Enhanced pedestrian safety due to shortening the distance to cross vehicle travel lanes</p> <p>Provides a logical termination point for the bike lanes at the high school</p>

Table 2
Proposed Improvements and Expected Results on Highland from Grant to Lincoln

Proposed Improvements	Expected Results
Construct Chicanes	Reduction in vehicle speeds

The proposed improvements were presented at a Public Information Meeting (PIM) on May 23, 2022. The comments from the Approximately 15 members of the public who attended and seven emails are summarized below:

Traffic Diversion - Several residents were concerned that a reduction in travel lanes will result in a diversion of traffic to surrounding neighborhood streets, predominantly Washington Street and Highland Avenue. They see the change in lane usage as a reduction in capacity which would result in increased volumes on other streets. The concern about traffic diversion when implementing this type of change in lane usage is common and has been addressed by the Federal Highway Administration (FHWA) in prior studies and information packets. The FHWA information can be found here:

[FHWA Safety Road Diet Page](#)
[FHWA Road Diet FAQ](#)

[FHWA Road Diet Case Studies](#)
[FHWA Road Diet Myth buster](#)

Merge Location Proximity to Ogden Avenue - Many residents expressed concern that the location of the proposed southbound merge point is too close to Ogden Avenue and may cause traffic to back up into the intersection. Based upon this feedback, HR Green analyzed the traffic data and applicable design standards and can relocate the proposed merge point south of Sherman Street. The final design of this project has not yet been completed, and will be reviewed and approved by IDOT.

Bike Lanes - Several residents were concerned about the usage, safety and limited length of the proposed bike lanes.

Lighting - Some residents expressed a desire for pedestrian lighting, not street lighting, along the segment. The initial report called for enhanced lighting. Options include the following:

- 1) Enhanced LED beacon lights at the intersections
- 2) Pedestrian and sidewalk lighting similar to the downtown business district on Main Street
- 3) Street lighting similar to what exists on Main Street south of Maple Avenue

Staff recommends enhanced LED beacon lighting at the signalized intersections to avoid any issues with the existing parkway trees that may result from installation of a full lighting system along the segment.

Temporary Test Case - Several residents requested that the proposed lane configuration be set up as a test case to allow for additional studies of the impacts on the neighborhoods related to potential traffic diversions. Staff does not recommend a temporary test. It is not feasible to accurately reflect the proposed improvements completely with the changes to pavement markings, traffic signal equipment, and signal controller programming.

Highland Avenue - One resident was in favor of speed reduction measures, provided they did not impact too many parking spots. The proposed improvements would eliminate approximately seven parking spots on the east side of Highland.

ATTACHMENTS

Draft Project Design Report (Phase I Engineering Plans and Supporting Information)
Proposed Highland Avenue Improvements Plan



DRAFT

**Local Project Development Report
for Group Categorical I Exclusions
and Design Approval**

County: DuPage
Local Public Agency: Village of Downers Grove
Section Number: 22-00118-00-PV
Route: FAU 2615

Project Number: _____ Project Length: 0.66 miles

Street/Road Name: Main Street (FAU 2615)

Termini: South of Ogden Avenue (FAP 311) to Franklin Street

For Township or Road District bridge projects: The County Engineer certifies that the project design speed exceeds the minimum design speed recommended for this classification of roadway as provided in the BLRS Manual in order to prevent a deficient NBIS rating for approach roadway alignment appraisal. All elements have been designed to the chosen design speed unless noted otherwise in Section 2(e) and/or the attached BLR 22120.

County Engineer Date

Categorical Exclusion and Design Approval Recommended

Local Agency Date

Categorical Exclusion Statement

This project will not have any significant impacts on the environment, or involve any unusual circumstances, therefore, it is a Categorical Exclusion I.

Categorical Exclusion and Design Approval

Regional Engineer Date

1. LOCATION AND EXISTING CONDITIONS

- a. **Location** (attach location map to supplement narrative description)

Main Street (FAU 2615) is located within the Village of Downers Grove, DuPage County for a total approximate length of 3,479 feet (0.66 miles), extending from Franklin Street to south of Ogden Avenue (FAP 311).

See Attachment 1 for Location Map.

- b. **Description of Existing Facility** - Give narrative description, including such items as width of travel, parking and turn lanes, sidewalks, alignment, traffic control devices, utilities, jurisdiction, maintenance responsibility, drainage, terrain and current land use (including major public facilities and local landmarks). Attach existing typical sections showing roadway widths, bridge widths, ROW widths, sidewalk widths, guardrail, curb and gutter and surface types.

Jurisdiction and Maintenance

Main Street (FAU 2615) between Franklin Street and south of Ogden Street (FAP 311), is under jurisdiction and maintenance responsibility of the Village of Downers Grove.

Terrain

The terrain is relatively flat with sections of slightly rolling topography.

Current Land Use

Surrounding land uses adjacent to Main Street consist of mainly urbanized residential. Downers Grove North High School (Community High School District 99) is located on the west side of Main Street approximately between Grant Street and Sherman Street.

Utilities

Franchise utilities within the right-of-way consist of electric, gas distribution, gas transmission, cable TV, telephone, and fiber optic cables. Utilities will need to be adjusted to accommodate the proposed resurfacing, street lighting and traffic signal improvements.

Right-of-Way

The existing right-of-way width is 66 feet. No additional right-of-way or easements will be required as part of the proposed improvements.

Drainage

The existing drainage facilities consist of a closed drainage system along Main Street. There are no known or apparent drainage issues within the project vicinity. The existing closed storm sewer facilities have been designed to accommodate the 10-year storm event. The minimum existing pipe size is 12-inch diameter.

Lighting

Lighting consists of multiple luminaires suspended from sporadic power poles throughout the project corridor.

Parking

There is no parking permitted in the study area along Main Street.

Existing Cross Section

Hot-mix asphalt pavement consisting of four lanes, two in each direction. The through lanes are 10' in width. Combination curb and gutter (type B-6.12) exists on both sides of the road, with a minimum existing clear zone width of 2.5' in width (Minimum required per BLRS Chapter 33 is 1 ½' from face of curb). Concrete sidewalks 4' in width exists along both sides of Main Street. Roadside slopes are 4:1 or flatter. The pavement structure is in good to fair condition.

See Attachment 2 for Existing Typical Sections.

Traffic Control Devices

Main Street has signalized intersections with Franklin Street, Prairie Avenue and Grant Street within the project study corridor. The existing traffic signals are warranted. The traffic signals are owned and maintained by the Village of Downers Grove.

Pedestrian traffic signals at are substandard and require modifications. Accessible pedestrian signals (APS) pushbuttons will be added at each signalized intersection. Traffic signal heads consist of older LED heads and require replacement with modern more energy efficient LED signal heads. Pedestrian pushbuttons will be located to meet ADA policy.

Main Street also intersects with numerous stop-controlled side streets including Chicago Avenue, Lincoln Street, East Sherman Street, and West Sherman Street. The stop control condition of the side streets is warranted as the volume on Main Street exceeds 6,000 vehicles per day.

Intersection Configuration and Channelization

Non-signalized intersection:

Sherman Street, Lincoln Street, Chicago Avenue,

Signalized intersection:

Grant Street, Prairie Avenue, Franklin Street.

Main Street at Franklin Street:

Four-way signalized intersection at Franklin Street. The east leg of Franklin Street operates as a one-way westbound street. There are opposing left turn lanes on the west and east legs of the intersection. There is a single right turn lane on the north leg of the intersection. Both Main Street and Franklin Street consist of a single through lane in each direction. Pedestrian crosswalks exist across all four (4) legs on the intersection. Capacity analysis of existing traffic volumes indicates the intersection currently operates at a Level of Service (LOS) of B at the AM peak and similarly LOS B at the PM peak.

Main Street at Prairie Avenue:

Four-way signalized intersection at Prairie Avenue. There are opposing left turn lanes on the west and east legs of the intersection. Main Street consists of two through lanes in each direction. Franklin Street consist of a single through lane in each direction. Pedestrian crosswalks exist across all four (4) legs of the intersection. Capacity analysis of existing traffic volumes indicates the intersection currently operates at a Level of Service (LOS) of C at the AM peak and similarly LOS C at the PM peak.

Main Street at Chicago Avenue:

Four-way intersection stop controlled at Chicago Avenue. Chicago Avenue is a low volume local road. Pedestrian crosswalks exist across the west and east legs of the intersection. There are no turn lanes at the intersection.

Main Street at Lincoln Street:

Four-way intersection stop controlled at Lincoln Street. Lincoln Street is a low volume local road. Pedestrian crosswalks exist across the west and east legs of the intersection. There are no turn lanes at the intersection.

Main Street at Grant Street:

Three-way signalized intersection at Grant Street. Grant Street is a low volume local road. The west side of the intersection resides the main door entrance to Downers Grove North High School. There is a student parking lot and drop-off/pick-up staging available at the northeast corner of the intersection. There are no turn lanes at the intersection. The traffic signal meets Warrant #5 for a school crossing. Main Street consists of two through lanes in each direction. Grant Street consists of a single through lane and is a signed Village bicycle route. The intersection striping pattern is cross hatched, and the traffic signal provides an exclusive pedestrian phase which provides pedestrians a 'walk' indication before the corresponding vehicle phase, allowing them to establish their presence in the intersection before any vehicle light. Capacity analysis of existing traffic volumes indicates the intersection currently operates at a Level of Service (LOS) of C at the AM peak and similarly LOS C at the PM peak.

Main Street at East Sherman Street:

Three-way intersection stop controlled at East Sherman Street. East Sherman Street is a low volume local road. A pedestrian crosswalk exists across the east leg of the intersection. There are no turn lanes at the intersection.

Main Street at West Sherman Street:

Three-way intersection stop controlled at West Sherman Street. West Sherman Street is a low volume local road. A pedestrian crosswalk exists across the west leg of the intersection. An existing northbound left turn lane at the

intersection will be maintained in the proposed condition.

See Traffic Technical Report in Attachment 3.

c. Traffic Data

Current ADT: 15,400 % trucks: 2.5%

Will 80,000 trucks be legally permitted on this route? Yes No

Design Year: 2050 ADT: 17,000 DHV: 170 % trucks: 2.5%

d. **Structures** - Identify location within the proposed improvement of all structures on attached location map. Attach a copy of the Structure Master Report for all structures within the project limits. Attach a copy of the Bridge Condition Report or the Bridge Deck Resurfacing approval letter for structures to be replaced, rehabilitated, or resurfaced.

There are no structures within the project limits.

e. **Railroads** - Identify location of all railroad crossings on attached location map and complete the following:

Railroad Name	No. and Type of Tracks (Main or Switching)	Type of Warning Devices*	No. of Trains Per Day	Railroad Width of Crossing at Rt. Angles
<u>N/A</u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>

*Include a sketch showing location of railroad protective devices from the edge of roadway and to the nearest track.

f. **Contiguous Sections** - Describe the existing typical sections at each end of the proposed improvement including number of travel lanes, turning lanes and parking lanes, lane widths and roadway width (f-f of curbs or e-e of shoulders), and sidewalk width.

Main Street to the south of the project limits is one lane in each direction with parallel parking along both sides of the street and under the jurisdiction of the Village of Downers Grove. Each lane is twelve feet (12') in width and the parking lanes are eight feet (8') in width. The existing sidewalks along both sides of Main Street vary in width between five feet and ten feet (5'-10').

Main Street north of the project limits is four (4) lanes and widens out to begin the left turn lane taper approaching the Ogden Avenue signalized intersection. The four (4) through lanes on Main Street are each ten feet (10') in width. The existing sidewalk along both sides of Main Street is four feet (4') in width. Ogden Avenue (US 34) is under State jurisdiction and consists of five (5) lanes west and east of its intersection with Main Street.

2. Proposed Improvement

a. Discuss the purpose and need of the project:

Main Street (FAU 2615) within the project study limits is experiencing a concerning crash history. The recent crash history within the corridor includes 99 total crashes, including a pedestrian fatality (1) and seven (7) other pedestrian and cyclist involved crashes. The proposed improvements are needed to improve safety and develop a more pedestrian friendly corridor, improving conditions for both vehicular traffic and non-motorized traffic (pedestrians and bicyclists) visiting Downers Grove North High School, the surrounding dense residential housing stock, and the Village of Downers Grove's central business district.

b. What design guidelines will be used for the proposed improvement? (Check One)

- Rural (BLRS Manual Chapter 32)
- Urban (BLRS Manual Chapter 32)
- Suburban (BLRS Manual Chapter 32)
- 3R Guidelines (BLRS Manual Chapter 33)
- Bicycle Guidelines (BLRS Manual Chapter 42)
- Pedestrian Guidelines
- Other: AASHTO Guide for the Development of Bicycle Facilities

Functional Classification: Arterial Collector Local Road Other _____

Terrain: Level Rolling

Regulatory or Posted Speed Limit: 25mph Design Speed: 25 mph

c. Describe type of work to be accomplished by the improvement. Discussion should include width of proposed travel, parking, bicycle and turning lanes, sidewalks, shared-use paths, guardrail, traffic control devices, drainage items (including storm sewer outfalls), alignment changes, railroad work, utility adjustments, intersection improvements, side slopes and clear zones. Specify the emax for horizontal curves. Attach typical sections, plan and profile sheets, and intersection design studies when applicable.

**See Attachment 4 for the Proposed Typical Section.
See Attachment 5 for Proposed Plans.**

Improvements

The proposed improvements on Main Street consist of a road diet, reducing the number of lanes from four (4) to three (3) vehicular lanes. The road diet will be accomplished with asphalt pavement mill and overlay with subsequent re-striping. The new Main Street facility will consist of a ten-foot (10') through lane in each direction, a center twelve-foot (12') wide bidirectional turn lane, and two (2) five-foot (5') wide on-street bicycle lanes located on each side of roadway centerline. New left turn lanes will be provided at East Sherman Street, Grant Street, Lincoln Street, Chicago Avenue, and Prairie Avenue.

The minimum required lane width per Chapter 33 of the Local Roads Manual is ten feet (10'). The minimum required bicycle lane width per Chapter 42 of the Local Roads Manual and the AASHTO Guide for the Development of Bicycle Facilities is five feet (5'). The bicycle lanes will provide a dedicated route for users separate from motorized traffic.

The Main Street improvements will match the three-lane section south of Franklin Street. At the north end of the project improvements, Main Street will be tapered at 35:1 for the conversion from three-lanes, to match the existing four-lane section south of Ogden Avenue per BDE Manual 36-3.J.

Highway Capacity Software (HCS) was used to analyze the capacity of the corridor in the proposed road diet configuration. Motorized arterial traffic will operate at a Level of Service of C or better. Pedestrian and bicycles will be predicted to operate at a Level of Service of D or better. See HCS Summary Table below.

HCS Summary table:

	Northbound		Southbound	
	AM	PM	AM	PM
Vehicle Segment	C	B	B	C
Pedestrian Segment	C	D	D	D
Bicycle Segment	C	C	C	C

**See Attachment 3 for the Traffic Analysis Report.
See Attachment 3 for the Highway Capacity Software 22 Analysis at end of Traffic Analysis Report.**

The vertical and horizontal alignments of Main Street will be maintained. Deteriorated sections of combination concrete curb and gutter and PCC sidewalk will be replaced. Traffic signals at Franklin Street, Prairie Avenue and Grant Street will be updated in accordance with the latest standards. Improved street lighting will be included as part of the improvements. Clear zones, side slopes, and storm sewer outfalls will be maintained. Pavement markings will be in accordance with the latest edition of the Illinois Manual On Uniform Traffic Control Devices.

Utilities

Franchise utilities within the project limits such as Commonwealth Edison, Comcast, and AT&T will be examined for potential adjustments to accommodate the proposed resurfacing, street lighting and traffic signal improvements.

See Attachment 7 for Utility Correspondence.

- d. Discuss items affecting improvement such as hazardous mailbox supports, parking and truck restrictions, mail delivery from traffic lanes, justification (including warrants) for multi-way stop signs, traffic signals and other traffic control and railroad protective devices, stage construction, nearby airports, and additional lighting:

There are no mailbox supports within the project limits; mail is delivered at the front door of residences. The roadway will remain open to two-way traffic during construction; therefore there will be no truck or mail delivery restrictions. Traffic control and protection will be in place during construction in accordance with applicable IDOT Highway Standards. There are no encroachments upon the right-of-way. There are no railroads within the project limits. There is no parking permitted within the project limits. There are no airports in the vicinity of this project.

- e. Identify each aspect to be constructed at less than the design guidelines and provide a clear description of required design variances and appropriate justification. (BLRS Manual Section 27-7). If a design variance is required, include a copy of the approved BLR 22120 form as an attachment.

There are no variances anticipated.

- f. Current estimated cost of proposed improvement? \$1,912,761.00

See Attachment 8 for Preliminary Estimate of Cost.

- g. Analyze the need for accommodating pedestrians, bicyclists and the handicapped. When applicable, describe the facilities to be provided for pedestrians and bicyclists. Discuss the ADA accessibility and maximum longitudinal grade of these facilities. (BLRS Manual Chapter 41)

Sidewalk Improvements

Handicap ramps will be provided in accordance with IDOT policy, and all ADA requirements will be met.

Pedestrian crossings will be enhanced with standard detectable warnings at locations which have not yet received new sidewalk ramps.

Traffic signal modifications will include phasing changes to account for left turn lanes, and installation of accessible pedestrian signal (APS) pushbuttons to improve access for all users through the corridor.

Bicyclist Improvements

See Section 2.c. Improvements for proposed bicyclist accommodations.

Sidewalks/Shared-Use Paths:

Maximum 2% crosslope: Yes No Not Applicable

ADA ramps with detectable warnings at street intersections: Yes No Not Applicable

If no, provide justification.

- h. Discuss any proposed improvements being considered in adjacent segments including the anticipated construction startup date of these improvements.

None.

3. Crash Analysis (BLRS Manual Section 22-2.11(b)(9))

- a. Summarize crash data for the past five years, including a spot map or a location map showing crash locations when possible. Detail the types of crashes and include collision diagrams, if possible, especially at cluster sites. Give the source of this data.

Accident reports were provided by the Village of Downers Grove Police Department. There were a total of 99 accidents reported from 2017 through 2021. The most predominant crash type is rear end (24%) followed by sideswipe same direction (22%). Failure to reduce speed was the most common primary contributing crash factor (27 crashes, or 27%), along with failure to yield right-of-way (27 crashes, or 27%).

There has been one (1) pedestrian fatality and seven (7) additional pedestrian/bicyclist crashes. Each of the pedestrian/bicyclist crashes occurred at signalized intersections; four (4) at Grant Street, and two (2) each at Prairie Avenue and Franklin Street. These pedestrian crashes have been more severe than the other crashes in the corridor. One (1) crash was the previously described fatal crash, there were two (2) minor injury crashes, two (2) possible injury crashes, and three (3) property damage only. The primary contributing cause of crash for all four (4) crashes at Prairie Avenue and Franklin Street was failure to yield right of way. Two (2) crashes at Grant Street were caused by disregarding the traffic signal, and the other two (2) were following too closely and failure to reduce speed.

See Attachment 9 for Accident Summary Tables over the most recent five (5) years between 2017-2021. See Attachment 9 for Collision Distribution Map.

- b. Analyze available crash data including results of field check. Discussion should include high crash locations, critical wet weather sites, and other crash patterns. If the data is inconclusive, make a statement to that effect.

There are no high accident locations or cluster sites. There are no critical wet weather sites.

There are no segments or intersections within the project limits on the IDOT FHWA Five Percent Report.

- c. Describe how the proposed project will address any crash issues.

The implementation of a 3-Lane cross section in place of the existing 4-Lane cross section could help reduce turning and angle crashes, which together accounted for approximately 30% of the corridor crashes. The 3-lane cross section provides a separated two-way left-turn lane into all minor cross-street and driveway access locations while a dedicated left turn lane is provided at major cross streets along Main Street. The Crash Modification Factor Clearinghouse lists a crash reduction factor of 47% for converting four-lane roadways to three-lane roadways with center turn lane. Two-way left turn lanes remove conflicts with opposing left-turning vehicles by aligning the opposing left turn movements and improve safety by reducing sight line obstructions to through vehicles. At intersections along a four-lane undivided corridor, opposing left-turning vehicles assume a greater risk due to the possibility of hidden vehicles in the outer lanes which may be blocked from view.

The following additional benefits are possible with the conversion to a 3-lane cross section:

- One lane in each direction would lend to a pace-car setting along the corridor. This phenomenon exists as one (1) vehicle traveling the speed limit leads following vehicles and prevents them from driving at excessive speeds.*
- The shy distance or comfortable distance between the vehicle and curb, for the outside lane traveling motorists along Main Street would be increased.*
- The existing narrow lane widths could be a contributing factor in sideswipe crashes. With only a single through lane in each direction the possibility of sideswipe, same direction crashes is reduced.*
- Reduces pedestrian crossing distance across Main Street, particularly with the addition of curb bump-outs at Grant Street.*
- In areas where a left turn is not allowed, or not possible, a painted pedestrian island would be provided in the Main Street turn lane to allow for easier and safer pedestrian crossing.*

At signalized intersections, traffic signal modifications will be undertaken to bring ADA sidewalk ramps to current standards and phasing changes to account for left turn lanes, and installation of accessible pedestrian signal (APS) pushbuttons to improve access and safety for all users through the corridor.

In addition to FHWA Crash Modification Factors, the Illinois Calibrated Safety Manual Calculations are also predicting less vehicle and pedestrian/bicyclist crashes in the proposed 3-lane section. In the design year 2050,

the number of annual vehicular crashes is predicted at 16.8 crashes per year, and the annual pedestrian/bicyclist crashes in 2050 is 0.70 crashes per year in the existing 4-lane section. Conversely, in the design year of 2050, the 3-lane section annual vehicular crashes is predicted at 14.2 crashes per year, and the annual pedestrian/bicyclist crashes in 2050 is 0.59 crashes per year.

See Attachment 6 for Illinois Calibrated Highway Safety Manual Calculations.

4. Right-of-Way

- a. Describe the right-of-way taking, including the total acreage required for each of the following categories: ROW, permanent easements, temporary easements and temporary land use permits. Include the width of taking, number of property owners, acreage of right-of-way and/or easements, character of land; i.e., farm, residential, commercial or publicly owned properties, anticipated impacts to properties that remain, and location of any improvements with respect to required right-of-way. Discuss any impacts on setbacks required by zoning.

All work will be constructed within the existing right-of-way. There are no easements required.

- b. Are any residents, businesses or farms to be displaced?

Yes No

If yes, describe the number and type of displacements anticipated and mitigation that will be taken to provide relief for this impact on an attached sheet.

5. Prime Farmland (BLRS Manual Section 20-10)

- a. If the project requires more than 3 acres/mile (0.75 hectares/kilometers), 10 acres (4 hectares) for a non-linear improvement, or the project ROW is not contiguous to the existing ROW, contact the Illinois Department of Agriculture and attach results of the coordination and summarize the results below.

N/A

- b. The project requires consultation with the Natural Resource Conservation Service., Form AD-1006 has been completed and submitted to the local office of NRCS. The completed AD-1006 form is attached.

The impact of this project on farmland conversion has been evaluated in accordance with the requirements of the US Natural Resources (NRCS). The project will cover 3 acres or less of farmland per mile (0.75 hectares or less of farmland per kilometer) and the conversion will not result in more than minor impacts. Accordingly, the project conforms to the general form AD-1006 prepared by NRCS. Therefore, further coordination with NRCS on this project will not be necessary.

6. Floodplain Encroachment (BLRS Manual Section 20-7)

Does the proposed work cross or encroach upon a 100-year floodplain, including a regulatory floodway?

Yes No

If yes, summarize the location hydraulics study, regulatory floodway restrictions, the effect of any encroachment (including a comparison between existing and proposed conditions) and the effect of over-the-road flow on the proposed transportation facility. Attach any available floodplain maps.

N/A

7. Phase I & II NPDES Storm Water Permit Requirements (BLRS Manual Section 7-4.01)

Will the project involve soil disturbance of 1 acre (0.4 hectares) or more?

Yes No

If yes, the project must comply with the Phase II NPDES Storm Water Permit Requirements.

8. **“404” Permit (BLRS Manual Section 7-4.02)**

Does this project involve waters regulated by Section 404?

Yes No

If yes, what type of 404 permit is required? Nationwide Individual Regional None

Attach a copy of any 404 permit authorization and/or coordination letters with the Corps of Engineers.

If an individual Section 404 permit is required, please notify the Illinois Department of Transportation district office before submitting the application.

9. **Special Waste (BLRS Manual Section 20-12)**

a. Following the special waste assessment screening criteria shown on Figure 20-12A of the BLRS Manual, is Preliminary Environmental Site Assessment (PESA) required?

Yes No

b. Is work being done on property in the name of the state or are contract plans being prepared by the state?

Yes No

c. If a PESA is required for either state or local ROW, did the PESA results determine that the project has Recognized Environmental Conditions (REC's) for special waste?

Yes No

If the PESA results determine that the project contains REC's, describe how the special waste is proposed to be handled (including if a Preliminary Site Investigation (PSI) is required).

N/A

10. **Environmental Survey (BLRS Manual Section 20-2)**

Whenever a project involves land acquisition (including easements), any in-stream work (including drainage structure run-around), is located within or adjacent to historic properties listed in (or eligible for) the National Register of Historic Places, a bridge on the historic list, is near wetlands, or known locations of threatened or endangered species, the Environmental Survey Request Form should be submitted early in the project development phase.

a. Wild and Scenic Rivers - If this project crosses or affects a river on the National Wild and Scenic Rivers System or a river listed in the Nationwide Inventory of Rivers with potential for inclusion on the system, include coordination between the National Park Service and the Bureau of Design and Environment (BDE).

Involvement No Involvement

b. Wetlands - Does the proposed work impact the use of regulatory wetlands?

Yes No

If yes, indicate how the wetlands will be migrated. Banking Accumulation On-site Other

c. Archaeological and Historical Preservation Include results of coordination. Does the project impact an archaeological or historic preservation site?

Yes No

If yes, describe any required documents.

- d. Threatened or Endangered Species – Does the project impact any endangered species or plants?

Involvement No Involvement

Include copy of biological resources memorandum or signoff by BDE and/or IDNR.

- e. Stream Modification and Wildlife Impacts - Include copies of any correspondence between BDE and IDNR or U.S. Fish and Wildlife Service. Attach copies of any additional coordination between local agency and IDNR or U.S. Fish and Wildlife Service whenever required as a result of biological review by BDE. Address any proposed mitigation measures.

Involvement No Involvement

See Attachment 10 for District 1 Screening Sheet for Cultural Clearance and Section 106.

See Attachment 10 Cultural Resources sign off (in process).

11. **Section 4(f) Lands (BLRS Manual Section 20-3)**

- a. Does this project require any right-of-way, including temporary construction easements, from a publicly owned park, recreational area, wildlife and waterfowl, or any historic site in or eligible for the National Register of Historic Places?

Yes No

- b. If yes, what type of of the Section 4(f) involvement has been completed?

Section 4(f) de minimis Standard Section 4(f) Temporary Occupancy None

12. **Air Quality (BLRS Manual Section 20-11)** Check One:

- a. This project is in an attainment area.

- Projects within a portion of a nonattainment area for which the Chicago Metropolitan Agency for Planning (CMAP) is the MPO.

This project is included in the _____ (transportation plan) and in the Transportation Improvement Program (TIP), endorsed by the _____, the region's Metropolitan Planning Organization. The _____ (transportation plan) was found to conform by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) on _____.

The TIP was found to conform by FHWA on _____ and by FTA on _____.

- Projects within a nonattainment area served by a Metropolitan Planning Organization other than CMAP.

This project is included in the Long-Range Transportation Plan and in the _____ Transportation Improvement Program (TIP) endorsed by _____, the Metropolitan Planning Organization (MPO) for the region in which the project is located.

- On October 20, 2003 the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) determined that the 2030 regional transportation plan conforms with the State Implementation Plan (SIP) and the transportation-related requirements of the 1990 Clean Air Act Amendments. On October 20, 2003 the FHWA and the FTA determined that the TIP also conforms with the SIP and Clean Air Act Amendments. These findings were in accordance with 40 CFR Part 93, "Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded or Approved Under Title 23 USC of the Federal Transit Act."

The project's design concept and scope are consistent with the project information used for the TIP conformity analysis. Therefore, this project conforms to the existing State Implementation Plan and the transportation-related requirements of the 1990 Clean Air Act Amendments.

The T.I.P. number for this project will be determined by FHWA during their meeting in October 2022.

b. Mobile Source Air Toxics (See BDE PM 52-06)

This project will not result in any meaningful changes in traffic volumes, vehicle mix, location of the exiting facility, or any other factor that would cause an increase in emissions relative to the no-build alternative. As such, FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special Mobile Source Air Toxic concerns. Consequently, this effort is exempt from analysis for MSATs.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSATs to decline significantly over the next 20 years. Even after accounting for a 64 percent increase in VMT, FHWA predicts MSATs will decline in the range of 57 to 87 percent, from 2000 to 2020, based on regulations now in effect, even with a projected 64 percent increase in VMT. This will both reduce the background level of MSATs as well as the possibility of even minor MSAT emissions from this project.

c. Construction-related Particulate Matter

Demolition and construction activities can result in short-term increases in fugitive dust and equipment-related particulate emissions in and around the project area. (Equipment-related particulate emissions are usually insignificant when equipment is well maintained.) The potential air quality impacts will be short-term, occurring only when demolition and construction work is in progress and local conditions are appropriate.

The potential for fugitive dust emissions typically is associated with building demolition, ground clearing, site preparation, grading, stockpiling of materials, on-site movement of equipment, and transportation of materials. The potential is greatest during dry periods, periods of intense construction activity, and during high wind conditions.

The Department's *Standard Specifications for Road and Bridge Construction* include provisions on dust control. Under these provisions, dust and airborne dirt generated by construction activities will be controlled through dust control procedures or a specific dust control plan, when warranted. The contractor and the Department will meet to review the nature and extent of dust-generating activities and will cooperatively develop specific types of control techniques appropriate to the specific situation. Techniques that may warrant consideration include measures such as minimizing track-out of soil onto nearby publicly-traveled roads, reducing speed on unpaved roads, covering haul vehicles, and applying chemical dust suppressants or water to exposed surfaces, particularly those on which construction vehicles travel. With the application of appropriate measures to limit dust emissions during construction, this project will not cause any significant, short-term particulate matter air quality impacts.

d. Project-level Hot Spot Analysis. Check One:

- This project is in an attainment area and does not require a hot spot analysis.
- This project does not meet the definition of a project of air quality concern as defined in 40 CFR 93.123(b)(1).
Due to
This project is considered exempt from the requirements of conformity per 40 CFR 93.126 or 40 CFR 93.128, as applicable. USEPA has determined that such projects meet the Clean Air Act's requirements without any further Hot-Spot analysis.

it has been determined that the project will not cause or contribute to any new localized PM_{2.5} or PM₁₀

violations or increase the frequency or severity of any PM_{2.5} or PM₁₀ violations. USEPA has determined that such projects meet the Clean Air Act's requirements without any further Hot-Spot analysis.

- This project is in a non-attainment or maintenance area and is a project of air quality concern. Therefore, a qualitative hot spot analysis is required. See Attachment _____ .

e. **COSIM**

Are through lanes or auxiliary turn lanes being added with this project?

- Yes No

If yes, has a COSIM pre-screen analysis been completed?

- Yes No

If yes, pre-screen analysis is attached as Attachment _____ .

If no, explain why an analysis has not been performed. There are no sensitive receptors within 1,000 feet of the improvement.

If yes, did the COSIM pre-screen analysis pass or fail? Pass Fail

If the COSIM pre-screen analysis failed, a full COSIM analysis would be required.

13. **Noise (BLRS Manual Section 20-6)**

- The referenced project meets the criteria for a Type III project established in 23 CFR Part 772. Therefore, the proposed project requires no traffic noise analysis or abatement evaluation. Type III projects do not involve added capacity, construction of new through lanes, changes in the horizontal or vertical alignment of the roadway, or exposure of noise sensitive land uses to a new or existing highway noise source.
- Based on the traffic noise analysis and noise abatement evaluation conducted, highway traffic noise abatement measures are likely to be implemented based on preliminary design. The noise barriers determined to meet the feasible and reasonable criteria are identified on the attachment. If it subsequently develops during final design that constraints not foreseen in the preliminary design or public input substantially change, the abatement measures may need to be modified or removed from the project plans. A final decision of the installation of the abatement measure(s) will be made upon completion of the project's final design and the public involvement process.

If this project involves a new alignment, additional lanes, or involves a significant alignment change, attach a traffic noise analysis.

14. **Work Zone Transportation Management Plans**

Does the project intersect or follow a state route?

- Yes No

Is the state or local route considered a significant route?

- Yes No Not Applicable

If yes, describe how the Work Zone Transportation Management Plan is being implemented.

N/A

15. Complete Streets (BLRS Manual Chapter 10)

Does the project include the addition of a travel, turning, or bi-directional turn lane on a state highway?

Yes No

If yes, describe how the Complete Streets Law requiring accommodating bicyclists on a state route apply.

N/A

16. Maintenance of Traffic (BLRS Manual Section 22-2.11(b)(9))

Discuss how vehicle traffic and pedestrians will be accommodated during construction, including the impacts of any road and/or sidewalk closure. If the road will be closed, include information concerning location of alternate routes, their ability to handle the additional traffic (street width, number of traffic lanes, structural adequacy, etc.), and the amount of adverse travel. When a marked detour route will be provided, include coordination with appropriate agencies, a description of the adverse travel, and include a map showing the alternate routes or marked detour in the report.

Traffic control and protection will be in place during construction of the roadway in accordance with applicable IDOT Highway Standards. Two-way traffic will be maintained throughout the duration of construction.

17. Public Involvement (BLRS Manual Chapter 21)

- a. Summarize public informational meetings, formal public hearings, property owner signoffs, council or board meetings, media coverage, and personal contact with public. Include copies of newspaper advertisements, letter to property owners, public comments, and documents showing all public comments have been addressed.

The project corridor and planned improvements have been the subject of two (2) open public forums. The first public forum event was presented in front of the public and stakeholders on September 5, 2019 at Downers Grove North High School. The forum covered an overview of the initial steps taken to improve safety, potential improvements opportunities, and collected feedback through a series of activities.

The second public forum event was presented in front of the public and stakeholders on November 14, 2019 at Downers Grove North High School. Community feedback from the interactive map along with corridor recommendations were presented. The forum provided activities for attendees to add comments on corridor recommendations. The presentation was posted online and available for feedback.

Additionally, a Public Information Meeting was hosted by the Village of Downers Grove on May 23, 2022. A total of fourteen (14) residents, stakeholders, and other interested parties attended. The public information meeting presented the alternatives considered, the preferred alternative, and updated project schedule. The purpose of the meeting was to seek public input and comments regarding the proposed improvements. The public has been supportive of the project and voiced vehicular capacity concerns with the road diet conversion from 4-lanes to 3-lanes. Project traffic studies have shown the corridor vehicle delay results in a minimal delay (mere seconds) from the existing condition to the proposed condition. The safety benefits the proposed improvement provides far outweighs a slight delay in corridor travel time.

See Attachment 11 for Public Involvement Information.

- b. Has any opposition been expressed toward the improvement?

Yes No

If yes, briefly discuss the type and extent of opposition.

N/A

- c. If yes, discuss how the opposition has been addressed with the property owners?

N/A

18. **Coordination: LA-IDOT-FHWA (BLRS Manual Section 22-1.02)**

Has there been any coordination meetings for this project? Yes No

If yes, list the date(s) of the coordination meeting(s) below and attach coordination meeting minutes in the report.

FHWA/IDOT Coordination Meeting was held on March 8, 2022.

See Attachment 12 for FHWA/IDOT Coordination Meeting Minutes.

19. **Other Coordination**

Attach results.

Phase I kickoff meeting with IDOT District 1 Bureau of Local Roads & Streets on February 23, 2022.

See Attachment 13 for Phase 1 Kickoff Meeting Minutes.

20. **Summary of Commitments**

None.

MAIN STREET IMPROVEMENTS
22-00118-00-PV
VILLAGE OF DOWNERS GROVE, DUPAGE COUNTY, ILLINOIS

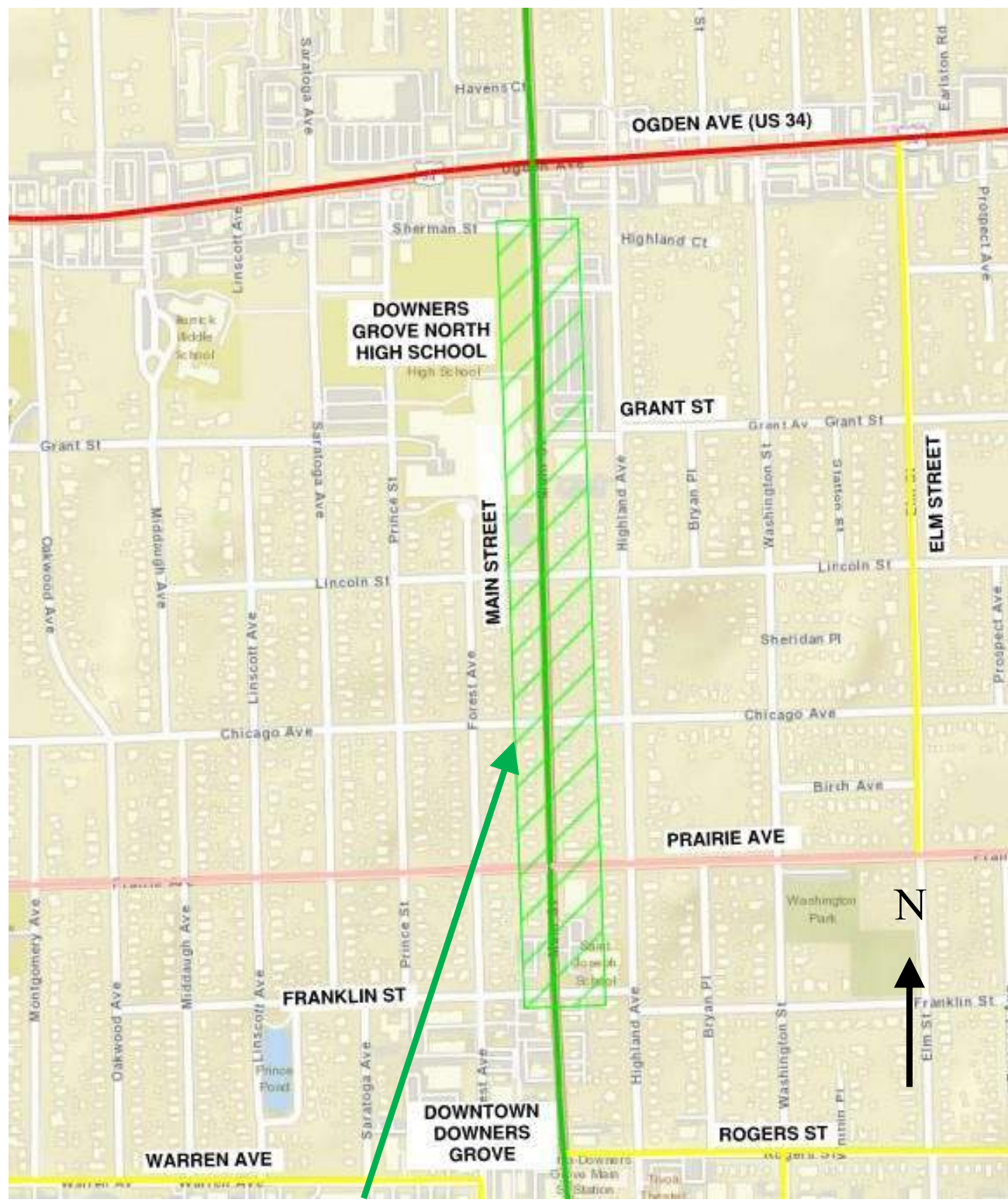
SUMMARY OF ATTACHMENTS

1. Location Map
2. Existing Typical Sections
3. Traffic Technical Report
4. Proposed Typical Sections
5. Proposed Plans
6. Illinois Calibrated Highway Safety Manual Calculations
7. Utility Correspondence
8. Preliminary Estimate of Cost
9. Accident Summary Tables & Collision Distribution Map
10. Cultural Resources
11. Public Involvement Information
12. FHWA/IDOT Coordination Meeting Minutes
13. Phase I Kickoff Meeting Minutes

LOCATION MAP



VILLAGE OF DOWNERS GROVE MAIN STREET IDOT ROADWAY FUNCTIONAL CLASSIFICATION MAP

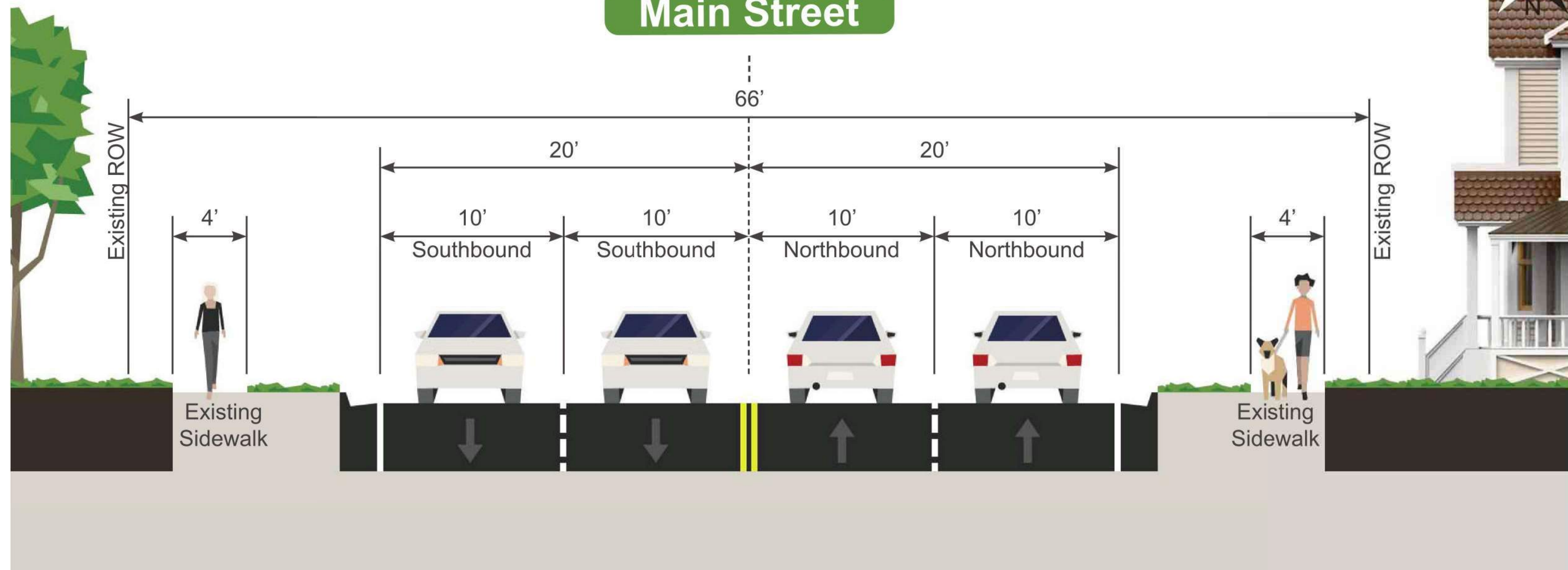


PROJECT LOCATION

EXISTING TYPICAL SECTIONS

Existing Typical Section

Main Street



TRAFFIC TECHNICAL REPORT

REPORT

District 99 Pedestrian Safety Study Traffic Technical Report

Downers Grove, Illinois

February 2022

HRG Project Number: 210553

Prepared For:
Village of Downers Grove

Prepared By:



District 99 Pedestrian Safety Traffic Analysis
 Village of Downers Grove
 February 2022

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Introduction

This document examines safety and traffic operations along the Main Street corridor in the Village of Downers Grove. The areas of focus for the study include the area near Downers Grove North High School, from Sherman Street to Franklin Street (hereby referred to as the North Corridor), as well as the intersection of Main Street with Oxford Street, just east of Kingsley Elementary School and Downers Grove South High School. This memorandum will present a summary of the crash history in the corridor, existing traffic volumes, and future traffic volume projections. The memorandum will then examine the existing and no build traffic operations, and will also analyze the projected traffic operations of modified geometric alternatives.

North Corridor Existing Conditions

Existing Geometry

Main Street is a north-south, four-lane undivided minor arterial. In the northern section of the study area, the road has two 10' lanes in each direction, and the posted speed limit is 25 mph with a 20 mph school zone near North High School. Main Street is a local roadway under the jurisdiction of the Village of Downers Grove in this segment of the study area.

This study focuses on the following intersections with Main Street:

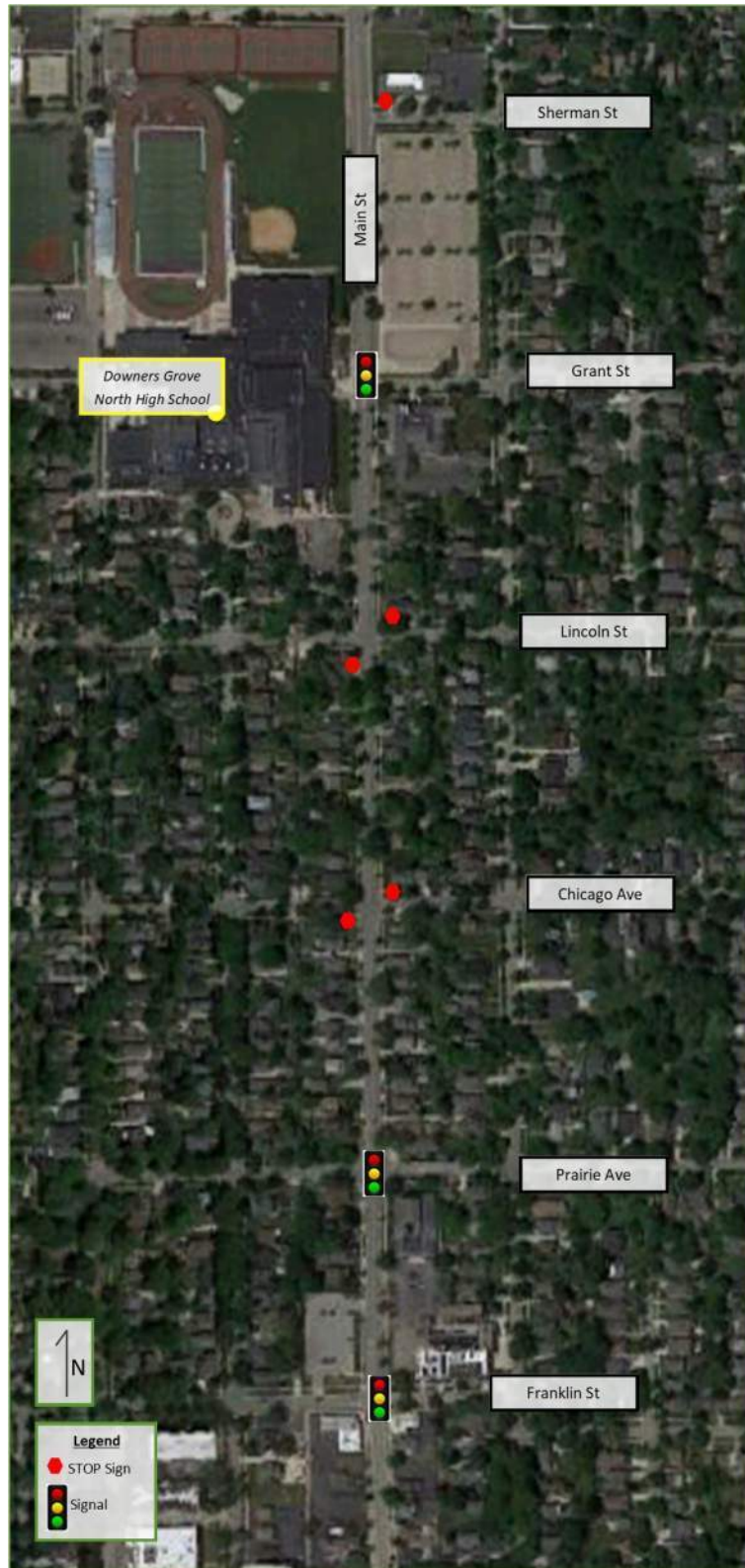
- Sherman Street (unsignalized)
- Grant Street (signalized)
- Lincoln Street (unsignalized)
- Chicago Avenue (unsignalized)
- Prairie Avenue (signalized)
- Franklin Street (signalized)

The intersections of Main Street with Sherman Street and Grant Street are 3-legged intersections with the minor street on the east leg of the intersection. All other intersections are 4-legged intersections. At Franklin Street, the east leg is one-way westbound, while all other legs are two-way. South of Franklin Street, the cross section of Main Street reduces to a single travel lane in each direction with parallel parking along both sides.

The intersections of Main Street with Grant Street, Prairie Avenue, and Franklin Street are signalized. The other study intersections are stop-controlled on the minor street approaches. Existing signal timings were provided by the Village of Downers Grove, and were used to analyze the corridor. The signal at Grant Street has an exclusive pedestrian phase to accommodate high school students crossing the street from the student parking lot to the high school.

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FIGURE 1 – NORTH STUDY CORRIDOR OVERVIEW



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Crash History

Five years of crash data, from 2017 through 2021, was provided by the Village for analysis at the study intersections. 99 total crashes were recorded at 6 intersections. Summaries of these crashes by crash type are presented in **Table 1**.

Throughout the corridor, the majority of crashes were property damage only. Two major injury crashes were recorded. One was a three-car rear end crash at Grant Street, and the other was an angle crash at Lincoln Street. One fatal crash occurred at Grant Street in 2019. A pedestrian was struck by a southbound car on Main Street that had crossed the centerline into the northbound lanes and ran a red light. The driver was cited for driving under the influence.

The most common manner of collision in the corridor was rear end (24 crashes, or 24%), while 22 crashes (22%) were sideswipe crashes between two vehicles traveling the same direction. Angle (18 crashes) and turning (13 crashes) were the next most prevalent manners. Failure to reduce speed was the most common primary contributing crash factor (27 crashes, or 27%), along with failure to yield right of way (27 crashes, or 27%).

The crash history along the corridor indicates that there have been 8 pedestrian or pedalcyclist crashes in the last 5 years. All of these crashes occurred at signalized intersections: 4 at Grant Street, and 2 each at Prairie Avenue and Franklin Street. These pedestrian crashes have been more severe than the other crashes in the corridor. One crash was the previously described fatal crash, there were 2 minor injury crashes, 2 possible injury crashes, and 3 property damage only. The primary contributing cause of crash for all four crashes at Prairie Avenue and Franklin Street was failure to yield right of way. Two crashes at Grant Street were caused by disregarding the traffic signal, and the other two were following too closely and failure to reduce speed.

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TABLE 1 – CRASH DATA SUMMARY

CRASH SEVERITY							MANNER OF COLLISION											
	Total Crashes	Fatal	Major Injury Incidents	Minor Injury Incidents	Possible/Unknown Incidents	PDO Incidents	Total Crashes	Angle	Broadside (rear to side)	Fixed Object	Head-On	Parked Motor Vehicle	Pedestrian/Pedalcyclist	Rear End	Rear to Front	Sideswipe, opposite direction	Sideswipe, same direction	Turning
Main St & Sherman Rd/St	5				1	4	Main St & Sherman Rd/St	5				1					4	
Main St & Grant St	13	1	1		1	10	Main St & Grant St	13					4	7			1	1
Main St & Lincoln St	9		1		1	7	Main St & Lincoln St	9	3			1		1				4
Main St & Chicago Ave	16			2	2	12	Main St & Chicago Ave	16	7	1		2					4	2
Main St & Prairie Ave	32			1	4	27	Main St & Prairie Ave	32	6	3			2	9			7	5
Main St & Franklin St	24			2	2	20	Main St & Franklin St	24	2	3		3	2	7			6	1

CONTRIBUTING CRASH FACTORS																				
	Total Crashes	N/A	Disregarding stop sign	Disregarding traffic signals	Distraction - from inside vehicle	Evasive action due to animal, object, nonmotorist	Failure to reduce speed to avoid crash	FTYROW	Following too closely	Had been drinking (arrest not made)	Improper Backing	Improper lane usage	Improper overtaking/passing	Improper turning/no signal	Physical Condition of Driver	Road construction/maintenance	Texting	Under the influence of alcohol/drugs (arrest made)	Vision Obscured	Unable to determine
Main St & Sherman Rd/St	5									1	3									1
Main St & Grant St	13			2			8	1	1		1									
Main St & Lincoln St	9						1	5	1										2	
Main St & Chicago Ave	16	1	1					8			3		1			1				1
Main St & Prairie Ave	32			3	2	1	9	8	1		7									1
Main St & Franklin St	24			1		1	9	5	2		4	1	1							

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North Corridor Traffic Volume Data

Turning movement counts were collected at the study intersections on October 14, 2021. Peak hour counts from 6:00-9:00am and from 2:00-6:00pm were taken at the study corridor intersections. Additionally, 13-hour counts from 6:00am-7:00pm were conducted at the Oxford Street intersection for a separate element of the study. These counts are included in **Appendix A**.

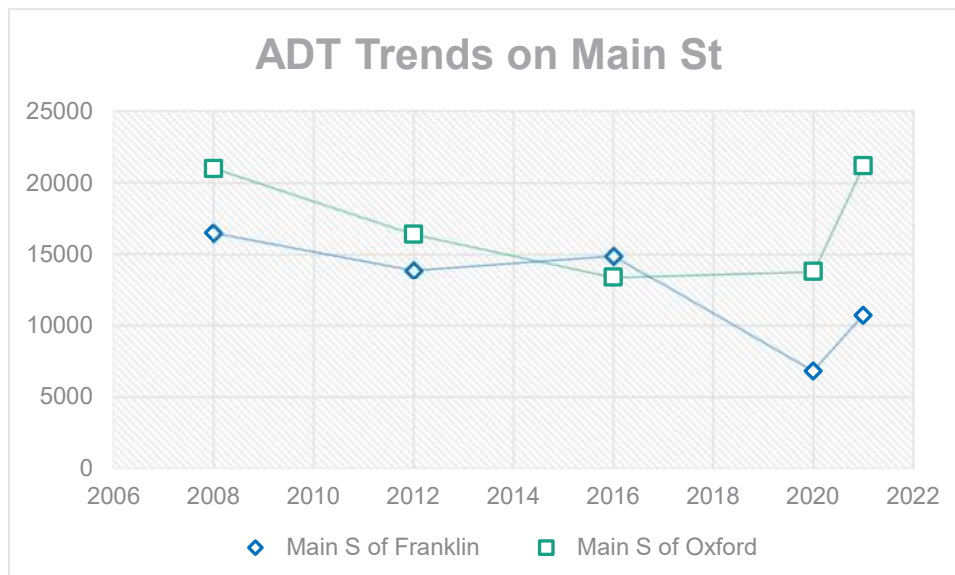
Because of the ongoing COVID-19 pandemic and its impact on work- and school-related travel, HR Green compared these hourly counts to IDOT’s historical traffic data. IDOT’s only available hourly counts in the corridor were taken in 2020. The travel impacts from COVID-19 were much greater in 2020 than in 2021, so therefore HR Green’s 2021 counts were higher than IDOT’s 2020 counts.

In addition to the 2020 data, IDOT has also provided historical ADT data from 2016, 2012, and 2008 at two locations in the corridor. 2021 ADT values were projected from the HR Green count volumes based on IDOT’s historical hourly data distribution. The resulting historical ADT values are shown in **Table 2** with an accompanying graph.

TABLE 2 – HISTORICAL ADT VALUES

Year	ADT	
	Main St south of Franklin St	Main St south of Oxford St
2008	16,500	21,000
2012	13,900	16,400
2016	14,900	13,400
2020	6,800	13,800
2021 (HRG)	10,700	21,200

FIGURE 2 – HISTORICAL ADT TRENDS



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The 2021 ADT value south of Franklin St was 10,700, which was lower than the most recent pre-COVID count from 2016. However, this location did not show steady traffic growth in the historical data, and a downward trend from 2008 to 2016 was observed. South of Oxford Street, Main Street's 2021 ADT was higher than any of the historical ADTs. Again, a downward trend was seen here between 2008 and 2016.

After review of the historical data, a COVID adjustment factor was not applied to the 2021 traffic counts. Because the data on Main Street south of Oxford Street was higher than all historical records dating back to 2008, the traffic at this portion of the study area is not likely impacted by COVID restrictions. Although the 2021 Main Street traffic in the north portion of the study area was below the pre-COVID historical ADT value, the 2021 counts are likely a reasonable estimate for the current traffic levels. The high volumes near Oxford Street suggest that traffic volumes along Main Street are not significantly depressed below expected levels. Additionally, Downers Grove North High School, a major generator of traffic in the area, was operating without restrictions when the count was performed. ADT projections near the high school are between 15,000 and 16,000 vehicles per day, which is more consistent with the 2016 traffic levels. Therefore, a COVID adjustment factor was not deemed necessary for this study.

The 2021 existing traffic volumes for the study intersections are depicted in **Figure 3**.

Year 2050 Traffic Volume Projections

The projected 2021 ADT counts for the study area were used to obtain 2050 traffic volume projections from the Chicago Metropolitan Agency for Planning (CMAP). CMAP projections indicated a total growth of approximately 6-11% is expected in the study area, depending on the street. This growth was applied to the 2021 volumes to determine the design year 2050 volumes, which are presented in **Figure 4**.

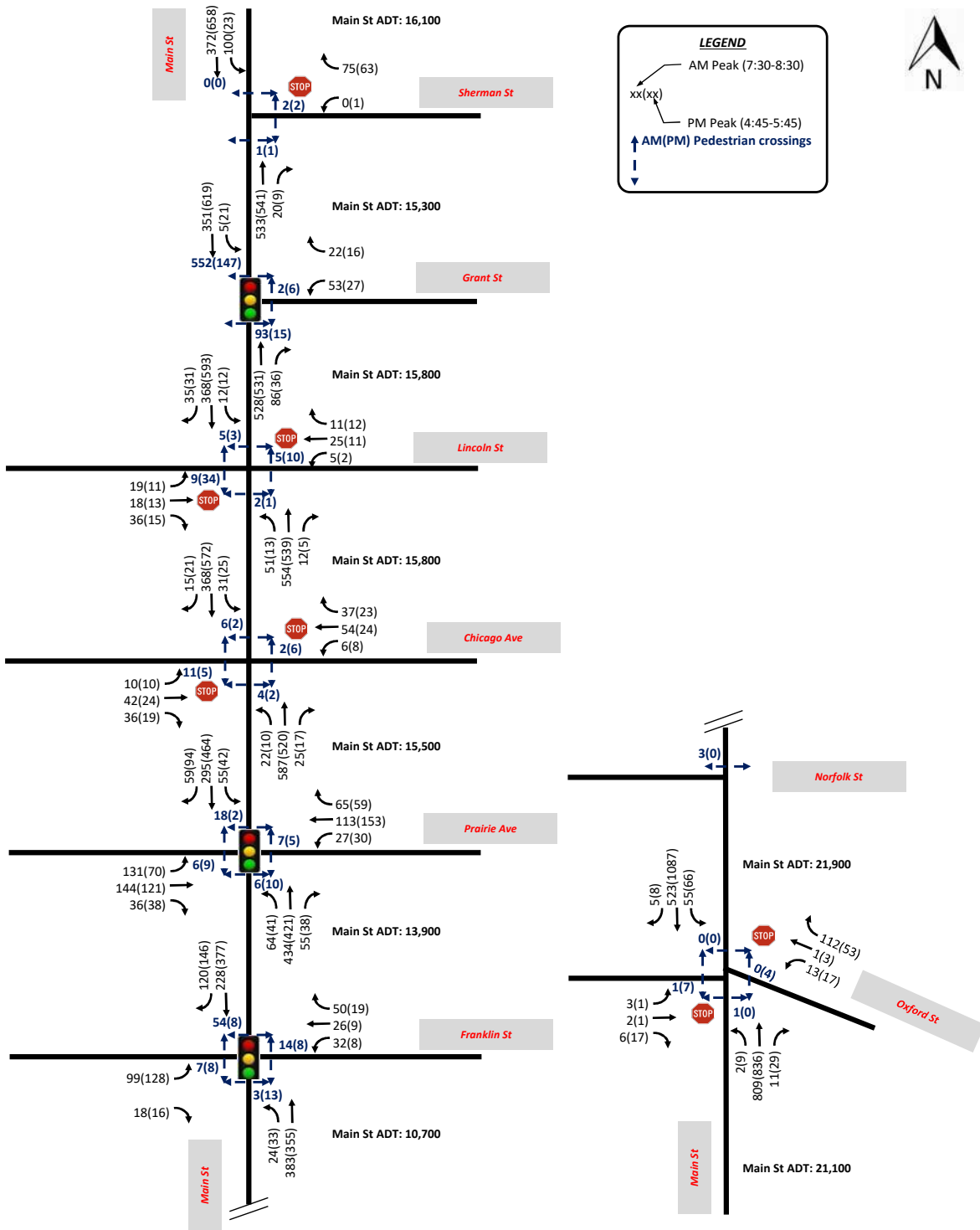
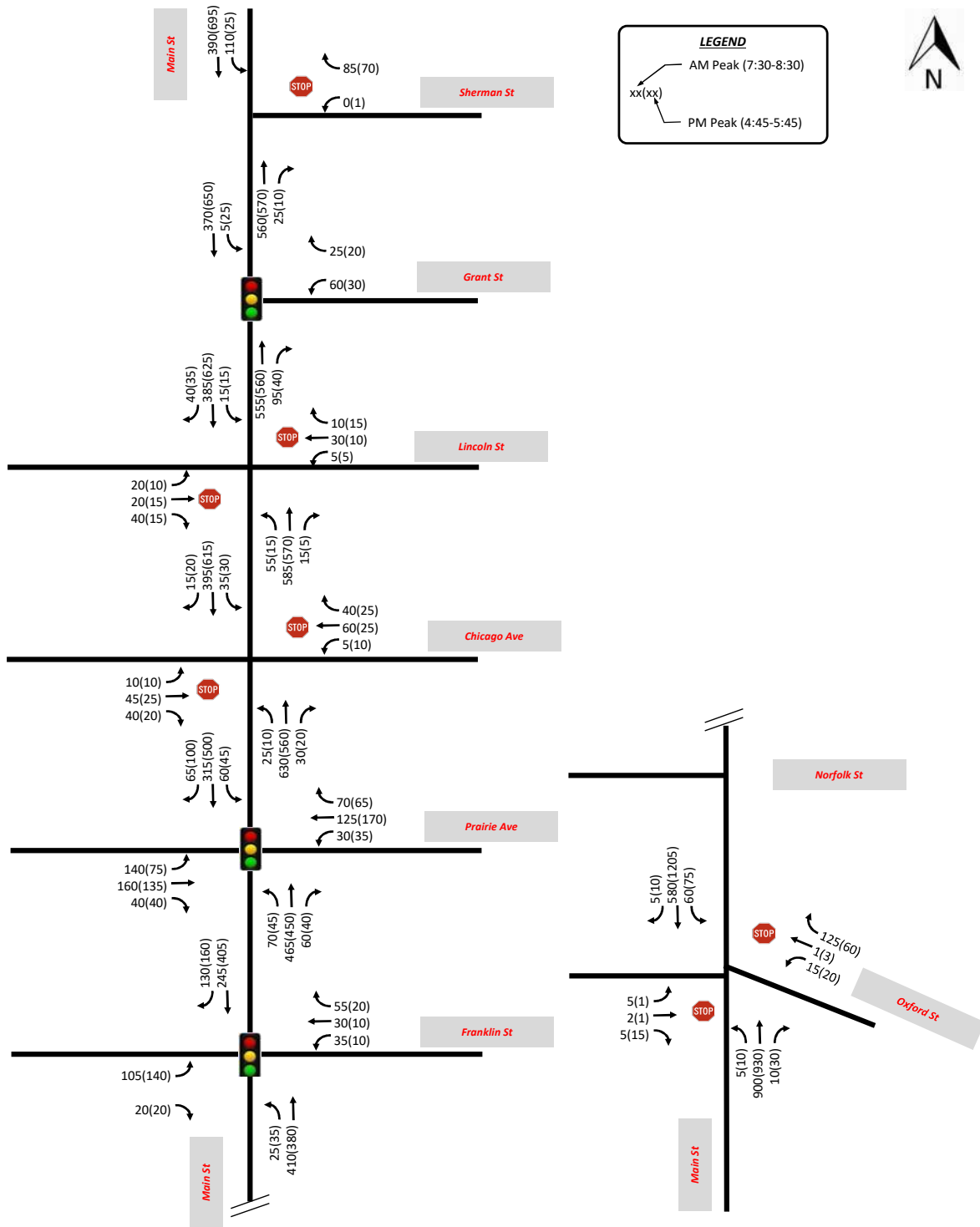


Figure 3
2021 Existing Traffic Volumes





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North Corridor Operational Analysis

A traffic operations analysis was performed at the intersections to evaluate the analysis year delay and level of service (LOS) values for the existing and proposed intersection geometry alternatives. LOS criteria are outlined in the 6th Edition of the Highway Capacity Manual (HCM) for signalized and unsignalized intersections. LOS is primarily a function of peak hour turning movement volumes, intersection lane configuration, and traffic control.

For intersection analysis, the HCM defines LOS in terms of the average control delay at the intersection in seconds per vehicle. The results of a HCM analysis are typically presented in the form of a letter grade (A-F) that provides a qualitative estimate of the operational efficiency or effectiveness of the individual intersection movements or lanes being analyzed. Much like an academic report card, LOS A represents the best range of operating conditions (i.e., motorists experiencing little delay or congestion) and LOS F represents the worst (i.e., extreme delay or severe congestion). LOS thresholds for stop-controlled intersections differ from those with traffic signal control to reflect different driver expectations with respect to delay.

The subject intersections were modeled using Synchro 10 software. Delays, LOS grades, and 95th percentile queue lengths were calculated and presented in the following tables.

Existing Geometry

Analysis of the existing geometric conditions provides a baseline to which the other proposed alternatives can be compared. The projected turning movement counts and the existing geometric configuration of the intersections were used to construct this model. Intersection LOS, delay, and 95th percentile queue results for existing year 2021 and design year 2050 analyses are presented in the following tables, and software outputs are included in **Appendix B**.

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TABLE 3 – 2021 EXISTING TRAFFIC OPERATIONS

Location / Critical Movements	Existing Conditions 2021					
	AM Peak Hour			PM Peak Hour		
	Delay (s)	LOS	Queue (ft)	Delay (s)	LOS	Queue (ft)
Main St and Sherman St						
WB Approach	9.3	A	9	9.4	A	6
Main St and Grant St						
WB Approach	45.9	D	83	50.4	D	62
NB Approach	25.4	C	266	22.1	C	216
SB Approach	20.9	C	126	17.3	B	206
OVERALL	25.3	C		20.6	C	
Main St and Lincoln St						
EB Approach	23.2	C	32	20.9	C	14
WB Approach	29.3	D	24	19.5	C	8
Main St and Chicago Ave						
EB Approach	38.8	E	66	21.9	C	19
WB Approach	43.7	E	80	20.8	C	18
Main St and Prairie Ave						
EB Approach	25.3	C	135	30.6	C	147
WB Approach	29.5	C	127	39.7	D	197
NB Approach	20.5	C	184	9.4	A	109
SB Approach	12.8	B	91	19.5	B	204
OVERALL	20.6	C		21.0	C	
Main St and Franklin St						
EB Approach	36.7	D	99	46.4	D	138
WB Approach	18.9	B	45	21.8	C	29
NB Approach	8.3	A	175	6.9	A	162
SB Approach	4.0	A	122	6.6	A	111
OVERALL	11.3	B		12.5	B	

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TABLE 4 – 2050 NO BUILD TRAFFIC OPERATIONS

Location / Critical Movements	No Build Conditions 2050					
	AM Peak Hour			PM Peak Hour		
	Delay (s)	LOS	Queue (ft)	Delay (s)	LOS	Queue (ft)
Main St and Sherman St						
WB Approach	9.4	A	11	9.3	A	7
Main St and Grant St						
WB Approach	46.2	D	91	51.8	D	69
NB Approach	26.2	C	282	21.7	C	233
SB Approach	21.7	C	135	19.4	B	221
OVERALL	26.2	C		21.7	C	
Main St and Lincoln St						
EB Approach	27.1	D	41	23.1	C	16
WB Approach	36.4	E	33	20.2	C	10
Main St and Chicago Ave						
EB Approach	54.4	F	92	22.8	C	21
WB Approach	62.3	F	110	21.8	C	21
Main St and Prairie Ave						
EB Approach	25.7	C	151	31.1	C	164
WB Approach	30.2	C	140	41.2	D	218
NB Approach	22.6	C	202	13.4	B	188
SB Approach	15.6	B	108	8.4	A	81
OVERALL	22.4	C		18.5	B	
Main St and Franklin St						
EB Approach	37.6	D	105	46.8	D	150
WB Approach	19.1	B	48	21.6	C	31
NB Approach	8.7	A	190	7.5	A	179
SB Approach	4.1	A	112	14.1	B	264
OVERALL	11.7	B		16.5	B	

In the 2021 analysis (Table 3 above), all signalized intersections operate at LOS C or better with individual approach grades at LOS D or better. Most minor street stop-controlled approaches operate at LOS D or better, with the exception

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of both Chicago Avenue approaches during the AM peak (LOS E). The longest 95th percentile queues do not appear to be long enough to cause backups between intersections.

The 2050 analysis predicts similar results, shown in **Table 4** above. Delays are expected to increase slightly with a few more minor street stop approaches reaching LOS E or F. Signalized intersection delays are predicted to be relatively stable, with overall intersection average delays within 4 seconds of the 2021 analysis.

An arterial travel time analysis was also performed using SimTraffic software. This analysis uses 10 hour-long simulations of the peak hours to estimate the travel time and average travel speed in both directions between Sherman Street and Franklin Street. The analysis indicates that travel speeds average between 17-19mph in both directions, and travel times are expected to remain relatively unchanged in the 2050 no build analysis.

TABLE 5 – ARTERIAL TRAVEL TIME COMPARISON

<i>Main St Direction</i>	<i>Existing Geometry</i>			
	<i>AM Peak Hour</i>		<i>PM Peak Hour</i>	
	<i>Travel Time (sec.)</i>	<i>Arterial Speed (mph)</i>	<i>Travel Time (sec.)</i>	<i>Arterial Speed (mph)</i>
Existing Condition 2021				
Northbound	168.8	18	156.7	19
Southbound	134.5	18	140.5	17
No Build Condition 2050				
Northbound	171.8	17	152.0	19
Southbound	139.7	17	140.4	17

It should be noted that these and all alternative analyses in this report are studying normal operations. Traffic signal operations will be preempted by emergency vehicles and railroad traffic on the tracks south of the study area. When trains or emergency vehicles come, the normal operation of the traffic signals is interrupted. Following these preemption events, delays and queues will likely be longer than analyzed as the corridor recovers from the change in traffic signal operation.

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North Corridor Considered Alternatives

This study primarily considers alternatives to improve pedestrian safety in the corridor. A combination of options, including a 4-lane to 3-lane conversion, leading pedestrian intervals at signals, pedestrian/roadway cross section improvements, and signalization were studied. Each alternative is identified and described below.

4-Lane to 3-Lane Conversion Alternative

The first considered alternative studies the impacts of reducing the number of traffic lanes on Main Street between Sherman Street and Franklin Street. Rather than having two lanes in each direction, this alternative consists of a single lane in each direction with a center, two-way left turn lane (TWLTL). The TWLTL provides access to driveways between intersections, and allows for dedicated left turn lanes at intersections. When evaluating approximations of whether a 3-lane roadway will adequately accommodate certain ADT or peak hour volumes, the Federal Highway Administration¹ notes the following planning-level thresholds:

- ADT of less than 20,000 vehicles per day
- Peak hour volumes²:
 - *Probably feasible* at or below 750 vehicles per hour per direction
 - *Consider cautiously* between 750-875 vehicles per hour per direction during peak hour
 - *Feasibility less likely* above 875 vehicles per hour per direction during the peak hour

The existing volumes along the Main Street corridor within the study area fall within these recommended thresholds. All segment ADT volumes (approximately around 11,000 to 16,000) are less than 20,000 vehicles per day. Existing and 2050 projected peak hour volumes at the intersections within the corridor generally fall below the 750 vehicles per hour per direction threshold listed above.

The 3-lane cross section provides a separated two-way left-turn lane into all minor cross-street and driveway access locations while a dedicated left turn lane is provided at major cross streets along Main Street. The Crash Modification Factor Clearinghouse lists a crash reduction factor of 47% for converting four-lane roadways to three-lane roadways with center turn lane based on a study by Persaud, et al³.

Two-way left turn lanes remove conflicts with opposing left-turning vehicles by aligning the opposing left turn movements and improve safety by reducing sight line obstructions to through vehicles. At intersections along a four-lane undivided corridor, opposing left-turning vehicles assume a greater risk due to the possibility of hidden vehicles in the outer lanes which may be blocked from view. This scenario is illustrated within **Figure 5**. As noted in the crash analysis, the implementation of a 3-Lane cross section in place of the existing 4-Lane cross section could help reduce turning and angle crashes, which together accounted for approximately 30% of the corridor crashes.

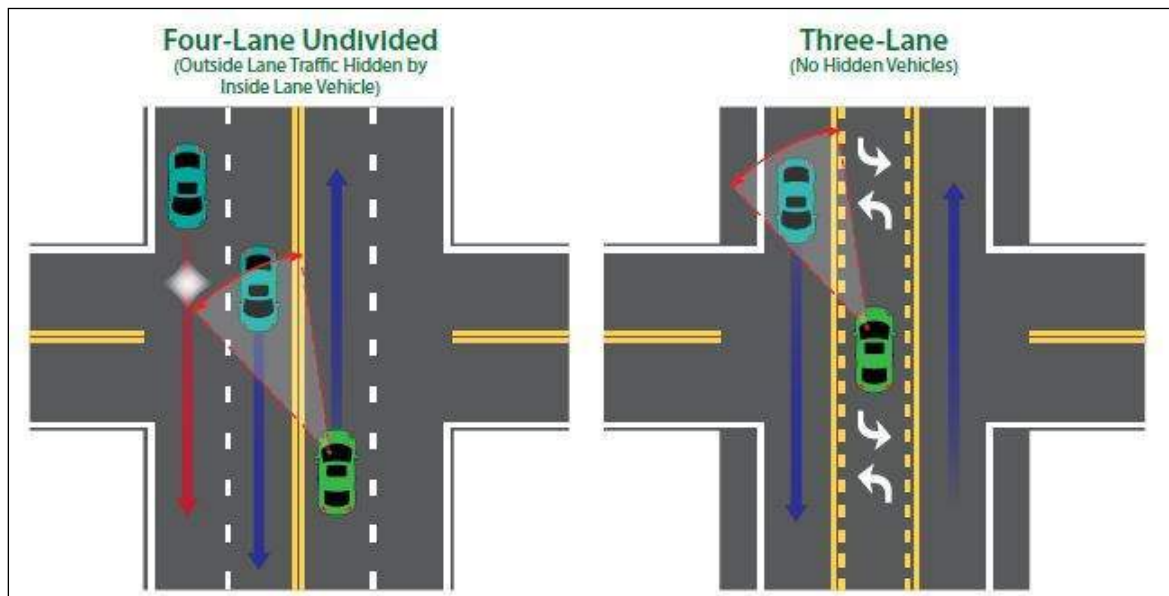
¹ *Road Diet Information Guide*. Federal Highway Administration. November 2014.
http://safety.fhwa.dot.gov/road_diets/info_guide/

² Knapp, Welch, and Witmer. *Converting Four-Lane Undivided Roadways to a Three-Lane Cross Section: Factors to Consider*. Center for Transportation Research and Education, Iowa State University, and Iowa DOT. 1999. Reference within FHWA *Road Diet Information Guide*.

³ Persaud, B., Lana, B., Lyon, C., and Bhim, R. "Comparison of empirical Bayes and full Bayes approaches for before-after road safety evaluations." *Accident Analysis & Prevention*, Vol. 42, Issue 1, pp. 38-43 (2010)

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FIGURE 5 – OPPOSING DIRECTION LEFT TURN MOVEMENTS



Reproduced from the FHWA Road Diet Information Guide

The following additional benefits are possible with the conversion to a 3-lane cross section:

- One lane in each direction would lend to a pace-car setting along the corridor. This phenomenon exists as one vehicle traveling the speed limit leads following vehicles and prevents them from driving at excessive speeds.
- The shy distance or comfortable distance between the vehicle and curb, for the outside lane traveling motorists along Main Street would be increased.
- The existing narrow lane widths could be a contributing factor in sideswipe crashes. With only a single through lane in each direction the possibility of sideswipe, same direction crashes is reduced.
- Reduces pedestrian crossing distance across Main Street, particularly with the addition of curb bump-outs.

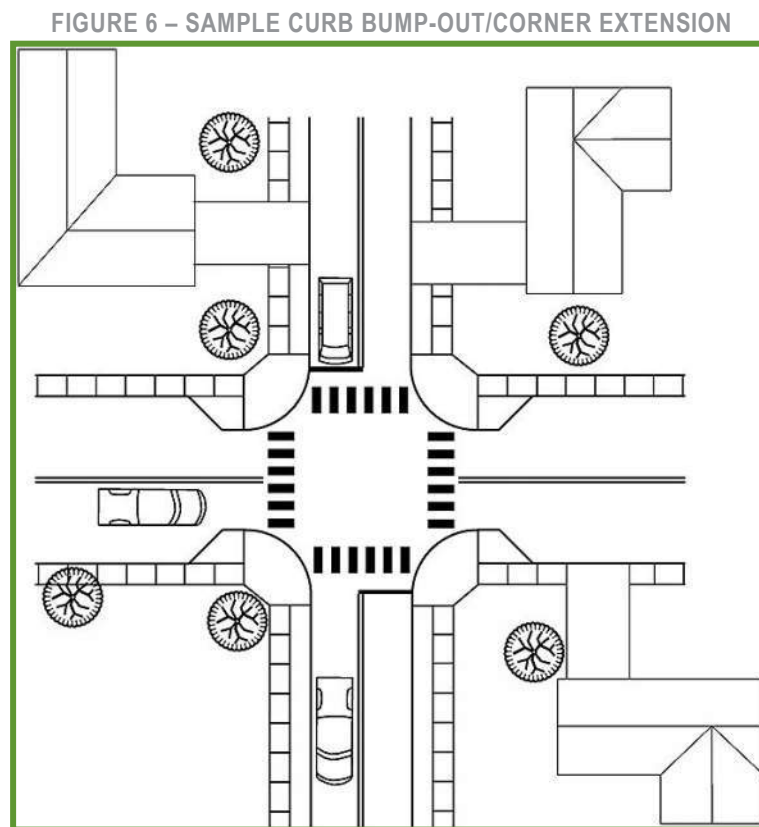
A curb bump-out is an extension of the sidewalk that reduces the crossing distance and allows pedestrians about to cross and approaching drivers a better vantage to see each other, especially when parked vehicles or other roadside features would otherwise block the view. Curb bump-outs also allow stop-controlled approach vehicles to stop closer to the edge of travel way of cross street traffic, improving the sight distance triangles. On considering the demand of pedestrian crossing movements at the study intersections and the sight restrictions imposed by the available vehicle parking spaces, installing curb bump-outs at study intersections may be considered as an option to improve pedestrian safety. The advantages of curb bump-outs include the following:

- Reduces vehicle speeds near the intersection due to a traffic calming effect,
- Allows side street traffic to stop closer to the edge of traveled way of Main Street, therefore increasing the sight distance with regards to existing obstructions'
- Provides additional space for sidewalk ramp improvements,
- Provides additional space in close proximity to the roadway for locating crosswalk warning signs,
- Improves pedestrian safety and comfort,
- Reduces pedestrian crossing distance across Main Street

The location of the study corridor in front of the high school and near the main downtown commercial area of the Village with high pedestrian activity makes it a prime candidate for a curb bump-out design, particularly at Grant Street.

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Figure 6 depicts a simple schematic of a curb bump-out design.



The available roadway cross section of 40 feet on Main Street allows a few options for redistributing the travel lanes. The following 3-lane cross section alternatives were developed for further consideration by the Village:

- 12/13/12:
 - The cross section could be reduced to provide 12' lanes in each direction with a 13' TWLTL. A new curb and gutter would be constructed on the west side of the road, with a new 8' bike path behind the curb. This alternative requires removing and replacing the western curb line, and the parkway work would likely require the removal of several mature trees along the corridor.
- 10/12/10:
 - Utilizing the existing roadway width without moving either curb, 4' bicycle lanes (5' including the gutter flag) could exist on either side of the road with 10' through lanes and a 12' center two-way left-turn lane, or
- 14/12/14:
 - 14' through lanes and a 12' center two-way left-turn lane. The 14' lanes would be "sharrow" lanes, or shared vehicle/bike lanes. Sharrow lanes are intended to raise awareness for bicyclists in the roadway, guide bicyclists in their lateral placement within the shared lane, and encourage vehicles to pass bicyclists at a safe distance. This alternative would not require changes to the existing curbs.

Figure 7 through **Figure 9** illustrate the potential lane reconfigurations.

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FIGURE 7 – 12/13/12 LANE CONFIGURATION

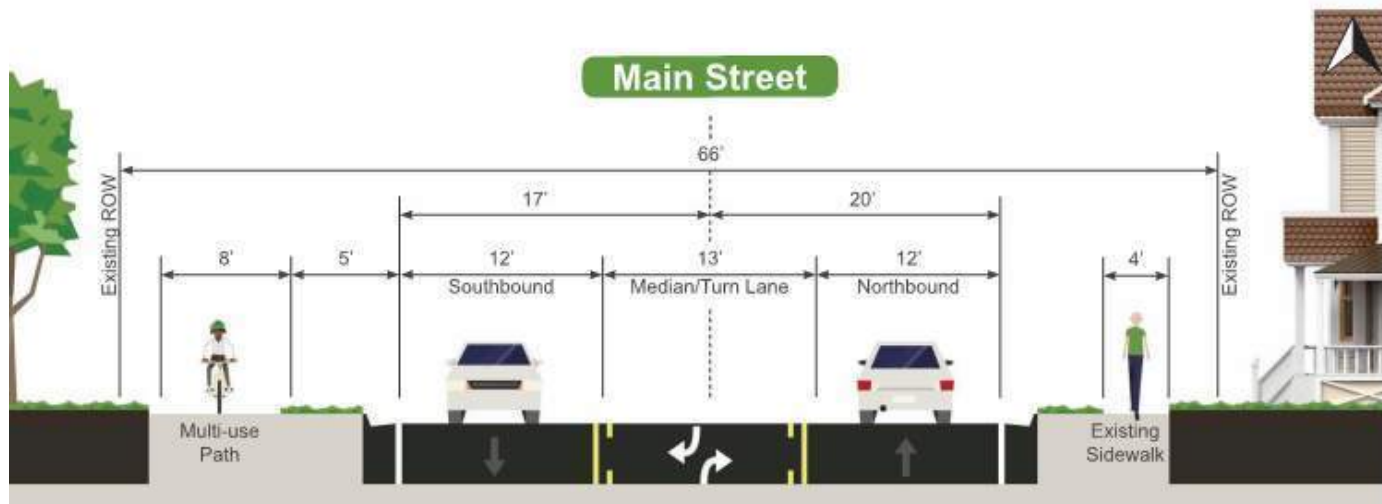
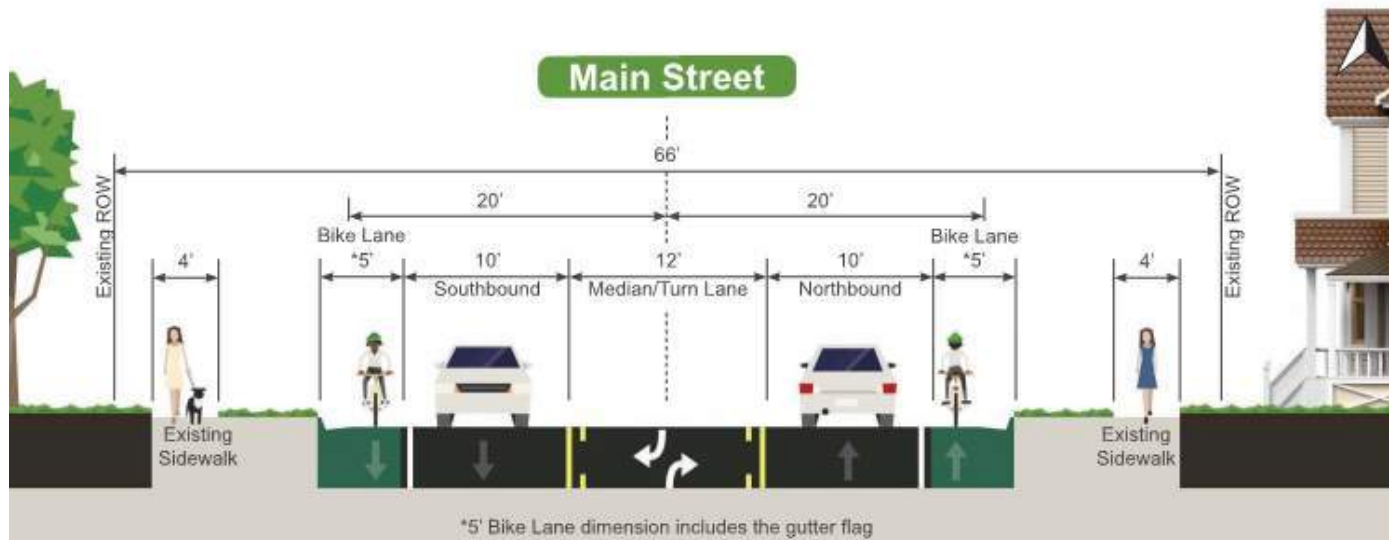
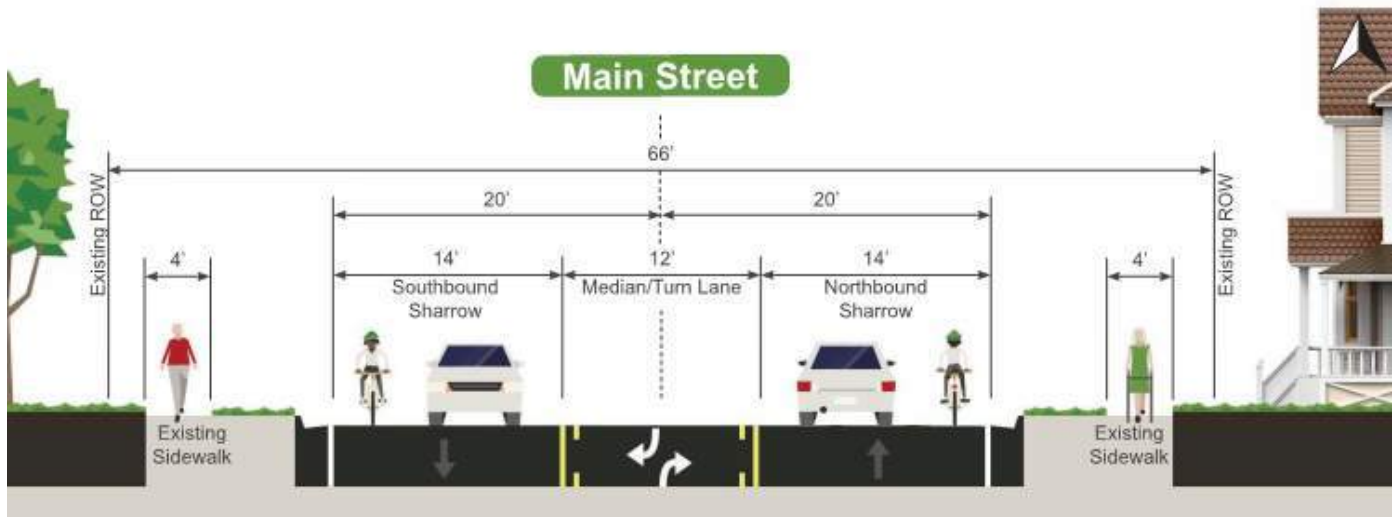


FIGURE 8 – 10/12/10 LANE CONFIGURATION



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FIGURE 9 – 14/12/14 LANE CONFIGURATION



The two-way left turn lane also allows for pedestrian refuge islands in certain locations. In areas where a left turn is not allowed, or not possible, a painted pedestrian island would be provided in the Main Street turn lane to allow for easier and safer pedestrian crossing. The likely locations for these islands are at the south leg of Grant Street and on the south leg of Sherman Street.

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Because each of these potential cross sections has the same number of vehicle lanes, the projected traffic operations are the same. Traffic signal splits were re-optimized to reflect the new lane configurations and new protected left turn phases. The 2050 operations results are presented in **Table 6**.

TABLE 6 – 2050 3-LANE TRAFFIC OPERATIONS

Location / Critical Movements	3-Lane Conditions 2050					
	AM Peak Hour			PM Peak Hour		
	Delay (s)	LOS	Queue (ft)	Delay (s)	LOS	Queue (ft)
Main St and Sherman St						
WB Approach	15.8	C	25	12.4	B	11
Main St and Grant St						
WB Approach	207.0	F	154	88.1	F	97
NB Approach	75.5	E	609	16.9	B	249
SB Approach	23.6	C	250	26.0	C	500
OVERALL	68.0	E		24.2	C	
Main St and Lincoln St						
EB Approach	18.1	C	26	17.1	C	11
WB Approach	19.3	C	16	15.8	C	7
Main St and Chicago Ave						
EB Approach	23.8	C	43	15.6	C	13
WB Approach	24.0	C	48	15.5	C	13
Main St and Prairie Ave						
EB Approach	31.4	C	166	32.7	C	164
WB Approach	32.8	C	152	40.7	D	217
NB Approach	26.9	C	253	13.1	B	263
SB Approach	11.2	B	115	5.4	A	49
OVERALL	24.4	C		17.5	B	
Main St and Franklin St						
EB Approach	37.4	D	104	44.5	D	145
WB Approach	18.9	B	48	21.1	C	30
NB Approach	8.8	A	193	7.7	A	191
SB Approach	2.3	A	43	2.0	A	46
OVERALL	11.0	B		11.3	B	

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With the 3-lane cross section, delays at Grant Street are predicted to increase with the reduction of through lanes. Delays may be acceptable at this intersection due to the adjacent entrance to Downers Grove North High School, and the ability of such delays to signify the corridor featuring heavy pedestrian usage. The Grant Street approach is expected to operate at LOS F during both peak hours, while the northbound approach of Main Street is predicted at LOS E during the AM peak hour, with queues projected to stretch into Lincoln Street (approximately 580' away). Overall delays at the Prairie Avenue and Franklin Street signalized intersections are expected to increase by no more than 2 seconds over the no build analysis. Southbound Main Street delays are expected to decrease at Franklin Street in the PM peak after re-optimizing timings and offsets to improve coordination.

At stop-controlled intersections, most side street delays are predicted to decrease. Though this may seem counterintuitive, this is likely because a vehicle turning onto or crossing a 3-lane street requires a shorter gap than a vehicle turning onto a 4-lane street.

95th percentile queues are not expected to impact neighboring intersections, except for the previously noted northbound approach at Grant Street during the morning peak.

Arterial travel times, shown in **Table 7**, are predicted to increase with the reduction in lanes. Northbound travel times between Franklin Street and Sherman Street in the 3-lane condition are expected to be about 39 seconds longer than the no build condition during the AM peak hour, and 9 seconds longer in the PM peak. This results in a decrease in average speed of 1-3mph. Southbound arterial travel times are projected to decrease by approximately 7-9 seconds after the timing re-optimization.

TABLE 7 – 3-LANE ARTERIAL TRAVEL TIMES

<i>Main St Direction</i>	<i>3-Lane Geometry</i>			
	<i>AM Peak Hour</i>		<i>PM Peak Hour</i>	
	<i>Travel Time (sec.)</i>	<i>Arterial Speed (mph)</i>	<i>Travel Time (sec.)</i>	<i>Arterial Speed (mph)</i>
3-Lane Condition 2050				
Northbound	210.6	15	161.3	18
Southbound	130.9	19	133.3	18

Leading Pedestrian Interval Alternative

At signals, pedestrian treatments can vary. At the Grant Street signal, pedestrians are given an exclusive interval where only pedestrians may enter the intersection and all vehicle indications are red. At the Prairie Avenue and Franklin Street signals, the beginning of the pedestrian “Walk” indication comes at the same time as a vehicle phase. With this concurrent phasing, vehicle/pedestrian conflicts occur between pedestrians and right-turning or left-turning traffic. One option that reduces the chance for conflict is leading pedestrian interval phasing. With a leading pedestrian interval, pedestrians are given a head start before the corresponding vehicle phase begins. Pedestrians will have 3-7 seconds of “Walk” time prior to vehicles. This allows pedestrians to establish themselves

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in the crosswalk and become more visible to drivers. According to a study by Goughnour, et al⁴, a leading pedestrian interval can reduce intersection crashes by 10%, and vehicle/pedestrian crashes by 19%.

Pedestrian traffic at Prairie Avenue and Franklin Street is high enough to see some potential benefits from a leading pedestrian interval. Peak hour volumes indicated that there is consistent pedestrian traffic at the intersections, with a high count of 54 pedestrians crossing the north leg at the Franklin Street intersection during the AM peak. The crash history indicated that each of these two intersections experienced two crashes involving pedestrians over the past five years. The Franklin Street signal phasing does not include protected left turn phases, which makes this intersection a good candidate for a leading pedestrian interval. The Prairie Street intersection currently has protected left turn phases for eastbound and westbound traffic, as well as a leading "protected" left turn phase in the dominant northbound or southbound direction, depending on the peak hour.

This scenario considers the implementation of a leading pedestrian interval at Franklin Street and no right turns on red at Prairie Avenue in the context of the existing geometry. Although geometry and phasing does not change outside of these two study intersections, some of the operations results are expected to change slightly due to differences in signal coordination and platooning behavior. The results of the analysis are shown in **Table 8** and **Table 9**.

The Franklin Street signal is predicted to operate with more overall delay than in the no build scenario, an increase of 9.6 seconds in the PM peak. A large delay increase is predicted for the eastbound approach of Franklin Street, which appears to be caused by a reduction in the HCM left turn factor, which significantly impacts the capacity calculation. The overall delays at Prairie Street are predicted to decrease, which could be a result of the signal re-optimization.

The travel time analysis indicates that travel speeds are generally expected remain within 1-2mph of the no build analysis. In the southbound direction, travel times may decrease by up to 14 seconds, while northbound travel times could increase up to 11 seconds in the PM peak.

⁴ Goughnour, E., D. Carter, C. Lyon, B. Persaud, B. Lan, P. Chun, I. Hamilton, and K. Signor. "Safety Evaluation of Protected Left-Turn Phasing and Leading Pedestrian Intervals on Pedestrian Safety." Report No. FHWA-HRT-18-044. Federal Highway Administration. (October 2018)

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TABLE 8 – 2050 LEADING PEDESTRIAN TRAFFIC OPERATIONS

Location / Critical Movements	Leading Pedestrian Conditions 2050					
	AM Peak Hour			PM Peak Hour		
	Delay (s)	LOS	Queue (ft)	Delay (s)	LOS	Queue (ft)
Main St and Sherman St						
WB Approach	9.4	A	11	9.3	B	7
Main St and Grant St						
WB Approach	52.6	D	97	53.1	D	70
NB Approach	17.3	B	163	11.8	B	87
SB Approach	20.5	C	125	19.2	B	217
OVERALL	21.1	C		17.1	B	
Main St and Lincoln St						
EB Approach	27.1	D	41	23.2	C	16
WB Approach	36.4	E	33	20.2	C	10
Main St and Chicago Ave						
EB Approach	51.9	F	89	22.3	C	20
WB Approach	59.2	F	106	21.3	C	21
Main St and Prairie Ave						
EB Approach	23.9	C	161	29.6	C	152
WB Approach	31.2	C	165	37.8	D	205
NB Approach	17.3	B	136	8.6	A	103
SB Approach	7.8	A	46	2.4	A	30
OVERALL	18.0	B		14.0	B	
Main St and Franklin St						
EB Approach	38.3	D	104	111.2	F	192
WB Approach	19.4	B	48	21.2	C	30
NB Approach	8.6	A	194	20.8	B	286
SB Approach	2.2	A	41	8.5	A	105
OVERALL	11.1	B		27.2	C	

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TABLE 9 – LEADING PEDESTRIAN ARTERIAL TRAVEL TIMES

Main St Direction	Leading Pedestrian with Existing Geometry			
	AM Peak Hour		PM Peak Hour	
	Travel Time (sec.)	Arterial Speed (mph)	Travel Time (sec.)	Arterial Speed (mph)
Leading Pedestrian Condition 2050				
Northbound	156.5	19	163.3	18
Southbound	126.0	19	136.1	18

3-Lane with Signal Adjustments Alternative

The final alternative for the north section of the study area combines elements the previous two alternatives. The 3-lane geometry was combined with some signal adjustments. At Franklin Street, the leading pedestrian alternative analysis indicated that sub-standard results could occur in the eastbound direction. To provide a more thorough analysis of the potential options for this intersection, this alternative considers the effects of a right turn on red prohibition instead of the leading pedestrian interval. Similarly, Prairie Avenue was analyzed with no turns on red.

At Grant Street, the 3-lane configuration presented delay and queueing challenges for the northbound approach during the AM peak hour. The proportion of green time available for the northbound movement was not enough to satisfy the capacity needs. To help alleviate this bottleneck, more green time could be allocated to the northbound and southbound movements by reducing the length of the pedestrian interval. The current pedestrian split is programmed as 33 seconds in both peak hours. The 33 seconds includes 7 seconds of Walk time and 26 seconds of pedestrian clearance time. The proposed geometry with reduced number of lanes and curb bump-outs at the intersection allows for a shorter crossing distance, and thus, a shorter pedestrian clearance time. The longest diagonal path across the intersection's vehicle travel lanes with the new 3-lane geometry is approximately 65'. However, after reviewing pedestrian patterns at the intersection, the longest diagonal is not a common crossing path. Most pedestrians are students crossing from the parking lot in the northeast corner to the main school entrance located in the middle of the west side of the intersection. That most common pedestrian path is 45'. Using the standard 3.5 feet per second walking speed, the new pedestrian clearance time required is 13 seconds, or 11 seconds if 4 feet per second is used. Although high school students are generally quicker who may walk at closer to 4 feet per second than 3.5, the 13-second clearance time would be more conservative, especially with the very high pedestrian volumes.

At school crossings, the recommended Walk interval is 10 seconds, rather than the currently programmed 7 seconds. By increasing the Walk interval, while reducing the clearance time to 13 seconds, the exclusive pedestrian interval can be reduced to a total pedestrian split of 23 seconds.

The traffic count video of existing pedestrian traffic patterns suggests that the shortened 23-second pedestrian interval would be long enough to accommodate the existing pedestrian platoons at the intersection. The full platoon of pedestrians waiting for the Walk signal appear to be able to cross within 23 seconds, with the possible exception of the first platoon after school dismissal. It is difficult to determine if some pedestrians may have to wait more than one signal cycle under the reduced interval after school lets out, because there is a steady stream of students leaving the building at that time of day. However, the majority of pedestrians cross within the 2-3 cycles after school is dismissed, so the peak pedestrian period is relatively short.

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The results of this analysis are shown in **Table 10** and **Table 11**.

TABLE 10 – 2050 3-LANE WITH SIGNAL ADJUSTMENTS TRAFFIC OPERATIONS

<i>Location / Critical Movements</i>	<i>3-Lane with Signal Adjustments Conditions 2050</i>					
	<i>AM Peak Hour</i>			<i>PM Peak Hour</i>		
	<i>Delay (s)</i>	<i>LOS</i>	<i>Queue (ft)</i>	<i>Delay (s)</i>	<i>LOS</i>	<i>Queue (ft)</i>
<i>Main St and Sherman St</i>						
WB Approach	15.6	C	25	12.7	B	12
<i>Main St and Grant St</i>						
WB Approach	85.2	F	128	59.1	E	72
NB Approach	29.0	C	361	11.3	B	153
SB Approach	17.0	B	211	17.9	B	423
OVERALL	29.2	C		16.4	B	
<i>Main St and Lincoln St</i>						
EB Approach	18.2	C	26	17.2	C	11
WB Approach	19.3	C	16	15.8	C	7
<i>Main St and Chicago Ave</i>						
EB Approach	24.4	C	44	15.8	C	13
WB Approach	24.5	C	49	15.5	C	13
<i>Main St and Prairie Ave</i>						
EB Approach	31.8	C	173	34.5	C	173
WB Approach	36.9	D	170	43.5	D	229
NB Approach	28.0	C	294	14.6	B	254
SB Approach	14.1	B	135	10.1	B	310
OVERALL	26.2	C		20.4	C	
<i>Main St and Franklin St</i>						
EB Approach	22.4	C	79	42.1	D	115
WB Approach	29.9	C	83	39.3	D	43
NB Approach	16.7	B	260	9.5	A	254
SB Approach	6.9	A	64	3.1	A	56
OVERALL	15.4	B		11.9	B	

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TABLE 11 – 3-LANE WITH SIGNAL ADJUSTMENTS ARTERIAL TRAVEL TIMES

<i>Main St Direction</i>	<i>3-Lane Geometry with Signal Adjustments</i>			
	<i>AM Peak Hour</i>		<i>PM Peak Hour</i>	
	<i>Travel Time (sec.)</i>	<i>Arterial Speed (mph)</i>	<i>Travel Time (sec.)</i>	<i>Arterial Speed (mph)</i>
3-Lane with Signal Adjustments Condition 2050				
Northbound	172.9	17	156.6	19
Southbound	127.8	19	127.7	19

The signal adjustments alternative is predicted to show several advantages over the 3-lane alternative without signal adjustments. At Grant Street, overall LOS is predicted at LOS C in the AM peak. The northbound approach is also at LOS C with queues predicted to well short of the 580' distance to Lincoln Street. The westbound approach of Grant Street is still predicted at LOS F, but with much lower delays. The overall delays at the Prairie Avenue and Franklin Street intersections are approximately 2-4 seconds longer than in the 3-lane alternative. Queues are predicted to be very similar, with increases of 2-3 vehicle lengths in most cases. Northbound travel times are predicted to be about 37 seconds faster during the AM peak. The northbound PM peak and southbound direction are analyzed approximately 3-5 seconds faster than the 3-lane analysis.

This alternative is expected to provide similar levels of service to the existing and no build scenarios. Minor street stop approaches are generally expected to improve, while signalized intersections are predicted to experience slightly increased delays. The reduction in lanes, curb bump-outs, pedestrian refuge islands, and bike lanes are all expected to improve pedestrian safety while minimally impacting the Main Street traffic operations. **Table 12** presents a comparison of this alternative with the existing and no build scenarios.

TABLE 12 – ALTERNATIVE OPERATIONS COMPARISON

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Location / Critical Movements	Alternative					
	2021 Existing		2050 No Build		2050 3-Lane with Signal Adjustments	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Main St and Sherman St						
WB Approach	9.3 A	9.4 A	9.4 A	9.3 A	15.6 C	12.7 B
Main St and Grant St						
NB Approach	25.4 C	22.1 C	26.2 C	21.7 C	29.0 C	11.3 B
SB Approach	20.9 C	17.3 B	21.7 C	19.4 B	17.0 B	17.9 B
Overall Intersection	25.3 C	20.6 C	26.2 C	21.7 C	29.2 C	16.4 B
Main St and Lincoln St						
Worst Minor Street Approach	29.3 D	20.9 C	36.4 E	23.1 C	19.3 C	17.2 C
Main St and Chicago Ave						
Worst Minor Street Approach	43.7 E	21.9 C	62.3 F	22.8 C	24.5 C	15.8 C
Main St and Prairie Ave						
NB Approach	20.5 C	9.4 A	22.6 C	13.4 B	28.0 C	14.6 B
SB Approach	12.8 B	19.5 B	15.6 B	8.4 A	14.1 B	10.1 B
Overall Intersection	20.6 C	21.0 C	22.4 C	18.5 B	26.2 C	20.4 C
Main St and Franklin St						
NB Approach	8.3 A	6.9 A	8.7 A	7.5 A	16.7 B	9.5 A
SB Approach	4.0 A	6.6 A	4.1 A	14.1 B	6.9 A	3.1 A
Overall Intersection	11.3 B	12.5 B	11.7 B	16.5 B	15.4 B	11.9 B
Arterial Travel Times						
NB Travel Time (s)	168.8	156.7	171.8	152.0	172.9	156.6
SB Travel Time (s)	134.5	140.5	139.7	140.4	127.8	127.7

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North Corridor Conclusion/Recommendation

A review of the Main Street corridor was completed to study the existing traffic and safety operations at the intersections, as well as several geometric alternatives to improve pedestrian safety.

Traffic data from October of 2021 was obtained along the study corridor and was compared to IDOT historical data. It was determined that the counts represent a reasonable estimate of pre-COVID traffic volumes, and no further adjustment was necessary. Traffic projections were then obtained from CMAP to estimate the 2050 turning movement counts.

To improve pedestrian safety along the corridor, several alternatives were considered. Between Sherman Street and Franklin Street, a 3-lane cross section was considered. This alternative would include a single travel lane in each direction on Main Street paired with a center two-way left turn lane. The 3-lane cross section would improve safety by reducing the crossing distance for pedestrians, providing dedicated left-turning space, and eliminating narrow travel lanes, among others. Bike accommodations could be provided on-street. The use of leading pedestrian intervals was also considered at the Prairie Avenue and Franklin Street signals. Pedestrians would get a "Walk" indication approximately 7 seconds before the corresponding vehicle phase, allowing them to establish their presence in the crosswalk before any vehicle traffic. Right turn on red prohibitions were also studied, as well as changes to the existing pedestrian interval.

After analysis, the following improvements are recommended:

- Change to a 3-lane cross section with bike lanes between Grant Street and Franklin Street.
- Install painted center pedestrian refuge islands at the south legs of Sherman Street and Grant Street.
- Install curb bump-outs for pedestrians at the Grant Street intersection, with the proposed bike lanes beginning south of the bump-outs.
- Reduce the exclusive pedestrian interval at Grant Street from 33 seconds to 23 seconds.
- Restrict right turns on red at Prairie Avenue and Franklin Street.

These improvements were determined to provide safety benefits at the study intersections, which could specifically help reduce angle, turning, and sideswipe crashes. The traffic operations analysis predicted that delays and queues would remain acceptable after implementation, and that travel times and speeds would not significantly deteriorate.

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Appendix A –Turning Movement Count Data

Main/Sherman - TMC

Thu Oct 14, 2021

Full Length (6 AM-9 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885149, Location: 41.807276, -88.010981



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Sherman Westbound					Main Northbound					Main Southbound					Int
	L	R	U	App	Ped*	T	R	U	App	Ped*	L	T	U	App	Ped*	
2021-10-14 6:00AM	0	2	0	2	0	39	1	0	40	0	2	15	0	17	0	59
6:15AM	0	0	0	0	0	42	1	0	43	0	0	15	0	15	0	58
6:30AM	0	4	0	4	0	69	2	0	71	0	2	37	0	39	1	114
6:45AM	0	17	0	17	0	82	0	0	82	0	13	53	0	66	0	165
Hourly Total	0	23	0	23	0	232	4	0	236	0	17	120	0	137	1	396
7:00AM	0	12	0	12	1	88	3	0	91	0	6	63	0	69	0	172
7:15AM	1	21	0	22	1	99	2	0	101	0	28	67	0	95	0	218
7:30AM	0	20	0	20	0	160	7	0	167	0	28	86	0	114	0	301
7:45AM	0	34	0	34	1	144	12	0	156	1	64	120	0	184	0	374
Hourly Total	1	87	0	88	3	491	24	0	515	1	126	336	0	462	0	1065
8:00AM	0	12	0	12	1	104	1	0	105	0	6	82	0	88	0	205
8:15AM	0	9	0	9	0	125	0	0	125	0	2	84	0	86	0	220
8:30AM	0	11	0	11	1	124	1	0	125	0	8	90	0	98	0	234
8:45AM	0	7	0	7	0	119	2	0	121	0	4	78	0	82	0	210
Hourly Total	0	39	0	39	2	472	4	0	476	0	20	334	0	354	0	869
2:00PM	0	12	0	12	0	104	0	0	104	0	5	123	0	128	0	244
2:15PM	1	15	0	16	0	138	0	0	138	0	4	116	0	120	0	274
2:30PM	0	14	0	14	0	123	1	0	124	0	7	110	0	117	0	255
2:45PM	0	8	0	8	1	97	2	0	99	0	4	128	0	132	0	239
Hourly Total	1	49	0	50	1	462	3	0	465	0	20	477	0	497	0	1012
3:00PM	0	14	0	14	0	100	4	0	104	0	14	126	0	140	0	258
3:15PM	11	39	0	50	14	114	3	0	117	0	9	138	0	147	1	314
3:30PM	0	52	0	52	2	151	4	0	155	0	5	146	0	151	0	358
3:45PM	1	20	0	21	2	95	0	0	95	0	6	152	0	158	0	274
Hourly Total	12	125	0	137	18	460	11	0	471	0	34	562	0	596	1	1204
4:00PM	0	29	0	29	1	139	1	0	140	0	4	153	0	157	0	326
4:15PM	0	25	0	25	0	125	1	0	126	0	10	159	0	169	0	320
4:30PM	1	22	0	23	0	134	1	0	135	0	10	136	0	146	0	304
4:45PM	0	19	0	19	0	139	1	0	140	0	8	162	0	170	0	329
Hourly Total	1	95	0	96	1	537	4	0	541	0	32	610	0	642	0	1279
5:00PM	0	20	0	20	0	149	0	0	149	0	4	166	0	170	0	339
5:15PM	1	16	0	17	1	121	1	0	122	0	6	145	0	151	0	290
5:30PM	0	8	0	8	1	132	7	0	139	1	5	185	0	190	0	337
5:45PM	0	6	0	6	0	107	1	0	108	0	7	151	0	158	1	272
Hourly Total	1	50	0	51	2	509	9	0	518	1	22	647	0	669	1	1238
Total	16	468	0	484	27	3163	59	0	3222	2	271	3086	0	3357	3	7063
% Approach	3.3%	96.7%	0%	-	-	98.2%	1.8%	0%	-	-	8.1%	91.9%	0%	-	-	-
% Total	0.2%	6.6%	0%	6.9%	-	44.8%	0.8%	0%	45.6%	-	3.8%	43.7%	0%	47.5%	-	-
Lights	16	464	0	480	-	3081	58	0	3139	-	270	3026	0	3296	-	6915
% Lights	100%	99.1%	0%	99.2%	-	97.4%	98.3%	0%	97.4%	-	99.6%	98.1%	0%	98.2%	-	97.9%
Articulated Trucks	0	0	0	0	-	7	0	0	7	-	0	5	0	5	-	12
% Articulated Trucks	0%	0%	0%	0%	-	0.2%	0%	0%	0.2%	-	0%	0.2%	0%	0.1%	-	0.2%
Buses and Single-Unit Trucks	0	3	0	3	-	74	1	0	75	-	0	55	0	55	-	133
% Buses and Single-Unit Trucks	0%	0.6%	0%	0.6%	-	2.3%	1.7%	0%	2.3%	-	0%	1.8%	0%	1.6%	-	1.9%
Bicycles on Road	0	1	0	1	-	1	0	0	1	-	1	0	0	1	-	3
% Bicycles on Road	0%	0.2%	0%	0.2%	-	0%	0%	0%	0%	-	0.4%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	21	-	-	-	-	2	-	-	-	-	3	-
% Pedestrians	-	-	-	-	77.8%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	6	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	22.2%	-	-	-	-	0%	-	-	-	-	0%	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Sherman - TMC

Thu Oct 14, 2021

Full Length (6 AM-9 AM, 2 PM-6 PM)

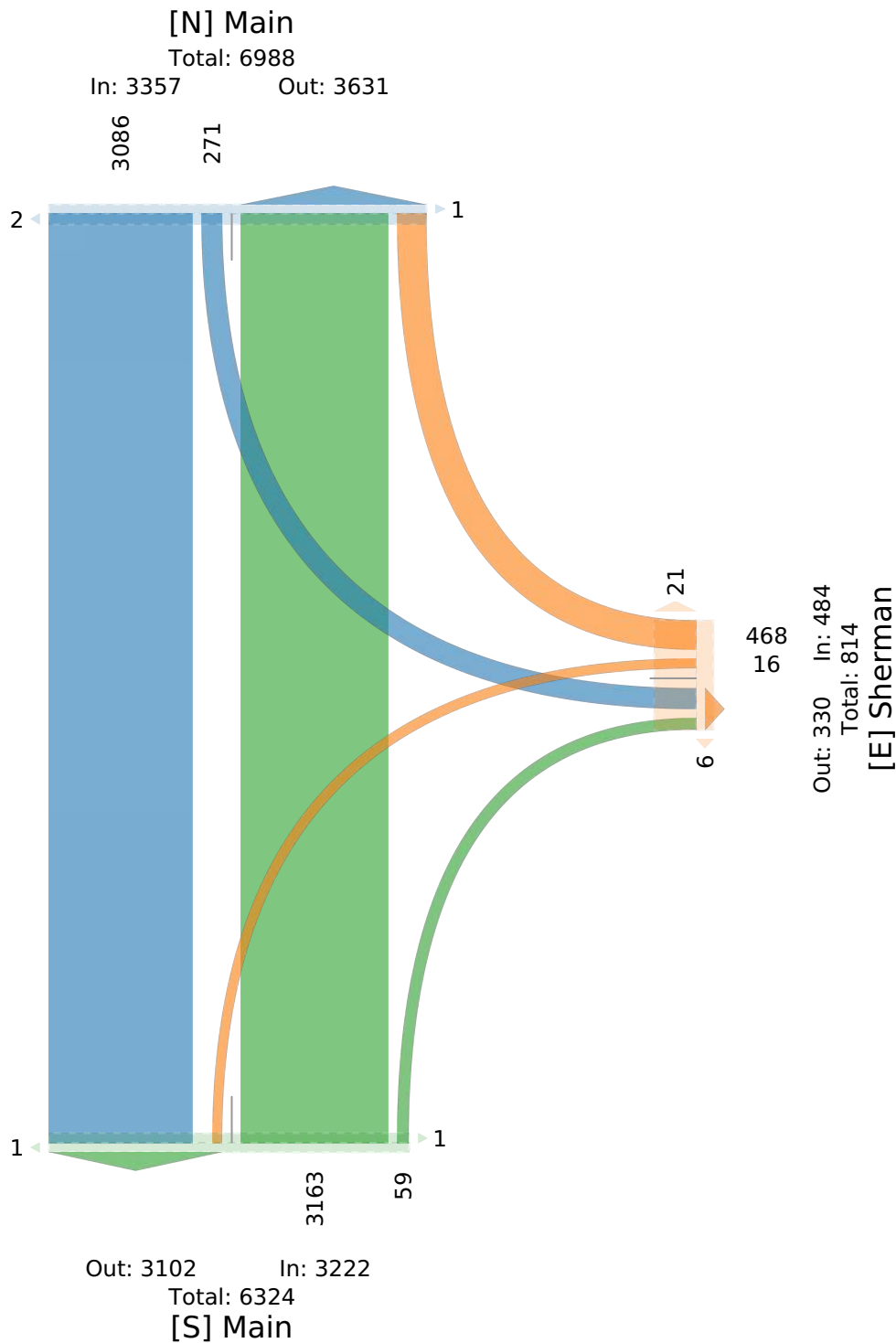
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885149, Location: 41.807276, -88.010981



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Main/Sherman - TMC

Thu Oct 14, 2021

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885149, Location: 41.807276, -88.010981



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Sherman Westbound					Main Northbound					Main Southbound					Int
	L	R	U	App	Ped*	T	R	U	App	Ped*	L	T	U	App	Ped*	
Time																
2021-10-14 7:30AM	0	20	0	20	0	160	7	0	167	0	28	86	0	114	0	301
7:45AM	0	34	0	34	1	144	12	0	156	1	64	120	0	184	0	374
8:00AM	0	12	0	12	1	104	1	0	105	0	6	82	0	88	0	205
8:15AM	0	9	0	9	0	125	0	0	125	0	2	84	0	86	0	220
Total	0	75	0	75	2	533	20	0	553	1	100	372	0	472	0	1100
% Approach	0%	100%	0%	-	-	96.4%	3.6%	0%	-	-	21.2%	78.8%	0%	-	-	-
% Total	0%	6.8%	0%	6.8%	-	48.5%	1.8%	0%	50.3%	-	9.1%	33.8%	0%	42.9%	-	-
PHF	-	0.551	-	0.551	-	0.833	0.417	-	0.828	-	0.391	0.775	-	0.641	-	0.735
Lights	0	73	0	73	-	519	19	0	538	-	100	358	0	458	-	1069
% Lights	0%	97.3%	0%	97.3%	-	97.4%	95.0%	0%	97.3%	-	100%	96.2%	0%	97.0%	-	97.2%
Articulated Trucks	0	0	0	0	-	0	0	0	0	-	0	1	0	1	-	1
% Articulated Trucks	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0.3%	0%	0.2%	-	0.1%
Buses and Single-Unit Trucks	0	2	0	2	-	14	1	0	15	-	0	13	0	13	-	30
% Buses and Single-Unit Trucks	0%	2.7%	0%	2.7%	-	2.6%	5.0%	0%	2.7%	-	0%	3.5%	0%	2.8%	-	2.7%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	2	-	-	-	-	1	-	-	-	-	0	-
% Pedestrians	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Sherman - TMC

Thu Oct 14, 2021

AM Peak (7:30 AM - 8:30 AM)

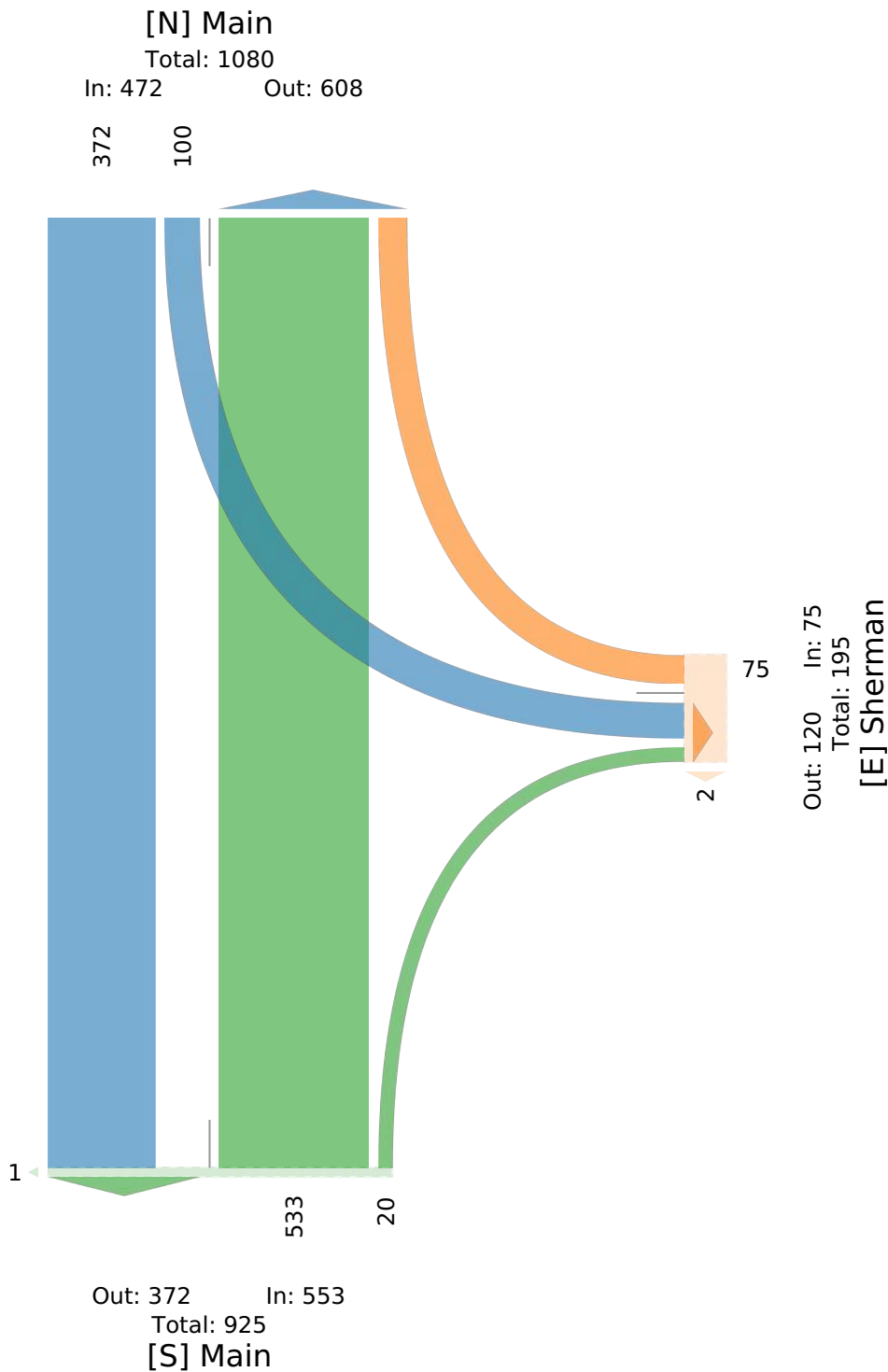
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885149, Location: 41.807276, -88.010981



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Main/Sherman - TMC

Thu Oct 14, 2021

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885149, Location: 41.807276, -88.010981



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Sherman Westbound					Main Northbound					Main Southbound					Int
	L	R	U	App	Ped*	T	R	U	App	Ped*	L	T	U	App	Ped*	
Time																
2021-10-14 4:45PM	0	19	0	19	0	139	1	0	140	0	8	162	0	170	0	329
5:00PM	0	20	0	20	0	149	0	0	149	0	4	166	0	170	0	339
5:15PM	1	16	0	17	1	121	1	0	122	0	6	145	0	151	0	290
5:30PM	0	8	0	8	1	132	7	0	139	1	5	185	0	190	0	337
Total	1	63	0	64	2	541	9	0	550	1	23	658	0	681	0	1295
% Approach	1.6%	98.4%	0%	-	-	98.4%	1.6%	0%	-	-	3.4%	96.6%	0%	-	-	-
% Total	0.1%	4.9%	0%	4.9%	-	41.8%	0.7%	0%	42.5%	-	1.8%	50.8%	0%	52.6%	-	-
PHF	0.250	0.788	-	0.800	-	0.908	0.321	-	0.923	-	0.719	0.889	-	0.896	-	0.955
Lights	1	63	0	64	-	534	9	0	543	-	23	651	0	674	-	1281
% Lights	100%	100%	0%	100%	-	98.7%	100%	0%	98.7%	-	100%	98.9%	0%	99.0%	-	98.9%
Articulated Trucks	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	0	0	0	0	-	7	0	0	7	-	0	7	0	7	-	14
% Buses and Single-Unit Trucks	0%	0%	0%	0%	-	1.3%	0%	0%	1.3%	-	0%	1.1%	0%	1.0%	-	1.1%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	1	-	-	-	-	1	-	-	-	-	0	-
% Pedestrians	-	-	-	-	50.0%	-	-	-	-	100%	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	50.0%	-	-	-	-	0%	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Sherman - TMC

Thu Oct 14, 2021

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

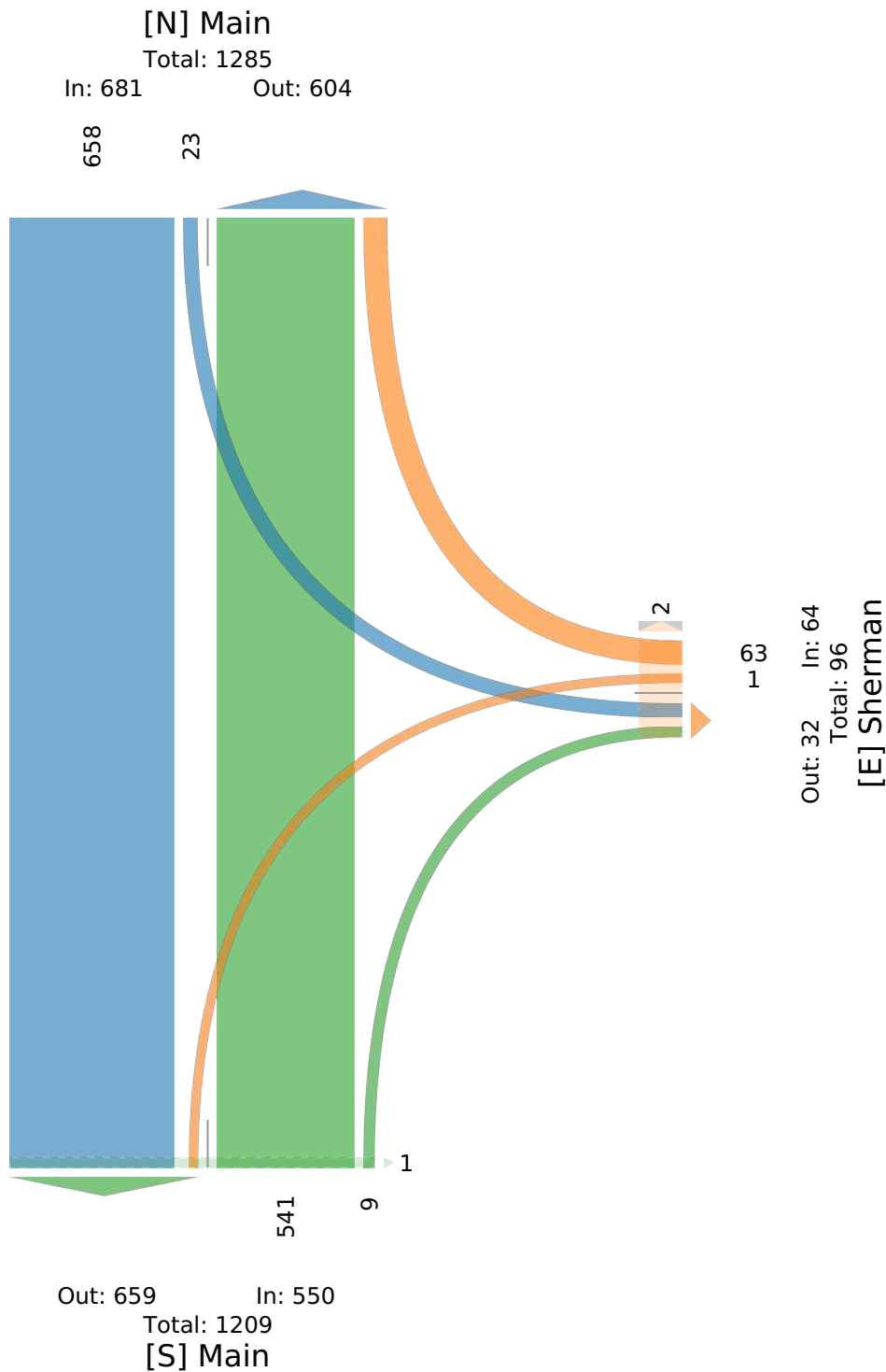
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885149, Location: 41.807276, -88.010981



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Main/Grant - TMC

Thu Oct 14, 2021

Full Length (6 AM-9 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885150, Location: 41.805445, -88.010906



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Grant Westbound					Main Northbound					Main Southbound					Int
	L	R	U	App	Ped*	T	R	U	App	Ped*	L	T	U	App	Ped*	
2021-10-14 6:00AM	5	0	0	5	0	40	2	0	42	0	1	13	0	14	20	61
6:15AM	1	0	0	1	0	43	1	0	44	0	0	15	0	15	5	60
6:30AM	0	0	0	0	1	71	6	0	77	0	1	32	0	33	8	110
6:45AM	7	1	0	8	1	84	15	0	99	2	2	55	0	57	87	164
Hourly Total	13	1	0	14	2	238	24	0	262	2	4	115	0	119	120	395
7:00AM	5	1	0	6	1	91	21	0	112	2	3	56	0	59	63	177
7:15AM	0	3	0	3	0	98	14	0	112	3	0	66	0	66	104	181
7:30AM	19	6	0	25	0	161	40	0	201	7	2	81	0	83	130	309
7:45AM	23	13	0	36	1	140	38	0	178	81	3	105	0	108	382	322
Hourly Total	47	23	0	70	2	490	113	0	603	93	8	308	0	316	679	989
8:00AM	6	1	0	7	1	102	5	0	107	5	0	82	0	82	29	196
8:15AM	5	2	0	7	0	125	3	0	128	0	0	83	0	83	11	218
8:30AM	1	1	0	2	1	120	4	0	124	1	1	83	0	84	10	210
8:45AM	5	0	0	5	0	120	8	0	128	0	2	76	0	78	36	211
Hourly Total	17	4	0	21	2	467	20	0	487	6	3	324	0	327	86	835
2:00PM	1	1	0	2	0	102	2	0	104	0	4	124	0	128	5	234
2:15PM	1	1	0	2	0	139	5	0	144	0	1	114	0	115	32	261
2:30PM	3	4	0	7	1	119	3	0	122	0	4	114	0	118	11	247
2:45PM	1	2	0	3	0	98	6	0	104	0	1	127	0	128	12	235
Hourly Total	6	8	0	14	1	458	16	0	474	0	10	479	0	489	60	977
3:00PM	2	2	0	4	0	108	2	0	110	0	5	123	0	128	10	242
3:15PM	11	11	0	22	9	99	11	0	110	76	3	132	0	135	330	267
3:30PM	13	12	0	25	0	141	4	0	145	5	9	139	0	148	77	318
3:45PM	7	1	0	8	2	93	9	0	102	3	1	124	0	125	51	235
Hourly Total	33	26	0	59	11	441	26	0	467	84	18	518	0	536	468	1062
4:00PM	9	9	0	18	0	127	7	0	134	2	7	159	0	166	72	318
4:15PM	7	3	0	10	0	120	8	0	128	2	5	149	0	154	42	292
4:30PM	8	5	0	13	1	132	8	0	140	9	9	131	0	140	73	293
4:45PM	9	5	0	14	4	133	19	0	152	0	6	154	0	160	64	326
Hourly Total	33	22	0	55	5	512	42	0	554	13	27	593	0	620	251	1229
5:00PM	10	4	0	14	0	144	8	0	152	2	5	141	0	146	46	312
5:15PM	5	4	0	9	2	119	6	0	125	5	4	158	0	162	23	296
5:30PM	3	3	0	6	0	135	3	0	138	8	6	166	0	172	14	316
5:45PM	8	13	0	21	0	95	6	0	101	0	5	142	0	147	45	269
Hourly Total	26	24	0	50	2	493	23	0	516	15	20	607	0	627	128	1193
Total	175	108	0	283	25	3099	264	0	3363	213	90	2944	0	3034	1792	6680
% Approach	61.8%	38.2%	0%	-	-	92.1%	7.9%	0%	-	-	3.0%	97.0%	0%	-	-	-
% Total	2.6%	1.6%	0%	4.2%	-	46.4%	4.0%	0%	50.3%	-	1.3%	44.1%	0%	45.4%	-	-
Lights	175	106	0	281	-	3015	262	0	3277	-	88	2885	0	2973	-	6531
% Lights	100%	98.1%	0%	99.3%	-	97.3%	99.2%	0%	97.4%	-	97.8%	98.0%	0%	98.0%	-	97.8%
Articulated Trucks	0	0	0	0	-	10	0	0	10	-	0	5	0	5	-	15
% Articulated Trucks	0%	0%	0%	0%	-	0.3%	0%	0%	0.3%	-	0%	0.2%	0%	0.2%	-	0.2%
Buses and Single-Unit Trucks	0	1	0	1	-	73	0	0	73	-	1	54	0	55	-	129
% Buses and Single-Unit Trucks	0%	0.9%	0%	0.4%	-	2.4%	0%	0%	2.2%	-	1.1%	1.8%	0%	1.8%	-	1.9%
Bicycles on Road	0	1	0	1	-	1	2	0	3	-	1	0	0	1	-	5
% Bicycles on Road	0%	0.9%	0%	0.4%	-	0%	0.8%	0%	0.1%	-	1.1%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	23	-	-	-	-	212	-	-	-	-	1772	-
% Pedestrians	-	-	-	-	92.0%	-	-	-	-	99.5%	-	-	-	-	98.9%	-
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	1	-	-	-	-	20	-
% Bicycles on Crosswalk	-	-	-	-	8.0%	-	-	-	-	0.5%	-	-	-	-	1.1%	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Grant - TMC

Thu Oct 14, 2021

Full Length (6 AM-9 AM, 2 PM-6 PM)

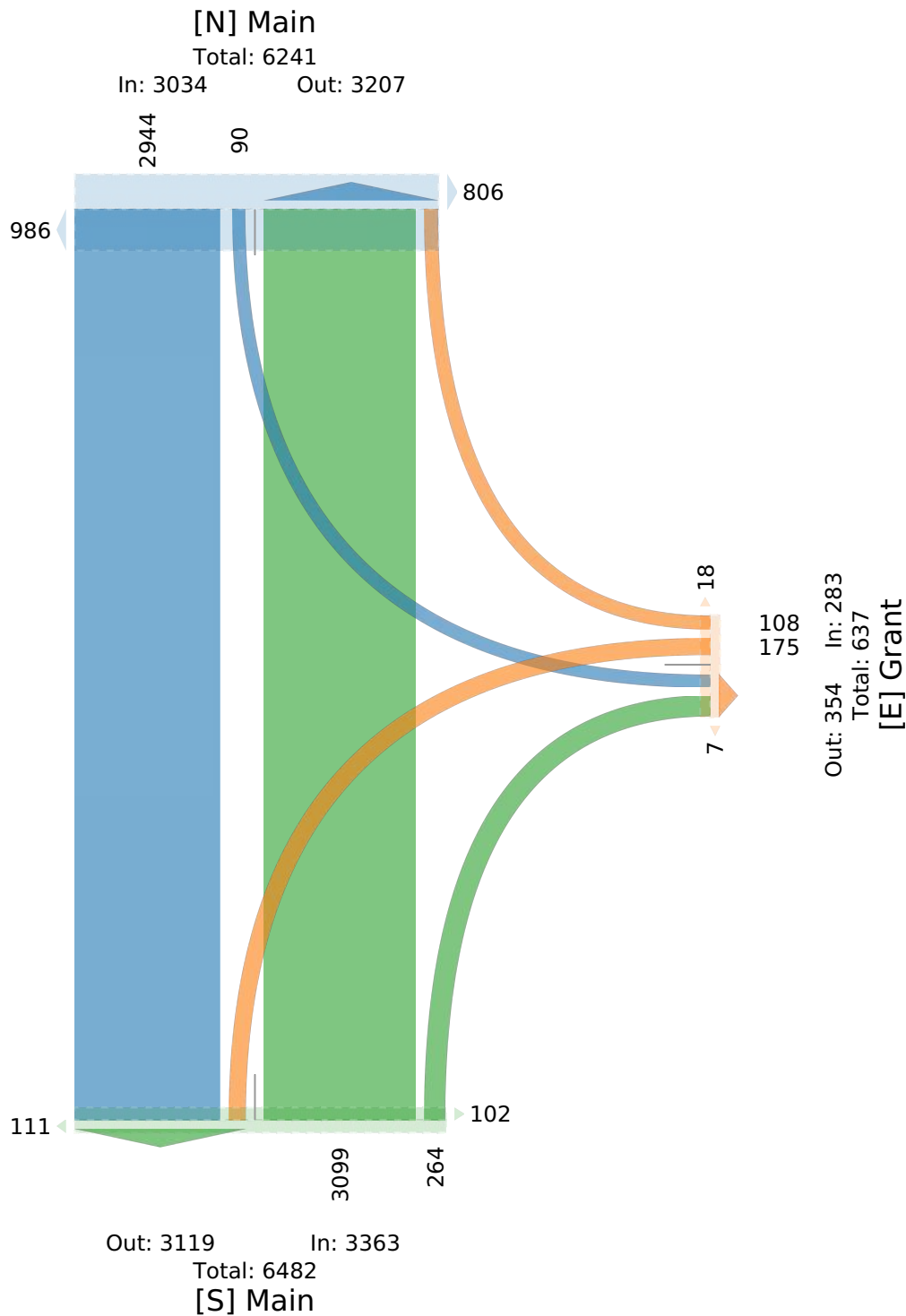
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885150, Location: 41.805445, -88.010906



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Main/Grant - TMC

Thu Oct 14, 2021

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885150, Location: 41.805445, -88.010906



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Grant Westbound					Main Northbound					Main Southbound					Int
	L	R	U	App	Ped*	T	R	U	App	Ped*	L	T	U	App	Ped*	
Time																
2021-10-14 7:30AM	19	6	0	25	0	161	40	0	201	7	2	81	0	83	130	309
7:45AM	23	13	0	36	1	140	38	0	178	81	3	105	0	108	382	322
8:00AM	6	1	0	7	1	102	5	0	107	5	0	82	0	82	29	196
8:15AM	5	2	0	7	0	125	3	0	128	0	0	83	0	83	11	218
Total	53	22	0	75	2	528	86	0	614	93	5	351	0	356	552	1045
% Approach	70.7%	29.3%	0%	-	-	86.0%	14.0%	0%	-	-	1.4%	98.6%	0%	-	-	-
% Total	5.1%	2.1%	0%	7.2%	-	50.5%	8.2%	0%	58.8%	-	0.5%	33.6%	0%	34.1%	-	-
PHF	0.576	0.423	-	0.521	-	0.820	0.531	-	0.762	-	0.417	0.836	-	0.824	-	0.813
Lights	53	22	0	75	-	512	85	0	597	-	5	337	0	342	-	1014
% Lights	100%	100%	0%	100%	-	97.0%	98.8%	0%	97.2%	-	100%	96.0%	0%	96.1%	-	97.0%
Articulated Trucks	0	0	0	0	-	2	0	0	2	-	0	1	0	1	-	3
% Articulated Trucks	0%	0%	0%	0%	-	0.4%	0%	0%	0.3%	-	0%	0.3%	0%	0.3%	-	0.3%
Buses and Single-Unit Trucks	0	0	0	0	-	14	0	0	14	-	0	13	0	13	-	27
% Buses and Single-Unit Trucks	0%	0%	0%	0%	-	2.7%	0%	0%	2.3%	-	0%	3.7%	0%	3.7%	-	2.6%
Bicycles on Road	0	0	0	0	-	0	1	0	1	-	0	0	0	0	-	1
% Bicycles on Road	0%	0%	0%	0%	-	0%	1.2%	0%	0.2%	-	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	1	-	-	-	-	93	-	-	-	-	545	-
% Pedestrians	-	-	-	-	50.0%	-	-	-	-	100%	-	-	-	-	98.7%	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	0	-	-	-	-	7	-
% Bicycles on Crosswalk	-	-	-	-	50.0%	-	-	-	-	0%	-	-	-	-	1.3%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Grant - TMC

Thu Oct 14, 2021

AM Peak (7:30 AM - 8:30 AM)

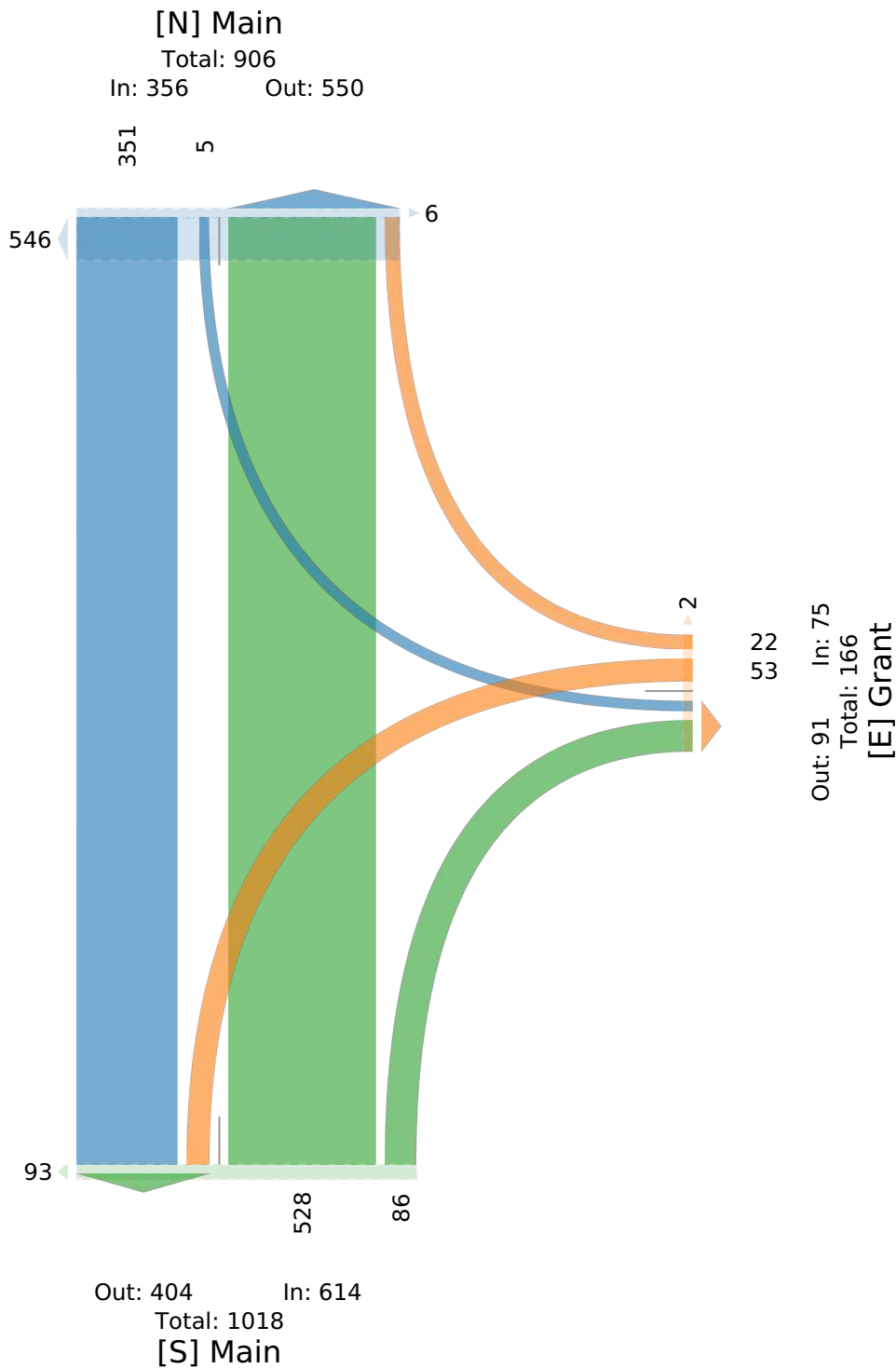
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885150, Location: 41.805445, -88.010906



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Main/Grant - TMC

Thu Oct 14, 2021

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885150, Location: 41.805445, -88.010906



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Grant Westbound					Main Northbound					Main Southbound					Int
	L	R	U	App	Ped*	T	R	U	App	Ped*	L	T	U	App	Ped*	
Time																
2021-10-14 4:45PM	9	5	0	14	4	133	19	0	152	0	6	154	0	160	64	326
5:00PM	10	4	0	14	0	144	8	0	152	2	5	141	0	146	46	312
5:15PM	5	4	0	9	2	119	6	0	125	5	4	158	0	162	23	296
5:30PM	3	3	0	6	0	135	3	0	138	8	6	166	0	172	14	316
Total	27	16	0	43	6	531	36	0	567	15	21	619	0	640	147	1250
% Approach	62.8%	37.2%	0%	-	-	93.7%	6.3%	0%	-	-	3.3%	96.7%	0%	-	-	-
% Total	2.2%	1.3%	0%	3.4%	-	42.5%	2.9%	0%	45.4%	-	1.7%	49.5%	0%	51.2%	-	-
PHF	0.675	0.750	-	0.750	-	0.922	0.461	-	0.931	-	0.875	0.932	-	0.930	-	0.957
Lights	27	15	0	42	-	523	35	0	558	-	21	613	0	634	-	1234
% Lights	100%	93.8%	0%	97.7%	-	98.5%	97.2%	0%	98.4%	-	100%	99.0%	0%	99.1%	-	98.7%
Articulated Trucks	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	0	0	0	0	-	8	0	0	8	-	0	6	0	6	-	14
% Buses and Single-Unit Trucks	0%	0%	0%	0%	-	1.5%	0%	0%	1.4%	-	0%	1.0%	0%	0.9%	-	1.1%
Bicycles on Road	0	1	0	1	-	0	1	0	1	-	0	0	0	0	-	2
% Bicycles on Road	0%	6.3%	0%	2.3%	-	0%	2.8%	0%	0.2%	-	0%	0%	0%	0%	-	0.2%
Pedestrians	-	-	-	-	6	-	-	-	-	14	-	-	-	-	146	-
% Pedestrians	-	-	-	-	100%	-	-	-	-	93.3%	-	-	-	-	99.3%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	1	-	-	-	-	1	-
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	6.7%	-	-	-	-	0.7%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Grant - TMC

Thu Oct 14, 2021

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

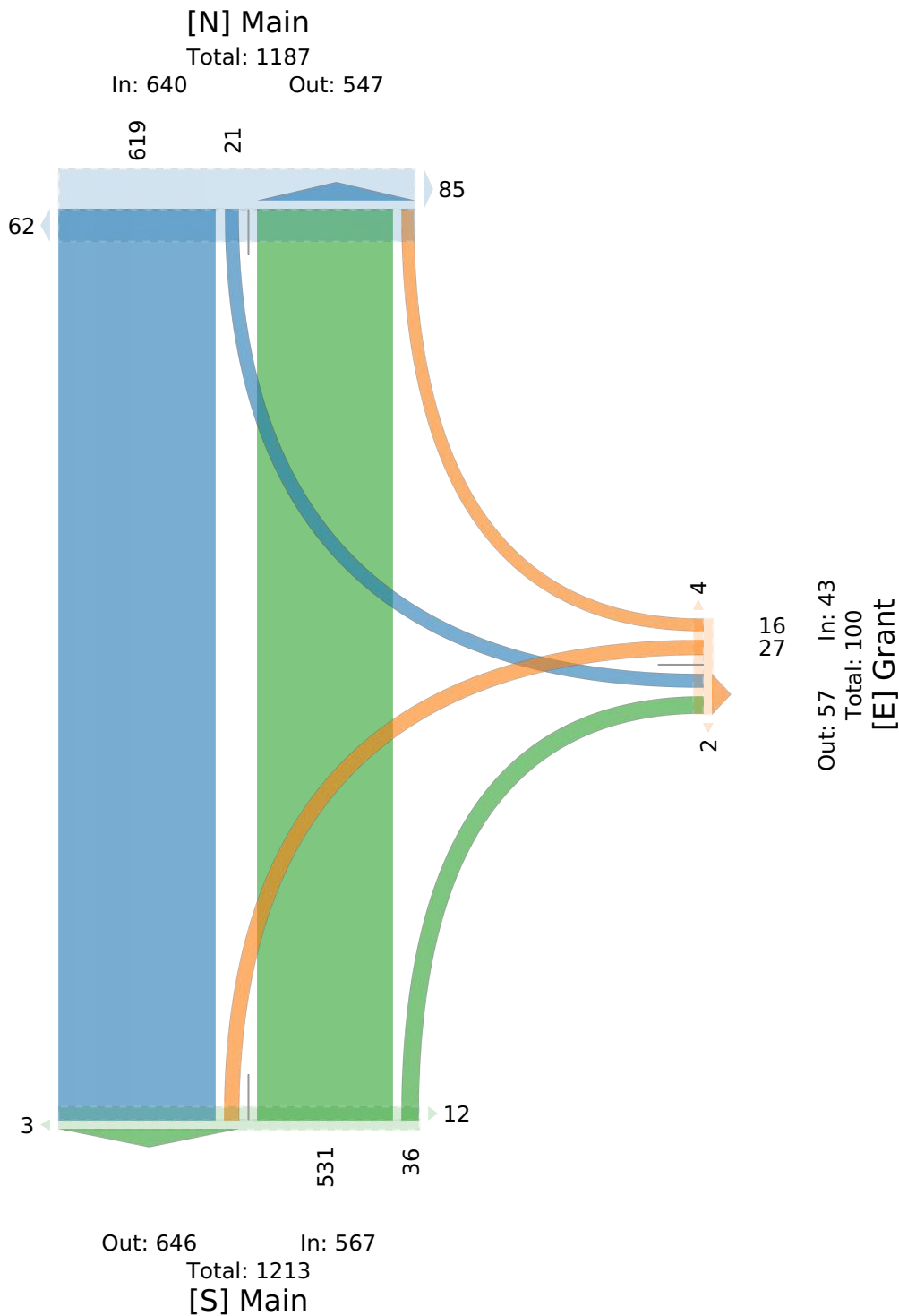
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885150, Location: 41.805445, -88.010906



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Main/Lincoln - TMC

Thu Oct 14, 2021

Full Length (6 AM-9 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885151, Location: 41.803701, -88.010853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Lincoln Eastbound						Lincoln Westbound						Main Northbound						Main Southbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2021-10-14 6:00AM	0	2	1	0	3	4	0	0	1	0	1	0	1	40	0	0	41	0	0	22	1	0	23	0	68
6:15AM	0	0	1	0	1	0	0	0	0	0	0	0	1	46	0	0	47	0	0	15	1	0	16	0	64
6:30AM	0	0	4	0	4	0	0	0	3	0	3	1	2	72	1	0	75	1	0	28	2	0	30	0	112
6:45AM	0	2	4	0	6	2	2	1	3	0	6	1	3	99	2	0	104	0	0	57	4	0	61	1	177
Hourly Total	0	4	10	0	14	6	2	1	7	0	10	2	7	257	3	0	267	1	0	122	8	0	130	1	421
7:00AM	5	1	4	0	10	1	0	1	4	0	5	0	5	101	1	0	107	2	1	55	8	0	64	3	186
7:15AM	4	3	3	0	10	1	1	0	1	0	2	0	5	107	6	0	118	0	1	62	7	0	70	3	200
7:30AM	6	4	10	0	20	1	2	2	4	0	8	1	15	180	6	0	201	0	3	78	14	0	95	0	324
7:45AM	9	5	14	0	28	5	2	4	2	0	8	4	17	144	6	0	167	0	4	124	13	0	141	3	344
Hourly Total	24	13	31	0	68	8	5	7	11	0	23	5	42	532	19	0	593	2	9	319	42	0	370	9	1054
8:00AM	2	3	4	0	9	2	0	7	2	0	9	0	6	110	0	0	116	0	5	83	2	0	90	2	224
8:15AM	2	6	8	0	16	1	1	12	3	0	16	0	13	120	0	0	133	2	0	83	6	0	89	0	254
8:30AM	2	1	1	0	4	1	1	2	2	0	5	2	4	122	0	0	126	0	1	84	2	0	87	0	222
8:45AM	3	1	1	0	5	0	0	2	2	0	4	0	1	132	2	1	136	0	1	81	0	0	82	0	227
Hourly Total	9	11	14	0	34	4	2	23	9	0	34	2	24	484	2	1	511	2	7	331	10	0	348	2	927
2:00PM	0	1	1	0	2	0	0	0	1	0	1	0	2	105	1	0	108	0	2	119	2	0	123	0	234
2:15PM	1	1	2	0	4	0	0	2	0	0	2	0	1	148	0	0	149	0	4	101	6	0	111	0	266
2:30PM	2	1	3	0	6	0	3	0	2	0	5	2	0	119	1	0	120	0	3	110	2	0	115	1	246
2:45PM	0	2	1	0	3	2	0	2	3	0	5	0	2	104	1	0	107	0	1	117	5	0	123	1	238
Hourly Total	3	5	7	0	15	2	3	4	6	0	13	2	5	476	3	0	484	0	10	447	15	0	472	2	984
3:00PM	2	2	3	0	7	1	1	7	0	0	8	0	6	103	2	0	111	0	4	119	5	0	128	0	254
3:15PM	7	9	10	0	26	13	1	7	7	0	15	2	9	93	4	0	106	1	4	136	10	0	150	3	297
3:30PM	7	5	3	0	15	4	0	9	4	0	13	0	5	131	3	0	139	0	2	156	8	0	166	2	333
3:45PM	1	2	0	0	3	0	1	2	5	0	8	6	2	101	0	0	103	1	1	134	8	0	143	1	257
Hourly Total	17	18	16	0	51	18	3	25	16	0	44	8	22	428	9	0	459	2	11	545	31	0	587	6	1141
4:00PM	0	1	3	0	4	17	0	1	5	0	6	0	1	131	1	0	133	0	5	170	6	1	182	0	325
4:15PM	2	4	5	0	11	3	3	2	3	0	8	0	3	122	1	0	126	1	0	152	8	0	160	3	305
4:30PM	3	2	3	0	8	10	2	0	4	0	6	8	6	137	5	0	148	0	4	132	7	0	143	0	305
4:45PM	2	5	4	0	11	4	0	4	3	0	7	2	8	143	1	1	153	0	3	150	13	0	166	0	337
Hourly Total	7	12	15	0	34	34	5	7	15	0	27	10	18	533	8	1	560	1	12	604	34	1	651	3	1272
5:00PM	5	2	3	0	10	2	0	2	4	0	6	2	1	147	1	0	149	2	2	136	8	0	146	1	311
5:15PM	2	1	5	0	8	0	1	1	2	0	4	0	1	116	1	0	118	0	3	152	4	0	159	0	289
5:30PM	2	5	3	0	10	0	1	4	3	0	8	1	3	133	2	0	138	0	4	155	6	0	165	1	321
5:45PM	0	3	6	0	9	1	0	6	1	0	7	1	8	116	2	0	126	0	1	150	6	0	157	1	299
Hourly Total	9	11	17	0	37	3	2	13	10	0	25	4	13	512	6	0	531	2	10	593	24	0	627	3	1220
Total	69	74	110	0	253	75	22	80	74	0	176	33	131	3222	50	2	3405	10	59	2961	164	1	3185	26	7019
% Approach	27.3%	29.2%	43.5%	0%	-	-	12.5%	45.5%	42.0%	0%	-	-	3.8%	94.6%	1.5%	0.1%	-	-	1.9%	93.0%	5.1%	0%	-	-	-
% Total	1.0%	1.1%	1.6%	0%	3.6%	-	0.3%	1.1%	1.1%	0%	2.5%	-	1.9%	45.9%	0.7%	0%	48.5%	-	0.8%	42.2%	2.3%	0%	45.4%	-	-
Lights	69	72	106	0	247	-	22	78	68	0	168	-	124	3150	47	2	3323	-	57	2906	157	1	3121	-	6859
% Lights	100%	97.3%	96.4%	0%	97.6%	-	100%	97.5%	91.9%	0%	95.5%	-	94.7%	97.8%	94.0%	100%	97.6%	-	96.6%	98.1%	95.7%	100%	98.0%	-	97.7%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	8	0	0	8	-	0	5	0	0	5	-	13
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0%	0.2%	0%	0%	0.2%	-	0.2%
Buses and Single-Unit Trucks	0	1	4	0	5	-	0	1	6	0	7	-	7	64	3	0	74	-	2	49	7	0	58	-	144
% Buses and Single-Unit Trucks	0%	1.4%	3.6%	0%	2.0%	-	0%	1.3%	8.1%	0%	4.0%	-	5.3%	2.0%	6.0%	0%	2.2%	-	3.4%	1.7%	4.3%	0%	1.8%	-	2.1%
Bicycles on Road	0	1	0	0	1	-	0	1	0	0	1	-	0	0	0	0	0	-	0	1	0	0	1	-	3
% Bicycles on Road	0%	1.4%	0%	0%	0.4%	-	0%	1.3%	0%	0%	0.6%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	70	-	-	-	-	-	29	-	-	-	-	-	10	-	-	-	-	-	25	
% Pedestrians	-	-	-	-	-	93.3%	-	-	-	-	-	87.9%	-	-	-	-	-	100%	-	-	-	-	-	96.2%	
Bicycles on Crosswalk	-	-	-	-	-	5	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	6.7%	-	-	-	-	-	12.1%	-	-	-	-	-	0%	-	-	-	-	-	3.8%	

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Lincoln - TMC

Thu Oct 14, 2021

Full Length (6 AM-9 AM, 2 PM-6 PM)

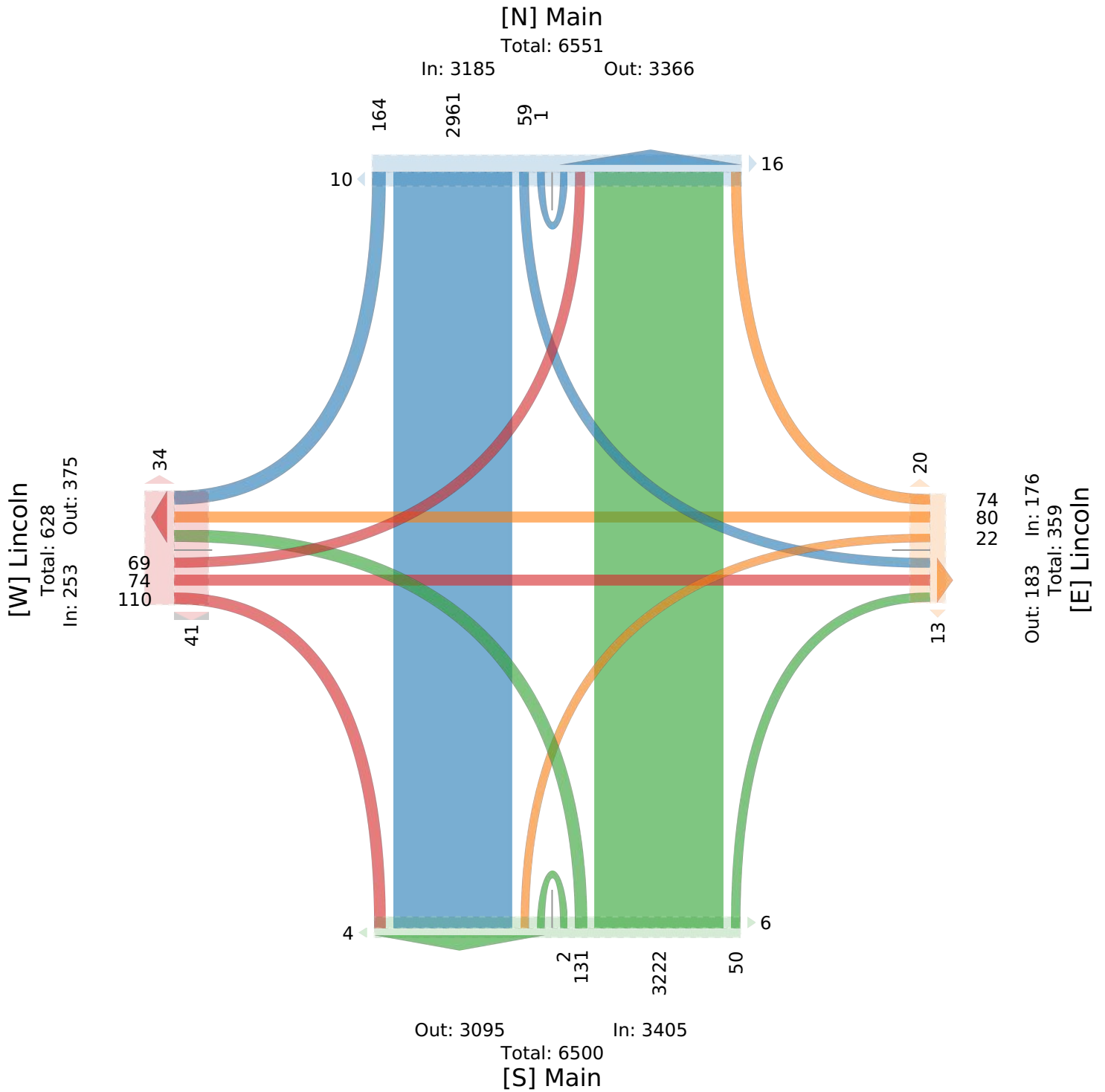
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885151, Location: 41.803701, -88.010853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Main/Lincoln - TMC

Thu Oct 14, 2021

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885151, Location: 41.803701, -88.010853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Lincoln Eastbound						Lincoln Westbound						Main Northbound						Main Southbound						Int
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2021-10-14 7:30AM	6	4	10	0	20	1	2	2	4	0	8	1	15	180	6	0	201	0	3	78	14	0	95	0	324
7:45AM	9	5	14	0	28	5	2	4	2	0	8	4	17	144	6	0	167	0	4	124	13	0	141	3	344
8:00AM	2	3	4	0	9	2	0	7	2	0	9	0	6	110	0	0	116	0	5	83	2	0	90	2	224
8:15AM	2	6	8	0	16	1	1	12	3	0	16	0	13	120	0	0	133	2	0	83	6	0	89	0	254
Total	19	18	36	0	73	9	5	25	11	0	41	5	51	554	12	0	617	2	12	368	35	0	415	5	1146
% Approach	26.0%	24.7%	49.3%	0%	-	-	12.2%	61.0%	26.8%	0%	-	-	8.3%	89.8%	1.9%	0%	-	-	2.9%	88.7%	8.4%	0%	-	-	-
% Total	1.7%	1.6%	3.1%	0%	6.4%	-	0.4%	2.2%	1.0%	0%	3.6%	-	4.5%	48.3%	1.0%	0%	53.8%	-	1.0%	32.1%	3.1%	0%	36.2%	-	-
PHF	0.528	0.750	0.643	-	0.652	-	0.625	0.521	0.688	-	0.641	-	0.750	0.769	0.500	-	0.767	-	0.600	0.742	0.625	-	0.736	-	0.833
Lights	19	18	35	0	72	-	5	25	10	0	40	-	50	540	12	0	602	-	10	353	33	0	396	-	1110
% Lights	100%	100%	97.2%	0%	98.6%	-	100%	100%	90.9%	0%	97.6%	-	98.0%	97.5%	100%	0%	97.6%	-	83.3%	95.9%	94.3%	0%	95.4%	-	96.9%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	1	-	1
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.2%	-	0.1%
Buses and Single-Unit Trucks	0	0	1	0	1	-	0	0	1	0	1	-	1	14	0	0	15	-	2	14	2	0	18	-	35
% Buses and Single-Unit Trucks	0%	0%	2.8%	0%	1.4%	-	0%	0%	9.1%	0%	2.4%	-	2.0%	2.5%	0%	0%	2.4%	-	16.7%	3.8%	5.7%	0%	4.3%	-	3.1%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	8	-	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-	-	5	-
% Pedestrians	-	-	-	-	-	88.9%	-	-	-	-	-	80.0%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	11.1%	-	-	-	-	-	20.0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Lincoln - TMC

Thu Oct 14, 2021

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885151, Location: 41.803701, -88.010853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

Total: 999

In: 415

Out: 584

35

368

12

4

1

[W] Lincoln

Total: 184

In: 73 Out: 111

6
19
18
6

3

5

11
25

Out: 42 In: 41

Total: 83

[E] Lincoln

1

1

51

554

12

Out: 409

In: 617

Total: 1026

[S] Main

Main/Lincoln - TMC

Thu Oct 14, 2021

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885151, Location: 41.803701, -88.010853



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Lincoln Eastbound						Lincoln Westbound						Main Northbound						Main Southbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2021-10-14 4:00PM	0	1	3	0	4	17	0	1	5	0	6	0	1	131	1	0	133	0	5	170	6	1	182	0	325
4:15PM	2	4	5	0	11	3	3	2	3	0	8	0	3	122	1	0	126	1	0	152	8	0	160	3	305
4:30PM	3	2	3	0	8	10	2	0	4	0	6	8	6	137	5	0	148	0	4	132	7	0	143	0	305
4:45PM	2	5	4	0	11	4	0	4	3	0	7	2	8	143	1	1	153	0	3	150	13	0	166	0	337
Total	7	12	15	0	34	34	5	7	15	0	27	10	18	533	8	1	560	1	12	604	34	1	651	3	1272
% Approach	20.6%	35.3%	44.1%	0%	-	-	18.5%	25.9%	55.6%	0%	-	-	3.2%	95.2%	1.4%	0.2%	-	-	1.8%	92.8%	5.2%	0.2%	-	-	-
% Total	0.6%	0.9%	1.2%	0%	2.7%	-	0.4%	0.6%	1.2%	0%	2.1%	-	1.4%	41.9%	0.6%	0.1%	44.0%	-	0.9%	47.5%	2.7%	0.1%	51.2%	-	-
PHF	0.583	0.688	0.750	-	0.750	-	0.417	0.375	0.750	-	0.813	-	0.563	0.932	0.400	0.250	0.915	-	0.600	0.892	0.654	0.250	0.898	-	0.944
Lights	7	10	15	0	32	-	5	6	15	0	26	-	17	528	8	1	554	-	12	598	33	1	644	-	1256
% Lights	100%	83.3%	100%	0%	94.1%	-	100%	85.7%	100%	0%	96.3%	-	94.4%	99.1%	100%	100%	98.9%	-	100%	99.0%	97.1%	100%	98.9%	-	98.7%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	1	-	1
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0.1%
Buses and Single-Unit Trucks	0	1	0	0	1	-	0	0	0	0	0	-	1	5	0	0	6	-	0	4	1	0	5	-	12
% Buses and Single-Unit Trucks	0%	8.3%	0%	0%	2.9%	-	0%	0%	0%	0%	0%	-	5.6%	0.9%	0%	0%	1.1%	-	0%	0.7%	2.9%	0%	0.8%	-	0.9%
Bicycles on Road	0	1	0	0	1	-	0	1	0	0	1	-	0	0	0	0	0	-	0	1	0	0	1	-	3
% Bicycles on Road	0%	8.3%	0%	0%	2.9%	-	0%	14.3%	0%	0%	3.7%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0.2%
Pedestrians	-	-	-	-	-	33	-	-	-	-	-	10	-	-	-	-	-	1	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	97.1%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	2.9%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Lincoln - TMC

Thu Oct 14, 2021

PM Peak (4 PM - 5 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885151, Location: 41.803701, -88.010853



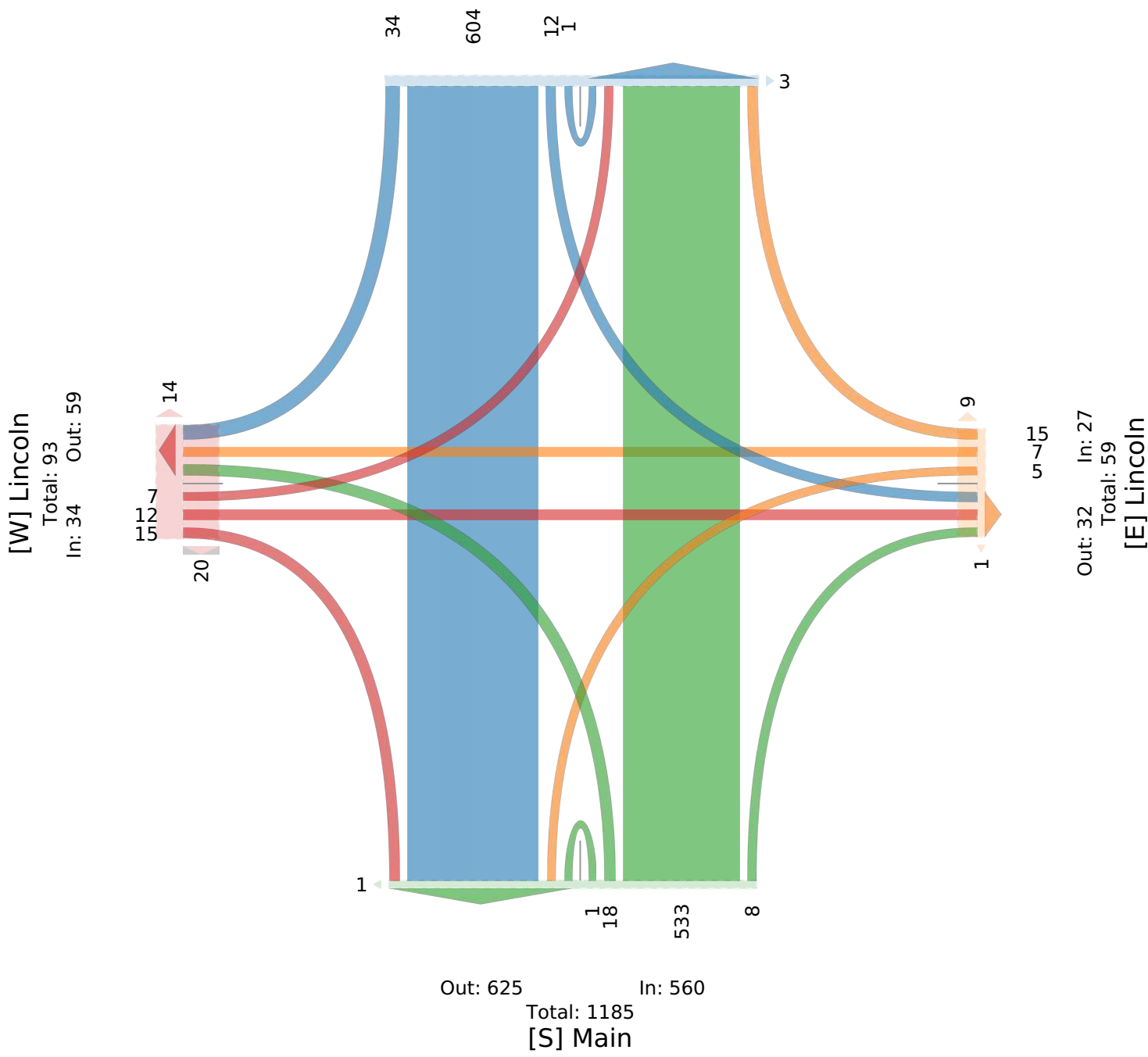
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

Total: 1207

In: 651

Out: 556



Main/Chicago - TMC

Thu Oct 14, 2021

Full Length (6 AM-9 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885152, Location: 41.801894, -88.010799



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Chicago Eastbound						Chicago Westbound						Main Northbound						Main Southbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2021-10-14 6:00AM	1	1	0	0	2	1	0	3	6	0	9	0	0	34	0	0	34	1	0	21	0	0	23	3	68
6:15AM	1	0	1	0	2	0	0	3	2	0	5	0	1	44	0	0	45	0	2	15	0	0	15	0	67
6:30AM	1	1	0	0	2	0	1	3	2	0	6	1	0	72	0	0	72	0	0	36	0	0	36	0	116
6:45AM	1	6	1	0	8	1	2	6	4	0	12	0	1	112	3	0	116	2	1	61	2	0	64	1	200
Hourly Total	4	8	2	0	14	2	3	15	14	0	32	1	2	262	3	0	267	3	3	133	2	0	138	4	451
7:00AM	4	10	2	0	16	2	1	6	5	0	12	0	3	97	4	0	104	0	4	53	2	0	59	1	191
7:15AM	1	12	5	0	18	2	1	9	9	0	19	0	3	109	13	0	125	2	4	61	0	0	65	0	227
7:30AM	4	7	11	0	22	1	3	19	11	0	33	1	4	197	6	0	207	0	9	84	3	0	96	1	358
7:45AM	3	18	13	0	34	3	2	13	15	0	30	1	4	162	8	0	174	2	10	128	6	0	144	0	382
Hourly Total	12	47	31	0	90	8	7	47	40	0	94	2	14	565	31	0	610	4	27	326	11	0	364	2	1158
8:00AM	2	3	5	0	10	5	1	14	4	0	19	0	5	110	3	0	118	2	10	76	4	1	91	3	238
8:15AM	1	14	7	0	22	2	0	8	7	0	15	0	9	118	8	0	135	0	2	80	2	0	84	2	256
8:30AM	2	6	7	0	15	0	1	1	4	0	6	1	6	121	4	0	131	2	4	75	5	0	84	2	236
8:45AM	2	5	2	0	9	1	1	2	11	0	14	1	3	121	2	0	126	3	2	77	1	0	80	2	229
Hourly Total	7	28	21	0	56	8	3	25	26	0	54	2	23	470	17	0	510	7	18	308	12	1	339	9	959
2:00PM	1	3	5	0	9	0	2	2	3	0	7	0	1	103	3	0	107	0	1	112	5	0	118	0	241
2:15PM	1	4	3	0	8	0	1	5	7	0	13	0	5	133	6	0	144	0	1	102	8	0	111	0	276
2:30PM	2	7	5	0	14	0	3	5	4	0	12	1	8	113	1	0	122	0	7	111	2	0	120	0	268
2:45PM	6	9	6	0	21	1	3	10	4	0	17	0	0	97	4	0	101	0	8	111	2	0	121	0	260
Hourly Total	10	23	19	0	52	1	9	22	18	0	49	1	14	446	14	0	474	0	17	436	17	0	470	0	1045
3:00PM	1	9	1	0	11	1	0	5	1	0	6	0	5	111	4	0	120	1	3	108	4	0	115	0	252
3:15PM	6	15	13	0	34	5	4	15	7	0	26	3	8	96	1	0	105	0	6	138	5	0	149	3	314
3:30PM	2	10	8	0	20	3	5	8	3	0	16	2	3	137	3	0	143	1	14	140	3	0	157	2	336
3:45PM	3	5	3	0	11	0	2	6	5	0	13	2	4	95	2	0	101	0	5	128	3	0	136	0	261
Hourly Total	12	39	25	0	76	9	11	34	16	0	61	7	20	439	10	0	469	2	28	514	15	0	557	5	1163
4:00PM	3	6	5	0	14	11	2	4	8	0	14	1	2	122	2	0	126	0	8	156	5	0	169	1	323
4:15PM	2	9	3	0	14	1	2	6	7	0	15	0	3	117	1	0	121	0	11	140	5	0	156	2	306
4:30PM	2	3	1	0	6	6	1	7	9	0	17	5	3	138	3	0	144	1	10	122	6	0	138	1	305
4:45PM	4	4	5	0	13	2	1	9	6	0	16	3	4	140	4	0	148	0	7	139	8	0	154	0	331
Hourly Total	11	22	14	0	47	20	6	26	30	0	62	9	12	517	10	0	539	1	36	557	24	0	617	4	1265
5:00PM	2	10	5	0	17	2	1	4	4	0	9	1	1	147	6	0	154	2	4	134	6	0	144	1	324
5:15PM	0	5	6	0	11	0	1	3	4	0	8	1	1	110	4	0	115	0	8	152	3	0	163	1	297
5:30PM	4	5	3	0	12	1	5	8	9	0	22	1	4	123	3	0	130	0	6	147	4	0	157	0	321
5:45PM	4	11	2	0	17	0	1	11	6	0	18	0	3	111	7	0	121	0	11	142	2	0	155	1	311
Hourly Total	10	31	16	0	57	3	8	26	23	0	57	3	9	491	20	0	520	2	29	575	15	0	619	3	1253
Total	66	198	128	0	392	51	47	195	167	0	409	25	94	3190	105	0	3389	19	158	2849	96	1	3104	27	7294
% Approach	16.8%	50.5%	32.7%	0%	-	-	11.5%	47.7%	40.8%	0%	-	-	2.8%	94.1%	3.1%	0%	-	-	5.1%	91.8%	3.1%	0%	-	-	-
% Total	0.9%	2.7%	1.8%	0%	5.4%	-	0.6%	2.7%	2.3%	0%	5.6%	-	1.3%	43.7%	1.4%	0%	46.5%	-	2.2%	39.1%	1.3%	0%	42.6%	-	-
Lights	65	191	118	0	374	-	47	188	164	0	399	-	84	3108	102	0	3294	-	154	2795	95	1	3045	-	7112
% Lights	98.5%	96.5%	92.2%	0%	95.4%	-	100%	96.4%	98.2%	0%	97.6%	-	89.4%	97.4%	97.1%	0%	97.2%	-	97.5%	98.1%	99.0%	100%	98.1%	-	97.5%
Articulated Trucks	0	0	1	0	1	-	0	0	0	0	0	-	0	8	0	0	8	-	0	4	0	0	4	-	13
% Articulated Trucks	0%	0%	0.8%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.2%	-	0%	0.1%	0%	0%	0.1%	-	0.2%
Buses and Single-Unit Trucks	1	5	9	0	15	-	0	4	3	0	7	-	10	74	3	0	87	-	4	50	1	0	55	-	164
% Buses and Single-Unit Trucks	1.5%	2.5%	7.0%	0%	3.8%	-	0%	2.1%	1.8%	0%	1.7%	-	10.6%	2.3%	2.9%	0%	2.6%	-	2.5%	1.8%	1.0%	0%	1.8%	-	2.2%
Bicycles on Road	0	2	0	0	2	-	0	3	0	0	3	-	0	0	0	0	0	-	0	0	0	0	0	-	5
% Bicycles on Road	0%	1.0%	0%	0%	0.5%	-	0%	1.5%	0%	0%	0.7%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	41	-	-	-	-	-	19	-	-	-	-	-	18	-	-	-	-	-	25	-
% Pedestrians	-	-	-	-	-	80.4%	-	-	-	-	-	76.0%	-	-	-	-	-	94.7%	-	-	-	-	-	92.6%	-
Bicycles on Crosswalk	-	-	-	-	-	10	-	-	-	-	-	6	-	-	-	-	-	1	-	-	-	-	-	2	-
% Bicycles on Crosswalk	-	-	-	-	-	19.6%	-	-	-	-	-	24.0%	-	-	-	-	-	5.3%	-	-	-	-	-	7.4%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Chicago - TMC

Thu Oct 14, 2021

Full Length (6 AM-9 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885152, Location: 41.801894, -88.010799



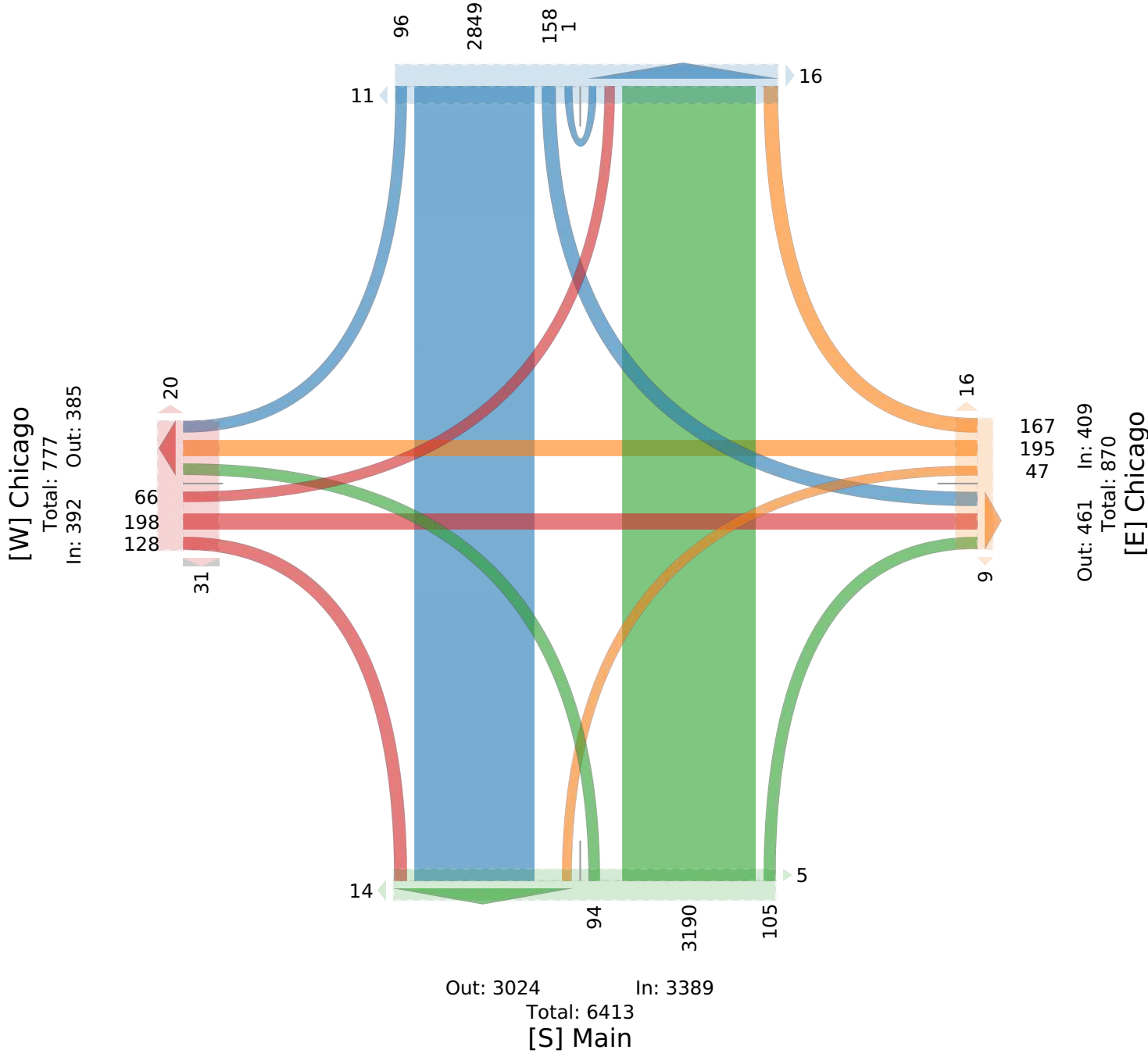
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

Total: 6528

In: 3104

Out: 3424



Main/Chicago - TMC

Thu Oct 14, 2021

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885152, Location: 41.801894, -88.010799



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Chicago Eastbound						Chicago Westbound						Main Northbound						Main Southbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2021-10-14 7:30AM	4	7	11	0	22	1	3	19	11	0	33	1	4	197	6	0	207	0	9	84	3	0	96	1	358
7:45AM	3	18	13	0	34	3	2	13	15	0	30	1	4	162	8	0	174	2	10	128	6	0	144	0	382
8:00AM	2	3	5	0	10	5	1	14	4	0	19	0	5	110	3	0	118	2	10	76	4	1	91	3	238
8:15AM	1	14	7	0	22	2	0	8	7	0	15	0	9	118	8	0	135	0	2	80	2	0	84	2	256
Total	10	42	36	0	88	11	6	54	37	0	97	2	22	587	25	0	634	4	31	368	15	1	415	6	1234
% Approach	11.4%	47.7%	40.9%	0%	-	-	6.2%	55.7%	38.1%	0%	-	-	3.5%	92.6%	3.9%	0%	-	-	7.5%	88.7%	3.6%	0.2%	-	-	-
% Total	0.8%	3.4%	2.9%	0%	7.1%	-	0.5%	4.4%	3.0%	0%	7.9%	-	1.8%	47.6%	2.0%	0%	51.4%	-	2.5%	29.8%	1.2%	0.1%	33.6%	-	-
PHF	0.625	0.583	0.692	-	0.647	-	0.500	0.697	0.617	-	0.727	-	0.611	0.745	0.781	-	0.766	-	0.775	0.719	0.625	0.250	0.720	-	0.807
Lights	10	41	34	0	85	-	6	51	35	0	92	-	19	573	25	0	617	-	29	355	15	1	400	-	1194
% Lights	100%	97.6%	94.4%	0%	96.6%	-	100%	94.4%	94.6%	0%	94.8%	-	86.4%	97.6%	100%	0%	97.3%	-	93.5%	96.5%	100%	100%	96.4%	-	96.8%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	1	-	1
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.2%	-	0.1%
Buses and Single-Unit Trucks	0	1	2	0	3	-	0	2	2	0	4	-	3	14	0	0	17	-	2	12	0	0	14	-	38
% Buses and Single-Unit Trucks	0%	2.4%	5.6%	0%	3.4%	-	0%	3.7%	5.4%	0%	4.1%	-	13.6%	2.4%	0%	0%	2.7%	-	6.5%	3.3%	0%	0%	3.4%	-	3.1%
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	1.9%	0%	0%	1.0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	7	-	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	5	
% Pedestrians	-	-	-	-	-	63.6%	-	-	-	-	-	50.0%	-	-	-	-	-	100%	-	-	-	-	-	83.3%	
Bicycles on Crosswalk	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	36.4%	-	-	-	-	-	50.0%	-	-	-	-	-	0%	-	-	-	-	-	16.7%	

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Chicago - TMC

Thu Oct 14, 2021

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885152, Location: 41.801894, -88.010799



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

Total: 1050

In: 415

Out: 635



[W] Chicago

Total: 179
In: 88 Out: 91



Out: 98 In: 97

Total: 195
[E] Chicago



Out: 410

In: 634

Total: 1044

[S] Main

Main/Chicago - TMC

Thu Oct 14, 2021

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885152, Location: 41.801894, -88.010799



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Chicago Eastbound							Chicago Westbound							Main Northbound							Main Southbound							Int
	L	T	R	U	App	Ped*		L	T	R	U	App	Ped*		L	T	R	U	App	Ped*		L	T	R	U	App	Ped*		
2021-10-14 4:45PM	4	4	5	0	13	2		1	9	6	0	16	3		4	140	4	0	148	0		7	139	8	0	154	0		331
5:00PM	2	10	5	0	17	2		1	4	4	0	9	1		1	147	6	0	154	2		4	134	6	0	144	1		324
5:15PM	0	5	6	0	11	0		1	3	4	0	8	1		1	110	4	0	115	0		8	152	3	0	163	1		297
5:30PM	4	5	3	0	12	1		5	8	9	0	22	1		4	123	3	0	130	0		6	147	4	0	157	0		321
Total	10	24	19	0	53	5		8	24	23	0	55	6		10	520	17	0	547	2		25	572	21	0	618	2		1273
% Approach	18.9%	45.3%	35.8%	0%	-	-		14.5%	43.6%	41.8%	0%	-	-		1.8%	95.1%	3.1%	0%	-	-		4.0%	92.6%	3.4%	0%	-	-		-
% Total	0.8%	1.9%	1.5%	0%	4.2%	-		0.6%	1.9%	1.8%	0%	4.3%	-		0.8%	40.8%	1.3%	0%	43.0%	-		2.0%	44.9%	1.6%	0%	48.5%	-		-
PHF	0.625	0.639	0.792	-	0.813	-		0.400	0.639	0.639	-	0.614	-		0.625	0.884	0.708	-	0.888	-		0.781	0.941	0.656	-	0.948	-		0.960
Lights	10	23	19	0	52	-		8	23	23	0	54	-		10	513	17	0	540	-		24	567	21	0	612	-		1258
% Lights	100%	95.8%	100%	0%	98.1%	-		100%	95.8%	100%	0%	98.2%	-		100%	98.7%	100%	0%	98.7%	-		96.0%	99.1%	100%	0%	99.0%	-		98.8%
Articulated Trucks	0	0	0	0	0	-		0	0	0	0	0	-		0	0	0	0	0	-		0	0	0	0	0	-		0
% Articulated Trucks	0%	0%	0%	0%	0%	-		0%	0%	0%	0%	0%	-		0%	0%	0%	0%	0%	-		0%	0%	0%	0%	0%	-		0%
Buses and Single-Unit Trucks	0	0	0	0	0	-		0	0	0	0	0	-		0	7	0	0	7	-		1	5	0	0	6	-		13
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	-		0%	0%	0%	0%	0%	-		0%	1.3%	0%	0%	1.3%	-		4.0%	0.9%	0%	0%	1.0%	-		1.0%
Bicycles on Road	0	1	0	0	1	-		0	1	0	0	1	-		0	0	0	0	0	-		0	0	0	0	0	-		2
% Bicycles on Road	0%	4.2%	0%	0%	1.9%	-		0%	4.2%	0%	0%	1.8%	-		0%	0%	0%	0%	0%	-		0%	0%	0%	0%	0%	-		0.2%
Pedestrians	-	-	-	-	-	4		-	-	-	-	-	6		-	-	-	-	-	1		-	-	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	80.0%		-	-	-	-	-	100%		-	-	-	-	-	50.0%		-	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	1		-	-	-	-	-	0		-	-	-	-	-	1		-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	20.0%		-	-	-	-	-	0%		-	-	-	-	-	50.0%		-	-	-	-	-	-	0%	

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Chicago - TMC

Thu Oct 14, 2021

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885152, Location: 41.801894, -88.010799



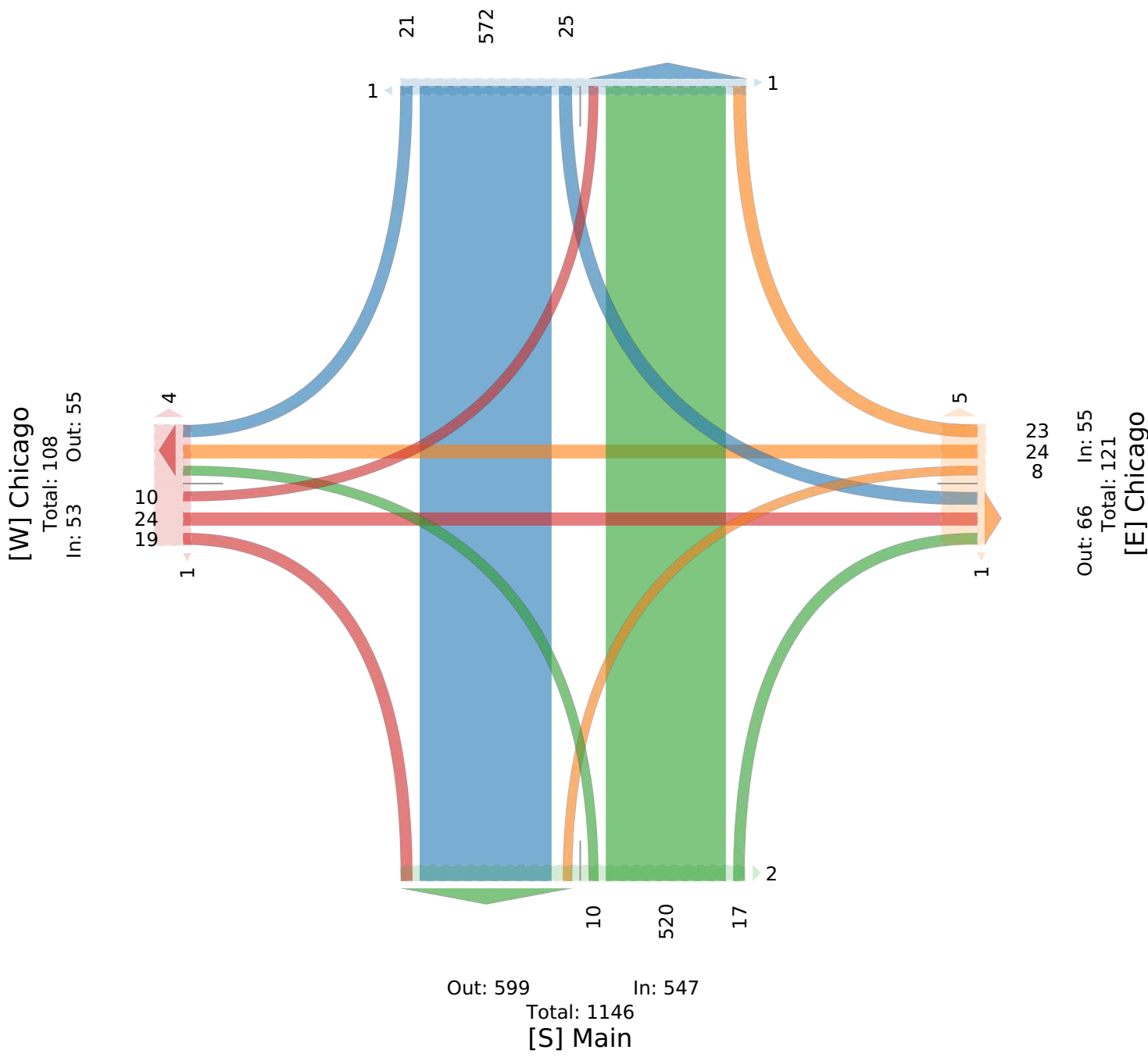
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

Total: 1171

In: 618

Out: 553



Main/Prairie - TMC

Thu Oct 14, 2021

Full Length (6 AM-9 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885153, Location: 41.80011, -88.010713



Provided by: Gewalt Hamilton Associates Inc. 625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Table with columns: Leg Direction, Time, Prairie Eastbound, Prairie Westbound, Main Northbound, Main Southbound, Int. Rows include hourly and total counts for various categories like Lights, Trucks, Buses, Bicycles, and Pedestrians.

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Prairie - TMC

Thu Oct 14, 2021

Full Length (6 AM-9 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885153, Location: 41.80011, -88.010713



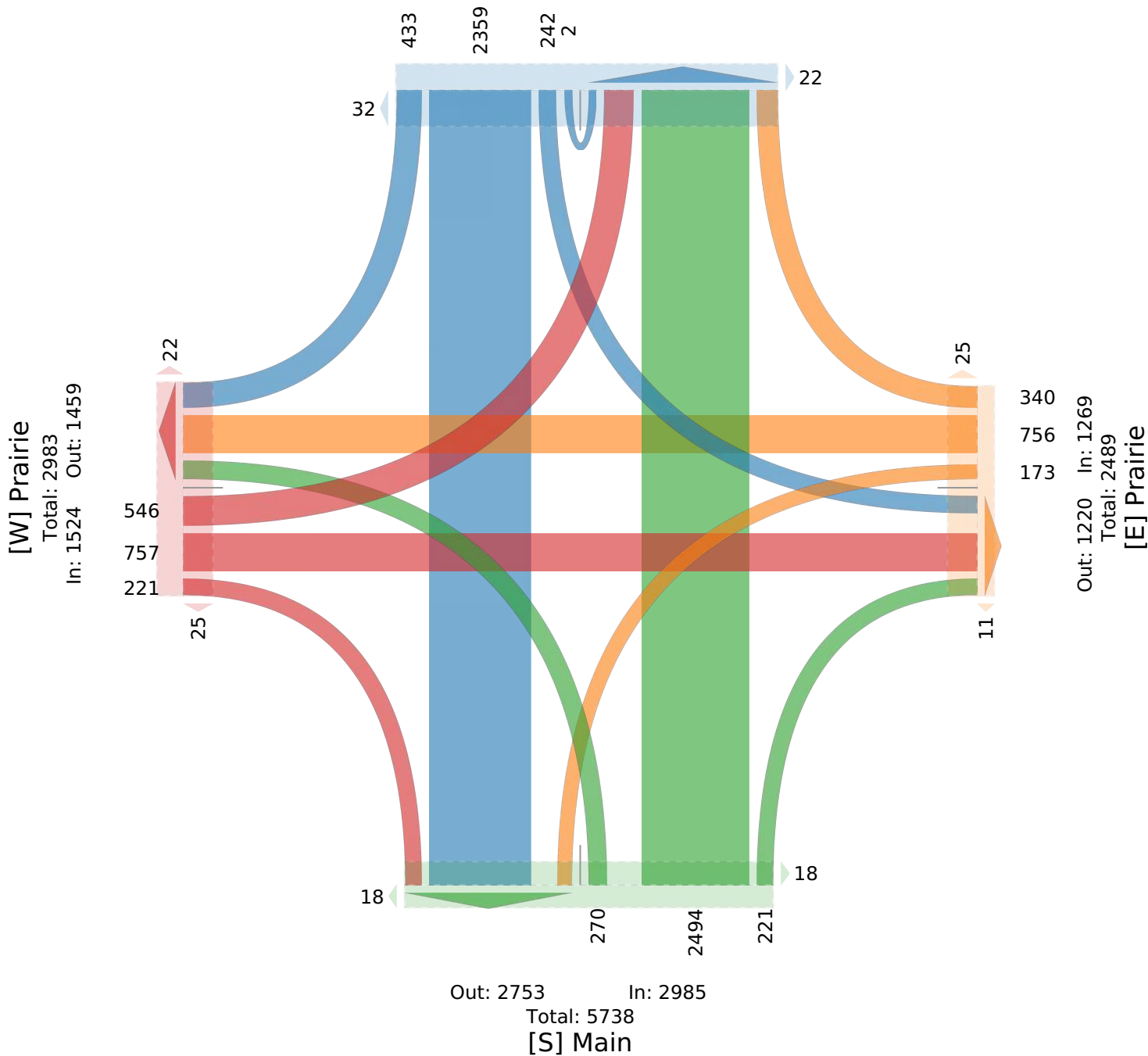
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

Total: 6418

In: 3036

Out: 3382



Main/Prairie - TMC

Thu Oct 14, 2021

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885153, Location: 41.80011, -88.010713



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Prairie Eastbound						Prairie Westbound						Main Northbound						Main Southbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2021-10-14 7:15AM	26	47	5	0	78	1	12	29	17	0	58	1	12	81	11	0	104	0	6	54	7	0	67	2	307
7:30AM	54	57	19	0	130	0	10	40	15	0	65	6	32	139	32	0	203	1	9	65	18	0	92	8	490
7:45AM	49	41	6	0	96	3	11	35	18	0	64	0	13	105	13	0	131	5	21	93	25	0	139	1	430
8:00AM	16	21	5	0	42	2	3	18	16	0	37	0	8	87	7	0	102	0	11	73	8	0	92	7	273
Total	145	166	35	0	346	6	36	122	66	0	224	7	65	412	63	0	540	6	47	285	58	0	390	18	1500
% Approach	41.9%	48.0%	10.1%	0%	-	-	16.1%	54.5%	29.5%	0%	-	-	12.0%	76.3%	11.7%	0%	-	-	12.1%	73.1%	14.9%	0%	-	-	-
% Total	9.7%	11.1%	2.3%	0%	23.1%	-	2.4%	8.1%	4.4%	0%	14.9%	-	4.3%	27.5%	4.2%	0%	36.0%	-	3.1%	19.0%	3.9%	0%	26.0%	-	-
PHF	0.667	0.728	0.461	-	0.663	-	0.750	0.763	0.917	-	0.862	-	0.508	0.741	0.492	-	0.665	-	0.560	0.766	0.580	-	0.701	-	0.765
Lights	144	164	34	0	342	-	35	116	65	0	216	-	64	392	58	0	514	-	46	271	58	0	375	-	1447
% Lights	99.3%	98.8%	97.1%	0%	98.8%	-	97.2%	95.1%	98.5%	0%	96.4%	-	98.5%	95.1%	92.1%	0%	95.2%	-	97.9%	95.1%	100%	0%	96.2%	-	96.5%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	1	-	0	1	0	0	1	-	2
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0%	0.4%	0%	0%	0.3%	-	0.1%
Buses and Single-Unit Trucks	0	2	1	0	3	-	1	6	1	0	8	-	1	19	5	0	25	-	1	13	0	0	14	-	50
% Buses and Single-Unit Trucks	0%	1.2%	2.9%	0%	0.9%	-	2.8%	4.9%	1.5%	0%	3.6%	-	1.5%	4.6%	7.9%	0%	4.6%	-	2.1%	4.6%	0%	0%	3.6%	-	3.3%
Bicycles on Road	1	0	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Bicycles on Road	0.7%	0%	0%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	5	-	-	-	-	-	7	-	-	-	-	-	6	-	-	-	-	-	15	
% Pedestrians	-	-	-	-	-	83.3%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	83.3%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	
% Bicycles on Crosswalk	-	-	-	-	-	16.7%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	16.7%	-

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Prairie - TMC

Thu Oct 14, 2021

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885153, Location: 41.80011, -88.010713



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

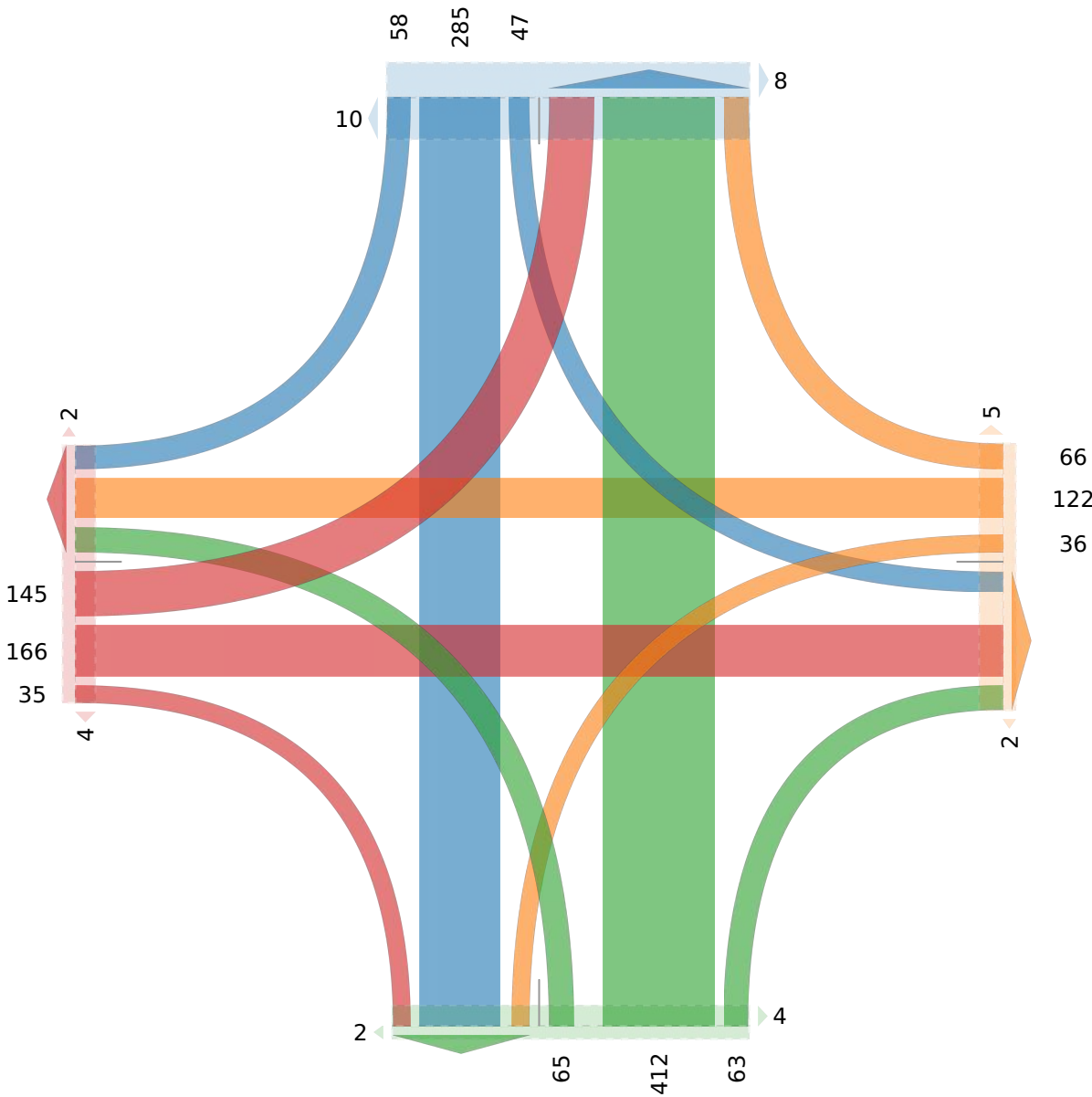
Total: 1013

In: 390

Out: 623

[W] Prairie

Total: 591
In: 346 Out: 245



Main/Prairie - TMC

Thu Oct 14, 2021

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885153, Location: 41.80011, -88.010713



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Prairie Eastbound						Prairie Westbound						Main Northbound						Main Southbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2021-10-14 4:45PM	28	28	8	0	64	4	6	39	15	0	60	3	7	98	9	0	114	0	7	104	27	0	138	1	376
5:00PM	19	31	15	0	65	3	7	38	22	0	67	1	13	121	9	0	143	5	10	115	19	0	144	0	419
5:15PM	9	29	8	0	46	0	5	33	11	0	49	0	10	90	17	0	117	4	15	120	27	0	162	1	374
5:30PM	14	33	7	0	54	2	12	43	11	0	66	1	11	112	3	0	126	1	10	125	21	0	156	0	402
Total	70	121	38	0	229	9	30	153	59	0	242	5	41	421	38	0	500	10	42	464	94	0	600	2	1571
% Approach	30.6%	52.8%	16.6%	0%	-	-	12.4%	63.2%	24.4%	0%	-	-	8.2%	84.2%	7.6%	0%	-	-	7.0%	77.3%	15.7%	0%	-	-	-
% Total	4.5%	7.7%	2.4%	0%	14.6%	-	1.9%	9.7%	3.8%	0%	15.4%	-	2.6%	26.8%	2.4%	0%	31.8%	-	2.7%	29.5%	6.0%	0%	38.2%	-	-
PHF	0.625	0.909	0.633	-	0.877	-	0.625	0.890	0.670	-	0.903	-	0.788	0.870	0.559	-	0.874	-	0.700	0.928	0.870	-	0.926	-	0.937
Lights	69	120	37	0	226	-	30	153	59	0	242	-	41	416	38	0	495	-	42	460	93	0	595	-	1558
% Lights	98.6%	99.2%	97.4%	0%	98.7%	-	100%	100%	100%	0%	100%	-	100%	98.8%	100%	0%	99.0%	-	100%	99.1%	98.9%	0%	99.2%	-	99.2%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	1	0	1	0	2	-	0	0	0	0	0	-	0	5	0	0	5	-	0	4	1	0	5	-	12
% Buses and Single-Unit Trucks	1.4%	0%	2.6%	0%	0.9%	-	0%	0%	0%	0%	0%	-	0%	1.2%	0%	0%	1.0%	-	0%	0.9%	1.1%	0%	0.8%	-	0.8%
Bicycles on Road	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Bicycles on Road	0%	0.8%	0%	0%	0.4%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	7	-	-	-	-	-	5	-	-	-	-	-	7	-	-	-	-	-	2	-
% Pedestrians	-	-	-	-	-	77.8%	-	-	-	-	-	100%	-	-	-	-	-	70.0%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	22.2%	-	-	-	-	-	0%	-	-	-	-	-	30.0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Prairie - TMC

Thu Oct 14, 2021

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885153, Location: 41.80011, -88.010713



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

Total: 1150

In: 600

Out: 550

94

464

42

1

1

[W] Prairie

Total: 517

In: 229 Out: 288

7

70

121

38

2

59

153

30

Out: 201 In: 242

Total: 443

[E] Prairie

6

4

41

421

38

Out: 532

In: 500

Total: 1032

[S] Main

Main/Franklin - TMC

Thu Oct 14, 2021

Full Length (6 AM-9 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians,

Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885154, Location: 41.798519, -88.01066



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Franklin Eastbound						Franklin Westbound						Main Northbound						Main Southbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2021-10-14 6:00AM	2	0	0	0	2	1	0	0	0	0	0	2	0	29	0	0	29	2	0	12	2	0	14	0	45
6:15AM	8	0	1	0	9	1	0	0	1	0	1	0	1	40	0	0	41	1	0	18	1	0	19	1	70
6:30AM	10	0	4	0	14	0	0	0	2	0	2	1	3	50	0	0	53	0	0	27	3	0	30	1	99
6:45AM	11	0	0	0	11	2	0	0	0	0	0	2	4	63	0	0	67	0	0	28	15	0	43	4	121
Hourly Total	31	0	5	0	36	4	0	0	3	0	3	5	8	182	0	0	190	3	0	85	21	0	106	6	335
7:00AM	20	0	0	0	20	0	0	2	1	0	3	2	4	68	0	0	72	1	0	32	15	0	47	7	142
7:15AM	25	0	5	0	30	1	2	2	15	0	19	3	8	67	0	0	75	0	0	46	20	0	66	15	190
7:30AM	23	0	3	0	26	0	17	12	21	0	50	5	5	135	0	0	140	0	0	58	24	0	82	24	298
7:45AM	26	0	1	0	27	3	6	10	15	0	31	2	8	91	0	0	99	0	0	70	43	0	113	12	270
Hourly Total	94	0	9	0	103	4	25	26	52	0	103	12	25	361	0	0	386	1	0	206	102	0	308	58	900
8:00AM	19	0	8	0	27	2	7	4	9	0	20	5	5	70	0	0	75	2	0	42	36	0	78	13	200
8:15AM	31	0	6	0	37	2	2	0	5	0	7	2	6	87	0	0	93	1	0	58	17	0	75	5	212
8:30AM	23	0	2	0	25	2	0	1	1	0	2	5	3	93	0	0	96	3	0	54	17	0	71	1	194
8:45AM	25	0	4	0	29	1	1	1	1	0	3	4	11	97	0	0	108	2	0	62	19	0	81	2	221
Hourly Total	98	0	20	0	118	7	10	6	16	0	32	16	25	347	0	0	372	8	0	216	89	0	305	21	827
2:00PM	23	0	6	0	29	2	0	2	2	0	4	7	11	77	0	0	88	0	0	85	27	0	112	70	233
2:15PM	28	0	6	0	34	0	7	1	2	0	10	3	11	86	0	0	97	0	0	80	29	0	109	15	250
2:30PM	20	0	3	0	23	0	3	0	3	0	6	0	6	76	0	0	82	4	0	80	24	0	104	7	215
2:45PM	23	0	4	0	27	3	4	3	3	0	10	0	4	59	0	0	63	1	0	81	34	0	115	4	215
Hourly Total	94	0	19	0	113	5	14	6	10	0	30	10	32	298	0	0	330	5	0	326	114	0	440	96	913
3:00PM	19	0	7	0	26	0	3	0	6	0	9	0	10	75	0	0	85	0	0	87	18	0	105	3	225
3:15PM	24	0	5	0	29	3	1	5	2	0	8	1	3	69	0	0	72	0	0	80	46	0	126	6	235
3:30PM	40	2	5	0	47	2	1	3	2	0	6	0	6	95	0	0	101	2	0	91	42	0	133	6	287
3:45PM	33	0	4	0	37	2	4	4	5	0	13	3	5	53	0	0	58	1	0	80	26	0	106	1	214
Hourly Total	116	2	21	0	139	7	9	12	15	0	36	4	24	292	0	0	316	3	0	338	132	0	470	16	961
4:00PM	27	0	7	0	34	16	2	3	2	0	7	0	7	90	0	0	97	3	0	99	47	0	146	4	284
4:15PM	23	0	2	0	25	4	1	0	1	0	2	1	5	66	0	0	71	0	0	99	48	0	147	1	245
4:30PM	38	0	6	0	44	4	1	2	1	0	4	8	9	95	0	0	104	0	0	76	32	0	108	0	260
4:45PM	26	0	3	0	29	4	1	2	2	0	5	2	6	95	0	0	101	1	0	97	25	0	122	3	257
Hourly Total	114	0	18	0	132	28	5	7	6	0	18	11	27	346	0	0	373	4	0	371	152	0	523	8	1046
5:00PM	45	0	4	0	49	3	0	5	6	0	11	2	7	96	0	0	103	2	0	80	46	0	126	0	289
5:15PM	28	0	2	0	30	0	6	2	8	0	16	0	9	72	0	0	81	5	0	95	31	0	126	4	253
5:30PM	29	0	7	0	36	1	1	0	3	0	4	4	11	92	1	0	104	5	0	105	44	0	149	1	293
5:45PM	27	0	5	0	32	1	0	1	3	0	4	0	6	68	0	0	74	3	0	87	37	0	124	0	234
Hourly Total	129	0	18	0	147	5	7	8	20	0	35	6	33	328	1	0	362	15	0	367	158	0	525	5	1069
Total	676	2	110	0	788	60	70	65	122	0	257	64	174	2154	1	0	2329	39	0	1909	768	0	2677	210	6051
% Approach	85.8%	0.3%	14.0%	0%	-	-	27.2%	25.3%	47.5%	0%	-	-	7.5%	92.5%	0%	0%	-	-	0%	71.3%	28.7%	0%	-	-	-
% Total	11.2%	0%	1.8%	0%	13.0%	-	1.2%	1.1%	2.0%	0%	4.2%	-	2.9%	35.6%	0%	0%	38.5%	-	0%	31.5%	12.7%	0%	44.2%	-	-
Lights	665	0	108	0	773	-	60	61	113	0	234	-	173	2091	0	0	2264	-	0	1855	759	0	2614	-	5885
% Lights	98.4%	0%	98.2%	0%	98.1%	-	85.7%	93.8%	92.6%	0%	91.1%	-	99.4%	97.1%	0%	0%	97.2%	-	0%	97.2%	98.8%	0%	97.6%	-	97.3%
Articulated Trucks	3	0	0	0	3	-	0	0	0	0	0	-	0	4	0	0	4	-	0	4	1	0	5	-	12
% Articulated Trucks	0.4%	0%	0%	0%	0.4%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0%	0.2%	0.1%	0%	0.2%	-	0.2%
Buses and Single-Unit Trucks	8	0	2	0	10	-	10	0	9	0	19	-	1	59	0	0	60	-	0	48	7	0	55	-	144
% Buses and Single-Unit Trucks	1.2%	0%	1.8%	0%	1.3%	-	14.3%	0%	7.4%	0%	7.4%	-	0.6%	2.7%	0%	0%	2.6%	-	0%	2.5%	0.9%	0%	2.1%	-	2.4%
Bicycles on Road	0	2	0	0	2	-	0	4	0	0	4	-	0	0	1	0	1	-	0	2	1	0	3	-	10
% Bicycles on Road	0%	100%	0%	0%	0.3%	-	0%	6.2%	0%	0%	1.6%	-	0%	0%	100%	0%	0%	-	0%	0.1%	0.1%	0%	0.1%	-	0.2%
Pedestrians	-	-	-	-	-	52	-	-	-	-	60	-	-	-	-	35	-	-	-	-	-	207	-		
% Pedestrians	-	-	-	-	-	86.7%	-	-	-	-	93.8%	-	-	-	-	89.7%	-	-	-	-	-	98.6%	-		
Bicycles on Crosswalk	-	-	-	-	-	8	-	-	-	-	4	-	-	-	-	4	-	-	-	-	-	3	-		
% Bicycles on Crosswalk	-	-	-	-	-	13.3%	-	-	-	-	6.3%	-	-	-	-	10.3%	-	-	-	-	-	1.4%	-		

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Franklin - TMC

Thu Oct 14, 2021

Full Length (6 AM-9 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885154, Location: 41.798519, -88.01066



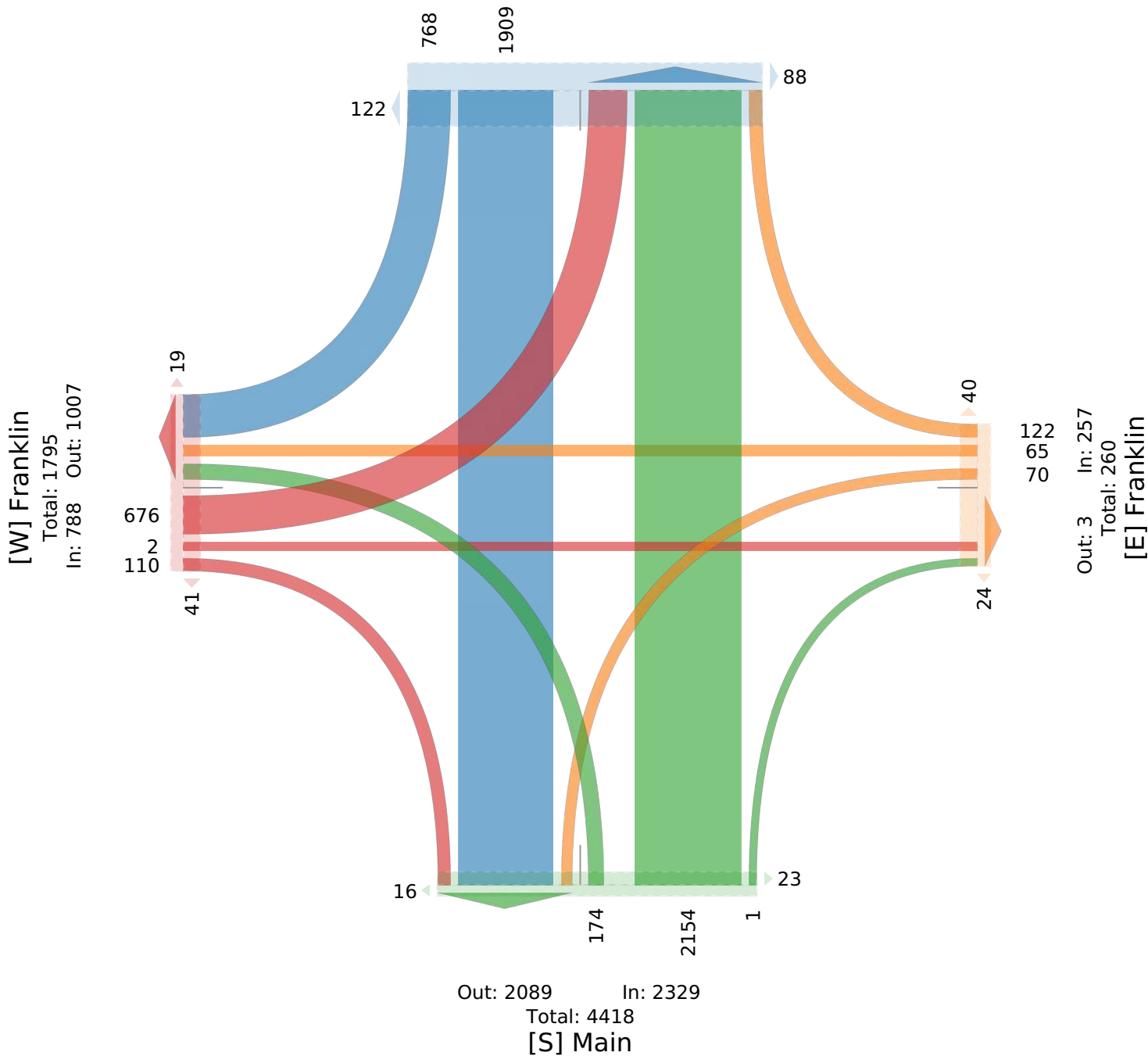
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

Total: 5629

In: 2677

Out: 2952



Main/Franklin - TMC

Thu Oct 14, 2021

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885154, Location: 41.798519, -88.01066



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Franklin Eastbound						Franklin Westbound						Main Northbound						Main Southbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2021-10-14 7:30AM	23	0	3	0	26	0	17	12	21	0	50	5	5	135	0	0	140	0	0	58	24	0	82	24	298
7:45AM	26	0	1	0	27	3	6	10	15	0	31	2	8	91	0	0	99	0	0	70	43	0	113	12	270
8:00AM	19	0	8	0	27	2	7	4	9	0	20	5	5	70	0	0	75	2	0	42	36	0	78	13	200
8:15AM	31	0	6	0	37	2	2	0	5	0	7	2	6	87	0	0	93	1	0	58	17	0	75	5	212
Total	99	0	18	0	117	7	32	26	50	0	108	14	24	383	0	0	407	3	0	228	120	0	348	54	980
% Approach	84.6%	0%	15.4%	0%	-	-	29.6%	24.1%	46.3%	0%	-	-	5.9%	94.1%	0%	0%	-	-	0%	65.5%	34.5%	0%	-	-	-
% Total	10.1%	0%	1.8%	0%	11.9%	-	3.3%	2.7%	5.1%	0%	11.0%	-	2.4%	39.1%	0%	0%	41.5%	-	0%	23.3%	12.2%	0%	35.5%	-	-
PHF	0.798	-	0.563	-	0.791	-	0.471	0.568	0.595	-	0.546	-	0.750	0.709	-	-	0.727	-	-	0.814	0.698	-	0.770	-	0.824
Lights	97	0	17	0	114	-	32	25	49	0	106	-	24	372	0	0	396	-	0	216	117	0	333	-	949
% Lights	98.0%	0%	94.4%	0%	97.4%	-	100%	96.2%	98.0%	0%	98.1%	-	100%	97.1%	0%	0%	97.3%	-	0%	94.7%	97.5%	0%	95.7%	-	96.8%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	1	-	1
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.4%	0%	0%	0.3%	-	0.1%
Buses and Single-Unit Trucks	2	0	1	0	3	-	0	0	1	0	1	-	0	11	0	0	11	-	0	11	3	0	14	-	29
% Buses and Single-Unit Trucks	2.0%	0%	5.6%	0%	2.6%	-	0%	0%	2.0%	0%	0.9%	-	0%	2.9%	0%	0%	2.7%	-	0%	4.8%	2.5%	0%	4.0%	-	3.0%
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	3.8%	0%	0%	0.9%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	6	-	-	-	-	-	14	-	-	-	-	-	3	-	-	-	-	-	54	
% Pedestrians	-	-	-	-	-	85.7%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	14.3%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Franklin - TMC

Thu Oct 14, 2021

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885154, Location: 41.798519, -88.01066



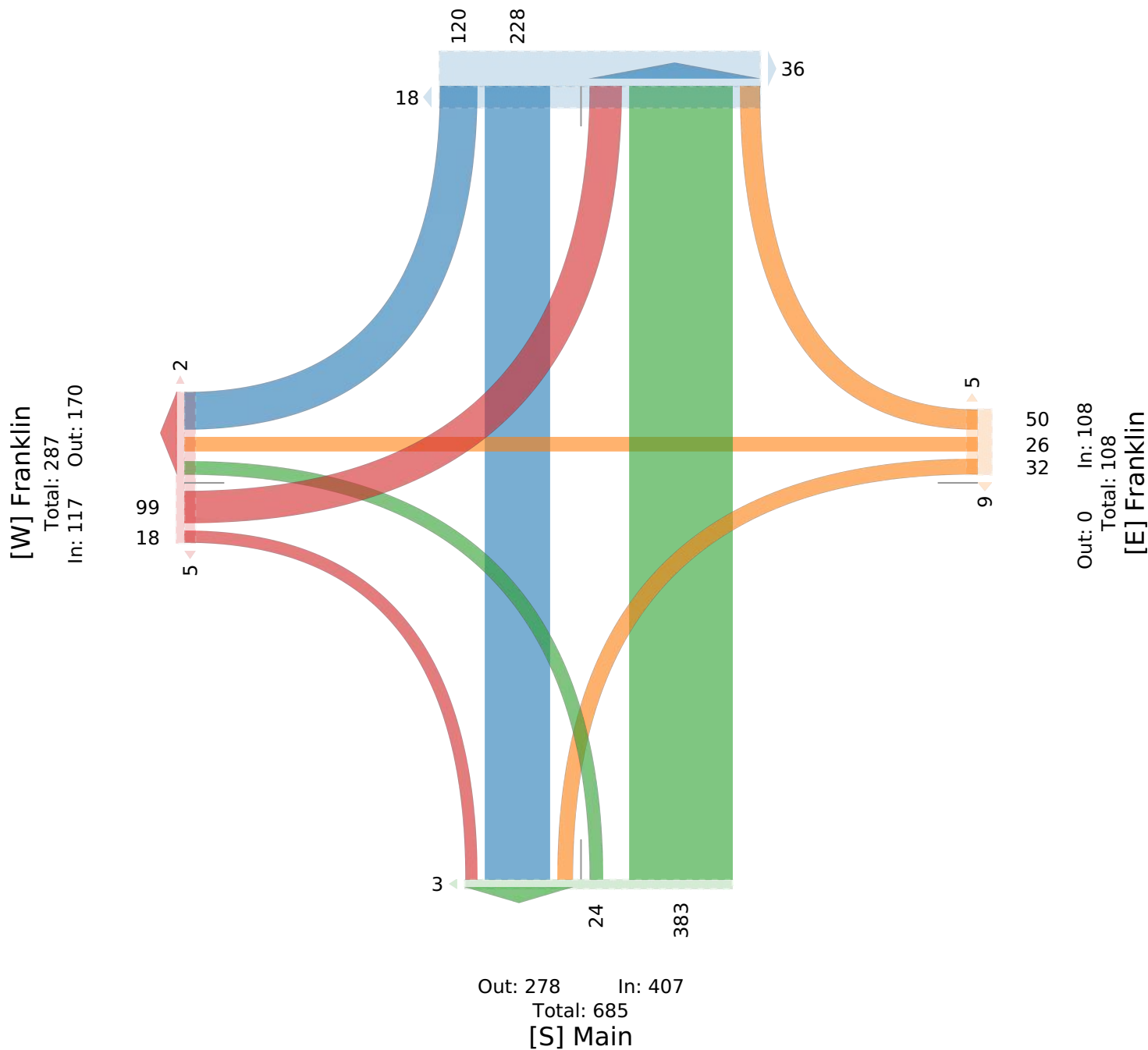
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

Total: 880

In: 348

Out: 532



Main/Franklin - TMC

Thu Oct 14, 2021

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885154, Location: 41.798519, -88.01066



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Franklin Eastbound						Franklin Westbound						Main Northbound						Main Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-10-14 4:45PM	26	0	3	0	29	4	1	2	2	0	5	2	6	95	0	0	101	1	0	97	25	0	122	3	257
5:00PM	45	0	4	0	49	3	0	5	6	0	11	2	7	96	0	0	103	2	0	80	46	0	126	0	289
5:15PM	28	0	2	0	30	0	6	2	8	0	16	0	9	72	0	0	81	5	0	95	31	0	126	4	253
5:30PM	29	0	7	0	36	1	1	0	3	0	4	4	11	92	1	0	104	5	0	105	44	0	149	1	293
Total	128	0	16	0	144	8	8	9	19	0	36	8	33	355	1	0	389	13	0	377	146	0	523	8	1092
% Approach	88.9%	0%	11.1%	0%	-	-	22.2%	25.0%	52.8%	0%	-	-	8.5%	91.3%	0.3%	0%	-	-	0%	72.1%	27.9%	0%	-	-	-
% Total	11.7%	0%	1.5%	0%	13.2%	-	0.7%	0.8%	1.7%	0%	3.3%	-	3.0%	32.5%	0.1%	0%	35.6%	-	0%	34.5%	13.4%	0%	47.9%	-	-
PHF	0.711	-	0.571	-	0.735	-	0.333	0.450	0.594	-	0.563	-	0.750	0.924	-	-	0.942	-	-	0.898	0.793	-	0.878	-	0.934
Lights	128	0	15	0	143	-	8	9	19	0	36	-	33	348	0	0	381	-	0	373	145	0	518	-	1078
% Lights	100%	0%	93.8%	0%	99.3%	-	100%	100%	100%	0%	100%	-	100%	98.0%	0%	0%	97.9%	-	0%	98.9%	99.3%	0%	99.0%	-	98.7%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	0	0	1	0	1	-	0	0	0	0	0	-	0	7	0	0	7	-	0	4	1	0	5	-	13
% Buses and Single-Unit Trucks	0%	0%	6.3%	0%	0.7%	-	0%	0%	0%	0%	0%	-	0%	2.0%	0%	0%	1.8%	-	0%	1.1%	0.7%	0%	1.0%	-	1.2%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	1	-	0	0	0	0	0	-	1
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	100%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	7	-	-	-	-	-	12	-	-	-	-	-	8	
% Pedestrians	-	-	-	-	-	37.5%	-	-	-	-	-	87.5%	-	-	-	-	-	92.3%	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	62.5%	-	-	-	-	-	12.5%	-	-	-	-	-	7.7%	-	-	-	-	-	0%	

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Franklin - TMC

Thu Oct 14, 2021

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885154, Location: 41.798519, -88.01066



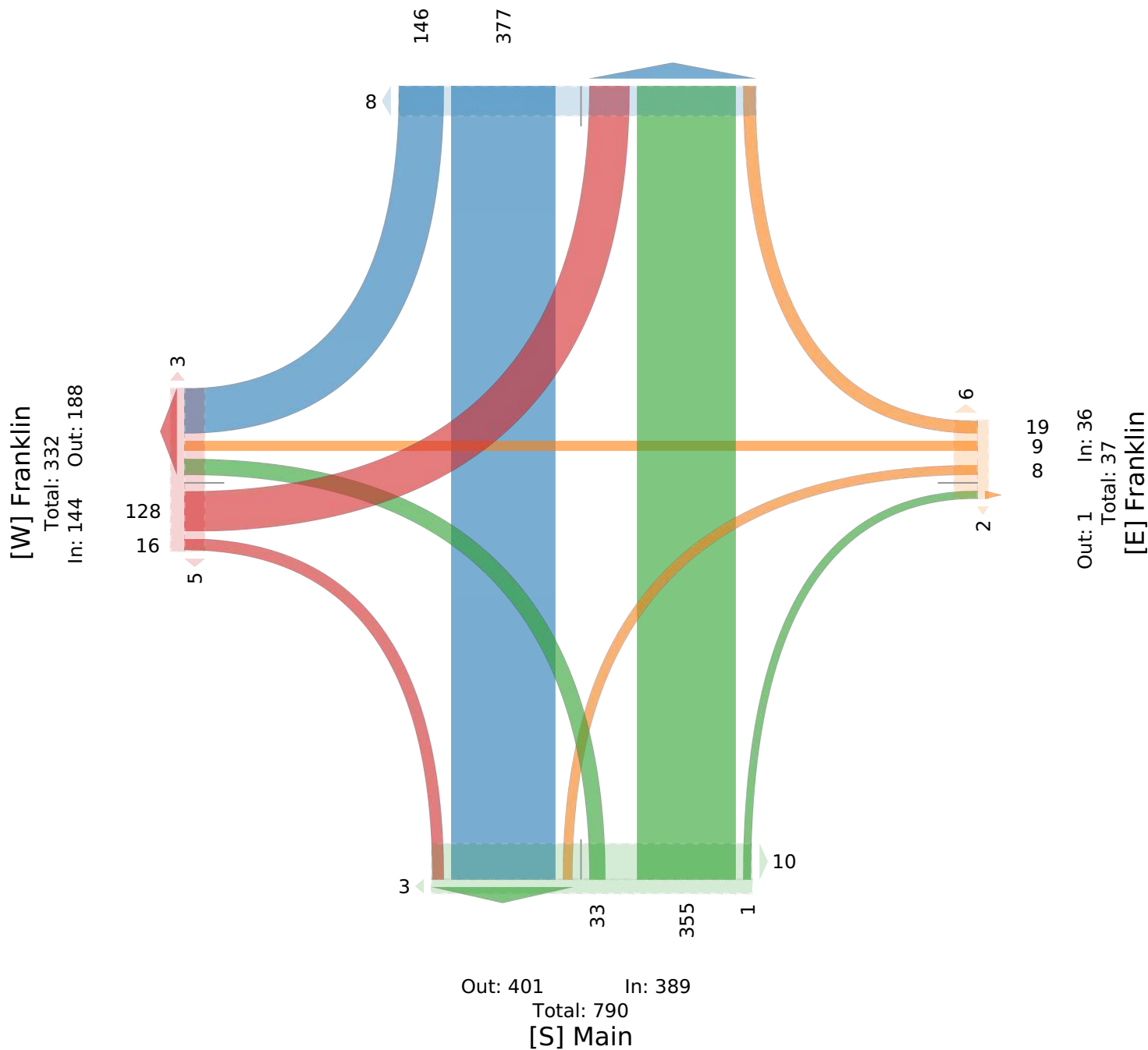
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

Total: 1025

In: 523

Out: 502



Pedestrian Crosswalk - Ped & Bike Pathway

Thu Oct 14, 2021

Full Length (6 AM-7 PM)

All Classes (Pedestrians, Bicycles)

All Channels

ID: 885155, Location: 41.76994, -88.008475



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	West Eastbound		East Westbound		Int
	T	App	T	App	
Time					
2021-10-14 6:00AM	0	0	0	0	0
6:15AM	0	0	0	0	0
6:30AM	0	0	0	0	0
6:45AM	0	0	0	0	0
Hourly Total	0	0	0	0	0
7:00AM	0	0	0	0	0
7:15AM	0	0	1	1	1
7:30AM	0	0	0	0	0
7:45AM	0	0	2	2	2
Hourly Total	0	0	3	3	0
8:00AM	0	0	0	0	0
8:15AM	0	0	0	0	0
8:30AM	0	0	0	0	0
8:45AM	0	0	0	0	0
Hourly Total	0	0	0	0	0
9:00AM	0	0	1	1	1
9:15AM	0	0	1	1	1
9:30AM	0	0	0	0	0
9:45AM	0	0	0	0	0
Hourly Total	0	0	2	2	0
10:00AM	0	0	0	0	0
10:15AM	0	0	0	0	0
10:30AM	0	0	0	0	0
10:45AM	0	0	0	0	0
Hourly Total	0	0	0	0	0
11:00AM	0	0	0	0	0
11:15AM	0	0	0	0	0
11:30AM	0	0	0	0	0
11:45AM	0	0	0	0	0
Hourly Total	0	0	0	0	0
12:00PM	0	0	0	0	0
12:15PM	0	0	0	0	0
12:30PM	0	0	0	0	0
12:45PM	0	0	0	0	0
Hourly Total	0	0	0	0	0
1:00PM	0	0	0	0	0
1:15PM	0	0	0	0	0
1:30PM	0	0	0	0	0
1:45PM	0	0	0	0	0
Hourly Total	0	0	0	0	0
2:00PM	0	0	0	0	0
2:15PM	0	0	0	0	0
2:30PM	0	0	0	0	0
2:45PM	0	0	0	0	0
Hourly Total	0	0	0	0	0
3:00PM	0	0	0	0	0
3:15PM	0	0	0	0	0
3:30PM	4	4	3	3	7
3:45PM	0	0	0	0	0
Hourly Total	4	4	3	3	0
4:00PM	0	0	0	0	0
4:15PM	0	0	0	0	0
4:30PM	0	0	0	0	0
4:45PM	0	0	0	0	0

Leg Direction	West Eastbound		East Westbound		
Time	T	App	T	App	Int
Hourly Total	0	0	0	0	0
5:00PM	0	0	0	0	0
5:15PM	0	0	0	0	0
5:30PM	0	0	0	0	0
5:45PM	0	0	0	0	0
Hourly Total	0	0	0	0	0
6:00PM	0	0	0	0	0
6:15PM	0	0	0	0	0
6:30PM	0	0	0	0	0
6:45PM	0	0	0	0	0
Hourly Total	0	0	0	0	0
Total	4	4	8	8	12
% Approach	100%	-	100%	-	-
% Total	33.3%	33.3%	66.7%	66.7%	-
Bicycles	0	0	0		
% Bicycles	0%	0%	0%	0%	0%
Pedestrians	4	4	8	8	12
% Pedestrians	100%	100%	100%	100%	100.0%

*T: Thru

Pedestrian Crosswalk - Ped & Bike Pathway

Thu Oct 14, 2021

Full Length (6 AM-7 PM)

All Classes (Pedestrians, Bicycles)

All Channels

ID: 885155, Location: 41.76994, -88.008475



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Pedestrian Crosswalk - Ped & Bike Pathway

Thu Oct 14, 2021

AM Peak (7:15 AM - 8:15 AM)

All Classes (Pedestrians, Bicycles)

All Channels

ID: 885155, Location: 41.76994, -88.008475



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	West		East		Int
	Eastbound		Westbound		
Time	T	App	T	App	
2021-10-14 7:15AM	0	0	1	1	1
7:30AM	0	0	0	0	0
7:45AM	0	0	2	2	2
8:00AM	0	0	0	0	0
Total	0	0	3	3	3
% Approach	0%	-	100%	-	-
% Total	0%	0%	100%	100%	-
Bicycles	0	0	0		
% Bicycles	0%	-	0%	0%	0%
Pedestrians	0	0	3	3	3
% Pedestrians	-	0%	100%	100%	100.0%

*T: Thru

Pedestrian Crosswalk - Ped & Bike Pathway

Thu Oct 14, 2021

AM Peak (7:15 AM - 8:15 AM)

All Classes (Pedestrians, Bicycles)

All Channels

ID: 885155, Location: 41.76994, -88.008475



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Pedestrian Crosswalk - Ped & Bike Pathway

Thu Oct 14, 2021

PM Peak (3:30 PM - 4:30 PM) - Overall Peak Hour

All Classes (Pedestrians, Bicycles)

All Channels

ID: 885155, Location: 41.76994, -88.008475



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	West Eastbound		East Westbound		Int
	T	App	T	App	
Time					
2021-10-14 3:30PM	4	4	3	3	7
3:45PM	0	0	0	0	0
4:00PM	0	0	0	0	0
4:15PM	0	0	0	0	0
Total	4	4	3	3	7
% Approach	100%	-	100%	-	-
% Total	57.1%	57.1%	42.9%	42.9%	-
Bicycles	0	0	0	0	
% Bicycles	0%	0%	0%	0%	0%
Pedestrians	4	4	3	3	7
% Pedestrians	100%	100%	100%	100%	100.0%

*T: Thru

Pedestrian Crosswalk - Ped & Bike Pathway

Thu Oct 14, 2021

PM Peak (3:30 PM - 4:30 PM) - Overall Peak Hour

All Classes (Pedestrians, Bicycles)

All Channels

ID: 885155, Location: 41.76994, -88.008475



Provided by: Gewalt Hamilton Associates Inc.
 625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Main/Oxford - TMC

Thu Oct 14, 2021

Full Length (6 AM-7 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885148, Location: 41.768883, -88.008429



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Oxford Eastbound						Oxford Westbound						Main Northbound						Main Southbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2021-10-14 6:00AM	0	0	0	0	0	0	1	0	5	0	6	0	0	61	2	0	63	0	0	26	0	0	26	0	95
6:15AM	0	0	0	0	0	0	2	0	7	0	9	0	0	67	0	0	67	0	3	48	1	0	52	0	128
6:30AM	1	0	0	0	1	0	2	0	8	0	10	2	0	101	0	0	101	0	1	42	1	0	44	1	156
6:45AM	0	0	1	0	1	0	3	1	18	0	22	0	0	115	0	0	115	0	2	45	0	0	47	0	185
Hourly Total	1	0	1	0	2	0	8	1	38	0	47	2	0	344	2	0	346	0	6	161	2	0	169	1	564
7:00AM	0	1	0	0	1	1	4	0	16	0	20	0	1	138	3	0	142	0	4	68	4	0	76	0	239
7:15AM	1	0	1	0	2	0	3	0	32	0	35	0	1	187	1	0	189	0	7	66	0	0	73	0	299
7:30AM	0	0	3	0	3	0	4	0	41	0	45	0	0	214	0	0	214	0	15	115	1	0	131	0	393
7:45AM	3	1	1	0	5	0	2	1	27	0	30	0	2	240	2	0	244	0	21	134	1	0	156	0	435
Hourly Total	4	2	5	0	11	1	13	1	116	0	130	0	4	779	6	0	789	0	47	383	6	0	436	0	1366
8:00AM	0	1	1	0	2	1	2	0	14	0	16	0	0	171	7	0	178	1	14	126	0	0	140	0	336
8:15AM	0	0	1	0	1	0	5	0	30	0	35	0	0	184	2	0	186	0	5	148	3	0	156	0	378
8:30AM	1	0	2	0	3	0	5	1	14	0	20	0	2	140	2	0	144	0	0	111	0	0	111	0	278
8:45AM	0	0	0	0	0	0	5	0	4	0	9	0	0	135	1	0	136	0	9	110	0	0	119	0	264
Hourly Total	1	1	4	0	6	1	17	1	62	0	80	0	2	630	12	0	644	1	28	495	3	0	526	0	1256
9:00AM	1	0	2	0	3	1	4	0	14	0	18	0	0	125	9	0	134	0	5	90	0	0	95	0	250
9:15AM	0	0	0	0	0	0	6	0	7	0	13	1	0	92	3	0	95	0	2	93	0	0	95	0	203
9:30AM	0	0	1	0	1	0	6	0	10	0	16	1	0	115	3	0	118	0	3	112	1	0	116	0	251
9:45AM	1	0	0	0	1	0	2	0	5	0	7	2	2	98	3	0	103	0	3	112	0	0	115	0	226
Hourly Total	2	0	3	0	5	1	18	0	36	0	54	4	2	430	18	0	450	0	13	407	1	0	421	0	930
10:00AM	0	1	0	0	1	0	4	1	10	0	15	0	0	104	3	0	107	0	7	128	2	0	137	0	260
10:15AM	0	0	0	0	0	1	2	1	16	0	19	0	0	137	7	0	144	0	8	128	0	0	136	0	299
10:30AM	0	0	0	0	0	0	7	0	5	0	12	1	0	125	5	0	130	0	8	144	3	0	155	0	297
10:45AM	0	0	0	0	0	0	3	0	4	0	7	0	0	138	1	0	139	0	9	120	0	0	129	0	275
Hourly Total	0	1	0	0	1	1	16	2	35	0	53	1	0	504	16	0	520	0	32	520	5	0	557	0	1131
11:00AM	2	0	1	0	3	0	2	2	8	0	12	3	1	149	5	0	155	0	3	156	2	0	161	0	331
11:15AM	0	0	2	0	2	0	7	0	10	0	17	1	0	135	7	0	142	0	4	154	1	0	159	0	320
11:30AM	0	0	0	0	0	0	4	0	7	0	11	0	0	137	9	0	146	0	6	175	0	0	181	0	338
11:45AM	1	0	0	0	1	0	5	0	6	0	11	0	0	154	6	0	160	0	3	151	0	0	154	0	326
Hourly Total	3	0	3	0	6	0	18	2	31	0	51	4	1	575	27	0	603	0	16	636	3	0	655	0	1315
12:00PM	0	1	2	0	3	0	2	0	8	0	10	0	1	148	5	0	154	0	5	145	2	0	152	0	319
12:15PM	0	0	0	0	0	0	4	0	12	0	16	1	0	167	4	0	171	0	4	159	1	0	164	0	351
12:30PM	1	0	1	0	2	0	3	0	7	0	10	0	4	158	5	0	167	0	7	174	2	0	183	0	362
12:45PM	1	0	2	0	3	0	3	0	11	0	14	0	0	144	3	0	147	0	7	201	3	0	211	0	375
Hourly Total	2	1	5	0	8	0	12	0	38	0	50	1	5	617	17	0	639	0	23	679	8	0	710	0	1407
1:00PM	2	1	0	0	3	0	6	2	9	0	17	1	0	138	8	0	146	0	13	168	1	0	182	0	348
1:15PM	1	0	1	0	2	1	4	0	7	0	11	0	2	161	1	0	164	0	11	155	2	0	168	0	345
1:30PM	0	0	0	0	0	0	4	0	10	0	14	0	0	147	2	0	149	0	7	163	1	0	171	0	334
1:45PM	0	1	0	0	1	0	1	1	5	0	7	0	1	166	8	0	175	0	8	160	1	0	169	0	352
Hourly Total	3	2	1	0	6	1	15	3	31	0	49	1	3	612	19	0	634	0	39	646	5	0	690	0	1379
2:00PM	2	0	1	0	3	2	6	0	9	0	15	0	1	141	2	0	144	0	4	153	2	0	159	0	321
2:15PM	1	0	1	0	2	1	5	1	10	0	16	1	1	153	4	0	158	0	7	207	0	0	214	0	390
2:30PM	0	0	4	0	4	3	7	0	14	0	21	0	0	160	6	0	166	0	21	197	1	0	219	0	410
2:45PM	0	0	2	0	2	1	2	0	11	0	13	0	2	177	4	0	183	0	8	179	2	0	189	0	387
Hourly Total	3	0	8	0	11	7	20	1	44	0	65	1	4	631	16	0	651	0	40	736	5	0	781	0	1508
3:00PM	1	0	2	0	3	0	4	0	22	0	26	0	1	163	6	0	170	0	10	226	2	0	238	0	437
3:15PM	1	0	0	0	1	0	4	0	20	0	24	1	4	168	7	0	179	0	13	227	2	0	242	0	446
3:30PM	1	0	8	0	9	1	4	0	12	0	16	1	1	165	8	0	174	0	23	231	1	0	255	0	454
3:45PM	0	0	3	0	3	0	7	0	14	0	21	0	2	162	6	0	170	0	17	220	4	0	241	0	435
Hourly Total	3	0	13	0	16	1	19	0	68	0	87	2	8	658	27	0	693	0	63	904	9	0	976	0	1772
4:00PM	1	0	2	0	3	0	3	0	12	0	15	2	1	187	4	0	192	0	9	244	5	0	258	0	468
4:15PM	0	0	1	0	1	0	2	2	12	0	16	2	4	186	4	0	194	0	14	264	1	0	279	0	490
4:30PM	1	0	1	0	2	1	2	0	16	0	18	1	0	178	5	0	183	2	15	243	4	0	262	0	465
4:45PM	0	0	5	0	5	0	5	1	17	0	23	2	0	212	12	0	224	0	18	265	2	0	285	0	537
Hourly Total	2	0	9	0	11	1	12	3	57	0	72	7	5	763	25	0	793	2	56	1016	12	0	1084	0	1960
5:00PM	0	1	4	0	5	1	1	1	12	0	14	2	1	193	4	0	198	0	17	254	4	0	275	0	492
5:15PM	1	0	6	0	7	5	5	1	18	0	24	0	5	205	9	0	219	0	18	299	2	0	319	0	569
5:30PM	0	0	2	0	2	1	6	0	6	0	12	0	3	226	4	0	233	0	13	269	0	0	282	0	529
5:45PM	0	0	1	0	1	0	4	0	10	0	14	1	2	211	8	0	221	0	15	243	2	0	260	0	496

Leg Direction	Oxford Eastbound						Oxford Westbound						Main Northbound						Main Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
Hourly Total	1	1	13	0	15	7	16	2	46	0	64	3	11	835	25	0	871	0	63	1065	8	0	1136	0	2086
6:00PM	0	0	3	0	3	0	1	1	11	0	13	2	1	244	5	0	250	0	17	207	2	0	226	0	492
6:15PM	0	1	3	0	4	1	5	0	16	0	21	0	1	240	7	0	248	0	11	220	2	0	233	0	506
6:30PM	0	0	1	0	1	0	4	0	14	0	18	3	1	255	5	0	261	0	8	169	3	0	180	0	460
6:45PM	0	0	4	0	4	2	2	1	9	0	12	0	1	201	5	0	207	0	8	187	2	0	197	2	420
Hourly Total	0	1	11	0	12	3	12	2	50	0	64	5	4	940	22	0	966	0	44	783	9	0	836	2	1878
Total	25	9	76	0	110	24	196	18	652	0	866	31	49	8318	232	0	8599	3	470	8431	76	0	8977	3	18552
% Approach	22.7%	8.2%	69.1%	0%	-	-	22.6%	2.1%	75.3%	0%	-	-	0.6%	96.7%	2.7%	0%	-	-	5.2%	93.9%	0.8%	0%	-	-	-
% Total	0.1%	0%	0.4%	0%	0.6%	-	1.1%	0.1%	3.5%	0%	4.7%	-	0.3%	44.8%	1.3%	0%	46.4%	-	2.5%	45.4%	0.4%	0%	48.4%	-	-
Lights	25	7	74	0	106	-	192	15	640	0	847	-	49	8170	225	0	8444	-	457	8274	70	0	8801	-	18198
% Lights	100%	77.8%	97.4%	0%	96.4%	-	98.0%	83.3%	98.2%	0%	97.8%	-	100%	98.2%	97.0%	0%	98.2%	-	97.2%	98.1%	92.1%	0%	98.0%	-	98.1%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	16	2	0	18	-	0	23	0	0	23	-	41
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0.9%	0%	0.2%	-	0%	0.3%	0%	0%	0.3%	-	0.2%
Buses and Single-Unit Trucks	0	2	2	0	4	-	3	1	11	0	15	-	0	131	5	0	136	-	13	134	6	0	153	-	308
% Buses and Single-Unit Trucks	0%	22.2%	2.6%	0%	3.6%	-	1.5%	5.6%	1.7%	0%	1.7%	-	0%	1.6%	2.2%	0%	1.6%	-	2.8%	1.6%	7.9%	0%	1.7%	-	1.7%
Bicycles on Road	0	0	0	0	0	-	1	2	1	0	4	-	0	1	0	0	1	-	0	0	0	0	0	-	5
% Bicycles on Road	0%	0%	0%	0%	0%	-	0.5%	11.1%	0.2%	0%	0.5%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	22	-	-	-	-	-	23	-	-	-	-	-	3	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	91.7%	-	-	-	-	-	74.2%	-	-	-	-	-	100%	-	-	-	-	-	33.3%	
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	8	-	-	-	-	-	0	-	-	-	-	-	2	
% Bicycles on Crosswalk	-	-	-	-	-	8.3%	-	-	-	-	-	25.8%	-	-	-	-	-	0%	-	-	-	-	-	66.7%	

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Oxford - TMC

Thu Oct 14, 2021

Full Length (6 AM-7 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885148, Location: 41.768883, -88.008429



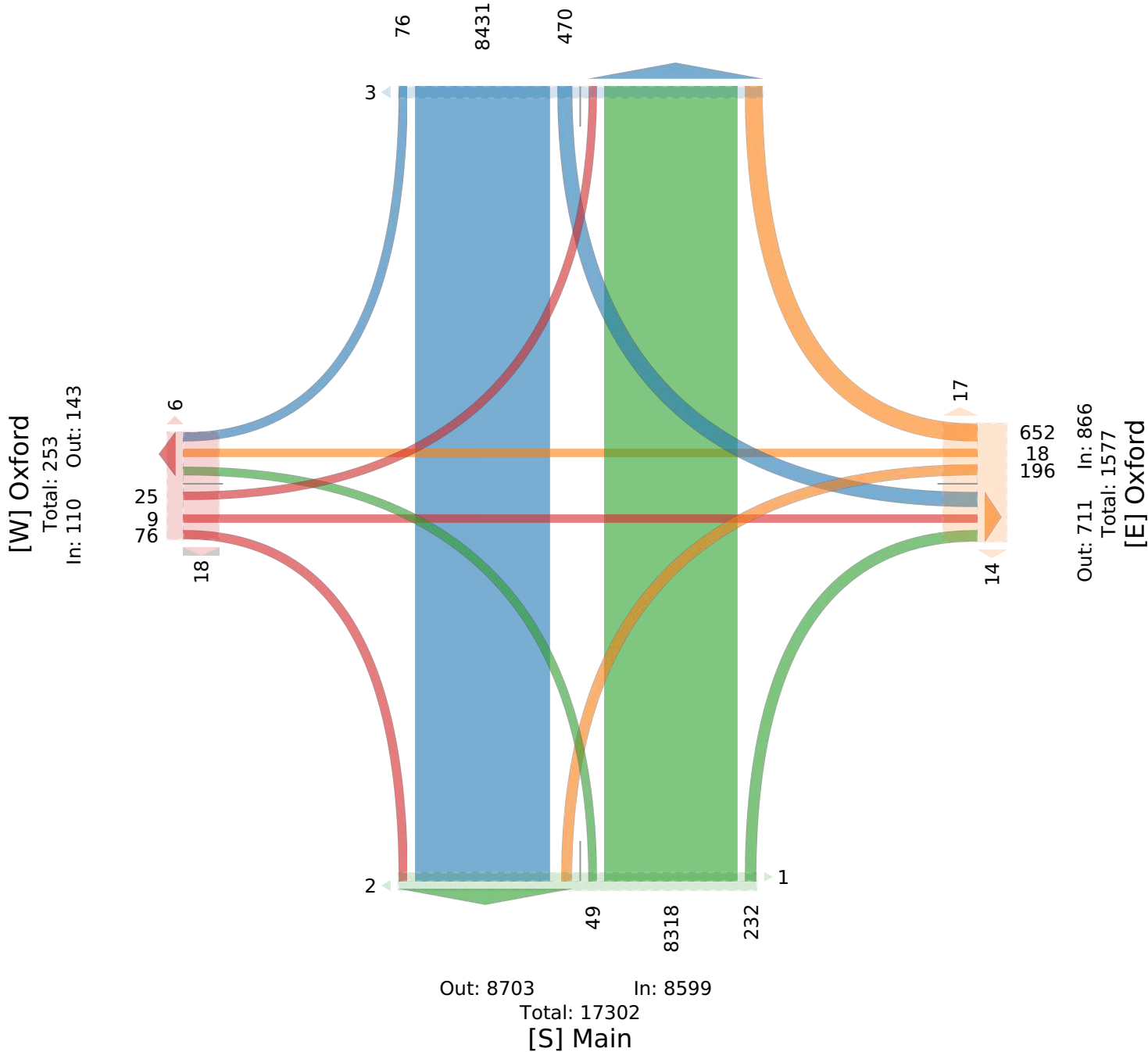
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

Total: 17972

In: 8977

Out: 8995



Main/Oxford - TMC

Thu Oct 14, 2021

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885148, Location: 41.768883, -88.008429



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Oxford Eastbound						Oxford Westbound						Main Northbound						Main Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2021-10-14 7:30AM	0	0	3	0	3	0	4	0	41	0	45	0	0	214	0	0	214	0	15	115	1	0	131	0	393
7:45AM	3	1	1	0	5	0	2	1	27	0	30	0	2	240	2	0	244	0	21	134	1	0	156	0	435
8:00AM	0	1	1	0	2	1	2	0	14	0	16	0	0	171	7	0	178	1	14	126	0	0	140	0	336
8:15AM	0	0	1	0	1	0	5	0	30	0	35	0	0	184	2	0	186	0	5	148	3	0	156	0	378
Total	3	2	6	0	11	1	13	1	112	0	126	0	2	809	11	0	822	1	55	523	5	0	583	0	1542
% Approach	27.3%	18.2%	54.5%	0%	-	-	10.3%	0.8%	88.9%	0%	-	-	0.2%	98.4%	1.3%	0%	-	-	9.4%	89.7%	0.9%	0%	-	-	-
% Total	0.2%	0.1%	0.4%	0%	0.7%	-	0.8%	0.1%	7.3%	0%	8.2%	-	0.1%	52.5%	0.7%	0%	53.3%	-	3.6%	33.9%	0.3%	0%	37.8%	-	-
PHF	0.250	0.500	0.500	-	0.550	-	0.650	0.250	0.683	-	0.700	-	0.250	0.843	0.393	-	0.842	-	0.655	0.883	0.417	-	0.934	-	0.886
Lights	3	1	6	0	10	-	13	1	109	0	123	-	2	787	11	0	800	-	53	502	5	0	560	-	1493
% Lights	100%	50.0%	100%	0%	90.9%	-	100%	100%	97.3%	0%	97.6%	-	100%	97.3%	100%	0%	97.3%	-	96.4%	96.0%	100%	0%	96.1%	-	96.8%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	3	0	0	3	-	3
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.6%	0%	0%	0.5%	-	0.2%
Buses and Single-Unit Trucks	0	1	0	0	1	-	0	0	3	0	3	-	0	22	0	0	22	-	2	18	0	0	20	-	46
% Buses and Single-Unit Trucks	0%	50.0%	0%	0%	9.1%	-	0%	0%	2.7%	0%	2.4%	-	0%	2.7%	0%	0%	2.7%	-	3.6%	3.4%	0%	0%	3.4%	-	3.0%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	

* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Oxford - TMC

Thu Oct 14, 2021

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885148, Location: 41.768883, -88.008429



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

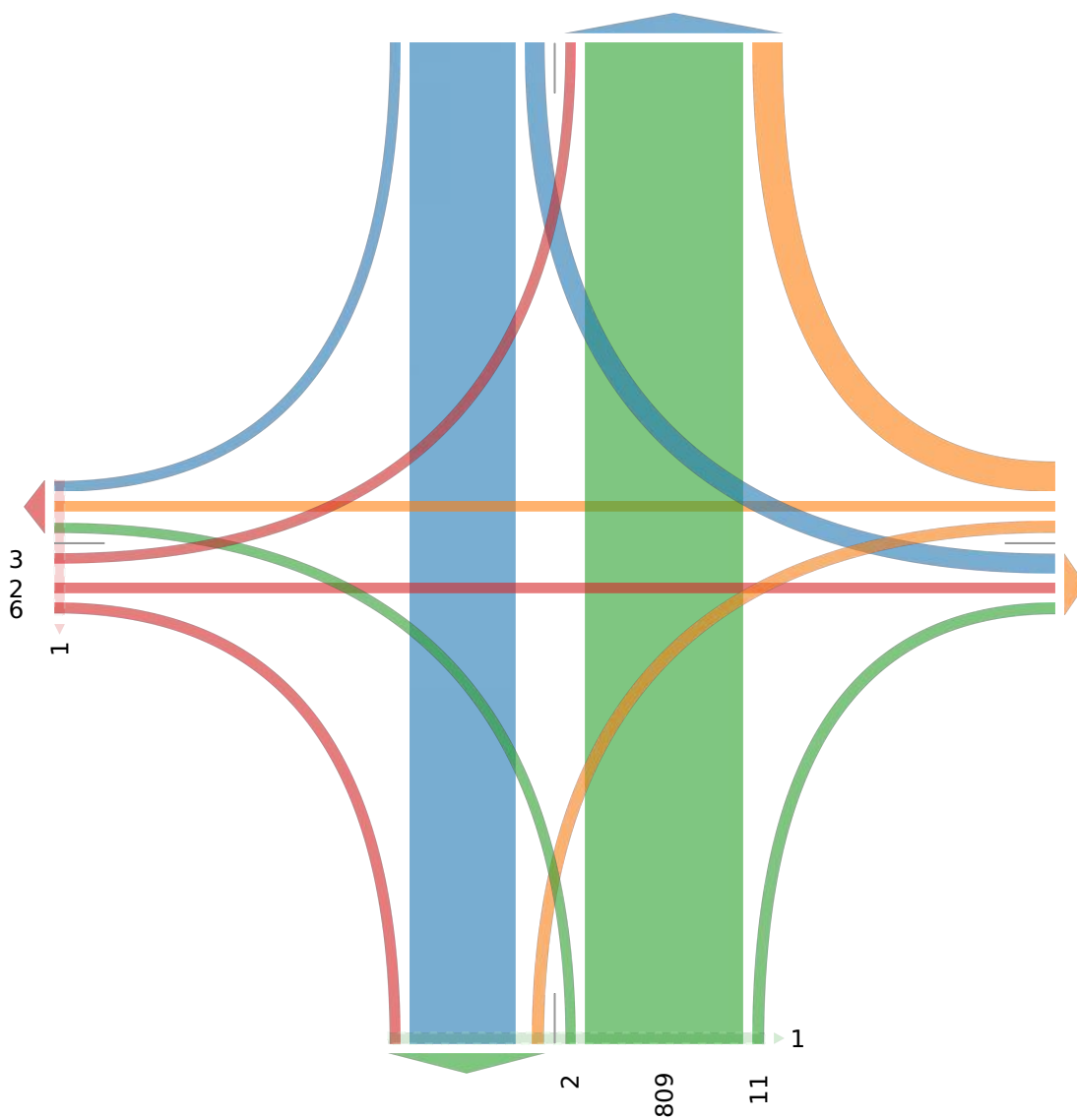
Total: 1507

In: 583

Out: 924

5 523 55

[W] Oxford
Total: 19
In: 11 Out: 8



112
1
13
Out: 68 In: 126
Total: 194
[E] Oxford

Out: 542

In: 822

Total: 1364

[S] Main

Main/Oxford - TMC

Thu Oct 14, 2021

Midday Peak (12 PM - 1 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885148, Location: 41.768883, -88.008429



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Oxford Eastbound						Oxford Westbound						Main Northbound						Main Southbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2021-10-14 12:00PM	0	1	2	0	3	0	2	0	8	0	10	0	1	148	5	0	154	0	5	145	2	0	152	0	319
12:15PM	0	0	0	0	0	0	4	0	12	0	16	1	0	167	4	0	171	0	4	159	1	0	164	0	351
12:30PM	1	0	1	0	2	0	3	0	7	0	10	0	4	158	5	0	167	0	7	174	2	0	183	0	362
12:45PM	1	0	2	0	3	0	3	0	11	0	14	0	0	144	3	0	147	0	7	201	3	0	211	0	375
Total	2	1	5	0	8	0	12	0	38	0	50	1	5	617	17	0	639	0	23	679	8	0	710	0	1407
% Approach	25.0%	12.5%	62.5%	0%	-	-	24.0%	0%	76.0%	0%	-	-	0.8%	96.6%	2.7%	0%	-	-	3.2%	95.6%	1.1%	0%	-	-	-
% Total	0.1%	0.1%	0.4%	0%	0.6%	-	0.9%	0%	2.7%	0%	3.6%	-	0.4%	43.9%	1.2%	0%	45.4%	-	1.6%	48.3%	0.6%	0%	50.5%	-	-
PHF	0.500	0.250	0.625	-	0.667	-	0.750	-	0.792	-	0.781	-	0.313	0.924	0.850	-	0.934	-	0.821	0.845	0.667	-	0.841	-	0.938
Lights	2	0	4	0	6	-	12	0	37	0	49	-	5	607	16	0	628	-	22	667	6	0	695	-	1378
% Lights	100%	0%	80.0%	0%	75.0%	-	100%	0%	97.4%	0%	98.0%	-	100%	98.4%	94.1%	0%	98.3%	-	95.7%	98.2%	75.0%	0%	97.9%	-	97.9%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	1	-	0	3	0	0	3	-	4
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0%	0.4%	0%	0%	0.4%	-	0.3%
Buses and Single-Unit Trucks	0	1	1	0	2	-	0	0	1	0	1	-	0	9	1	0	10	-	1	9	2	0	12	-	25
% Buses and Single-Unit Trucks	0%	100%	20.0%	0%	25.0%	-	0%	0%	2.6%	0%	2.0%	-	0%	1.5%	5.9%	0%	1.6%	-	4.3%	1.3%	25.0%	0%	1.7%	-	1.8%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Oxford - TMC

Thu Oct 14, 2021

Midday Peak (12 PM - 1 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885148, Location: 41.768883, -88.008429



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

Total: 1367

In: 710

Out: 657

8

679

23

[W] Oxford
Total: 21
In: 8 Out: 13

5
2
1

38
12

Out: 41 In: 50
Total: 91
[E] Oxford

1

5

617

17

Out: 696

In: 639

Total: 1335

[S] Main

Main/Oxford - TMC

Thu Oct 14, 2021

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885148, Location: 41.768883, -88.008429



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Oxford Eastbound						Oxford Westbound						Main Northbound						Main Southbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2021-10-14 4:45PM	0	0	5	0	5	0	5	1	17	0	23	2	0	212	12	0	224	0	18	265	2	0	285	0	537
5:00PM	0	1	4	0	5	1	1	1	12	0	14	2	1	193	4	0	198	0	17	254	4	0	275	0	492
5:15PM	1	0	6	0	7	5	5	1	18	0	24	0	5	205	9	0	219	0	18	299	2	0	319	0	569
5:30PM	0	0	2	0	2	1	6	0	6	0	12	0	3	226	4	0	233	0	13	269	0	0	282	0	529
Total	1	1	17	0	19	7	17	3	53	0	73	4	9	836	29	0	874	0	66	1087	8	0	1161	0	2127
% Approach	5.3%	5.3%	89.5%	0%	-	-	23.3%	4.1%	72.6%	0%	-	-	1.0%	95.7%	3.3%	0%	-	-	5.7%	93.6%	0.7%	0%	-	-	-
% Total	0%	0%	0.8%	0%	0.9%	-	0.8%	0.1%	2.5%	0%	3.4%	-	0.4%	39.3%	1.4%	0%	41.1%	-	3.1%	51.1%	0.4%	0%	54.6%	-	-
PHF	0.250	0.250	0.708	-	0.679	-	0.708	0.750	0.722	-	0.750	-	0.450	0.924	0.604	-	0.937	-	0.917	0.909	0.500	-	0.910	-	0.934
Lights	1	1	17	0	19	-	17	3	52	0	72	-	9	831	29	0	869	-	66	1082	8	0	1156	-	2116
% Lights	100%	100%	100%	0%	100%	-	100%	100%	98.1%	0%	98.6%	-	100%	99.4%	100%	0%	99.4%	-	100%	99.5%	100%	0%	99.6%	-	99.5%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2	0	0	2	-	2
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0.1%
Buses and Single-Unit Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	4	0	0	4	-	0	3	0	0	3	-	7
% Buses and Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.5%	0%	0%	0.5%	-	0%	0.3%	0%	0%	0.3%	-	0.3%
Bicycles on Road	0	0	0	0	0	-	0	0	1	0	1	-	0	1	0	0	1	-	0	0	0	0	0	-	2
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	1.9%	0%	1.4%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	6	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	85.7%	-	-	-	-	-	75.0%	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	14.3%	-	-	-	-	-	25.0%	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main/Oxford - TMC

Thu Oct 14, 2021

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 885148, Location: 41.768883, -88.008429

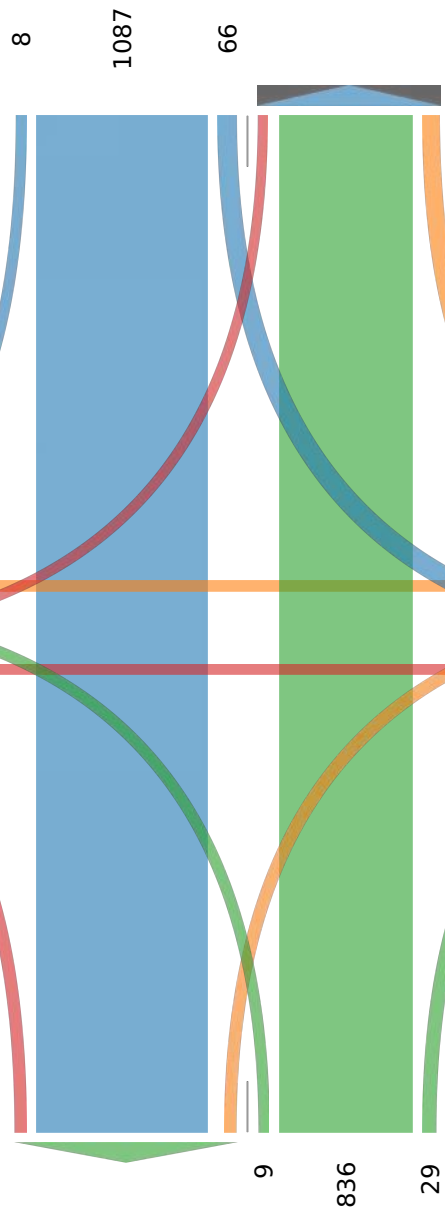


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Main

Total: 2051

In: 1161 Out: 890



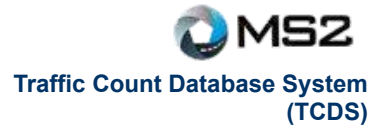
[S] Main

Total: 1995

In: 874 Out: 1121

[W] Oxford
Total: 39
In: 19 Out: 20

[E] Oxford
Total: 169
In: 73 Out: 96

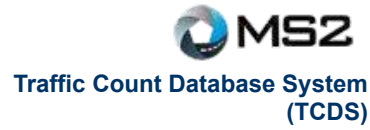


Volume Count Report

LOCATION INFO	
Location ID	022 3675
Type	LINK
Funct'l Class	4
Located On	Main St
From Road	Ogden Ave
To Road	55th St
Direction	2-WAY
County	Dupage
Community	DOWNERS GROVE
MPO ID	
HPMS ID	
Agency	Illinois DOT

COUNT DATA INFO	
Count Status	Accepted
Start Date	Mon 6/29/2020
End Date	Tue 6/30/2020
Start Time	9:00:00 AM
End Time	9:00:00 AM
Direction	2-WAY
Notes	
Station	MAIN ST
Study	
Speed Limit	
Description	
Sensor Type	
Source	CombineVolumeCountsIncremental
Latitude,Longitude	

INTERVAL:60-MIN	
Time	Hourly Count
0:00-1:00	21
1:00-2:00	17
2:00-3:00	16
3:00-4:00	10
4:00-5:00	23
5:00-6:00	89
6:00-7:00	203
7:00-8:00	372
8:00-9:00	450
9:00-10:00	502
10:00-11:00	511
11:00-12:00	599
12:00-13:00	673
13:00-14:00	626
14:00-15:00	604
15:00-16:00	559
16:00-17:00	551
17:00-18:00	496
18:00-19:00	507
19:00-20:00	328
20:00-21:00	300
21:00-22:00	174
22:00-23:00	125
23:00-24:00	68
Total	7,824
AM Peak	11:00-12:00 599
PM Peak	12:00-13:00 673



Volume Count Report

LOCATION INFO	
Location ID	022 3677
Type	LINK
Funct'l Class	4
Located On	Main St
From Road	63rd St
To Road	Lemont Rd
Direction	2-WAY
County	Dupage
Community	DOWNERS GROVE
MPO ID	
HPMS ID	
Agency	Illinois DOT

COUNT DATA INFO	
Count Status	Accepted
Start Date	Tue 6/30/2020
End Date	Wed 7/1/2020
Start Time	1:00:00 PM
End Time	1:00:00 PM
Direction	2-WAY
Notes	
Station	MAIN ST
Study	
Speed Limit	
Description	
Sensor Type	
Source	CombineVolumeCountsIncremental
Latitude,Longitude	

INTERVAL:60-MIN	
Time	Hourly Count
0:00-1:00	75
1:00-2:00	46
2:00-3:00	29
3:00-4:00	23
4:00-5:00	72
5:00-6:00	201
6:00-7:00	458
7:00-8:00	779
8:00-9:00	871
9:00-10:00	905
10:00-11:00	1,091
11:00-12:00	1,191
12:00-13:00	1,271
13:00-14:00	1,220
14:00-15:00	1,254
15:00-16:00	1,278
16:00-17:00	1,370
17:00-18:00	1,309
18:00-19:00	1,145
19:00-20:00	955
20:00-21:00	643
21:00-22:00	406
22:00-23:00	226
23:00-24:00	123
Total	16,941
AM Peak	11:00-12:00 1,191
PM Peak	16:00-17:00 1,370

TRAFFIC FORECAST RECORD

Record Number: du-53-21

Type of Report: Projection

Year Sought: 2050

Analyst: JAR

Organization requesting forecast: HR Green

Contact: Ted Yelton, P.E., PTOE

Email or Phone tyelton@hrgreen.com

Sponsor: Village of Downers Grove

Date request was received: December 3, 2021

Date that response was emailed: December 6, 2021

Facility Location: Main Street Corridor Study

Municipality: Downers Grove



Chicago Metropolitan
Agency for Planning

433 West Van Buren Street
Suite 450
Chicago, IL 60607

312-454-0400
cmap.illinois.gov

December 6, 2021

Hon. Bob Barnett
Mayor
Village of Downers Grove
801 Burlington Ave
Downers Grove, IL 60515

Subject: Main Street Corridor Study
Village of Downers Grove

Dear Mayor Barnett:

In response to a request made on your behalf and dated December 3, 2021, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current ADT	Year 2050 ADT
Main St north of Sherman Rd	16,100	17,000
Main St south of Franklin Ave	10,700	11,500
Main St north of Oxford St	21,900	24,300
Main St south of Oxford St	21,100	23,400
Prairie Ave west of Main St	6,900	7,500
Prairie Ave east of Main St	5,700	6,300
Oxford St east of Main St	1,900	2,100

Traffic projections are developed using existing ADT data provided in the request letter and the results from the June 2021 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area.

If you have any questions, please call me at (312) 386-8806.

Sincerely,

Jose Rodriguez, PTP, AICP
Senior Planner, Research & Analysis










cc: Yelton (HR Green)
2021_CY_TrafficForecast\DownersGrove\du-53-21\du-53-21.docx

District 99 Pedestrian Safety Traffic Analysis
Village of Downers Grove
February 2022

Appendix B – Traffic Operations Analysis Outputs

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: AM Peak
02/20/2022

							
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Lane Configurations							
Traffic Volume (vph)	53	22	528	86	5	351	
Future Volume (vph)	53	22	528	86	5	351	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	10	10	10	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.79		1.00			1.00	
Frt	0.960		0.979				
Flt Protected	0.966					0.999	
Satd. Flow (prot)	1545	0	3259	0	0	3333	
Flt Permitted	0.966					0.944	
Satd. Flow (perm)	1384	0	3259	0	0	3150	
Right Turn on Red		No		No			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	329		609			671	
Travel Time (s)	9.0		16.6			18.3	
Confl. Peds. (#/hr)	93	552		2	2		
Confl. Bikes (#/hr)				1			
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	
Adj. Flow (vph)	65	27	652	106	6	433	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	92	0	758	0	0	439	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		0			0	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	6		65			65	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9		9	15		
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	7
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	5.0		15.0		15.0	15.0	3.0
Minimum Split (s)	11.0		22.5		22.5	22.5	33.0
Total Split (s)	23.0		34.0		34.0	34.0	33.0
Total Split (%)	25.6%		37.8%		37.8%	37.8%	37%
Maximum Green (s)	17.0		28.0		28.0	28.0	30.0
Yellow Time (s)	4.5		4.5		4.5	4.5	3.0
All-Red Time (s)	1.5		1.5		1.5	1.5	0.0
Lost Time Adjust (s)	0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0			6.0	
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: AM Peak
02/20/2022

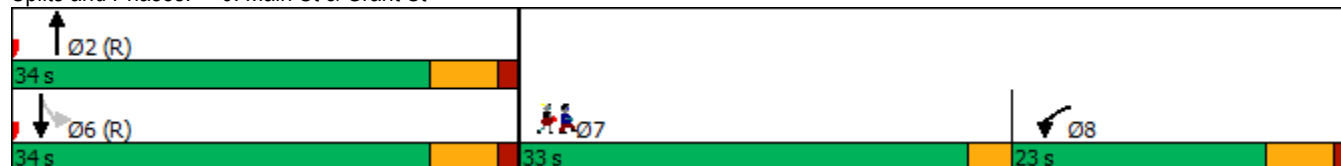


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Recall Mode	None		C-Max		C-Max	C-Max	None
Walk Time (s)							7.0
Flash Dont Walk (s)							23.0
Pedestrian Calls (#/hr)							500
Act Effct Green (s)	10.7		36.8			36.8	
Actuated g/C Ratio	0.12		0.41			0.41	
v/c Ratio	0.50		0.57			0.34	
Control Delay	45.9		25.4			20.9	
Queue Delay	0.0		0.0			0.0	
Total Delay	45.9		25.4			20.9	
LOS	D		C			C	
Approach Delay	45.9		25.4			20.9	
Approach LOS	D		C			C	
Queue Length 50th (ft)	50		218			92	
Queue Length 95th (ft)	83		266			126	
Internal Link Dist (ft)	249		529			591	
Turn Bay Length (ft)							
Base Capacity (vph)	291		1331			1287	
Starvation Cap Reductn	0		0			0	
Spillback Cap Reductn	0		0			0	
Storage Cap Reductn	0		0			0	
Reduced v/c Ratio	0.32		0.57			0.34	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.57
Intersection Signal Delay:	25.3
Intersection LOS:	C
Intersection Capacity Utilization	34.6%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 6: Main St & Grant St



Lanes, Volumes, Timings
13: Main St & Prairie Ave

Timing Plan: AM Peak
02/20/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	144	36	27	113	65	64	434	55	55	295	59
Future Volume (vph)	131	144	36	27	113	65	64	434	55	55	295	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1000
Lane Width (ft)	11	11	11	11	11	11	10	10	10	10	10	10
Storage Length (ft)	110		0	110		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	0.99	1.00		1.00	0.99			1.00			0.99	
Frt		0.970			0.945			0.985			0.978	
Flt Protected	0.950			0.950				0.994			0.993	
Satd. Flow (prot)	1745	1774	0	1745	1714	0	0	3262	0	0	3234	0
Flt Permitted	0.431			0.613				0.811			0.767	
Satd. Flow (perm)	780	1774	0	1120	1714	0	0	2660	0	0	2496	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			33			16			21	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		710			690			585			659	
Travel Time (s)		19.4			18.8			16.0			18.0	
Confl. Peds. (#/hr)	18		6	6		18	6		7	7		6
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	170	187	47	35	147	84	83	564	71	71	383	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	234	0	35	231	0	0	718	0	0	531	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		6			6			6			6	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	2.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		custom	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2				6
Permitted Phases	4			8			5			6		
Detector Phase	7	4		3	8		5	2		6		6
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		3.0	15.0		15.0	15.0	
Minimum Split (s)	9.0	28.0		9.0	28.0		6.0	28.0		28.0	28.0	
Total Split (s)	12.0	33.0		12.0	33.0		15.0	45.0		30.0	30.0	
Total Split (%)	13.3%	36.7%		13.3%	36.7%		16.7%	50.0%		33.3%	33.3%	
Maximum Green (s)	9.0	27.0		9.0	27.0		12.0	39.0		24.0	24.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	4.5		4.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0			6.0			6.0	

Lanes, Volumes, Timings
13: Main St & Prairie Ave

Timing Plan: AM Peak
02/20/2022

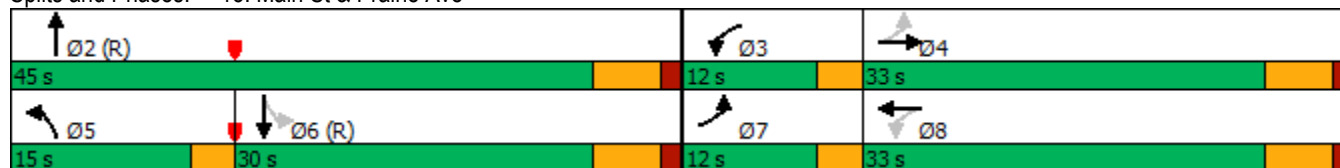


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	7.0		3.0	7.0		3.0	4.0		4.0	4.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)		7.0			7.0			7.0		7.0	7.0	
Flash Dont Walk (s)		15.0			15.0			15.0		15.0	15.0	
Pedestrian Calls (#/hr)		6			18			7		6	6	
Act Effct Green (s)	33.9	25.5		29.6	19.8		46.3				46.3	
Actuated g/C Ratio	0.38	0.28		0.33	0.22		0.51				0.51	
v/c Ratio	0.44	0.46		0.08	0.57		0.52				0.41	
Control Delay	21.4	28.2		15.9	31.5		20.5				12.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0				0.0	
Total Delay	21.4	28.2		15.9	31.5		20.5				12.8	
LOS	C	C		B	C		C				B	
Approach Delay		25.3			29.5		20.5				12.8	
Approach LOS		C			C		C				B	
Queue Length 50th (ft)	65	109		12	101		136				44	
Queue Length 95th (ft)	80	135		23	127		184				91	
Internal Link Dist (ft)		630			610		505				579	
Turn Bay Length (ft)	110			110								
Base Capacity (vph)	390	553		458	537		1377				1295	
Starvation Cap Reductn	0	0		0	0		0				0	
Spillback Cap Reductn	0	0		0	0		0				0	
Storage Cap Reductn	0	0		0	0		0				0	
Reduced v/c Ratio	0.44	0.42		0.08	0.43		0.52				0.41	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 35.5 (39%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 20.6
 Intersection LOS: C
 Intersection Capacity Utilization 76.3%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 13: Main St & Prairie Ave



Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: AM Peak
02/20/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	0	18	32	26	50	24	383	0	0	228	120
Future Volume (vph)	99	0	18	32	26	50	24	383	0	0	228	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	10	10	10
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94		0.97	0.99	0.95			1.00				0.96
Frt			0.850		0.902							0.850
Flt Protected	0.950			0.950				0.997				
Satd. Flow (prot)	1745	0	1561	1745	1572	0	0	1894	0	0	1756	1507
Flt Permitted	0.697			0.950				0.971				
Satd. Flow (perm)	1206	0	1521	1734	1572	0	0	1844	0	0	1756	1451
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			42		61							146
Link Speed (mph)		25			25			25				25
Link Distance (ft)		715			336			1132				585
Travel Time (s)		19.5			9.2			30.9				16.0
Confl. Peds. (#/hr)	54		3	3		54	7		14	14		7
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	121	0	22	39	32	61	29	467	0	0	278	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	0	22	39	93	0	0	496	0	0	278	146
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		6			6			6				6
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.00	1.00	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm	NA		Perm	NA			NA	Perm
Protected Phases					8			2				6
Permitted Phases	4		4	8			2					6
Detector Phase	4		4	8	8		2	2				6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		15.0	15.0			15.0	15.0
Minimum Split (s)	28.0		28.0	28.0	28.0		24.5	24.5			24.5	24.5
Total Split (s)	28.0		28.0	28.0	28.0		62.0	62.0			62.0	62.0
Total Split (%)	31.1%		31.1%	31.1%	31.1%		68.9%	68.9%			68.9%	68.9%
Maximum Green (s)	22.0		22.0	22.0	22.0		55.5	55.5			55.5	55.5
Yellow Time (s)	4.0		4.0	4.0	4.0		4.5	4.5			4.5	4.5
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0			6.5			6.5	6.5

Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: AM Peak
02/20/2022

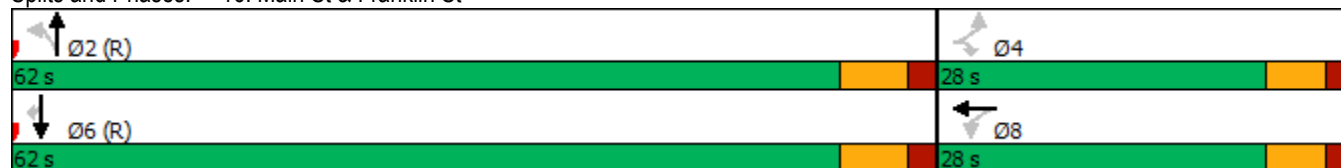


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0		4.0	4.0	4.0		6.0	6.0			6.0	6.0
Recall Mode	None		None	None	None		C-Max	C-Max			C-Max	C-Max
Walk Time (s)	8.0		8.0	8.0	8.0		8.0	8.0			8.0	8.0
Flash Dont Walk (s)	14.0		14.0	14.0	14.0		10.0	10.0			10.0	10.0
Pedestrian Calls (#/hr)	3		3	20	20		14	14			7	7
Act Effct Green (s)	16.1		16.1	16.1	16.1			61.4			61.4	61.4
Actuated g/C Ratio	0.18		0.18	0.18	0.18			0.68			0.68	0.68
v/c Ratio	0.56		0.07	0.13	0.28			0.39			0.23	0.14
Control Delay	42.7		4.2	29.2	14.5			8.3			5.0	2.0
Queue Delay	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Delay	42.7		4.2	29.2	14.5			8.3			5.0	2.0
LOS	D		A	C	B			A			A	A
Approach Delay		36.7				18.9		8.3			4.0	
Approach LOS		D				B		A			A	
Queue Length 50th (ft)	64		0	19	16			102			46	0
Queue Length 95th (ft)	99		7	39	45			175			122	23
Internal Link Dist (ft)		635				256		1052			505	
Turn Bay Length (ft)	50											
Base Capacity (vph)	294		403	423	430			1258			1198	1036
Starvation Cap Reductn	0		0	0	0			0			0	0
Spillback Cap Reductn	0		0	0	0			0			0	0
Storage Cap Reductn	0		0	0	0			0			0	0
Reduced v/c Ratio	0.41		0.05	0.09	0.22			0.39			0.23	0.14

Intersection Summary










Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 46.8 (52%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 11.3
 Intersection Capacity Utilization 68.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 16: Main St & Franklin St



HCM Unsignalized Intersection Capacity Analysis 3: Main St & Sherman St

Timing Plan: AM Peak
01/13/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	75	533	20	100	372
Future Volume (Veh/h)	0	75	533	20	100	372
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	101	720	27	135	503
Pedestrians	2		1			
Lane Width (ft)	12.0		10.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			671			
pX, platoon unblocked	0.87	0.87			0.87	
vC, conflicting volume	1258	376			749	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	996	0			410	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	89			87	
cM capacity (veh/h)	184	946			1006	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	101	480	267	303	335	
Volume Left	0	0	0	135	0	
Volume Right	101	0	27	0	0	
cSH	946	1700	1700	1006	1700	
Volume to Capacity	0.11	0.28	0.16	0.13	0.20	
Queue Length 95th (ft)	9	0	0	12	0	
Control Delay (s)	9.3	0.0	0.0	4.8	0.0	
Lane LOS	A			A		
Approach Delay (s)	9.3	0.0		2.3		
Approach LOS	A					
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			43.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
7: Main St & Lincoln St

Timing Plan: AM Peak
01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	19	18	36	5	25	11	51	554	12	12	368	35
Future Volume (Veh/h)	19	18	36	5	25	11	51	554	12	12	368	35
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	23	22	43	6	30	13	61	667	14	14	443	42
Pedestrians		9			5			2			5	
Lane Width (ft)		12.0			12.0			10.0			10.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											609	
pX, platoon unblocked	0.94	0.94	0.94	0.94	0.94		0.94					
vC, conflicting volume	990	1309	254	1106	1323	350	494			686		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	863	1202	80	987	1217	350	336			686		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	86	95	96	81	98	95			98		
cM capacity (veh/h)	184	161	903	153	158	646	1151			913		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	88	49	394	348	236	264						
Volume Left	23	6	61	0	14	0						
Volume Right	43	13	0	14	0	42						
cSH	285	197	1151	1700	913	1700						
Volume to Capacity	0.31	0.25	0.05	0.20	0.02	0.15						
Queue Length 95th (ft)	32	24	4	0	1	0						
Control Delay (s)	23.2	29.3	1.7	0.0	0.7	0.0						
Lane LOS	C	D	A		A							
Approach Delay (s)	23.2	29.3	0.9		0.3							
Approach LOS	C	D										
Intersection Summary												
Average Delay			3.1									
Intersection Capacity Utilization			47.5%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

10: Main St & Chicago Ave

Timing Plan: AM Peak
01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	10	42	36	6	54	37	22	587	25	31	368	15
Future Volume (Veh/h)	10	42	36	6	54	37	22	587	25	31	368	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	12	52	44	7	67	46	27	725	31	38	454	19
Pedestrians		11			2			4			6	
Lane Width (ft)		12.0			12.0			10.0			10.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								659			1279	
pX, platoon unblocked	0.95	0.95		0.95	0.95	0.95				0.95		
vC, conflicting volume	1052	1362	252	1174	1356	386	484			758		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	944	1272	252	1072	1265	241	484			634		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	65	94	94	55	94	97			96		
cM capacity (veh/h)	118	148	744	108	149	721	1078			907		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	108	120	390	394	265	246						
Volume Left	12	7	27	0	38	0						
Volume Right	44	46	0	31	0	19						
cSH	211	208	1078	1700	907	1700						
Volume to Capacity	0.51	0.58	0.03	0.23	0.04	0.14						
Queue Length 95th (ft)	66	80	2	0	3	0						
Control Delay (s)	38.8	43.7	0.8	0.0	1.7	0.0						
Lane LOS	E	E	A		A							
Approach Delay (s)	38.8	43.7	0.4		0.9							
Approach LOS	E	E										
Intersection Summary												
Average Delay			6.7									
Intersection Capacity Utilization			48.4%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis 22: Main St & Oxford St

Timing Plan: AM Peak
01/13/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	2	6	13	1	112	2	809	11	55	523	5
Future Volume (Veh/h)	3	2	6	13	1	112	2	809	11	55	523	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	3	2	7	15	1	126	2	909	12	62	588	6
Pedestrians		1						1				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		3.5						3.5				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1301	1641	299	1346	1638	460	595			921		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1301	1641	299	1346	1638	460	595			921		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	98	99	85	99	77	100			92		
cM capacity (veh/h)	86	92	702	102	93	553	990			750		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	12	142	456	466	356	300						
Volume Left	3	15	2	0	62	0						
Volume Right	7	126	0	12	0	6						
cSH	181	368	990	1700	750	1700						
Volume to Capacity	0.07	0.39	0.00	0.27	0.08	0.18						
Queue Length 95th (ft)	5	44	0	0	7	0						
Control Delay (s)	26.3	20.8	0.1	0.0	2.6	0.0						
Lane LOS	D	C	A		A							
Approach Delay (s)	26.3	20.8	0.0		1.4							
Approach LOS	D	C										
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			57.4%		ICU Level of Service				B			
Analysis Period (min)			15									

Arterial Level of Service
2021 Existing Conditions

AM Peak
02/20/2022

Arterial Level of Service: NB Main St












Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Franklin St	16	8.8	39.3	0.2	20
Prairie Ave	13	23.1	38.4	0.1	10
Chicago Ave	10	1.9	19.9	0.1	23
Lincoln St	7	0.8	18.8	0.1	24
Grant St	6	16.0	30.4	0.1	14
Sherman St	3	2.3	21.9	0.1	21
Total		53.0	168.8	0.8	18

Arterial Level of Service: SB Main St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Sherman St	3	1.0	10.2	0.1	23
Grant St	6	14.5	30.8	0.1	15
Lincoln St	7	1.8	19.6	0.1	21
Chicago Ave	10	1.2	19.5	0.1	23
Prairie Ave	13	14.7	32.4	0.1	14
Franklin St	16	6.2	21.9	0.1	18
Total		39.4	134.5	0.7	18

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: PM Peak
02/20/2022

							Ø7
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations			 			 	
Traffic Volume (vph)	27	16	531	36	21	619	
Future Volume (vph)	27	16	531	36	21	619	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	10	10	10	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.85		1.00			1.00	
Frt	0.949		0.990				
Flt Protected	0.970					0.998	
Satd. Flow (prot)	1533	0	3330	0	0	3363	
Flt Permitted	0.970					0.923	
Satd. Flow (perm)	1494	0	3330	0	0	3110	
Right Turn on Red		No		No			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	329		609			671	
Travel Time (s)	9.0		16.6			18.3	
Confl. Peds. (#/hr)	15	147		6	6		
Confl. Bikes (#/hr)		1		1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	
Adj. Flow (vph)	28	17	553	38	22	645	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	45	0	591	0	0	667	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		0			0	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	6		65			65	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9		9	15		
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	7
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	5.0		15.0		15.0	15.0	3.0
Minimum Split (s)	11.0		22.5		22.5	22.5	33.0
Total Split (s)	17.0		50.0		50.0	50.0	33.0
Total Split (%)	17.0%		50.0%		50.0%	50.0%	33%
Maximum Green (s)	11.0		44.0		44.0	44.0	30.0
Yellow Time (s)	4.5		4.5		4.5	4.5	3.0
All-Red Time (s)	1.5		1.5		1.5	1.5	0.0
Lost Time Adjust (s)	0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0			6.0	
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: PM Peak
02/20/2022

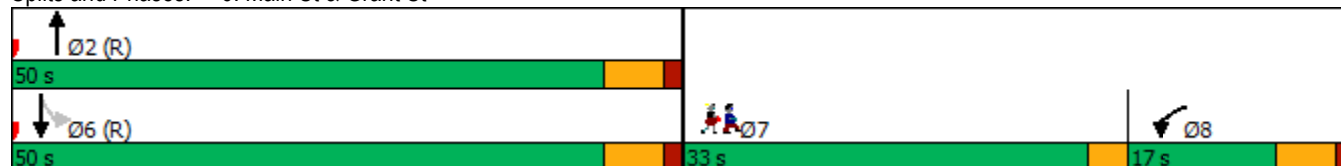


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Recall Mode	None		C-Max		C-Max	C-Max	None
Walk Time (s)							7.0
Flash Dont Walk (s)							23.0
Pedestrian Calls (#/hr)							147
Act Effct Green (s)	8.3		51.6			51.6	
Actuated g/C Ratio	0.08		0.52			0.52	
v/c Ratio	0.35		0.34			0.42	
Control Delay	50.4		22.1			17.3	
Queue Delay	0.0		0.0			0.0	
Total Delay	50.4		22.1			17.3	
LOS	D		C			B	
Approach Delay	50.4		22.1			17.3	
Approach LOS	D		C			B	
Queue Length 50th (ft)	28		155			146	
Queue Length 95th (ft)	62		216			206	
Internal Link Dist (ft)	249		529			591	
Turn Bay Length (ft)							
Base Capacity (vph)	168		1719			1605	
Starvation Cap Reductn	0		0			0	
Spillback Cap Reductn	0		0			0	
Storage Cap Reductn	0		0			0	
Reduced v/c Ratio	0.27		0.34			0.42	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.42
Intersection Signal Delay:	20.6
Intersection LOS:	C
Intersection Capacity Utilization	47.4%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 6: Main St & Grant St



Lanes, Volumes, Timings
13: Main St & Prairie Ave

Timing Plan: PM Peak
02/20/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	121	38	30	153	59	41	421	38	42	464	94
Future Volume (vph)	70	121	38	30	153	59	41	421	38	42	464	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	10	10	10	10	10	10
Storage Length (ft)	110		0	110		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00	0.99		0.99	1.00			1.00			0.99	
Frt		0.964			0.958			0.989			0.977	
Flt Protected	0.950			0.950				0.996			0.996	
Satd. Flow (prot)	1745	1760	0	1745	1752	0	0	3311	0	0	3258	0
Flt Permitted	0.403			0.650				0.853			0.877	
Satd. Flow (perm)	739	1760	0	1182	1752	0	0	2834	0	0	2868	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			18			10			33	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		710			690			585			659	
Travel Time (s)		19.4			18.8			16.0			18.0	
Confl. Peds. (#/hr)	2		10	10		2	9		5	5		9
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	74	129	40	32	163	63	44	448	40	45	494	100
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	169	0	32	226	0	0	532	0	0	639	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		6			6			6			6	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		custom	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			1		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		15.0	15.0		3.0	15.0	
Minimum Split (s)	9.0	28.0		9.0	28.0		28.0	28.0		6.0	28.0	
Total Split (s)	12.0	28.0		12.0	28.0		45.0	45.0		15.0	60.0	
Total Split (%)	12.0%	28.0%		12.0%	28.0%		45.0%	45.0%		15.0%	60.0%	
Maximum Green (s)	9.0	22.0		9.0	22.0		39.0	39.0		12.0	54.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5		3.0	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		1.5	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0			6.0			6.0	

Lanes, Volumes, Timings
13: Main St & Prairie Ave

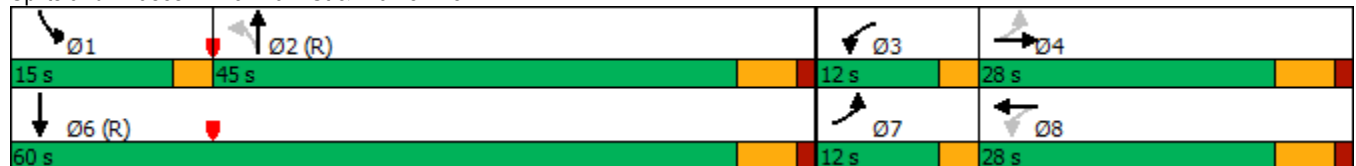
Timing Plan: PM Peak
02/20/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	7.0		3.0	7.0		4.0	4.0		3.0	4.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0				7.0
Flash Dont Walk (s)		15.0			15.0		15.0	15.0				15.0
Pedestrian Calls (#/hr)		10			2		5	5				9
Act Effct Green (s)	30.7	22.4		28.1	19.4			59.3				59.3
Actuated g/C Ratio	0.31	0.22		0.28	0.19			0.59				0.59
v/c Ratio	0.24	0.42		0.09	0.64			0.32				0.37
Control Delay	23.9	33.5		21.5	42.3			9.4				19.5
Queue Delay	0.0	0.0		0.0	0.0			0.0				0.0
Total Delay	23.9	33.5		21.5	42.3			9.4				19.5
LOS	C	C		C	D			A				B
Approach Delay		30.6			39.7			9.4				19.5
Approach LOS		C			D			A				B
Queue Length 50th (ft)	32	85		13	121			83				120
Queue Length 95th (ft)	62	147		33	197			109				204
Internal Link Dist (ft)		630			610			505				579
Turn Bay Length (ft)	110			110								
Base Capacity (vph)	318	431		400	399			1685				1715
Starvation Cap Reductn	0	0		0	0			0				0
Spillback Cap Reductn	0	0		0	0			0				0
Storage Cap Reductn	0	0		0	0			0				0
Reduced v/c Ratio	0.23	0.39		0.08	0.57			0.32				0.37

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	20.5 (21%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	21.0
Intersection LOS:	C
Intersection Capacity Utilization:	72.1%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 13: Main St & Prairie Ave



Lanes, Volumes, Timings
16: Main St & Franklin St












Timing Plan: PM Peak
02/20/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	0	16	8	9	19	33	355	1	0	377	146
Future Volume (vph)	128	0	16	8	9	19	33	355	1	0	377	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	10	10	10
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.97	0.98			1.00				0.96
Frt			0.850		0.900							0.850
Flt Protected	0.950			0.950				0.996				
Satd. Flow (prot)	1745	0	1473	1745	1628	0	0	1858	0	0	1756	1492
Flt Permitted	0.738			0.950				0.945				
Satd. Flow (perm)	1341	0	1401	1693	1628	0	0	1761	0	0	1756	1430
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			38		20							157
Link Speed (mph)		25			25			25				25
Link Distance (ft)		715			336			1132				585
Travel Time (s)		19.5			9.2			30.9				16.0
Confl. Peds. (#/hr)	8		13	13		8	8		8	8		8
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	6%	0%	0%	0%	0%	2%	0%	0%	1%	1%
Adj. Flow (vph)	138	0	17	9	10	20	35	382	1	0	405	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	0	17	9	30	0	0	418	0	0	405	157
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		6			6			6				6
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.00	1.00	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm	NA		Perm	NA			NA	Perm
Protected Phases					8			2				6
Permitted Phases	4		4	8			2					6
Detector Phase	4		4	8	8		2	2				6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		15.0	15.0			15.0	15.0
Minimum Split (s)	28.0		28.0	28.0	28.0		24.5	24.5			24.5	24.5
Total Split (s)	28.0		28.0	28.0	28.0		72.0	72.0			72.0	72.0
Total Split (%)	28.0%		28.0%	28.0%	28.0%		72.0%	72.0%			72.0%	72.0%
Maximum Green (s)	22.0		22.0	22.0	22.0		65.5	65.5			65.5	65.5
Yellow Time (s)	4.0		4.0	4.0	4.0		4.5	4.5			4.5	4.5
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0			6.5			6.5	6.5

HCM Unsignalized Intersection Capacity Analysis 3: Main St & Sherman St

Timing Plan: PM Peak
01/13/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (veh/h)	1	63	541	9	23	658
Future Volume (Veh/h)	1	63	541	9	23	658
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	1	66	564	9	24	685
Pedestrians	2		1			
Lane Width (ft)	12.0		10.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			671			
pX, platoon unblocked	0.92	0.92			0.92	
vC, conflicting volume	962	288			575	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	791	61			372	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	93			98	
cM capacity (veh/h)	294	913			1090	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	67	376	197	252	457	
Volume Left	1	0	0	24	0	
Volume Right	66	0	9	0	0	
cSH	885	1700	1700	1090	1700	
Volume to Capacity	0.08	0.22	0.12	0.02	0.27	
Queue Length 95th (ft)	6	0	0	2	0	
Control Delay (s)	9.4	0.0	0.0	1.0	0.0	
Lane LOS	A			A		
Approach Delay (s)	9.4	0.0		0.4		
Approach LOS	A					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			45.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 7: Main St & Lincoln St

















Timing Plan: PM Peak
01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	11	13	15	2	11	12	13	539	5	12	593	31
Future Volume (Veh/h)	11	13	15	2	11	12	13	539	5	12	593	31
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	12	14	16	2	12	13	14	573	5	13	631	33
Pedestrians		34			10			1			3	
Lane Width (ft)		12.0			12.0			10.0			10.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		3			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											609	
pX, platoon unblocked	0.89	0.89	0.89	0.89	0.89		0.89					
vC, conflicting volume	1044	1324	367	979	1338	302	698			588		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	810	1123	52	737	1139	302	423			588		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	92	98	99	93	98	99			99		
cM capacity (veh/h)	209	173	873	240	169	692	992			988		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	42	27	300	292	328	348						
Volume Left	12	2	14	0	13	0						
Volume Right	16	13	0	5	0	33						
cSH	268	275	992	1700	988	1700						
Volume to Capacity	0.16	0.10	0.01	0.17	0.01	0.20						
Queue Length 95th (ft)	14	8	1	0	1	0						
Control Delay (s)	20.9	19.5	0.5	0.0	0.5	0.0						
Lane LOS	C	C	A		A							
Approach Delay (s)	20.9	19.5	0.3		0.2							
Approach LOS	C	C										
Intersection Summary												
Average Delay			1.3									
Intersection Capacity Utilization			38.3%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
10: Main St & Chicago Ave

Timing Plan: PM Peak
01/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	24	19	8	24	23	10	520	17	25	572	21
Future Volume (Veh/h)	10	24	19	8	24	23	10	520	17	25	572	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	10	25	20	8	25	24	10	542	18	26	596	22
Pedestrians		5			6			2			2	
Lane Width (ft)		12.0			12.0			10.0			10.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								659			1279	
pX, platoon unblocked	0.97	0.97	0.97	0.97	0.97	0.98	0.97			0.98		
vC, conflicting volume	994	1250	316	962	1252	288	623			566		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	865	1128	221	832	1130	244	539			526		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	87	97	96	87	97	99			97		
cM capacity (veh/h)	204	191	757	217	191	745	999			1028		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	55	57	281	289	324	320						
Volume Left	10	8	10	0	26	0						
Volume Right	20	24	0	18	0	22						
cSH	267	285	999	1700	1028	1700						
Volume to Capacity	0.21	0.20	0.01	0.17	0.03	0.19						
Queue Length 95th (ft)	19	18	1	0	2	0						
Control Delay (s)	21.9	20.8	0.4	0.0	0.9	0.0						
Lane LOS	C	C	A		A							
Approach Delay (s)	21.9	20.8	0.2		0.5							
Approach LOS	C	C										
Intersection Summary												
Average Delay			2.1									
Intersection Capacity Utilization			46.6%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
22: Main St & Oxford St

Timing Plan: PM Peak
01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	1	1	17	17	3	53	9	836	29	66	1087	8
Future Volume (Veh/h)	1	1	17	17	3	53	9	836	29	66	1087	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	1	1	18	18	3	57	10	899	31	71	1169	9
Pedestrians		7			4							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		3.5			3.5							
Percent Blockage		1			0							
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1850	2276	596	1684	2266	469	1185			934		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1850	2276	596	1684	2266	469	1185			934		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	97	96	66	92	90	98			90		
cM capacity (veh/h)	36	36	449	53	36	544	592			738		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	20	78	460	480	656	594						
Volume Left	1	18	10	0	71	0						
Volume Right	18	57	0	31	0	9						
cSH	208	148	592	1700	738	1700						
Volume to Capacity	0.10	0.53	0.02	0.28	0.10	0.35						
Queue Length 95th (ft)	8	64	1	0	8	0						
Control Delay (s)	24.2	53.4	0.5	0.0	2.5	0.0						
Lane LOS	C	F	A		A							
Approach Delay (s)	24.2	53.4	0.2		1.3							
Approach LOS	C	F										
Intersection Summary												
Average Delay			2.8									
Intersection Capacity Utilization			77.1%		ICU Level of Service					D		
Analysis Period (min)			15									

Arterial Level of Service
2021 Existing Conditions

PM Peak
02/20/2022

Arterial Level of Service: NB Main St










Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Franklin St	16	7.0	37.5	0.2	21
Prairie Ave	13	8.5	24.0	0.1	17
Chicago Ave	10	1.5	19.6	0.1	23
Lincoln St	7	0.7	19.1	0.1	24
Grant St	6	20.0	34.8	0.1	12
Sherman St	3	2.2	21.8	0.1	21
Total		40.0	156.7	0.8	19

Arterial Level of Service: SB Main St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Sherman St	3	0.4	9.6	0.1	25
Grant St	6	14.9	31.3	0.1	15
Lincoln St	7	2.2	20.0	0.1	21
Chicago Ave	10	1.4	19.5	0.1	23
Prairie Ave	13	20.8	38.5	0.1	12
Franklin St	16	6.1	21.7	0.1	18
Total		45.8	140.5	0.7	17

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: AM Peak
02/20/2022

							
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Lane Configurations							
Traffic Volume (vph)	60	25	555	95	5	370	
Future Volume (vph)	60	25	555	95	5	370	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	10	10	10	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.79		1.00			1.00	
Frt	0.960		0.978				
Flt Protected	0.966					0.999	
Satd. Flow (prot)	1544	0	3256	0	0	3333	
Flt Permitted	0.966					0.944	
Satd. Flow (perm)	1383	0	3256	0	0	3150	
Right Turn on Red		No		No			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	329		609			671	
Travel Time (s)	9.0		16.6			18.3	
Confl. Peds. (#/hr)	93	552		2	2		
Confl. Bikes (#/hr)				1			
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	
Adj. Flow (vph)	74	31	685	117	6	457	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	105	0	802	0	0	463	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		0			0	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	6		65			65	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9		9	15		
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	7
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	5.0		15.0		15.0	15.0	3.0
Minimum Split (s)	11.0		22.5		22.5	22.5	33.0
Total Split (s)	23.0		34.0		34.0	34.0	33.0
Total Split (%)	25.6%		37.8%		37.8%	37.8%	37%
Maximum Green (s)	17.0		28.0		28.0	28.0	30.0
Yellow Time (s)	4.5		4.5		4.5	4.5	3.0
All-Red Time (s)	1.5		1.5		1.5	1.5	0.0
Lost Time Adjust (s)	0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0			6.0	
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: AM Peak
02/20/2022

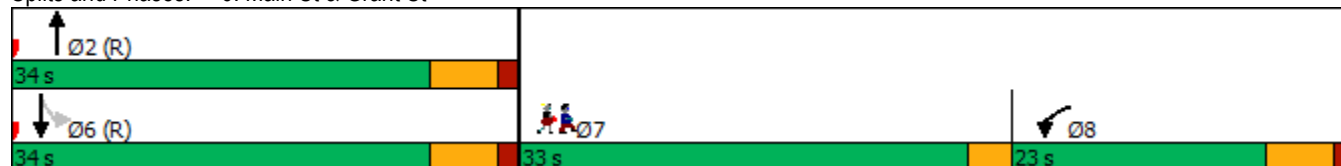


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Recall Mode	None		C-Max		C-Max		None
Walk Time (s)							7.0
Flash Dont Walk (s)							23.0
Pedestrian Calls (#/hr)							500
Act Effct Green (s)	11.4		36.1		36.1		
Actuated g/C Ratio	0.13		0.40		0.40		
v/c Ratio	0.54		0.61		0.37		
Control Delay	46.2		26.2		21.7		
Queue Delay	0.0		0.0		0.0		
Total Delay	46.2		26.2		21.7		
LOS	D		C		C		
Approach Delay	46.2		26.2		21.7		
Approach LOS	D		C		C		
Queue Length 50th (ft)	57		236		100		
Queue Length 95th (ft)	91		282		135		
Internal Link Dist (ft)	249		529		591		
Turn Bay Length (ft)							
Base Capacity (vph)	291		1307		1265		
Starvation Cap Reductn	0		0		0		
Spillback Cap Reductn	0		0		0		
Storage Cap Reductn	0		0		0		
Reduced v/c Ratio	0.36		0.61		0.37		

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.61
Intersection Signal Delay:	26.2
Intersection LOS:	C
Intersection Capacity Utilization:	36.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 6: Main St & Grant St



Lanes, Volumes, Timings
13: Main St & Prairie Ave

Timing Plan: AM Peak
02/20/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	160	40	30	125	70	70	465	60	60	315	65
Future Volume (vph)	140	160	40	30	125	70	70	465	60	60	315	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	10	10	10	10	10	10
Storage Length (ft)	110		0	110		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	0.99	1.00		1.00	0.99			1.00			0.99	
Frt		0.970			0.946			0.985			0.978	
Flt Protected	0.950			0.950				0.994			0.993	
Satd. Flow (prot)	1745	1774	0	1745	1716	0	0	3262	0	0	3234	0
Flt Permitted	0.406			0.592				0.794			0.726	
Satd. Flow (perm)	735	1774	0	1082	1716	0	0	2604	0	0	2363	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			32			17			21	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		710			690			585			659	
Travel Time (s)		19.4			18.8			16.0			18.0	
Confl. Peds. (#/hr)	18		6	6		18	6		7	7		6
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	182	208	52	39	162	91	91	604	78	78	409	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	260	0	39	253	0	0	773	0	0	571	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		6			6			6			6	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		custom	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			5			6		
Detector Phase	7	4		3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		3.0	15.0		15.0	15.0	
Minimum Split (s)	9.0	28.0		9.0	28.0		6.0	28.0		28.0	28.0	
Total Split (s)	12.0	33.0		12.0	33.0		15.0	45.0		30.0	30.0	
Total Split (%)	13.3%	36.7%		13.3%	36.7%		16.7%	50.0%		33.3%	33.3%	
Maximum Green (s)	9.0	27.0		9.0	27.0		12.0	39.0		24.0	24.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	4.5		4.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0			6.0			6.0	

Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: AM Peak
02/20/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	0	20	35	30	55	25	410	0	0	245	130
Future Volume (vph)	105	0	20	35	30	55	25	410	0	0	245	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	10	10	10
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94		0.97	0.99	0.95			1.00				0.96
Frt			0.850		0.903							0.850
Flt Protected	0.950			0.950				0.997				
Satd. Flow (prot)	1745	0	1561	1745	1575	0	0	1894	0	0	1756	1507
Flt Permitted	0.690			0.950				0.971				
Satd. Flow (perm)	1195	0	1521	1734	1575	0	0	1844	0	0	1756	1451
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			42		67							159
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		715			336			1132			585	
Travel Time (s)		19.5			9.2			30.9			16.0	
Confl. Peds. (#/hr)	54		3	3		54	7		14	14		7
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	128	0	24	43	37	67	30	500	0	0	299	159
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	0	24	43	104	0	0	530	0	0	299	159
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		6			6			6			6	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.00	1.00	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm	NA		Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases	4		4	8			2					6
Detector Phase	4		4	8	8		2	2			6	6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		15.0	15.0			15.0	15.0
Minimum Split (s)	28.0		28.0	28.0	28.0		24.5	24.5			24.5	24.5
Total Split (s)	28.0		28.0	28.0	28.0		62.0	62.0			62.0	62.0
Total Split (%)	31.1%		31.1%	31.1%	31.1%		68.9%	68.9%			68.9%	68.9%
Maximum Green (s)	22.0		22.0	22.0	22.0		55.5	55.5			55.5	55.5
Yellow Time (s)	4.0		4.0	4.0	4.0		4.5	4.5			4.5	4.5
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0			6.5			6.5	6.5

Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: AM Peak
02/20/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0		4.0	4.0	4.0		6.0	6.0			6.0	6.0
Recall Mode	None		None	None	None		C-Max	C-Max			C-Max	C-Max
Walk Time (s)	8.0		8.0	8.0	8.0		8.0	8.0			8.0	8.0
Flash Dont Walk (s)	14.0		14.0	14.0	14.0		10.0	10.0			10.0	10.0
Pedestrian Calls (#/hr)	3		3	20	20		14	14			7	7
Act Effct Green (s)	16.4		16.4	16.4	16.4			61.1			61.1	61.1
Actuated g/C Ratio	0.18		0.18	0.18	0.18			0.68			0.68	0.68
v/c Ratio	0.59		0.08	0.14	0.30			0.42			0.25	0.15
Control Delay	43.8		4.7	29.3	14.8			8.7			5.3	1.9
Queue Delay	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Delay	43.8		4.7	29.3	14.8			8.7			5.3	1.9
LOS	D		A	C	B			A			A	A
Approach Delay		37.6				19.1		8.7			4.1	
Approach LOS		D				B		A			A	
Queue Length 50th (ft)	68		0	21	18			115			51	1
Queue Length 95th (ft)	105		9	41	48			190			112	19
Internal Link Dist (ft)		635				256		1052			505	
Turn Bay Length (ft)	50											
Base Capacity (vph)	292		403	423	435			1252			1192	1036
Starvation Cap Reductn	0		0	0	0			0			0	0
Spillback Cap Reductn	0		0	0	0			0			0	0
Storage Cap Reductn	0		0	0	0			0			0	0
Reduced v/c Ratio	0.44		0.06	0.10	0.24			0.42			0.25	0.15

Intersection Summary










Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 46.8 (52%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 11.7
 Intersection Capacity Utilization 70.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 16: Main St & Franklin St



HCM Unsignalized Intersection Capacity Analysis 3: Main St & Sherman St

Timing Plan: AM Peak
01/13/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	85	560	25	110	390
Future Volume (Veh/h)	0	85	560	25	110	390
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	115	757	34	149	527
Pedestrians	2		1			
Lane Width (ft)	12.0		10.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			671			
pX, platoon unblocked	0.85	0.85			0.85	
vC, conflicting volume	1338	398			793	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1052	0			412	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	88			85	
cM capacity (veh/h)	163	929			985	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	115	505	286	325	351	
Volume Left	0	0	0	149	0	
Volume Right	115	0	34	0	0	
cSH	929	1700	1700	985	1700	
Volume to Capacity	0.12	0.30	0.17	0.15	0.21	
Queue Length 95th (ft)	11	0	0	13	0	
Control Delay (s)	9.4	0.0	0.0	5.1	0.0	
Lane LOS	A			A		
Approach Delay (s)	9.4	0.0		2.5		
Approach LOS	A					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			45.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
7: Main St & Lincoln St

















Timing Plan: AM Peak
01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	20	20	40	5	30	10	55	585	15	15	385	40
Future Volume (Veh/h)	20	20	40	5	30	10	55	585	15	15	385	40
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	24	24	48	6	36	12	66	705	18	18	464	48
Pedestrians		9			5			2			5	
Lane Width (ft)		12.0			12.0			10.0			10.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											609	
pX, platoon unblocked	0.93	0.93	0.93	0.93	0.93		0.93					
vC, conflicting volume	1052	1393	267	1181	1408	372	521			728		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	910	1275	67	1048	1292	372	340			728		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	85	83	95	95	74	98	94			98		
cM capacity (veh/h)	157	143	912	132	140	626	1137			881		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	96	54	418	370	250	280						
Volume Left	24	6	66	0	18	0						
Volume Right	48	12	0	18	0	48						
cSH	257	167	1137	1700	881	1700						
Volume to Capacity	0.37	0.32	0.06	0.22	0.02	0.16						
Queue Length 95th (ft)	41	33	5	0	2	0						
Control Delay (s)	27.1	36.4	1.8	0.0	0.9	0.0						
Lane LOS	D	E	A		A							
Approach Delay (s)	27.1	36.4	1.0		0.4							
Approach LOS	D	E										
Intersection Summary												
Average Delay			3.8									
Intersection Capacity Utilization			49.9%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis 10: Main St & Chicago Ave

Timing Plan: AM Peak
01/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	45	40	5	60	40	25	630	30	35	395	15
Future Volume (Veh/h)	10	45	40	5	60	40	25	630	30	35	395	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	12	56	49	6	74	49	31	778	37	43	488	19
Pedestrians		11			2			4			6	
Lane Width (ft)		12.0			12.0			10.0			10.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								659			1279	
pX, platoon unblocked	0.93	0.93		0.93	0.93	0.93				0.93		
vC, conflicting volume	1138	1474	268	1272	1464	416	518			817		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	991	1353	268	1135	1343	212	518			645		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	56	93	93	43	93	97			95		
cM capacity (veh/h)	89	128	726	85	129	736	1047			879		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	117	129	420	426	287	263						
Volume Left	12	6	31	0	43	0						
Volume Right	49	49	0	37	0	19						
cSH	183	182	1047	1700	879	1700						
Volume to Capacity	0.64	0.71	0.03	0.25	0.05	0.15						
Queue Length 95th (ft)	92	110	2	0	4	0						
Control Delay (s)	54.4	62.3	0.9	0.0	1.8	0.0						
Lane LOS	F	F	A		A							
Approach Delay (s)	54.4	62.3	0.5		1.0							
Approach LOS	F	F										
Intersection Summary												
Average Delay			9.3									
Intersection Capacity Utilization			51.3%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
22: Main St & Oxford St

Timing Plan: AM Peak
01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	5	2	5	15	1	125	5	900	10	60	580	5
Future Volume (Veh/h)	5	2	5	15	1	125	5	900	10	60	580	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	6	2	6	17	1	140	6	1011	11	67	652	6
Pedestrians		1						1				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		3.5						3.5				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1448	1824	331	1496	1822	511	659			1022		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1448	1824	331	1496	1822	511	659			1022		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	97	99	78	99	73	99			90		
cM capacity (veh/h)	62	70	669	77	70	513	938			687		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	14	158	512	516	393	332						
Volume Left	6	17	6	0	67	0						
Volume Right	6	140	0	11	0	6						
cSH	104	311	938	1700	687	1700						
Volume to Capacity	0.13	0.51	0.01	0.30	0.10	0.20						
Queue Length 95th (ft)	11	68	0	0	8	0						
Control Delay (s)	44.8	27.9	0.2	0.0	2.9	0.0						
Lane LOS	E	D	A		A							
Approach Delay (s)	44.8	27.9	0.1		1.6							
Approach LOS	E	D										
Intersection Summary												
Average Delay			3.3									
Intersection Capacity Utilization			62.1%		ICU Level of Service					B		
Analysis Period (min)			15									

Arterial Level of Service
2050 No Build Conditions

AM Peak
02/20/2022

Arterial Level of Service: NB Main St












Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Franklin St	16	9.6	40.2	0.2	19
Prairie Ave	13	24.5	39.7	0.1	10
Chicago Ave	10	2.0	19.8	0.1	23
Lincoln St	7	0.9	18.9	0.1	24
Grant St	6	16.8	31.2	0.1	13
Sherman St	3	2.4	22.0	0.1	21
Total		56.2	171.8	0.8	17

Arterial Level of Service: SB Main St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Sherman St	3	1.1	10.3	0.1	23
Grant St	6	16.1	32.5	0.1	14
Lincoln St	7	2.2	20.0	0.1	21
Chicago Ave	10	1.5	19.6	0.1	23
Prairie Ave	13	17.3	35.0	0.1	13
Franklin St	16	6.5	22.3	0.1	18
Total		44.7	139.7	0.7	17

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: PM Peak
02/20/2022

							
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Lane Configurations			 			 	
Traffic Volume (vph)	30	20	560	40	25	650	
Future Volume (vph)	30	20	560	40	25	650	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	10	10	10	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.85		1.00			1.00	
Frt	0.945		0.990				
Flt Protected	0.971					0.998	
Satd. Flow (prot)	1513	0	3329	0	0	3363	
Flt Permitted	0.971					0.914	
Satd. Flow (perm)	1476	0	3329	0	0	3079	
Right Turn on Red		No		No			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	329		609			671	
Travel Time (s)	9.0		16.6			18.3	
Confl. Peds. (#/hr)	15	147		6	6		
Confl. Bikes (#/hr)		1		1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	
Adj. Flow (vph)	31	21	583	42	26	677	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	52	0	625	0	0	703	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		0			0	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	6		65			65	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9		9	15		
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	7
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	5.0		15.0		15.0	15.0	3.0
Minimum Split (s)	11.0		22.5		22.5	22.5	33.0
Total Split (s)	17.0		50.0		50.0	50.0	33.0
Total Split (%)	17.0%		50.0%		50.0%	50.0%	33%
Maximum Green (s)	11.0		44.0		44.0	44.0	30.0
Yellow Time (s)	4.5		4.5		4.5	4.5	3.0
All-Red Time (s)	1.5		1.5		1.5	1.5	0.0
Lost Time Adjust (s)	0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0			6.0	
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: PM Peak
02/20/2022

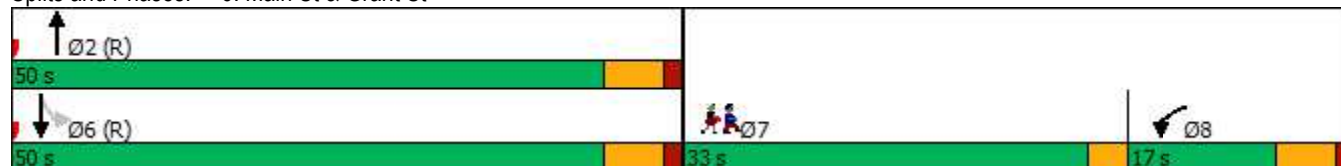


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Recall Mode	None		C-Max		C-Max		C-Max
Walk Time (s)	7.0						
Flash Dont Walk (s)	23.0						
Pedestrian Calls (#/hr)	147						
Act Effct Green (s)	8.6		48.7		48.7		48.7
Actuated g/C Ratio	0.09		0.49		0.49		0.49
v/c Ratio	0.40		0.39		0.47		0.47
Control Delay	51.8		21.7		19.4		19.4
Queue Delay	0.0		0.0		0.0		0.0
Total Delay	51.8		21.7		19.4		19.4
LOS	D		C		B		B
Approach Delay	51.8		21.7		19.4		19.4
Approach LOS	D		C		B		B
Queue Length 50th (ft)	32		174		158		158
Queue Length 95th (ft)	69		233		221		221
Internal Link Dist (ft)	249		529		591		591
Turn Bay Length (ft)							
Base Capacity (vph)	166		1621		1500		1500
Starvation Cap Reductn	0		0		0		0
Spillback Cap Reductn	0		0		0		0
Storage Cap Reductn	0		0		0		0
Reduced v/c Ratio	0.31		0.39		0.47		0.47

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 21.7
 Intersection Capacity Utilization 51.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service A

Splits and Phases: 6: Main St & Grant St



Lanes, Volumes, Timings
13: Main St & Prairie Ave

Timing Plan: PM Peak
02/20/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	135	40	35	170	65	45	450	40	45	500	100
Future Volume (vph)	75	135	40	35	170	65	45	450	40	45	500	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	10	10	10	10	10	10
Storage Length (ft)	110		0	110		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00	0.99		0.99	1.00			1.00			0.99	
Frt		0.966			0.959			0.989			0.977	
Flt Protected	0.950			0.950				0.996			0.997	
Satd. Flow (prot)	1745	1763	0	1745	1754	0	0	3311	0	0	3262	0
Flt Permitted	0.364			0.624				0.840			0.870	
Satd. Flow (perm)	667	1763	0	1135	1754	0	0	2791	0	0	2845	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			18			10			33	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		710			690			585			659	
Travel Time (s)		19.4			18.8			16.0			18.0	
Confl. Peds. (#/hr)	2		10	10		2	9		5	5		9
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	80	144	43	37	181	69	48	479	43	48	532	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	187	0	37	250	0	0	570	0	0	686	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		6			6			6			6	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		custom	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			1		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		15.0	15.0		3.0	15.0	
Minimum Split (s)	9.0	28.0		9.0	28.0		28.0	28.0		6.0	28.0	
Total Split (s)	12.0	28.0		12.0	28.0		45.0	45.0		15.0	60.0	
Total Split (%)	12.0%	28.0%		12.0%	28.0%		45.0%	45.0%		15.0%	60.0%	
Maximum Green (s)	9.0	22.0		9.0	22.0		39.0	39.0		12.0	54.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5		3.0	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		1.5	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0			6.0			6.0	

Lanes, Volumes, Timings
13: Main St & Prairie Ave

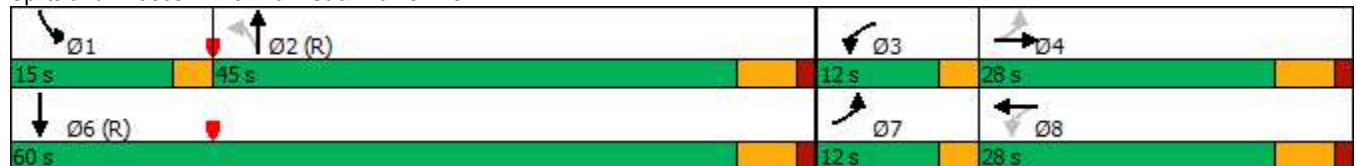
Timing Plan: PM Peak
02/20/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	7.0		3.0	7.0		4.0	4.0		3.0	4.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0				7.0
Flash Dont Walk (s)		15.0			15.0		15.0	15.0				15.0
Pedestrian Calls (#/hr)		10			2		5	5				9
Act Effct Green (s)	31.4	23.1		28.9	20.1			58.5				58.5
Actuated g/C Ratio	0.31	0.23		0.29	0.20			0.58				0.58
v/c Ratio	0.27	0.45		0.10	0.68			0.35				0.41
Control Delay	24.1	34.1		21.4	44.1			13.4				8.4
Queue Delay	0.0	0.0		0.0	0.0			0.0				0.0
Total Delay	24.1	34.1		21.4	44.1			13.4				8.4
LOS	C	C		C	D			B				A
Approach Delay		31.1			41.2			13.4				8.4
Approach LOS		C			D			B				A
Queue Length 50th (ft)	33	94		15	135			135				55
Queue Length 95th (ft)	65	164		36	218			88				81
Internal Link Dist (ft)		630			610			505				579
Turn Bay Length (ft)	110			110								
Base Capacity (vph)	306	440		398	399			1638				1679
Starvation Cap Reductn	0	0		0	0			0				0
Spillback Cap Reductn	0	0		0	0			0				0
Storage Cap Reductn	0	0		0	0			0				0
Reduced v/c Ratio	0.26	0.42		0.09	0.63			0.35				0.41

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	35.5 (36%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	18.5
Intersection LOS:	B
Intersection Capacity Utilization	73.4%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 13: Main St & Prairie Ave



Lanes, Volumes, Timings
16: Main St & Franklin St












Timing Plan: PM Peak
02/20/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	0	20	10	10	20	35	380	5	0	405	160
Future Volume (vph)	140	0	20	10	10	20	35	380	5	0	405	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	10	10	10
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.97	0.98			1.00				0.96
Frt			0.850		0.900			0.999				0.850
Flt Protected	0.950			0.950				0.996				
Satd. Flow (prot)	1745	0	1473	1745	1628	0	0	1856	0	0	1756	1492
Flt Permitted	0.736			0.950				0.940				
Satd. Flow (perm)	1338	0	1401	1693	1628	0	0	1750	0	0	1756	1430
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			38		22			1				172
Link Speed (mph)		25			25			25				25
Link Distance (ft)		715			336			1132				585
Travel Time (s)		19.5			9.2			30.9				16.0
Confl. Peds. (#/hr)	8		13	13		8	8		8	8		8
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	6%	0%	0%	0%	0%	2%	0%	0%	1%	1%
Adj. Flow (vph)	151	0	22	11	11	22	38	409	5	0	435	172
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	0	22	11	33	0	0	452	0	0	435	172
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		6			6			6				6
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.00	1.00	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm	NA		Perm	NA			NA	Perm
Protected Phases					8			2				6
Permitted Phases	4		4	8			2					6
Detector Phase	4		4	8	8		2	2				6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		15.0	15.0			15.0	15.0
Minimum Split (s)	28.0		28.0	28.0	28.0		24.5	24.5			24.5	24.5
Total Split (s)	28.0		28.0	28.0	28.0		72.0	72.0			72.0	72.0
Total Split (%)	28.0%		28.0%	28.0%	28.0%		72.0%	72.0%			72.0%	72.0%
Maximum Green (s)	22.0		22.0	22.0	22.0		65.5	65.5			65.5	65.5
Yellow Time (s)	4.0		4.0	4.0	4.0		4.5	4.5			4.5	4.5
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0			6.5			6.5	6.5

HCM Unsignalized Intersection Capacity Analysis 3: Main St & Sherman St

Timing Plan: PM Peak
01/13/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (veh/h)	1	70	570	10	25	695
Future Volume (Veh/h)	1	70	570	10	25	695
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	1	73	594	10	26	724
Pedestrians	2		1			
Lane Width (ft)	12.0		10.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			671			
pX, platoon unblocked	0.91	0.91			0.91	
vC, conflicting volume	1016	304			606	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	818	35			367	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	92			98	
cM capacity (veh/h)	278	935			1078	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	74	396	208	267	483	
Volume Left	1	0	0	26	0	
Volume Right	73	0	10	0	0	
cSH	906	1700	1700	1078	1700	
Volume to Capacity	0.08	0.23	0.12	0.02	0.28	
Queue Length 95th (ft)	7	0	0	2	0	
Control Delay (s)	9.3	0.0	0.0	1.0	0.0	
Lane LOS	A			A		
Approach Delay (s)	9.3	0.0		0.4		
Approach LOS	A					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			48.5%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
7: Main St & Lincoln St

















Timing Plan: PM Peak
01/13/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	10	15	15	5	10	15	15	570	5	15	625	35
Future Volume (Veh/h)	10	15	15	5	10	15	15	570	5	15	625	35
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	11	16	16	5	11	16	16	606	5	16	665	37
Pedestrians		34			10			1			3	
Lane Width (ft)		12.0			12.0			10.0			10.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		3			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											609	
pX, platoon unblocked	0.88	0.88	0.88	0.88	0.88		0.88					
vC, conflicting volume	1109	1402	386	1040	1418	318	736			621		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	849	1183	26	770	1201	318	425			621		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	90	98	98	93	98	98			98		
cM capacity (veh/h)	191	156	892	218	152	675	974			960		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	43	32	319	308	348	370						
Volume Left	11	5	16	0	16	0						
Volume Right	16	16	0	5	0	37						
cSH	241	269	974	1700	960	1700						
Volume to Capacity	0.18	0.12	0.02	0.18	0.02	0.22						
Queue Length 95th (ft)	16	10	1	0	1	0						
Control Delay (s)	23.1	20.2	0.6	0.0	0.6	0.0						
Lane LOS	C	C	A		A							
Approach Delay (s)	23.1	20.2	0.3		0.3							
Approach LOS	C	C										
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			40.3%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 10: Main St & Chicago Ave

Timing Plan: PM Peak
 01/13/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	25	20	10	25	25	10	560	20	30	615	20
Future Volume (Veh/h)	10	25	20	10	25	25	10	560	20	30	615	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	10	26	21	10	26	26	10	583	21	31	641	21
Pedestrians		5			6			2			2	
Lane Width (ft)		12.0			12.0			10.0			10.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								659			1279	
pX, platoon unblocked	0.96	0.96	0.95	0.96	0.96	0.97	0.95			0.97		
vC, conflicting volume	1071	1348	338	1038	1348	310	667			610		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	863	1152	190	829	1152	233	537			542		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	86	97	95	86	97	99			97		
cM capacity (veh/h)	199	182	778	212	182	748	982			1003		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	57	62	302	312	352	342						
Volume Left	10	10	10	0	31	0						
Volume Right	21	26	0	21	0	21						
cSH	259	276	982	1700	1003	1700						
Volume to Capacity	0.22	0.22	0.01	0.18	0.03	0.20						
Queue Length 95th (ft)	21	21	1	0	2	0						
Control Delay (s)	22.8	21.8	0.4	0.0	1.1	0.0						
Lane LOS	C	C	A		A							
Approach Delay (s)	22.8	21.8	0.2		0.5							
Approach LOS	C	C										
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			50.0%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
22: Main St & Oxford St

Timing Plan: PM Peak
01/13/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1	15	20	3	60	10	930	30	75	1205	10
Future Volume (Veh/h)	1	1	15	20	3	60	10	930	30	75	1205	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	1	1	16	22	3	65	11	1000	32	81	1296	11
Pedestrians		7			4							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		3.5			3.5							
Percent Blockage		1			0							
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2059	2528	660	1868	2518	520	1314			1036		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2059	2528	660	1868	2518	520	1314			1036		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	96	96	41	88	87	98			88		
cM capacity (veh/h)	23	24	407	37	24	504	529			676		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	18	90	511	532	729	659						
Volume Left	1	22	11	0	81	0						
Volume Right	16	65	0	32	0	11						
cSH	144	107	529	1700	676	1700						
Volume to Capacity	0.13	0.84	0.02	0.31	0.12	0.39						
Queue Length 95th (ft)	10	121	2	0	10	0						
Control Delay (s)	33.6	121.1	0.6	0.0	3.1	0.0						
Lane LOS	D	F	A		A							
Approach Delay (s)	33.6	121.1	0.3		1.6							
Approach LOS	D	F										
Intersection Summary												
Average Delay			5.5									
Intersection Capacity Utilization			84.4%		ICU Level of Service				E			
Analysis Period (min)			15									

Arterial Level of Service
2050 No Build Conditions

PM Peak
02/20/2022

Arterial Level of Service: NB Main St











Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Franklin St	16	7.7	38.2	0.2	20
Prairie Ave	13	7.7	23.4	0.1	17
Chicago Ave	10	1.8	20.0	0.1	22
Lincoln St	7	0.8	19.2	0.1	24
Grant St	6	14.9	29.5	0.1	14
Sherman St	3	2.2	21.7	0.1	21
Total		35.1	152.0	0.8	19

Arterial Level of Service: SB Main St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Sherman St	3	0.4	9.6	0.1	25
Grant St	6	15.7	32.1	0.1	14
Lincoln St	7	2.4	20.3	0.1	20
Chicago Ave	10	1.8	19.8	0.1	23
Prairie Ave	13	15.3	33.1	0.1	14
Franklin St	16	10.0	25.5	0.1	16
Total		45.6	140.4	0.7	17

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: AM Peak
02/20/2022

							
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Lane Configurations							
Traffic Volume (vph)	60	25	555	95	5	370	
Future Volume (vph)	60	25	555	95	5	370	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	10	12	10	
Storage Length (ft)	0	0		0	100		
Storage Lanes	1	0		0	1		
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.45		1.00		1.00		
Frt	0.960		0.980				
Flt Protected	0.966				0.950		
Satd. Flow (prot)	1293	0	1717	0	1805	1756	
Flt Permitted	0.966				0.103		
Satd. Flow (perm)	801	0	1717	0	196	1756	
Right Turn on Red		No		No			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	329		609			671	
Travel Time (s)	9.0		16.6			18.3	
Confl. Peds. (#/hr)	93	552		2	2		
Confl. Bikes (#/hr)				1			
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	
Adj. Flow (vph)	74	31	685	117	6	457	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	105	0	802	0	6	457	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		12			12	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	6		65			65	
Two way Left Turn Lane			Yes			Yes	
Headway Factor	1.00	1.00	1.09	1.09	1.00	1.09	
Turning Speed (mph)	15	9		9	15		
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	7
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	5.0		15.0		15.0	15.0	3.0
Minimum Split (s)	11.0		22.5		22.5	22.5	33.0
Total Split (s)	12.0		45.0		45.0	45.0	33.0
Total Split (%)	13.3%		50.0%		50.0%	50.0%	37%
Maximum Green (s)	6.0		39.0		39.0	39.0	30.0
Yellow Time (s)	4.5		4.5		4.5	4.5	3.0
All-Red Time (s)	1.5		1.5		1.5	1.5	0.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0		6.0		6.0	6.0	

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: AM Peak
02/20/2022

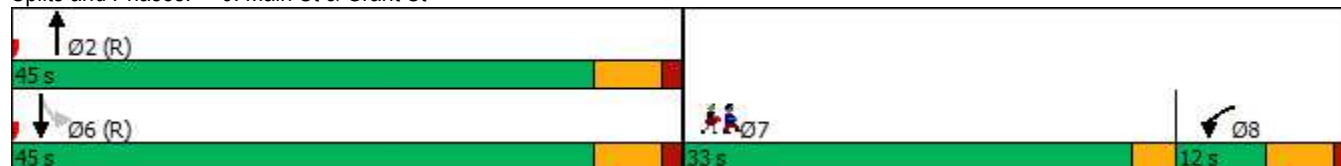


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max	None
Walk Time (s)							7.0
Flash Dont Walk (s)							23.0
Pedestrian Calls (#/hr)							500
Act Effct Green (s)	6.0		39.0		39.0	39.0	
Actuated g/C Ratio	0.07		0.43		0.43	0.43	
v/c Ratio	1.22		1.08		0.07	0.60	
Control Delay	207.0		75.5		17.8	23.7	
Queue Delay	0.0		0.0		0.0	0.0	
Total Delay	207.0		75.5		17.8	23.7	
LOS	F		E		B	C	
Approach Delay	207.0		75.5			23.6	
Approach LOS	F		E			C	
Queue Length 50th (ft)	~74		~503		2	193	
Queue Length 95th (ft)	#154		#609		9	250	
Internal Link Dist (ft)	249		529			591	
Turn Bay Length (ft)					100		
Base Capacity (vph)	86		744		84	760	
Starvation Cap Reductn	0		0		0	0	
Spillback Cap Reductn	0		0		0	0	
Storage Cap Reductn	0		0		0	0	
Reduced v/c Ratio	1.22		1.08		0.07	0.60	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 42 (47%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.22
 Intersection Signal Delay: 68.0
 Intersection LOS: E
 Intersection Capacity Utilization 52.9%
 ICU Level of Service A
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Main St & Grant St



Lanes, Volumes, Timings
13: Main St & Prairie Ave

Timing Plan: AM Peak
02/20/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	160	40	30	125	70	70	465	60	60	315	65
Future Volume (vph)	140	160	40	30	125	70	70	465	60	60	315	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	10	10	12	10	10
Storage Length (ft)	110		0	110		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		0.99	0.98		1.00	1.00			0.99	
Frt		0.970			0.946			0.983				0.974
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1831	0	1805	1761	0	1805	1721	0	1805	1704	0
Flt Permitted	0.401			0.515			0.330			0.161		
Satd. Flow (perm)	744	1831	0	971	1761	0	624	1721	0	306	1704	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			30			9			14	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		710			690			585			659	
Travel Time (s)		19.4			18.8			16.0			18.0	
Confl. Peds. (#/hr)	18		6	6		18	6		7	7		6
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	182	208	52	39	162	91	91	604	78	78	409	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	260	0	39	253	0	91	682	0	78	493	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		6			6			6			6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	15.0		6.0	15.0	
Minimum Split (s)	9.0	28.0		9.0	28.0		9.0	28.0		9.0	28.0	
Total Split (s)	9.0	28.0		9.0	28.0		9.0	44.0		9.0	44.0	
Total Split (%)	10.0%	31.1%		10.0%	31.1%		10.0%	48.9%		10.0%	48.9%	
Maximum Green (s)	6.0	22.0		6.0	22.0		6.0	38.0		6.0	38.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	4.5		3.0	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	6.0		3.0	6.0	

Lanes, Volumes, Timings
13: Main St & Prairie Ave

Timing Plan: AM Peak
02/20/2022

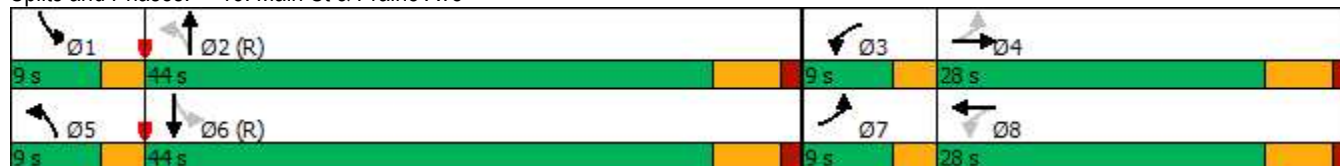


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	7.0		3.0	7.0		3.0	4.0		3.0	4.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		6			18			7			6	
Act Effct Green (s)	29.7	23.1		28.5	19.5		50.2	42.2		50.1	42.1	
Actuated g/C Ratio	0.33	0.26		0.32	0.22		0.56	0.47		0.56	0.47	
v/c Ratio	0.58	0.54		0.11	0.63		0.21	0.84		0.29	0.61	
Control Delay	29.5	32.7		19.0	34.9		8.1	29.4		7.1	11.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	29.5	32.7		19.0	34.9		8.1	29.4		7.1	11.8	
LOS	C	C		B	C		A	C		A	B	
Approach Delay		31.4			32.8			26.9			11.2	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	71	124		14	112		15	376		8	81	
Queue Length 95th (ft)	100	166		29	152		24	#253		m13	m115	
Internal Link Dist (ft)		630			610			505			579	
Turn Bay Length (ft)	110			110			100			100		
Base Capacity (vph)	316	480		362	453		429	811		272	804	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.58	0.54		0.11	0.56		0.21	0.84		0.29	0.61	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 84 (93%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 24.4 Intersection LOS: C
 Intersection Capacity Utilization 72.2% ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Main St & Prairie Ave



Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: AM Peak
02/20/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	0	20	35	30	55	25	410	0	0	245	130
Future Volume (vph)	105	0	20	35	30	55	25	410	0	0	245	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	10	10
Storage Length (ft)	50		0	0		0	100		0	0		100
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90		0.97	0.99	0.92			1.00				0.96
Frt			0.850		0.903							0.850
Flt Protected	0.950			0.950				0.997				
Satd. Flow (prot)	1805	0	1615	1805	1573	0	0	1894	0	0	1756	1507
Flt Permitted	0.690			0.950				0.971				
Satd. Flow (perm)	1186	0	1573	1794	1573	0	0	1844	0	0	1756	1451
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			42		67							159
Link Speed (mph)		25			25			25				25
Link Distance (ft)		715			336			1132				585
Travel Time (s)		19.5			9.2			30.9				16.0
Confl. Peds. (#/hr)	54		3	3		54	7		14	14		7
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	128	0	24	43	37	67	30	500	0	0	299	159
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	0	24	43	104	0	0	530	0	0	299	159
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		6			6			6				6
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm	NA		Perm	NA			NA	Perm
Protected Phases					8			2				6
Permitted Phases	4		4	8			2					6
Detector Phase	4		4	8	8		2	2				6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		15.0	15.0			15.0	15.0
Minimum Split (s)	28.0		28.0	28.0	28.0		24.5	24.5			24.5	24.5
Total Split (s)	33.0		33.0	33.0	33.0		57.0	57.0			57.0	57.0
Total Split (%)	36.7%		36.7%	36.7%	36.7%		63.3%	63.3%			63.3%	63.3%
Maximum Green (s)	27.0		27.0	27.0	27.0		50.5	50.5			50.5	50.5
Yellow Time (s)	4.0		4.0	4.0	4.0		4.5	4.5			4.5	4.5
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0			6.5			6.5	6.5

Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: AM Peak
02/20/2022

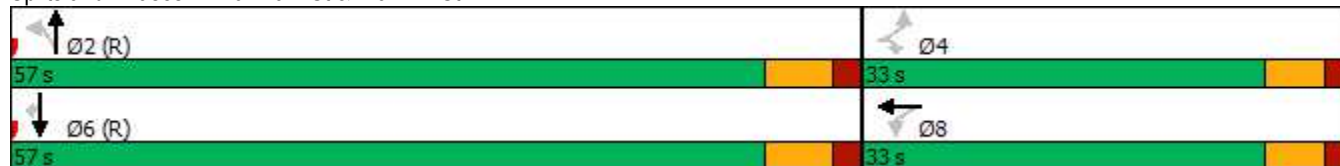


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0		4.0	4.0	4.0		6.0	6.0			6.0	6.0
Recall Mode	None		None	None	None		C-Max	C-Max			C-Max	C-Max
Walk Time (s)	8.0		8.0	8.0	8.0		8.0	8.0			8.0	8.0
Flash Dont Walk (s)	14.0		14.0	14.0	14.0		10.0	10.0			10.0	10.0
Pedestrian Calls (#/hr)	3		3	20	20		14	14			7	7
Act Effct Green (s)	16.5		16.5	16.5	16.5			61.0			61.0	61.0
Actuated g/C Ratio	0.18		0.18	0.18	0.18			0.68			0.68	0.68
v/c Ratio	0.59		0.07	0.13	0.30			0.42			0.25	0.15
Control Delay	43.6		4.6	29.0	14.7			8.8			3.3	0.4
Queue Delay	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Delay	43.6		4.6	29.0	14.7			8.8			3.3	0.4
LOS	D		A	C	B			A			A	A
Approach Delay		37.4				18.9		8.8			2.3	
Approach LOS		D				B		A			A	
Queue Length 50th (ft)	68		0	21	18			116			30	0
Queue Length 95th (ft)	104		9	41	48			193			43	0
Internal Link Dist (ft)		635				256		1052			505	
Turn Bay Length (ft)	50											100
Base Capacity (vph)	355		501	538	518			1249			1189	1034
Starvation Cap Reductn	0		0	0	0			0			0	0
Spillback Cap Reductn	0		0	0	0			0			0	0
Storage Cap Reductn	0		0	0	0			0			0	0
Reduced v/c Ratio	0.36		0.05	0.08	0.20			0.42			0.25	0.15

Intersection Summary











Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 88 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 11.0
 Intersection LOS: B
 Intersection Capacity Utilization 70.4%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 16: Main St & Franklin St



HCM Unsignalized Intersection Capacity Analysis 3: Main St & Sherman St

Timing Plan: AM Peak
01/14/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	85	560	25	110	390
Future Volume (Veh/h)	0	85	560	25	110	390
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	115	757	34	149	527
Pedestrians	2		1			
Lane Width (ft)	12.0		10.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh			2			2
Upstream signal (ft)			671			
pX, platoon unblocked	0.60	0.60			0.60	
vC, conflicting volume	1602	776			793	
vC1, stage 1 conf vol	776					
vC2, stage 2 conf vol	826					
vCu, unblocked vol	1670	296			324	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	74			80	
cM capacity (veh/h)	271	449			748	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	115	791	149	527		
Volume Left	0	0	149	0		
Volume Right	115	34	0	0		
cSH	449	1700	748	1700		
Volume to Capacity	0.26	0.47	0.20	0.31		
Queue Length 95th (ft)	25	0	18	0		
Control Delay (s)	15.8	0.0	11.0	0.0		
Lane LOS	C		B			
Approach Delay (s)	15.8	0.0	2.4			
Approach LOS	C					
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			52.4%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 7: Main St & Lincoln St

Timing Plan: AM Peak
02/02/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	20	20	40	5	30	10	55	585	15	15	385	40
Future Volume (Veh/h)	20	20	40	5	30	10	55	585	15	15	385	40
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	24	24	48	6	36	12	66	705	18	18	464	48
Pedestrians		9			5			2			5	
Lane Width (ft)		12.0			12.0			10.0			10.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			0			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage (veh)								2			2	
Upstream signal (ft)											609	
pX, platoon unblocked	0.80	0.80	0.80	0.80	0.80		0.80					
vC, conflicting volume	1414	1393	499	1437	1408	724	521			728		
vC1, stage 1 conf vol	533	533		851	851							
vC2, stage 2 conf vol	881	860		586	557							
vCu, unblocked vol	1393	1367	252	1421	1385	724	279			728		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	92	92	98	87	97	94			98		
cM capacity (veh/h)	239	289	629	257	287	425	1030			881		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	96	54	789	530								
Volume Left	24	6	66	18								
Volume Right	48	12	18	48								
cSH	369	305	1030	881								
Volume to Capacity	0.26	0.18	0.06	0.02								
Queue Length 95th (ft)	26	16	5	2								
Control Delay (s)	18.1	19.3	1.6	0.6								
Lane LOS	C	C	A	A								
Approach Delay (s)	18.1	19.3	1.6	0.6								
Approach LOS	C	C										
Intersection Summary												
Average Delay			3.0									
Intersection Capacity Utilization			71.0%		ICU Level of Service					C		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

10: Main St & Chicago Ave

Timing Plan: AM Peak
01/14/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Volume (veh/h)	10	45	40	5	60	40	25	630	30	35	395	15
Future Volume (Veh/h)	10	45	40	5	60	40	25	630	30	35	395	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	12	56	49	6	74	49	31	778	37	43	488	19
Pedestrians		11			2			4			6	
Lane Width (ft)		12.0			12.0			11.0			11.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			0			0			1	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage (veh)								2			2	
Upstream signal (ft)								659			1279	
pX, platoon unblocked	0.67	0.67	0.92	0.67	0.67	0.63	0.92			0.63		
vC, conflicting volume	1526	1474	512	1516	1464	804	518			817		
vC1, stage 1 conf vol	594	594		860	860							
vC2, stage 2 conf vol	932	879		655	604							
vCu, unblocked vol	1262	1183	423	1246	1170	397	429			417		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	78	91	97	74	88	97			94		
cM capacity (veh/h)	155	256	574	239	281	411	1035			726		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	117	129	31	815	43	507						
Volume Left	12	6	31	0	43	0						
Volume Right	49	49	0	37	0	19						
cSH	306	316	1035	1700	726	1700						
Volume to Capacity	0.38	0.41	0.03	0.48	0.06	0.30						
Queue Length 95th (ft)	43	48	2	0	5	0						
Control Delay (s)	23.8	24.0	8.6	0.0	10.3	0.0						
Lane LOS	C	C	A		B							
Approach Delay (s)	23.8	24.0	0.3		0.8							
Approach LOS	C	C										
Intersection Summary												
Average Delay			4.0									
Intersection Capacity Utilization			51.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Arterial Level of Service
2050 3-Lane Conditions

AM Peak
02/20/2022

Arterial Level of Service: NB Main St











Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Franklin St	16	9.9	40.4	0.2	19
Prairie Ave	13	17.3	32.8	0.1	12
Chicago Ave	10	2.4	20.2	0.1	22
Lincoln St	7	5.0	22.9	0.1	20
Grant St	6	46.1	70.9	0.1	7
Sherman St	3	3.8	23.4	0.1	20
Total		84.5	210.6	0.8	15

Arterial Level of Service: SB Main St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Sherman St	3	0.5	10.2	0.1	24
Grant St	6	16.5	33.0	0.1	14
Lincoln St	7	2.8	20.7	0.1	20
Chicago Ave	10	1.5	19.3	0.1	24
Prairie Ave	13	12.5	30.2	0.1	15
Franklin St	16	2.0	17.6	0.1	23
Total		35.8	130.9	0.7	19

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: PM Peak
02/20/2022

							
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Lane Configurations							
Traffic Volume (vph)	30	20	560	40	25	650	
Future Volume (vph)	30	20	560	40	25	650	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	10	10	10	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.85		1.00			1.00	
Frt	0.945		0.990				
Flt Protected	0.971					0.998	
Satd. Flow (prot)	1513	0	3329	0	0	3363	
Flt Permitted	0.971					0.914	
Satd. Flow (perm)	1476	0	3329	0	0	3079	
Right Turn on Red		No		No			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	329		609			671	
Travel Time (s)	9.0		16.6			18.3	
Confl. Peds. (#/hr)	15	147		6	6		
Confl. Bikes (#/hr)		1		1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	
Adj. Flow (vph)	31	21	583	42	26	677	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	52	0	625	0	0	703	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		0			0	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	6		65			65	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9		9	15		
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	7
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	5.0		15.0		15.0	15.0	3.0
Minimum Split (s)	11.0		22.5		22.5	22.5	33.0
Total Split (s)	17.0		50.0		50.0	50.0	33.0
Total Split (%)	17.0%		50.0%		50.0%	50.0%	33%
Maximum Green (s)	11.0		44.0		44.0	44.0	30.0
Yellow Time (s)	4.5		4.5		4.5	4.5	3.0
All-Red Time (s)	1.5		1.5		1.5	1.5	0.0
Lost Time Adjust (s)	0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0			6.0	
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: PM Peak
02/20/2022

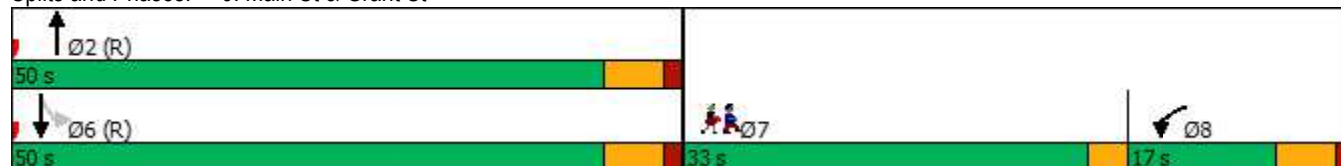


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Recall Mode	None		C-Max		C-Max	C-Max	None
Walk Time (s)							7.0
Flash Dont Walk (s)							23.0
Pedestrian Calls (#/hr)							147
Act Effct Green (s)	8.6		48.7			48.7	
Actuated g/C Ratio	0.09		0.49			0.49	
v/c Ratio	0.40		0.39			0.47	
Control Delay	51.8		21.7			19.4	
Queue Delay	0.0		0.0			0.0	
Total Delay	51.8		21.7			19.4	
LOS	D		C			B	
Approach Delay	51.8		21.7			19.4	
Approach LOS	D		C			B	
Queue Length 50th (ft)	32		174			158	
Queue Length 95th (ft)	69		233			221	
Internal Link Dist (ft)	249		529			591	
Turn Bay Length (ft)							
Base Capacity (vph)	166		1621			1500	
Starvation Cap Reductn	0		0			0	
Spillback Cap Reductn	0		0			0	
Storage Cap Reductn	0		0			0	
Reduced v/c Ratio	0.31		0.39			0.47	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.47
Intersection Signal Delay:	21.7
Intersection LOS:	C
Intersection Capacity Utilization	51.9%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 6: Main St & Grant St



Lanes, Volumes, Timings
13: Main St & Prairie Ave

Timing Plan: PM Peak
02/20/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	135	40	35	170	65	45	450	40	45	500	100
Future Volume (vph)	75	135	40	35	170	65	45	450	40	45	500	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	10	10	10	10	10	10
Storage Length (ft)	110		0	110		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00	0.99		0.99	1.00			1.00			0.99	
Frt		0.966			0.959			0.989			0.977	
Flt Protected	0.950			0.950				0.996			0.997	
Satd. Flow (prot)	1745	1763	0	1745	1754	0	0	3311	0	0	3262	0
Flt Permitted	0.364			0.624				0.840			0.870	
Satd. Flow (perm)	667	1763	0	1135	1754	0	0	2791	0	0	2845	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			18			10			33	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		710			690			585			659	
Travel Time (s)		19.4			18.8			16.0			18.0	
Confl. Peds. (#/hr)	2		10	10		2	9		5	5		9
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	80	144	43	37	181	69	48	479	43	48	532	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	187	0	37	250	0	0	570	0	0	686	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		6			6			6			6	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		custom	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			1		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		15.0	15.0		3.0	15.0	
Minimum Split (s)	9.0	28.0		9.0	28.0		28.0	28.0		6.0	28.0	
Total Split (s)	12.0	28.0		12.0	28.0		45.0	45.0		15.0	60.0	
Total Split (%)	12.0%	28.0%		12.0%	28.0%		45.0%	45.0%		15.0%	60.0%	
Maximum Green (s)	9.0	22.0		9.0	22.0		39.0	39.0		12.0	54.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5		3.0	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		1.5	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0			6.0			6.0	

Lanes, Volumes, Timings
13: Main St & Prairie Ave

Timing Plan: PM Peak
02/20/2022

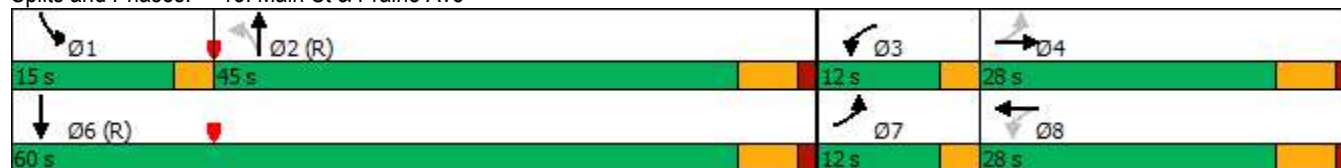


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	7.0		3.0	7.0		4.0	4.0		3.0	4.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		15.0			15.0		15.0	15.0			15.0	
Pedestrian Calls (#/hr)		10			2		5	5			9	
Act Effct Green (s)	31.4	23.1		28.9	20.1			58.5			58.5	
Actuated g/C Ratio	0.31	0.23		0.29	0.20			0.58			0.58	
v/c Ratio	0.27	0.45		0.10	0.68			0.35			0.41	
Control Delay	24.1	34.1		21.4	44.1			13.4			8.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	24.1	34.1		21.4	44.1			13.4			8.4	
LOS	C	C		C	D			B			A	
Approach Delay		31.1			41.2			13.4			8.4	
Approach LOS		C			D			B			A	
Queue Length 50th (ft)	33	94		15	135			135			55	
Queue Length 95th (ft)	65	164		36	218			88			81	
Internal Link Dist (ft)		630			610			505			579	
Turn Bay Length (ft)	110			110								
Base Capacity (vph)	306	440		398	399			1638			1679	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.26	0.42		0.09	0.63			0.35			0.41	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	35.5 (36%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	18.5
Intersection LOS:	B
Intersection Capacity Utilization	73.4%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 13: Main St & Prairie Ave



Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: PM Peak
02/20/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	0	20	10	10	20	35	380	5	0	405	160
Future Volume (vph)	140	0	20	10	10	20	35	380	5	0	405	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	10	10	10
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.97	0.98			1.00				0.96
Frt			0.850		0.900			0.999				0.850
Flt Protected	0.950			0.950				0.996				
Satd. Flow (prot)	1745	0	1473	1745	1628	0	0	1856	0	0	1756	1492
Flt Permitted	0.736			0.950				0.940				
Satd. Flow (perm)	1338	0	1401	1693	1628	0	0	1750	0	0	1756	1430
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			38		22			1				172
Link Speed (mph)		25			25			25				25
Link Distance (ft)		715			336			1132				585
Travel Time (s)		19.5			9.2			30.9				16.0
Confl. Peds. (#/hr)	8		13	13		8	8		8	8		8
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	6%	0%	0%	0%	0%	2%	0%	0%	1%	1%
Adj. Flow (vph)	151	0	22	11	11	22	38	409	5	0	435	172
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	0	22	11	33	0	0	452	0	0	435	172
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		6			6			6				6
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.00	1.00	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm	NA		Perm	NA			NA	Perm
Protected Phases					8			2				6
Permitted Phases	4		4	8			2					6
Detector Phase	4		4	8	8		2	2				6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		15.0	15.0			15.0	15.0
Minimum Split (s)	28.0		28.0	28.0	28.0		24.5	24.5			24.5	24.5
Total Split (s)	28.0		28.0	28.0	28.0		72.0	72.0			72.0	72.0
Total Split (%)	28.0%		28.0%	28.0%	28.0%		72.0%	72.0%			72.0%	72.0%
Maximum Green (s)	22.0		22.0	22.0	22.0		65.5	65.5			65.5	65.5
Yellow Time (s)	4.0		4.0	4.0	4.0		4.5	4.5			4.5	4.5
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0			6.5			6.5	6.5

Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: PM Peak
02/20/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0		4.0	4.0	4.0		6.0	6.0			6.0	6.0
Recall Mode	None		None	None	None		C-Max	C-Max			C-Max	C-Max
Walk Time (s)	8.0		8.0	8.0	8.0		8.0	8.0			8.0	8.0
Flash Dont Walk (s)	14.0		14.0	14.0	14.0		10.0	10.0			10.0	10.0
Pedestrian Calls (#/hr)	13		13	8	8		8	8			8	8
Act Effct Green (s)	16.9		16.9	16.9	16.9			70.6			70.6	70.6
Actuated g/C Ratio	0.17		0.17	0.17	0.17			0.71			0.71	0.71
v/c Ratio	0.67		0.08	0.04	0.11			0.37			0.35	0.16
Control Delay	52.8		5.6	32.3	18.1			7.5			16.4	8.5
Queue Delay	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Delay	52.8		5.6	32.3	18.1			7.5			16.4	8.5
LOS	D		A	C	B			A			B	A
Approach Delay		46.8				21.6		7.5			14.1	
Approach LOS		D				C		A			B	
Queue Length 50th (ft)	91		0	6	6			101			196	38
Queue Length 95th (ft)	150		12	20	31			179			264	80
Internal Link Dist (ft)		635				256		1052			505	
Turn Bay Length (ft)	50											
Base Capacity (vph)	294		337	372	375			1235			1239	1059
Starvation Cap Reductn	0		0	0	0			0			0	0
Spillback Cap Reductn	0		0	0	0			0			0	0
Storage Cap Reductn	0		0	0	0			0			0	0
Reduced v/c Ratio	0.51		0.07	0.03	0.09			0.37			0.35	0.16

Intersection Summary











Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 16.5
 Intersection LOS: B
 Intersection Capacity Utilization 72.2%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 16: Main St & Franklin St



HCM Unsignalized Intersection Capacity Analysis 3: Main St & Sherman St

Timing Plan: PM Peak
01/14/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	70	570	10	25	695
Future Volume (Veh/h)	1	70	570	10	25	695
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	1	73	594	10	26	724
Pedestrians	2		1			
Lane Width (ft)	12.0		10.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh			2			2
Upstream signal (ft)			671			
pX, platoon unblocked	0.73	0.73			0.73	
vC, conflicting volume	1378	601			606	
vC1, stage 1 conf vol	601					
vC2, stage 2 conf vol	777					
vCu, unblocked vol	1332	262			269	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	87			97	
cM capacity (veh/h)	358	563			938	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	74	604	26	724		
Volume Left	1	0	26	0		
Volume Right	73	10	0	0		
cSH	559	1700	938	1700		
Volume to Capacity	0.13	0.36	0.03	0.43		
Queue Length 95th (ft)	11	0	2	0		
Control Delay (s)	12.4	0.0	8.9	0.0		
Lane LOS	B		A			
Approach Delay (s)	12.4	0.0	0.3			
Approach LOS	B					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			47.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
7: Main St & Lincoln St

Timing Plan: PM Peak
02/02/2022





















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	10	15	15	5	10	15	15	570	5	15	625	35
Future Volume (Veh/h)	10	15	15	5	10	15	15	570	5	15	625	35
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	11	16	16	5	11	16	16	606	5	16	665	37
Pedestrians		34			10			1			3	
Lane Width (ft)		12.0			12.0			10.0			10.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		3			1			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage (veh)								2			2	
Upstream signal (ft)											609	
pX, platoon unblocked	0.67	0.67	0.67	0.67	0.67		0.67					
vC, conflicting volume	1414	1402	718	1391	1418	622	736			621		
vC1, stage 1 conf vol	750	750		650	650							
vC2, stage 2 conf vol	665	653		740	768							
vCu, unblocked vol	1373	1355	337	1338	1379	622	363			621		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	95	97	98	96	97	98			98		
cM capacity (veh/h)	288	299	461	293	291	485	785			960		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	43	32	627	718								
Volume Left	11	5	16	16								
Volume Right	16	16	5	37								
cSH	340	364	785	960								
Volume to Capacity	0.13	0.09	0.02	0.02								
Queue Length 95th (ft)	11	7	2	1								
Control Delay (s)	17.1	15.8	0.5	0.4								
Lane LOS	C	C	A	A								
Approach Delay (s)	17.1	15.8	0.5	0.4								
Approach LOS	C	C										
Intersection Summary												
Average Delay			1.3									
Intersection Capacity Utilization			53.1%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

10: Main St & Chicago Ave

Timing Plan: PM Peak
01/14/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	25	20	10	25	25	10	560	20	30	615	20
Future Volume (Veh/h)	10	25	20	10	25	25	10	560	20	30	615	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	10	26	21	10	26	26	10	583	21	31	641	21
Pedestrians		5			6			2			2	
Lane Width (ft)		12.0			12.0			11.0			11.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage (veh)								2			2	
Upstream signal (ft)								659			1279	
pX, platoon unblocked	0.80	0.80	0.72	0.80	0.80	0.82	0.72			0.82		
vC, conflicting volume	1362	1348	658	1358	1348	602	667			610		
vC1, stage 1 conf vol	718	718		620	620							
vC2, stage 2 conf vol	644	630		739	729							
vCu, unblocked vol	831	814	324	826	814	407	336			417		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	93	96	97	93	95	99			97		
cM capacity (veh/h)	333	354	513	329	355	529	879			942		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	57	62	10	604	31	662						
Volume Left	10	10	10	0	31	0						
Volume Right	21	26	0	21	0	21						
cSH	395	406	879	1700	942	1700						
Volume to Capacity	0.14	0.15	0.01	0.36	0.03	0.39						
Queue Length 95th (ft)	13	13	1	0	3	0						
Control Delay (s)	15.6	15.5	9.1	0.0	9.0	0.0						
Lane LOS	C	C	A		A							
Approach Delay (s)	15.6	15.5	0.1		0.4							
Approach LOS	C	C										
Intersection Summary												
Average Delay			1.6									
Intersection Capacity Utilization			45.4%	ICU Level of Service		A						
Analysis Period (min)			15									

Arterial Level of Service
2050 3-Lane Conditions

PM Peak
02/20/2022

Arterial Level of Service: NB Main St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Franklin St	16	8.4	39.0	0.2	20
Prairie Ave	13	13.3	29.0	0.1	14
Chicago Ave	10	2.1	20.2	0.1	22
Lincoln St	7	1.4	19.8	0.1	23
Grant St	6	15.8	30.7	0.1	14
Sherman St	3	3.0	22.7	0.1	20
Total		44.0	161.3	0.8	18

Arterial Level of Service: SB Main St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Sherman St	3	0.5	10.4	0.1	24
Grant St	6	20.7	37.1	0.1	12
Lincoln St	7	3.0	21.0	0.1	20
Chicago Ave	10	2.1	20.0	0.1	23
Prairie Ave	13	9.6	27.4	0.1	16
Franklin St	16	1.9	17.4	0.1	23
Total		37.9	133.3	0.7	18

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: AM Peak
01/28/2022

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Lane Configurations							
Traffic Volume (vph)	60	25	555	95	5	370	
Future Volume (vph)	60	25	555	95	5	370	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	10	10	10	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.73		1.00			1.00	
Frt	0.960		0.978				
Flt Protected	0.966					0.999	
Satd. Flow (prot)	1507	0	3256	0	0	3333	
Flt Permitted	0.966					0.944	
Satd. Flow (perm)	1285	0	3256	0	0	3150	
Right Turn on Red		No		No			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	329		609			671	
Travel Time (s)	9.0		16.6			18.3	
Confl. Peds. (#/hr)	93	552		2	2		
Confl. Bikes (#/hr)				1			
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	
Adj. Flow (vph)	74	31	685	117	6	457	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	105	0	802	0	0	463	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		0			0	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	6		65			65	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9		9	15		
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	7
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	5.0		15.0		15.0	15.0	3.0
Minimum Split (s)	11.0		22.5		22.5	22.5	33.0
Total Split (s)	18.0		39.0		39.0	39.0	33.0
Total Split (%)	20.0%		43.3%		43.3%	43.3%	37%
Maximum Green (s)	12.0		33.0		33.0	33.0	30.0
Yellow Time (s)	4.5		4.5		4.5	4.5	3.0
All-Red Time (s)	1.5		1.5		1.5	1.5	0.0
Lost Time Adjust (s)	0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0			6.0	
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: AM Peak
01/28/2022

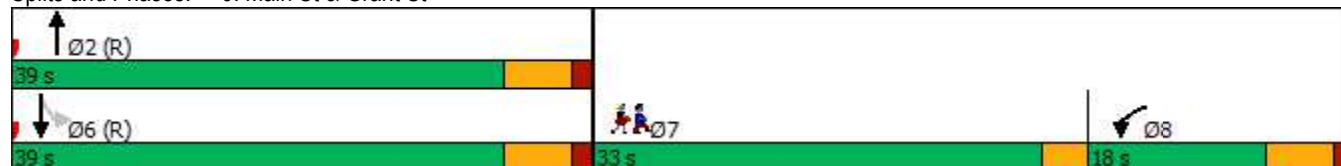


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Recall Mode	None		C-Max		C-Max	C-Max	None
Walk Time (s)							7.0
Flash Dont Walk (s)							23.0
Pedestrian Calls (#/hr)							500
Act Effct Green (s)	10.4		37.2			37.2	
Actuated g/C Ratio	0.12		0.41			0.41	
v/c Ratio	0.61		0.60			0.36	
Control Delay	52.6		17.3			20.5	
Queue Delay	0.0		0.0			0.0	
Total Delay	52.6		17.3			20.5	
LOS	D		B			C	
Approach Delay	52.6		17.3			20.5	
Approach LOS	D		B			C	
Queue Length 50th (ft)	57		119			100	
Queue Length 95th (ft)	97		163			125	
Internal Link Dist (ft)	249		529			591	
Turn Bay Length (ft)							
Base Capacity (vph)	200		1344			1301	
Starvation Cap Reductn	0		0			0	
Spillback Cap Reductn	0		0			0	
Storage Cap Reductn	0		0			0	
Reduced v/c Ratio	0.53		0.60			0.36	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	38 (42%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.61
Intersection Signal Delay:	21.1
Intersection LOS:	C
Intersection Capacity Utilization	36.2%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 6: Main St & Grant St



Lanes, Volumes, Timings
13: Main St & Prairie Ave

Timing Plan: AM Peak
01/28/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	160	40	30	125	70	70	465	60	60	315	65
Future Volume (vph)	140	160	40	30	125	70	70	465	60	60	315	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	10	10	10	10	10	10
Storage Length (ft)	110		0	110		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	0.99	1.00		1.00	0.99			1.00			0.99	
Frt		0.970			0.946			0.985			0.978	
Flt Protected	0.950			0.950				0.994			0.993	
Satd. Flow (prot)	1745	1774	0	1745	1716	0	0	3262	0	0	3234	0
Flt Permitted	0.443			0.599				0.779			0.708	
Satd. Flow (perm)	803	1774	0	1095	1716	0	0	2555	0	0	2304	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		710			690			585			659	
Travel Time (s)		19.4			18.8			16.0			18.0	
Confl. Peds. (#/hr)	18		6	6		18	6		7	7		6
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	182	208	52	39	162	91	91	604	78	78	409	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	260	0	39	253	0	0	773	0	0	571	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		6			6			6			6	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		custom	NA		Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases	4			8			5			6		
Detector Phase	7	4		3	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		1.5	15.0		15.0	15.0	
Minimum Split (s)	9.0	33.0		9.0	28.0		6.0	28.0		28.0	28.0	
Total Split (s)	12.0	33.0		9.0	30.0		6.0	48.0		42.0	42.0	
Total Split (%)	13.3%	36.7%		10.0%	33.3%		6.7%	53.3%		46.7%	46.7%	
Maximum Green (s)	9.0	27.0		6.0	24.0		3.0	42.0		36.0	36.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	4.5		4.5	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0			6.0			6.0	

Lanes, Volumes, Timings
13: Main St & Prairie Ave

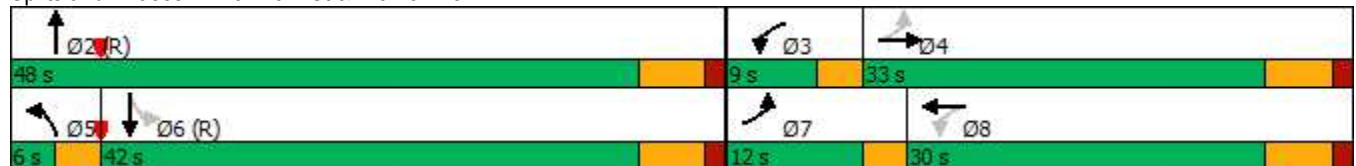
Timing Plan: AM Peak
01/28/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lead			Lag		
Lead-Lag Optimize?							Yes			Yes		
Vehicle Extension (s)	3.0	7.0		3.0	7.0		3.0	4.0		4.0	4.0	
Recall Mode	None	Max		None	Max		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0			7.0			7.0			7.0		
Flash Dont Walk (s)	15.0			15.0			15.0			15.0		
Pedestrian Calls (#/hr)	6			18			7			6		
Act Effct Green (s)	39.0	30.6		33.3	24.3		42.0				42.0	
Actuated g/C Ratio	0.43	0.34		0.37	0.27		0.47				0.47	
v/c Ratio	0.41	0.43		0.09	0.55		0.65				0.53	
Control Delay	19.4	27.0		15.6	33.6		17.3				7.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0				0.0	
Total Delay	19.4	27.0		15.6	33.6		17.3				7.8	
LOS	B	C		B	C		B				A	
Approach Delay	23.9			31.2			17.3			7.8		
Approach LOS	C			C			B			A		
Queue Length 50th (ft)	64	121		13	124		126				46	
Queue Length 95th (ft)	90	161		26	165		136				46	
Internal Link Dist (ft)	630			610			505			579		
Turn Bay Length (ft)	110			110								
Base Capacity (vph)	442	603		447	462		1192				1075	
Starvation Cap Reductn	0	0		0	0		0				0	
Spillback Cap Reductn	0	0		0	0		0				0	
Storage Cap Reductn	0	0		0	0		0				0	
Reduced v/c Ratio	0.41	0.43		0.09	0.55		0.65				0.53	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 87 (97%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 18.0
 Intersection LOS: B
 Intersection Capacity Utilization 81.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 13: Main St & Prairie Ave



Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: AM Peak
01/28/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	0	20	35	30	55	25	410	0	0	245	130
Future Volume (vph)	105	0	20	35	30	55	25	410	0	0	245	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	10	10	10
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.92		0.97	0.99	0.93			1.00				0.95
Frt			0.850		0.903							0.850
Flt Protected	0.950			0.950				0.997				
Satd. Flow (prot)	1745	0	1561	1745	1543	0	0	1894	0	0	1756	1507
Flt Permitted	0.690			0.950				0.971				
Satd. Flow (perm)	1161	0	1516	1729	1543	0	0	1843	0	0	1756	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			91		67							159
Link Speed (mph)		25			25			25				25
Link Distance (ft)		715			336			1132				585
Travel Time (s)		19.5			9.2			30.9				16.0
Confl. Peds. (#/hr)	54		3	3		54	7		14	14		7
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	128	0	24	43	37	67	30	500	0	0	299	159
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	0	24	43	104	0	0	530	0	0	299	159
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		6			6			6				6
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.00	1.00	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm	NA		Perm	NA			NA	Perm
Protected Phases					8			2				6
Permitted Phases	4		4	8			2					6
Detector Phase	4		4	8	8		2	2				6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		15.0	15.0			15.0	15.0
Minimum Split (s)	21.0		21.0	21.0	21.0		21.5	21.5			21.5	21.5
Total Split (s)	26.0		26.0	26.0	26.0		50.0	50.0			50.0	50.0
Total Split (%)	28.9%		28.9%	28.9%	28.9%		55.6%	55.6%			55.6%	55.6%
Maximum Green (s)	20.0		20.0	20.0	20.0		43.5	43.5			43.5	43.5
Yellow Time (s)	4.0		4.0	4.0	4.0		4.5	4.5			4.5	4.5
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0			6.5			6.5	6.5

Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: AM Peak
01/28/2022

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(ft)				
Link Offset(ft)				
Crosswalk Width(ft)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (mph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	7.0	7.0	7.0	7.0
Total Split (s)	7.0	7.0	7.0	7.0
Total Split (%)	8%	8%	8%	8%
Maximum Green (s)	5.0	5.0	5.0	5.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				

Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: AM Peak
01/28/2022

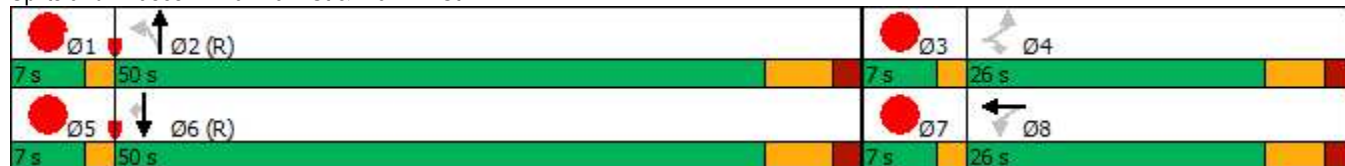


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lag		Lag	Lag	Lag		Lag	Lag			Lag	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes	Yes			Yes	Yes
Vehicle Extension (s)	4.0		4.0	4.0	4.0		6.0	6.0			6.0	6.0
Recall Mode	None		None	None	None		C-Max	C-Max			C-Max	C-Max
Walk Time (s)	1.0		1.0	1.0	1.0		1.0	1.0			1.0	1.0
Flash Dont Walk (s)	14.0		14.0	14.0	14.0		10.0	10.0			10.0	10.0
Pedestrian Calls (#/hr)	3		3	54	54		14	14			7	7
Act Effct Green (s)	16.3		16.3	16.3	16.3			61.2			61.2	61.2
Actuated g/C Ratio	0.18		0.18	0.18	0.18			0.68			0.68	0.68
v/c Ratio	0.61		0.07	0.14	0.31			0.42			0.25	0.15
Control Delay	45.4		0.4	29.7	15.2			8.6			3.2	0.4
Queue Delay	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Delay	45.4		0.4	29.7	15.2			8.6			3.2	0.4
LOS	D		A	C	B			A			A	A
Approach Delay		38.3				19.4		8.6			2.2	
Approach LOS		D				B		A			A	
Queue Length 50th (ft)	68		0	21	18			117			25	0
Queue Length 95th (ft)	104		0	41	48			194			41	1
Internal Link Dist (ft)		635				256		1052			505	
Turn Bay Length (ft)	50											
Base Capacity (vph)	265		415	394	403			1253			1194	1026
Starvation Cap Reductn	0		0	0	0			0			0	0
Spillback Cap Reductn	0		0	0	0			0			0	0
Storage Cap Reductn	0		0	0	0			0			0	0
Reduced v/c Ratio	0.48		0.06	0.11	0.26			0.42			0.25	0.15

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 11.1
 Intersection LOS: B
 Intersection Capacity Utilization 63.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 16: Main St & Franklin St












Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: AM Peak
01/28/2022

Lane Group	Ø1	Ø3	Ø5	Ø7
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None
Walk Time (s)				
Flash Dont Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

HCM Unsignalized Intersection Capacity Analysis 3: Main St & Sherman St

Timing Plan: AM Peak
01/28/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	85	560	25	110	390
Future Volume (Veh/h)	0	85	560	25	110	390
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	115	757	34	149	527
Pedestrians	2		1			
Lane Width (ft)	12.0		10.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			671			
pX, platoon unblocked	0.85	0.85			0.85	
vC, conflicting volume	1338	398			793	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1053	0			414	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	88			85	
cM capacity (veh/h)	162	929			985	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	115	505	286	325	351	
Volume Left	0	0	0	149	0	
Volume Right	115	0	34	0	0	
cSH	929	1700	1700	985	1700	
Volume to Capacity	0.12	0.30	0.17	0.15	0.21	
Queue Length 95th (ft)	11	0	0	13	0	
Control Delay (s)	9.4	0.0	0.0	5.1	0.0	
Lane LOS	A			A		
Approach Delay (s)	9.4	0.0		2.5		
Approach LOS	A					
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			45.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 7: Main St & Lincoln St

Timing Plan: AM Peak
01/28/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	20	20	40	5	30	10	55	585	15	15	385	40
Future Volume (Veh/h)	20	20	40	5	30	10	55	585	15	15	385	40
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	24	24	48	6	36	12	66	705	18	18	464	48
Pedestrians		9			5			2			5	
Lane Width (ft)		12.0			12.0			10.0			10.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											609	
pX, platoon unblocked	0.93	0.93	0.93	0.93	0.93		0.93					
vC, conflicting volume	1052	1393	267	1181	1408	372	521			728		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	911	1276	68	1048	1292	372	340			728		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	85	83	95	95	74	98	94			98		
cM capacity (veh/h)	157	143	912	132	140	626	1137			881		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	96	54	418	370	250	280						
Volume Left	24	6	66	0	18	0						
Volume Right	48	12	0	18	0	48						
cSH	257	167	1137	1700	881	1700						
Volume to Capacity	0.37	0.32	0.06	0.22	0.02	0.16						
Queue Length 95th (ft)	41	33	5	0	2	0						
Control Delay (s)	27.1	36.4	1.8	0.0	0.9	0.0						
Lane LOS	D	E	A		A							
Approach Delay (s)	27.1	36.4	1.0		0.4							
Approach LOS	D	E										
Intersection Summary												
Average Delay			3.8									
Intersection Capacity Utilization			49.9%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

10: Main St & Chicago Ave

Timing Plan: AM Peak
01/28/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	10	45	40	5	60	40	25	630	30	35	395	15
Future Volume (Veh/h)	10	45	40	5	60	40	25	630	30	35	395	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	12	56	49	6	74	49	31	778	37	43	488	19
Pedestrians		11			2			4			6	
Lane Width (ft)		12.0			12.0			10.0			10.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								659			1279	
pX, platoon unblocked	0.91	0.91		0.91	0.91	0.91				0.91		
vC, conflicting volume	1138	1474	268	1272	1464	416	518			817		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	963	1330	268	1109	1321	173	518			612		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	57	93	93	44	94	97			95		
cM capacity (veh/h)	94	130	726	88	132	769	1047			891		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	117	129	420	426	287	263						
Volume Left	12	6	31	0	43	0						
Volume Right	49	49	0	37	0	19						
cSH	187	186	1047	1700	891	1700						
Volume to Capacity	0.63	0.69	0.03	0.25	0.05	0.15						
Queue Length 95th (ft)	89	106	2	0	4	0						
Control Delay (s)	51.9	59.2	0.9	0.0	1.8	0.0						
Lane LOS	F	F	A		A							
Approach Delay (s)	51.9	59.2	0.5		1.0							
Approach LOS	F	F										
Intersection Summary												
Average Delay			8.9									
Intersection Capacity Utilization			51.3%		ICU Level of Service				A			
Analysis Period (min)			15									

Arterial Level of Service
2050 Leading Pedestrian Interval Conditions

AM Peak
01/28/2022

Arterial Level of Service: NB Main St











Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Franklin St	16	7.9	38.5	0.2	20
Prairie Ave	13	13.3	28.7	0.1	14
Chicago Ave	10	1.6	19.3	0.1	23
Lincoln St	7	0.9	19.0	0.1	24
Grant St	6	14.9	29.3	0.1	14
Sherman St	3	2.1	21.7	0.1	21
Total		40.7	156.5	0.8	19

Arterial Level of Service: SB Main St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Sherman St	3	1.0	10.2	0.1	23
Grant St	6	15.3	31.7	0.1	14
Lincoln St	7	2.1	20.0	0.1	21
Chicago Ave	10	1.1	19.1	0.1	24
Prairie Ave	13	8.5	26.2	0.1	17
Franklin St	16	3.0	18.7	0.1	21
Total		31.1	126.0	0.7	19

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: PM Peak
01/28/2022

							Ø7
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (vph)	30	20	560	40	25	650	
Future Volume (vph)	30	20	560	40	25	650	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	10	10	10	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.84		1.00			1.00	
Frt	0.945		0.990				
Flt Protected	0.971					0.998	
Satd. Flow (prot)	1508	0	3330	0	0	3363	
Flt Permitted	0.971					0.914	
Satd. Flow (perm)	1467	0	3330	0	0	3079	
Right Turn on Red		No		No			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	329		609			671	
Travel Time (s)	9.0		16.6			18.3	
Confl. Peds. (#/hr)	15	147		6	6		
Confl. Bikes (#/hr)		1		1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	
Adj. Flow (vph)	31	21	583	42	26	677	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	52	0	625	0	0	703	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		0			0	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	6		65			65	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9		9	15		
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	7
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	5.0		15.0		15.0	15.0	3.0
Minimum Split (s)	11.0		22.5		22.5	22.5	33.0
Total Split (s)	16.0		51.0		51.0	51.0	33.0
Total Split (%)	16.0%		51.0%		51.0%	51.0%	33%
Maximum Green (s)	10.0		45.0		45.0	45.0	30.0
Yellow Time (s)	4.5		4.5		4.5	4.5	3.0
All-Red Time (s)	1.5		1.5		1.5	1.5	0.0
Lost Time Adjust (s)	0.0		0.0			0.0	
Total Lost Time (s)	6.0		6.0			6.0	
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: PM Peak
01/28/2022

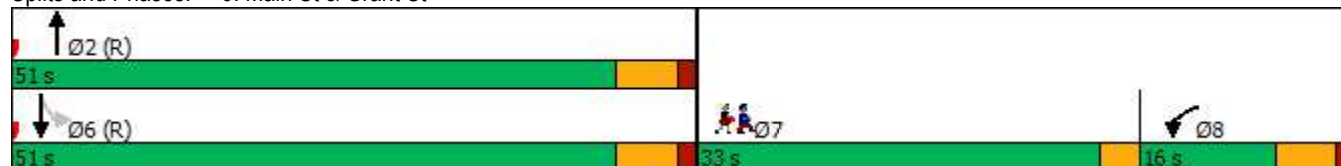


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Recall Mode	None		C-Max		C-Max	C-Max	None
Walk Time (s)							7.0
Flash Dont Walk (s)							23.0
Pedestrian Calls (#/hr)							147
Act Effct Green (s)	8.3		49.0			49.0	
Actuated g/C Ratio	0.08		0.49			0.49	
v/c Ratio	0.42		0.38			0.47	
Control Delay	53.1		11.8			19.2	
Queue Delay	0.0		0.0			0.0	
Total Delay	53.1		11.8			19.2	
LOS	D		B			B	
Approach Delay	53.1		11.8			19.2	
Approach LOS	D		B			B	
Queue Length 50th (ft)	32		107			158	
Queue Length 95th (ft)	70		87			217	
Internal Link Dist (ft)	249		529			591	
Turn Bay Length (ft)							
Base Capacity (vph)	150		1631			1508	
Starvation Cap Reductn	0		0			0	
Spillback Cap Reductn	0		0			0	
Storage Cap Reductn	0		0			0	
Reduced v/c Ratio	0.35		0.38			0.47	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	48 (48%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.47
Intersection Signal Delay:	17.1
Intersection LOS:	B
Intersection Capacity Utilization	51.9%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 6: Main St & Grant St



Lanes, Volumes, Timings
13: Main St & Prairie Ave

Timing Plan: PM Peak
01/28/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	135	40	35	170	65	45	450	40	45	500	100
Future Volume (vph)	75	135	40	35	170	65	45	450	40	45	500	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	10	10	10	10	10	10
Storage Length (ft)	110		0	110		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor	1.00	0.99		0.99	1.00			1.00			0.99	
Frt		0.966			0.959			0.989			0.977	
Flt Protected	0.950			0.950				0.996			0.997	
Satd. Flow (prot)	1745	1764	0	1745	1754	0	0	3311	0	0	3262	0
Flt Permitted	0.410			0.624				0.840			0.870	
Satd. Flow (perm)	752	1764	0	1134	1754	0	0	2791	0	0	2845	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		710			690			585			659	
Travel Time (s)		19.4			18.8			16.0			18.0	
Confl. Peds. (#/hr)	2		10	10		2	9		5	5		9
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	80	144	43	37	181	69	48	479	43	48	532	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	187	0	37	250	0	0	570	0	0	686	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		6			6			6			6	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		custom	NA	
Protected Phases	7	4		3	8			2		1	6	
Permitted Phases	4			8			2			1		
Detector Phase	7	4		3	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		15.0	15.0		3.0	15.0	
Minimum Split (s)	9.0	28.0		9.0	28.0		28.0	28.0		6.0	28.0	
Total Split (s)	10.0	37.0		9.0	36.0		48.0	48.0		6.0	54.0	
Total Split (%)	10.0%	37.0%		9.0%	36.0%		48.0%	48.0%		6.0%	54.0%	
Maximum Green (s)	7.0	31.0		6.0	30.0		42.0	42.0		3.0	48.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		4.5	4.5		3.0	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		1.5	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0			6.0			6.0	

Lanes, Volumes, Timings
13: Main St & Prairie Ave

Timing Plan: PM Peak
01/28/2022

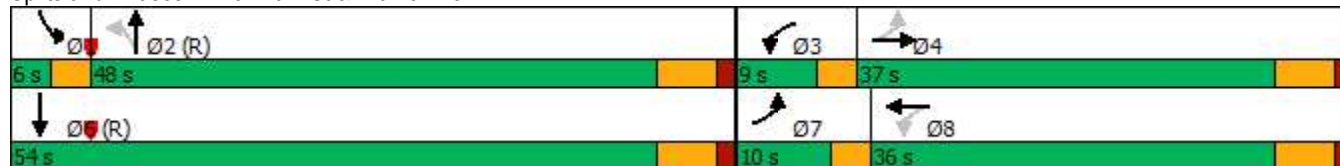


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	7.0		3.0	7.0		4.0	4.0		3.0	4.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		15.0			15.0		15.0	15.0			15.0	
Pedestrian Calls (#/hr)		10			2		5	5			9	
Act Effct Green (s)	33.0	25.8		31.0	23.2			56.8			56.8	
Actuated g/C Ratio	0.33	0.26		0.31	0.23			0.57			0.57	
v/c Ratio	0.25	0.41		0.10	0.62			0.36			0.42	
Control Delay	22.0	32.9		19.4	40.5			8.6			2.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	22.0	32.9		19.4	40.5			8.6			2.4	
LOS	C	C		B	D			A			A	
Approach Delay		29.6			37.8			8.6			2.4	
Approach LOS		C			D			A			A	
Queue Length 50th (ft)	34	102		15	144			79			20	
Queue Length 95th (ft)	59	152		32	205			103			30	
Internal Link Dist (ft)		630			610			505			579	
Turn Bay Length (ft)	110			110								
Base Capacity (vph)	317	546		387	526			1586			1617	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.25	0.34		0.10	0.48			0.36			0.42	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 5 (5%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 14.0
 Intersection LOS: B
 Intersection Capacity Utilization 73.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 13: Main St & Prairie Ave



Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: PM Peak
01/28/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	0	20	10	10	20	35	380	5	0	405	160
Future Volume (vph)	140	0	20	10	10	20	35	380	5	0	405	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	10	10	10
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.94	0.96	0.98			1.00				0.94
Frt			0.850		0.900			0.999				0.850
Flt Protected	0.950			0.950				0.996				
Satd. Flow (prot)	1745	0	1473	1745	1622	0	0	1856	0	0	1756	1492
Flt Permitted	0.461			0.950				0.935				
Satd. Flow (perm)	834	0	1381	1669	1622	0	0	1740	0	0	1756	1409
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82		22			1				172
Link Speed (mph)		25			25			25				25
Link Distance (ft)		715			336			1132				585
Travel Time (s)		19.5			9.2			30.9				16.0
Confl. Peds. (#/hr)	8		13	13		8	8		8	8		8
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	6%	0%	0%	0%	0%	2%	0%	0%	1%	1%
Adj. Flow (vph)	151	0	22	11	11	22	38	409	5	0	435	172
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	0	22	11	33	0	0	452	0	0	435	172
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		6			6			6				6
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.00	1.00	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm	Perm	NA		Perm	NA			NA	Perm
Protected Phases					8			2				6
Permitted Phases	4		4	8			2					6
Detector Phase	4		4	8	8		2	2				6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0	7.0		15.0	15.0			15.0	15.0
Minimum Split (s)	21.0		21.0	21.0	21.0		21.5	21.5			21.5	21.5
Total Split (s)	31.0		31.0	31.0	31.0		55.0	55.0			55.0	55.0
Total Split (%)	31.0%		31.0%	31.0%	31.0%		55.0%	55.0%			55.0%	55.0%
Maximum Green (s)	25.0		25.0	25.0	25.0		48.5	48.5			48.5	48.5
Yellow Time (s)	4.0		4.0	4.0	4.0		4.5	4.5			4.5	4.5
All-Red Time (s)	2.0		2.0	2.0	2.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	6.0		6.0	6.0	6.0			6.5			6.5	6.5

Lanes, Volumes, Timings

16: Main St & Franklin St

Timing Plan: PM Peak
01/28/2022

Lane Group	Ø1	Ø3	Ø5	Ø7
Lane Configurations				
Traffic Volume (vph)				
Future Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor				
Heavy Vehicles (%)				
Adj. Flow (vph)				
Shared Lane Traffic (%)				
Lane Group Flow (vph)				
Enter Blocked Intersection				
Lane Alignment				
Median Width(ft)				
Link Offset(ft)				
Crosswalk Width(ft)				
Two way Left Turn Lane				
Headway Factor				
Turning Speed (mph)				
Turn Type				
Protected Phases	1	3	5	7
Permitted Phases				
Detector Phase				
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	7.0	7.0	7.0	7.0
Total Split (s)	7.0	7.0	7.0	7.0
Total Split (%)	7%	7%	7%	7%
Maximum Green (s)	5.0	5.0	5.0	5.0
Yellow Time (s)	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0
Lost Time Adjust (s)				
Total Lost Time (s)				












Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: PM Peak
01/28/2022

Lane Group	Ø1	Ø3	Ø5	Ø7
Lead/Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max
Walk Time (s)				
Flash Dont Walk (s)				
Pedestrian Calls (#/hr)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Queue Length 50th (ft)				
Queue Length 95th (ft)				
Internal Link Dist (ft)				
Turn Bay Length (ft)				
Base Capacity (vph)				
Starvation Cap Reductn				
Spillback Cap Reductn				
Storage Cap Reductn				
Reduced v/c Ratio				
Intersection Summary				

HCM Unsignalized Intersection Capacity Analysis 3: Main St & Sherman St

Timing Plan: PM Peak
01/28/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (veh/h)	1	70	570	10	25	695
Future Volume (Veh/h)	1	70	570	10	25	695
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	1	73	594	10	26	724
Pedestrians	2		1			
Lane Width (ft)	12.0		10.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			671			
pX, platoon unblocked	0.91	0.91			0.91	
vC, conflicting volume	1016	304			606	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	820	38			369	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	92			98	
cM capacity (veh/h)	277	932			1077	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	74	396	208	267	483	
Volume Left	1	0	0	26	0	
Volume Right	73	0	10	0	0	
cSH	903	1700	1700	1077	1700	
Volume to Capacity	0.08	0.23	0.12	0.02	0.28	
Queue Length 95th (ft)	7	0	0	2	0	
Control Delay (s)	9.3	0.0	0.0	1.0	0.0	
Lane LOS	A			A		
Approach Delay (s)	9.3	0.0		0.4		
Approach LOS	A					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			48.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 7: Main St & Lincoln St

Timing Plan: PM Peak
01/28/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	10	15	15	5	10	15	15	570	5	15	625	35
Future Volume (Veh/h)	10	15	15	5	10	15	15	570	5	15	625	35
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	11	16	16	5	11	16	16	606	5	16	665	37
Pedestrians		34			10			1			3	
Lane Width (ft)		12.0			12.0			10.0			10.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		3			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											609	
pX, platoon unblocked	0.88	0.88	0.88	0.88	0.88		0.88					
vC, conflicting volume	1109	1402	386	1040	1418	318	736			621		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	851	1185	29	773	1203	318	427			621		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	90	98	98	93	98	98			98		
cM capacity (veh/h)	190	156	889	218	152	675	973			960		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	43	32	319	308	348	370						
Volume Left	11	5	16	0	16	0						
Volume Right	16	16	0	5	0	37						
cSH	241	269	973	1700	960	1700						
Volume to Capacity	0.18	0.12	0.02	0.18	0.02	0.22						
Queue Length 95th (ft)	16	10	1	0	1	0						
Control Delay (s)	23.2	20.2	0.6	0.0	0.6	0.0						
Lane LOS	C	C	A		A							
Approach Delay (s)	23.2	20.2	0.3		0.3							
Approach LOS	C	C										
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			40.3%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

10: Main St & Chicago Ave

Timing Plan: PM Peak
01/28/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	10	25	20	10	25	25	10	560	20	30	615	20
Future Volume (Veh/h)	10	25	20	10	25	25	10	560	20	30	615	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	10	26	21	10	26	26	10	583	21	31	641	21
Pedestrians		5			6			2			2	
Lane Width (ft)		12.0			12.0			10.0			10.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								659			1279	
pX, platoon unblocked	0.96	0.96	0.95	0.96	0.96	0.97	0.95			0.97		
vC, conflicting volume	1071	1348	338	1038	1348	310	667			610		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	850	1138	193	816	1138	221	540			531		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	86	97	95	86	97	99			97		
cM capacity (veh/h)	205	186	775	218	186	759	980			1008		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	57	62	302	312	352	342						
Volume Left	10	10	10	0	31	0						
Volume Right	21	26	0	21	0	21						
cSH	264	282	980	1700	1008	1700						
Volume to Capacity	0.22	0.22	0.01	0.18	0.03	0.20						
Queue Length 95th (ft)	20	21	1	0	2	0						
Control Delay (s)	22.3	21.3	0.4	0.0	1.1	0.0						
Lane LOS	C	C	A		A							
Approach Delay (s)	22.3	21.3	0.2		0.5							
Approach LOS	C	C										
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			50.0%		ICU Level of Service					A		
Analysis Period (min)			15									

Arterial Level of Service
2050 Leading Pedestrian Interval Conditions

PM Peak
01/28/2022

Arterial Level of Service: NB Main St











Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Franklin St	16	23.5	53.7	0.2	14
Prairie Ave	13	8.5	24.1	0.1	17
Chicago Ave	10	1.4	19.5	0.1	23
Lincoln St	7	0.8	19.1	0.1	24
Grant St	6	10.7	25.6	0.1	16
Sherman St	3	1.7	21.3	0.1	22
Total		46.6	163.3	0.8	18

Arterial Level of Service: SB Main St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Sherman St	3	0.4	9.7	0.1	24
Grant St	6	16.7	33.2	0.1	14
Lincoln St	7	2.4	20.3	0.1	20
Chicago Ave	10	1.5	19.3	0.1	24
Prairie Ave	13	6.9	24.6	0.1	18
Franklin St	16	13.7	29.2	0.1	14
Total		41.6	136.1	0.7	18

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: AM Peak
02/21/2022

							
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Lane Configurations							
Traffic Volume (vph)	60	25	555	95	5	370	
Future Volume (vph)	60	25	555	95	5	370	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	10	12	10	
Storage Length (ft)	0	0		0	100		
Storage Lanes	1	0		0	1		
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.49		1.00		1.00		
Frt	0.960		0.980				
Flt Protected	0.966				0.950		
Satd. Flow (prot)	1293	0	1717	0	1805	1756	
Flt Permitted	0.966				0.132		
Satd. Flow (perm)	869	0	1717	0	251	1756	
Right Turn on Red		No		No			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	329		609			671	
Travel Time (s)	9.0		16.6			18.3	
Confl. Peds. (#/hr)	93	552		2	2		
Confl. Bikes (#/hr)				1			
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%	
Adj. Flow (vph)	74	31	685	117	6	457	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	105	0	802	0	6	457	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		12			12	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	6		65			65	
Two way Left Turn Lane			Yes			Yes	
Headway Factor	1.00	1.00	1.09	1.09	1.00	1.09	
Turning Speed (mph)	15	9		9	15		
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	7
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	5.0		15.0		15.0	15.0	3.0
Minimum Split (s)	11.0		22.5		22.5	22.5	23.0
Total Split (s)	15.0		52.0		52.0	52.0	23.0
Total Split (%)	16.7%		57.8%		57.8%	57.8%	26%
Maximum Green (s)	9.0		46.0		46.0	46.0	20.0
Yellow Time (s)	4.5		4.5		4.5	4.5	3.0
All-Red Time (s)	1.5		1.5		1.5	1.5	0.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0		6.0		6.0	6.0	

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: AM Peak
02/21/2022

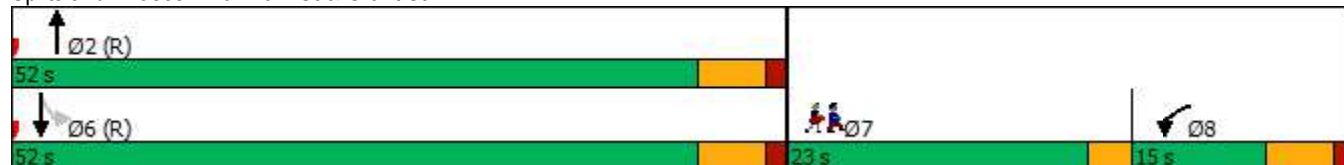


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max	None
Walk Time (s)							10.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							500
Act Effct Green (s)	8.9		46.1		46.1	46.1	
Actuated g/C Ratio	0.10		0.51		0.51	0.51	
v/c Ratio	0.82		0.91		0.05	0.51	
Control Delay	85.2		29.0		12.4	17.0	
Queue Delay	0.0		0.0		0.0	0.0	
Total Delay	85.2		29.0		12.4	17.0	
LOS	F		C		B	B	
Approach Delay	85.2		29.0			17.0	
Approach LOS	F		C			B	
Queue Length 50th (ft)	60		229		2	163	
Queue Length 95th (ft)	#128		#361		7	211	
Internal Link Dist (ft)	249		529			591	
Turn Bay Length (ft)					100		
Base Capacity (vph)	129		879		128	899	
Starvation Cap Reductn	0		0		0	0	
Spillback Cap Reductn	0		0		0	0	
Storage Cap Reductn	0		0		0	0	
Reduced v/c Ratio	0.81		0.91		0.05	0.51	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 44 (49%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 29.2
 Intersection LOS: C
 Intersection Capacity Utilization 52.9%
 ICU Level of Service A
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 6: Main St & Grant St



Lanes, Volumes, Timings
13: Main St & Prairie Ave

Timing Plan: AM Peak
02/21/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	160	40	30	125	70	70	465	60	60	315	65
Future Volume (vph)	140	160	40	30	125	70	70	465	60	60	315	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	10	10	12	10	10
Storage Length (ft)	110		0	110		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		0.99	0.98		1.00	1.00			0.99	
Frt		0.970			0.946			0.983				0.974
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1831	0	1805	1761	0	1805	1721	0	1805	1704	0
Flt Permitted	0.407			0.519			0.327			0.156		
Satd. Flow (perm)	756	1831	0	979	1761	0	619	1721	0	296	1704	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		710			690			585			659	
Travel Time (s)		19.4			18.8			16.0			18.0	
Confl. Peds. (#/hr)	18		6	6		18	6		7	7		6
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	182	208	52	39	162	91	91	604	78	78	409	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	260	0	39	253	0	91	682	0	78	493	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		6			6			6			6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	15.0		6.0	15.0	
Minimum Split (s)	9.0	28.0		9.0	28.0		9.0	28.0		9.0	28.0	
Total Split (s)	9.0	28.0		9.0	28.0		9.0	44.0		9.0	44.0	
Total Split (%)	10.0%	31.1%		10.0%	31.1%		10.0%	48.9%		10.0%	48.9%	
Maximum Green (s)	6.0	22.0		6.0	22.0		6.0	38.0		6.0	38.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	4.5		3.0	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	6.0		3.0	6.0	

Lanes, Volumes, Timings 13: Main St & Prairie Ave

Timing Plan: AM Peak
02/21/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	7.0		3.0	7.0		3.0	4.0		3.0	4.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		6			18			7			6	
Act Effct Green (s)	30.2	23.6		29.0	20.0		49.6	41.7		49.5	41.6	
Actuated g/C Ratio	0.34	0.26		0.32	0.22		0.55	0.46		0.55	0.46	
v/c Ratio	0.56	0.54		0.11	0.65		0.22	0.86		0.29	0.63	
Control Delay	28.6	34.0		18.9	39.7		8.9	30.5		8.3	15.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.6	34.0		18.9	39.7		8.9	30.5		8.3	15.0	
LOS	C	C		B	D		A	C		A	B	
Approach Delay		31.8			36.9			28.0			14.1	
Approach LOS		C			D			C			B	
Queue Length 50th (ft)	70	130		14	127		18	217		10	118	
Queue Length 95th (ft)	100	173		29	170		35	#294		m16	135	
Internal Link Dist (ft)		630			610			505			579	
Turn Bay Length (ft)	110			110			100			100		
Base Capacity (vph)	324	480		371	430		422	796		265	787	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.56	0.54		0.11	0.59		0.22	0.86		0.29	0.63	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 89 (99%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 26.2

Intersection LOS: C

Intersection Capacity Utilization 72.2%

ICU Level of Service C

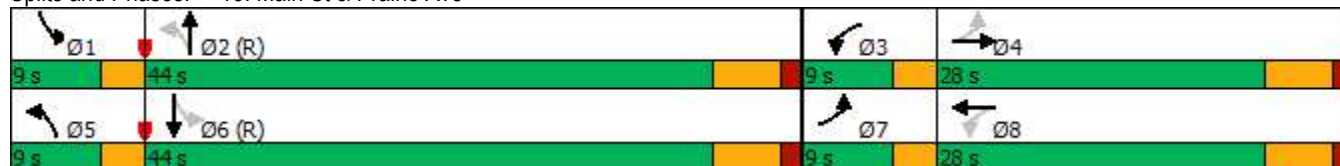
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Main St & Prairie Ave



Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: AM Peak
02/21/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	0	20	35	30	55	25	410	0	0	245	130
Future Volume (vph)	105	0	20	35	30	55	25	410	0	0	245	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	10	10
Storage Length (ft)	50		0	0		0	100		0	0		100
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.91		0.97	0.99	0.92			1.00				0.96
Frt			0.850		0.903							0.850
Flt Protected	0.950			0.950				0.997				
Satd. Flow (prot)	1805	0	1615	1805	1572	0	0	1894	0	0	1756	1507
Flt Permitted	0.549			0.950				0.969				
Satd. Flow (perm)	954	0	1573	1794	1572	0	0	1840	0	0	1756	1451
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25				25
Link Distance (ft)		715			336			1132				585
Travel Time (s)		19.5			9.2			30.9				16.0
Confl. Peds. (#/hr)	54		3	3		54	7		14	14		7
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	128	0	24	43	37	67	30	500	0	0	299	159
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	0	24	43	104	0	0	530	0	0	299	159
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		6			6			6				6
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt		Prot	Perm	NA		Perm	NA			NA	Perm
Protected Phases	7		4		8			2			6	
Permitted Phases	4		4	8			2					6
Detector Phase	7		4	8	8		2	2			6	6
Switch Phase												
Minimum Initial (s)	5.0		7.0	7.0	7.0		15.0	15.0			15.0	15.0
Minimum Split (s)	9.5		28.0	28.0	28.0		24.5	24.5			24.5	24.5
Total Split (s)	10.4		38.4	28.0	28.0		51.6	51.6			51.6	51.6
Total Split (%)	11.6%		42.7%	31.1%	31.1%		57.3%	57.3%			57.3%	57.3%
Maximum Green (s)	5.9		32.4	22.0	22.0		45.1	45.1			45.1	45.1
Yellow Time (s)	3.5		4.0	4.0	4.0		4.5	4.5			4.5	4.5
All-Red Time (s)	1.0		2.0	2.0	2.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.5		6.0	6.0	6.0			6.5			6.5	6.5

Lanes, Volumes, Timings
16: Main St & Franklin St

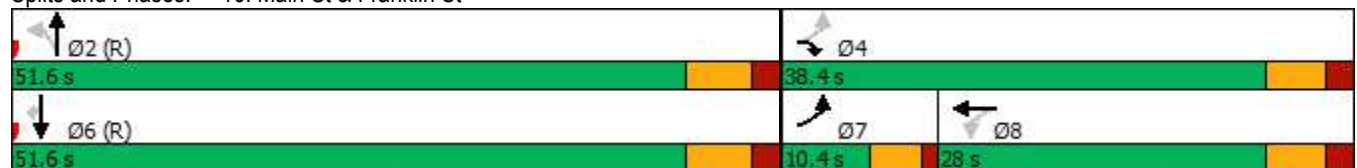
Timing Plan: AM Peak
02/21/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead			Lag			Lag					
Lead-Lag Optimize?	Yes			Yes			Yes					
Vehicle Extension (s)	3.0			4.0			4.0			6.0		
Recall Mode	None			None			C-Max			C-Max		
Walk Time (s)	8.0			8.0			8.0			8.0		
Flash Dont Walk (s)	14.0			14.0			14.0			10.0		
Pedestrian Calls (#/hr)	3			54			54			14		
Act Effct Green (s)	28.8			27.3			19.1			50.2		
Actuated g/C Ratio	0.32			0.30			0.21			0.56		
v/c Ratio	0.35			0.05			0.11			0.31		
Control Delay	23.0			19.1			27.3			31.0		
Queue Delay	0.0			0.0			0.0			0.0		
Total Delay	23.0			19.1			27.3			31.0		
LOS	C			B			C			C		
Approach Delay	22.4			29.9			16.7			6.9		
Approach LOS	C			C			B			A		
Queue Length 50th (ft)	48			9			19			48		
Queue Length 95th (ft)	79			23			41			83		
Internal Link Dist (ft)	635			256			1052			505		
Turn Bay Length (ft)	50									100		
Base Capacity (vph)	366			581			438			384		
Starvation Cap Reductn	0			0			0			0		
Spillback Cap Reductn	0			0			0			0		
Storage Cap Reductn	0			0			0			0		
Reduced v/c Ratio	0.35			0.04			0.10			0.27		

Intersection Summary











Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.52
 Intersection Signal Delay: 15.4
 Intersection LOS: B
 Intersection Capacity Utilization 70.4%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 16: Main St & Franklin St



HCM Unsignalized Intersection Capacity Analysis 3: Main St & Sherman St

Timing Plan: AM Peak
02/21/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	85	560	25	110	390
Future Volume (Veh/h)	0	85	560	25	110	390
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	0	115	757	34	149	527
Pedestrians	2		1			
Lane Width (ft)	12.0		10.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh			2			2
Upstream signal (ft)			671			
pX, platoon unblocked	0.59	0.59			0.59	
vC, conflicting volume	1602	776			793	
vC1, stage 1 conf vol	776					
vC2, stage 2 conf vol	826					
vCu, unblocked vol	1674	268			297	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	75			80	
cM capacity (veh/h)	271	455			748	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	115	791	149	527		
Volume Left	0	0	149	0		
Volume Right	115	34	0	0		
cSH	455	1700	748	1700		
Volume to Capacity	0.25	0.47	0.20	0.31		
Queue Length 95th (ft)	25	0	18	0		
Control Delay (s)	15.6	0.0	11.0	0.0		
Lane LOS	C		B			
Approach Delay (s)	15.6	0.0	2.4			
Approach LOS	C					
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			52.4%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 7: Main St & Lincoln St



















Timing Plan: AM Peak
02/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Volume (veh/h)	20	20	40	5	30	10	55	585	15	15	385	40
Future Volume (Veh/h)	20	20	40	5	30	10	55	585	15	15	385	40
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	24	24	48	6	36	12	66	705	18	18	464	48
Pedestrians		9			5			2			5	
Lane Width (ft)		12.0			12.0			11.0			11.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			0			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage (veh)								2			2	
Upstream signal (ft)											609	
pX, platoon unblocked	0.84	0.84	0.84	0.84	0.84		0.84					
vC, conflicting volume	1405	1393	499	1413	1408	724	521			728		
vC1, stage 1 conf vol	533	533		851	851							
vC2, stage 2 conf vol	872	860		562	557							
vCu, unblocked vol	1387	1372	305	1396	1390	724	331			728		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	92	92	98	87	97	94			98		
cM capacity (veh/h)	241	290	613	261	288	425	1029			881		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	96	54	66	723	18	512						
Volume Left	24	6	66	0	18	0						
Volume Right	48	12	0	18	0	48						
cSH	368	306	1029	1700	881	1700						
Volume to Capacity	0.26	0.18	0.06	0.43	0.02	0.30						
Queue Length 95th (ft)	26	16	5	0	2	0						
Control Delay (s)	18.2	19.3	8.7	0.0	9.2	0.0						
Lane LOS	C	C	A		A							
Approach Delay (s)	18.2	19.3	0.7		0.3							
Approach LOS	C	C										
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			54.0%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
10: Main St & Chicago Ave

Timing Plan: AM Peak
02/21/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	45	40	5	60	40	25	630	30	35	395	15
Future Volume (Veh/h)	10	45	40	5	60	40	25	630	30	35	395	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	12	56	49	6	74	49	31	778	37	43	488	19
Pedestrians		11			2			4			6	
Lane Width (ft)		12.0			12.0			11.0			11.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		1			0			0			1	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage (veh)								2			2	
Upstream signal (ft)								659			1279	
pX, platoon unblocked	0.65	0.65	0.96	0.65	0.65	0.63	0.96			0.63		
vC, conflicting volume	1526	1474	512	1516	1464	804	518			817		
vC1, stage 1 conf vol	594	594		860	860							
vC2, stage 2 conf vol	932	879		655	604							
vCu, unblocked vol	1387	1305	466	1370	1291	393	472			413		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	78	91	97	73	88	97			94		
cM capacity (veh/h)	153	251	566	233	274	412	1040			725		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	117	129	31	815	43	507						
Volume Left	12	6	31	0	43	0						
Volume Right	49	49	0	37	0	19						
cSH	301	311	1040	1700	725	1700						
Volume to Capacity	0.39	0.41	0.03	0.48	0.06	0.30						
Queue Length 95th (ft)	44	49	2	0	5	0						
Control Delay (s)	24.4	24.5	8.6	0.0	10.3	0.0						
Lane LOS	C	C	A		B							
Approach Delay (s)	24.4	24.5	0.3		0.8							
Approach LOS	C	C										
Intersection Summary												
Average Delay			4.1									
Intersection Capacity Utilization			51.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Arterial Level of Service
2050 3-Lane + Signal Adjustments Conditions

AM Peak
02/21/2022

Arterial Level of Service: NB Main St











Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Franklin St	16	13.7	44.0	0.2	18
Prairie Ave	13	18.5	34.0	0.1	12
Chicago Ave	10	2.3	20.1	0.1	22
Lincoln St	7	1.5	19.5	0.1	23
Grant St	6	17.6	32.3	0.1	13
Sherman St	3	3.3	22.9	0.1	20
Total		56.9	172.9	0.8	17

Arterial Level of Service: SB Main St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Sherman St	3	0.5	10.2	0.1	24
Grant St	6	11.3	27.7	0.1	17
Lincoln St	7	2.4	20.2	0.1	21
Chicago Ave	10	1.4	19.3	0.1	24
Prairie Ave	13	11.9	29.6	0.1	15
Franklin St	16	5.2	20.7	0.1	19
Total		32.6	127.8	0.7	19

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: PM Peak
02/21/2022

							Ø7
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (vph)	30	20	560	40	25	650	
Future Volume (vph)	30	20	560	40	25	650	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	10	10	12	10	
Storage Length (ft)	0	0		0	100		
Storage Lanes	1	0		0	1		
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.73		1.00		1.00		
Frt	0.945		0.991				
Flt Protected	0.971				0.950		
Satd. Flow (prot)	1339	0	1754	0	1805	1773	
Flt Permitted	0.971				0.308		
Satd. Flow (perm)	1273	0	1754	0	584	1773	
Right Turn on Red		No		No			
Satd. Flow (RTOR)							
Link Speed (mph)	25		25			25	
Link Distance (ft)	329		609			671	
Travel Time (s)	9.0		16.6			18.3	
Confl. Peds. (#/hr)	15	147		6	6		
Confl. Bikes (#/hr)		1		1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	
Adj. Flow (vph)	31	21	583	42	26	677	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	52	0	625	0	26	677	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	12		12			12	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	6		65			65	
Two way Left Turn Lane			Yes			Yes	
Headway Factor	1.00	1.00	1.09	1.09	1.00	1.09	
Turning Speed (mph)	15	9		9	15		
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	7
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	5.0		15.0		15.0	15.0	3.0
Minimum Split (s)	11.0		22.5		22.5	22.5	23.0
Total Split (s)	15.0		62.0		62.0	62.0	23.0
Total Split (%)	15.0%		62.0%		62.0%	62.0%	23%
Maximum Green (s)	9.0		56.0		56.0	56.0	20.0
Yellow Time (s)	4.5		4.5		4.5	4.5	3.0
All-Red Time (s)	1.5		1.5		1.5	1.5	0.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	6.0		6.0		6.0	6.0	

Lanes, Volumes, Timings
6: Main St & Grant St

Timing Plan: PM Peak
02/21/2022

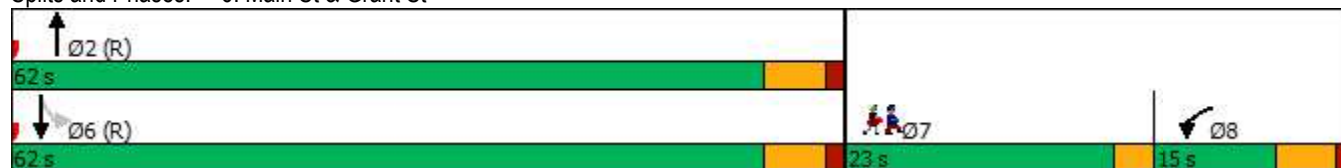


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø7
Lead/Lag	Lag						Lead
Lead-Lag Optimize?	Yes						Yes
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max	None
Walk Time (s)							10.0
Flash Dont Walk (s)							10.0
Pedestrian Calls (#/hr)							147
Act Effct Green (s)	8.0		59.3		59.3	59.3	
Actuated g/C Ratio	0.08		0.59		0.59	0.59	
v/c Ratio	0.49		0.60		0.08	0.64	
Control Delay	59.1		11.3		10.9	18.1	
Queue Delay	0.0		0.0		0.0	0.0	
Total Delay	59.1		11.3		10.9	18.1	
LOS	E		B		B	B	
Approach Delay	59.1		11.3			17.9	
Approach LOS	E		B			B	
Queue Length 50th (ft)	32		117		7	289	
Queue Length 95th (ft)	72		153		20	423	
Internal Link Dist (ft)	249		529			591	
Turn Bay Length (ft)					100		
Base Capacity (vph)	120		1039		346	1050	
Starvation Cap Reductn	0		0		0	0	
Spillback Cap Reductn	0		0		0	0	
Storage Cap Reductn	0		0		0	0	
Reduced v/c Ratio	0.43		0.60		0.08	0.64	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	33 (33%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	16.4
Intersection LOS:	B
Intersection Capacity Utilization:	49.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 6: Main St & Grant St



Lanes, Volumes, Timings
13: Main St & Prairie Ave

Timing Plan: PM Peak
02/21/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	135	40	35	170	65	45	450	40	45	500	100
Future Volume (vph)	75	135	40	35	170	65	45	450	40	45	500	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	10	10	12	10	10
Storage Length (ft)	110		0	110		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.98	0.99			1.00		1.00	0.99	
Frt		0.966			0.959			0.988			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1817	0	1805	1810	0	1805	1748	0	1805	1717	0
Flt Permitted	0.388			0.584			0.262			0.351		
Satd. Flow (perm)	735	1817	0	1091	1810	0	498	1748	0	665	1717	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		710			690			585			659	
Travel Time (s)		19.4			18.8			16.0			18.0	
Confl. Peds. (#/hr)	2		10	10		2	9		5	5		9
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	80	144	43	37	181	69	48	479	43	48	532	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	187	0	37	250	0	48	522	0	48	638	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		6			6			6			6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	8.0		6.0	8.0		6.0	15.0		6.0	15.0	
Minimum Split (s)	9.0	28.0		9.0	28.0		9.0	28.0		9.0	28.0	
Total Split (s)	9.0	28.0		9.0	28.0		9.0	54.0		9.0	54.0	
Total Split (%)	9.0%	28.0%		9.0%	28.0%		9.0%	54.0%		9.0%	54.0%	
Maximum Green (s)	6.0	22.0		6.0	22.0		6.0	48.0		6.0	48.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	4.5		3.0	4.5	
All-Red Time (s)	0.0	1.5		0.0	1.5		0.0	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	6.0		3.0	6.0	

Lanes, Volumes, Timings
13: Main St & Prairie Ave

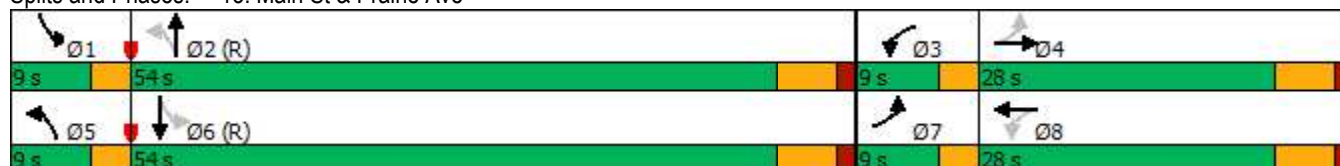
Timing Plan: PM Peak
02/21/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	7.0		3.0	7.0		3.0	4.0		3.0	4.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		15.0			15.0			15.0			15.0	
Pedestrian Calls (#/hr)		10			2			5			9	
Act Effct Green (s)	28.8	22.2		28.2	20.4		61.6	55.0		61.6	55.0	
Actuated g/C Ratio	0.29	0.22		0.28	0.20		0.62	0.55		0.62	0.55	
v/c Ratio	0.29	0.47		0.11	0.68		0.12	0.54		0.10	0.68	
Control Delay	26.4	37.9		23.3	46.5		6.4	15.3		2.3	10.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.1		0.0	0.0	
Total Delay	26.4	37.9		23.3	46.5		6.4	15.4		2.3	10.7	
LOS	C	D		C	D		A	B		A	B	
Approach Delay		34.5			43.5			14.6			10.1	
Approach LOS		C			D			B			B	
Queue Length 50th (ft)	35	104		16	145		7	189		3	235	
Queue Length 95th (ft)	69	173		38	229		m14	254		m4	310	
Internal Link Dist (ft)		630			610			505			579	
Turn Bay Length (ft)	110			110			100			100		
Base Capacity (vph)	275	424		350	398		385	961		478	944	
Starvation Cap Reductn	0	0		0	0		0	38		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.29	0.44		0.11	0.63		0.12	0.57		0.10	0.68	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 89 (89%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 20.4 Intersection LOS: C
 Intersection Capacity Utilization 69.0% ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Main St & Prairie Ave



Lanes, Volumes, Timings
16: Main St & Franklin St

Timing Plan: PM Peak
02/21/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	0	20	10	10	20	35	380	5	0	405	160
Future Volume (vph)	140	0	20	10	10	20	35	380	5	0	405	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	10	10
Storage Length (ft)	50		0	0		0	100		0	0		100
Storage Lanes	1		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.95	0.97	0.97			1.00				0.96
Frt			0.850		0.900			0.999				0.850
Flt Protected	0.950			0.950				0.996				
Satd. Flow (prot)	1805	0	1524	1805	1667	0	0	1856	0	0	1756	1492
Flt Permitted	0.471			0.950				0.939				
Satd. Flow (perm)	881	0	1449	1752	1667	0	0	1748	0	0	1756	1430
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		715			336			1132			585	
Travel Time (s)		19.5			9.2			30.9			16.0	
Confl. Peds. (#/hr)	8		13	13		8	8		8	8		8
Confl. Bikes (#/hr)									1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	6%	0%	0%	0%	0%	2%	0%	0%	1%	1%
Adj. Flow (vph)	151	0	22	11	11	22	38	409	5	0	435	172
Shared Lane Traffic (%)												
Lane Group Flow (vph)	151	0	22	11	33	0	0	452	0	0	435	172
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		6			6			6			6	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt		Prot	Perm	NA		Perm	NA			NA	Perm
Protected Phases	7		4		8			2			6	
Permitted Phases	4		4	8			2					6
Detector Phase	7		4	8	8		2	2			6	6
Switch Phase												
Minimum Initial (s)	5.0		7.0	7.0	7.0		15.0	15.0			15.0	15.0
Minimum Split (s)	9.5		28.0	28.0	28.0		24.5	24.5			24.5	24.5
Total Split (s)	12.0		40.0	28.0	28.0		60.0	60.0			60.0	60.0
Total Split (%)	12.0%		40.0%	28.0%	28.0%		60.0%	60.0%			60.0%	60.0%
Maximum Green (s)	7.5		34.0	22.0	22.0		53.5	53.5			53.5	53.5
Yellow Time (s)	3.5		4.0	4.0	4.0		4.5	4.5			4.5	4.5
All-Red Time (s)	1.0		2.0	2.0	2.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)	4.5		6.0	6.0	6.0			6.5			6.5	6.5

Lanes, Volumes, Timings
16: Main St & Franklin St

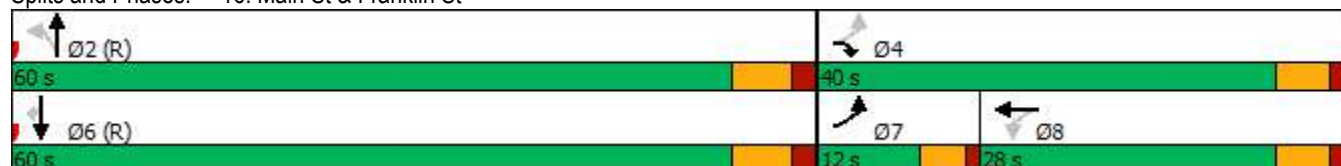
Timing Plan: PM Peak
02/21/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag	Lead			Lag			Lag					
Lead-Lag Optimize?	Yes			Yes			Yes					
Vehicle Extension (s)	3.0			4.0			4.0			6.0		
Recall Mode	None			None			C-Max			C-Max		
Walk Time (s)	8.0			8.0			8.0			8.0		
Flash Dont Walk (s)	14.0			14.0			14.0			10.0		
Pedestrian Calls (#/hr)	13			8			8			8		
Act Effct Green (s)	19.5			18.0			10.8			10.8		
Actuated g/C Ratio	0.20			0.18			0.11			0.11		
v/c Ratio	0.62			0.08			0.06			0.18		
Control Delay	44.0			28.8			36.7			40.2		
Queue Delay	0.0			0.0			0.0			0.0		
Total Delay	44.0			28.8			36.7			40.2		
LOS	D			C			D			D		
Approach Delay	42.1						39.3			9.5		
Approach LOS	D						D			A		
Queue Length 50th (ft)	83			11			7			20		
Queue Length 95th (ft)	115			27			20			43		
Internal Link Dist (ft)	635						256			1052		
Turn Bay Length (ft)	50									100		
Base Capacity (vph)	244			518			385			366		
Starvation Cap Reductn	0			0			0			0		
Spillback Cap Reductn	0			0			0			0		
Storage Cap Reductn	0			0			0			0		
Reduced v/c Ratio	0.62			0.04			0.03			0.09		

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 99 (99%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 11.9
 Intersection LOS: B
 Intersection Capacity Utilization 72.2%
 ICU Level of Service C
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.











Splits and Phases: 16: Main St & Franklin St



HCM Unsignalized Intersection Capacity Analysis

3: Main St & Sherman St



















02/21/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	70	570	10	25	695
Future Volume (Veh/h)	1	70	570	10	25	695
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	1	73	594	10	26	724
Pedestrians	2		1			
Lane Width (ft)	12.0		10.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh			2			2
Upstream signal (ft)			671			
pX, platoon unblocked	0.77	0.77			0.77	
vC, conflicting volume	1378	601			606	
vC1, stage 1 conf vol	601					
vC2, stage 2 conf vol	777					
vCu, unblocked vol	1342	333			340	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	87			97	
cM capacity (veh/h)	358	545			938	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	74	604	26	724		
Volume Left	1	0	26	0		
Volume Right	73	10	0	0		
cSH	541	1700	938	1700		
Volume to Capacity	0.14	0.36	0.03	0.43		
Queue Length 95th (ft)	12	0	2	0		
Control Delay (s)	12.7	0.0	8.9	0.0		
Lane LOS	B		A			
Approach Delay (s)	12.7	0.0	0.3			
Approach LOS	B					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			47.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: Main St & Lincoln St




















02/21/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	15	15	5	10	15	15	570	5	15	625	35
Future Volume (Veh/h)	10	15	15	5	10	15	15	570	5	15	625	35
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	11	16	16	5	11	16	16	606	5	16	665	37
Pedestrians		34			10			1			3	
Lane Width (ft)		12.0			12.0			11.0			11.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		3			1			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage (veh)								2			2	
Upstream signal (ft)											609	
pX, platoon unblocked	0.73	0.73	0.73	0.73	0.73		0.73					
vC, conflicting volume	1412	1402	718	1372	1418	622	736			621		
vC1, stage 1 conf vol	750	750		650	650							
vC2, stage 2 conf vol	662	653		722	768							
vCu, unblocked vol	1379	1366	424	1324	1388	622	448			621		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	95	96	98	96	97	98			98		
cM capacity (veh/h)	286	300	445	296	292	485	789			960		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	43	32	16	611	16	702						
Volume Left	11	5	16	0	16	0						
Volume Right	16	16	0	5	0	37						
cSH	337	366	789	1700	960	1700						
Volume to Capacity	0.13	0.09	0.02	0.36	0.02	0.41						
Queue Length 95th (ft)	11	7	2	0	1	0						
Control Delay (s)	17.2	15.8	9.7	0.0	8.8	0.0						
Lane LOS	C	C	A		A							
Approach Delay (s)	17.2	15.8	0.2		0.2							
Approach LOS	C	C										
Intersection Summary												
Average Delay			1.1									
Intersection Capacity Utilization			46.1%	ICU Level of Service		A						
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

10: Main St & Chicago Ave

02/21/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	25	20	10	25	25	10	560	20	30	615	20
Future Volume (Veh/h)	10	25	20	10	25	25	10	560	20	30	615	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	10	26	21	10	26	26	10	583	21	31	641	21
Pedestrians		5			6			2			2	
Lane Width (ft)		12.0			12.0			11.0			11.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			1			0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage (veh)								2			2	
Upstream signal (ft)								659			1279	
pX, platoon unblocked	0.86	0.86	0.77	0.86	0.86	0.82	0.77			0.82		
vC, conflicting volume	1362	1348	658	1358	1348	602	667			610		
vC1, stage 1 conf vol	718	718		620	620							
vC2, stage 2 conf vol	644	630		739	729							
vCu, unblocked vol	870	853	408	865	853	404	419			415		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	93	96	97	93	95	99			97		
cM capacity (veh/h)	331	354	496	325	355	530	883			942		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	57	62	10	604	31	662						
Volume Left	10	10	10	0	31	0						
Volume Right	21	26	0	21	0	21						
cSH	391	405	883	1700	942	1700						
Volume to Capacity	0.15	0.15	0.01	0.36	0.03	0.39						
Queue Length 95th (ft)	13	13	1	0	3	0						
Control Delay (s)	15.8	15.5	9.1	0.0	9.0	0.0						
Lane LOS	C	C	A		A							
Approach Delay (s)	15.8	15.5	0.1		0.4							
Approach LOS	C	C										
Intersection Summary												
Average Delay			1.6									
Intersection Capacity Utilization			45.4%	ICU Level of Service		A						
Analysis Period (min)			15									

Arterial Level of Service
2050 3-Lane + Signal Adjustments Conditions

PM Peak
02/21/2022

Arterial Level of Service: NB Main St

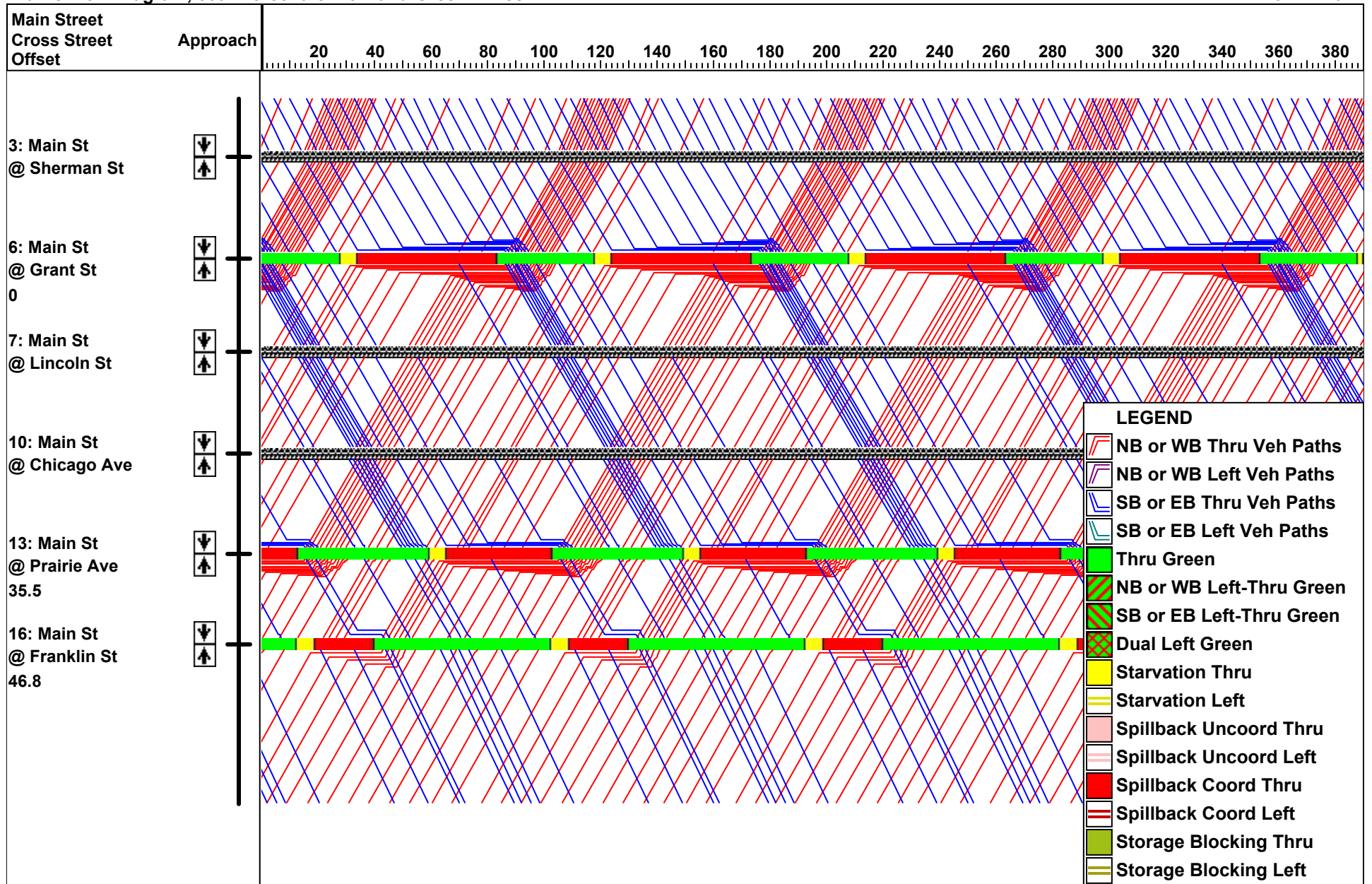
Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Franklin St	16	10.0	40.6	0.2	19
Prairie Ave	13	13.1	28.7	0.1	14
Chicago Ave	10	2.2	20.2	0.1	22
Lincoln St	7	1.4	19.7	0.1	23
Grant St	6	10.3	25.1	0.1	17
Sherman St	3	2.7	22.3	0.1	21
Total		39.7	156.6	0.8	19

Arterial Level of Service: SB Main St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Sherman St	3	0.5	10.4	0.1	24
Grant St	6	13.2	29.6	0.1	15
Lincoln St	7	2.7	20.7	0.1	20
Chicago Ave	10	2.0	19.9	0.1	23
Prairie Ave	13	11.3	29.0	0.1	15
Franklin St	16	2.6	18.2	0.1	22
Total		32.2	127.7	0.7	19

Time-Space Diagram - Main St
 Traffic Flow Diagram, 50th Percentile Flow and Green Times

Timing Plan: AM Peak
 02/21/2022

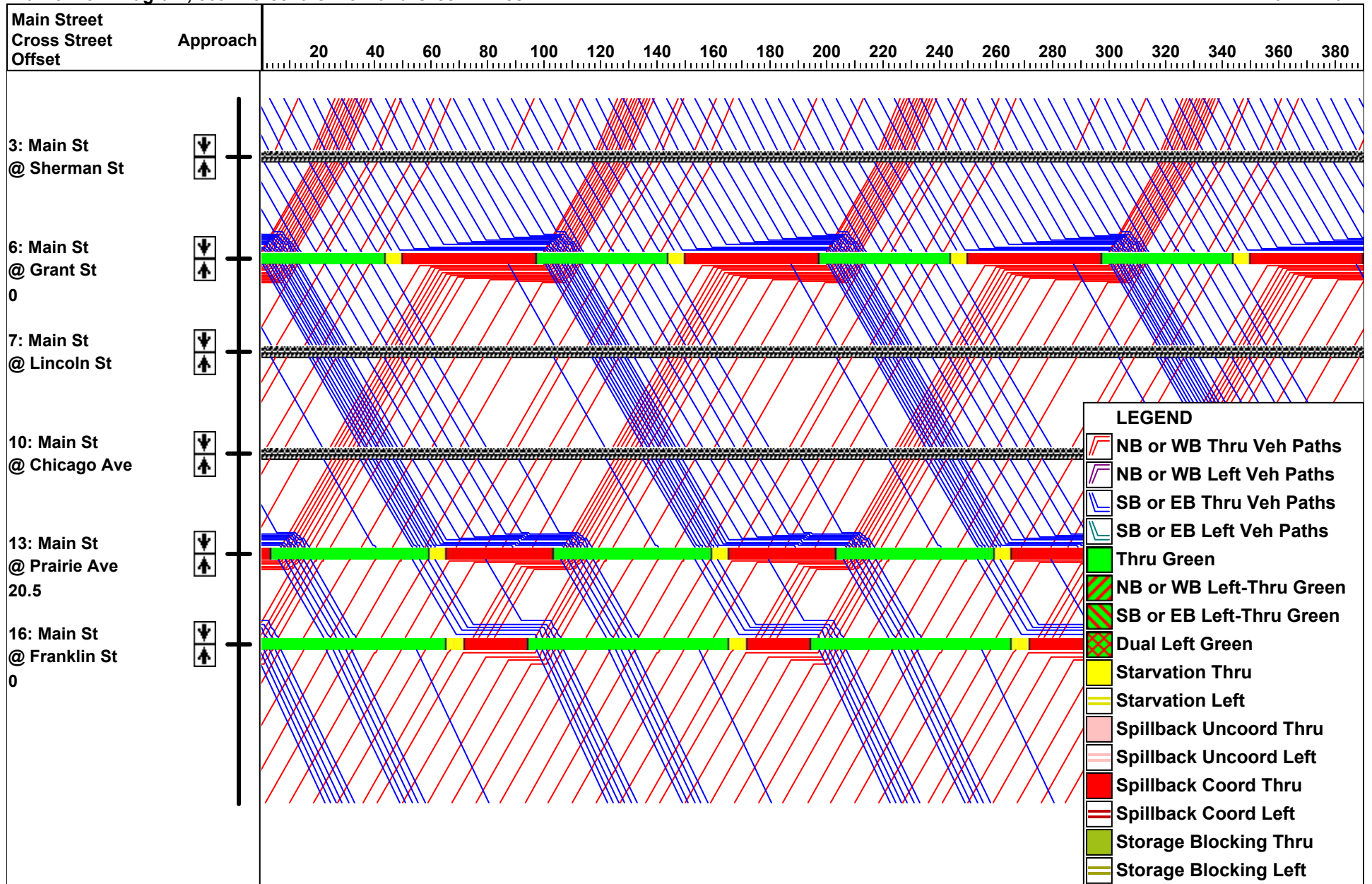


Main St Corridor 2021 Existing Conditions

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Time-Space Diagram - Main St
 Traffic Flow Diagram, 50th Percentile Flow and Green Times

Timing Plan: PM Peak
 02/21/2022

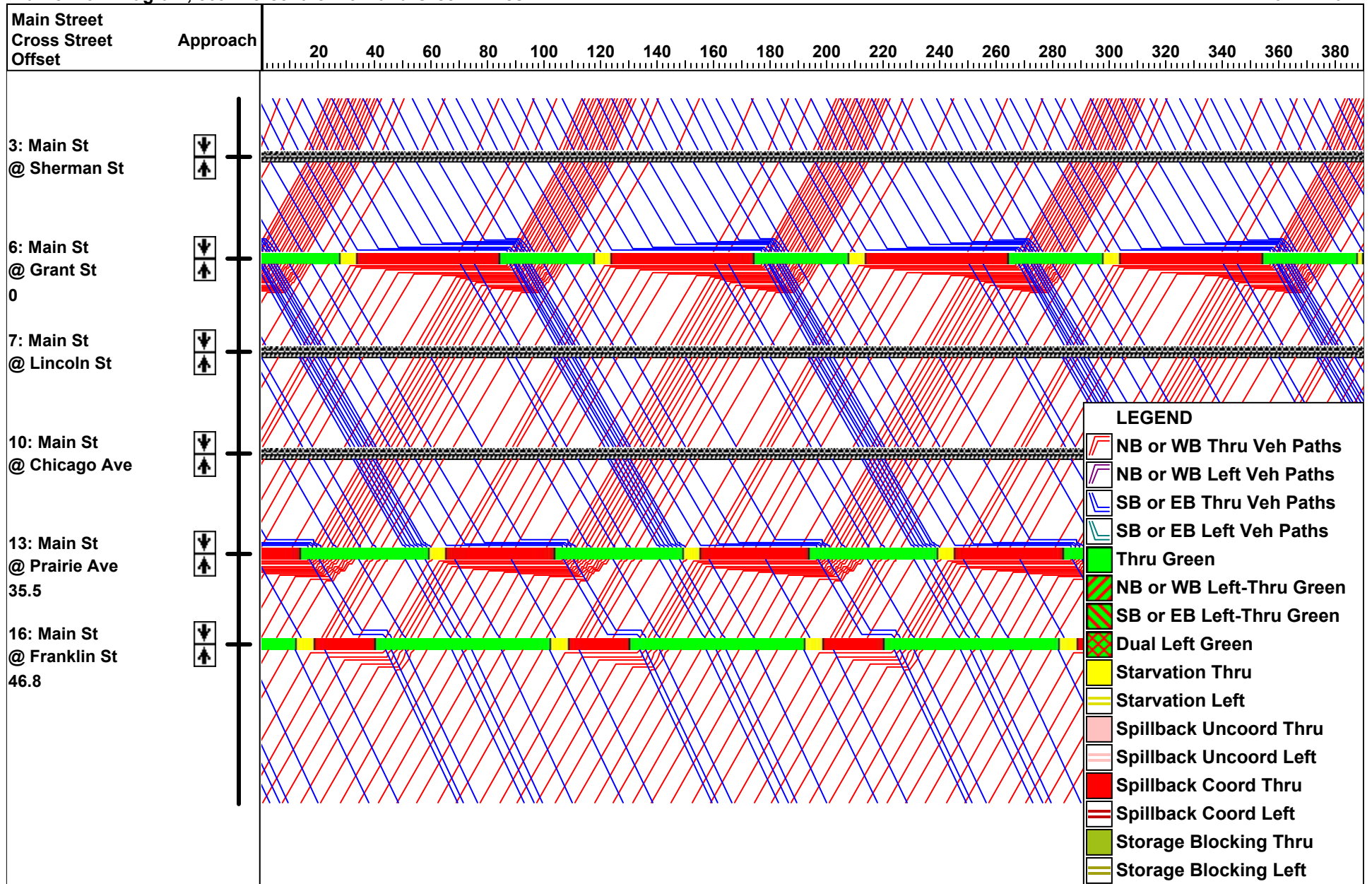


Main St Corridor 2021 Existing Conditions

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Time-Space Diagram - Main St
Traffic Flow Diagram, 50th Percentile Flow and Green Times

Timing Plan: AM Peak
02/21/2022

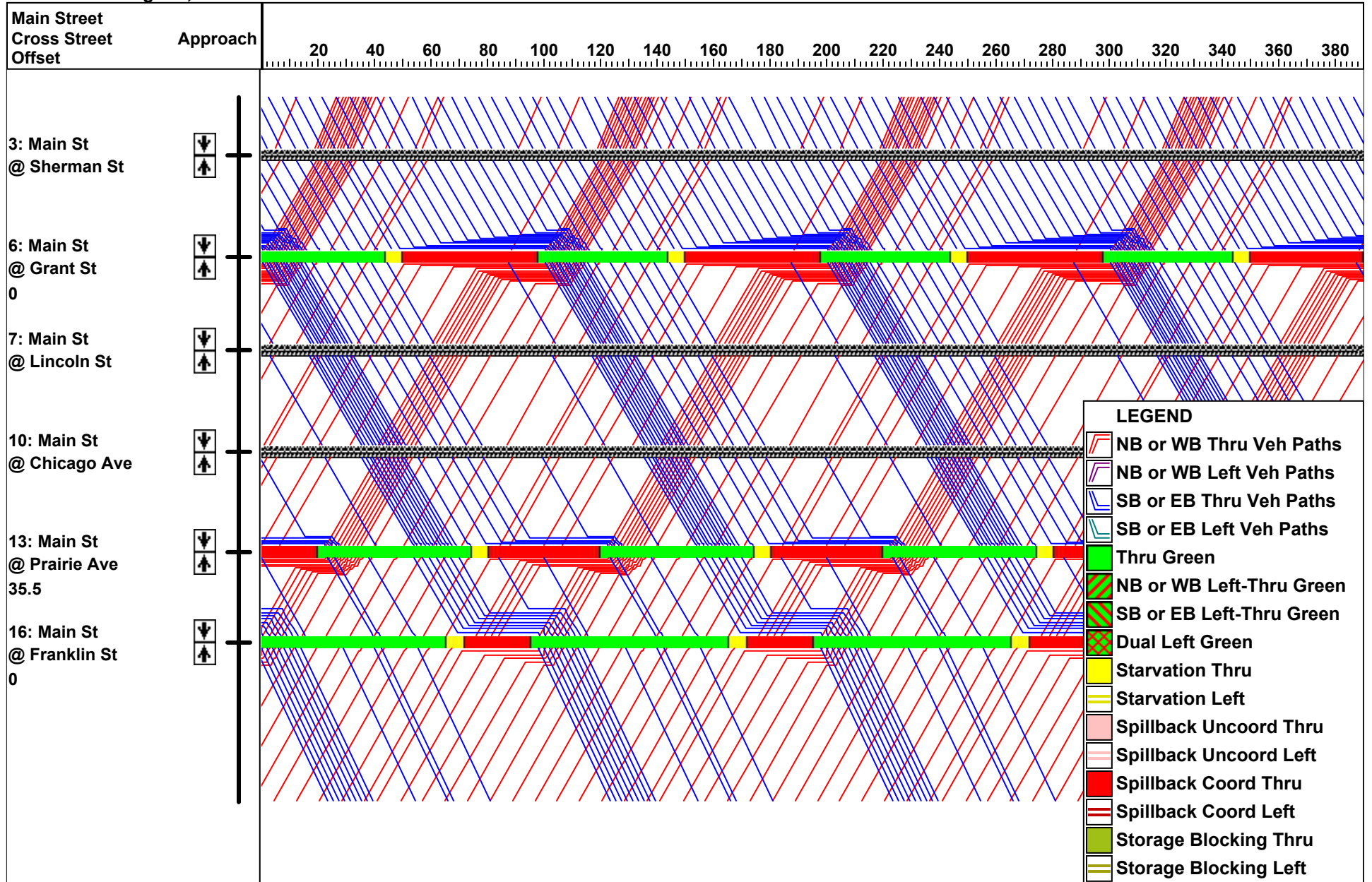


Main St Corridor 2050 No Build Conditions

J:\2021\210553\Design\Traffic\Analysis\Synchro\2050 AM No Build.syn

Time-Space Diagram - Main St
Traffic Flow Diagram, 50th Percentile Flow and Green Times

Timing Plan: PM Peak
02/21/2022

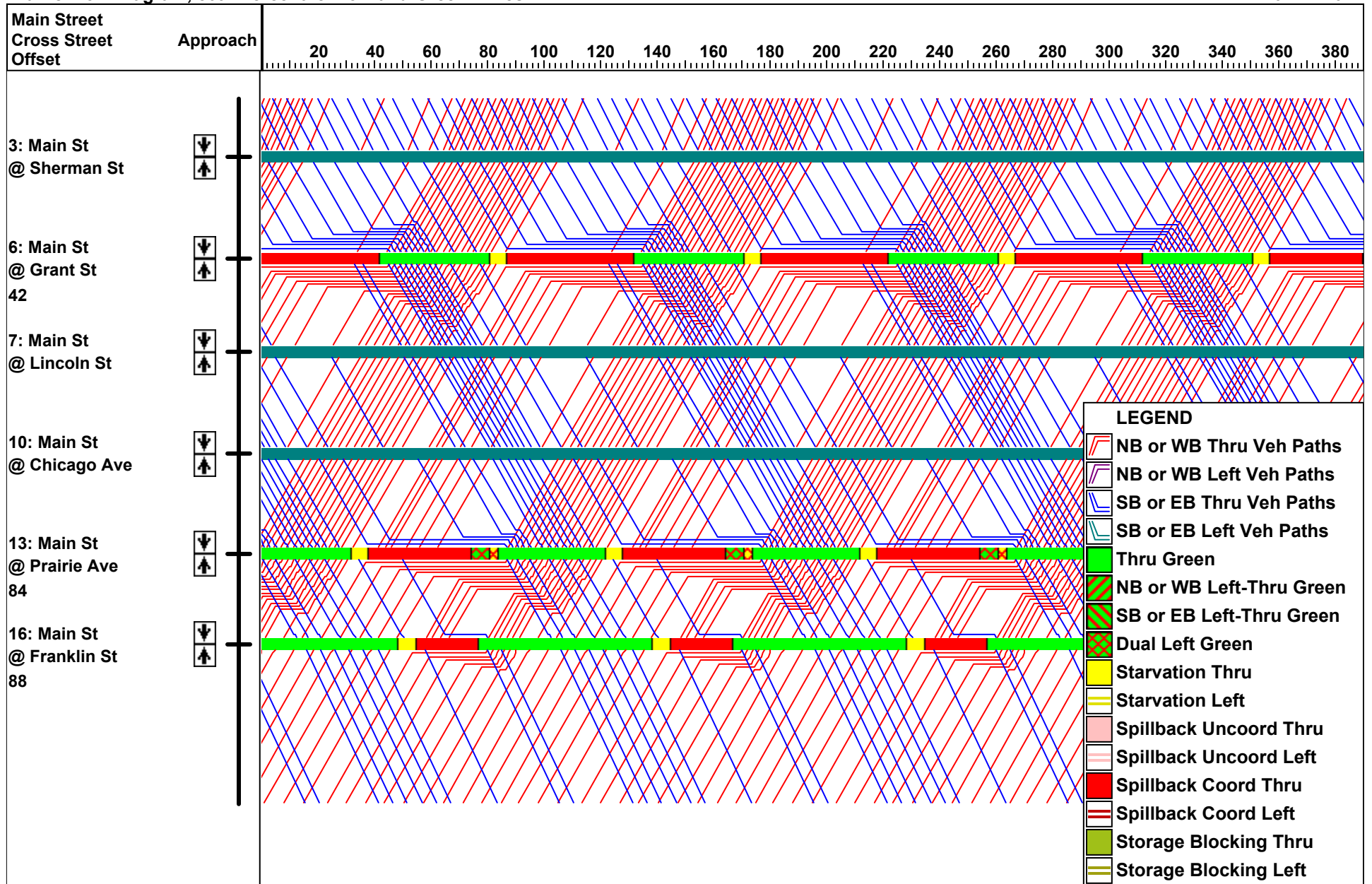


Main St Corridor 2050 No Build Conditions

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Time-Space Diagram - Main St
Traffic Flow Diagram, 50th Percentile Flow and Green Times

Timing Plan: AM Peak
 02/21/2022

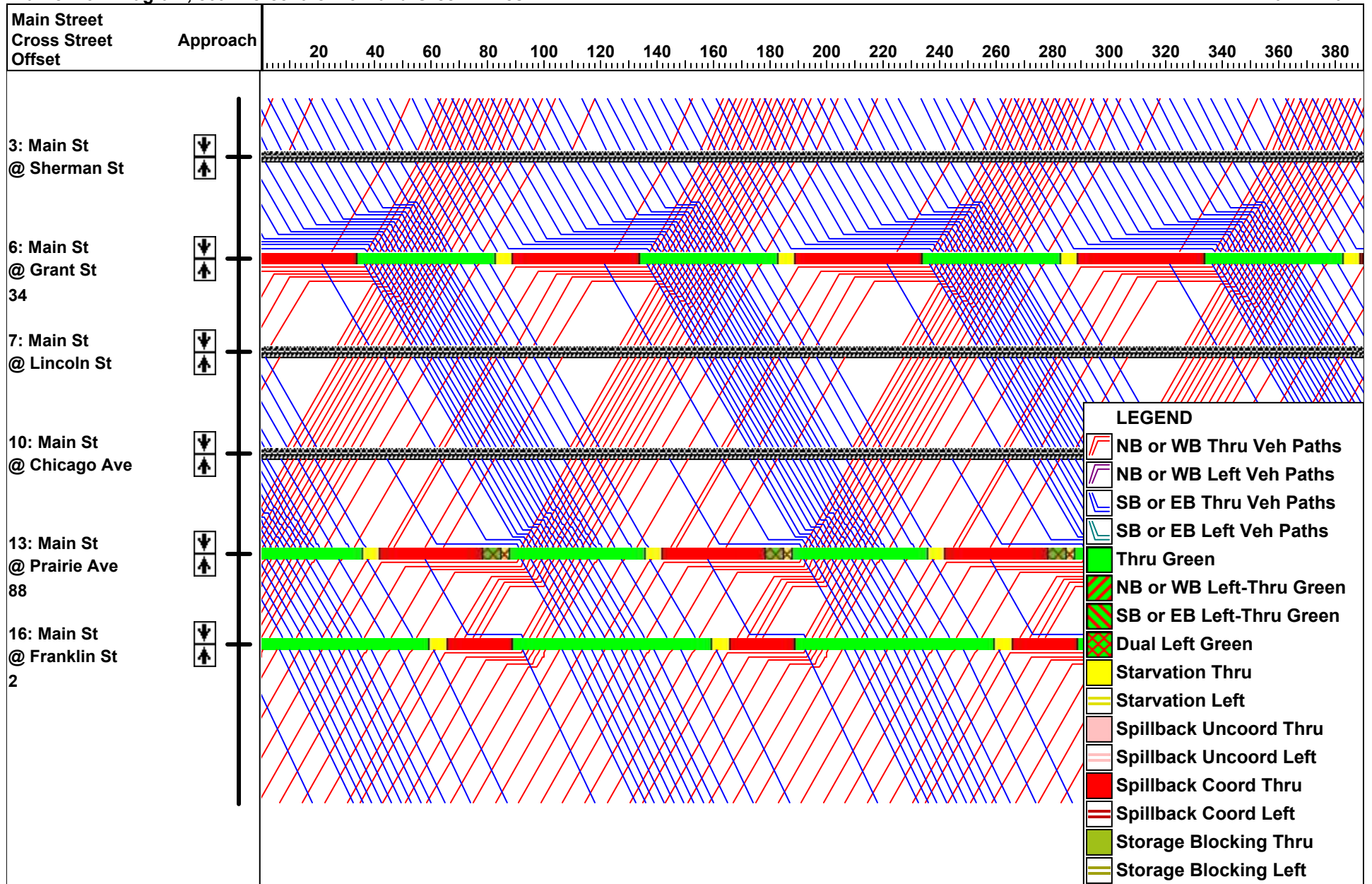


Main St Corridor 2050 3-Lane Conditions

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Time-Space Diagram - Main St
 Traffic Flow Diagram, 50th Percentile Flow and Green Times

Timing Plan: PM Peak
 02/21/2022

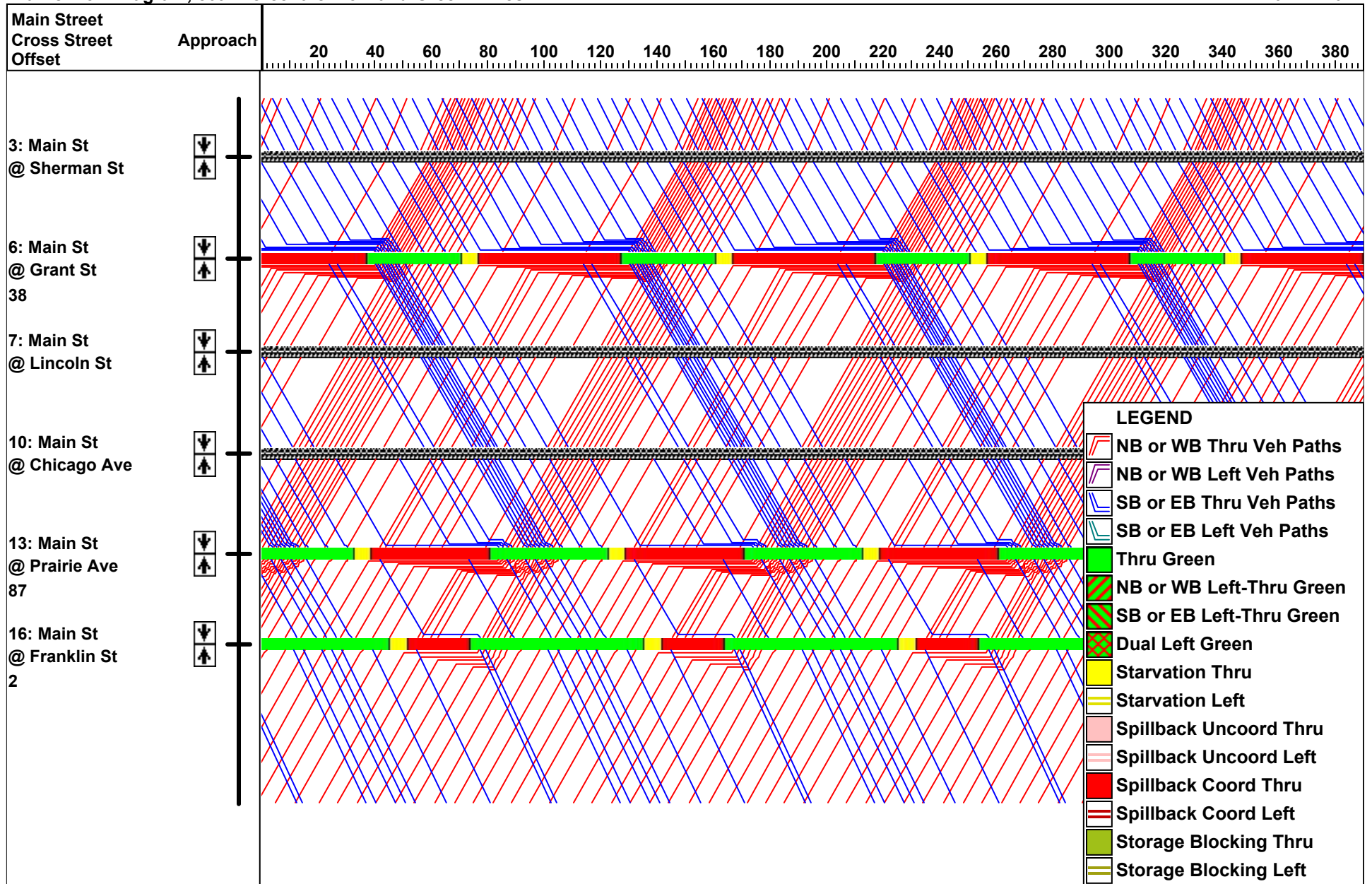


Main St Corridor 2050 3-Lane Conditions

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Time-Space Diagram - Main St
 Traffic Flow Diagram, 50th Percentile Flow and Green Times

Timing Plan: AM Peak
 02/21/2022

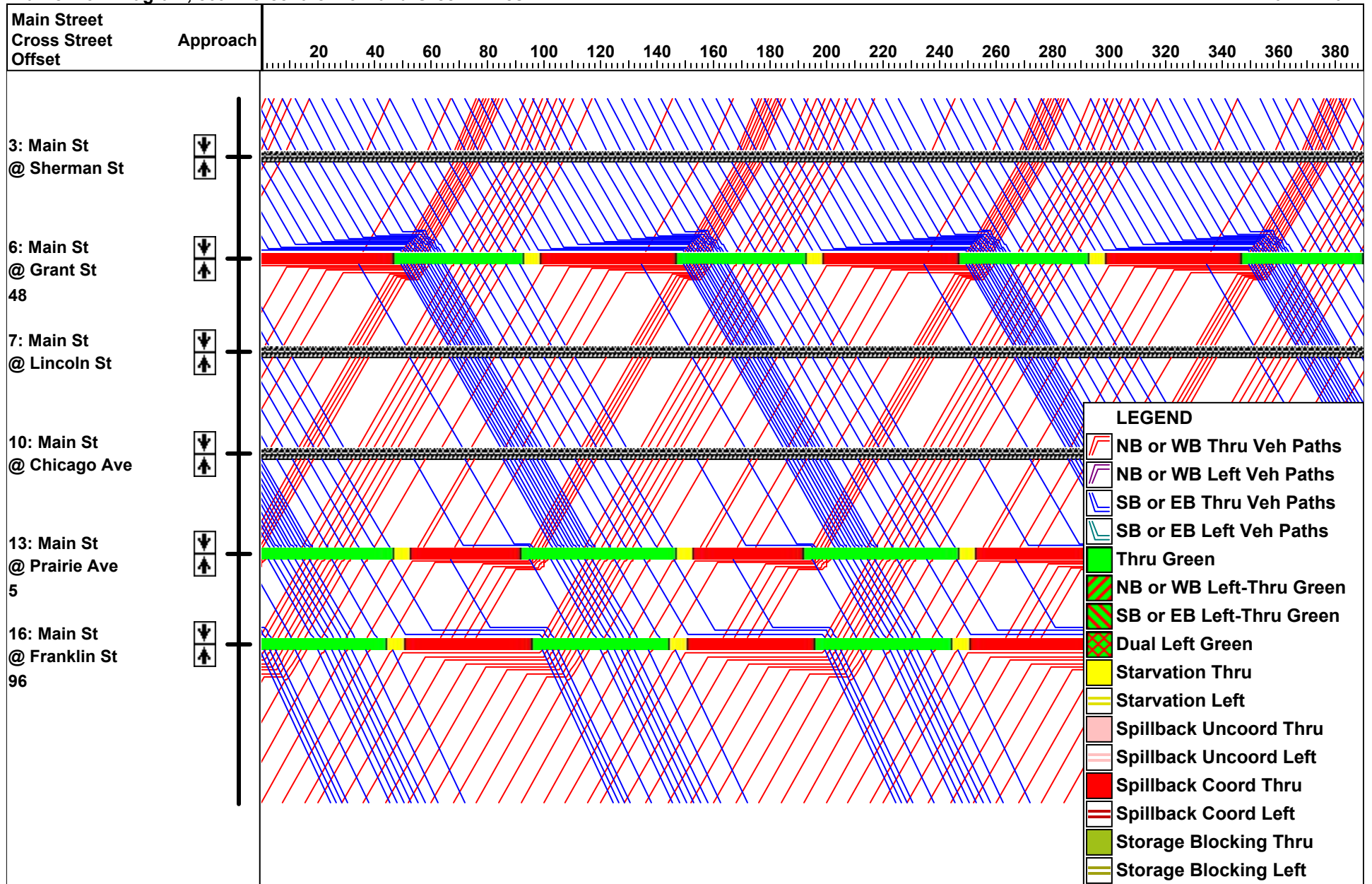


Main St Corridor 2050 Leading Pedestrian Interval Conditions

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Time-Space Diagram - Main St
Traffic Flow Diagram, 50th Percentile Flow and Green Times

Timing Plan: PM Peak
02/21/2022

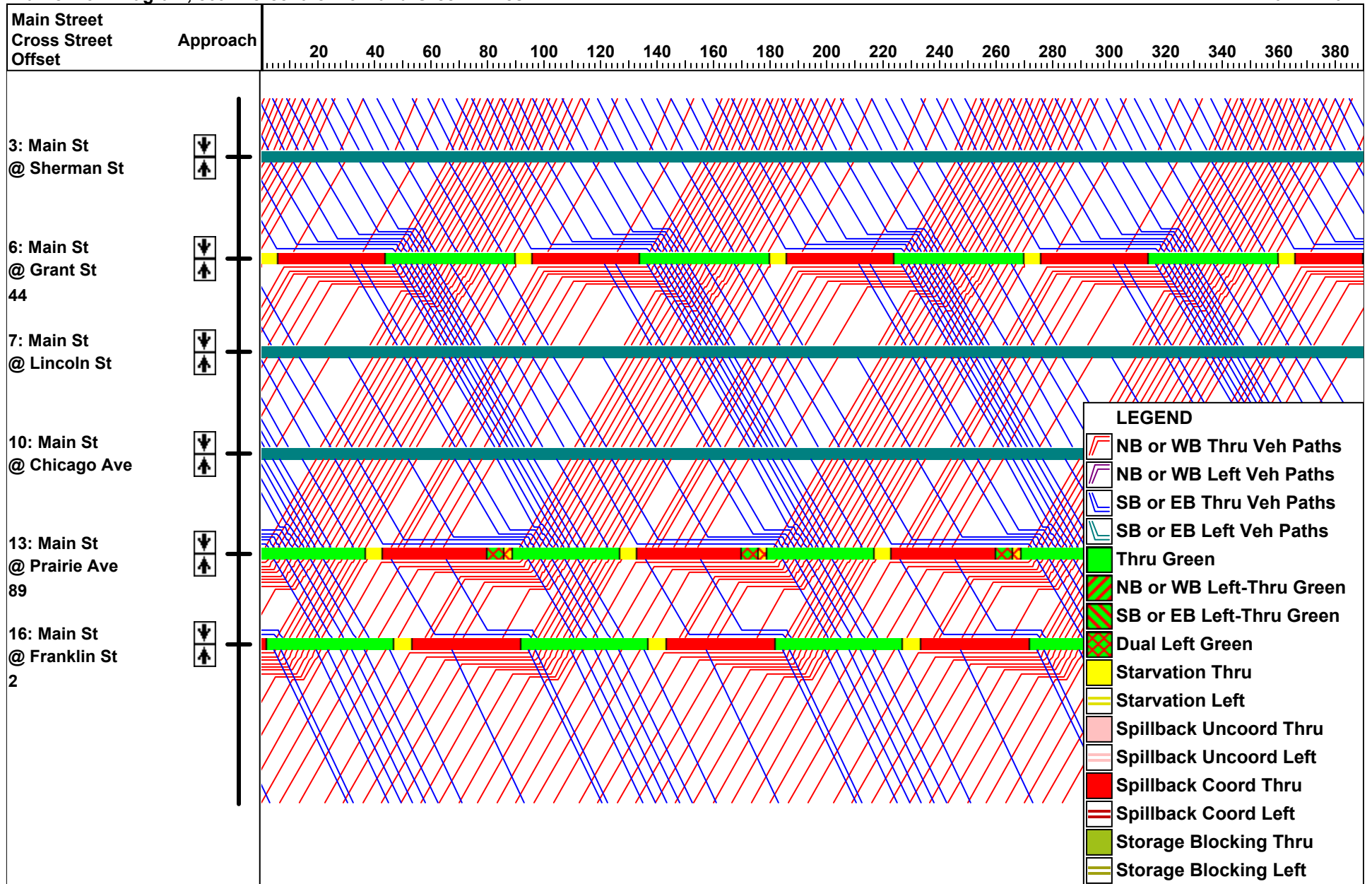


Main St Corridor 2050 Leading Pedestrian Interval Conditions

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Time-Space Diagram - Main St
 Traffic Flow Diagram, 50th Percentile Flow and Green Times

Timing Plan: AM Peak
 02/21/2022

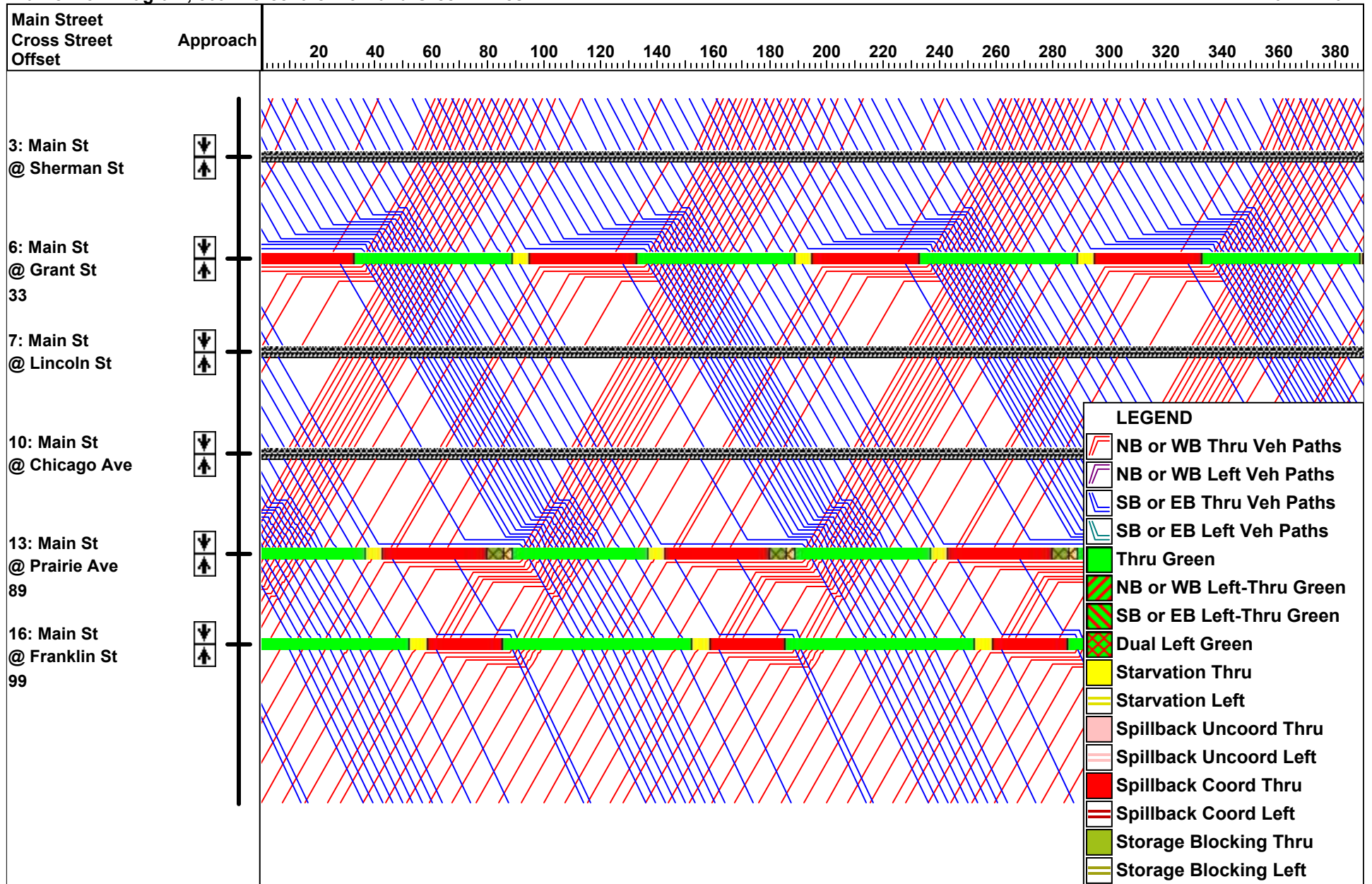


Main St Corridor 2050 3-Lane + Signal Adjustments Conditions

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Time-Space Diagram - Main St
Traffic Flow Diagram, 50th Percentile Flow and Green Times

Timing Plan: PM Peak
02/21/2022



Main St Corridor 2050 3-Lane + Signal Adjustments Conditions

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Lanes, Volumes, Timings
22: Main St & Oxford St

Timing Plan: AM Peak
01/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕		↗	↕	
Traffic Volume (vph)	5	2	5	15	1	125	5	900	10	60	580	5
Future Volume (vph)	5	2	5	15	1	125	5	900	10	60	580	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	11	10	11	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00		1.00					1.00
Frt		0.942			0.880			0.998				0.999
Flt Protected		0.979			0.995		0.950			0.950		
Satd. Flow (prot)	0	1742	0	0	1664	0	1685	3483	0	1685	3451	0
Flt Permitted		0.874			0.969		0.402			0.205		
Satd. Flow (perm)	0	1555	0	0	1620	0	712	3483	0	364	3451	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			40				40
Link Distance (ft)		1262			1083			803				947
Travel Time (s)		34.4			29.5			13.7				16.1
Confl. Peds. (#/hr)			1	1			1					1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	6	2	6	17	1	140	6	1011	11	67	652	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	158	0	6	1022	0	67	658	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		6			6			6				6
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.04	1.04	1.09	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt		NA
Protected Phases		4			8		5	2		1		6
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1		6
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		6.0	15.0		6.0		15.0
Minimum Split (s)	18.0	18.0		18.0	18.0		9.0	24.0		9.0		24.0
Total Split (s)	25.0	25.0		25.0	25.0		9.0	49.0		9.0		49.0
Total Split (%)	27.8%	27.8%		27.8%	27.8%		10.0%	54.4%		10.0%		54.4%
Maximum Green (s)	19.0	19.0		19.0	19.0		6.0	43.0		6.0		43.0
Yellow Time (s)	4.5	4.5		4.5	4.5		3.0	4.5		3.0		4.5
All-Red Time (s)	1.5	1.5		1.5	1.5		0.0	1.5		0.0		1.5
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0		0.0
Total Lost Time (s)		6.0			6.0		3.0	6.0		3.0		6.0
Lead/Lag							Lead	Lag		Lead		Lag
Lead-Lag Optimize?							Yes	Yes		Yes		Yes
Vehicle Extension (s)	7.0	7.0		7.0	7.0		3.0	4.0		3.0		4.0
Recall Mode	None	None		None	None		None	Max		None		Min

Lanes, Volumes, Timings

22: Main St & Oxford St

Timing Plan: AM Peak
01/14/2022

Lane Group	Ø10
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Ped Bike Factor	
Fr _t	
Fl _t Protected	
Satd. Flow (prot)	
Fl _t Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	10
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	7.0
Total Split (s)	7.0
Total Split (%)	8%
Maximum Green (s)	5.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None

Lanes, Volumes, Timings
22: Main St & Oxford St

Timing Plan: AM Peak
01/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	1.0	1.0		1.0	1.0			7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	10	10		10	10			0			0	
Act Effct Green (s)		16.2			16.2		54.0	46.2		55.8	51.7	
Actuated g/C Ratio		0.19			0.19		0.65	0.56		0.67	0.62	
v/c Ratio		0.05			0.50		0.01	0.53		0.20	0.31	
Control Delay		27.9			36.1		6.4	14.5		7.2	9.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		27.9			36.1		6.4	14.5		7.2	9.4	
LOS		C			D		A	B		A	A	
Approach Delay		27.9			36.1			14.4			9.2	
Approach LOS		C			D			B			A	
Queue Length 50th (ft)		6			71		1	167		10	67	
Queue Length 95th (ft)		23			141		6	288		31	169	
Internal Link Dist (ft)		1182			1003			723			867	
Turn Bay Length (ft)												
Base Capacity (vph)		356			370		532	1932		339	2146	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.04			0.43		0.01	0.53		0.20	0.31	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	83.2
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.53
Intersection Signal Delay:	14.3
Intersection LOS:	B
Intersection Capacity Utilization	52.4%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 22: Main St & Oxford St



Lanes, Volumes, Timings
 22: Main St & Oxford St

Timing Plan: AM Peak
 01/14/2022

Lane Group	Ø10
Walk Time (s)	7.0
Flash Dont Walk (s)	0.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
22: Main St & Oxford St

Timing Plan: PM Peak
01/14/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	1	1	15	20	3	60	10	930	30	75	1205	10
Future Volume (vph)	1	1	15	20	3	60	10	930	30	75	1205	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	11	11	10	11	11
Storage Length (ft)	0		0	0		0	115		0	115		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor					0.99			1.00		1.00	1.00	
Frt		0.880			0.902			0.995			0.999	
Flt Protected		0.997			0.988		0.950			0.950		
Satd. Flow (prot)	0	1667	0	0	1677	0	1685	3469	0	1685	3451	0
Flt Permitted		0.979			0.911		0.172			0.206		
Satd. Flow (perm)	0	1637	0	0	1546	0	305	3469	0	365	3451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			65			5			1	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		1262			1083			803			947	
Travel Time (s)		34.4			29.5			13.7			16.1	
Confl. Peds. (#/hr)							7		4	4		7
Confl. Bikes (#/hr)						1			1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	1	1	16	22	3	65	11	1000	32	81	1296	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	0	0	90	0	11	1032	0	81	1307	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.09	1.04	1.04	1.09	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		6.0	15.0		6.0	15.0	
Minimum Split (s)	18.0	18.0		18.0	18.0		9.0	24.0		9.0	24.0	
Total Split (s)	20.0	20.0		20.0	20.0		9.0	64.0		9.0	64.0	
Total Split (%)	20.0%	20.0%		20.0%	20.0%		9.0%	64.0%		9.0%	64.0%	
Maximum Green (s)	14.0	14.0		14.0	14.0		6.0	58.0		6.0	58.0	
Yellow Time (s)	4.5	4.5		4.5	4.5		3.0	4.5		3.0	4.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		0.0	1.5		0.0	1.5	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0		3.0	6.0		3.0	6.0	

Lanes, Volumes, Timings

22: Main St & Oxford St

Timing Plan: PM Peak
01/14/2022

Lane Group	Ø10
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	10
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	7.0
Total Split (s)	7.0
Total Split (%)	7%
Maximum Green (s)	5.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	

Lanes, Volumes, Timings
22: Main St & Oxford St

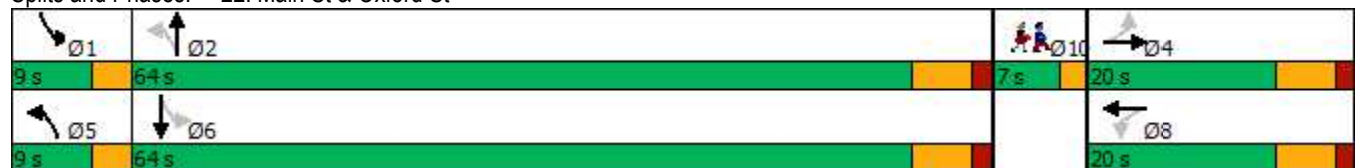
Timing Plan: PM Peak
01/14/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	7.0	7.0		7.0	7.0		3.0	4.0		3.0	4.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Walk Time (s)	1.0	1.0		1.0	1.0			7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0			11.0	
Pedestrian Calls (#/hr)	10	10		10	10			10			10	
Act Effct Green (s)		11.8			11.8		43.2	37.3		45.2	43.1	
Actuated g/C Ratio		0.19			0.19		0.68	0.59		0.72	0.68	
v/c Ratio		0.06			0.26		0.03	0.50		0.20	0.55	
Control Delay		17.5			15.5		4.5	12.1		5.4	9.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		17.5			15.5		4.5	12.1		5.4	9.6	
LOS		B			B		A	B		A	A	
Approach Delay		17.5			15.5			12.1			9.4	
Approach LOS		B			B			B			A	
Queue Length 50th (ft)		1			7		1	135		8	126	
Queue Length 95th (ft)		22			61		7	257		30	365	
Internal Link Dist (ft)		1182			1003			723			867	
Turn Bay Length (ft)							115			115		
Base Capacity (vph)		414			428		353	3101		400	3085	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.04			0.21		0.03	0.33		0.20	0.42	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	63.2
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.55
Intersection Signal Delay:	10.8
Intersection LOS:	B
Intersection Capacity Utilization:	63.6%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 22: Main St & Oxford St



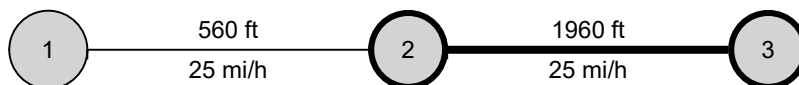
Lanes, Volumes, Timings
22: Main St & Oxford St

Timing Plan: PM Peak
01/14/2022

Lane Group	Ø10
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	0.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

HCS Urban Street Segment Report

General Information				Streets Information	
Agency	HR Green			Number of Intersections	3
Analyst	TAY	Analysis Date	Apr 22, 2022	Number of Segments	2
Jurisdiction	Downers Grove	Time Period	AM Peak	Number of Iterations	15
File Name	2050 AM 3-Lane_ADJ.xus	Analysis Year	2050	System Cycle Length, s	90
Intersections	Prairie Ave	Grant St		Analysis Period	1> 7:00
Project Description	D99 Pedestrian Safety Study				



Basic Segment Information (Prairie to Grant)

Segment	Speed Limit mi/h		Through Lanes		Segment Length ft		Intersection Wid ft		Length of RM ft		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
2	25	25	1	1	1960	1960	40	40	0	0	75	79	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement		2	12	1	6	
2	Bay/Lane Spillback Time, h						
2	Shared Lane Spillback Time, h						
2	Base Free-Flow Speed, mi/h		29.06		29.04		
2	Running Time, s		49.78		48.73		
2	Running Speed, mi/h		26.84		27.42		
2	Through Delay, s/veh		21.91		16.76		
2	Travel Time, s		71.69		65.49		
2	Travel Speed, mi/h		18.64		20.40		
2	Stop Rate, stops/veh		0.63		0.56		
2	Spatial Stop Rate, stops/mi		1.69		1.51		
2	Through vol/cap Ratio		0.72		0.46		
2	Percent of Base FFS		64.14		70.26		
2	Level of Service		C		B		
2	Auto Traveler Perception Score		2.62		2.37		

Multimodal Results (Segment)

2	Pedestrian Segment LOS Score / LOS	3.43	C	3.61	D
2	Bicycle Segment LOS Score / LOS	3.27	C	3.09	C
2	Transit Segment LOS Score / LOS	2.06	B	1.97	A

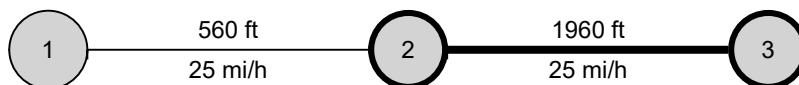
Facility Output Data		Northbound		Southbound	
Facility Travel Time, s		104.93		92.44	
Facility Travel Speed, mi/h		16.38		18.59	
Facility Base Free Flow Speed, mi/h		29.55		29.54	
Facility Percent of Base FFS		55.42		62.92	
Facility Level of Service		C		C	
Facility Auto Traveler Perception Score		2.69		2.46	

Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.36	C	3.41	C
Bicycle Facility LOS Score / LOS	3.05	C	3.03	C
Transit Facility LOS Score / LOS	2.30	C	2.04	B

HCS Urban Street Segment Report

General Information				Streets Information	
Agency	HR Green			Number of Intersections	3
Analyst	TAY	Analysis Date	Apr 22, 2022	Number of Segments	2
Jurisdiction	Downers Grove	Time Period	PM Peak	Number of Iterations	15
File Name	2050 PM 3-Lane_ADJ.xus	Analysis Year	2050	System Cycle Length, s	100
Intersections	Prairie Ave	Grant St		Analysis Period	1> 7:00
Project Description	D99 Pedestrian Safety Study				



Basic Segment Information (Prairie to Grant)

Segment	Speed Limit mi/h		Through Lanes		Segment Length ft		Intersection Wid ft		Length of RM ft		Percent Curb		Other Delay	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
2	25	25	1	1	1960	1960	40	40	0	0	75	79	0.0	0.0

Segment Output Data		Northbound			Southbound		
		NBL	NBT	NBR	SBL	SBT	SBR
Segment	Movement		2	12	1	6	
2	Bay/Lane Spillback Time, h	never	never	never	never	never	never
2	Shared Lane Spillback Time, h				never		
2	Base Free-Flow Speed, mi/h	29.06			29.04		
2	Running Time, s	49.59			50.16		
2	Running Speed, mi/h	26.95			26.64		
2	Through Delay, s/veh	13.05			20.27		
2	Travel Time, s	62.63			70.43		
2	Travel Speed, mi/h	21.34			18.97		
2	Stop Rate, stops/veh	0.47			0.63		
2	Spatial Stop Rate, stops/mi	1.26			1.70		
2	Through vol/cap Ratio	0.56			0.70		
2	Percent of Base FFS	73.42			65.33		
2	Level of Service	B			C		
2	Auto Traveler Perception Score	2.55			2.40		

Multimodal Results (Segment)

2	Pedestrian Segment LOS Score / LOS	3.53	D	4.15	D
2	Bicycle Segment LOS Score / LOS	3.17	C	3.28	C
2	Transit Segment LOS Score / LOS	2.04	B	2.08	B

Facility Output Data		Northbound		Southbound	
		Facility Travel Time, s	95.90	93.66	
Facility Travel Speed, mi/h	17.92	18.34			
Facility Base Free Flow Speed, mi/h	29.55	29.54			
Facility Percent of Base FFS	60.64	62.10			
Facility Level of Service	C	C			
Facility Auto Traveler Perception Score	2.63	2.42			

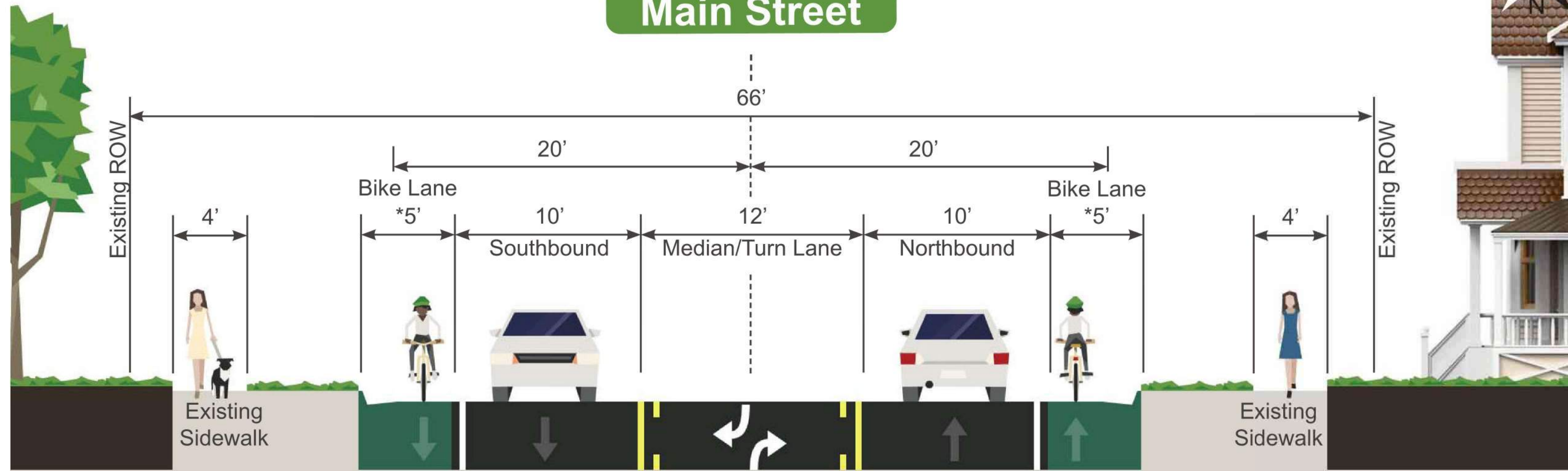
Multimodal Results (Facility)

Pedestrian Facility LOS Score / LOS	3.45	C	3.91	D
Bicycle Facility LOS Score / LOS	2.99	C	3.21	C
Transit Facility LOS Score / LOS	2.28	C	2.09	B

PROPOSED TYPICAL SECTIONS

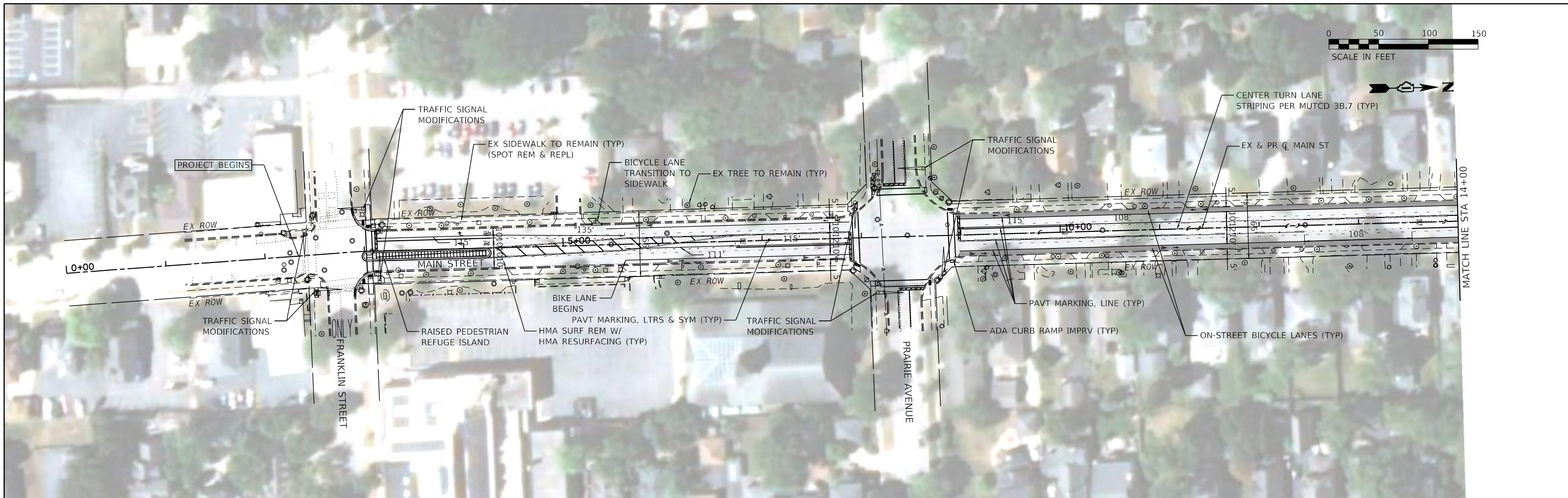
Proposed Typical Section

Main Street



*5' Bike Lane dimension includes the gutter flag

PROPOSED PLANS



HRG PROJECT NO.: 210553
 HRG PROJ. CONTACT:
 FILE NAME: 210553-srt+prairie-15-012-0.dgn
 PEN TABLE: 10/10/2021.tbl



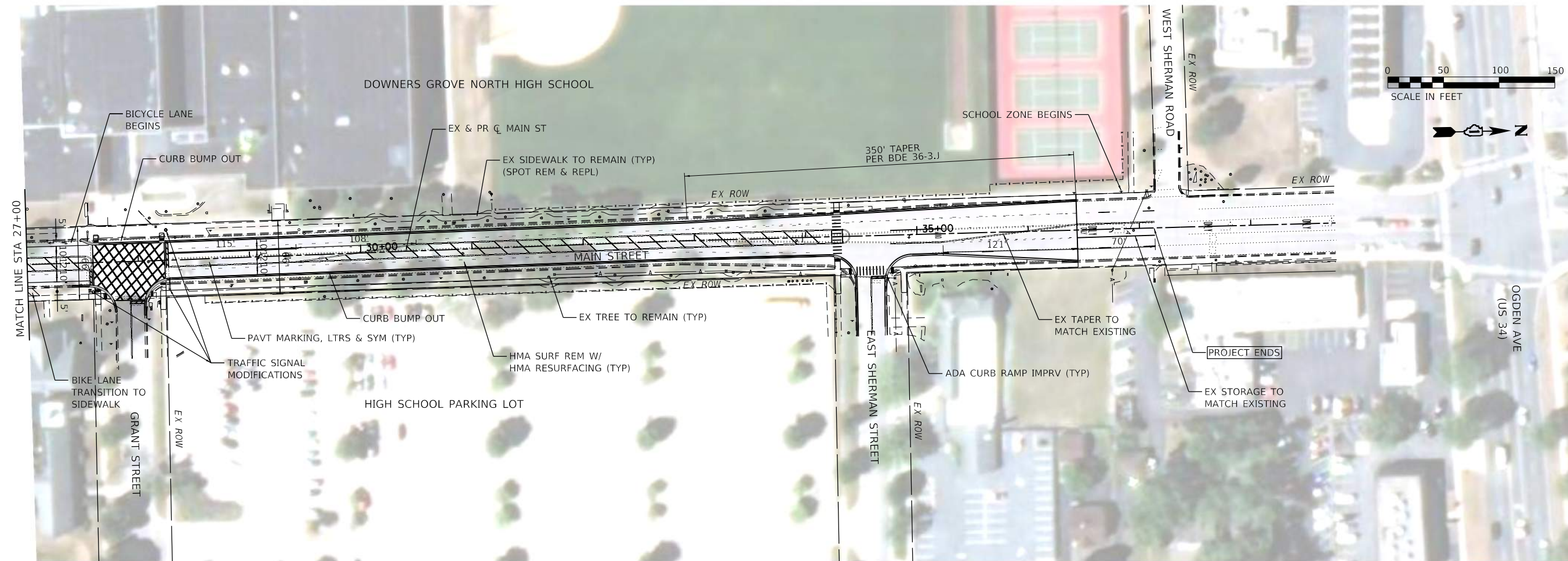
USER NAME = jstrzal	DESIGNED - JJS	REVISED - XX/XX/XXXX
	DRAWN - DMS	REVISED - XX/XX/XXXX
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED - XX/XX/XXXX
PLOT DATE = 6/1/2022	DATE -	REVISED - XX/XX/XXXX

VILLAGE OF DOWNERS GROVE

MAIN STREET IMPROVEMENTS

SCALE: 1"=50' SHEET 1 OF 2 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2615	22-00118-00-PV	DuPAGE	2	1
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



HRG PROJECT NO: 210553
 HRG PROJ CONTACT:
 FILE NAME: 210553-spr+plan+if-012-02.dgn
 PEN TABLE: 1/10/2022



USER NAME = jstrzal	DESIGNED - JJS	REVISED - XX/XX/XXXX
	DRAWN - DMS	REVISED - XX/XX/XXXX
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED - XX/XX/XXXX
PLOT DATE = 6/1/2022	DATE -	REVISED - XX/XX/XXXX

VILLAGE OF DOWNERS GROVE

MAIN STREET IMPROVEMENTS

SCALE: 1"=50' SHEET 2 OF 2 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2615	22-00118-00-PV	DuPAGE	2	2
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

**ILLINOIS CALIBRATED HIGHWAY SAFETY MANUAL
CALCULATIONS**

CH2M HILL				Urban and Suburban Arterials Summary Sheet	
Worksheet 3A -- Predicted Crashes by Severity and Site Type for Urban and Suburban Arterials					
Analyst	TAY	Roadway	4-Lane Main St		
Agency or Company	HR Green	Jurisdiction	Village of Downers Grove		
Date Performed	3/14/2022	Study Period	2050		
Project Description	D99 Safety Study				

- Return to Main
- Hide Unused Rows
- Unhide All Rows

(1) Collision type / Site type	(2) Predicted average crash frequency (crashes/year)		
	(3) N _{predicted} (TOTAL)	(3) N _{predicted} (FI)	(4) N _{predicted} (PDO)

ROADWAY SEGMENTS			
Multiple-vehicle nondriveway			
Single-vehicle			
Multiple-vehicle Driveway-Related			
INTERSECTIONS			
Multiple-vehicle			
Intersection 1	0.857	0.300	0.557
Year1 -- 2050	0.857	0.300	0.557
Intersection 2	2.185	0.841	1.344
Year1 -- 2050	2.185	0.841	1.344
Intersection 3	1.530	0.591	0.939
Year1 -- 2050	1.530	0.591	0.939
Intersection 4	1.656	0.646	1.011
Year1 -- 2050	1.656	0.646	1.011
Intersection 5	4.793	1.485	3.309
Year1 -- 2050	4.793	1.485	3.309
Intersection 6	4.364	1.361	3.003
Year1 -- 2050	4.364	1.361	3.003
Single-vehicle			
Intersection 1	0.123	0.038	0.085
Year1 -- 2050	0.123	0.038	0.085
Intersection 2	0.166	0.042	0.124
Year1 -- 2050	0.166	0.042	0.124
Intersection 3	0.207	0.071	0.136
Year1 -- 2050	0.207	0.071	0.136
Intersection 4	0.217	0.073	0.144
Year1 -- 2050	0.217	0.073	0.144
Intersection 5	0.390	0.119	0.271
Year1 -- 2050	0.390	0.119	0.271
Intersection 6	0.348	0.104	0.243
Year1 -- 2050	0.348	0.104	0.243
COMBINED (sum of column)	16.836	5.670	11.165

Worksheet 3B -- Predicted Pedestrian and Bicycle Crashes for Urban and Suburban Arterials		
(1) Site Type	(2) N _{ped}	(3) N _{bike}
ROADWAY SEGMENTS		
INTERSECTIONS		
Intersection 1	0.012	0.026
Year1 -- 2050	0.012	0.026
Intersection 2	0.145	0.033
Year1 -- 2050	0.145	0.033
Intersection 3	0.044	0.040
Year1 -- 2050	0.044	0.040
Intersection 4	0.047	0.043
Year1 -- 2050	0.047	0.043
Intersection 5	0.057	0.093
Year1 -- 2050	0.057	0.093
Intersection 6	0.083	0.085
Year1 -- 2050	0.083	0.085
COMBINED (sum of column)	0.387	0.321

Worksheet 3C -- Site-Specific EB Method Summary Results for Urban and Suburban Arterials			
(1) Crash severity level	(2) N _{predicted}	(3) N _{ped}	(4) N _{bike}
Total	(2) _{COMB} from Worksheet 3A 16.8	(2) _{COMB} from Worksheet 3B 0.4	(3) _{COMB} from Worksheet 3B 0.3
Fatal and injury (FI)	(3) _{COMB} from Worksheet 3A 5.7	(2) _{COMB} from Worksheet 3B 0.4	(3) _{COMB} from Worksheet 3B 0.3
Property damage only (PDO)	(4) _{COMB} from Worksheet 3A 11.2	--	--
		0.0	0.0

Urban and Suburban Arterials Summary Sheet			
Worksheet 3A -- Predicted Crashes by Severity and Site Type for Urban and Suburban Arterials			
Analyst	TAY	Roadway	3-Lane Main St
Agency or Company	HR Green	Jurisdiction	Village of Downers Grove
Date Performed	3/14/2022	Study Period	2050
Project Description	D99 Safety Study		

Return to Main

Hide Unused Rows

Unhide All Rows

(1) Collision type / Site type	(2) Predicted average crash frequency (crashes/year)		
	(3) N _{predicted} (TOTAL)	(3) N _{predicted} (FI)	(4) N _{predicted} (PDO)

ROADWAY SEGMENTS			
Multiple-vehicle nondriveway			
Single-vehicle			
Multiple-vehicle Driveway-Related			
INTERSECTIONS			
Multiple-vehicle			
Intersection 1	0.639	0.224	0.415
Year1 -- 2050	0.639	0.224	0.415
Intersection 2	2.209	0.851	1.358
Year1 -- 2050	2.209	0.851	1.358
Intersection 3	0.888	0.343	0.545
Year1 -- 2050	0.888	0.343	0.545
Intersection 4	0.962	0.375	0.587
Year1 -- 2050	0.962	0.375	0.587
Intersection 5	3.838	1.189	2.649
Year1 -- 2050	3.838	1.189	2.649
Intersection 6	4.465	1.393	3.072
Year1 -- 2050	4.465	1.393	3.072
Single-vehicle			
Intersection 1	0.091	0.028	0.063
Year1 -- 2050	0.091	0.028	0.063
Intersection 2	0.168	0.042	0.126
Year1 -- 2050	0.168	0.042	0.126
Intersection 3	0.120	0.041	0.079
Year1 -- 2050	0.120	0.041	0.079
Intersection 4	0.126	0.042	0.084
Year1 -- 2050	0.126	0.042	0.084
Intersection 5	0.312	0.095	0.217
Year1 -- 2050	0.312	0.095	0.217
Intersection 6	0.356	0.107	0.249
Year1 -- 2050	0.356	0.107	0.249
COMBINED (sum of column)	14.174	4.730	9.445

Worksheet 3B -- Predicted Pedestrian and Bicycle Crashes for Urban and Suburban Arterials		
(1) Site Type	(2) N _{ped}	(3) N _{bike}
ROADWAY SEGMENTS		
INTERSECTIONS		
Intersection 1	0.009	0.020
Year1 -- 2050	0.009	0.020
Intersection 2	0.133	0.033
Year1 -- 2050	0.133	0.033
Intersection 3	0.025	0.023
Year1 -- 2050	0.025	0.023
Intersection 4	0.027	0.025
Year1 -- 2050	0.027	0.025
Intersection 5	0.055	0.075
Year1 -- 2050	0.055	0.075
Intersection 6	0.080	0.087
Year1 -- 2050	0.080	0.087
COMBINED (sum of column)	0.328	0.263

Worksheet 3C -- Site-Specific EB Method Summary Results for Urban and Suburban Arterials			
(1) Crash severity level	(2) N _{predicted}	(3) N _{ped}	(4) N _{bike}
Total	(2) _{COMB} from Worksheet 3A 14.2	(2) _{COMB} from Worksheet 3B 0.3	(3) _{COMB} from Worksheet 3B 0.3
Fatal and injury (FI)	(3) _{COMB} from Worksheet 3A 4.7	(2) _{COMB} from Worksheet 3B 0.3	(3) _{COMB} from Worksheet 3B 0.3
Property damage only (PDO)	(4) _{COMB} from Worksheet 3A 9.4	--	--
		0.0	0.0

UTILITY CORRESPONDENCE

Strzalka, Jeff

From: OCARS_Pro@Julie1Call.com
Sent: Friday, March 11, 2022 8:50 AM
To: Strzalka, Jeff
Subject: JULIE CONFIRMATION PLEASE REVIEW 2022/03/11 X220700384-00X NORM DSGN

This email came from outside the HR Green organization. Please use caution when clicking on hyperlinks and opening attachments

EMLCFM 00258 JULIEx 03/11/22 08:50:21 X220700384-00X DESIGN

Thank you for contacting JULIE, Inc. regarding your upcoming Design project.

Please review and print this Design stage notification for your records. If any of the information is incorrect, contact JULIE by dialing 811 or 800-892-0123 and provide the agent with the Design stage notification number. Agents are available 24/7.

Engineering contacts for the member utility companies that may be affected by your project are listed at the end of the request below. Please be aware that JULIE's role in this process is limited to providing you with these contacts. It is your responsibility to initiate communication with each of these utility contacts to discuss your project so that they may determine what action will be taken.

For information about JULIE's Design stage process, including the responsibilities of project designers and facility owners, go to <https://www.illinois1call.com/large-project/>

Dig No : X220700384 Rev : 00X Digstart: 09/11/22 08:44
Rcvd : 03/11/22 08:50 Priority: 2 Expires : 01/01/00 00:00
Org Dig: X220700384 Rcvd: 03/11/22 08:44 Dig by : 01/01/00 00:00

Firm : HR GREEN Caller: JEFF STRZALKA
CoAddr1: 420 N FRONT ST
City,St: MCHENRY, IL Zip : 60050
Phone : 815-385-1778 Ext :
Call Bk: Done For : VILLAGE OF DOWNERS GROVE
SiteCnt: SAME AS ABOVE
Email : JSTRZALKA@HRGREEN.COM

County : DUPAGE Place: DOWNERSGROVE CIT
Address: MAIN ST
Subdiv : Cross: E OGDEN AVE

Grids : T38NR11E05SW T38NR11E08NW

BestFit: 41.809077/-88.011747 41.809138/-88.010549
: 41.797679/-88.011173 41.797739/-88.009975

PreMark: NO Directional Boring: NO Depth>7Ft: YES

Locatn : IN THE CITY OF DOWNERSGROVE,

WrkType: DESIGN STAGE-TRAFFIC SIGNALS, LIGHTING, RESURFACING

Extent : WORK BEING DONE ON MAIN ST FROM OGDEN AVE SOUTH TO FRANKLIN ST---R.O.W.
: TO R.O.W.

Remarks:

Members:

ATT0A	ATT / T (TRANSMISSION) VF2021@ATT.COM	VANESSA ROSS	217-381-4284xCELL
ATTD5A	ATT/DISTRIBUTION G11629@ATT.COM	G11629@ATT.COM	000-000-0000
CECO0A	COMED	DESIGN STAGE LOCATE LINE	630-576-7094
COMC0A	COMCAST martha_gieras@cable.comcast.com	MARTHA GIERAS	224-229-5862
CRWN0A	CROWN CASTLE FIBER.DIG@CROWNCastle.COM	.	888-632-0931xOPTION 2
DCDT0A	DUPAGE COUNTY DOT jeremy.lee@dupageco.org	JEREMY LEE	630-407-6900
DGSD0A	DOWNERS GROVE SANIT.DIST kshaffner@dgsd.org	KEITH SHAFFNER	630-353-3610
DWGV0A	DOWNERS GROVE, VILLAGE OF JWELCH@DOWNERS.US	JOHN WELCH	630-434-5494x630-878-1167
HBK2A	HBK ENGINEERING, LLC	Information not provided	
KDL0A	WINDSTREAM KDL/MCLEOD USA locate.desk@windstream.com	LOCATE DESK	800-289-1901
LEVL0A	LEVEL3 (CENTURYLINK) NATIONALRELO@CENTURYLINK.COM	NETWORK RELOCATIONS	877-366-8344x2
MCI0A	MCI/VERIZON INVESTIGATIONS@VERIZON.COM	INVESTIGATIONS TEAM	000-000-0000
MFN0A	ZAYO FIBER SOLUTIONS TIMOTHY.PAYMENT@ZAYO.COM	TIM PAYMENT	630-203-8003
NICR0A	NICOR GAS	UTILITY CONSULTANT GO3W	630-388-2362
SCL1A	STAKE CENTER LOCATING	Information not provided	
USIC0A	USIC LOCATING SERVICES	Information not provided	

View map at:

<http://map.julielcall.com/?TRG=CFSYRZTVSPeGZJF-Y>

Strzalka, Jeff

From: windstreamprs@korweb.com
Sent: Friday, March 11, 2022 9:13 AM
To: Strzalka, Jeff
Subject: Ticket X220700384 for KDLOA - Status Change

This email came from outside the HR Green organization. Please use caution when clicking on hyperlinks and opening attachments

Our records indicate you called in dig request **X220700384** at **MAIN ST, DOWNERSGROVE CIT, IL**.

This email is a status update relating to ticket number **X220700384** for code **KDLOA**.

Ticket: **X220700384**
Member
Code: **KDLOA**
Company: **HR GREEN**
Done For: **VILLAGE OF DOWNERS GROVE**
Work to
begin on: **9/11/2022 8:44:00 AM**
County: **DUPAGE**
City: **DOWNERSGROVE CIT**
Address: **MAIN ST**
Contact: **JEFF STRZALKA**
Phone: **815-385-1778**
Completed
on: **3/11/2022 9:09:04 AM**
Response: **_CLEARED PER MAP**

Facility	Work Performed	Action Code
PHONE	Cleared	

Remarks:

Notes:

Windstream has addressed your ticket as noted above. If you have any further questions please contact our Damage Prevention Groups at 1-800-289-1901. Please note! The positive response you received is just for Windstream Telecommunications. If you have questions regarding responses from other utilities, please contact them directly. Windstream is working with the one call center to promote Safety and Damage Prevention. It's a shared responsibility. Thank you for doing your part in supporting public safety. Please visit <http://www.call811.com> regarding best practices.

Strzalka, Jeff

From: agt_comm@irth.com
Sent: Friday, March 11, 2022 9:05 AM
To: Strzalka, Jeff
Subject: Ticket X220700384 - Response to Dig Request

This email came from outside the HR Green organization. Please use caution when clicking on hyperlinks and opening attachments _____

=====
To: HR GREEN Attn: JEFF STRZALKA
Voice: 8153851778 Fax:
Re: Response to Dig Request

This is an important message from the Village of Downers Grove replying to your request to locate underground facilities in an area described on the one call center ticket.

=====
Ticket: X220700384
County: DUPAGE Place: Downers Grove
Address: MAIN ST

DWGV0A:
No VODG utilities located within specified dig area.

=====
If you have any questions please contact the Village of Downers Grove.

=====
This message was generated by an automated system. Please do not reply to this email.

Strzalka, Jeff

From: Verizon Design Ticket Info . <verizon.design.ticket.info@verizon.com>
Sent: Friday, March 11, 2022 8:56 AM
To: Strzalka, Jeff
Subject: #X220700384 Downers Grove, IL

This email came from outside the HR Green organization. Please use caution when clicking on hyperlinks and opening attachments

Verizon Business (MCI) does have facilities in the area. Please see attached map. If these facilities will present an issue, please contact robert.vezina@verizonwireless.com, john.hemmer@verizon.com, jason.jarvis@verizon.com, john.buher@one.verizon.com, oscar.guererro@one.verizon.com, joe.chaney@one.verizon.com and asg.investigationsteam@asginc.us.

FLPS #: 11207003642	Process Views Tasks Other 22:43
OCC #: X220700384	Work Type: DESIGN STAGE -- TRAFFIC SIGNALS, LIGHTING, RESURFACING
ROUTINE	Locate Info: (DESIGN TKT) WORK BEING DONE ON MAIN ST FROM OGDEN AVE SOUTH TO FRANKLIN STR. O.W. TO R.O.W. --Send Design Info to: HR GREEN --420 N FRONT ST, MCHENRY, IL 60050
Dig Location Info	Comments: Wire Center from FIM in PARSER nullDispatched by SMURPHY to FS9999 at 2022-03-11 14:53:14.904 Since this is a Design Stage Ticket it was automatically forwarded to manual processing to decide whether to dispatch to the Field or to FS9999 for handling.
State: IL	
County: DUPAGE	
City(OCC): DOWNERS GROVE	
Street: MAIN ST	
XStreet: E OGDEN AVE	
XStreet2:	
Subdivision	Measure Banding WB WR WP Home (5) Prev (-) Search Clear (q) Basemap
Dig Coordinates	***Verizon Confidential***
LongLat 1: -88.011747 41.809077	
LongLat 2: -88.010545 41.809138	
LongLat 3: -88.009975 41.797739	
LongLat 4: -88.011733 41.797679	
Dig Details	
Dig Date: 2022-04-08	
Recd Date: 2022-03-11	
Digger Information	
Company: HR GREEN	
Contact: JEFF STRZALKA	
Phone1: (615)355-1778	
Work For: VILLAGE OF DOWNERS GROVE	
Ticket Details	
Srv Cntr: IL3	
Disposition	
Proc By: SMURPHY	
FS Id: FS9999	
Geosrc: Work Box	
MP Reason: AN	

This is not a monitored email box- PLEASE DO NOT RESPOND TO THIS EMAIL.

Strzalka, Jeff

From: cl_irth_comm@irth.com
Sent: Friday, March 11, 2022 8:53 AM
To: Strzalka, Jeff
Subject: Ticket X220700384 - Response to Dig Request

This email came from outside the HR Green organization. Please use caution when clicking on hyperlinks and opening attachments

To: HR GREEN
Voice: 8153851778
Re: Response to Dig Request

Attn: JEFF STRZALKA
Fax:

This is an important message from HBK responding to your request to locate facilities.

Ticket: X220700384
County: DUPAGE
Place: DOWNERSGROVE
Address: MAIN ST

HBK2A:
Contact DuPage County DOT ([630/407-6900](tel:6304076900) M-F 8 am-4:30 pm CST) for plans/information.

If you have any questions please contact HBK.

This message was generated by an automated system. Please do not reply to this email.

Strzalka, Jeff

From: cl_irth_comm@irth.com
Sent: Friday, March 11, 2022 6:32 PM
To: Strzalka, Jeff
Subject: Seq# 1: X220700384 for LEVL0A
Attachments: Map Legend.JPG; MAP.JPG

This email came from outside the HR Green organization. Please use caution when clicking on hyperlinks and opening attachments _____

LEVL0A 00024 JULIEx 03/11/22 08:50:26 X220700384-00X DESIGN

Dig No : X220700384 Rev : 00X Digstart: 09/11/22 08:44
Rcvd : 03/11/22 08:50 Priority: 2 Expires : 01/01/00 00:00
Org Dig: X220700384 Rcvd: 03/11/22 08:44 Dig by : 01/01/00 00:00

Firm : HR GREEN Caller: JEFF STRZALKA
CoAddr1: 420 N FRONT ST
City,St: MCHENRY, IL Zip : 60050
Phone : 815-385-1778 Ext :
Call Bk: Done For : VILLAGE OF DOWNERS GROVE
SiteCnt: SAME AS ABOVE
Email : JSTRZALKA@HRGREEN.COM

County : DUPAGE Place: DOWNERSGROVE CIT
Address: MAIN ST
Subdiv : Cross: E OGDEN AVE

Grids : T38NR11E05SW T38NR11E08NW

BestFit: 41.809077/-88.011747 41.809138/-88.010549
: 41.797679/-88.011173 41.797739/-88.009975

PreMark: NO Directional Boring: NO Depth>7Ft: YES

Locatn : IN THE CITY OF DOWNERSGROVE,

WrkType: DESIGN STAGE-TRAFFIC SIGNALS, LIGHTING, RESURFACING Extent : WORK BEING DONE ON MAIN ST FROM
OGDEN AVE SOUTH TO FRANKLIN ST---R.O.W.

: TO R.O.W.

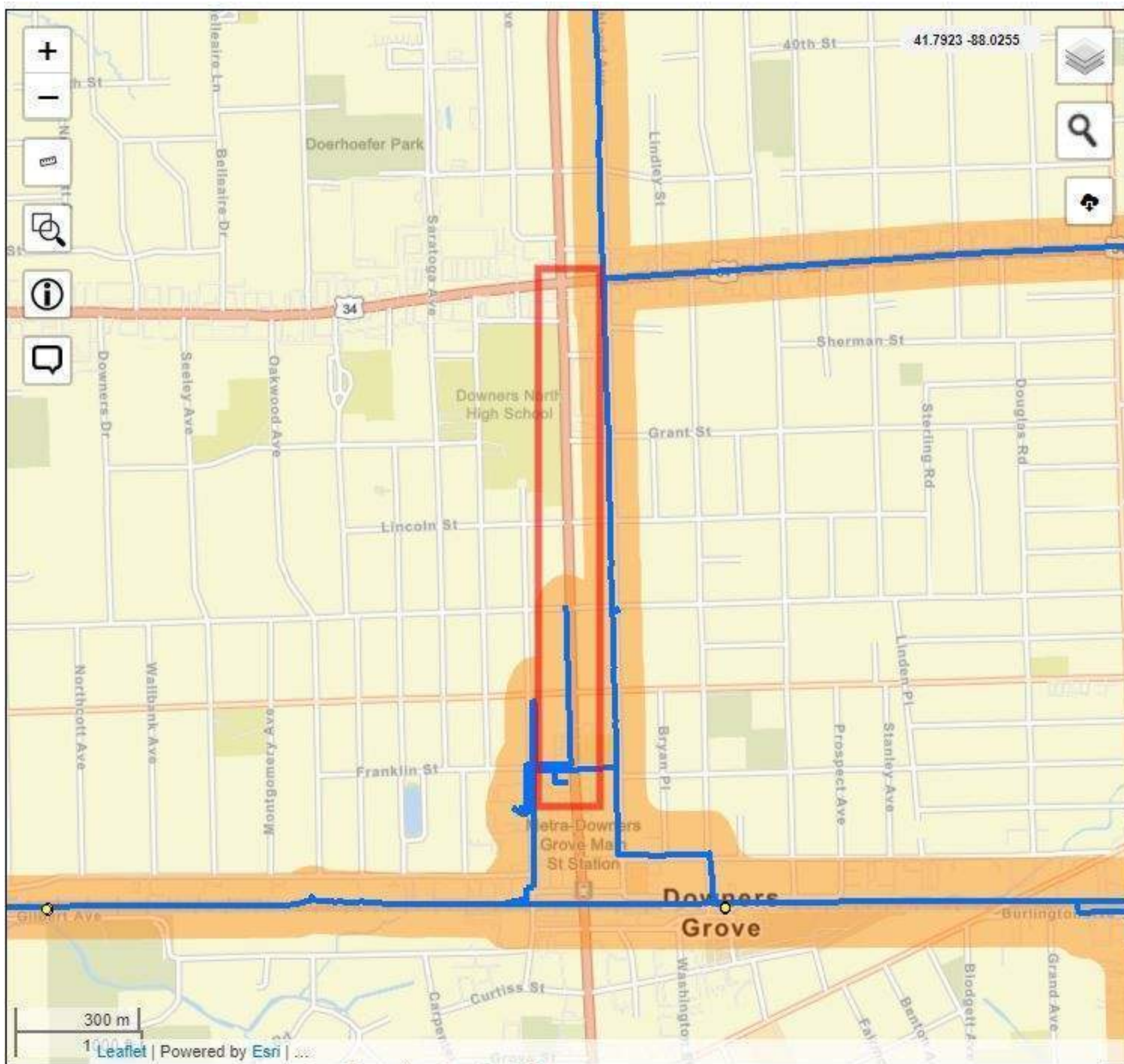
Remarks:

Members: ATT0A ATTD5A CECO0A COMC0A CRWN0A DCDT0A DGSD0A DWGV0A HBK2A KDL0A

Members: LEVL0A MCI0A MFN0A NICR0A SCL1A USIC0A

View map at:

<http://map.julie1call.com/?TRG=48TXSUYMxObJWI0n4n3>



Strzalka, Jeff

From: Keith Shaffner <kshaffner@dgsd.org>
Sent: Monday, March 14, 2022 7:32 AM
To: Strzalka, Jeff
Subject: DGSD Utilities Main Street Ogden to Franklin Downers Grove
Attachments: Atlas 2_10_12_Page_45.pdf; Atlas 2_10_12_Page_53.pdf

This email came from outside the HR Green organization. Please use caution when clicking on hyperlinks and opening attachments

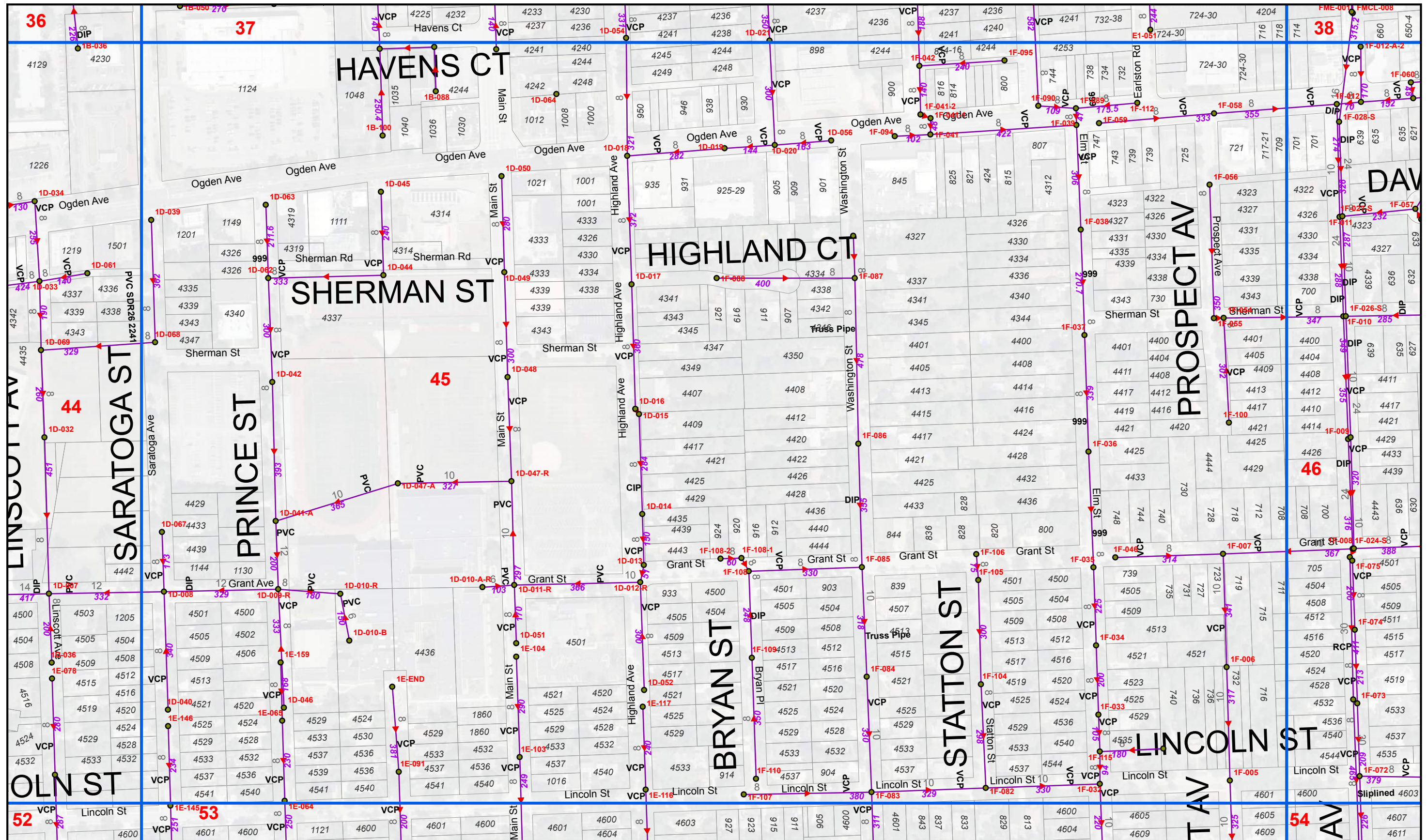
Jeff,
Attached are the atlas pages for the requested area.
Thanks

Keith Shaffner
Sewer Construction Supervisor
Downers Grove Sanitary District
2710 Curtiss Street
P.O. Box 1412
Downers Grove, IL 60515
Office: (630)969-0664
Email: kshaffner@dgsd.org
Web: www.dgsd.org

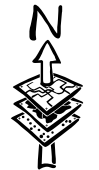


Do you really need to print this email? Think Environment...

DOWNERS GROVE SANITARY DISTRICT

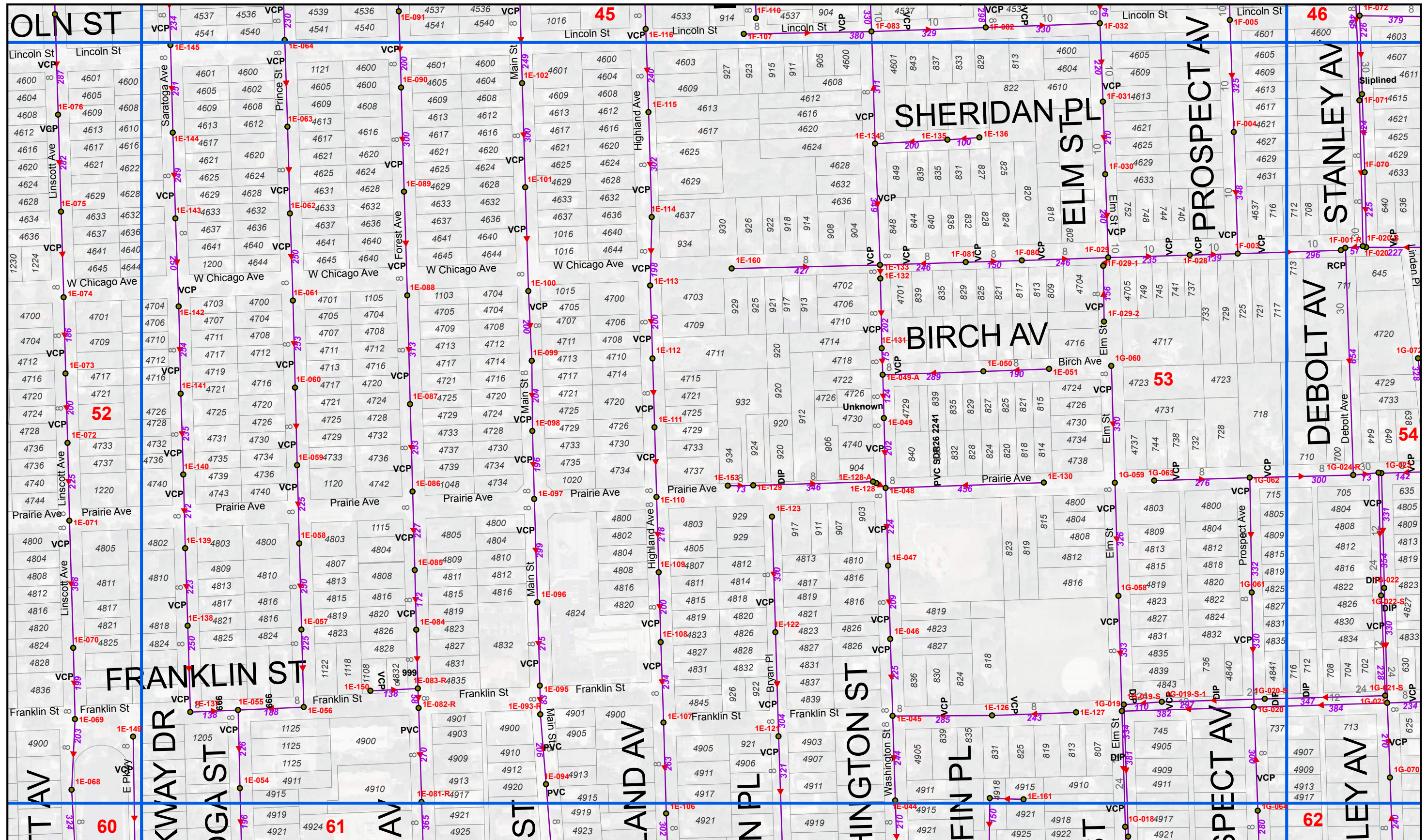


Date: 2/10/2012

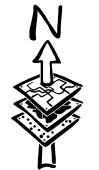


GRID
45

DOWNERS GROVE SANITARY DISTRICT



Date: 2/10/2012



GRID
53

Strzalka, Jeff

From: Illinois Damage <IllinoisDamage@usicllc.com>
Sent: Monday, March 14, 2022 10:22 AM
To: Strzalka, Jeff
Subject: DESIGN STAGE X220700384
Attachments: UG Locating Map Legend_Redacted_Wetland Added.pdf; 465-05S-UGL.pdf; 465-08N-UGL.pdf

This email came from outside the HR Green organization. Please use caution when clicking on hyperlinks and opening attachments

JEFF

If your project is regarding new or renovation construction, supplied electrical voltage needs, or changes in current electrical demands, you must contact ComEd's New Business office at 1-866-NEW-ELEC (1-866-639-3532) to begin the process to complete your request.

If your project is for a publicly funded improvement project such as road widening, sewer, water, or other general public improvement, please call ComEd's Public Relocation Department at 630-437-4855.

ComEd has forwarded your JULIE Design Stage Ticket – [X220700384-DOWNERSGROVE](#) to our company to provide the attached prints as you requested. I have also attached a ComEd Legend relative to these prints. Note that since we are submitting this information for ComEd, you may need to contact ComEd directly to further develop your project.

It is very important to note that you must take additional steps if your project is for a new or revised electric service or for a publicly funded roadway improvement project.

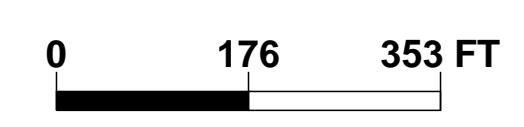
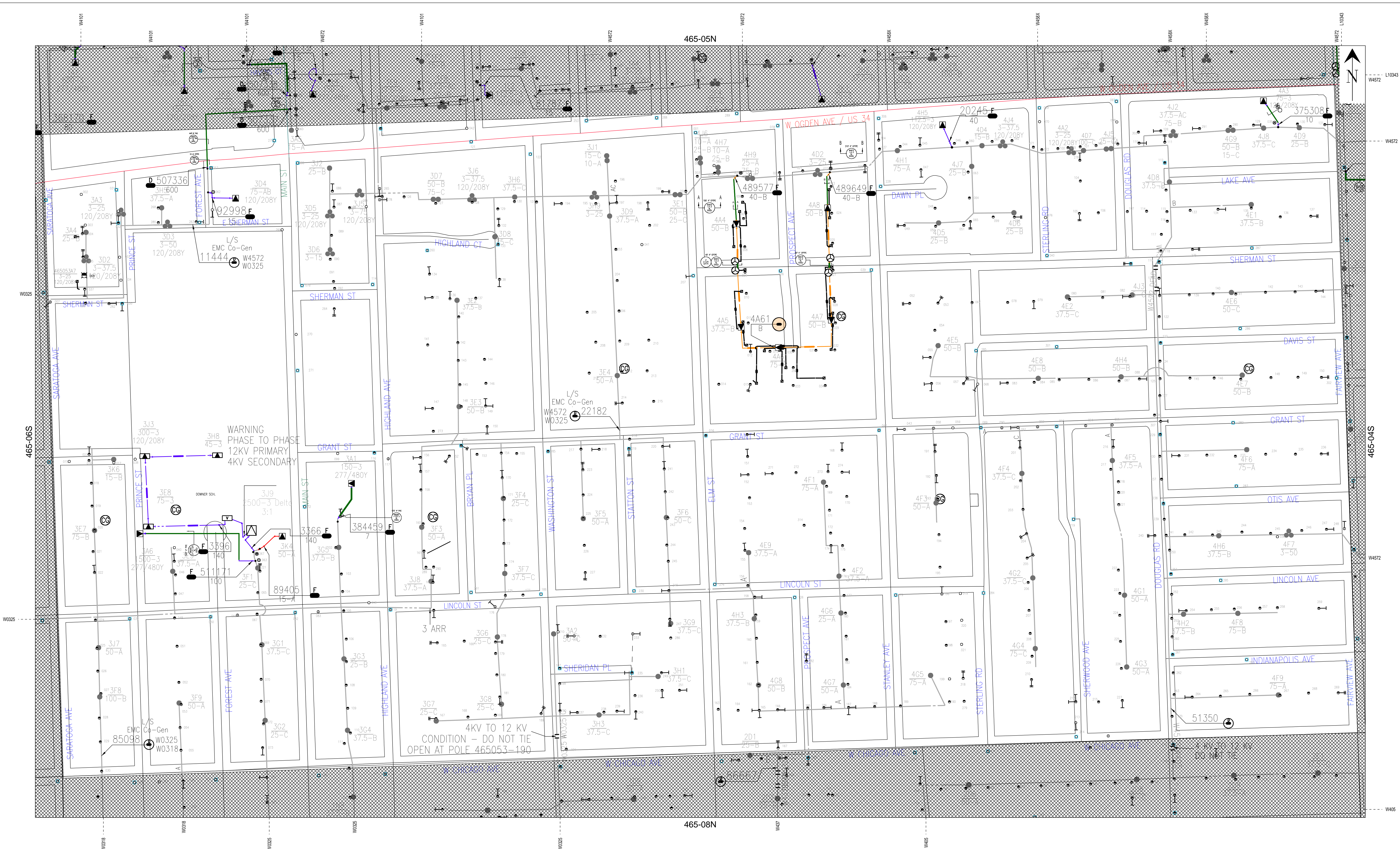
Live the SAFE-LIFE!

Frank Costanzo

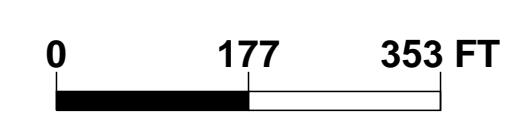
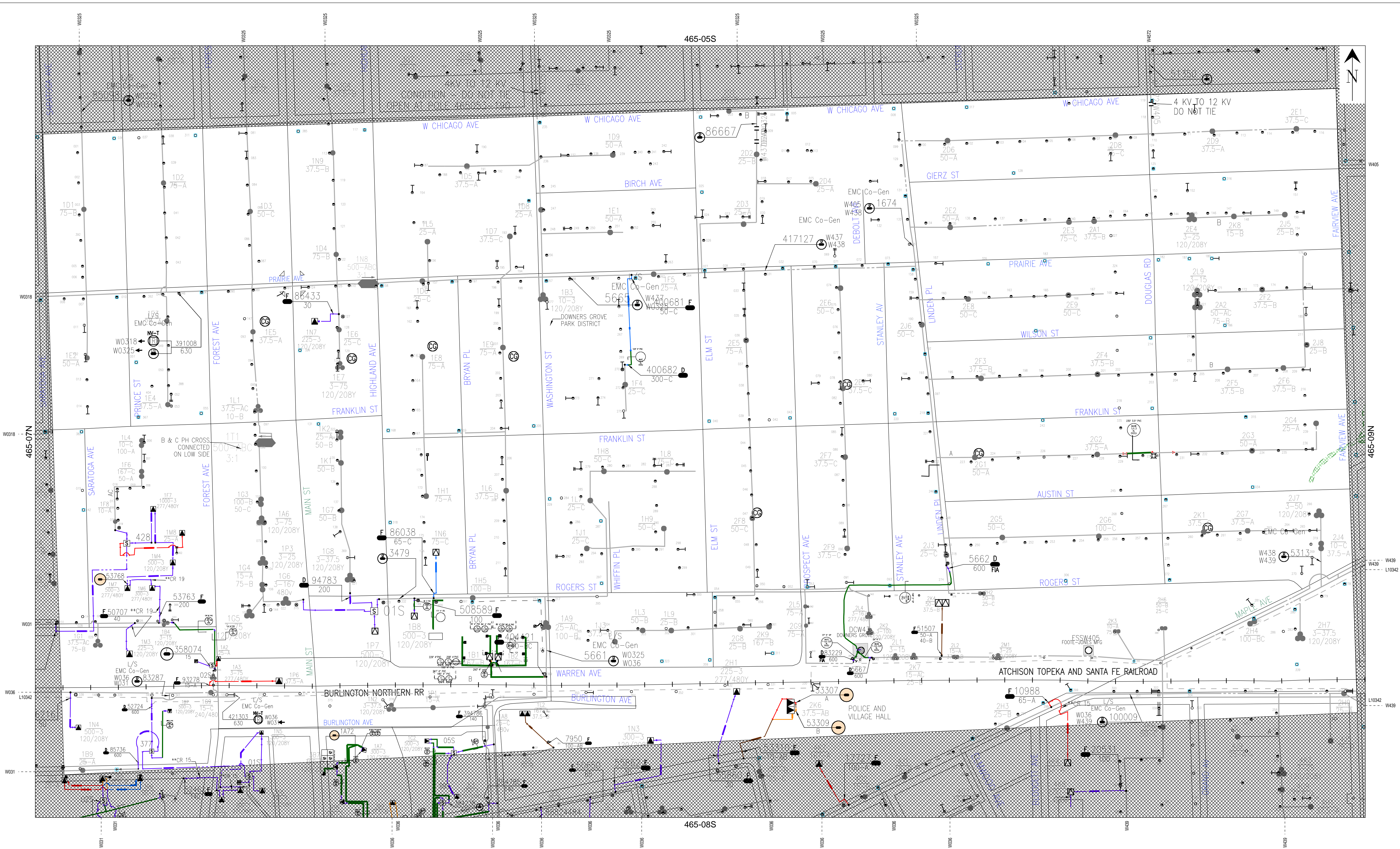
Administrative Assistant
O: 630 396 8224
F: 630 396 8230

860 Oak Creek Dr
Lombard, IL 60148





Co: DU PAGE	Area Office: Bolingbrook
Twp: Downers Grove township	Reporting Office: Bolingbrook
City: DOWNERS GROVE	Regional Office: SouthWest



Co: DU PAGE	Area Office: Bolingbrook
Twp: Downers Grove township	Reporting Office: Bolingbrook
City: DOWNERS GROVE	Regional Office: SouthWest

PRELIMINARY ESTIMATE OF COST

PRELIMINARY ESTIMATE OF COST
 MAIN STREET IMPROVEMENTS
 SECTION NO. 22-00118-00-PV
 March 11, 2022



PAY ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	ESTIMATED UNIT PRICE	ESTIMATED COST
INLET FILTERS	EACH	45	\$250.00	\$11,250.00
PERIMETER EROSION BARRIER	FOOT	870	\$7.00	\$6,090.00
TOPSOIL FURNISH AND PLACE, 18"	SQ YD	470	\$40.00	\$18,800.00
SUPPLEMENTAL WATERING	UNIT	25	\$50.00	\$1,250.00
SODDING, SALT TOLERANT	SQ YD	465	\$15.00	\$6,975.00
AGGREGATE BASE COURSE, TYPE B 6"	SQ YD	1,905	\$10.00	\$19,050.00
AGGREGATE BASE COURSE, TYPE B 8"	SQ YD	10	\$25.00	\$250.00
BITUMINOUS MATERIALS (TACK COAT)	POUND	12,070	\$0.25	\$3,017.50
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	TON	2,310	\$85.00	\$196,350.00
HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N70	TON	1,880	\$100.00	\$188,000.00
PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ FT	7,355	\$6.00	\$44,130.00
DETECTABLE WARNINGS	SQ FT	455	\$40.00	\$18,200.00
HOT-MIX ASPHALT SURFACE REMOVAL, 4"	SQ YD	18,770	\$5.00	\$93,850.00
COMBINATION CURB AND GUTTER REMOVAL	FOOT	3,779	\$7.00	\$26,453.00
SIDEWALK REMOVAL	SQ FT	7,355	\$2.00	\$14,710.00
STORM SEWERS, CLASS A, TYPE 1 12"	FOOT	200	\$90.00	\$18,000.00
CATCH BASINS, TYPE A, 4'-DIAMETER, TYPE 11 FRAME AND GRATE	EACH	4	\$3,750.00	\$15,000.00
COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	FOOT	3,779	\$25.00	\$94,475.00
MOBILIZATION	L SUM	1	\$50,000.00	\$50,000.00
TRAFFIC CONTROL & PROTECTION, ALL STANDARDS	L SUM	1	\$125,000.00	\$125,000.00
CONSTRUCTION LAYOUT	L SUM	1	\$5,000.00	\$5,000.00
THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	1,065	\$12.00	\$12,780.00
THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	20,320	\$0.75	\$15,240.00
THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	1,211	\$1.50	\$1,816.50
THERMOPLASTIC PAVEMENT MARKING - LINE 12"	FOOT	684	\$2.00	\$1,368.00
THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	308	\$7.00	\$2,156.00
SHREDDED BARK MULCH 3"	SQ YD	30	\$15.00	\$450.00
PERENNIAL PLANTS, ORNAMENTAL TYPE, GALLON POT	UNIT	1	\$3,000.00	\$3,000.00
PAVEMENT COLOR (GREEN BICYCLE LANES)	SQ YD	2,225	\$35.00	\$77,875.00
CONCRETE MEDIAN SURFACE, 8"	SQ FT	35	\$35.00	\$1,225.00
TRAFFIC SIGNAL MODIFICATIONS (INCLUDING DETECTOR LOOP REPL)	EACH	3	\$100,000.00	\$300,000.00
FRAMES AND LIDS TO BE ADJUSTED (SPECIAL)	EACH	25	\$800.00	\$20,000.00
LONGITUDINAL JOINT SEALANT	FOOT	7,000	\$6.00	\$42,000.00
CLASS D PATCHES, 6 INCH	SQ YD	900	\$60.00	\$54,000.00
LIGHT POLE W/ LUMINAIRE (INCL CABLE & CONDUIT)	EACH	25	\$15,000.00	\$375,000.00
LIGHTING CONTROLLER	EACH	2	\$25,000.00	\$50,000.00
			TOTAL	\$1,912,761.00

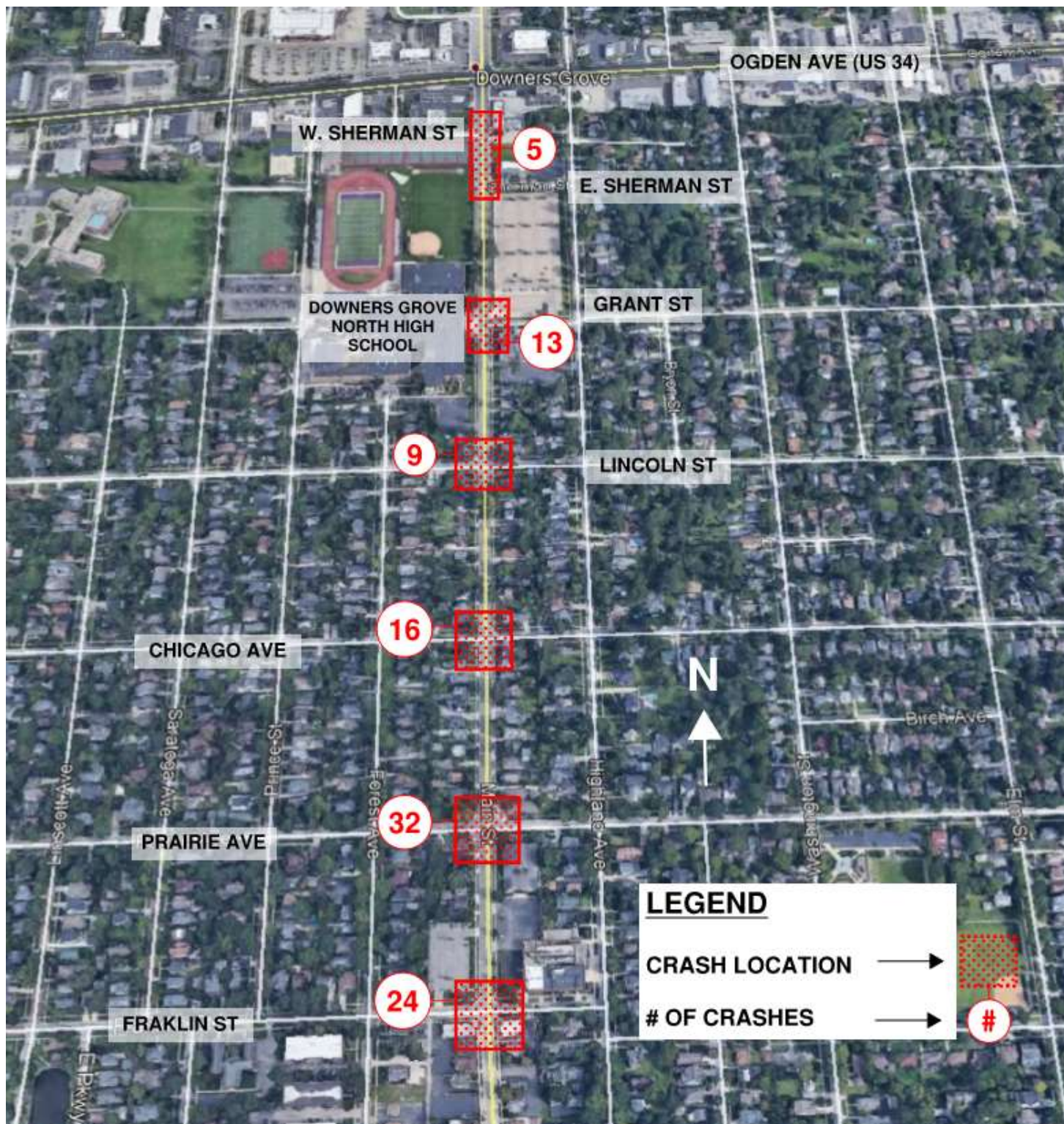
**ACCIDENT SUMMARY TABLES &
COLLISION DISTRIBUTION MAP**

TABLE 1 – CRASH DATA SUMMARY

CRASH SEVERITY							MANNER OF COLLISION											
	Total Crashes	Fatal	Major Injury Incidents	Minor Injury Incidents	Possible/Unknown Incidents	PDO Incidents	Total Crashes	Angle	Broadside (rear to side)	Fixed Object	Head-On	Parked Motor Vehicle	Pedestrian/Pedalcyclist	Rear End	Rear to Front	Sideswipe, opposite direction	Sideswipe, same direction	Turning
Main St & Sherman Rd/St	5				1	4	Main St & Sherman Rd/St	5				1					4	
Main St & Grant St	13	1	1		1	10	Main St & Grant St	13					4	7				1
Main St & Lincoln St	9		1		1	7	Main St & Lincoln St	9	3			1		1				4
Main St & Chicago Ave	16			2	2	12	Main St & Chicago Ave	16	7		1	2					4	2
Main St & Prairie Ave	32			1	4	27	Main St & Prairie Ave	32	6		3		2	9			7	5
Main St & Franklin St	24			2	2	20	Main St & Franklin St	24	2		3	3	2	7			6	1

CONTRIBUTING CRASH FACTORS																				
	Total Crashes	N/A	Disregarding stop sign	Disregarding traffic signals	Distraction - from inside vehicle	Evasive action due to animal, object, nonmotorist	Failure to reduce speed to avoid crash	FTYROW	Following too closely	Had been drinking (arrest not made)	Improper Backing	Improper lane usage	Improper overtaking/passing	Improper turning/no signal	Physical Condition of Driver	Road construction/maintenance	Texting	Under the influence of alcohol/drugs (arrest made)	Vision Obscured	Unable to determine
Main St & Sherman Rd/St	5									1	3									1
Main St & Grant St	13			2			8	1	1		1									
Main St & Lincoln St	9						1	5	1										2	
Main St & Chicago Ave	16	1	1					8			3		1			1				1
Main St & Prairie Ave	32			3	2	1	9	8	1		7									1
Main St & Franklin St	24			1		1	9	5	2		4	1	1							

VILLAGE OF DOWNERS GROVE MAIN STREET COLLISION DISTRIBUTION MAP



CULTURAL RESOURCES

Screening Sheet for Cultural Clearance and Section 106

County	DuPage
Section	22-00118-00-PV
Local Agency	Village of Downers Grove

1. This screening sheet is to be used for:
 - a. all MFT general maintenance, LAFO and 3R projects that are entirely within the existing right of way;
 - b. within historical districts and adjacent to buildings that are 40 years and older;
 - c. Removal and replacement of materials must be "in-kind".
2. Please send completed screening sheet and location map to William.Raffensperger@illinois.gov

Attach project location map

Project Scope:	Main Street Improvements from approximately 600-ft south of Prairie Street to 300-ft south of Ogden Avenue within the Village of Downers Grove. The work will consist of mill and resurfacing, road diet, traffic signal modifications, improved street lighting, and ADA sidewalk curb ramps.
----------------	--

Check all that apply:	
1. General highway maintenance and repair, including but not limited to pavement patching, crack sealing, joint grinding, milling and resurfacing with in-kind materials, curb and gutter replacement with in-kind materials, erosion control, storm sewer repair	<input checked="" type="checkbox"/>
2. Removal and replacement of existing sidewalks and ADA ramps with in-kind materials.	<input checked="" type="checkbox"/>
3. General pavement marking activities that include, but are not limited to, installation of raised pavement markers, rumble strips, striping on existing pavements.	<input checked="" type="checkbox"/>
4. Repair and replacement of appurtenances such as guardrails, safety barriers, crash attenuators, safety cable, or lighting.	<input checked="" type="checkbox"/>
5. Repair, rehabilitation, or removal of railroad grade crossings, separations or grade crossing protection.	<input type="checkbox"/>

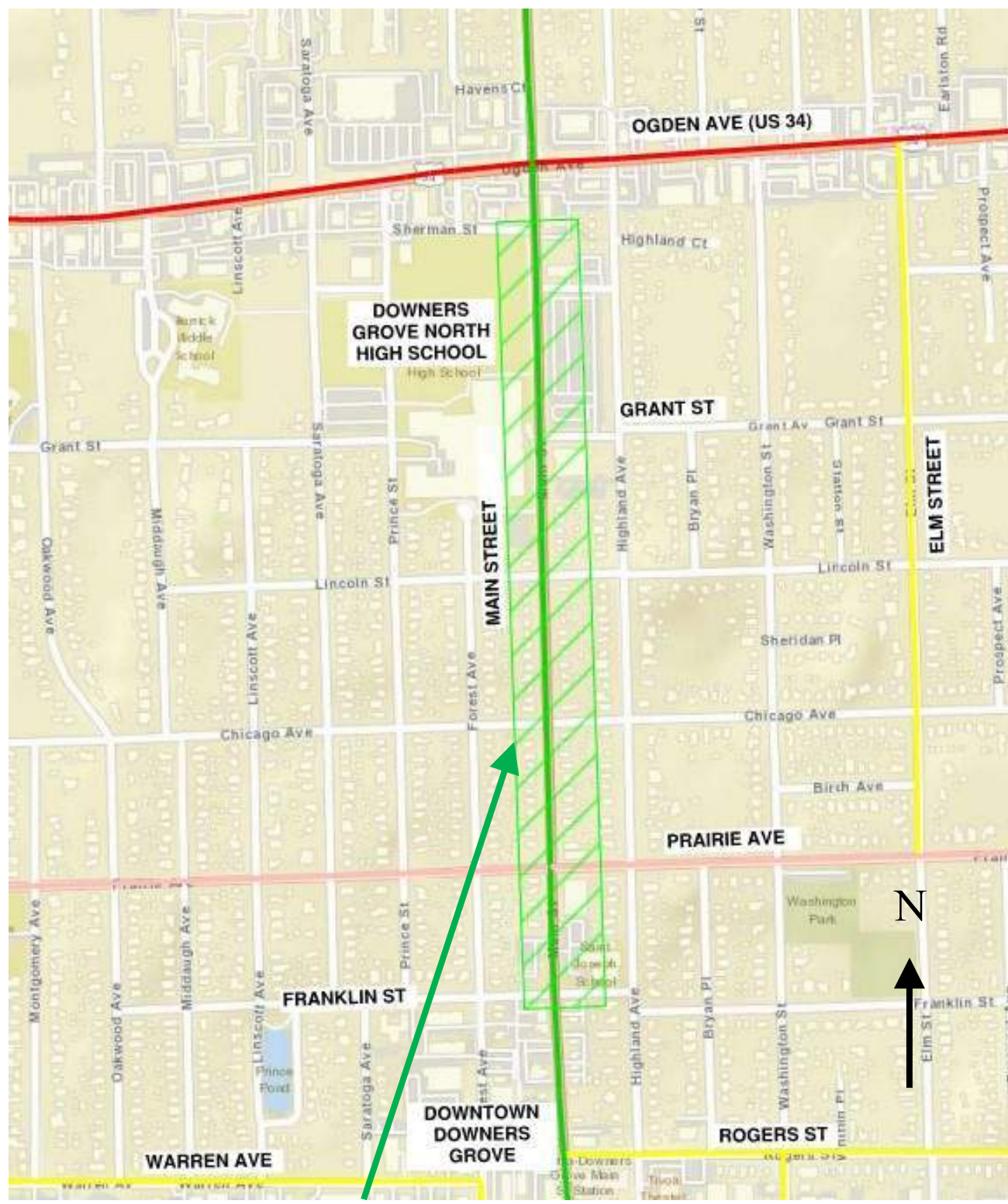
Will the project involve (check YES/NO):	YES	NO
1. New right-of-way	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. New temporary or permanent easement	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. In-stream work	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. A bridge or culvert	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Excavation in previously undisturbed soil (includes agricultural land)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Addition of new thru lanes, turn lanes, auxiliary lanes,	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Construction of new roundabouts and traffic circles.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Construction of a new bike path or multi-use path where one does not exist.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Installation of new ADA Ramps or sidewalk where none exist.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Change in elevation of sidewalk for ADA compliance when adjacent to buildings.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. * Is the project in or adjoining to a National Historic Landmark?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

* Note: Projects in a designated historic district are treated differently than those which are in or adjoining a National Historic Landmark



VILLAGE OF DOWNERS GROVE MAIN STREET

(600-ft South of Prairie Ave TO 300-ft South of Ogden Ave)
IDOT ROADWAY FUNCTIONAL CLASSIFICATION MAP



PROJECT LOCATION

PUBLIC INVOLVEMENT INFORMATION

**OPEN PUBLIC FORUM #1
SEPTEMBER 5, 2019**



TRAFFIC SAFETY FORUM

Downers Grove North High School

September 5, 2019

NORTH HIGH FORUM AGENDA

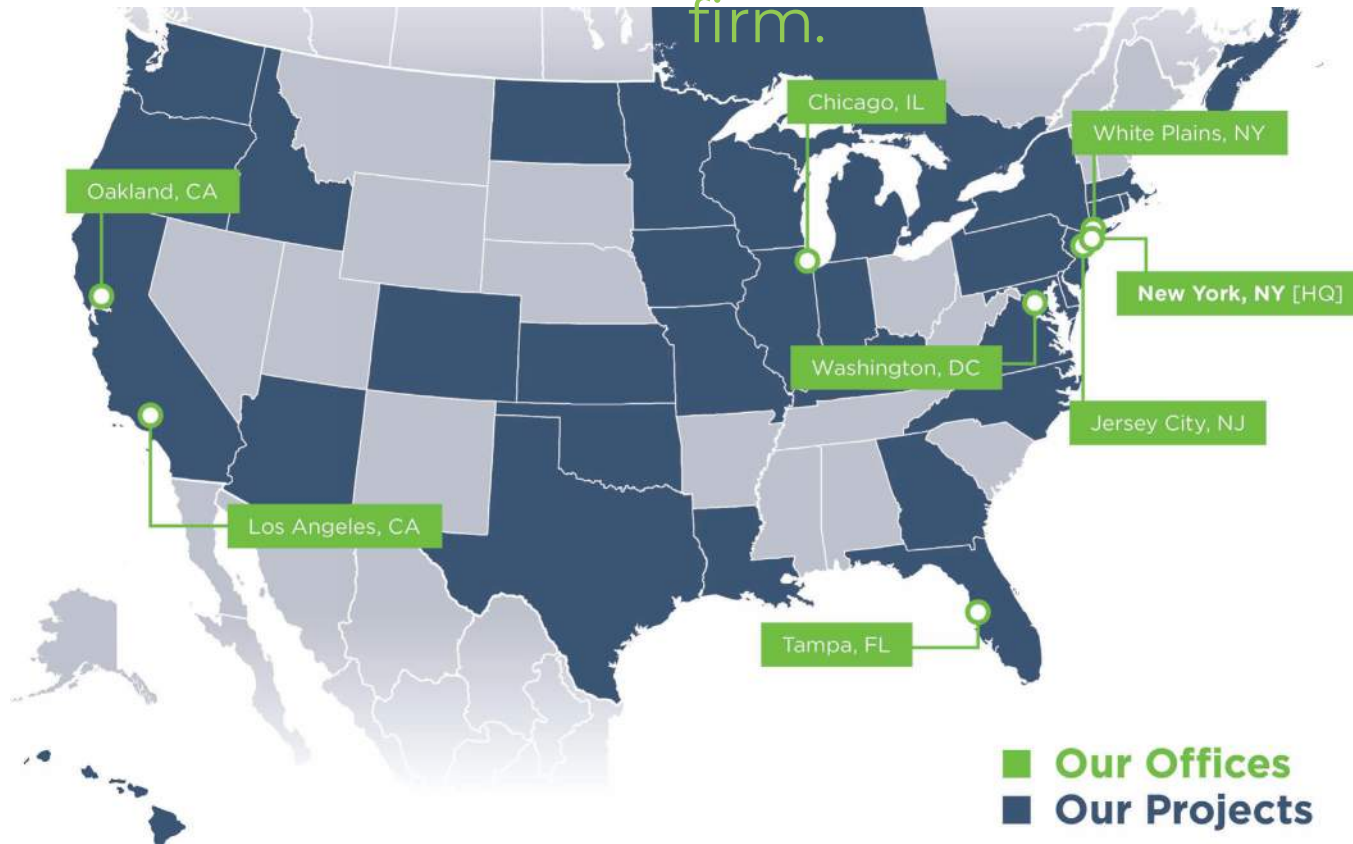
6:30 – 6:45 District 99 and the Village of Downers Grove

6:45 – 6:55 Presentation of program and instructions

6:55 – 7:00 Presentation conclusion

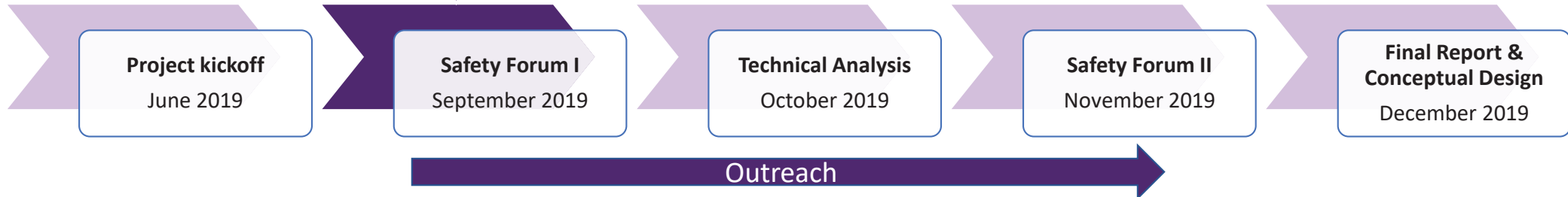
7:00 – 8:00 Forum activities

Sam Schwartz is a national engineering, planning and consulting firm.



PROJECT SCHEDULE

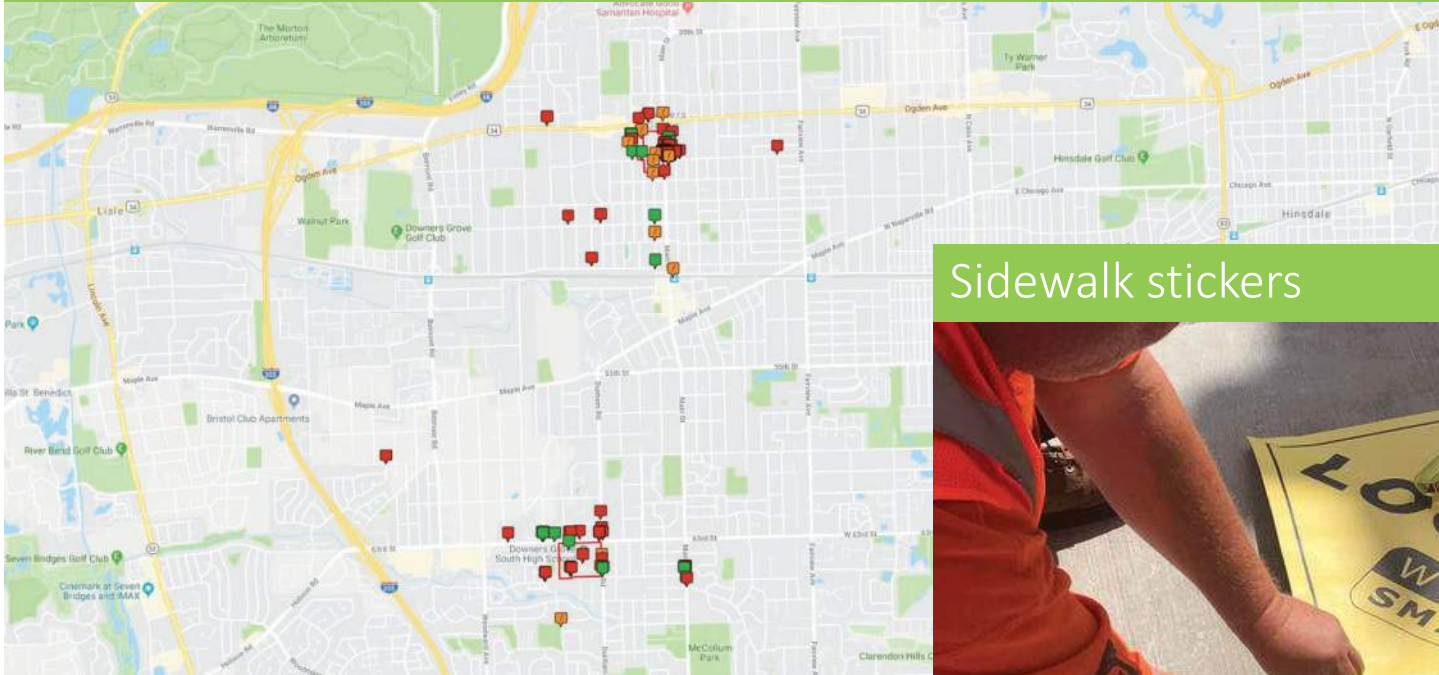
we are here



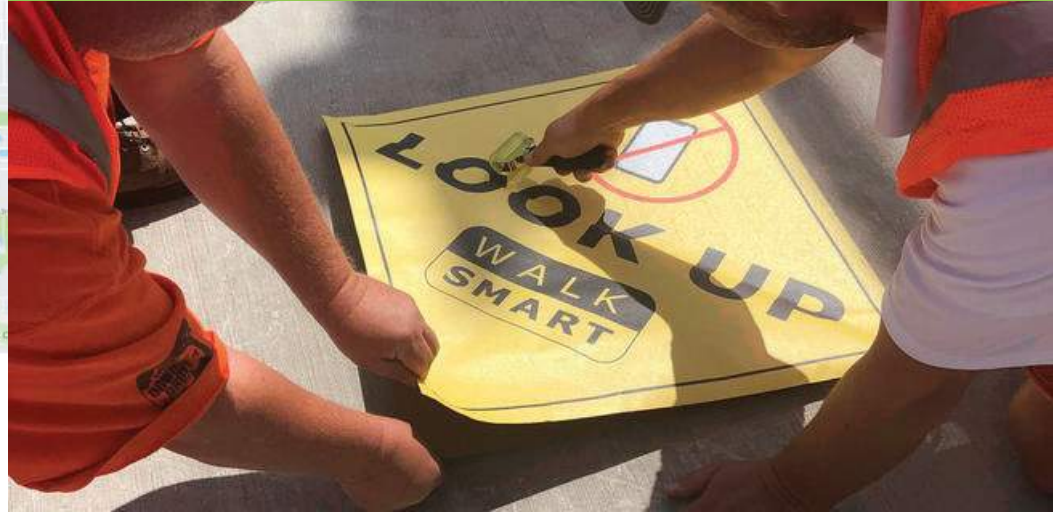
WHAT WE'VE DONE SO FAR

Speed feedback...variable message board

Interactive map: 200+ responses to date



Sidewalk stickers



TAKE THE SAFETY PLEDGE!



TAKE THE STREETSMARTS PLEDGE

I PLEDGE...

TO BE A CAUTIOUS DRIVER BY ALWAYS...

- Wearing a seatbelt while in a vehicle and encouraging others to do the same
- Reducing my speed in school zones
- Coming to a complete stop at all stop signs
- Putting my phone away while at the wheel
- Looking out for and slowing down for pedestrians and cyclists

TO BE AN ATTENTIVE PEDESTRIAN BY ALWAYS...

- Stopping and looking both ways before crossing the street
- Obeying "walk" and "don't walk" signals
- Trying to make eye contact with drivers to confirm I am seen before crossing the street
- Putting my phone down while crossing the street

TO BE A COGNIZANT CYCLIST BY ALWAYS...

- Giving pedestrians the right of way
- Wearing proper protective gear including a helmet and lights at night
- Putting my phone away while driving

TO BE AN INFORMED MEMBER OF THE COMMUNITY BY ALWAYS...

- Informing others in the community of traffic, pedestrian, and traffic safety tips
- Being proactive in spreading the word about the important role that safety plays in the community

SIGN THE PLEDGE!



IDEAS FOR NORTH HIGH



Based on input collected by District 99 in collaboration with partners, here are the safety ideas we have heard so far. Place your stickers on the idea(s) you would most like to see around North High!

PAINTED INTERSECTION



Painted intersections grab the attention of drivers and pedestrians, reduce speeds and increase awareness.

VOTE HERE!

City of Fort Lauderdale

CONCRETE PLANTERS



Concrete planters create a physical barrier between sidewalks and the roadway while improving aesthetics.

VOTE HERE!

Twitter, Alisa Hauser

PAINTED CROSSWALKS



A painted crosswalk improves crosswalk visibility and fosters a sense of place.

VOTE HERE!

Project for Public Spaces

BIKE PARKING CANOPY



Bicycle storage options encourage people to use alternative modes and feel safer when locking their bikes.

VOTE HERE!

Virginia Tech Daily

BANNERS



Street banners hang from light poles or posts to spread a message and make people aware of programs and events.

VOTE HERE!

Watsonville Police

STREET LIGHTING



Street lighting allows all roadway users to be more aware of their surroundings and feel safer traveling the corridor.

VOTE HERE!

CityLab

INSTRUCTIONS:

Based on input collected by District 99 and collaboration with partners, here's what we've heard so far.

Take stickers and choose the idea(s) you would most like



SPOT YOUR TRANSPORTATION CHALLENGES & CONCERNS



Place a sticker or post-it on the map at an area you think could use improvements and let us know what it is. Use the comments cards to write down your thoughts as well.



NORTH

STREET SMARTS

INSTRUCTIONS: Put a sticker on the map to show us a street or intersection you would like to change. Take a comment card



Community
HIGH SCHOOL District 99



Share *your* story



INSTRUCTION: Talk to a representative and fill out a comment card so we can hear about your traffic safety stories at Downers Grove.

We want to hear from YOU!





SAFETY MESSAGE IDEAS

This is only the beginning! We will be creating digital messaging, yard signs, speed signs, and more. Below are some of our ideas. Please tell us what you think by placing a post-it note on the ones you like or which ones don't work.



INSTRUCTION

S: We have provided some ideas on this board, please tell us what you think by placing a post-it note on the ones you like





CREATE YOUR OWN SAFETY MESSAGE!

Do you have any ideas for North High's safety campaign? Share your ideas below!

INSTRUCTIONS: Your turn. Please use the post-it notes to share your traffic safety slogan or messaging



DON'T FORGET TO TAKE A HANDOUT!

THERE'S ALWAYS TIME FOR SAFETY

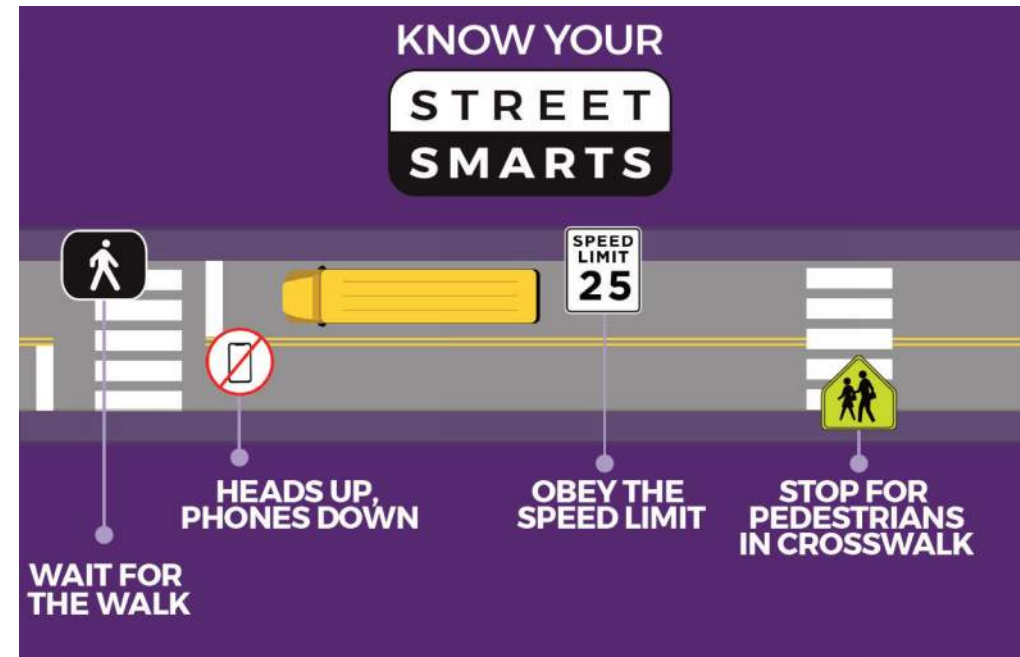
WHAT YOU CAN DO...

Tell us your transportation thoughts
on our **INTERACTIVE MAP**:

 www.wikimapping.com/DGHS-Traffic-Safety.html

WHAT WE'RE DOING...

We are working to improve safety around Downers Grove North and South High Schools. While long-term improvements are being planned, several safety tools have been implemented such as speed feedback signs, digital message boards, and an awareness campaign.



**OPEN PUBLIC FORUM #2
NOVEMBER 14, 2019**

COMMUNITY PEDESTRIAN SAFETY FORUM #2

November 14, 2019



PEDESTRIAN SAFETY

Community Collaboration and Partnership

- **Immediate North High Changes:**
 - ✓ Main St. speed limit reduced to 25 mph, Ogden Ave. to south of North High
 - ✓ School Zone 20 established mph in front of North High
 - ✓ Reviewed signal timing / prioritized for pedestrians
- **Immediate South High Changes:**
 - ✓ Light and crosswalk at 63rd St & Springside approved for installation
 - ✓ Other changes on Dunham being discussed



PROJECT SCHEDULE



COMMUNITY OUTREACH

Safety Forum Activities

Student Input

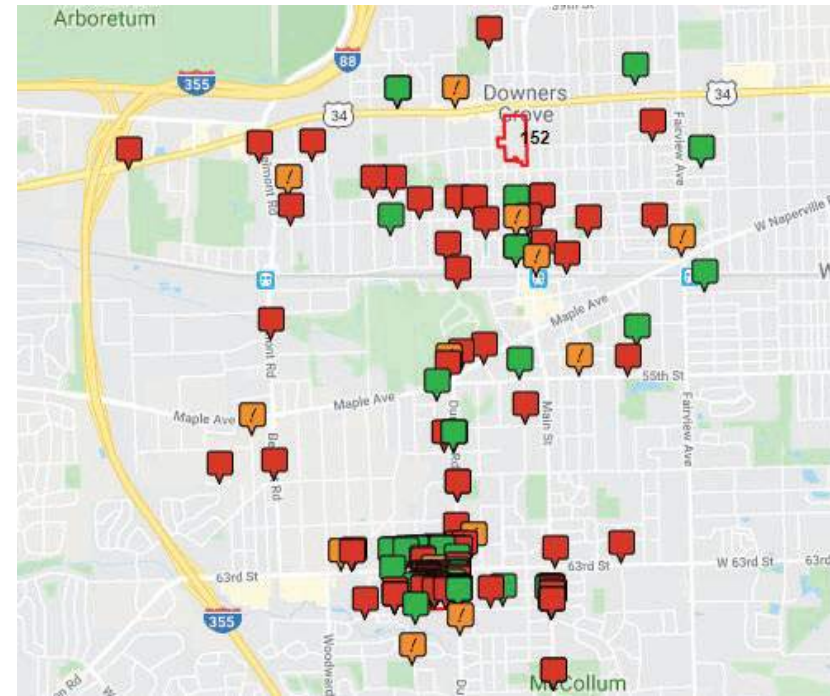
Interactive Map



COMMUNITY FEEDBACK

- 1 Main and Grant
- 2 North High Parking Lot (East of Main)
- 3 South High Parking Lot
- 4 Main and Norfolk
- 5 63rd & Springside

Total # of Comments: 463



NORTH HIGH

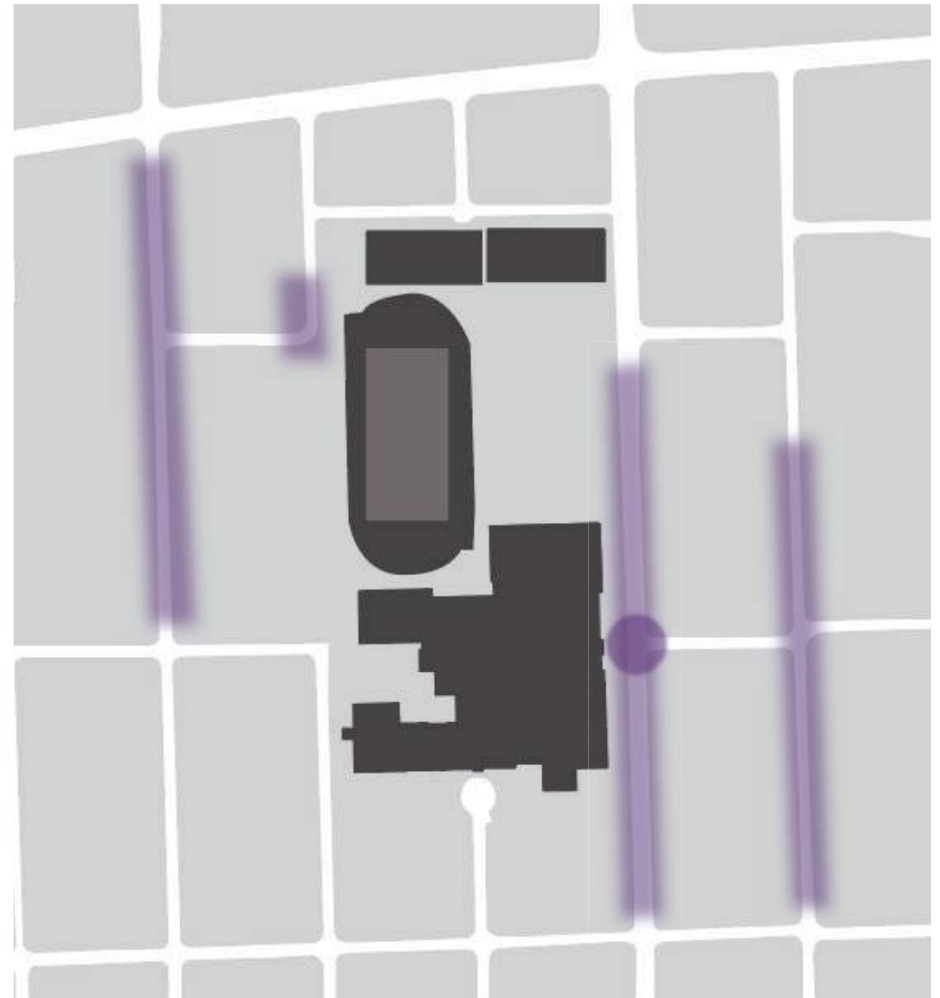
COMMENTS & RECOMMENDATIONS

North High

COMMENT SUMMARY

TOP COMMENT LOCATIONS

Total # of Comments: 295



North High

MAIN STREET CORRIDOR

TOP COMMENTS

- 1 Dangerous pedestrian crossings
- 2 Turning at Main/Sherman
- 3 Speeding along Main



MOST LIKED COMMENT

"This intersection [Main and Lincoln] is also heavily used by pedestrians and traffic to/from DGN. Cars need to slow down here. Needs to be a safer crosswalk for drivers and pedestrians in all directions."

TAKEAWAY:

Calm traffic and emphasize pedestrian crossing locations



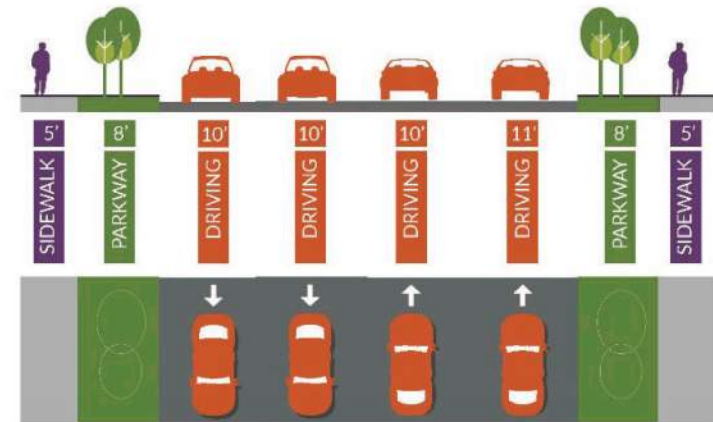
North High

MAIN STREET CORRIDOR

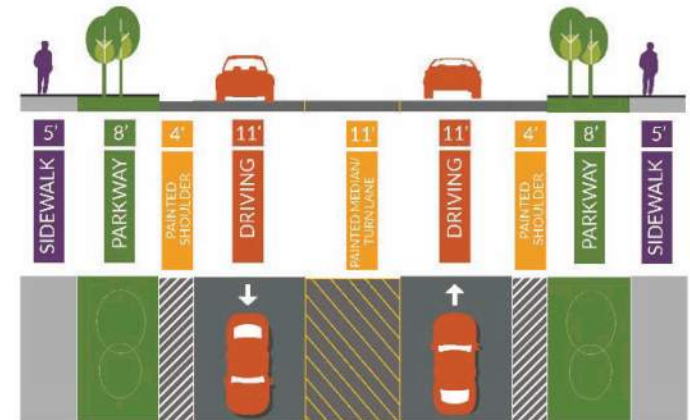
STUDY RECOMMENDATIONS

- 4 to 3-lane conversion on Main (Sherman - Prairie)
- Ped refuge islands at Sherman, Grant & Lincoln
- Pedestrian-scale lighting (Sherman - Lincoln)
- Decreased posted speed limit & install speed feedback signs
- Installed school zone speed limit

MAIN ST - EXISTING



MAIN ST - OPPORTUNITY



North High

MAIN STREET CORRIDOR

PEDESTRIAN REFUGE ISLANDS

@ Sherman, Grant & Lincoln

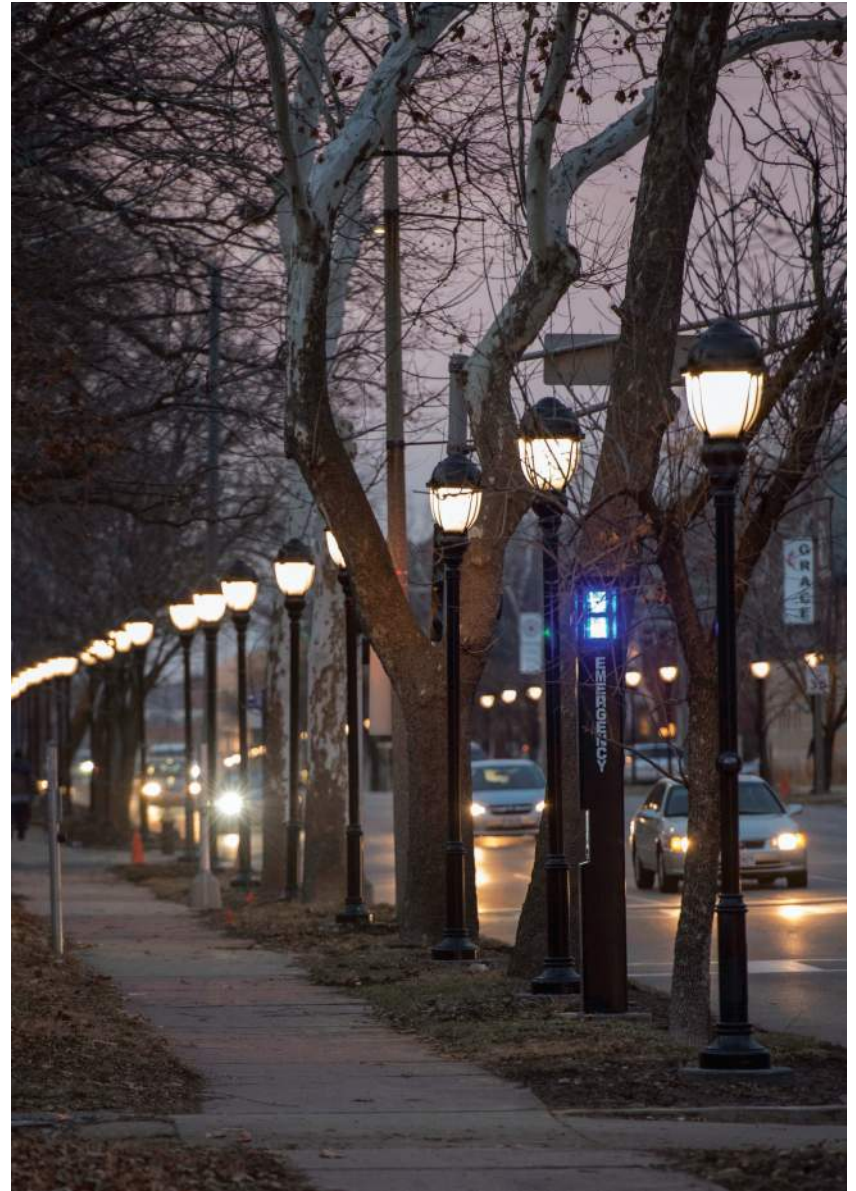


North High

MAIN STREET CORRIDOR

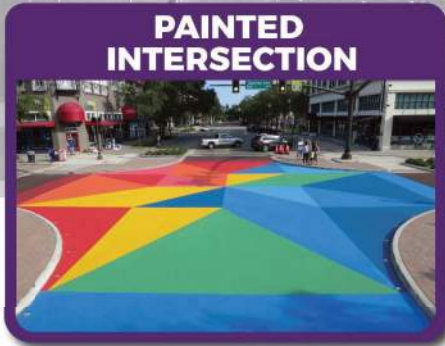
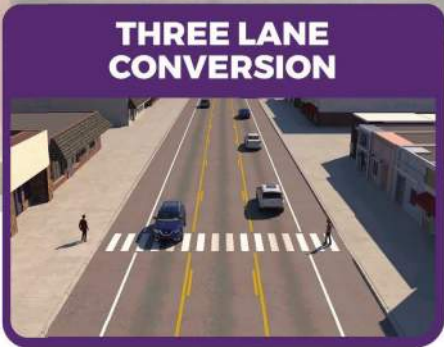
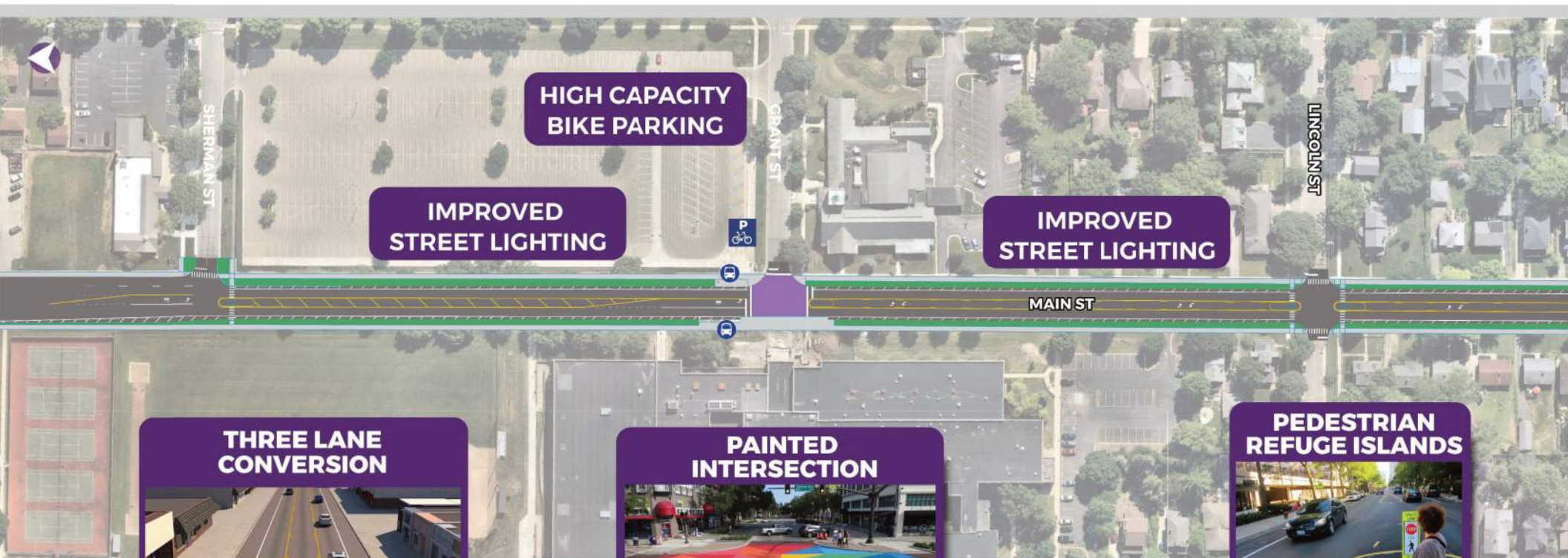
PEDESTRIAN SCALE LIGHTING

Sherman to Lincoln



North High

MAIN STREET CORRIDOR



North High

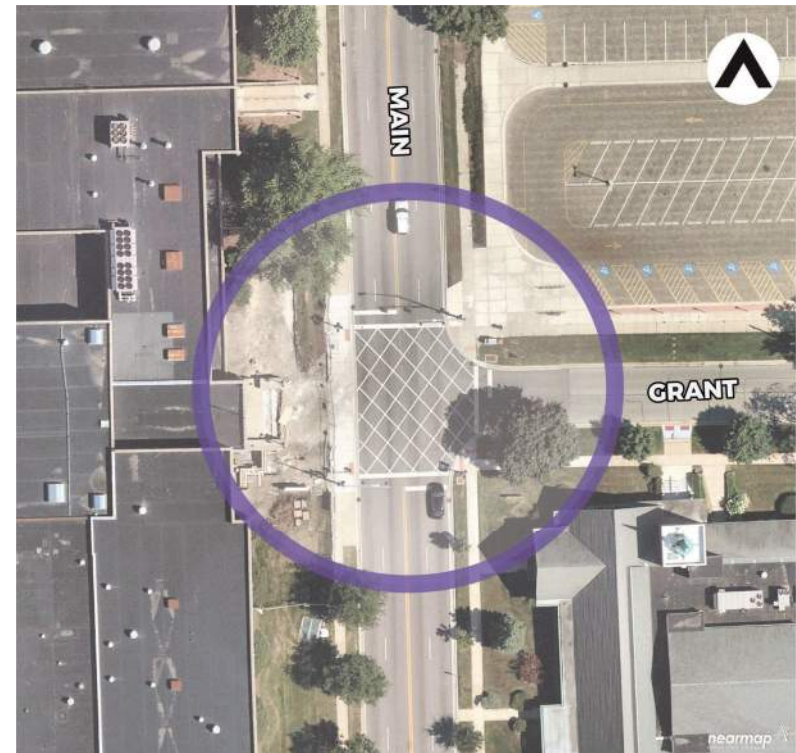
MAIN / GRANT INTERSECTION

TOP COMMENTS

- 1 Grade separated crossing
- 2 Crosswalk visibility
- 3 Suggested enforcement

TAKEAWAY:

Calm traffic and prioritize pedestrian movements



North High

MAIN / GRANT INTERSECTION

CURB EXTENSIONS



North High

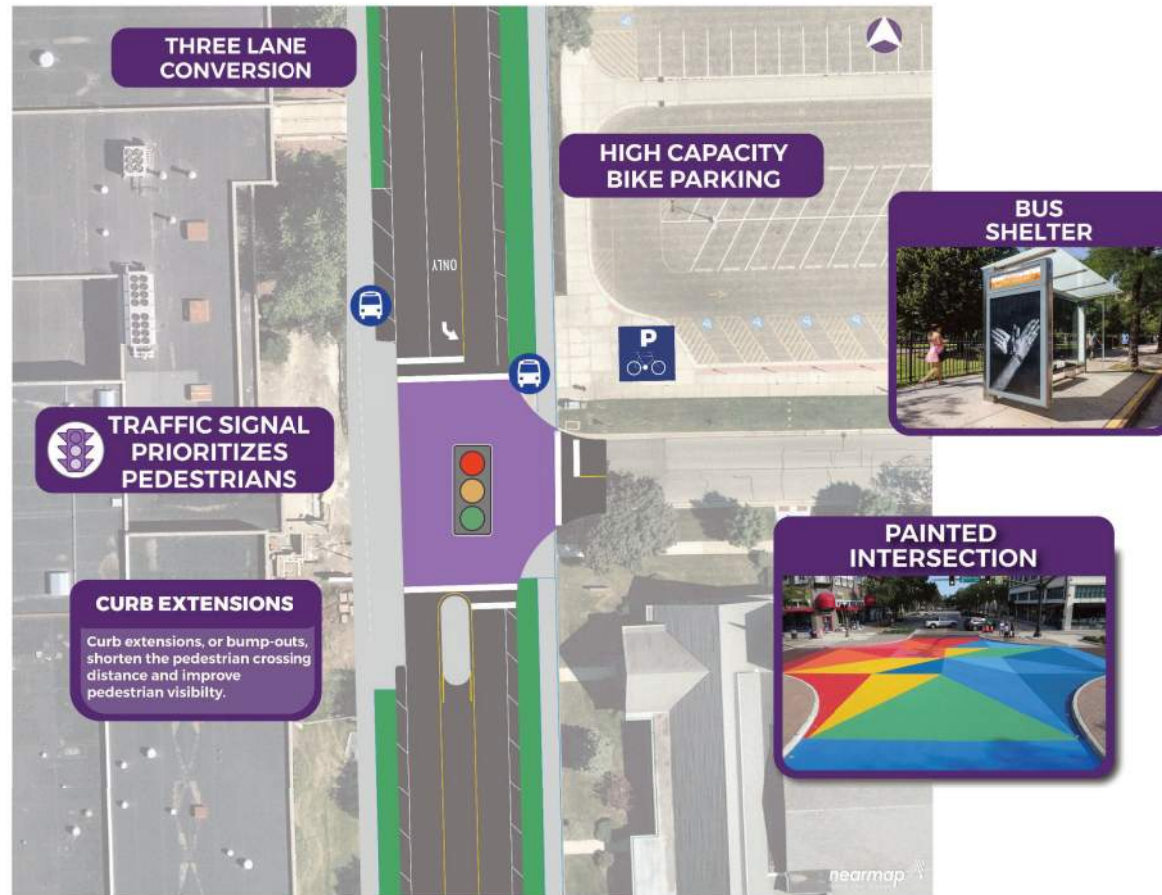
MAIN / GRANT INTERSECTION

PAINTED INTERSECTION



North High

MAIN / GRANT INTERSECTION



**PUBLIC INFORMATION MEETING
MAY 23, 2022**

SHAW MEDIA
 EST. 1851
 PO BOX 250
 CRYSTAL LAKE IL 60039-0250
 (815)459-4040

ORDER CONFIRMATION (CONTINUED)

Salesperson: BARBARA BEHRENS

Printed at 05/03/22 11:36 by bbehr-sm

Acct #: 10077451

Ad #: 1981522

Status: New

PUBLIC NOTICE

The Village of
 Downers Grove
 has scheduled a
PUBLIC INFORMATION

MEETING
 for the

**Main Street Improvements
 Project Preliminary
 Engineering Study**

Notice is hereby given that the Village of Downers Grove (Village) will hold a Public Information Meeting to discuss the Phase I Engineering Study and preferred alternatives for the Main Street Improvements from Franklin Street to Sherman Road, south of Ogden Avenue.

The Village initiated the Phase I Engineering Study to assess safety and operational improvements within the Main Street corridor. The purpose of the Public Information Meeting is to present a public update of the Engineering Study and solicit comments. The details of the meeting are as follows:

Date: May 23, 2022

Time: 6:00 p.m. to
8:00 p.m.

Location:

Downers Grove Village Hall
 Council Chambers
 801 Burlington Avenue
 Downers Grove, Illinois
 60133

The Public Information Meeting will be conducted in an informal, Open House format. Maps and exhibits will be available for public viewing. Representatives from the Village of Downers Grove and the project consultant team (HR Green, Inc.) will be present to discuss the project and answer any questions on an individual basis. Feel free to attend the Public Information Meeting at any time between 6:00 p.m. and 8:00 p.m.

The meeting will be accessible to persons with a disability. If you require special assistance and plan to attend, please contact Mr. Michael Tuman, Village of Downers Grove at (630) 434-6863 or mtuman@downers.us.

(Published in the Downers Grove Suburban Life May 5, 19, 2022) 1981522



www.downers.us

May 9, 2022

**COMMUNITY RESPONSE
CENTER**

630.434.CALL (2255)

CIVIC CENTER

801 Burlington Avenue

Downers Grove

Illinois 60515-4782

630.434.5500

TDD 630.434.5511

FAX 630.434.5571

FIRE DEPARTMENT

ADMINISTRATION

5420 Main Street

Downers Grove

Illinois 60515-4834

630.434.5980

FAX 630.434.5998

POLICE DEPARTMENT

825 Burlington Avenue

Downers Grove

Illinois 60515-4783

630.434.5600

FAX 630.434.5690

PUBLIC WORKS

DEPARTMENT

5101 Walnut Avenue

Downers Grove

Illinois 60515-4046

630.434.5460

FAX 630.434.5495

Project Name: **Main Street and Highland Avenue Improvements**

Dear Resident/Business Owner:

A Public Information Meeting regarding proposed improvements to Main Street and Highland Avenue is scheduled for **Monday, May 23, 2022 at the Downers Grove Village Hall, 801 Burlington Avenue from 6:00 to 8:00 PM.**

The proposed improvements are in accordance with the Downers Grove High School Safety Study which provided specific recommendations for Main Street and Highland Avenue.

The limits for the proposed work on Main Street are from Franklin Street to Sherman Road, south of Ogden Avenue. The limits for the proposed work on Highland Avenue are from Lincoln Street to Grant Street.

The purpose of this Public Information Meeting is to provide an opportunity to view project exhibits, discuss preferred alternatives, and provide your comments and input to the project team. Your input will be greatly appreciated.

If you are unable to attend and have questions about the project, please contact me at (630) 434-6863 or by e-mail at mtuman@downers.us.

Sincerely,

Michael Tuman, P.E., PTOE
Transportation Manager



SIGN-IN SHEET

Subject:	Public Information Meeting		
Project:	Main Street Improvements		
Project Number:	210553		
Meeting Date:	May 23, 2022, 6:00 pm – 8:00 pm		
Meeting Location:	Downers Grove Village Hall		
Name (printed)	Phone	Email	Address
Leroy K. Pickett	630-769-6419	leroykpickett@sbcglobal.net	200 Village Drive ^{Apt 1217} Downers Grove, IL 60516
Mark Lockett	630-632-2800	Mlockett086@gmail.com	716 Lincoln Downers Grove IL 60515
Maureen Benjamins	630-915-7920	mabenjamins13@gmail.com	4636 Washington St, DG
Angela Hassan	630-388-9088	amulrey@hotmail.com	4840 Washington St, DG 60515



SIGN-IN SHEET

Subject:	Public Information Meeting		
Project:	Main Street Improvements		
Project Number:	210553		
Meeting Date:	May 23, 2022, 6:00 pm – 8:00 pm		
Meeting Location:	Downers Grove Village Hall		
Name (printed)	Phone	Email	Address
Carol Reiter	630-971-3757	carol.reiter@att.net	4707 Main St.
Rich Arshant	630-377-0296	RMARSHANT@SIXGLOBE.NET	4906 Reshig.
ROSEMARY REATECCI	630 515-8174	REATECCI@HOTMAIL.COM	4440 Washington St.
Bill & Diane Prescht	630-852-5623		1500 Lexington LN DOWNERS GROVE



SIGN-IN SHEET

Subject:	Public Information Meeting		
Project:	Main Street Improvements		
Project Number:	210553		
Meeting Date:	May 23, 2022, 6:00 pm – 8:00 pm		
Meeting Location:	Downers Grove Village Hall		
Name (printed)	Phone	Email	Address
George Pike	412-953-4697	gkp3@comcast.net	4636 Linscott Ave, DG
Michelle DeBruler	630 738-0493	mdebruler@comcast.net	4720 Main St. DG
Dennis "	630 947 4378	bruler@xnet.com	"
DAVID FRANKMATER	630-991-7558	david@columatech.com	4440 WASHINGTON ST DG
Hank Thiele		hthiele@cdpp.org	



Building Communities.
Improving Lives.



Village of Downers Grove

Main Street Improvements –
Franklin Street to Sherman Street

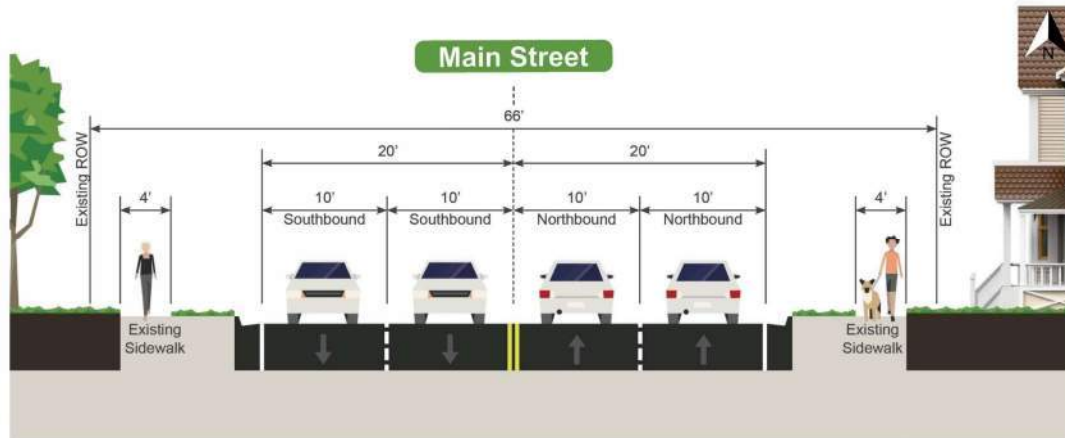
May 23, 2022



Downers Grove – Main Street
May 23, 2022

Main Street Corridor

Existing Conditions



Safety Need

▶ Documented Accident History

- ▶ 99 crashes
- ▶ Rear end crashes 24%
- ▶ Sideswipe crashes 22%
- ▶ 8 pedestrian / bicyclist crashes
- ▶ 1 fatal crash
- ▶ 7 crashes resulting in injury

▶ Contributing Factors

- ▶ Failure to reduce speed
(27% of crashes)
- ▶ Failure to yield right-of-way
(27% of crashes)

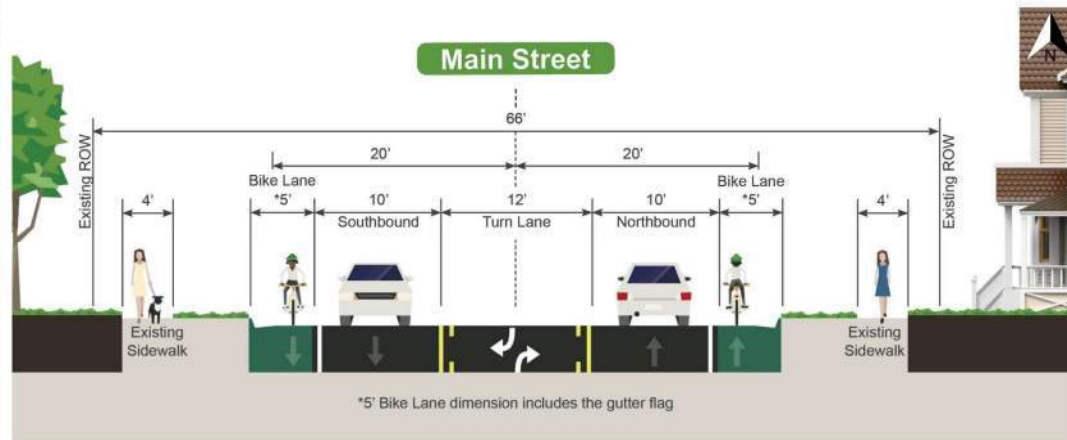
Objectives

- ▶ Reduce death and severe injury related crashes
- ▶ Provide a safe corridor for pedestrians and cyclists
- ▶ Improve pedestrian street crossings
- ▶ Safer vehicle turning conditions at intersections and driveways
- ▶ Select improvement with consideration of the following factors
 - ▶ Safety first and foremost
 - ▶ Avoid right-of-way acquisition
 - ▶ Avoid tree removal
 - ▶ Meet traffic demands
 - ▶ Cost effective

Alternatives Considered

- ▶ Road Diet with separated off-street bike path
- ▶ Road Diet with outside sharrow lanes (shared lane between bicyclists and vehicles)
- ▶ Road Diet with dedicated on-street bicycle lanes
- ▶ What is a Road Diet?
 - ▶ Develops protected left turn lanes
 - ▶ Provides a safety improvement
 - ▶ FHWA crash reduction factor of up to 47%!
 - ▶ Pedestrian & bicycle friendly
 - ▶ Typically avoids right-of-way acquisition
 - ▶ Reduces vehicle speeds and passing maneuvers

Main Street – Dedicated Bicycle Lanes



Features

- ▶ Green colored dedicated bicycle lanes
- ▶ Left turn lanes
 - ▶ Sherman Street
 - ▶ Grant Street
 - ▶ Lincoln Street
 - ▶ Chicago Avenue
 - ▶ Prairie Avenue
- ▶ Center 2-way left turn lane for better access to driveways
- ▶ Shorter crosswalk distances
- ▶ Modernized traffic signals
- ▶ Pavement resurfacing



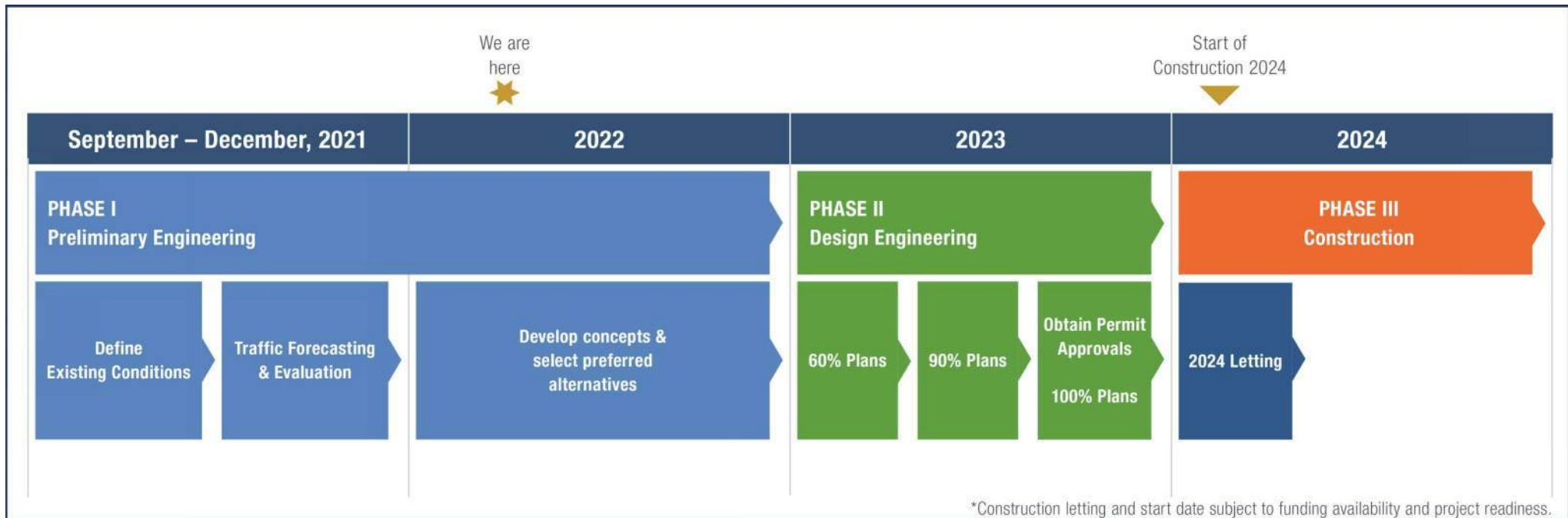
Downers Grove – Main Street
May 23, 2022

Main Street & Grant Street Intersection

Preferred Alternative



Project Timeline



*Construction letting and start date subject to funding availability and project readiness.



Downers Grove – Main Street
 May 23, 2022

Look Ahead for 2022-2024

2022

- Pursue outside funding participation
- Complete Phase I engineering studies
- Begin Phase II engineering design

2023-2024

- Complete Phase II engineering design
- Construction
 - Dependent upon project readiness and funding availability



Downers Grove – Main Street
May 23, 2022

Questions



Downers Grove – Main Street
May 23, 2022

Contact Us



Jeff Strzalka
Senior Project Manager
jstrzalka@hrgreen.com
815-759-8359

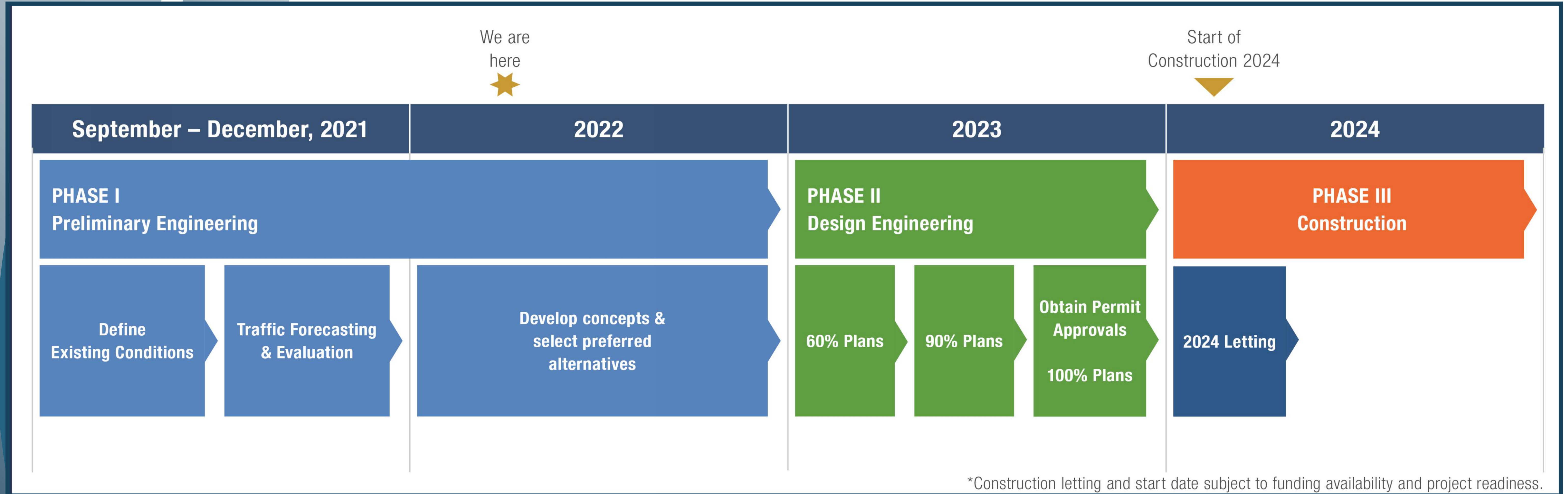
Welcome!

Village of Downers Grove Public Information Meeting
May 23, 2022 – 6-8 PM

Main Street Improvements Franklin Street to Sherman Street



Main Street Project Timeline

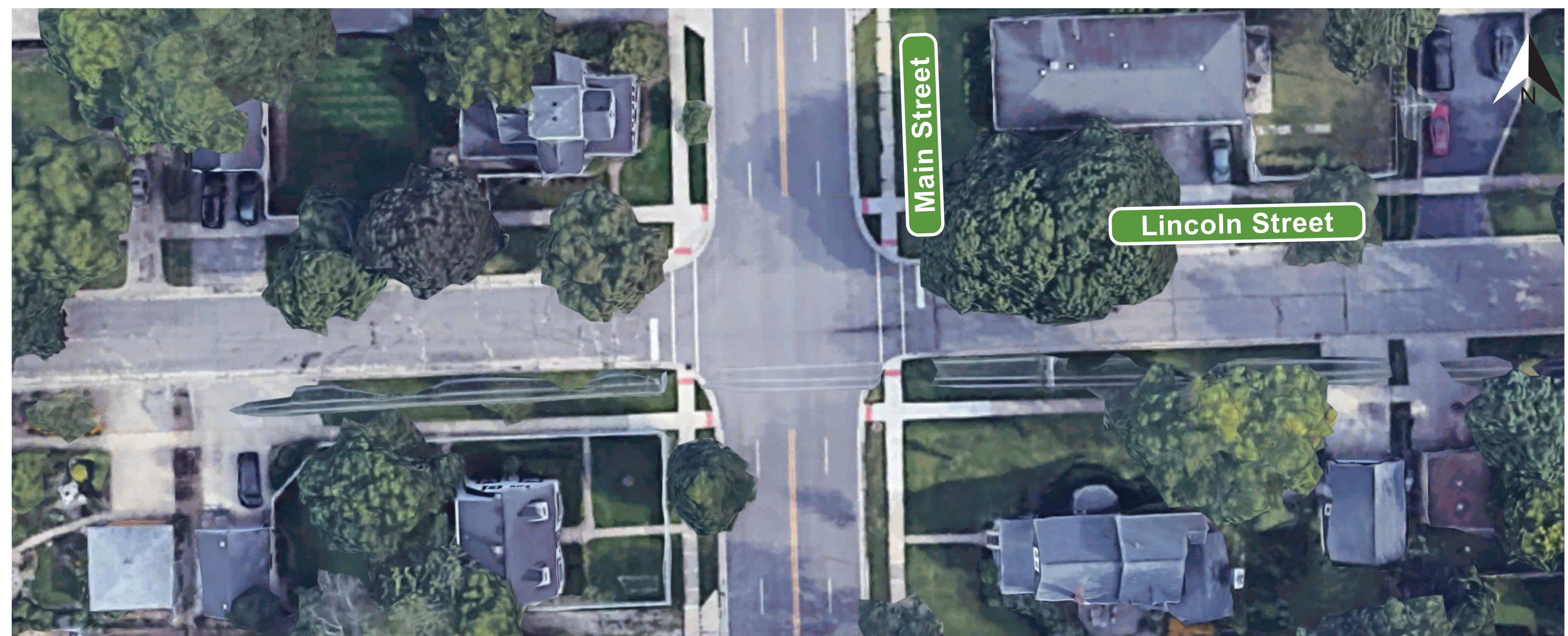
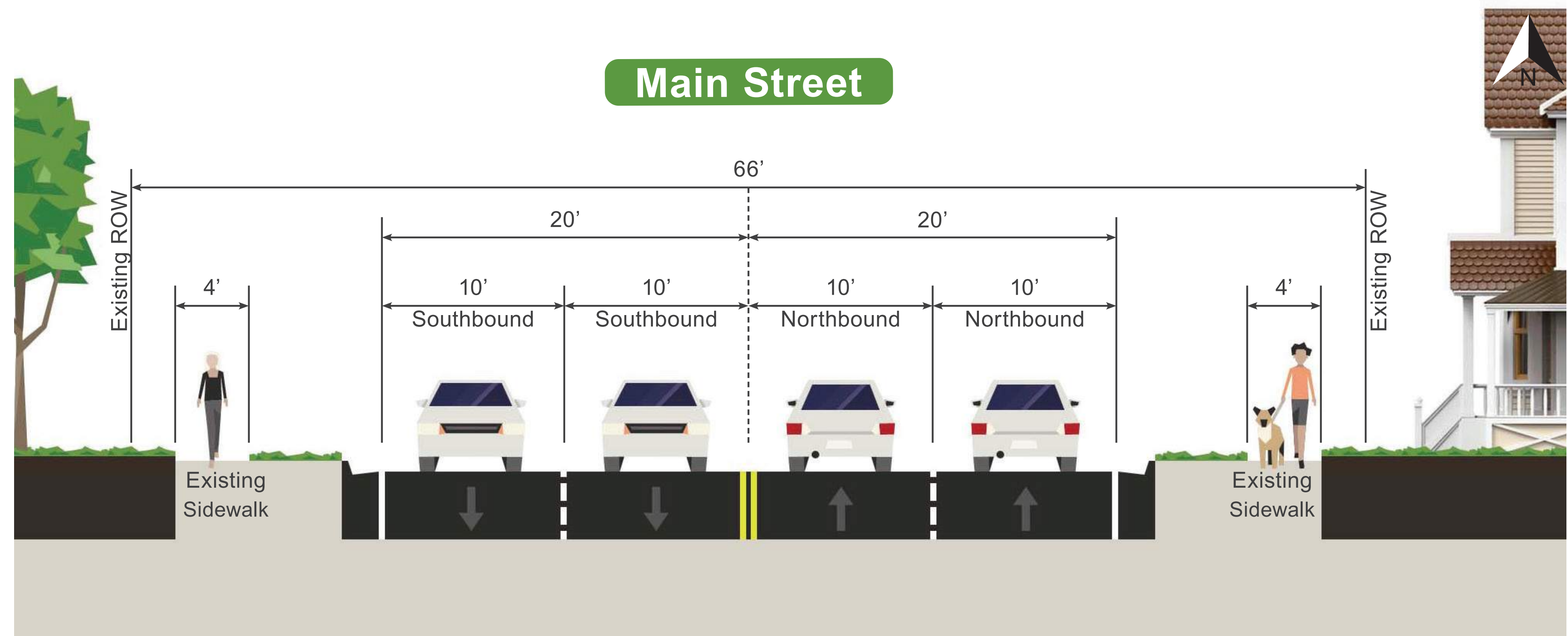
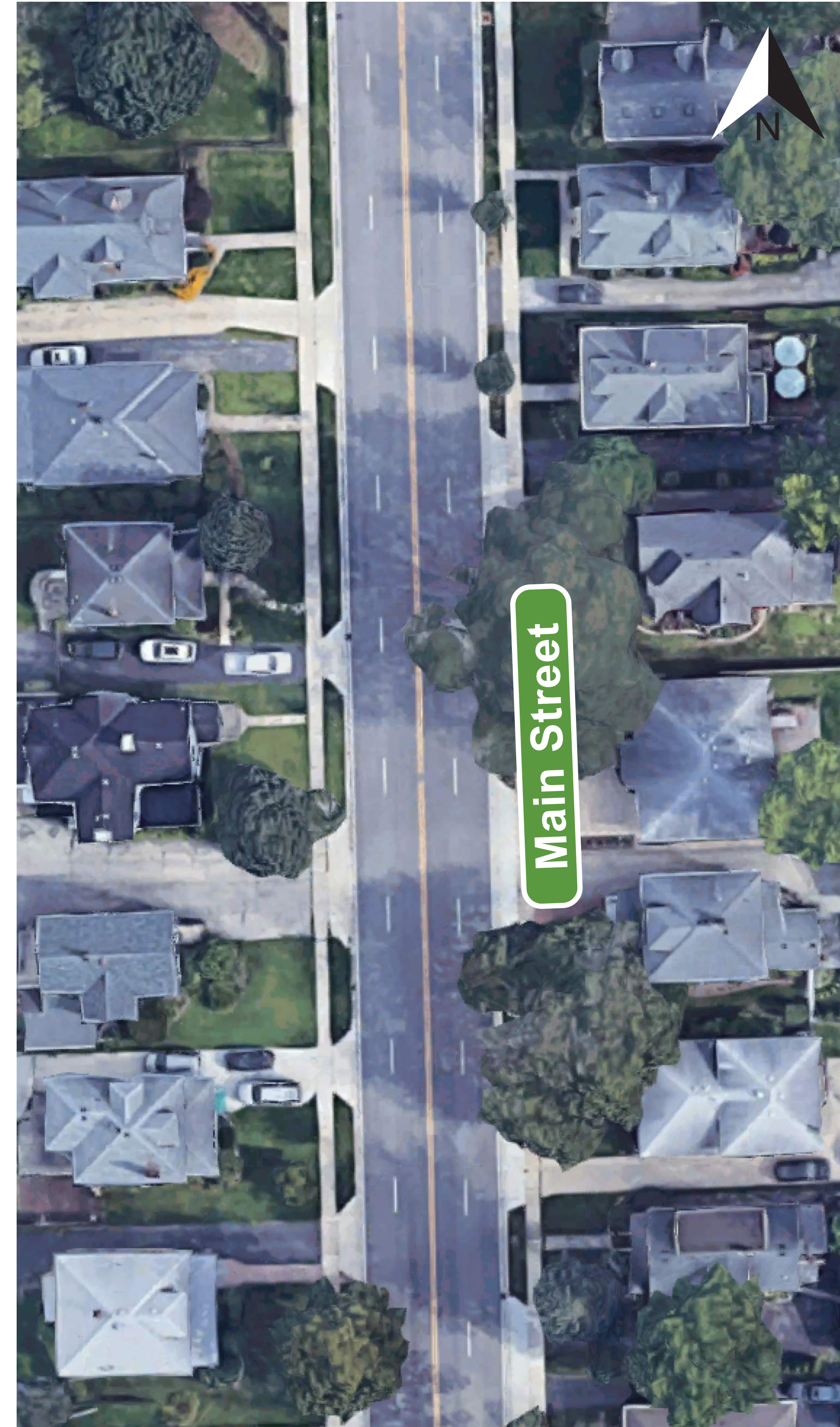


*Construction letting and start date subject to funding availability and project readiness.



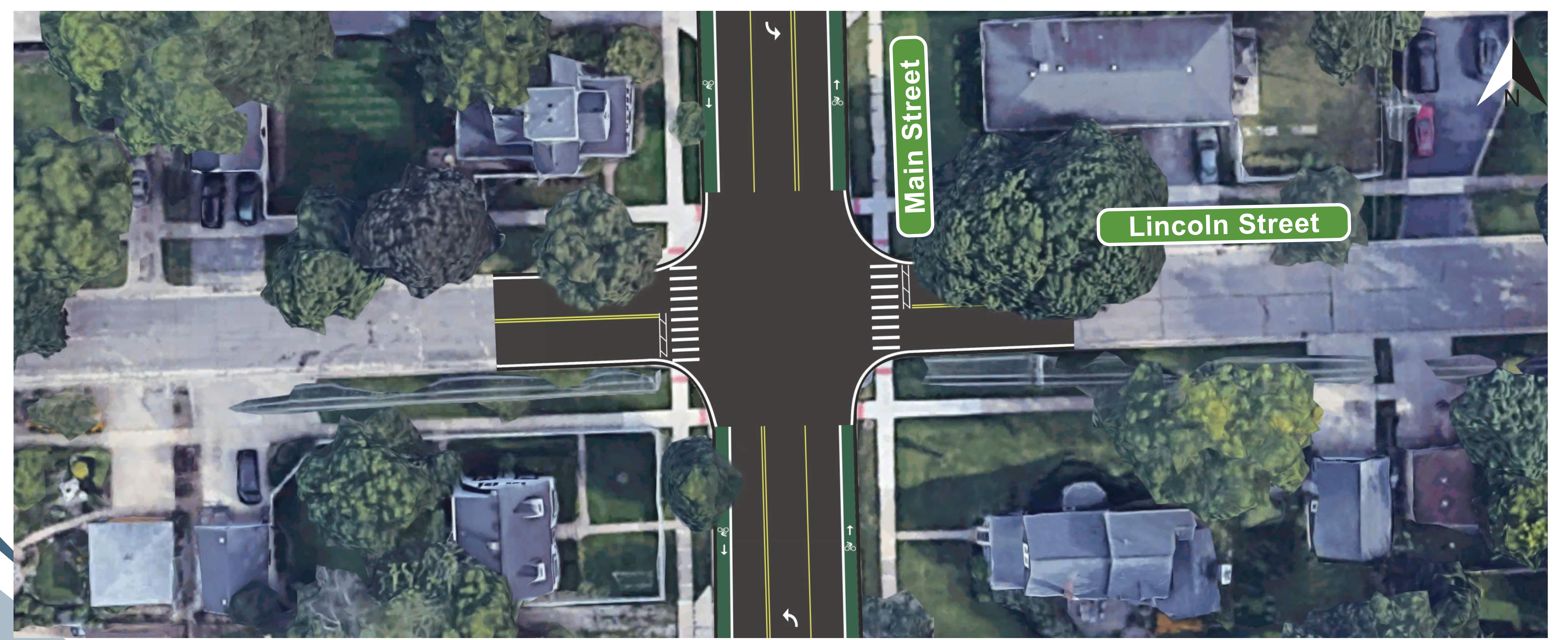
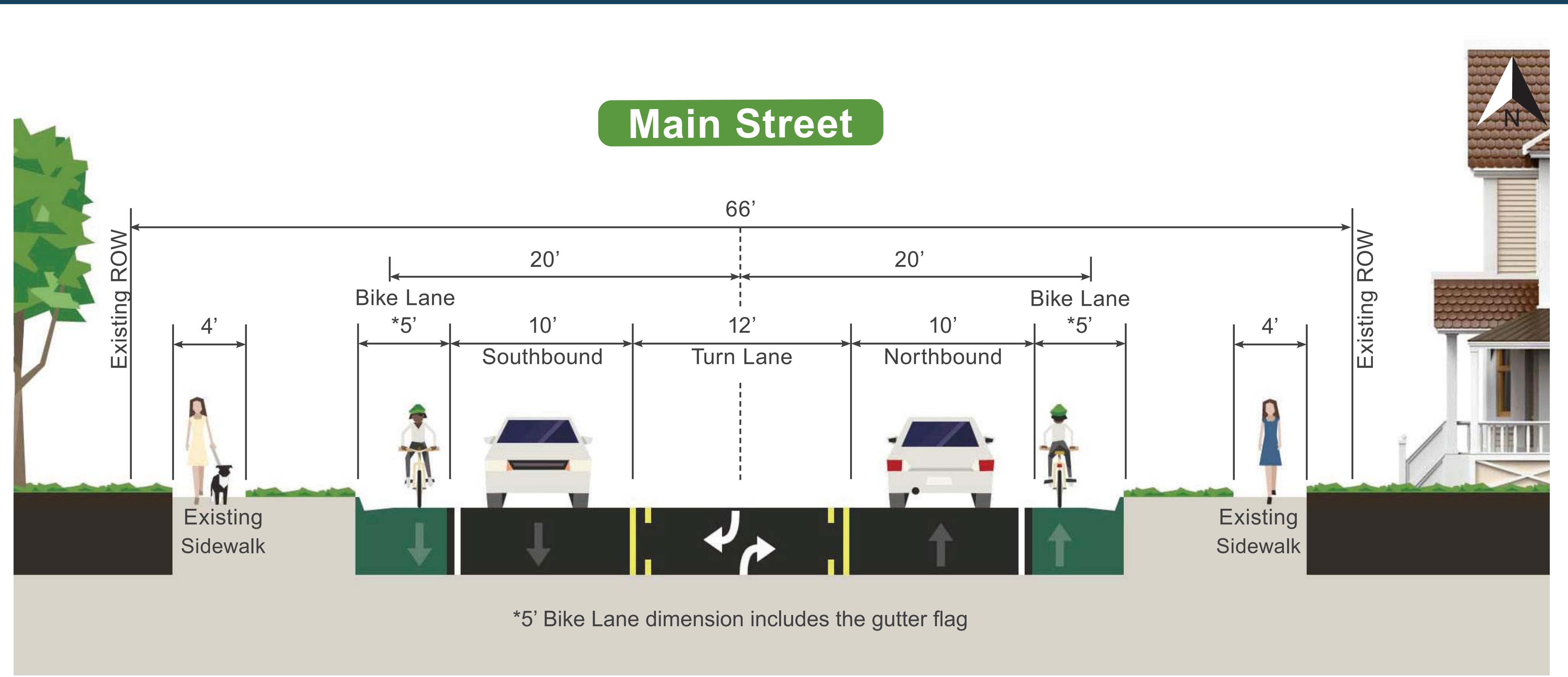
Main Street

Existing Conditions



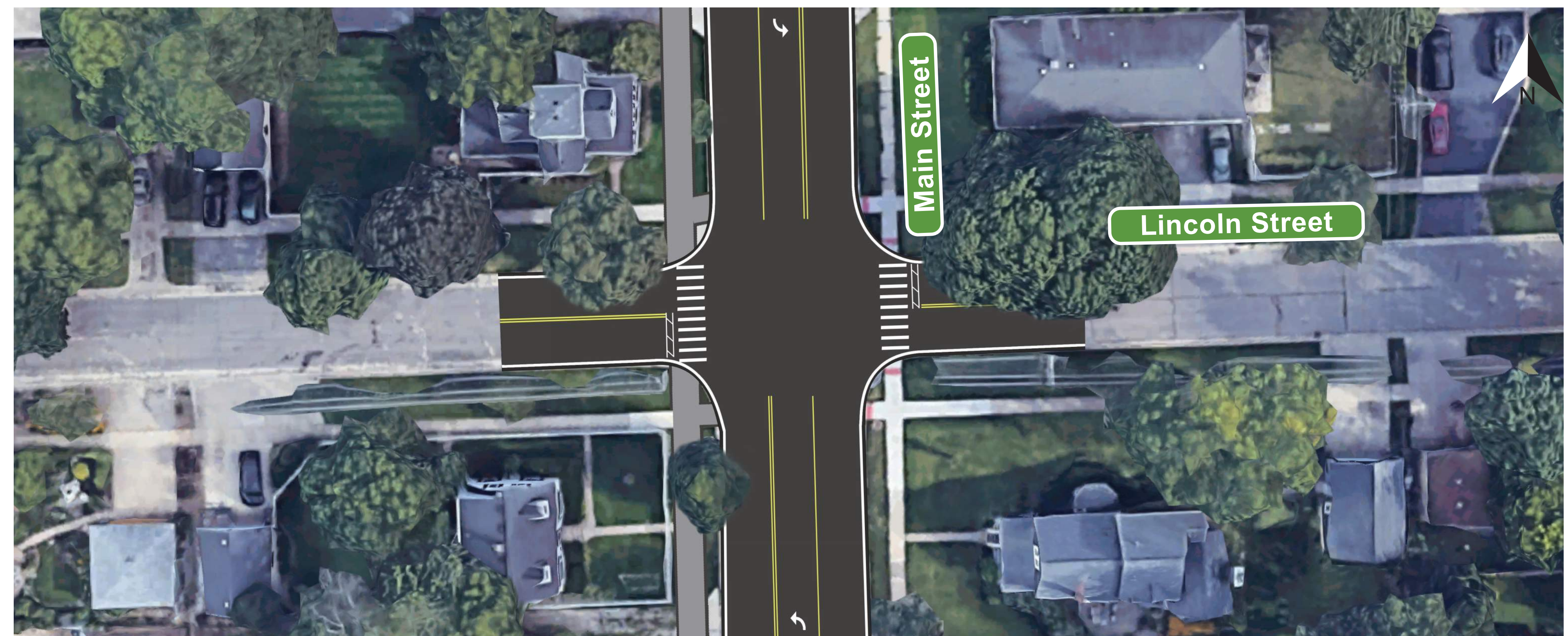
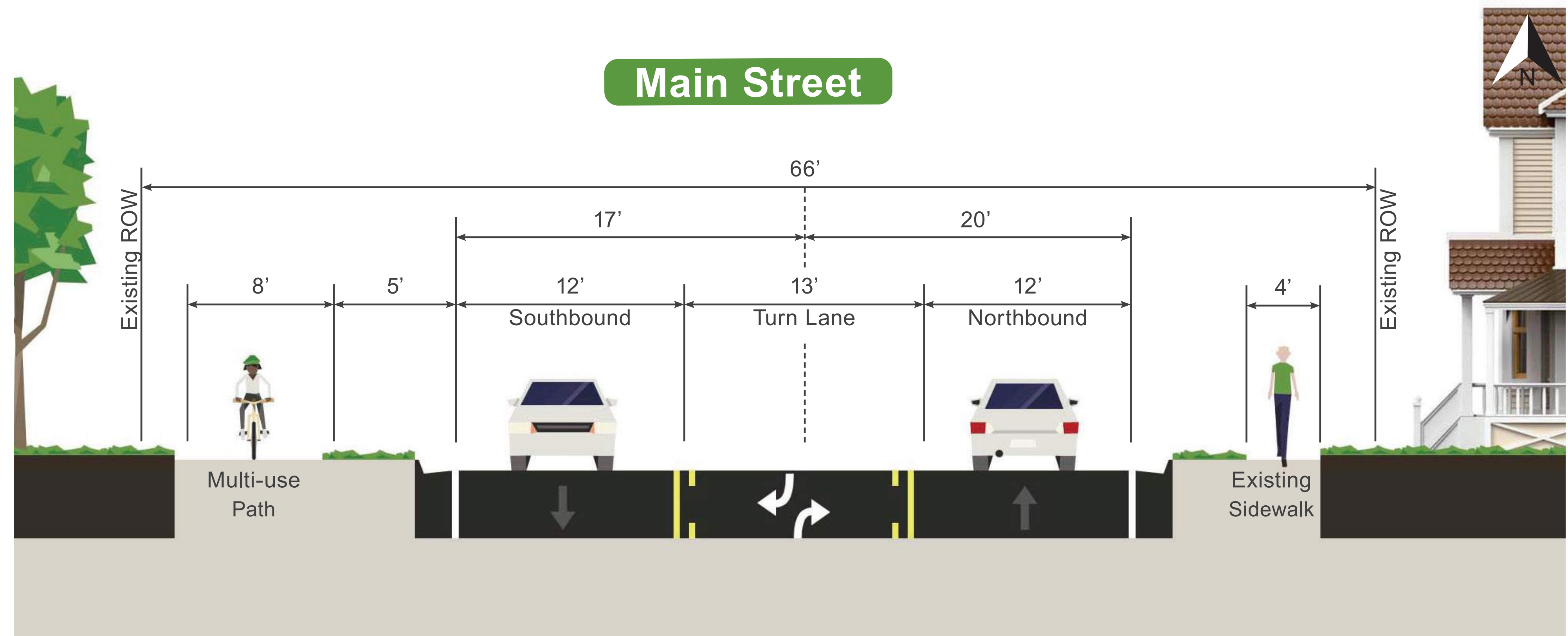
Main Street – Dedicated Bicycle Lanes

Preferred Alternative



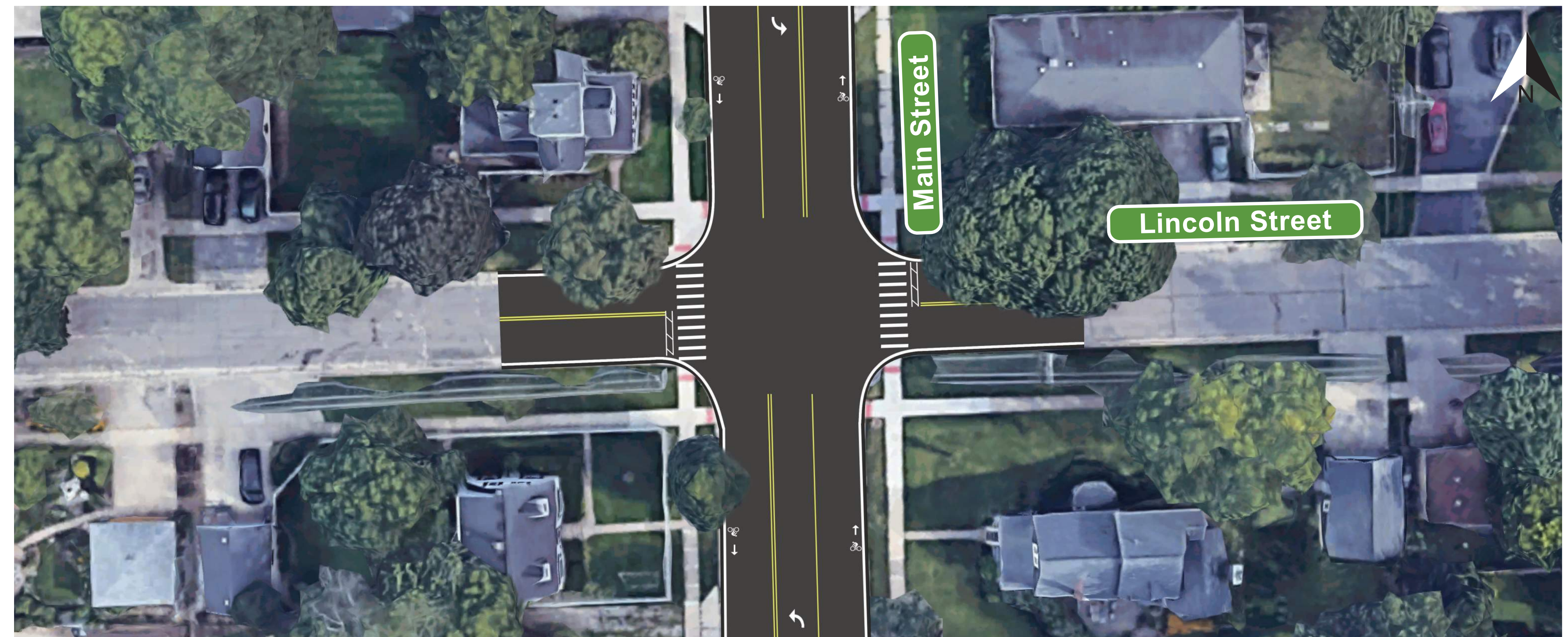
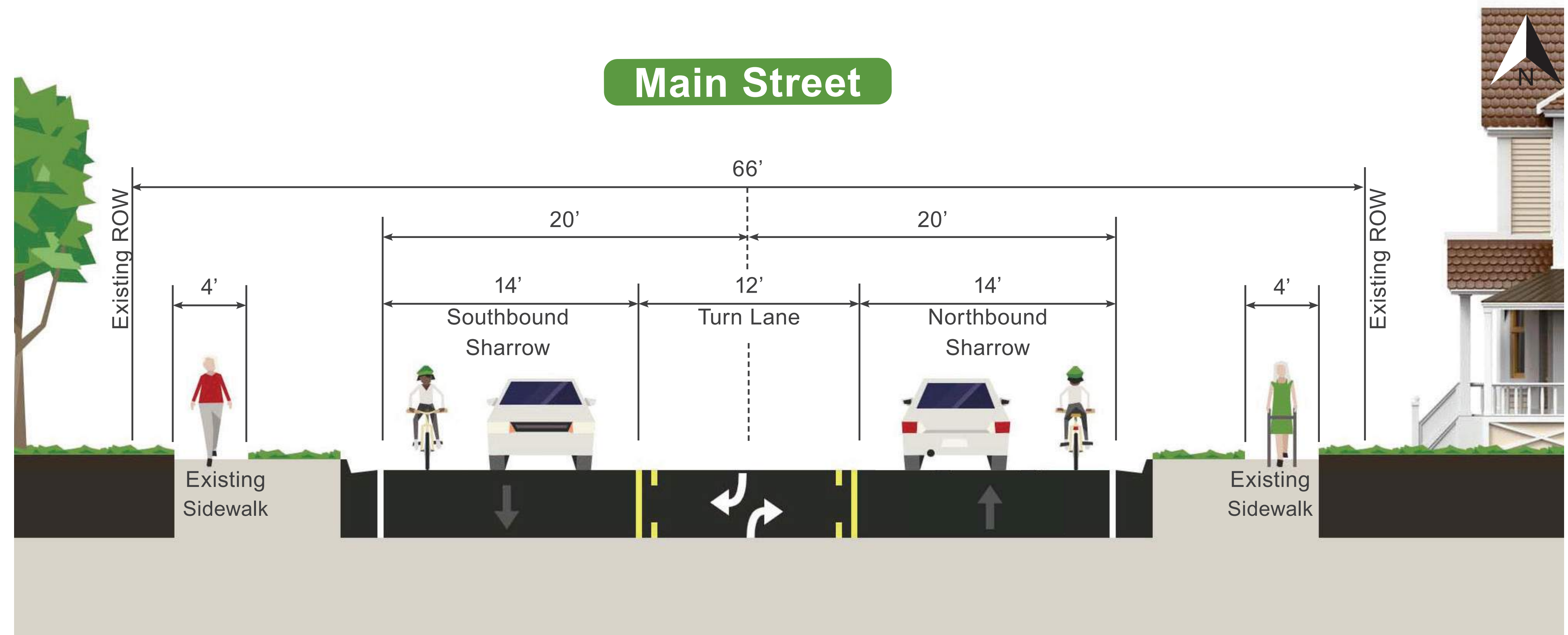
Main Street – Separated Multi-use Path

Other Alternatives Considered



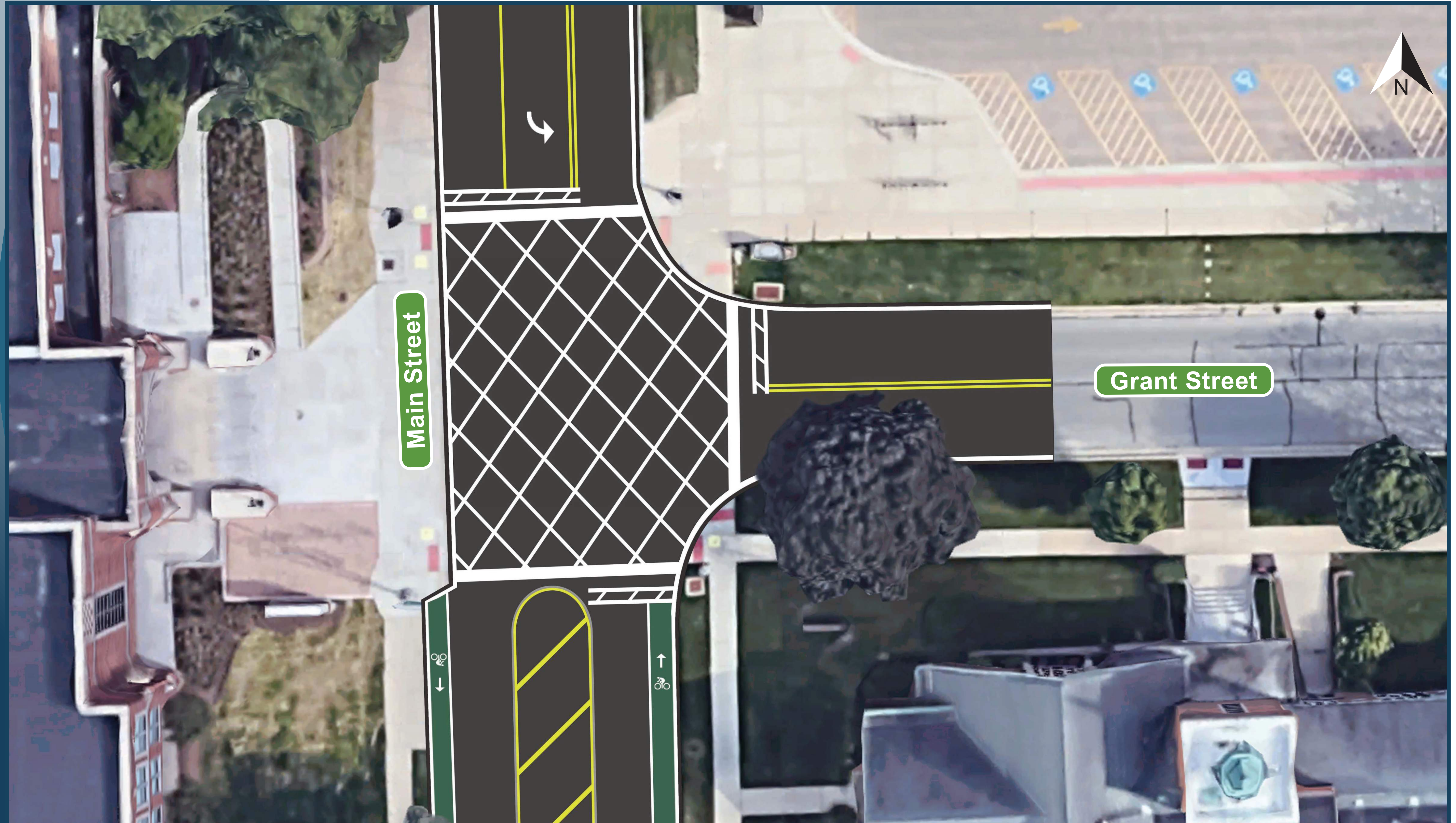
Main Street – “Sharrows” Lanes

Other Alternatives Considered



Main Street & Grant Street

Preferred Alternative



COMMENT SHEET

Please provide your comments relating to the proposed improvements. A receptacle marked "COMMENTS" is available for you to place this sheet.

PLEASE PRINT:

Name

Address

City/State/Zip

Phone No.

George Pike

4636 Linscott Avenue

Downers Grove, IL 60515

412-953-4697

Comments

My concern is about the consequences of this proposal. The recent traffic calming efforts on Main and Prairie have resulted in increased traffic and higher speeds on the neighborhood streets, particularly Chicago Ave (E-W), Forest Ave (N-S) and Saratoga (N-S), and to a lesser degree on Linscott. Further traffic calming on Main needs to be evaluated for its impact on the neighborhood streets east and west of Main Street.

THANK YOU for your comments!

COMMENT SHEET

Please provide your comments relating to the proposed improvements. A receptacle marked "COMMENTS" is available for you to place this sheet.

PLEASE PRINT:

May 23, 2022

Name

Leroy K. Pickett

Address

206 Village Drive Apt. 127

City/State/Zip

Downers Grove, IL 60516

Phone No.

630-769-6419

Comments

I was at the discussion of 55th Street particularly regarding the Fairview cross street. I am pleased with the result of that improved. (at the time I lived on 8th Street.)

I generally agree with the main street proposal but wonder if it would be better to have one wide bike lane rather than 2 narrow lanes. Narrowing from 4 lanes should be done at the Ogden stop. This avoids the forced narrowing farther south. The narrowing of lanes ~~is~~ on Fairview north of maple and especially at 2nd Street. The last 2 times I was driving south toward 2nd Street, a vehicle behind me speed up excessively and passed me on the right. I moved to the center lane each time to prevent an accident.

THANK YOU for your comments!

COMMENT SHEET

Please provide your comments relating to the proposed improvements. A receptacle marked "COMMENTS" is available for you to place this sheet.

PLEASE PRINT:

Name

Carol Reiter

Address

4707 Main

City/State/Zip

IG

Phone No.

630-977-3757

Comments

Bike lanes useless in this short space

^{Sidewalk} Street lighting is needed from Prairie to Highschool

THANK YOU for your comments!

COMMENT SHEET

Please provide your comments relating to the proposed improvements. A receptacle marked "COMMENTS" is available for you to place this sheet.

PLEASE PRINT:

Name

Maureen Benjamins

Address

4636 Washington St

City/State/Zip

DC 62515

Phone No.

630-915-7920

Comments

I'm very concerned about the impact of the Main St changes on other neighborhood roads like Highland + Washington. Tons of kids live on those streets, play at Washington Park, ~~at the~~ and/or go to St. Joe's. Thanks for doing comprehensive studies before making any changes.

THANK YOU for your comments!

COMMENT SHEET

Please provide your comments relating to the proposed improvements. A receptacle marked "COMMENTS" is available for you to place this sheet.

PLEASE PRINT:

Name

Angela Hassan

Address

4840 Washington St.

City/State/Zip

Downers Grove, IL 60515

Phone No.

630-388-9088

Comments

Can a test run /study be done similar to what was done at Prairie & Forest to see how traffic will be impacted by changes? For a time, orange barricades were placed at Prairie & Forest to prevent people from turning south onto Forest and a traffic study was done.

I would like to see a temporary lane setup with the proposed center turn on Main so we could see some data on what drivers will do and how it will impact their routes.

THANK YOU for your comments!

Thanks!



VILLAGE OF
DOWNERS GROVE

Mike Tuman <mtuman@downers.us>

Main St and Traffic Study

juliet beriou <jberiou@gmail.com>

Fri, May 20, 2022 at 8:46 AM

To: mtuman@downers.us

Cc: rtbarnett@downers.us, Greg Hose <ghose@downers.us>, nwalus@downers.us, Isfugitt@downers.us, rkulovany@downers.us, cgilmartin@downers.us, dglover@downers.us, David Fieldman <dfieldman@downers.us>, asikich@downers.us, jtock@downers.us

Dear Michael,

I am writing regarding the proposed Main Street improvements cited in the 2020 report to the Village. If I understand the intent, the Village is considering reducing Main Street from 4 lanes of traffic to 2 lanes from Sherman Street to Franklin Street. In reviewing the study, it seems to be isolated to traffic behavior surrounding the high school only, and does not take into consideration the surrounding neighborhoods. A few concerns I'd like to raise:

- Forums were complete in 2019 and the study presented in 2020. Since that time, a new condo complex has opened on Maple Street and another one is under construction. These have both increased traffic counts on Main Street.
- Traffic on Main Street is already back up 1/2-1 mile during rush hours, reducing the lanes of traffic would make this situation worse.
- If we further bottle neck traffic on Main Street, traffic will abandon Main and utilize neighboring streets. In 2021, the Village undertook traffic modifications to reduce this issue on Prairie and Forest due to the already existing problem.
- The study does not take into account the potential traffic flow for neighborhoods should Main Street be reduced - has a holistic study been done to gather traffic counts on neighboring streets?

My concern is that this is an isolated study that only takes into account the area directly adjacent to the high school. If implemented, we would be routing traffic elsewhere into areas that are not designed for rush hour traffic flow.

In summary, I do not support the reduction of lanes to Main Street. I believe we already have a traffic problem caused by increased housing counts in downtown and this would be furthering that problem. Housing has increased but our infrastructure (roads, parking) has not been adjusted. We need a holistic plan to address the overall increase of downtown traffic - not implement a change that would further strain the issue.

I will not be able to attend the meeting on May 23 and I would appreciate this being shared during public comment.

Thank you-



VILLAGE OF
DOWNERS GROVE

Mike Tuman <mtuman@downers.us>

Main St and Highland Ave Improvements

Lynse Briney <brineydds@gmail.com>
To: mtuman@downers.us

Sun, May 22, 2022 at 10:23 PM

Dear Michael,

I am writing to echo Sheryl Van Anne's concerns about the possibility of reducing Main Street from 4 lanes of traffic to 2 lanes from Sherman Street to Franklin Street.

The concerns summarized:

- Forums were complete in 2019 and the study presented in 2020. Since that time, a new condo complex has opened on Maple Street and another one is under construction. These have both increased traffic counts on Main Street.
- Traffic on Main Street is already back up 1/2-1 mile during rush hours, reducing the lanes of traffic would make this situation worse.
- If we further bottle neck traffic on Main Street, traffic will abandon Main and utilize neighboring streets. In 2021, the Village undertook traffic modifications to reduce this issue on Prairie and Forest due to the already existing problem.
- The study does not take into account the potential traffic flow for neighborhoods should Main Street be reduced - has a holistic study been done to gather traffic counts on neighboring streets?

The concern is that this is an isolated study that only takes into account the area directly adjacent to the high school. If implemented, we would be routing traffic elsewhere into areas that are not designed for rush hour traffic flow.

In summary, I do not support the reduction of lanes to Main Street. I believe we already have a traffic problem caused by increased housing counts in downtown and this would be furthering that problem. Housing has increased but our infrastructure (roads, parking) has not been adjusted. We need a holistic plan to address the overall increase of downtown traffic - not implement a change that would further strain the issue.

Thank you!

Lynse Briney
4827 Washington St.
773-503-0370

--

Lynse J Briney, DDS, MS
Diplomate, American Board of Pediatric Dentistry



630-743-6700 | shinekidsdg.com
950 Ogden Ave, Downers Grove, IL 60515



VILLAGE OF
DOWNERS GROVE

Mike Tuman <mtuman@downers.us>

Main Street Traffic

Dennis DeBruler <dennisdebruler2@gmail.com>

Tue, May 24, 2022 at 5:01 AM

To: traffic@downers.us

Cc: Michelle DeBruler <debruler@comcast.net>

(Please delete my previous email. This is an update)

Concerning the diagram showing the Grant Street intersection:

There should be significant bike traffic crossing Grant Street to get to the bike racks in the school parking lot. This will cause through traffic to be held up while right turners yield to the bike traffic. The middle lane was crossed hatched. If the middle lane is used for through traffic, then the right lane can be right-turn only and bike traffic won't interfere with through traffic.

I agree with others that traffic merging between Ogden and Grant would be chaos since the light creates two dense lanes of traffic that have to quickly merge. Someone suggested merging the southbound traffic north of Ogden. But that would reduce the through capacity of the intersection from two to one lanes. Which is probably half the capacity. Then it occurred to me that the unneeded through traffic lane could be used as a second left-turn lane. That would solve multiple problems. I've observed that sometimes more people want to turn left than would fit in the existing turn lane. A second turn lane would solve this capacity problem. Furthermore, two left-turn lanes would reduce the amount of time dedicated to left turning and thus allow more time for through traffic. That would help alleviate the reduced through capacity of only one lane.

A speed limit of 25mph is unrealistic for a major throughfare. Put it back up to 35mph and then enforce it. A realistic speed limit will help the southbound capacity if the merge is done north of Ogden.

The last time I used the intersection as a pedestrian, I noticed that there is still no Walk button for the southbound pedestrians on the west side of Main. Thus you have to step out in front of a long line of right-turners in their own lane without the authority of a Walk Sign. Having one of the most dangerous pedestrian scenarios in town right next to a high school is not a good situation.

Dennis DeBruler



VILLAGE OF
DOWNERS GROVE

Mike Tuman <mtuman@downers.us>

Traffic issues

Gina Graham <ginamichelleg@icloud.com>
To: mtuman@downers.us

Mon, May 23, 2022 at 9:39 AM

Hi Michael,

It has come to my attention that there is some consideration being made to decrease lanes of traffic on Main St. I live on Washington St. and have some concerns. I have lived in this neighborhood for 15 years, and my kids attended St. Joseph school as well as now attend Herrick (crossing Main on foot and on bikes) as well as North. Over the years I have seen several traffic issues, such as confusion around which stops are four way and which stops are two way, traffic that moves too fast going down Washington St. disregarding school crossing, traffic down Highland endangering school drop off at St. Joes, as well as traffic moving too quickly near Washington Park.

With Washington Park so close to Main, as well as several schools, I am concerned about traffic shunting throughout the neighborhood at high traffic times.

I understand there is a meeting tonight but I cannot be in attendance. Please know that I am voicing my concern over this issue.

Thanks,

Gina Graham

Gina D. Graham, LCSW, PLLC
Lifelensandlove photography
www.lifelensandlove.com

773-620-0820



VILLAGE OF
DOWNERS GROVE

Mike Tuman <mtuman@downers.us>

Main St and Traffic Study

Renee McGowan <renee.b.mcgowan@gmail.com>

Fri, May 20, 2022 at 4:59 PM

To: mtuman@downers.us

Cc: rtbarnett@downers.us, Greg Hose <ghose@downers.us>, nwalus@downers.us, Isfugitt@downers.us, rkulovany@downers.us, cgilmartin@downers.us, dglover@downers.us, David Fieldman <dfieldman@downers.us>, asikich@downers.us, jtock@downers.us

Dear Michael,

I am writing regarding the proposed Main Street improvements cited in the 2020 report to the Village. If I understand the intent, the Village is considering reducing Main Street from 4 lanes of traffic to 2 lanes from Sherman Street to Franklin Street. In reviewing the study, it seems to be isolated to traffic behavior surrounding the high school only, and does not take into consideration the surrounding neighborhoods.

Like others, here are a few concerns I'd like to raise:

- Forums were completed in 2019 and the study presented in 2020. Since that time, a new condo complex has opened on Maple Street and another one is under construction. These have both increased traffic counts on Main Street.
- Traffic on Main Street is already backed up 1/2-1 mile during rush hours, reducing the lanes of traffic would make this situation worse.
- If we further bottleneck traffic on Main Street, traffic will abandon Main and utilize neighboring streets. In 2021, the Village undertook traffic modifications to reduce this issue on Prairie and Forest due to the already existing problem.
- The study does not take into account the potential traffic flow for neighborhoods should Main Street be reduced - has a holistic study been done to gather traffic counts on neighboring streets?

My concern is that this is an isolated study that only takes into account the area directly adjacent to the high school. If implemented, we would be routing traffic elsewhere into areas that are not designed for rush hour traffic flow.

In summary, like many others, I do not support the reduction of lanes to Main Street. I believe we already have a traffic problem caused by increased housing counts in downtown and this would be furthering that problem. Housing has increased but our infrastructure (roads, parking) has not been adjusted. We need a holistic plan to address the overall increase of downtown traffic - not implement a change that would further strain the issue.

I will not be able to attend the meeting on May 23 and I would appreciate this being shared during public comment.

Thank you for your consideration.

Best,
Renee McGowan

--

Renee McGowan, LCSW
renee.b.mcgowan@gmail.com
312.371.1733



VILLAGE OF
DOWNERS GROVE

Mike Tuman <mtuman@downers.us>

Proposed Main Street Improvements

Alaina Morris <alaina.p.morris@gmail.com>

Mon, May 23, 2022 at 8:49 AM

To: mtuman@downers.us

Cc: rtbarnett@downers.us

Dear Mr. Tuman,

I am writing to echo my neighbor Sheryl Van Anne's concerns regarding the proposed Main Street improvements cited in the 2020 report to the village. It appears as if the Village is considering reducing Main Street from 4 lanes of traffic to 2 lanes from Sherman Street to Franklin Street. I'd like to raise several concerns:

- Forums were complete in 2019 and the study presented in 2020. Since that time, a new condo complex has opened on Maple Street and another one is under construction. These have both increased traffic counts on Main Street.
- Traffic on Main Street is already backing up 0.5-1 mile during rush hours and reducing the lanes of traffic would make this situation worse.
- If we further bottleneck traffic on Main Street, traffic will abandon Main and utilize neighboring streets. In 2021, the Village undertook traffic modifications to reduce this issue on Prairie and Forest due to the already existing problem.
- The study does not take into account the potential traffic flow for neighborhoods should Main Street be reduced - has a holistic study been done to gather traffic counts on neighboring streets? Congestion during rush hour also causes backups for several blocks on these streets as well.

My concern is that this is an isolated study that only takes into account the area directly adjacent to the high school. If implemented, we would be routing traffic elsewhere into areas that are not designed for rush hour traffic flow.

In summary, I do not support the reduction of lanes on Main Street. I believe we already have a traffic problem caused by increased housing counts in downtown and this would be furthering that problem. Housing has increased but our infrastructure (roads, parking) has not been adjusted. We need a holistic plan to address the overall increase of downtown traffic - not implement a change that would further strain the issue.

Thank you for your consideration,
Alaina Morris
4826 Washington St.
815.545.4521



Mike Tuman <mtuman@downers.us>

Highland & Main proposals

'william precht' via Traffic <traffic@downers.us>
Reply-To: william precht <weprecht@yahoo.com>
To: "traffic@downers.us" <traffic@downers.us>

Wed, May 25, 2022 at 1:52 PM

We were at your meeting on Monday, May 23rd.

Our concerns are the bottleneck of turning four lanes into 3 lanes. Especially on how it was presented.

At Main and Grant, we agree there could be a right turn lane going North on Main at Grant. There should be NO bump outs or plantar islands on anywhere on Main.

We suggest the turn into the North High School parking lot off a Main should be at Sherman Street and have No left turn on Grant Street.

This should eliminate the congestion on Main Street by the High School.

We suggest there should be a No Right turn going East from Ogden onto Main Street.

As for Main & Prairie:

There can be a Signal Light with a Left Turn or go thru. This will eliminate the congestion a half block South where the street converts to a straight only and a Right turn lane.

Again no bump out curbs. Where Downers Grove have placed them already create frustration and creates the lack of wanting to come to the Downtown area or any areas that have these.

As for the side streets around the school, suggest reminder speed limits and possibly have Police appearance to discourage speeders.

As for the residents that live around the school KNEW the school was there and they would have traffic issues come morning and night.

Resident of Downers Grove
William & Diane Precht



VILLAGE OF
DOWNERS GROVE

Mike Tuman <mtuman@downers.us>

Question — Proposed safety changes DH High School Communities

Bonnie <kaleidoscopes@comcast.net>
To: mtuman@downers.us

Tue, May 10, 2022 at 5:56 PM

Mr. Tuman,

Thank you for being available for our questions.

Are any provisions planned or included for bike riders—specifically bike lanes near the schools or sidewalks as an alternative? Given the current high cost of gas and also environmental concerns due to climate change, I hope that efforts will be made to encourage and keep safe users of all alternate forms of transportation including public transportation, walking and biking. I see many along north Main Street daily and expect the numbers may increase. My apologies if I missed this on my first quick read.

As a community member who lives on our always busy Main Street, I appreciate the work involved to create greater safety in the areas near our high schools and the opportunities to hear more.

Sincerely,

Bonnie T. Summers
4608 Main Street, Downers Grove
kaleidoscopes@comcast.net



VILLAGE OF
DOWNERS GROVE

Mike Tuman <mtuman@downers.us>

Main St & Highland Improvements

Sheryl Van anne <vananne2000@gmail.com>

Mon, May 16, 2022 at 8:25 PM

To: mtuman@downers.us

Cc: rtbarnett@downers.us, Greg Hose <ghose@downers.us>, nwalus@downers.us, Isfugitt@downers.us, rkulovany@downers.us, cgilmartin@downers.us, dglover@downers.us, David Fieldman <dfieldman@downers.us>, asikich@downers.us, jtock@downers.us

Dear Michael,

I am writing regarding the proposed Main Street improvements cited in the 2020 report to the Village. If I understand the intent, the Village is considering reducing Main Street from 4 lanes of traffic to 2 lanes from Sherman Street to Franklin Street. In reviewing the study, it seems to be isolated to traffic behavior surrounding the high school only, and does not take into consideration the surrounding neighborhoods. A few concerns I'd like to raise:

- Forums were complete in 2019 and the study presented in 2020. Since that time, a new condo complex has opened on Maple Street and another one is under construction. These have both increased traffic counts on Main Street.
- Traffic on Main Street is already back up 1/2-1 mile during rush hours, reducing the lanes of traffic would make this situation worse.
- If we further bottle neck traffic on Main Street, traffic will abandon Main and utilize neighboring streets. In 2021, the Village undertook traffic modifications to reduce this issue on Prairie and Forest due to the already existing problem.
- The study does not take into account the potential traffic flow for neighborhoods should Main Street be reduced - has a holistic study been done to gather traffic counts on neighboring streets?

My concern is that this is an isolated study that only takes into account the area directly adjacent to the high school. If implemented, we would be routing traffic elsewhere into areas that are not designed for rush hour traffic flow.

In summary, I do not support the reduction of lanes to Main Street. I believe we already have a traffic problem caused by increased housing counts in downtown and this would be furthering that problem. Housing has steadily increased in the downtown district but our infrastructure (roads, parking) for the same has not been adjusted. We need a holistic plan to address the overall increase of downtown traffic - not implement a change that would further strain the issue.

I will not be able to attend the meeting on May 23 and I would appreciate this being shared during public comment.

Thank you-
Sheryl Van Anne
4822 Washington Street
630-730-2841

FHWA/IDOT COORDINATION MEETING MINUTES



FHWA/IDOT Coordination Meeting
March 8, 2022

Main Street Improvements
Village of Downers Grove
DuPage County
Section # 22-00118-00-PV

This was the initial presentation for the project. The purpose of the presentation was to discuss the project limits, scope of work, design guidelines, public involvement, and environmental processing.

HR Green, Inc. (HR Green) began by introducing the project location and general surrounding vicinity. The proposed improvements are in the Village of Downers Grove in DuPage County, Illinois on Main Street from south of Ogden Avenue to Franklin Street. The major user within the corridor is Downers Grove North High School; the rest of the corridor is dense urbanized residential. The Village's central business district begins at the south end of the corridor at Franklin Street.

Main Street is classified as a Minor Arterial under Village jurisdiction carrying 15,400 vehicles per day (vpd). Main Street consists of a four-lane section, 2 lanes in each direction with curb and gutter and sidewalks along both sides of the road. There are traffic signals at the Main Street intersections with Grant Street, Prairie Avenue and Franklin Street.

The proposed project study limits for Main Street will begin at the Franklin Street intersection. The east leg of Franklin Street is one-way westbound, the west leg provides two-way traffic with eastbound left and right turn lanes. South of Franklin Street, Main Street exhibits one through lane in each direction with parallel parking along both sides of the road. The north leg of Main Street at the intersection consists of a single southbound through lane, a right turn lane onto westbound Franklin Street, and two northbound through lanes. The proposed project study limits extend to the radius return at the south leg of the intersection.

The proposed northern project study limits will be south of Ogden Avenue (US 34). Ogden Avenue is a five-lane section, Other Principal Arterial, under State jurisdiction with average daily traffic volume of 25,400. The Ogden Avenue intersection with Main Street is signalized. Main Street at the south leg of the Ogden Avenue intersection consists of 2 lanes in each direction plus a left turn lane. The proposed project study limits will tie into the existing left turn lane south of Ogden Avenue between West Sherman Street and East Sherman Street.

The Main Street corridor has serious safety concerns. Crash reports have been reviewed from 2017 through 2021 and include one pedestrian fatality and seven additional pedestrian/bicyclist crashes. Over the five-year study period there have been ninety-nine crashes. The most predominant crash type is rear end (24%) followed by sideswipe same direction (22%).



The proposed improvements endeavor to improve pedestrian, bicyclist, and vehicular safety along the corridor. The proposed work elements include a road diet from four lanes to three lanes. Per the FHWA Road Diet Information Guide (2014), road diet thresholds are less than 20,000 vpd and existing and proposed peak hour volumes generally below 750 vehicles per hour per direction. Main Street falls within both thresholds.

The proposed three lane section will consist of a single through lane in each direction, a single center bidirectional turn lane, and two on-street bicycles lanes on flanking sides of the roadway painted green. The road diet improvements will specifically help reduce angle, turning and sideswipe crashes.

The traffic operations analysis shows that delays and queues remain acceptable after implementation of the road diet. A traffic analysis report for the corridor will be included in the Phase I report. The traffic report includes discussion, capacity analysis, and crash modification factors (CMF).

The project will also include traffic signal modifications, curb 'bump-outs', pavement resurfacing with re-striping, improved street lighting, and bringing existing ADA sidewalk ramps to current standards to improve safety through the study corridor. Traffic signal modifications will include phasing changes to account for left turn lanes, and installation of accessible pedestrian signal (APS) pushbuttons to improve access for all users through the corridor. Signal timing adjustments will also be made to accommodate traffic in the new three lane section and maintain the exclusive pedestrian interval configuration at Grant Street. Curb 'bump-outs' are planned at the Grant Street intersection to reduce the length of travel across the intersection for pedestrians. The improvements will result in no change to the vertical or horizontal alignment of Main Street.

Implementation of the bicycle lanes with bicycle signage and pavement markings will be consistent with IDOT Local Roads Manual Chapter 42 and the AASHTO Guide for the Development of Bicycle Facilities. The bicycle lanes are proposed to extend between the Village's central business district, at Franklin Street, to Downers Grove North High School, at the Grant Street intersection. The proposed Main Street bicycle lanes will be very complimentary to the Village's bike facility plan.

IDOT requested Illinois calibrated highway safety manual calculations be completed and included in the Phase I report for analysis of the road diet lane widths, including bicycle lane widths.

Two public forums have been hosted by the Village to discuss the Main Street safety improvements. A public information meeting is scheduled for April or May of 2022. Public advertisement requirements will be followed.

There is no right-of-way or easements needed for the proposed improvements.

There are no new ADA sidewalk curbs proposed in the project study area.

There is no tree removal, in-stream work, or wetlands within the project study area.

Construction of the improvements will occur under staged traffic with no detour.

IDOT requested, at a minimum, submittal of an environmental survey request (ESR) for review of cultural resources due to the change in lane usage.



The Village is applying for STP Federal funds for the project. At present, the project is not included in the TIP. The project can be entered into the TIP if the Village decides to commit Phase II engineering dollars for the project. Due to the air conformity process, as a lane reduction project, the Phase I report cannot be approved until the FHWA approves the next TIP in October 2022.

Approval of the termini and scope as presented were concurred by FHWA. The design guidelines for the project will be in accordance with Chapter 33 (3R Guidelines) and Chapter 42 (Bicycle Facilities) of the IDOT Local Roads & Streets Manual.

IDOT stated the draft Project Development Report can be submitted using Form BLR 22211, pending results of the ESR submittal and air conformity process.

Jeffrey Strzalka, P.E.
HR Green, Inc.

PHASE I KICKOFF MEETING MINUTES



Meeting Minutes

Meeting Purpose:	Phase 1 Kickoff Meeting
Project:	Village of Downers Grove – Main Street Improvements
Section Number:	22-00118-00-PV
Meeting Date/Time:	February 23, 2022 / 10:30 A.M.
Meeting Location:	WebEx Video Conference
Notes by:	HR Green, Inc. (HR Green)

Attendees:

Marilyn Solomon – Illinois Department of Transportation (IDOT)
Jim Tock – Village of Downers Grove (Village)
Mike Tuman – Village of Downers Grove (Village)
Joe Breinig – DuPage Mayors & Managers Conference (DMMC)
Akram Chaudhry – HR Green
Jeff Strzalka – HR Green

HR Green used online Google Maps and IDOT Functional Classification maps for discussion purposes. There was no sign-in sheet as the meeting was held over the phone via a conference call. Thus, the 'Attendees List' above constitutes the sign-in sheet.

Meeting Discussion Items:

Existing Conditions & Project Limits

Item	Action
<p>HR Green reviewed the existing conditions and proposed project limits.</p> <p>The project consists of pedestrian safety improvements and enhancements along Main Street from approximately 300-feet south of Ogden Avenue (US 34) to approximately 600-feet south of Prairie Avenue (Franklin Street). Ogden Avenue, beyond the north project limits, is under State jurisdiction. All other streets within the project corridor are under the jurisdiction and maintenance responsibility of the Village.</p> <p>Main Street:</p> <ul style="list-style-type: none"> • Minor Arterial • 15,400 ADT • 4 lanes, 2 lanes in each direction • Curb and gutter section • Sidewalk along both sides of the road • Traffic signals at Ogden Ave, Grant St, Prairie Ave, & Franklin St <p>Prairie Avenue:</p> <ul style="list-style-type: none"> • Major Collector • 3,000 ADT • 2 lanes 	<p>HR Green will request formal approval of the project termini at the future FHWA coordination meeting.</p>

<p>Franklin Street:</p> <ul style="list-style-type: none"> • Marks beginning of downtown district • North of Franklin St beginning of taper from 4-lanes to 3 lanes • Prairie Ave and Franklin St both signalized intersections <p>Ogden Avenue:</p> <ul style="list-style-type: none"> • Other Principal Arterial • 25,400 ADT • 5 lanes <p>The surrounding land use was noted as mainly residential, plus Downers Grove North High School and two (2) churches along the project corridor.</p> <p>There have been several pedestrian involved accidents within the project corridor, including a fatality.</p>	
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Project Scope

<p>The pedestrian safety and enhancement improvements consist of Road Diet resurfacing and re-striping, converting Main Street from 4 vehicular lanes to 3 vehicular lanes and 2 bicycle lanes. The proposed roadway section will consist of 2 through lanes, a center two-way-left-turn-lane, and 2 outside green on-street bicycles lanes.</p> <p>Per FHWA guidelines, Road Diets can be considered if corridor traffic volumes are under 20,000 vehicles per day (VPD), and the existing and projected peak hour volumes are generally below 750 vehicles per hour, per direction. Main Street qualifies on both points.</p> <p>The resurfacing will be an 'in-kind' mill and overlay pavement rehabilitation with no changes to the vertical or horizontal alignment. The existing curb and gutter and sidewalks will remain at their current location with only spot removal and replacement repair-type work.</p> <p>Additionally, the improvements along Main Street will also include traffic signal modifications, improved street lighting and ADA sidewalk curb ramps.</p> <p>The work will be completed under traffic according to IDOT Highway Standards. There is no detour required.</p> <p>There are no wetland impacts or tree removals.</p> <p>There is no proposed work within the floodplain.</p> <p>There is no land acquisition. All work will be completed within Village right-of-way and easements.</p> <p>There are no bridges.</p> <p>Special waste review will be the responsibility of the Village/Consultant.</p>	<p>IDOT stated the project will be a State in-district approved Categorical Exclusion (CE) on either BLR 19100 or BLR 22100.</p> <p>IDOT stated the project needs to be presented at an FHWA coordination meeting to confirm processing of the Phase I engineering.</p>
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Environmental Review

<p>IDOT requested submittal of the cultural screening form and a location map for in-house Section 106 consultation. The consultation will determine if an Environmental Survey Request (ESR) is required.</p> <p>In the event an ESR is required, IDOT stated a draft PDR can be submitted for review while the ESR is being processed.</p>	<p><i>Post Script to the meeting: Following the meeting, HR Green provided the requested cultural screening form and map exhibit to IDOT.</i></p> <p><i>Upon review of the Section 106 Cultural Screening submittal, IDOT determined an ESR is required due to the Road Diet improvement type and the addition of street lighting where there is no lighting currently.</i></p>
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Public Involvement

<p>The Village has hosted 2 Public Forums to date and is planning to host an in-person Public Information Meeting in April or May. The upcoming Public Information Meeting will be hosted in conjunction with the Village's Transportation Committee meeting.</p> <p>IDOT stated the Public Information Meeting must be separated from the committee meeting.</p> <p>Public advertisement will occur, at a minimum, in the local newspaper. The first advertisement will occur approximately 15 days in advance of the meeting, and the second advertisement will occur 3-7 days in advance of the meeting.</p>	<p>HR Green will include the description of public involvement in the Phase I report.</p>
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Phase I Schedule

<p>The Village and HR Green anticipate submitting the Phase I report to IDOT in advance of the March 15, 2022 deadline for the DMMC STP Call for Projects.</p> <p>IDOT requested the first submittal of the Phase I report to be in hard copy format. IDOT will accept the Phase I report as substantially complete in advance of the planned 3rd public involvement event (Public Information Meeting), and processing of the potential ESR.</p> <p>Assuming an ESR is not required, the group agreed June 15, 2022 would be an acceptable target for Phase I Design Approval.</p>	<p>HR Green will submit the Phase I report to IDOT prior to March 15, 2022 for review.</p>
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The meeting ended at 11:15 a.m.

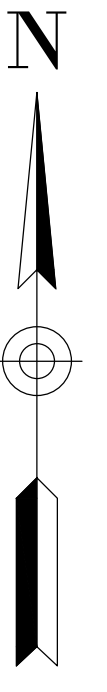
These minutes are assumed correct unless the author is notified within seven calendar days of publication.

Distribution: All attendees
Andy Sickich, PE, CFM – Village of Downers Grove
Mohammad Kawash - IDOT



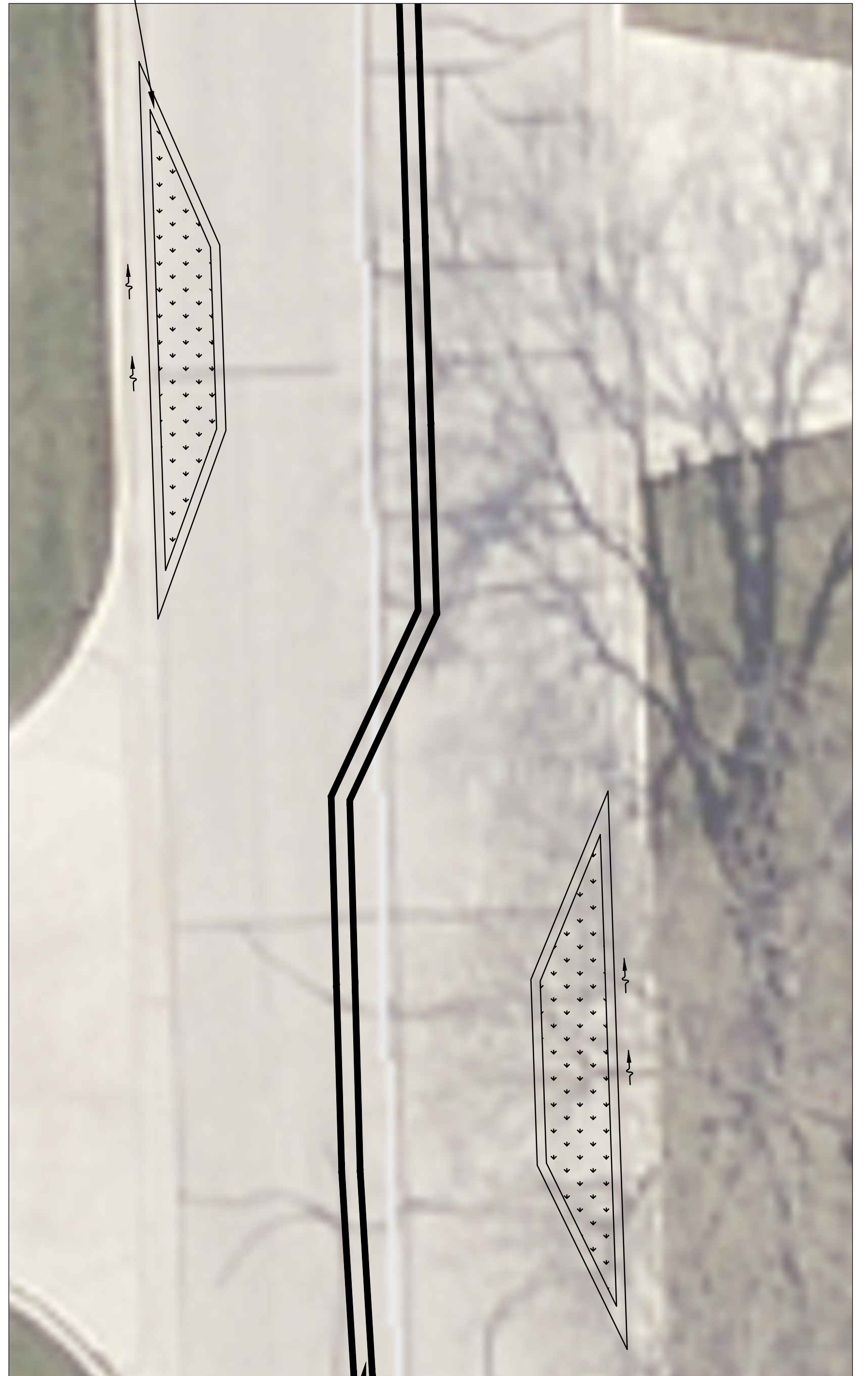
By: Jeff Strzalka, P.E.
Senior Project Manager

Date of Publication: March 2, 2022



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