

05: APPENDIX

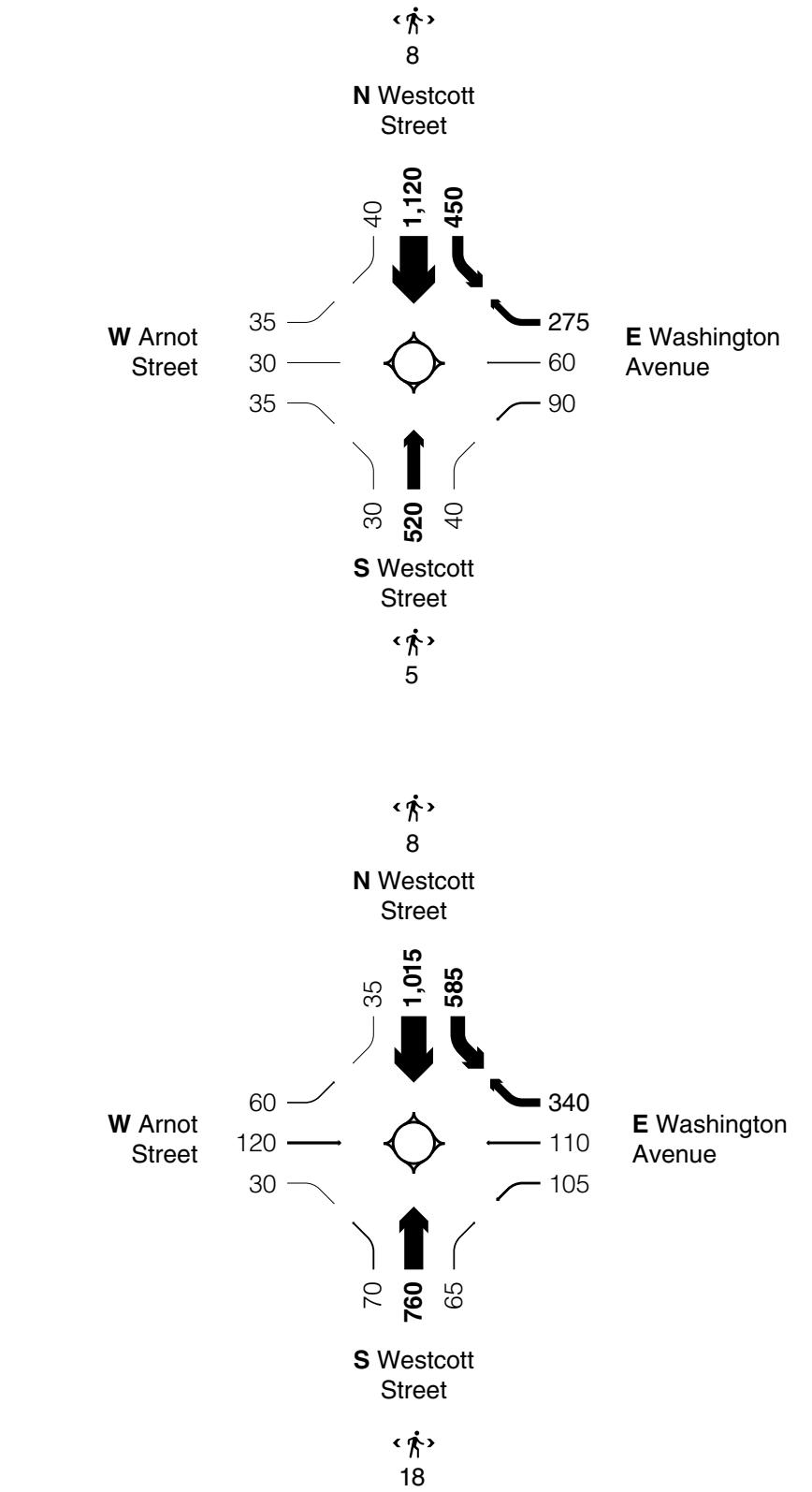


APPENDIX A EXISTING CONDITIONS

Segment 1 Westcott Washington Roundabout: Existing Conditions



Peak hour traffic counts
Westcott Street at Washington Avenue
AM Weekday
7:45 - 8:45 AM
11.01.2023

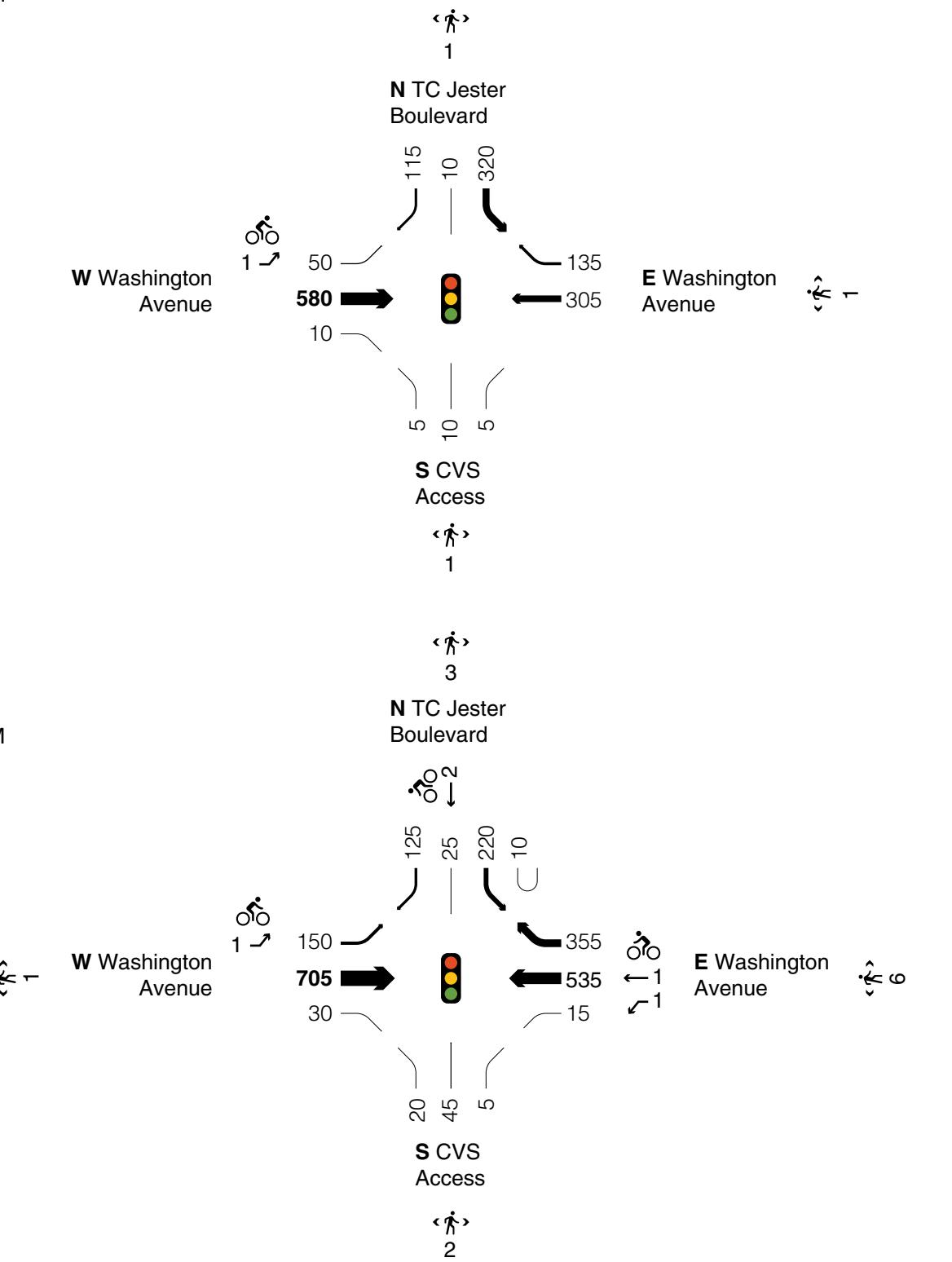


Segment 2 Birdsall Street to Sandman Street: Existing Conditions

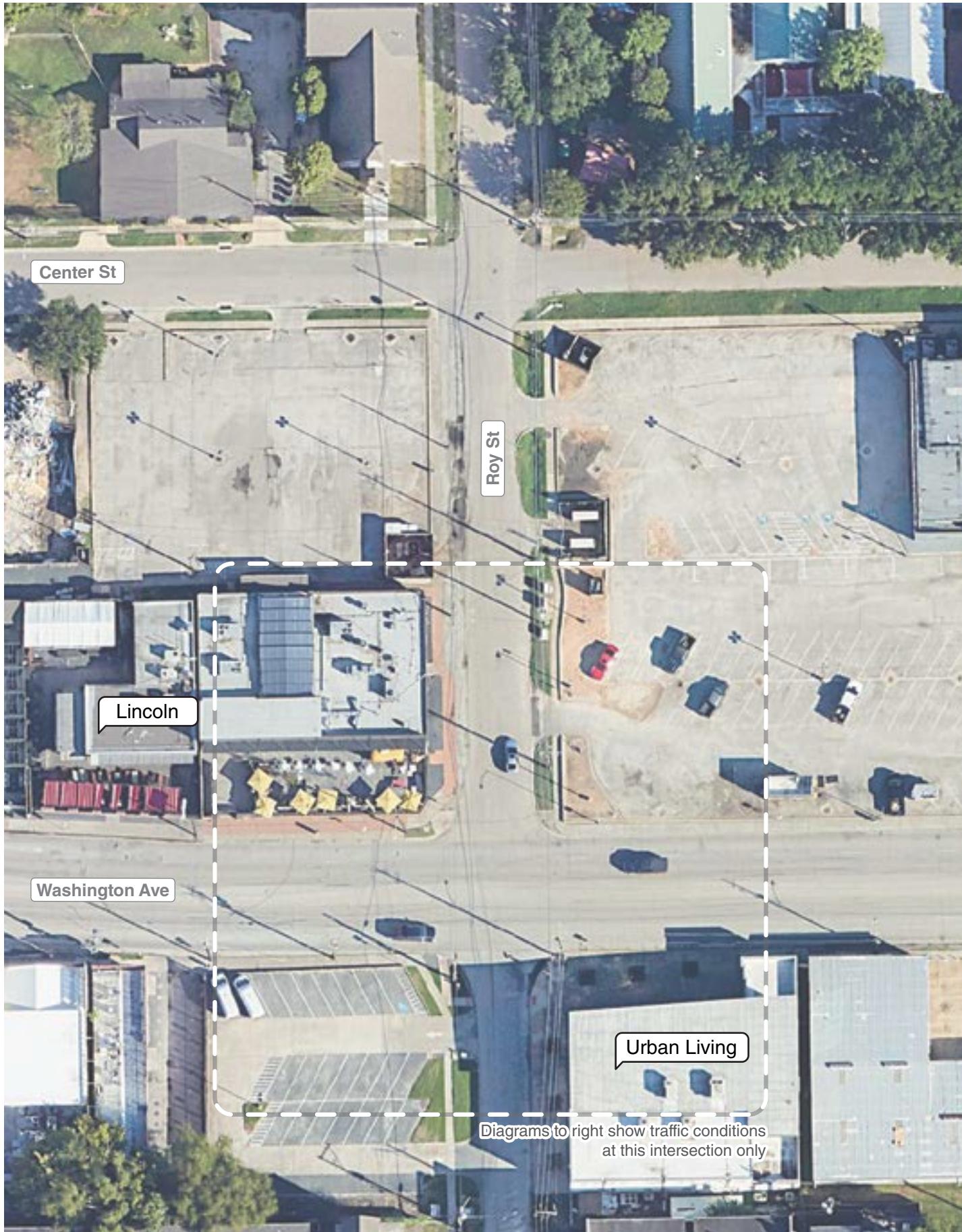


Peak hour traffic counts TC Jester Boulevard at Washington Avenue

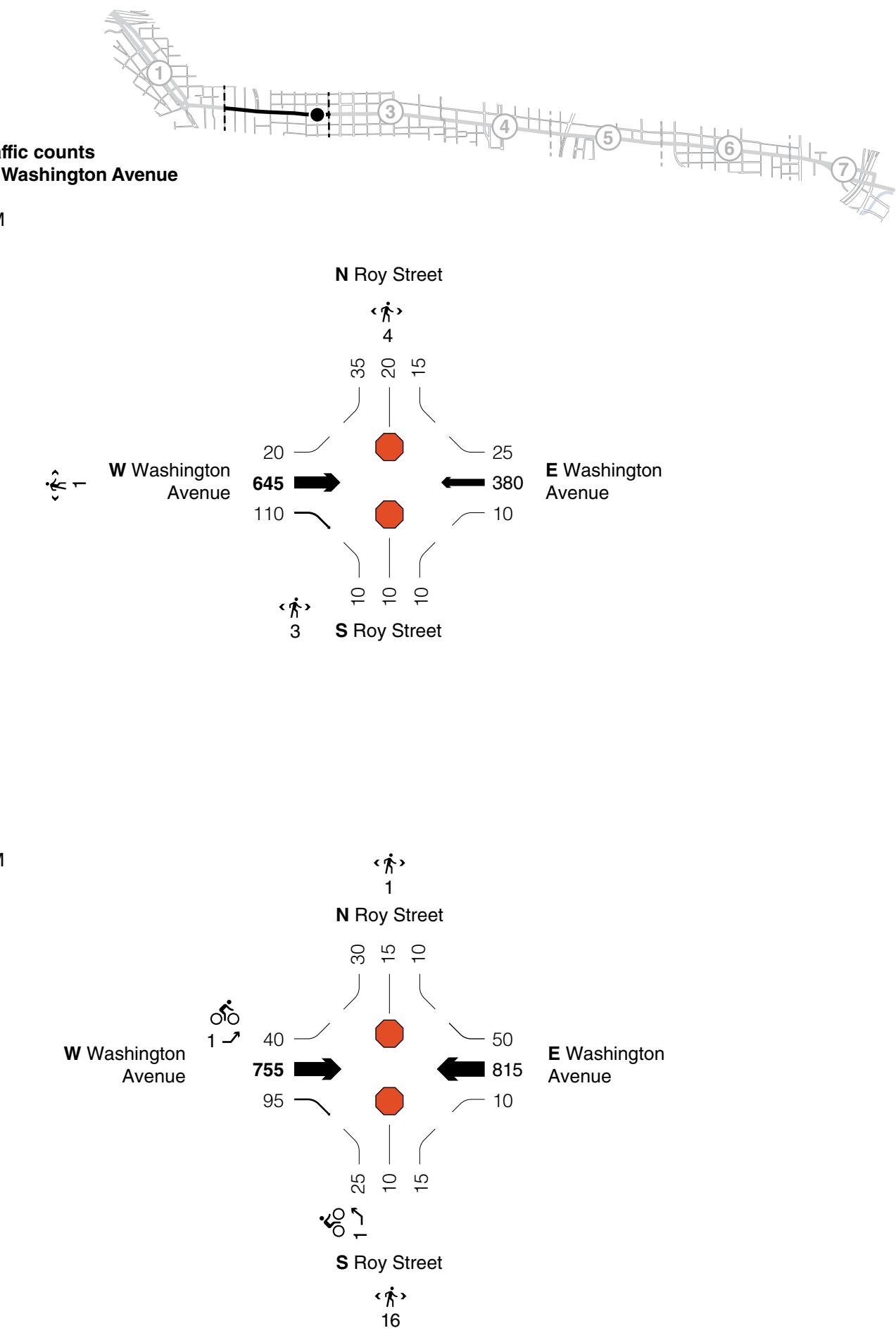
AM Weekday
7:45 - 8:45 AM
11.01.2023



Segment 2 Birdsall Street to Sandman Street: Existing Conditions



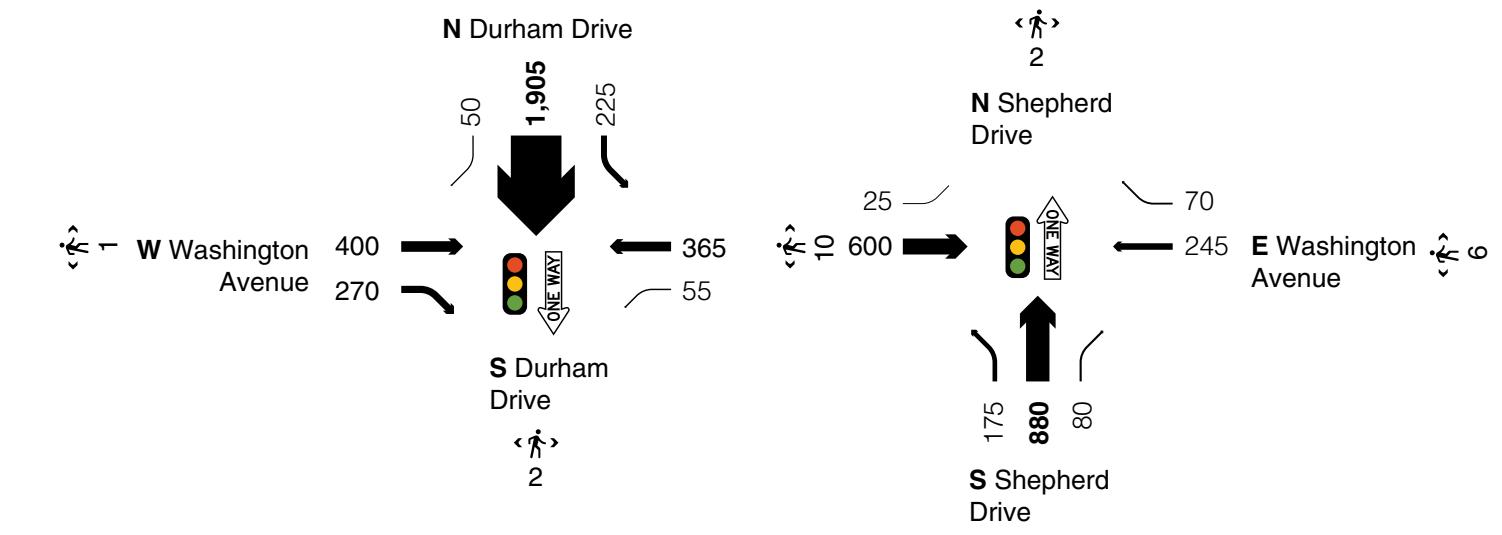
Peak hour traffic counts
Roy Street at Washington Avenue
 AM Weekday
 7:45 - 8:45 AM
 11.01.2023



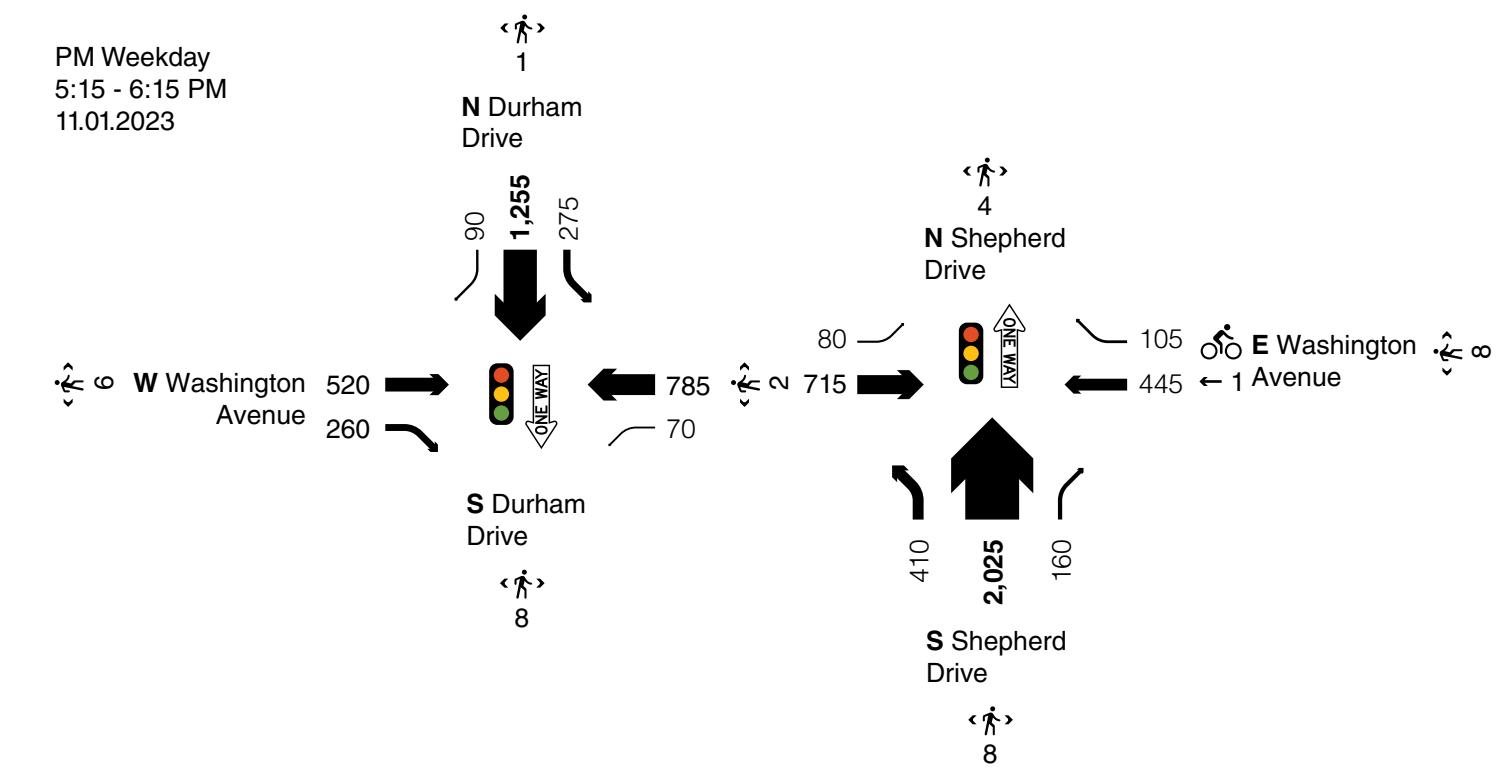
Segment 3 Sandman Street to Bonner Street: Existing Conditions



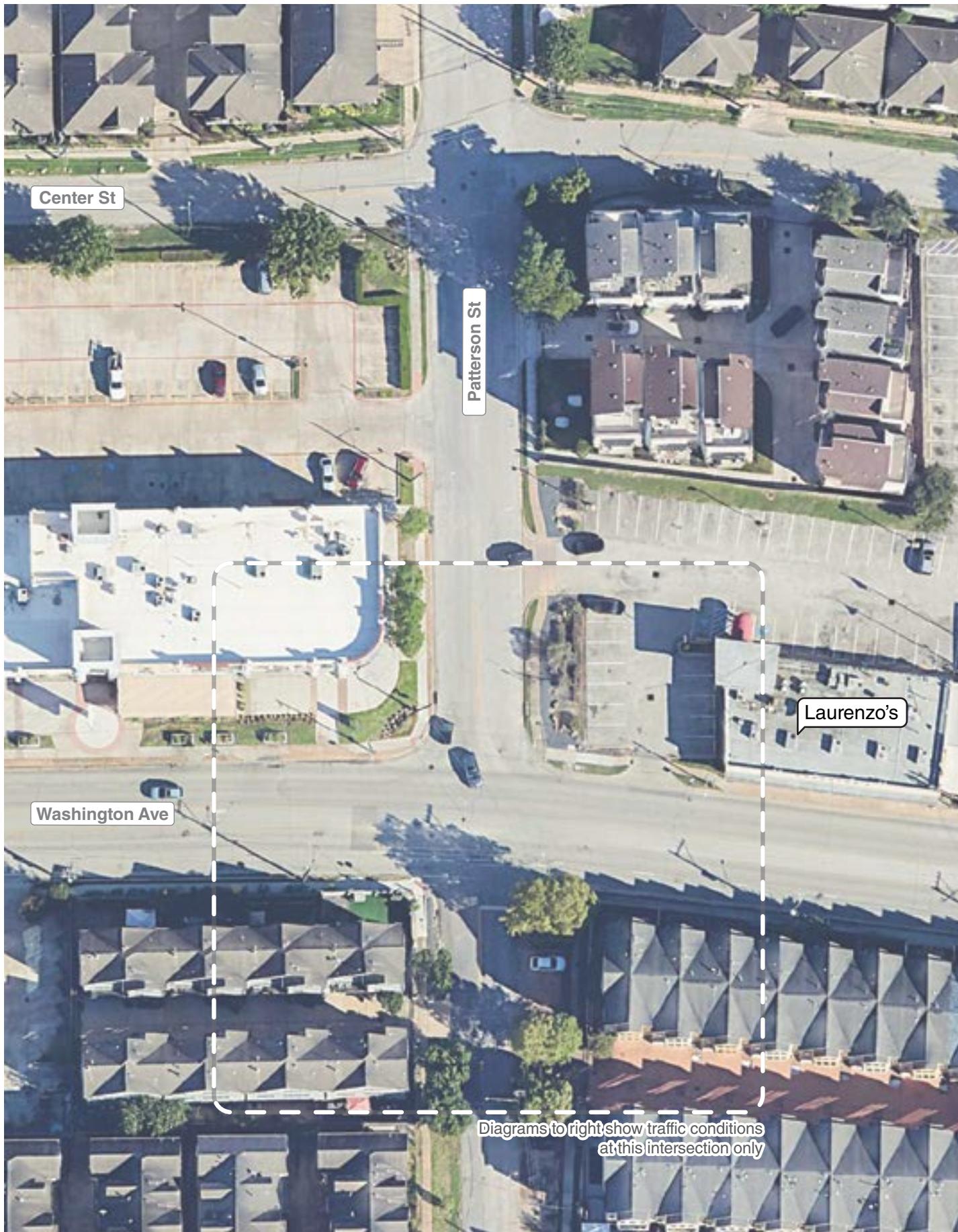
Peak hour traffic counts
Durham Drive and Shepherd Drive at Washington Avenue
 AM Weekday
 7:45 - 8:45 AM
 11.01.2023



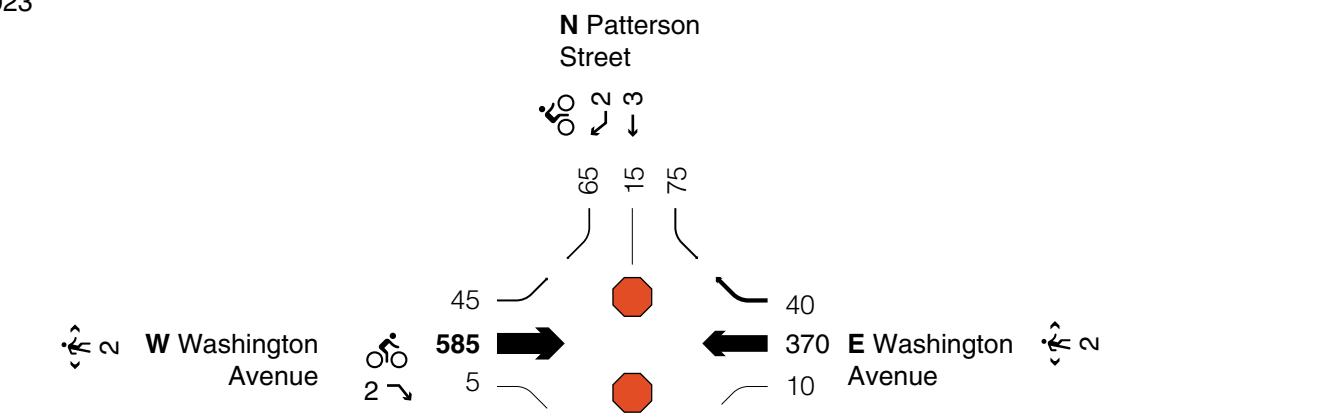
PM Weekday
 5:15 - 6:15 PM
 11.01.2023



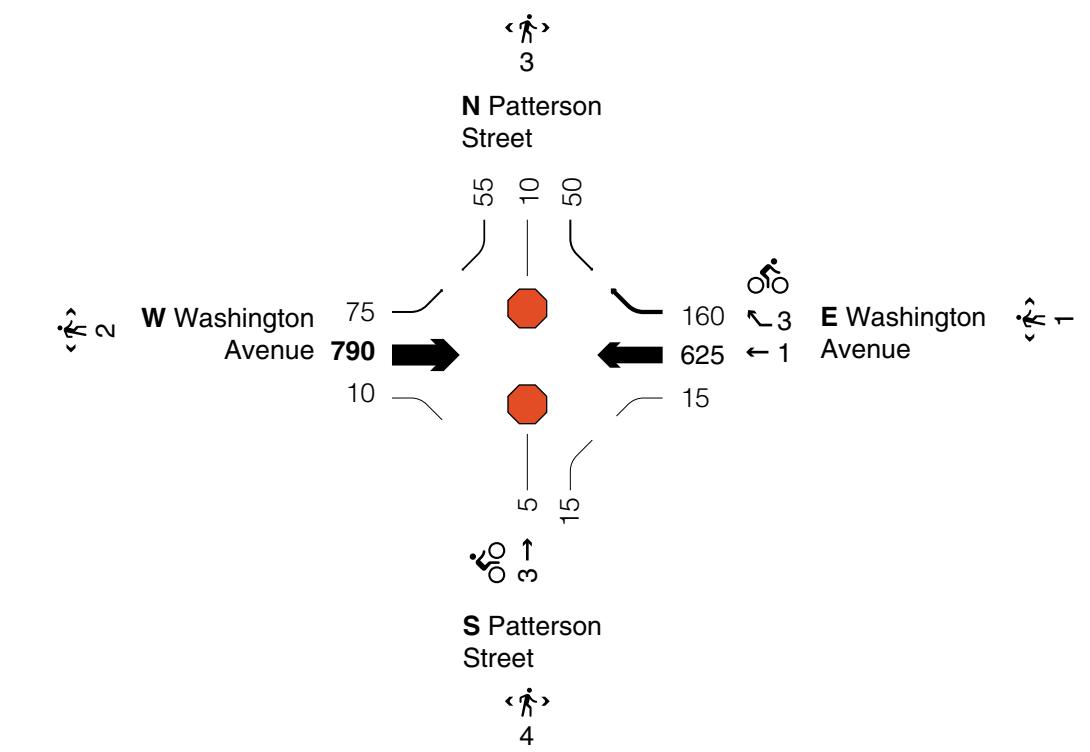
Segment 3 Sandman Street to Bonner Street: Existing Conditions



Peak hour traffic counts
Patterson Street at Washington Avenue
AM Weekday
7:45 - 8:45 AM
11.01.2023



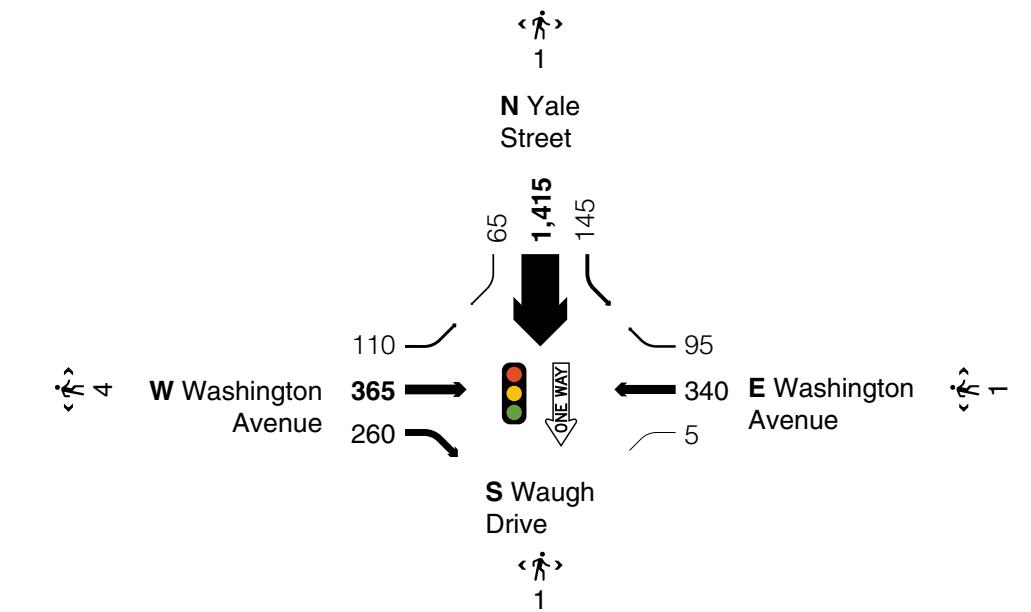
PM Weekday
5:15 - 6:15 PM
11.01.2023



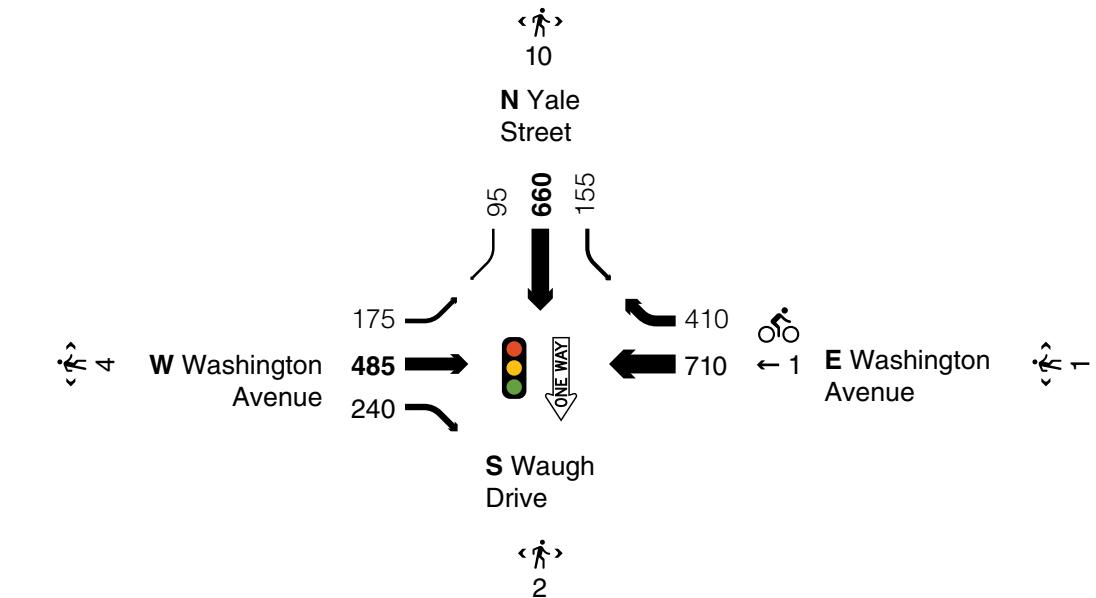
Segment 4 Bonner Street to Wichman Street: Existing Conditions



Peak hour traffic counts
Yale Street and Waugh Drive at Washington Avenue
 AM Weekday
 7:45 - 8:45 AM
 11.01.2023



PM Weekday
 5:15 - 6:15 PM
 11.01.2023

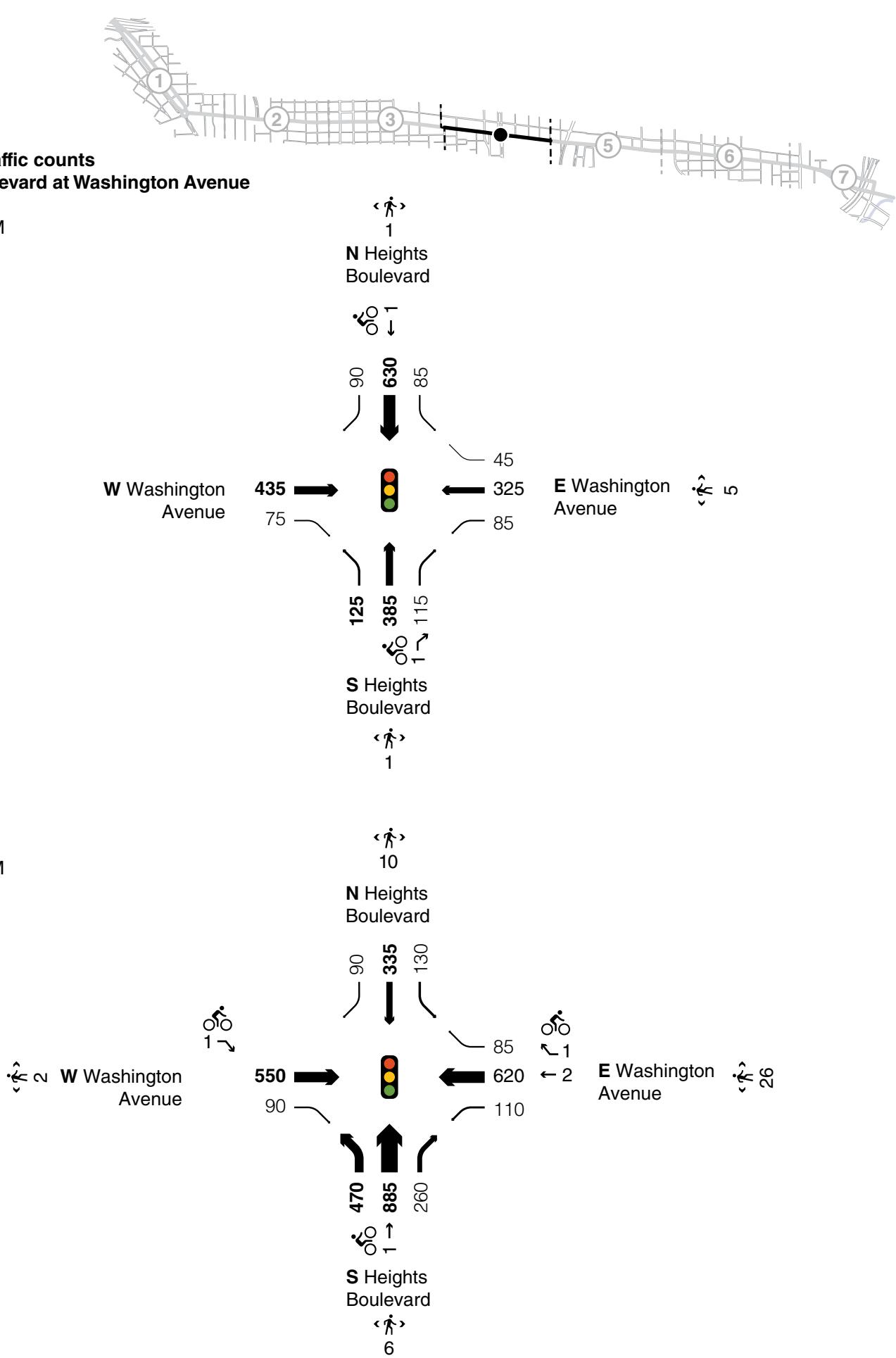


Segment 4 Bonner Street to Wichman Street: Existing Conditions

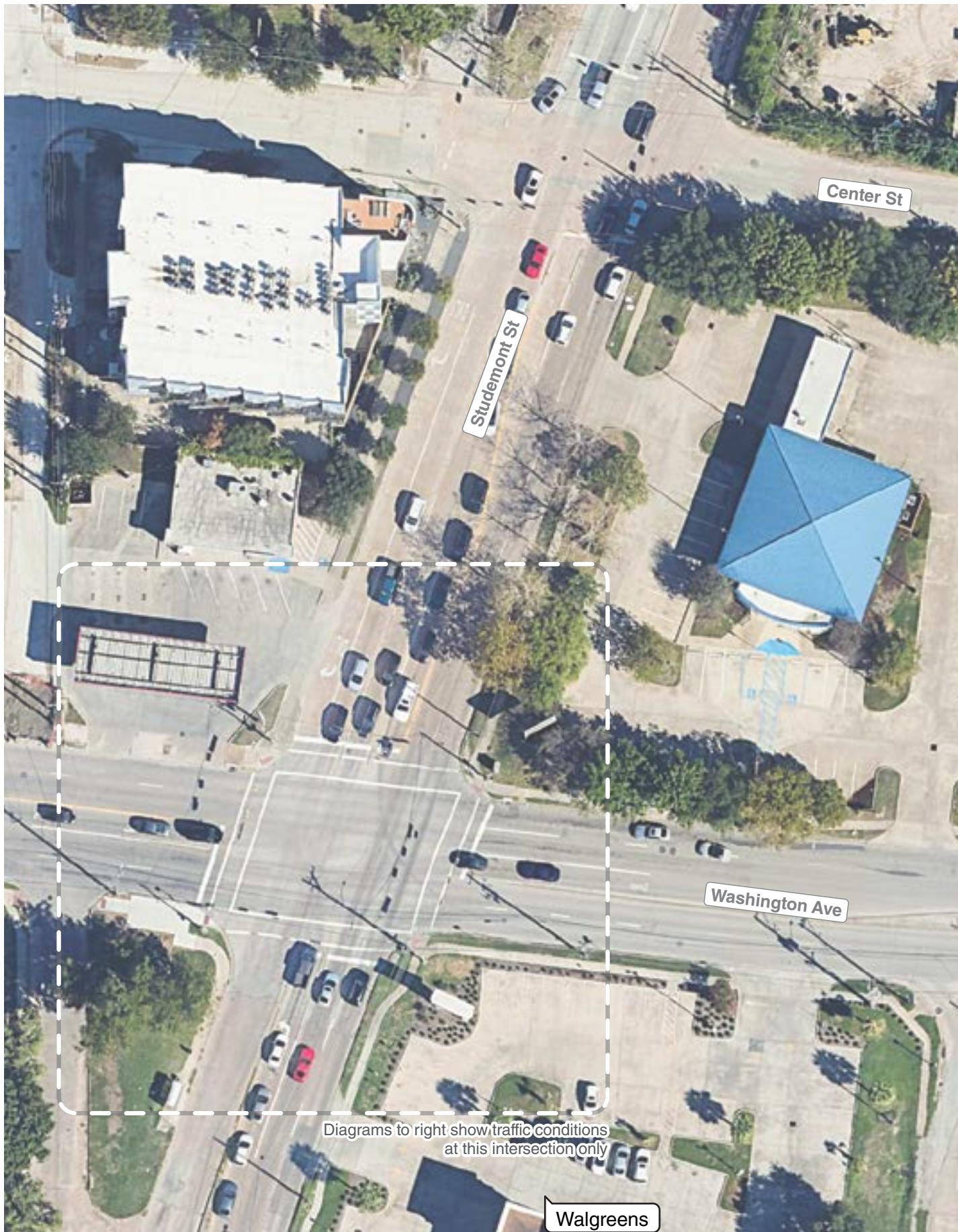


Peak hour traffic counts Heights Boulevard at Washington Avenue

AM Weekday
7:45 - 8:45 AM
11.01.2023

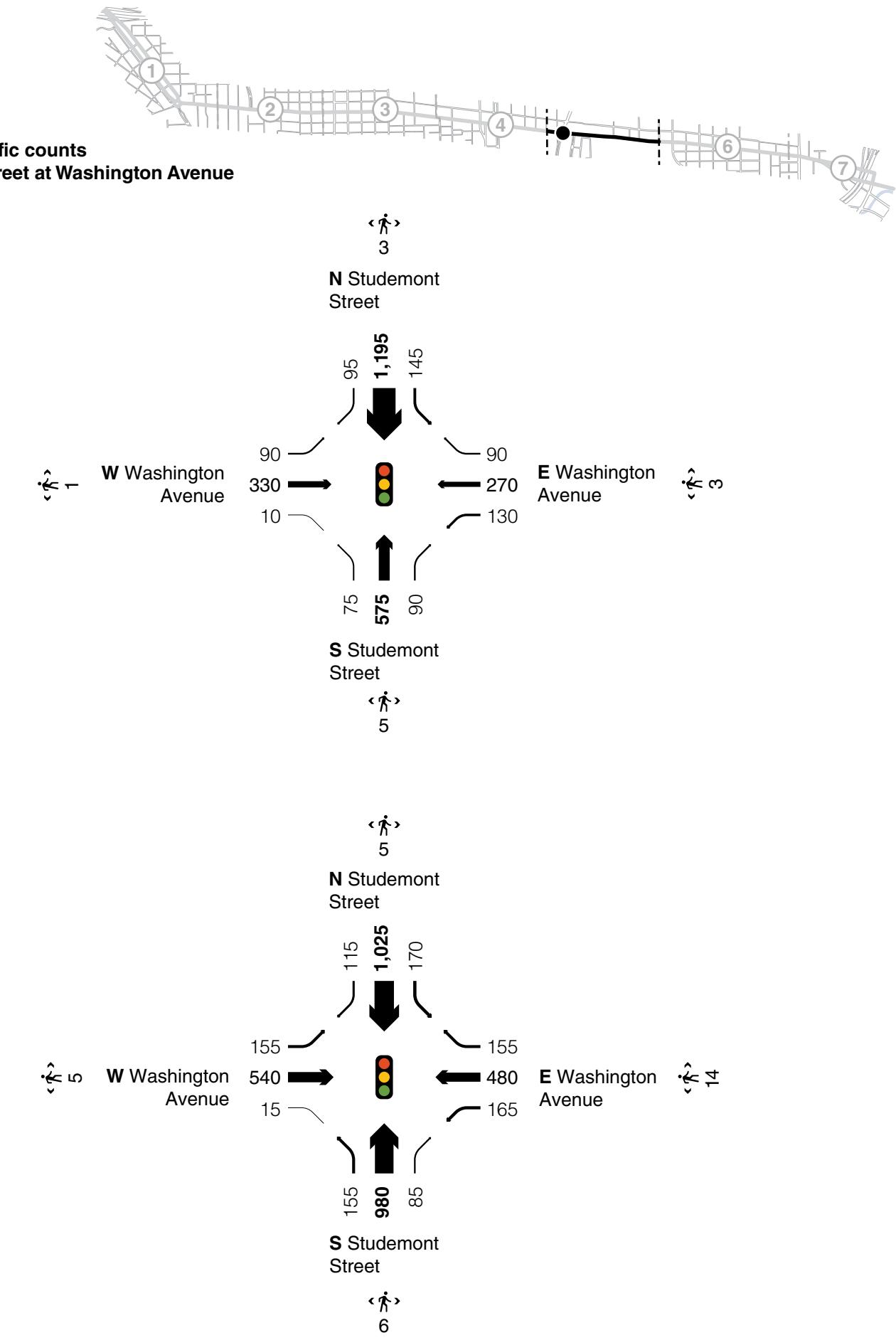


Segment 5 Wichman Street to Brashear Street: Existing Conditions

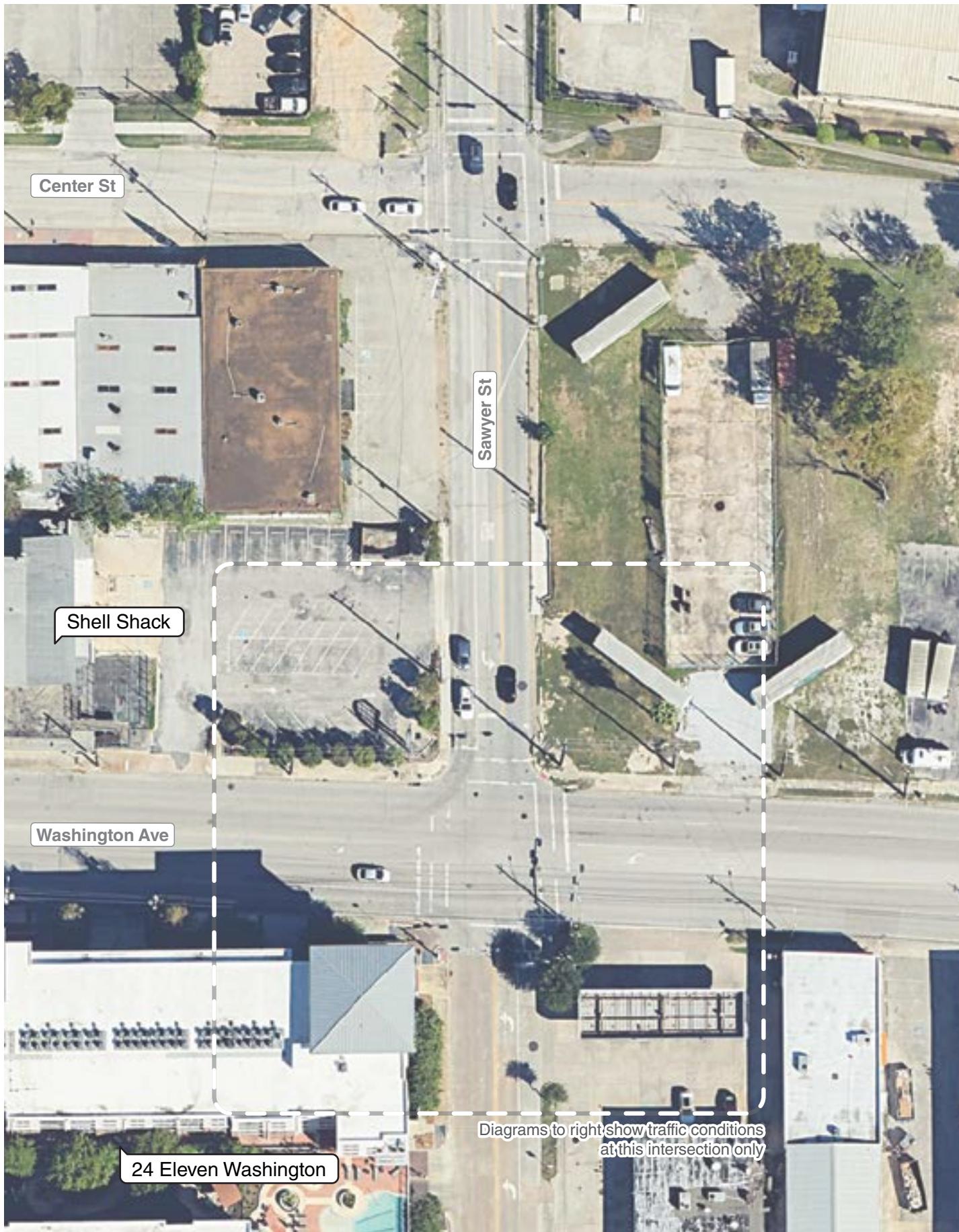


Peak hour traffic counts Studemont Street at Washington Avenue

AM Weekday
7:45 - 8:45 A
11.01.2023

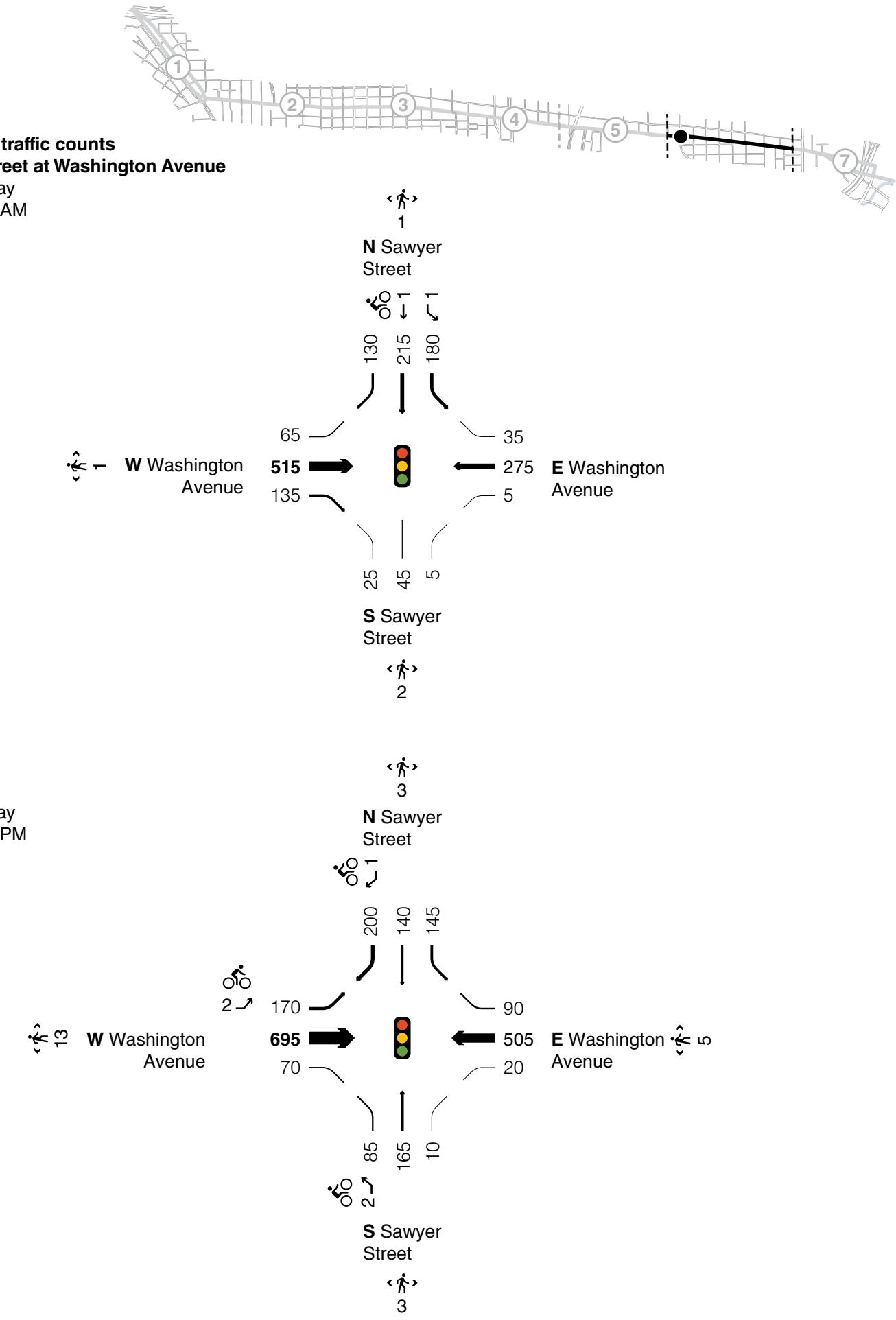


Segment 6 Brashear Street to Colorado Street: Existing Conditions



Peak hour traffic counts Sawyer Street at Washington Avenue

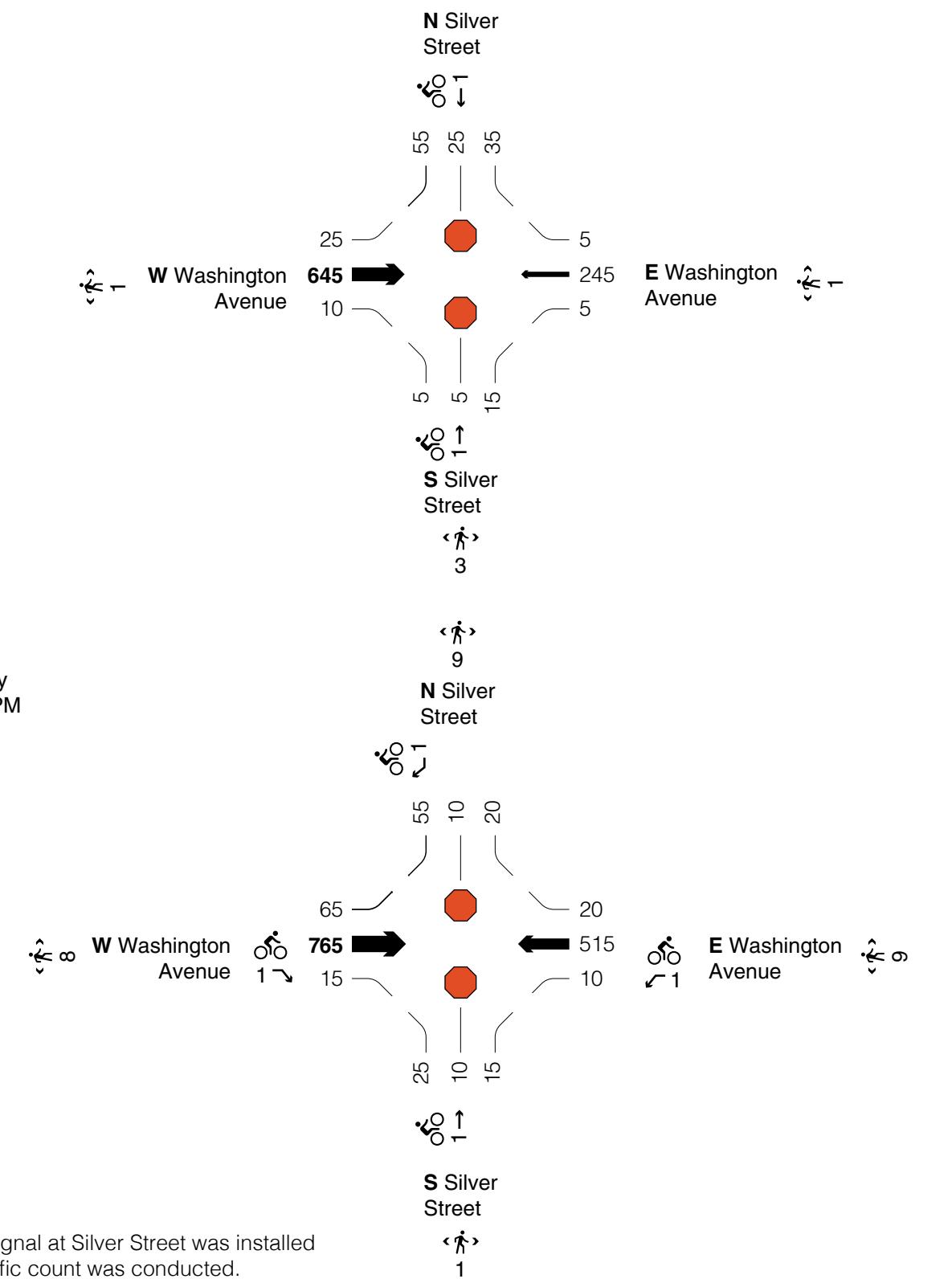
AM Weekday
7:45 - 8:45 A
11.01.2023



Segment 6 Brashear Street to Colorado Street: Existing Conditions



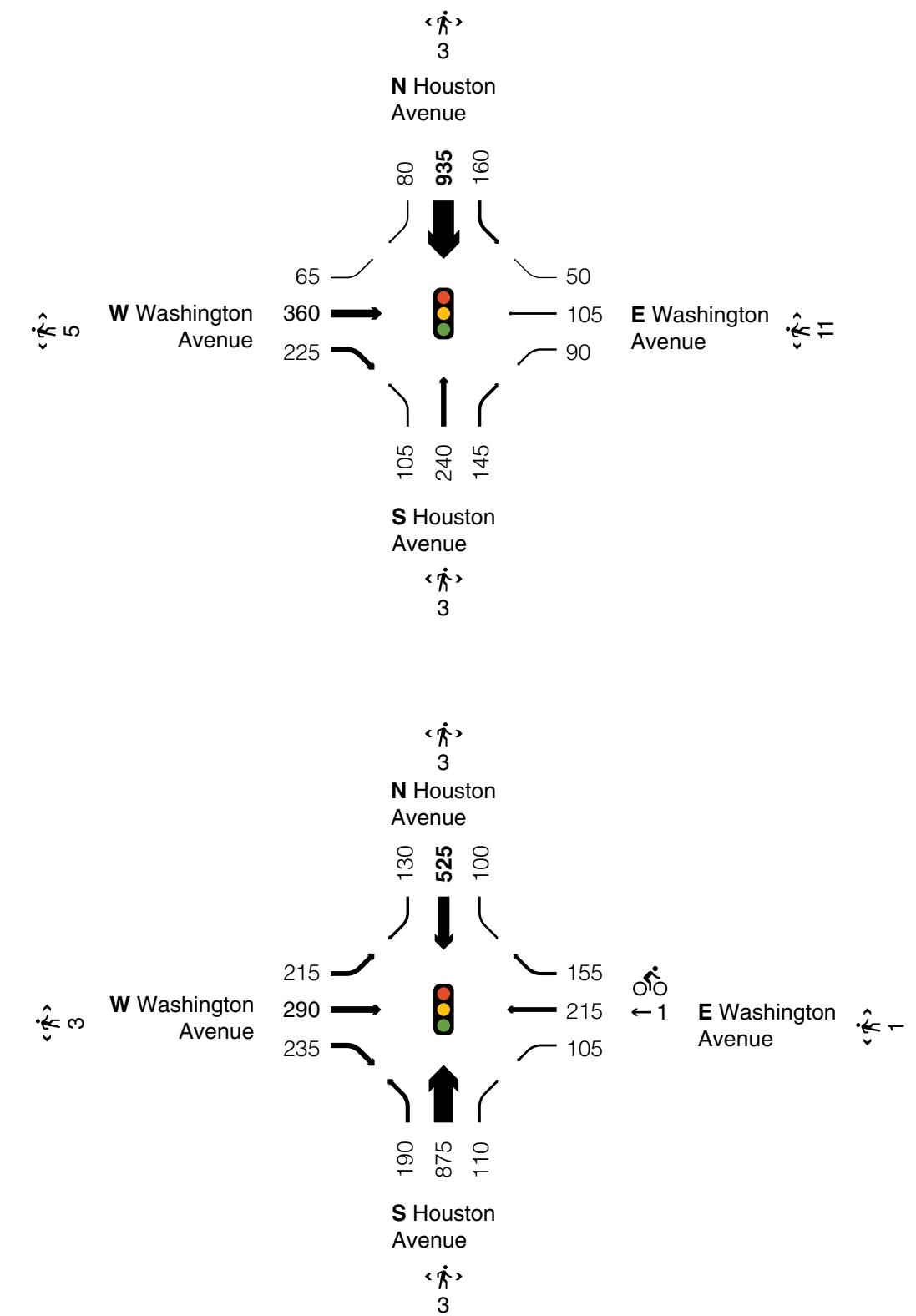
Peak hour traffic counts
Silver Street at Washington Avenue
AM Weekday
7:45 - 8:45 AM
11.01.2023



Segment 7 Colorado Street to Smith Street: Existing Conditions



Peak hour traffic counts
Houston Avenue at Washington Avenue
 AM Weekday
 7:45 - 8:45 AM
 11.01.2023



APPENDIX B ALTERNATIVES

The evaluation criteria for the seven alternatives is based on the project goals.

The project team studied the impacts of each of the alternatives based on the three primary project goals: Works Effectively, Safe for All Users, and Connects into a Network. The alternatives were measured through many criteria on a scale from -2 to 2, from worst to best for each criteria. Criteria that are binary used -2 and 2, whereas criteria that housed a spectrum within the design alternatives used -2, -1, 0, 1, and 2 to describe those differences. Each criteria was measured based on the elements that change within the alternative designs. The corridor was evaluated for each criteria in five segments which were normalized based on the distance per segment to arrive at the final measurement for each alternative. Traffic engineers TYLin performed traffic analyses to help inform the development of alternatives and the selection of a preferred alternative for the study corridor.

Goal Area: Works Effectively

Level of Service at Intersections

Traffic operations were modeled for existing conditions, a future condition with no changes to the corridor, and for three future scenarios representing five of the study alternatives. The future conditions utilized Year 2045 traffic projections which were based on the H-GAC regional model to account for continued regional growth. The three study alternative Models are briefly described below:

Model 1 maintains two vehicular lanes in each direction on Washington Avenue and represents the “Baseline Constrained Alternative”, which was shown as Alternative B at the community meetings in March 2025. Model 1 is also a reasonable, slightly conservative approximation of Alternative A.

Model 2 removes the outside vehicular lanes in each direction on Washington Avenue, leaving a single general travel lane in each direction. This scenario models Alternative C as it was shown at the community meetings in March 2025, which converts the outside vehicular lanes into dedicated bus lanes. It also represents a reasonable approximation of Alternative D, which converts the outside vehicular lanes into additional sidewalk space.

Model 3 reduces Washington Avenue to a single lane of travel in each direction and assumes raised, sidewalk-level bike lanes in both directions. This scenario models Alternative E as it was shown at the community meetings in March 2025.

All Models included the recommended intersection treatments, which are detailed later in this report. Alternatives F and G, which both incorporate the addition of light rail to the Washington Avenue corridor, were unmodeled for the purposes of this study due to limitations on Synchro software to adequately model the complex operations that occur when light rail infrastructure is provided on street.

Scores ranging from -2 and 2 were given to each Alternative segment based on the level of service at the intersections within that segment. A -2 score was given to the Alternative segments where vehicles are expected to experience the highest amounts of delay at intersections, whereas a 2 score was given to the Alternative segments where vehicles are expected to experience the lowest amount of delay at intersections.

Bus Reliability

In measuring transit reliability in future alternatives, the type of infrastructure the bus or light rail is running within determined the evaluation measurement as it is the main factor that changes between the alternatives that effects transit reliability. Since transit service, particularly bus service, is the most reliable when in center-running lanes, segments with that infrastructure were given a 2, whereas a bus in one lane of mixed bus and single occupancy vehicle traffic is the least reliable and segments with that condition were given a -2.

Stress Levels - Bicycles

A bicycle level of traffic stress (LTS) analysis was conducted for each Alternative segment. This analysis was based on methodology from the Maryland Department of Transportation (MDOT), which assigns a LTS score from 1 (comfortable for almost everyone) to 4 (comfortable only for “strong and fearless” bicyclists) based on several criteria. These criteria include vehicular speed and volume on the adjacent roadway, as well as the type of bicycle infrastructure provided and its amount of separation from vehicular traffic. Scores of 2, 1, -1, and -2 were given to each segment directly correlating to LTS 1-4.

Parking Space

Segments with dedicated parking space received a 2 and segments without dedicated parking space received a -2.

Pedestrian Space

The pedestrian realm was measured by the amount of space between the curb and the property line. This space can include a variety of amenities like landscaping, outdoor dining, bike racks, and transit stops. All alternatives include a minimum of 6ft sidewalks, so segments with that minimum were evaluated at a -1. Segments with over 24ft of pedestrian space received a 2.

Goal Area: Safe for All Users

Crossing Distance

Many crashes, especially severe ones, happen at intersections between two streets. The distance one vehicle or person is exposed to oncoming traffic increases the likelihood of a crash. Segments with less than 18 ft between exposure received a 2, and segments with more than 40 ft of exposure received a -2.

Crash Modification Factor (CMF)

The crash modification factor analysis is based on resources provided by the Federal Highway Administration (FHWA) called the Crash Modification Factors Clearinghouse. CMFs are research-backed estimates of the expected change in crash frequency after a roadway design change is implemented. Each alternative shows the CMFs by segment. For the overall evaluation, the expected safety impact of each alternative was consolidated into the -2 to 2 scale based on the alternatives CMFs, with segments scoring a 2 having the most expected safety benefit and segments scoring -2 having the least.

Back of Curb Width

The amount of space behind the curb between the curb and property line is measured as an increased amount of space in that area creates a safer environment for people within it. None of the alternatives have below 6 ft behind the curb, so the spectrum of scores range from -1 for 6ft to 2 for 20+ ft.

Goal Area: Connects into a Network

The following “direct path” criteria take into account the ways that different users connect into the networks for those modes.

Direct Path - Vehicular

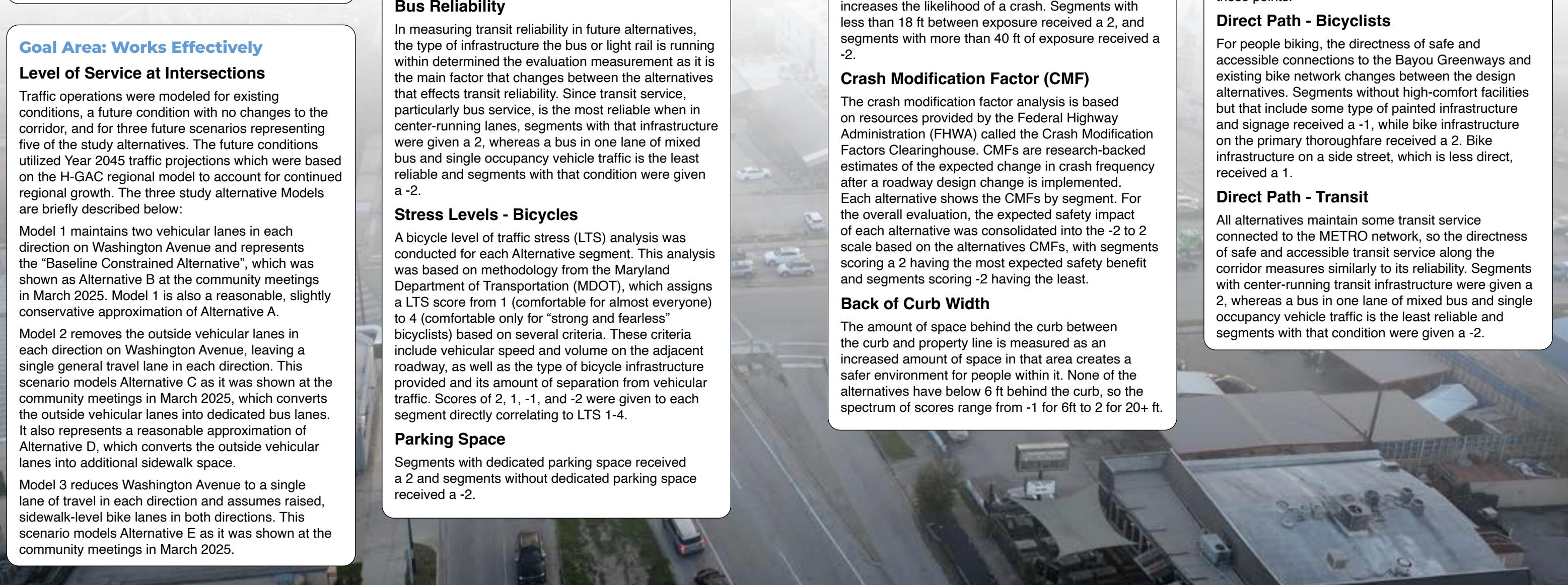
All alternatives maintain single occupancy vehicular travel throughout the corridor, so the directness of safe and accessible vehicular access is measured based on the number of through lanes and turn lanes, resulting in a similar measure to Level of Service. Alternative segments with two lanes of single occupancy vehicle traffic and turning lanes received a 2 at intersections, whereas segments with one lane of single occupancy vehicle traffic and no right turn lane at major intersections received a -2, with the spectrum of intersection lane configurations scoring between those points.

Direct Path - Bicyclists

For people biking, the directness of safe and accessible connections to the Bayou Greenways and existing bike network changes between the design alternatives. Segments without high-comfort facilities but that include some type of painted infrastructure and signage received a -1, while bike infrastructure on the primary thoroughfare received a 2. Bike infrastructure on a side street, which is less direct, received a 1.

Direct Path - Transit

All alternatives maintain some transit service connected to the METRO network, so the directness of safe and accessible transit service along the corridor measures similarly to its reliability. Segments with center-running transit infrastructure were given a 2, whereas a bus in one lane of mixed bus and single occupancy vehicle traffic is the least reliable and segments with that condition were given a -2.

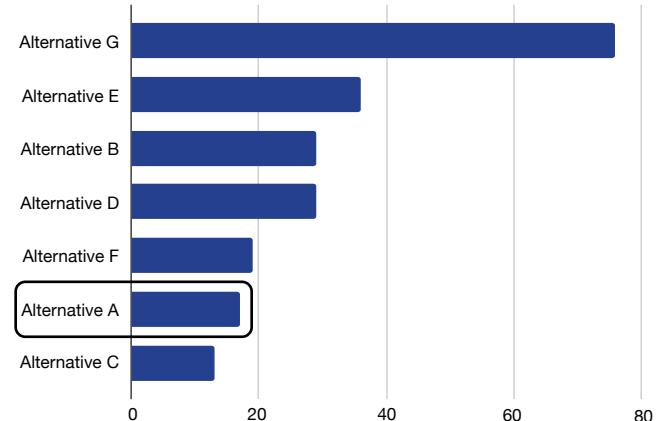


Alternative A Public Feedback

Public engagement participants ranked each of the seven alternatives from their top choice to their last choice for the future corridor design. Alternative A was not favored by the majority of participants in the engagement process: 8% of people ranked Alternative A as their first choice for the future Washington Avenue corridor.

Considering the strengths and weaknesses of each alternative, please rank the alternatives:

Count of Respondent's First Ranked Alternative



When taking into account people's ranked choices, Alternative A scored at #7 of the seven alternative options, ranking at #5.55 on average.

“The best alternative would be to combine Alternative A for Washington Avenue and Alternative B for Center Street”

Few people ranked Alternative A first and many people ranked it low in their overall choice between all of the alternatives. People who chose Alternative A disliked most other alternatives, particularly C-G. Nearly everyone who ranked Alternative A first ranked Alternative B second. Some people who chose Alternative A as their top choice noted that they prefer the Center Street shown in Alternative B. Some also emphasized that the additional signalization, phasing, and dual left turn lanes shown for all alternatives are needed. Upcoming construction on I-10 and I-45 was mentioned as a need for Alternative A.

Participants were asked about the factors that matter most when choosing their top alternative, and “Mitigates congestion” was the most important factor to participants who chose Alternative A.

“Alt A only. I did not want to rank other alternatives because they do not improve mobility on WAC. Any Alt that has Bike Lanes on WA are automatically eliminated.

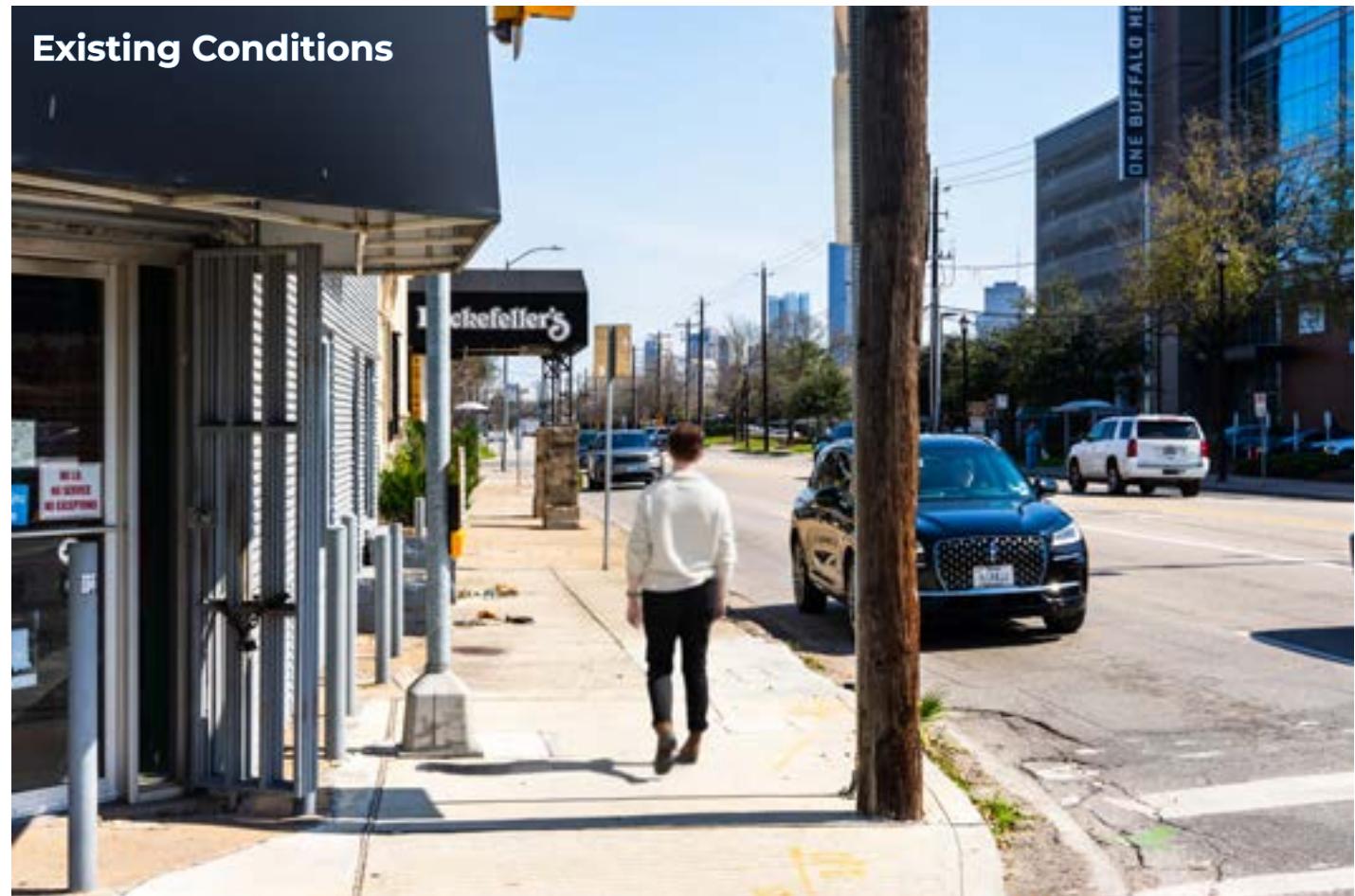
WA is already at peak capacity. Removing lanes for bike lanes will result in gridlock and overflow into already crowded neighborhoods. Side streets are not capable of handling any significant traffic - narrow, usually ditches and cars parked.”

“I would have preferred to not include C thru G in the ranking.”



Similar condition: Woodway Drive

Existing Conditions



Alternative A



Alternative A Evaluation

Traffic Modeling

All alternatives include a number of intersection treatments that could improve vehicular operations like removing channelized turn lanes and slip lanes, removing extra receiving lanes, adding dual left-turn lanes in key locations, implementing signal phasing and timing modifications, and signalizing select additional intersections throughout the corridor. With these modifications, the traffic analyses for the Model 1, which was used for Alternative A, found that Washington Avenue would be projected to operate similar to existing conditions from a vehicular standpoint.

Level of Service

- Meets the typical standard of LOS D at most intersections.
- Roundabout would be congested if background traffic growth occurs at the rate forecasted by H-GAC. Drivers on stop-controlled minor streets would also experience high delays.
- Reduced cross-section on one-way pairs (north of roundabout) may require some traffic to shift-up to 22% of traffic volume for up to 5 hours/weekday. No need for traffic to shift away from Washington east of the roundabout.

Safety Outcomes

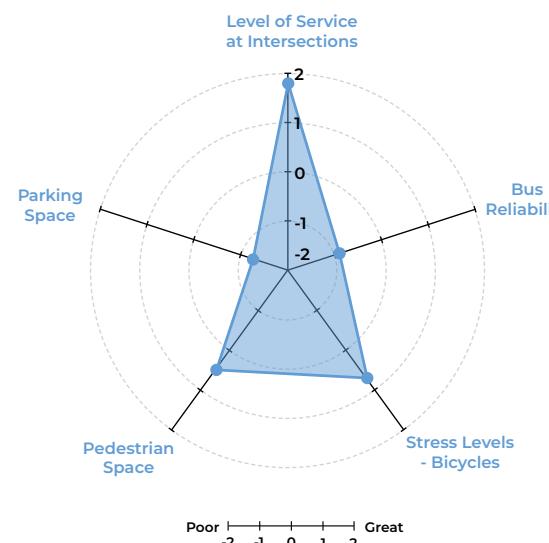
- Safety benefits from the addition of bike facilities (some of which are on Center St, not Washington).
- Street trees also have a traffic calming effect that benefits safety, as well as providing a buffer between vehicles and pedestrians.

Bike Level of Stress

- While Washington Avenue would remain uncomfortable for most cyclists, Center Street was evaluated as “comfortable for most bicyclists” throughout the section with “sharrow” treatment. The addition of protected lanes at the far east and west ends of the corridor would allow most people (and possibly even some families) to feel comfortable biking on those particular segments.

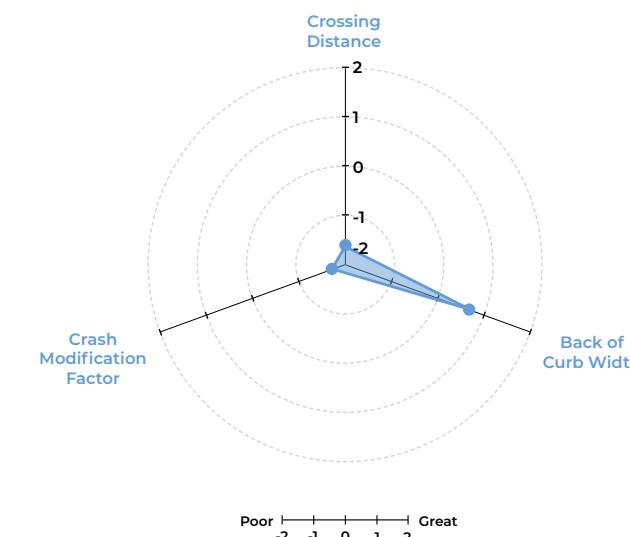
The appendix has more details on evaluation criteria.

Works Effectively



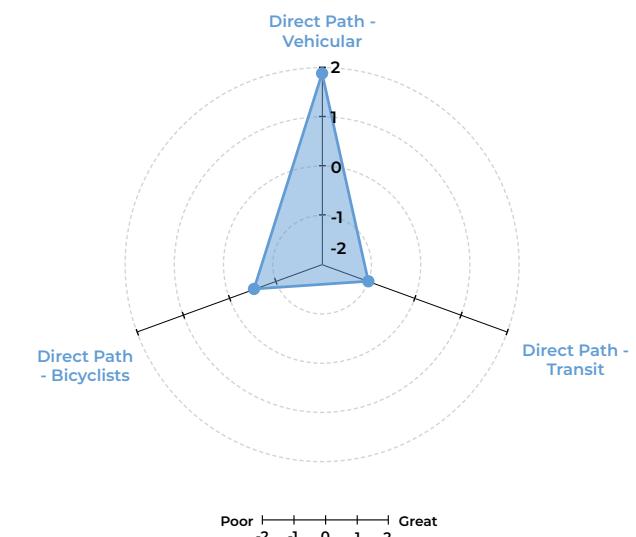
This alternative prioritizes vehicle movement, especially personal automobiles, and bus reliability would be similar to today. Much of Washington Avenue would remain uncomfortable for even the most confident cyclists, while Center Street would be comfortable for most to bike on.

Safe for all Users



With long crossings for pedestrians and minimal opportunity for traffic calming, this alternative provides little safety improvement for most of the corridor.

Connects into a Network



This alternative Connects into a Network by providing a direct path for vehicles to travel Washington Avenue.

Level of Service



With 2 travel lanes per direction for vehicles, rush hour traffic operation meets the typical standard (LOS D or better) at most intersections. Drivers on unsignalized minor streets and at the Washington/Westcott roundabout could experience high delays.

The crash modification factor (CMF) analysis is based on resources provided by the Federal Highway Administration (FHWA) called the Crash Modification Factors Clearinghouse. CMFs are research-backed estimates of the expected change in crash frequency after a roadway design change is implemented.

Under Year 2045 conditions for this alternative, drivers may shift their trip to a different route, different time of day, or different mode of transportation north of the Washington/Westcott roundabout.

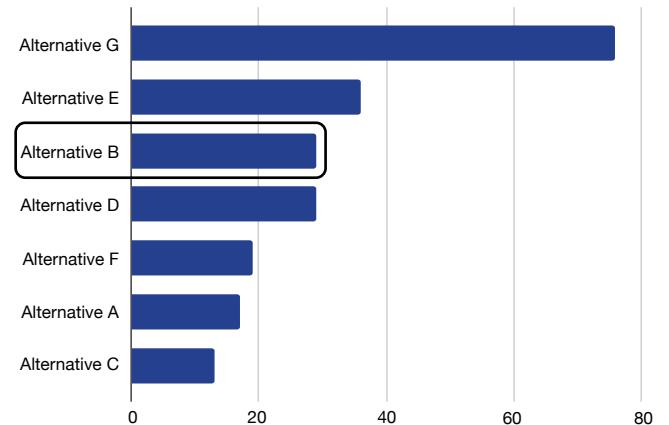
For southbound Westcott, traffic may shift in up to 5 hours of the day. % diversion anticipated = 15% on average, 22% maximum.
 For northbound Washington, traffic may shift for up to 1 hour of the day with a 4% diversion.

Alternative B Public Feedback

Public engagement participants ranked each of the seven alternatives from their top choice to their last choice for the future corridor design. Alternative B was favored by some of the participants in the engagement process: 13% of people ranked Alternative B as their first choice for the future Washington Avenue corridor.

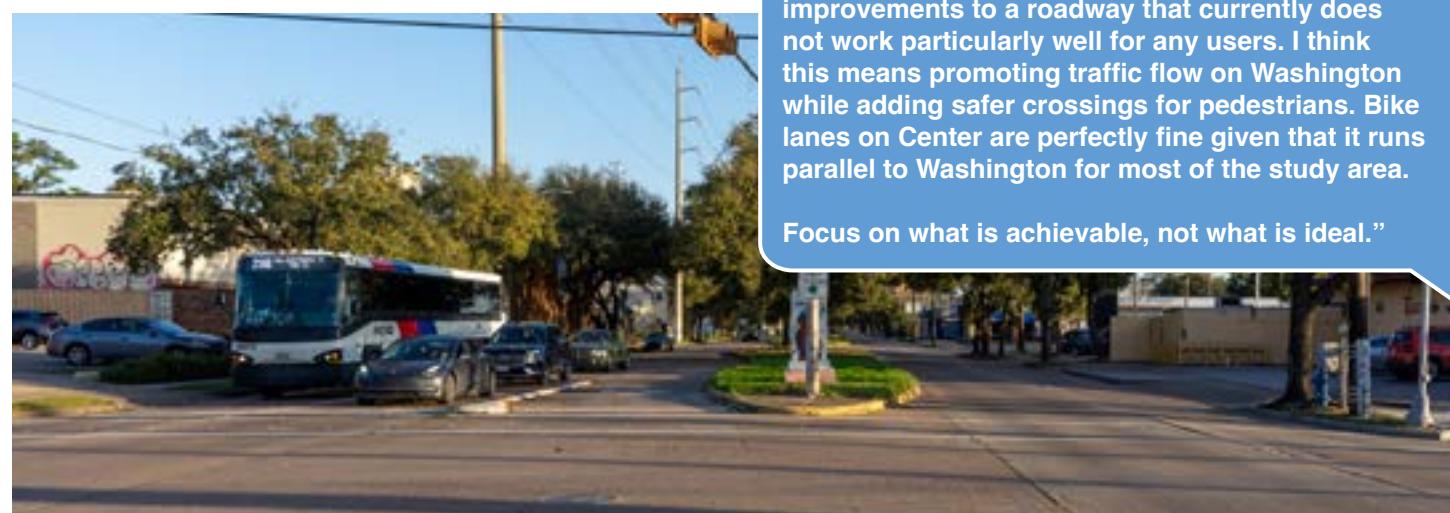
Considering the strengths and weaknesses of each alternative, please rank the alternatives:

Count of Respondent's First Ranked Alternative



When taking into account people's ranked choices, Alternative B scored at #6 of the seven alternative options, ranking at #4.65 on average.

"Alternative B: 1) minimizes impact to existing right-of-way, 2) Center becomes friendlier to active transportation, 3) seems most likely (least costly) to fund."



Similar condition: Montrose Boulevard

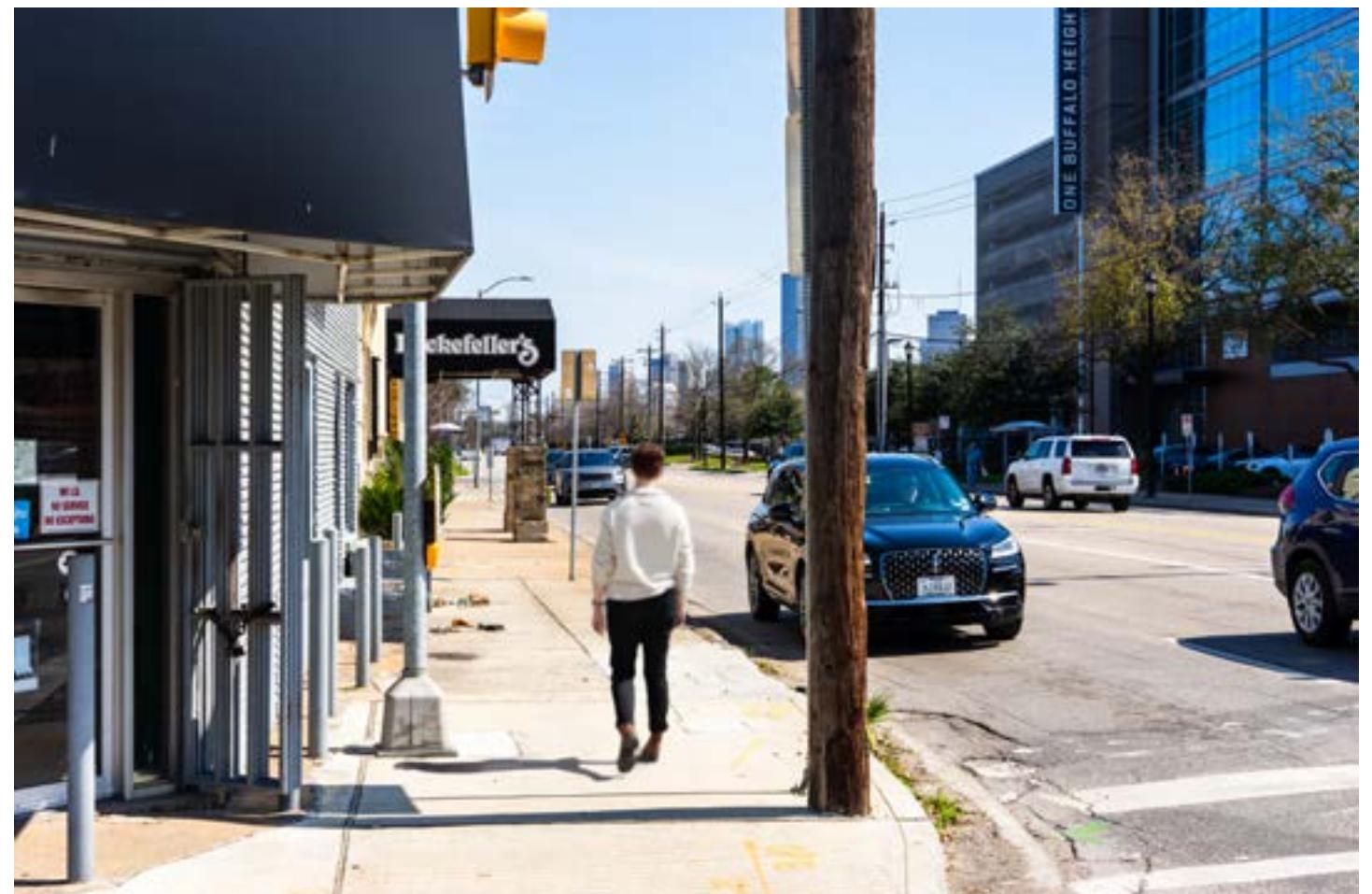
While Alternative B was 13% of people's top choice, it did not rank highly overall, as most respondents would prefer all options other than A or B. People who chose Alternative B as their top choice appreciated that it has two lanes for vehicular traffic, like today, while adding medians and other safety treatments. Most people who ranked Alternative B first ranked Alternative A second. Many commented that it balances the interests of drivers, bikers, and walkers. People also commented on how important Center Street is as a bikeway connector and emphasized the importance of the Patterson intersection being made safer for those crossing north and south to access the Bayou Greenways. Some mentioned that the current parking on Washington Avenue is a hazard and should be removed as there is ample off-street parking on Washington Avenue. It was noted that it is a realistic and cost effective option that addresses the current safety and sidewalk issues. Some people who chose Alternative B expressed interest in Alternative D in their comments.

Participants were asked about the factors that matter most when choosing their top alternative, and "Improves driving safety" was the most important factor to participants who chose Alt B in addition to "mitigates congestion."

"The options with transit are not realistic, given that METRO has neither the will nor the political capital to proceed even with existing high-capacity transit projects that have been in planning for decades.

This project should focus on making incremental improvements to a roadway that currently does not work particularly well for any users. I think this means promoting traffic flow on Washington while adding safer crossings for pedestrians. Bike lanes on Center are perfectly fine given that it runs parallel to Washington for most of the study area.

Focus on what is achievable, not what is ideal."



Alternative B Evaluation

Traffic Modeling

All alternatives include a number of intersection treatments that could improve vehicular operations like removing channelized turn lanes and slip lanes, removing extra receiving lanes, adding dual left-turn lanes in key locations, implementing signal phasing and timing modifications, and signalizing select additional intersections throughout the corridor. With these modifications, the traffic analyses for the Model 1, which was used for Alternative B, found that Washington Avenue would be projected to operate similar to existing conditions from a vehicular standpoint.

Level of Service

- Meets typical standard of LOS D at most intersections.
- Roundabout would be congested if background traffic growth occurs at the rate forecasted by H-GAC. Drivers on stop-controlled minor streets would also experience high delays.
- Reduced cross-section on one-way pairs (north of roundabout) may require some traffic to shift-up to 22% of traffic volume for up to 5 hours/weekday. No need for traffic to shift away from Washington east of roundabout.

Safety Outcomes

- Safety benefits from the addition of bike facilities (some of which are on Center, not Washington).
- Raised medians reduce injury crashes by separating opposing directions of traffic and limiting conflict points, especially on corridors with many driveways, and by providing a refuge island for pedestrians to cross.
- Street trees also have a traffic calming effect that benefits safety, as well as providing a buffer between vehicles and pedestrians.
- While there is an adverse CMF for narrowing travel lanes on streets that carry > 4,000 vehicles daily (like Washington does), narrower lanes are correlated with lower speeds and are therefore expected to reduce crash severity.

Bike Level of Stress

- While Washington Avenue would remain uncomfortable for most cyclists along the majority of the study segment, the addition of protected lanes at the far east and west ends of the corridor and on Center would allow most people to feel comfortable biking end to end.

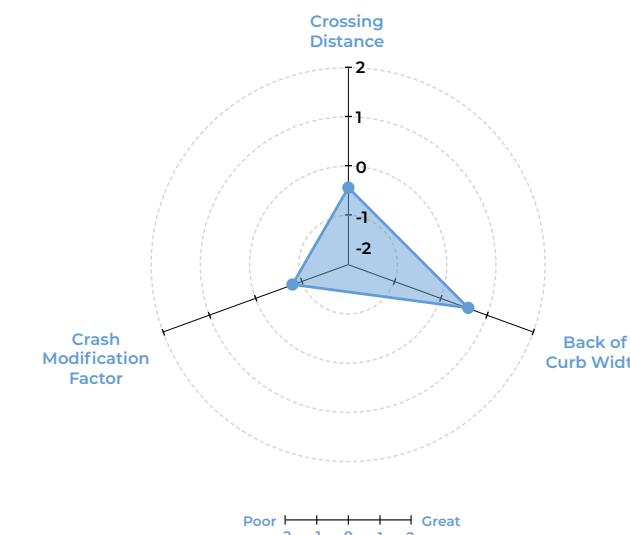
The appendix has more details on evaluation criteria.

Works Effectively



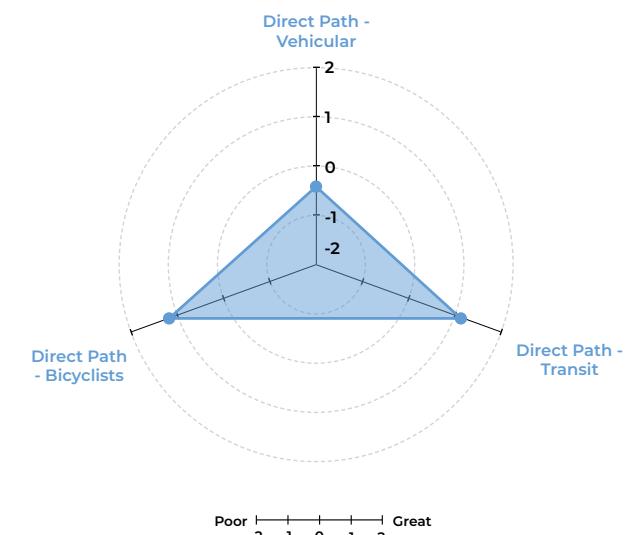
This alternative prioritizes vehicle movement, though narrower lanes are correlated with lower travel speeds for improved safety. Bus reliability would be similar to today. Much of Washington Avenue would remain uncomfortable for even the most confident cyclists, but protected bike lanes on Center Street could be bikeable for all ages.

Safe for all Users



With design features that reduce driver speed and additional protected bike facilities, some safety improvements can be expected with this alternative—but long crossing distances still leave travelers vulnerable, especially when outside of a vehicle.

Connects into a Network



This alternative Connects into a Network by providing a direct path for vehicles to travel Washington Avenue.

Level of Service



With 2 travel lanes per direction for vehicles, rush hour traffic operation meets the typical standard (LOS D or better) at most intersections. Drivers on unsignalized minor streets and at the Washington/Westcott roundabout could experience high delays.

Under Year 2045 conditions for this alternative, drivers may shift their trip to a different route, different time of day, or different mode of transportation north of the Washington/Westcott roundabout.

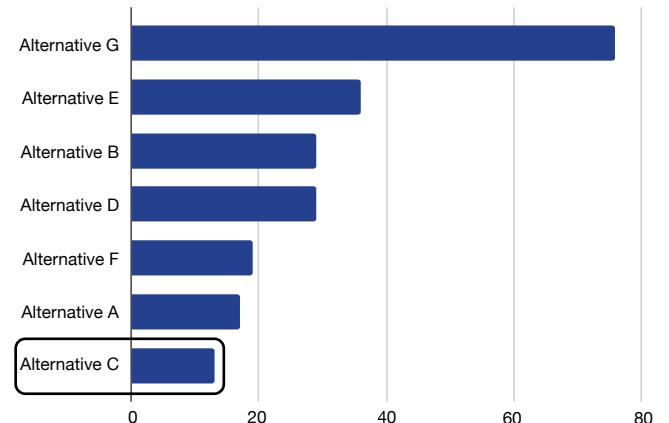
For southbound Westcott, traffic may shift in up to 5 hours of the day. % diversion anticipated = 15% on average, 22% maximum.
For northbound Washington, traffic may shift for up to 1 hour of the day with a 4% diversion.

Alternative C Public Feedback

Public engagement participants ranked each of the seven alternatives from their top choice to their last choice for the future corridor design. Alternative C was not highly favored by participants in the engagement process: 6% of people ranked Alternative C as their first choice for the future Washington Avenue corridor.

Considering the strengths and weaknesses of each alternative, please rank the alternatives:

Count of Respondent's First Ranked Alternative



When taking into account people's ranked choices, Alternative C scored at #4 of the seven alternative options, ranking at #3.78 on average.

"We have to offer the best alternative to driving in order to relieve congestion in this area, and throughout the city. Between the options given, adding a lane dedicated to buses only would be the best way to reduce congestion."

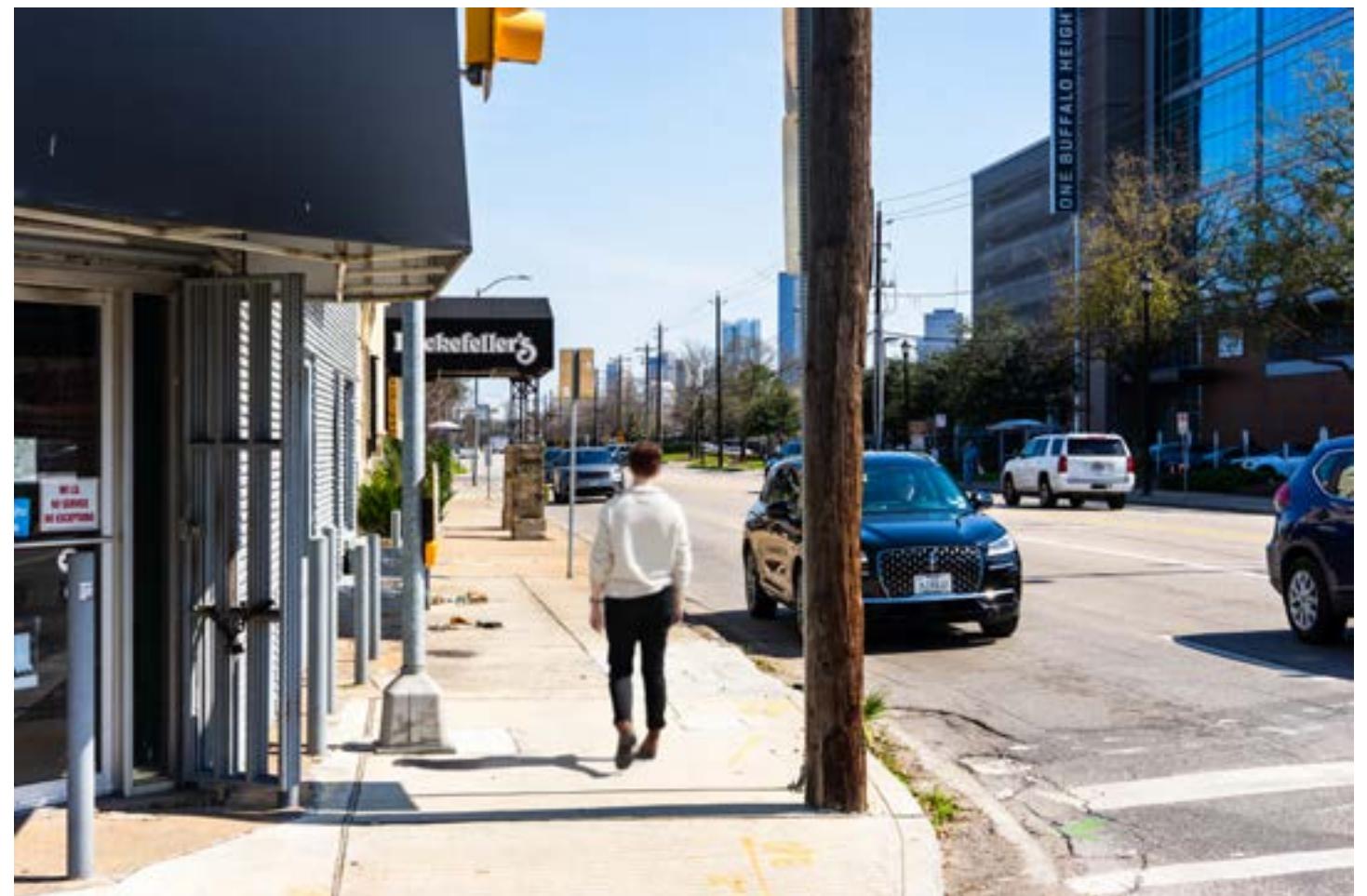
While few people chose Alternative C as their top choice for the corridor, it ranked relatively highly amongst in people's overall rankings. People who chose Alternative C as their top choice appreciate that it would improve bus reliability and make it a more attractive mobility option. As the bus lane allows for right turns, it was noted that it balances the needs of drivers while increasing the usability of the current bus service. People noted that having Memorial Drive parallel to Washington Avenue alleviates the need for Washington to serve as a route for bypass traffic, and that reducing vehicular volumes on Washington Avenue is important. Some noted that it should be easier to access Memorial Park on transit. Many people who prefer Alternative C emphasized the importance of Center Street for east-west bike connectivity and noted that it is an important part of making the transit lanes work well. Some also mentioned the potential for the curb-running bus lane to be used as a pick up/drop off lane during the nighttime hours when the bus is not in service.

Participants were asked about the factors that matter most when choosing their top alternative, and all of the factors were important to those who chose Alt C, except "Mitigates congestion."

"Austin's red line along Guadelupe is an example of successful rapid bus transit that Metro should consider; displayed arrival times and the ability to synchronize lights for buses improved the ridership experience to make it approachable to those who hadn't used mass transit before. We found ourselves using it quite a bit when we lived there."



Similar condition: Broadway Street, Everett, MA



Alternative C Evaluation

Traffic Modeling

With the intersection modifications included in all alternatives, the analyses for Model 2, which was used for Alternative C, showed increasing delays and queues throughout the corridor, with the projected delay at many intersection approaches exceeding typical standards.

Level of Service

- LOS exceeds the typical threshold of LOS D during peak hours at most intersections. Bus lanes provide more flexible access for drivers to use right-turn lanes than if the sidewalks were widened.
- Roundabout would be congested if background traffic growth occurs at the rate forecasted by H-GAC. Drivers on stop-controlled minor streets would also experience high delays.
- The need for traffic to shift to other routes/times of day/modes is most pronounced for eastbound Washington (up to 39% for 4-11 hours/day). Westbound, the shift is expected to be up to 28% for 0-8 hours/day. The need for traffic to shift is highest near Studemont and lowest east of Houston and west of TC Jester (including on the one-way pairs).

Safety Outcomes

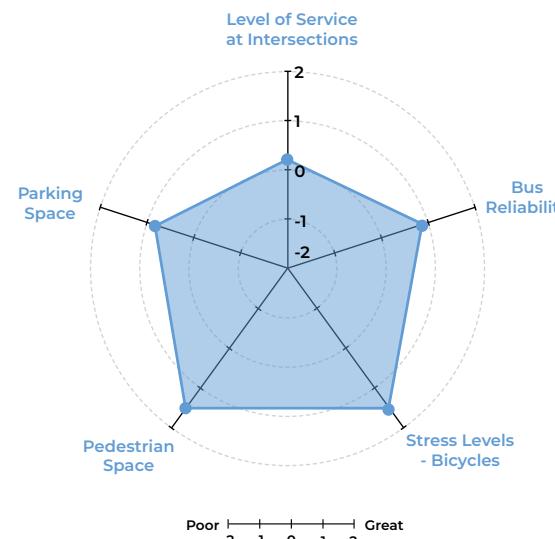
- Safety benefits from the addition of bike facilities (some of which are on Center, not Washington).
- Adding transit lanes with transit priority at signals is shown to reduce crashes at intersections.
- Raised medians reduce injury crashes by separating opposing directions of traffic and limiting conflict points, especially on corridors with many driveways, and by providing a refuge island for pedestrians to cross.
- Street trees also have a traffic calming effect that benefits safety, as well as providing a buffer between vehicles and pedestrians.
- While there is an adverse CMF for narrowing travel lanes on streets that carry > 4,000 vehicles daily (like Washington does), narrower lanes are correlated with lower speeds and are therefore expected to reduce crash severity.

Bike Level of Stress

- While Washington Avenue would remain uncomfortable for most cyclists along the majority of the study segment, the addition of protected lanes at the far east and west ends of the corridor and on Center would allow most people to feel comfortable biking end to end.

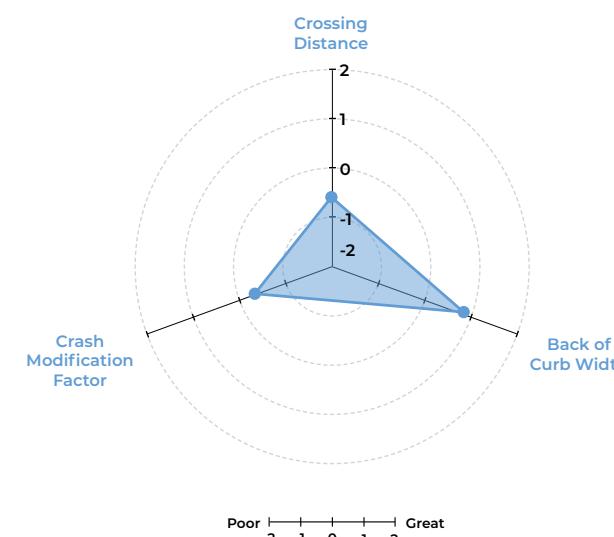
The appendix has more details on evaluation criteria.

Works Effectively



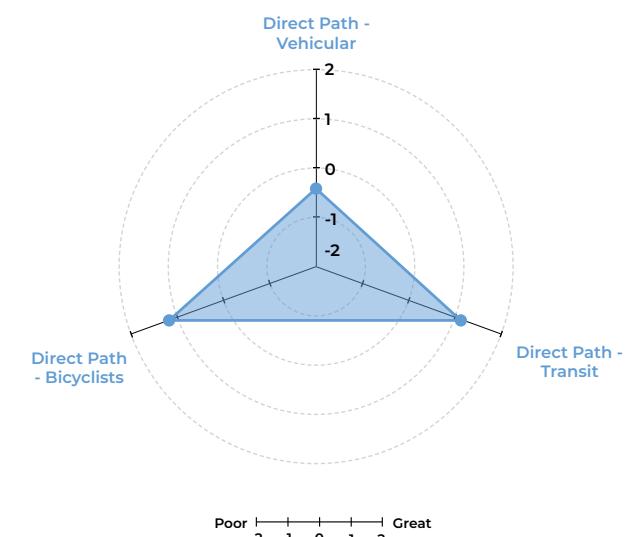
Dedicated bus lanes improve transit reliability while also supporting heavy driver turns at intersections by allowing space for right-turn lanes. Much of Washington Avenue would remain uncomfortable for even the most confident cyclists, but protected bike lanes on Center Street could be bikeable for all ages.

Safe for all Users



Narrow lane widths and the presence of the bus lane would be expected to calm traffic speeds for some overall safety improvements, but long crossing distances still leave travelers vulnerable, especially when outside of a vehicle.

Connects into a Network



This alternative Connects into a Network by providing a direct path for transit and bicyclists to travel Washington Avenue.

Level of Service



With 1 travel lane per direction, congestion exceeds typical standards (LOS D) at several study intersections due to vehicular delay. At intersections, bus lanes provide flexible access to turn lanes.

Under Year 2045 conditions for this alternative, drivers along the study corridor may shift their trip to a different route, different time of day, or different mode of transportation.

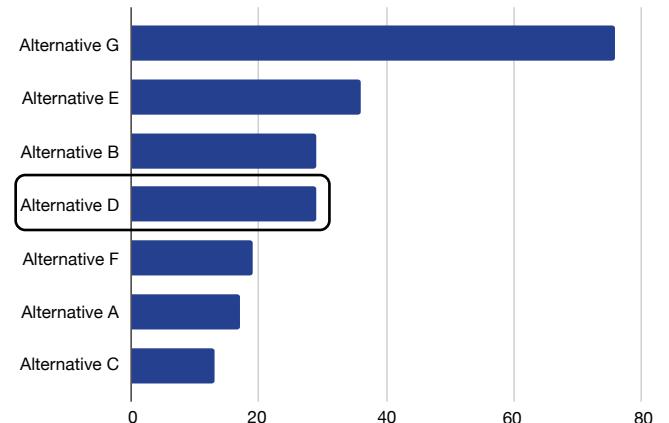
In the eastbound direction, traffic may shift 4 to 11 hours of the day. % diversion anticipated = 17% on average, 39% maximum. In the westbound direction, traffic may shift 0 to 8 hours of the day. % diversion anticipated = 11% on average, 28% maximum.

Alternative D Public Feedback

Public engagement participants ranked each of the seven alternatives from their top choice to their last choice for the future corridor design. Alternative D was favored by some of the participants in the engagement process: 13% of people ranked Alternative D as their first choice for the future Washington Avenue corridor.

Considering the strengths and weaknesses of each alternative, please rank the alternatives:

Count of Respondent's First Ranked Alternative



When taking into account people's ranked choices, Alternative D scored at #2 of the seven alternative options, ranking at #3.43 on average.

While Alternative D was not a majority of participants' top choice, it was ranked highly by nearly all participants. People who chose Alternative D as their top choice emphasized the need for large root space for heritage trees to thrive, which attracted them to Alternative D. Shade and walkability was a primary decision factor for those who ranked Alternative D first. Many people noted that walkability is critical for those taking transit, and that slowing down traffic would benefit all users of the street. People appreciated that Alternative D would make crossing Washington Avenue easier at all intersections. People noted that with the large number of restaurants, businesses, and apartments in the area, it would be a more lively street if it was more safe and comfortable to walk. The proximity to schools is also a major factor for those who chose Alternative D. Some people who live in the neighborhood expressed concern about medians blocking left turns into neighborhood streets, and many people emphasized the need for a safer crossing at Patterson Street for people walking and biking across Washington Avenue.

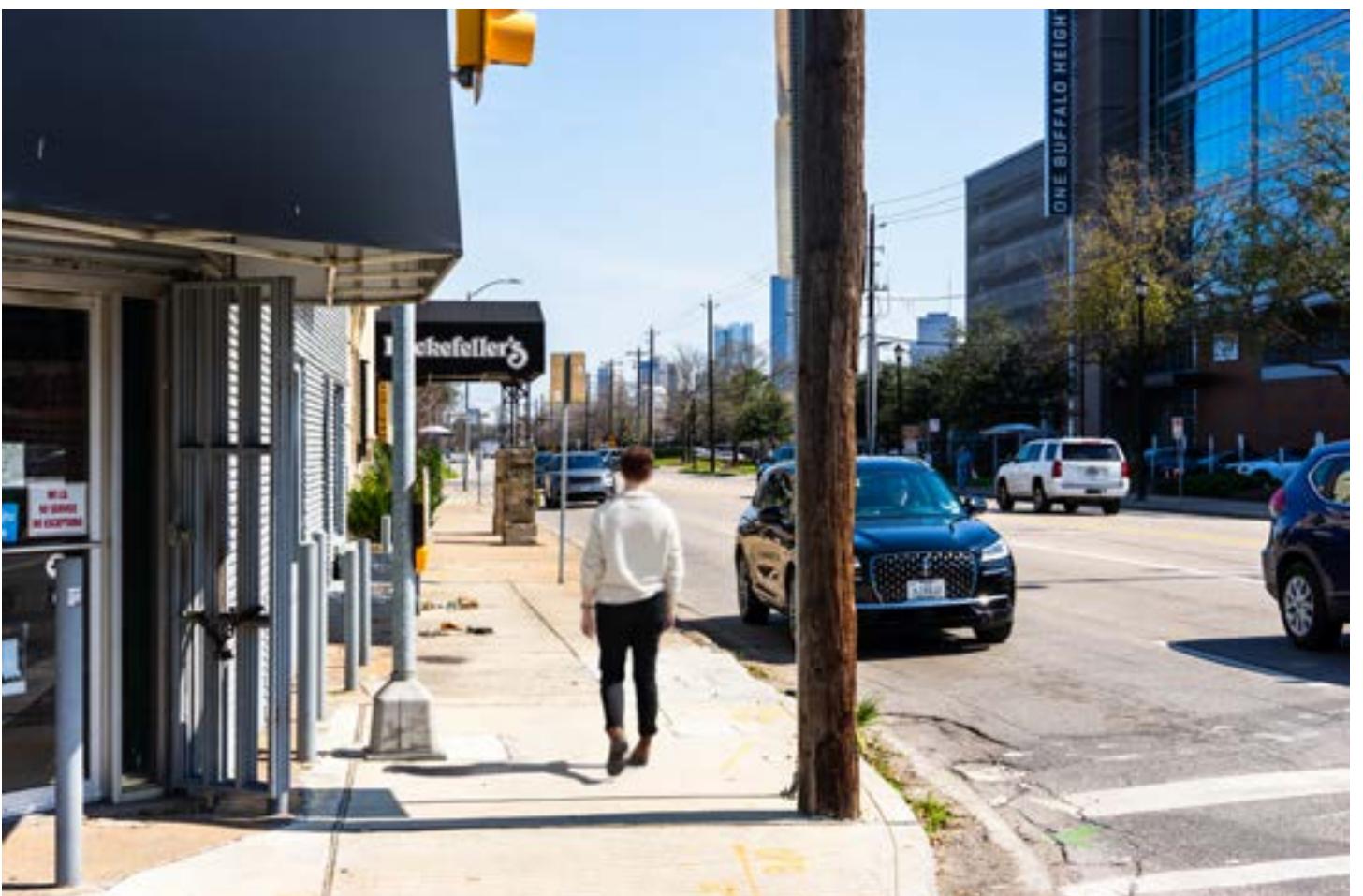
Participants were asked about the factors that matter most when choosing their top alternative, and "Improves driving safety" and "Improve walking/rolling conditions on sidewalks" was the most important to participants who chose Alt D as their top choice.

"Room for large shade trees. So productive for local businesses and quality of life, while allowing right turn lanes to mitigate traffic. Foot traffic will go up when it has shade and buffer from traffic; bikes can use Center Street; restaurants might even use outdoor dining space; while reducing the urban heat island effect for a region of the city with a lot of housing density."

"Prioritize safety for walkers rollers and drivers. Current design is unsafe for all in and out of cars. This road is not a highway. If folks want a highway, they can take the new I-10 lane not Washington avenue."



Similar condition: Navigation Boulevard



Alternative D Evaluation

Traffic Modeling

With the intersection modifications included in all alternatives, the analyses for Model 2, which was used for Alternative D, showed increasing delays and queues throughout the corridor, with the projected delay at many intersection approaches exceeding typical standards.

Level of Service

- LOS exceeds the typical threshold of LOS D during peak hours at most intersections. Wider sidewalks provide less flexible access for drivers to use right-turn lanes than bus lanes.
- Roundabout would be congested if background traffic growth occurs at the rate forecasted by H-GAC. Drivers on stop-controlled minor streets would also experience high delays.
- The need for traffic to shift to other routes/times of day/modes is most pronounced for eastbound Washington (up to 39% for 4-11 hours/day). Westbound, the shift is expected to be up to 28% for 0-8 hours/day. The need for traffic to shift is highest near Studemont and lowest east of Houston and west of TC Jester (including on the one-way pairs).

Safety Outcomes

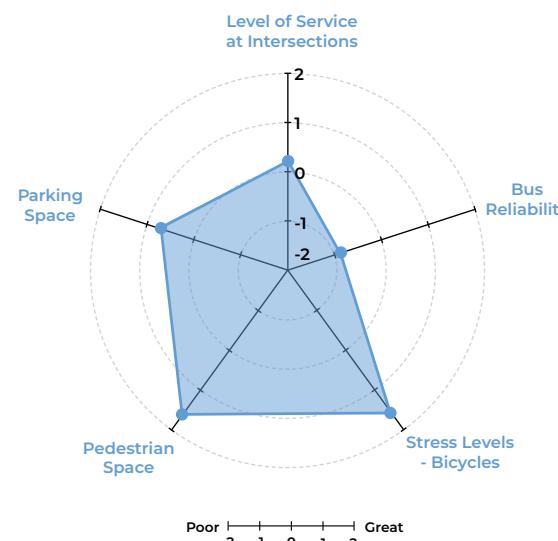
- Safety benefits from the addition of bike facilities (some of which are on Center, not Washington).
- Shortening pedestrian crossing distances improves safety outcomes for pedestrian-involved crashes.
- Raised medians reduce injury crashes by separating opposing directions of traffic and limiting conflict points, especially on corridors with many driveways, and by providing a refuge island for pedestrians to cross.
- Street trees also have a traffic calming effect that benefits safety, as well as providing a buffer between vehicles and pedestrians.
- While there is an adverse CMF for narrowing travel lanes on streets that carry > 4,000 vehicles daily (like Washington does), narrower lanes are correlated with lower speeds and are therefore expected to reduce crash severity.

Bike Level of Stress

- While Washington Avenue would remain uncomfortable for most cyclists along the majority of the study segment, the addition of protected lanes at the far east and west ends of the corridor and on Center would allow most people to feel comfortable biking end to end.

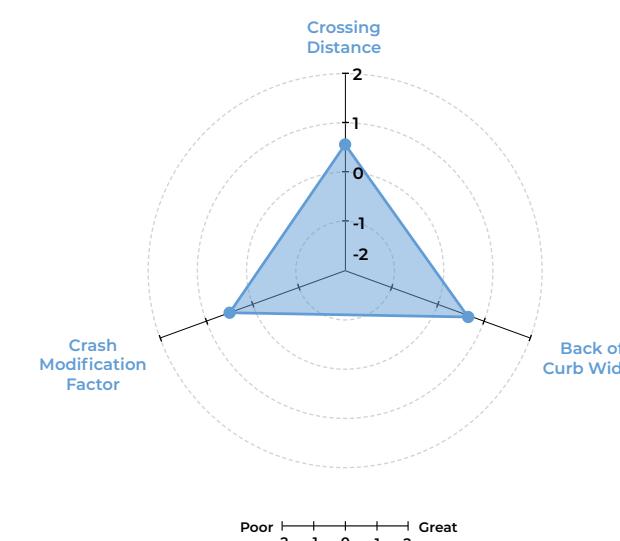
The appendix has more details on evaluation criteria.

Works Effectively



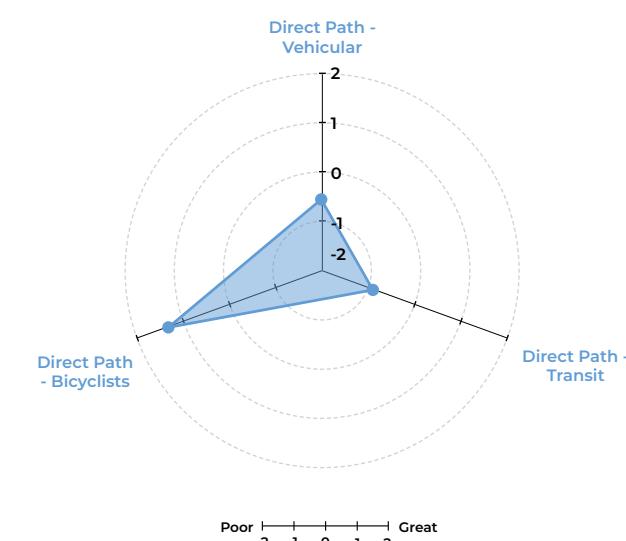
With a single lane in each direction for all vehicles (including buses), vehicular delays would be expected to increase, though right-turn lanes at major intersections would provide some minor relief. Wide sidewalk space would support comfortable pedestrian movement, as well as gathering and beautification. Much of Washington Avenue would remain uncomfortable for even the most confident cyclists, but protected bike lanes on Center Street could be bikeable for all ages.

Safe for all Users



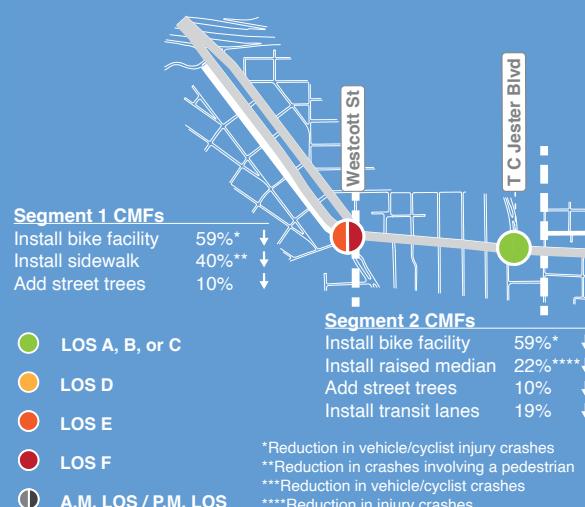
Reduced driver speeds and shortened crossing distances would be expected to improve safety for all users, especially pedestrians.

Connects into a Network

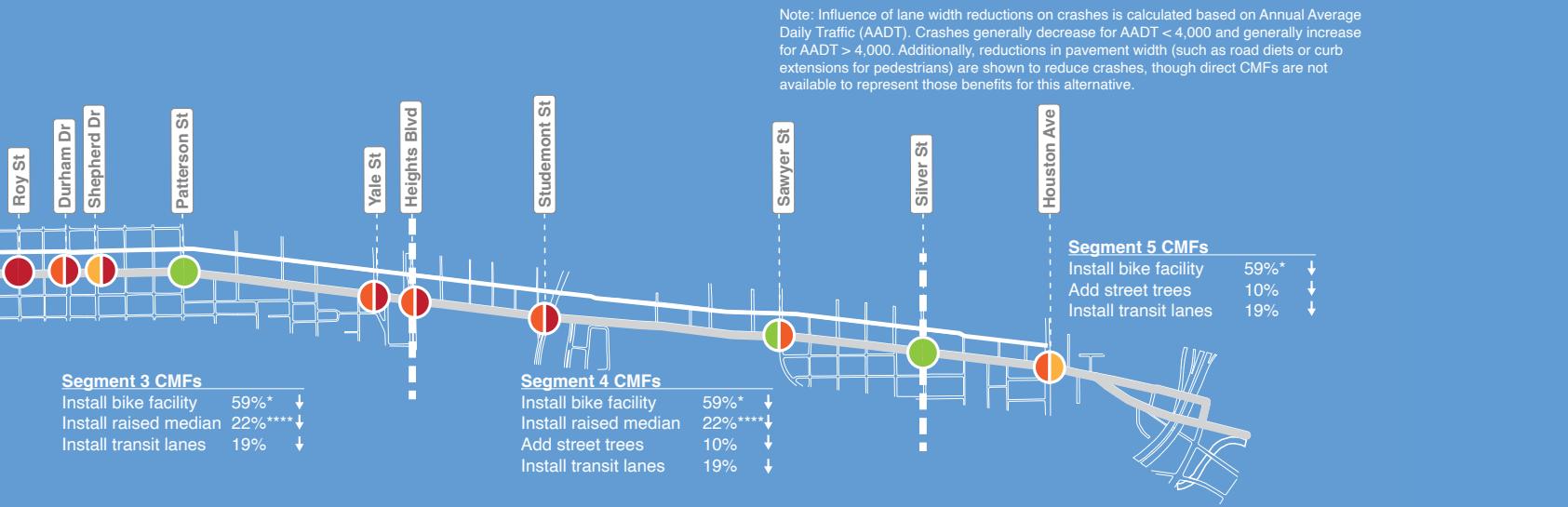


This alternative Connects into a Network by providing a direct path for bicyclists to travel Washington Avenue.

Level of Service



With one travel lane per direction, congestion exceeds typical standards (LOS D) at several study intersections due to vehicular delay. Turn lanes are more constrained under this alternative to maximize sidewalk space,



so right-turn queues may spill out of turn lanes and greatly increase congestion during rush hours. Under Year 2045 conditions for this alternative, drivers along the study corridor may shift their trip to a different route, different time of day, or different mode of transportation.

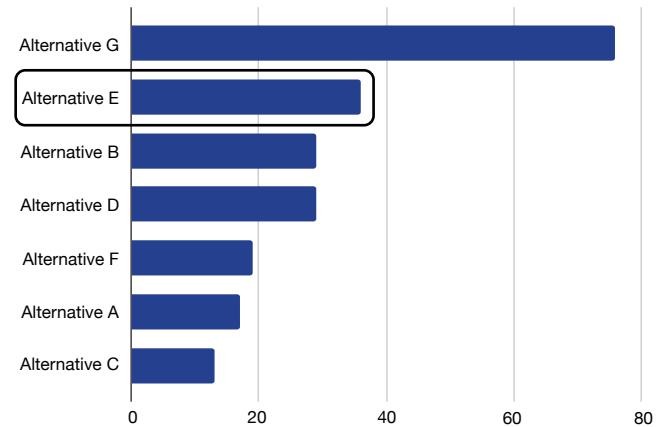
In the eastbound direction, traffic may shift 4 to 11 hours of the day. % diversion anticipated = 17% on average, 39% maximum. In the westbound direction, traffic may shift 0 to 8 hours of the day. % diversion anticipated = 11% on average, 28% maximum.

Alternative E Public Feedback

Public engagement participants ranked each of the seven alternatives from their top choice to their last choice for the future corridor design. Alternative E was favored by many of the participants in the engagement process: 16% of people ranked Alternative E as their first choice for the future Washington Avenue corridor.

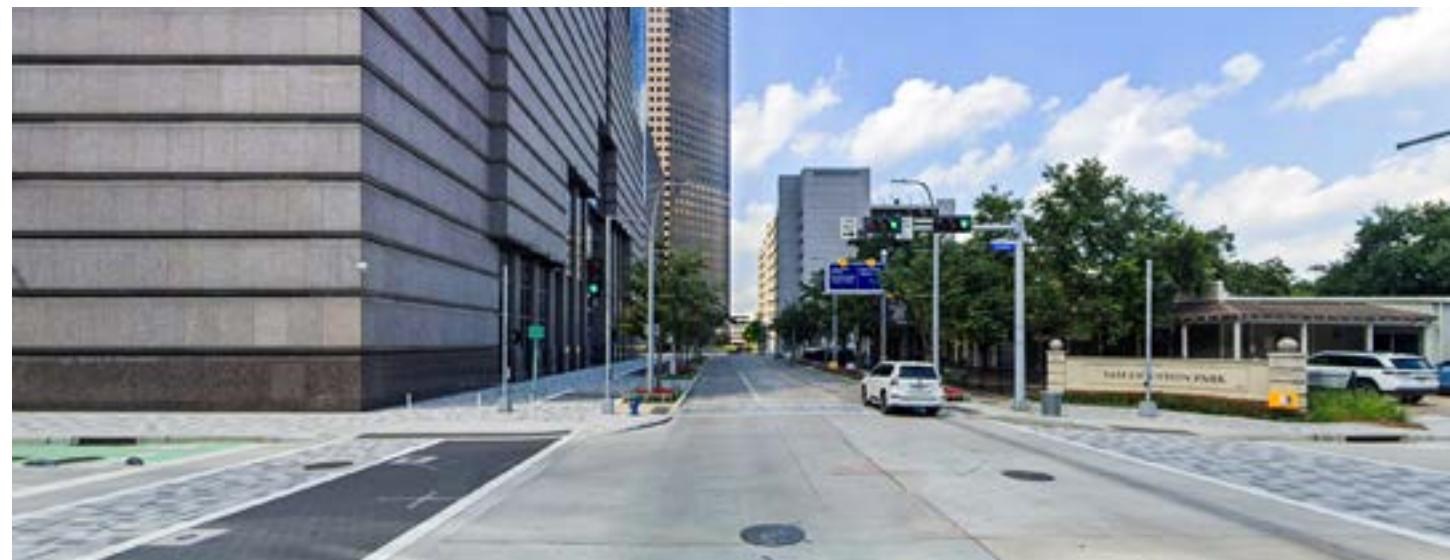
Considering the strengths and weaknesses of each alternative, please rank the alternatives:

Count of Respondent's First Ranked Alternative



When taking into account people's ranked choices, Alternative E scored at #5 of the seven alternative options, ranking at #3.80 on average.

"We need help at Patterson/Washington. We need a new Jackson Hill Pedestrian Bridge current one is rusting out. I bike to work downtown 2 or 3 days a week now from west end"



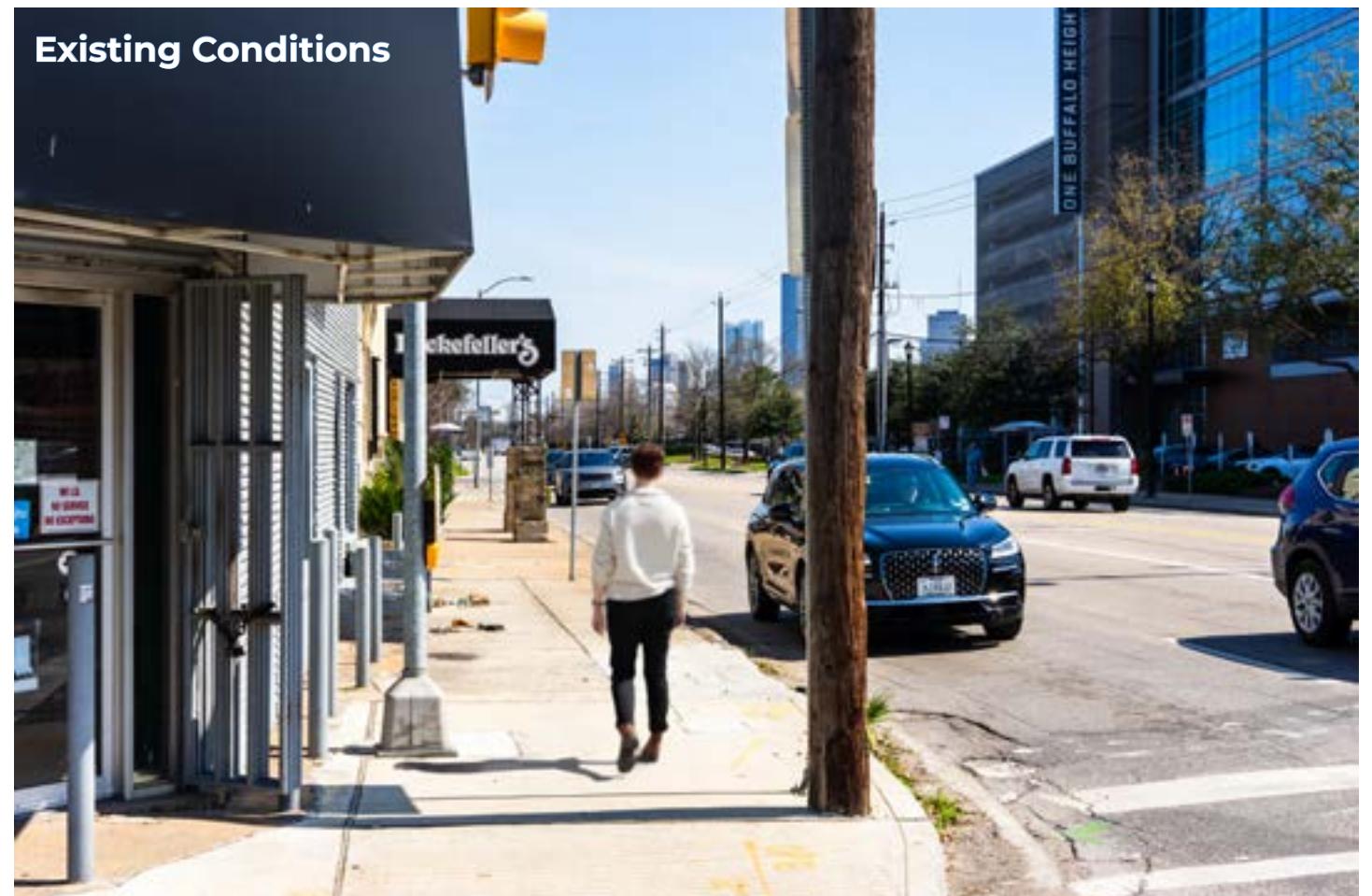
Similar condition: Bagby Street

While Alternative E was many participants' top choice, it was not ranked very highly overall by all participants. People who chose Alternative E as their top choice noted the amount of people currently biking on Washington Avenue based on data available on Strava and emphasized that adding separated bike infrastructure to Washington Avenue would also make it safer for drivers and pedestrians as speeding causes many crashes today. Many people wrote that this would be beneficial for businesses on Washington Avenue and that the broad mix of uses on the street should be accommodated. Patterson Street was also noted as in need of a median treatment or signal.

Participants were asked about the factors that matter most when choosing their top alternative, and "Improve walking/rolling conditions on sidewalks" and "improves biking conditions" was most important to participants who chose Alt E, F, and G.

"This corridor has the potential to be beautiful and well utilized by everyone. There are already sections with vibrant nightlife and entertainment in quick walking distance, but walking on the sidewalk or biking in the right lane is terrifying. As it is now the street speeds are well above posted limits, it's dangerous to cross even at a crosswalk, and I see near-collisions regularly. As someone who takes public transit, bikes, and walks in addition to using a private vehicle, I want my streets to de-prioritize the focus on vehicle traffic only and make it safer for all modes of transit."

Existing Conditions



Alternative E



Alternative E Evaluation

Traffic Modeling

With the intersection modifications included in all alternatives, the analyses for Model 3, which was used for Alternative E, exhibited further increased delays and queues compared to Model 2, primarily because right-turning vehicles at high-volume intersections would be severely constrained by short protected-only right-turn phases, which are necessitated by the sidewalk-level bicycle lanes.

Level of Service

- LOS exceeds the typical threshold of LOS D during peak hours at most intersections, and this is further exacerbated by the need for bike signal priority at intersections with right-turn lanes on Washington. Wider sidewalks provide less flexible access for drivers to use right-turn lanes than bus lanes.
- The need for traffic to shift to other routes/times of day/modes is most pronounced for eastbound Washington (up to 39% for 4-11 hours/day). Westbound, the shift is expected to be up to 28 percent for 0-8 hours/day. The need for traffic to shift is highest near Studemont and lowest east of Houston and west of TC Jester (including on the one-way pairs).

Safety Outcomes

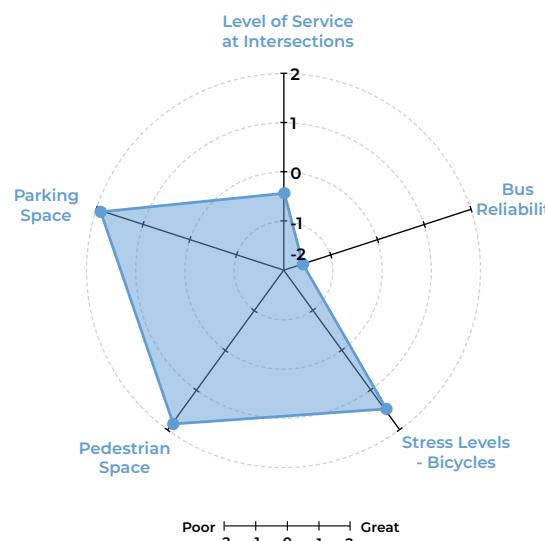
- Safety benefits from the addition of bike facilities, as well as a bike phase at signalized intersections. (Bike signals are required by FHWA when there is a dedicated right-turn lane to the left of a dedicated bike lane, as we have here.)
- Raised medians reduce injury crashes by separating opposing directions of traffic and limiting conflict points, especially on corridors with many driveways, and by providing a refuge island for pedestrians to cross.
- Street trees also have a traffic calming effect that benefits safety, as well as providing a buffer between vehicles and pedestrians.
- While there is an adverse CMF for narrowing travel lanes on streets that carry > 4,000 vehicles daily (like Washington does), narrower lanes are correlated with lower speeds and are therefore expected to reduce crash severity.

Bike Level of Stress

- Under this alternative, biking would be comfortable for most people who want to bike along the entirety of the Washington Avenue study corridor, including Center Street and Westcott Street.

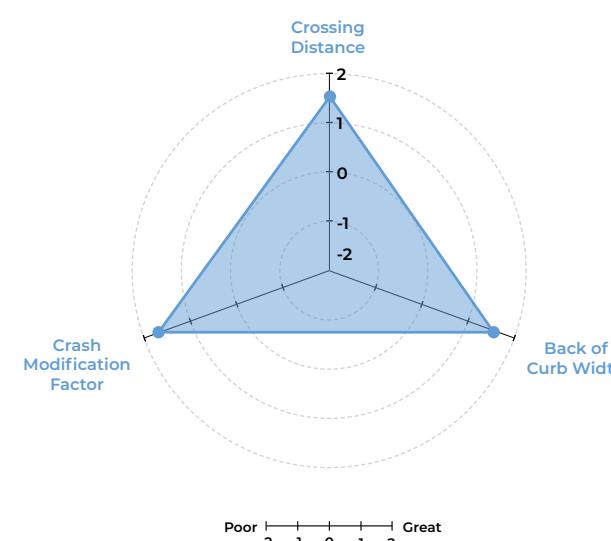
The appendix has more details on evaluation criteria.

Works Effectively



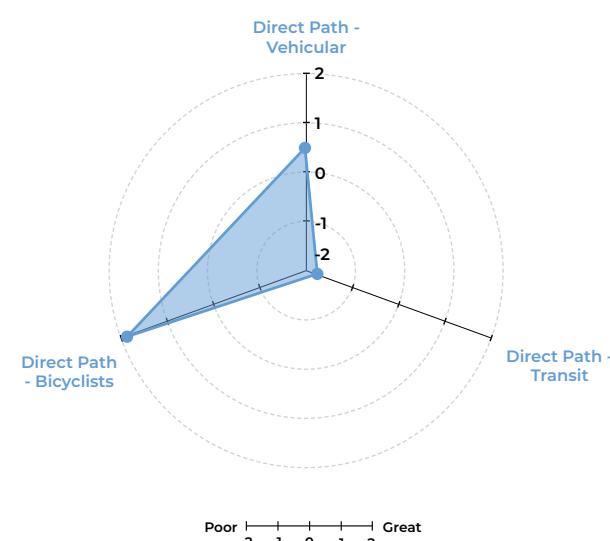
With a single lane in each direction for all vehicles (including buses) and bike signal separation at major intersections, vehicular delays would be expected to increase substantially. Pedestrians would have comfortable sidewalks, and bicyclists of all ages could benefit from raised bike facilities along Washington.

Safe for all Users

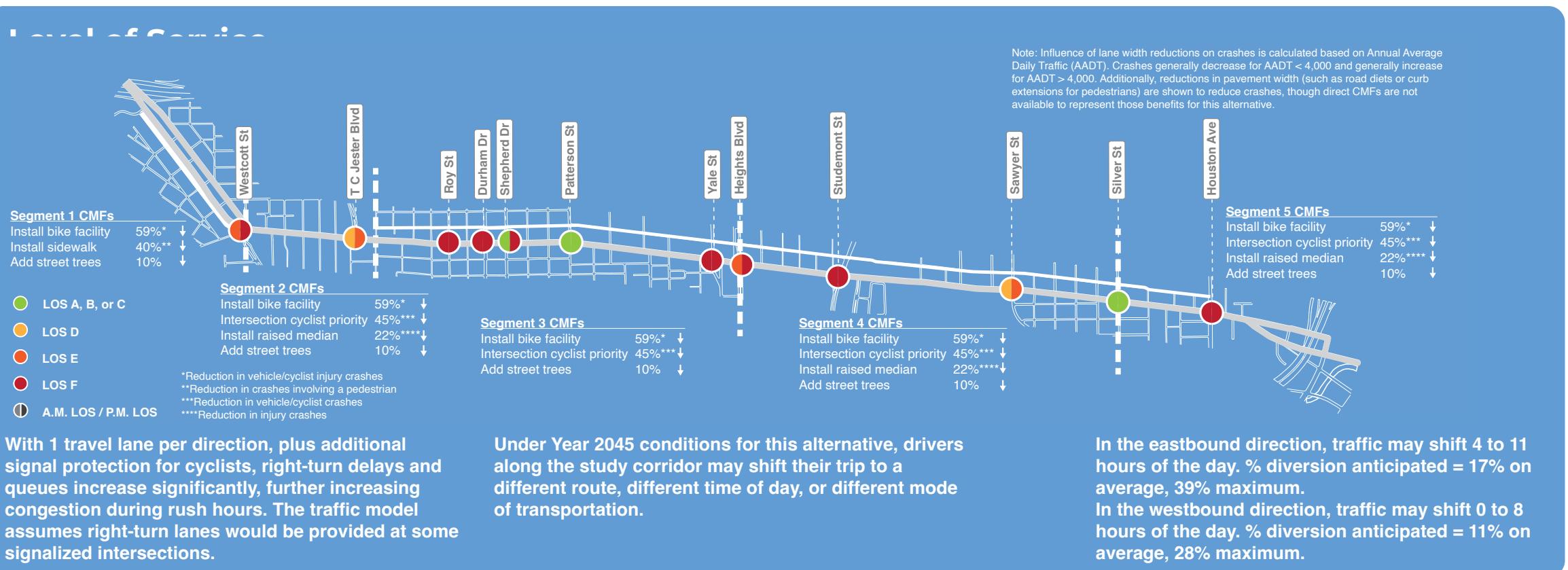


Reduced driver speeds, shortened crossing distances, and off-street bike facilities along Washington Avenue would be expected to significantly improve safety for all users, especially pedestrians and bicyclists.

Connects into a Network



This alternative Connects into a Network by providing a direct path for vehicles and bicyclists to travel Washington Avenue.

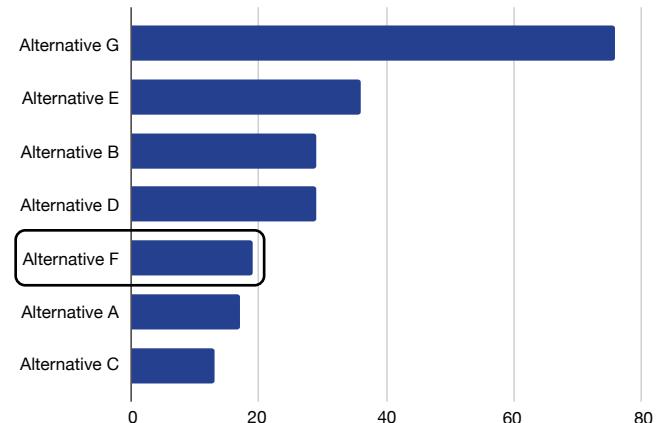


Alternative F Public Feedback

Public engagement participants ranked each of the seven alternatives from their top choice to their last choice for the future corridor design. Alternative F was favored by some of the participants in the engagement process: 9% of people ranked Alternative F as their first choice for the future Washington Avenue corridor.

Considering the strengths and weaknesses of each alternative, please rank the alternatives:

Count of Respondent's First Ranked Alternative



When taking into account people's ranked choices, Alternative F scored at #3 of the seven alternative options, ranking at #3.48 on average.

"There are lots of great opportunities to improve multimodal planning along Washington Avenue. However, ideal results will manifest if land use modifications (e.g. elimination of parking minimums, elimination of setback minimums, etc) take place within Houston's code."

While Alternative F was not many participants' top choice, it was many people's second or third choice and ranked highly among all participants. People who chose Alternative F as their top choice noted the importance of the Washington Avenue corridor in the high-frequency transit network, especially the METRO Rail Green and Purple lines, which currently terminate downtown. They also emphasized the importance of the corridor redesign providing shade and pedestrian prioritization as well as bicycle facilities and transit. Many people who ranked Alternative F first also ranked Alternatives D, C, and E highly in addition to Alternative G.

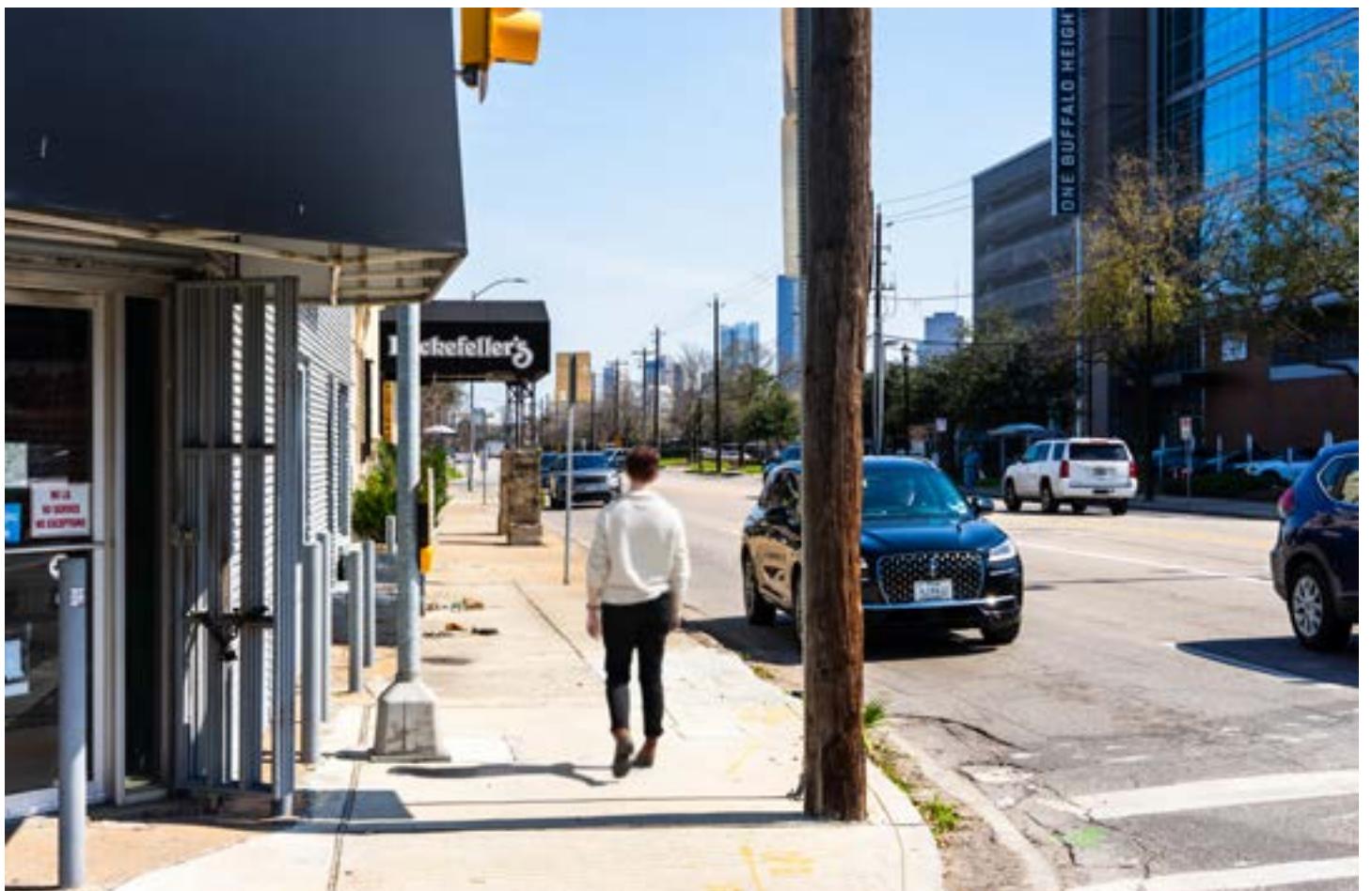
Participants were asked about the factors that matter most when choosing their top alternative, and "Improve walking/rolling conditions on sidewalks" and "improves biking conditions" was most important to participants who chose Alt E, F, and G. "Improve bus reliability" was most important to participants who chose Alt F and G.

"I want light rail in the corridor, extend purple green metrorail that way!"

"As the study highlighted, Washington Ave (outside of specific points) is quite dangerous for pedestrians and bikers alike. Increasing side walk space, boosting public transit connectivity with other areas, and reducing motorized traffic pressure on the street would massively improve living conditions in the neighbourhood."



Similar condition: Harrisburg Blvd



Alternative F Evaluation

Traffic Modeling

Alternatives F and G, which both incorporate the addition of light rail to the Washington Avenue corridor, were unmodeled for the purposes of this study due to limitations on Synchro software to adequately model the complex operations that occur when light rail infrastructure is provided on street.

Level of Service

- West of Heights Blvd, the corridor meets typical standard of LOS D at most intersections, matching Model 1 (Alt B), but no traffic analysis was done specifically for this alternative. LOS east of Heights for vehicle traffic would likely be F.
- Reduced cross-section on one-way pairs (north of roundabout) may require some traffic to shift – up to 22% of traffic volume for up to 5 hours/weekday. Because two vehicle lanes are maintained from the roundabout east to Heights Boulevard, there is no need for traffic to shift in this segment. However, where the cross-section is reduced to one vehicle lane in each direction east of Heights Boulevard, up to 39% of eastbound traffic may need to shift for 7-11 hours of a typical weekday. Up to 28% of westbound traffic may also need to shift for 0-8 hours of a typical weekday in this same section.

Safety Outcomes

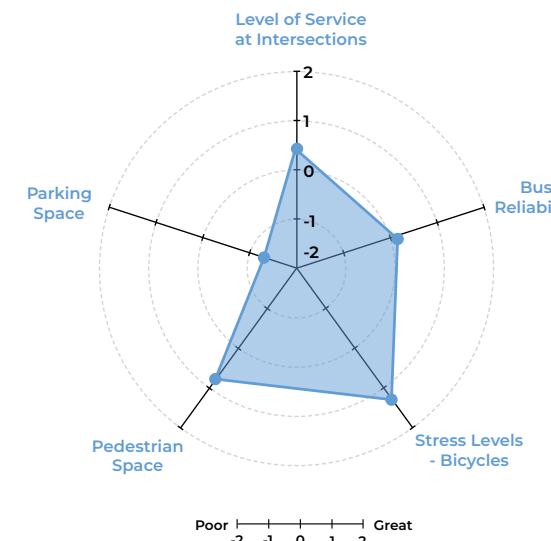
- Safety benefits from the addition of bike facilities (some of which are on Center, not Washington).
- Adding transit lanes with transit priority at signals is shown to reduce crashes at intersections.
- Raised medians reduce injury crashes by separating opposing directions of traffic and limiting conflict points, especially on corridors with many driveways, and by providing a refuge island for pedestrians to cross.
- Street trees also have a traffic calming effect that benefits safety, as well as providing a buffer between vehicles and pedestrians. (Only relevant for the west half of the corridor)
- While there is an adverse CMF for narrowing travel lanes on streets that carry > 4,000 vehicles daily (like Washington does), narrower lanes are correlated with lower speeds and are therefore expected to reduce crash severity.

Bike Level of Stress

- The addition of protected lanes at the far east and west ends of the corridor and on Center would allow most people to feel comfortable biking end to end.

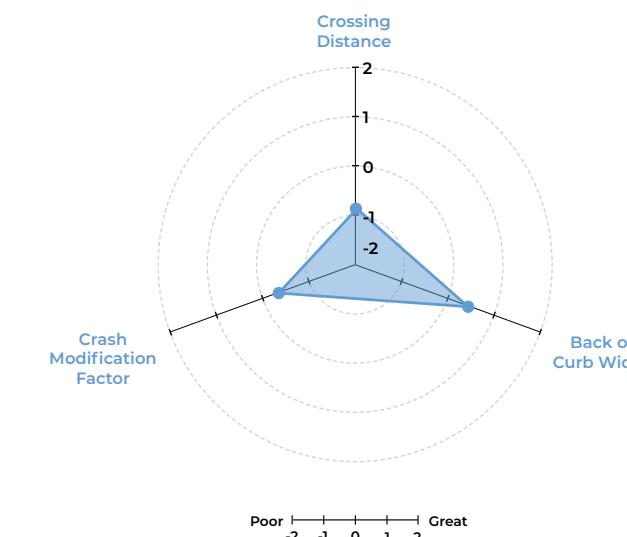
The appendix has more details on evaluation criteria.

Works Effectively



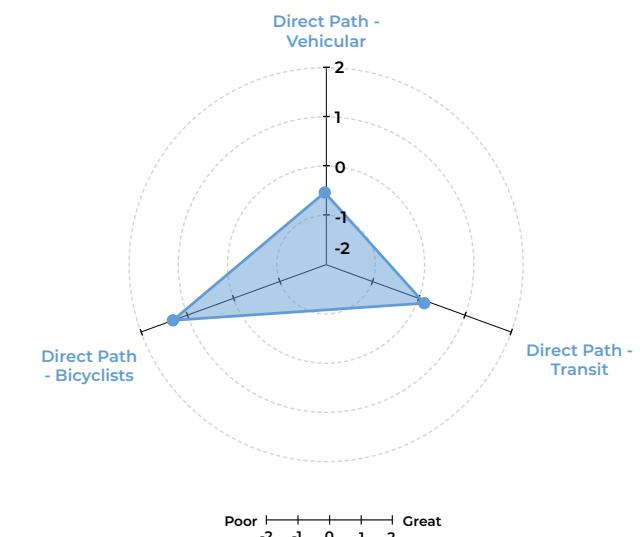
This alternative prioritizes vehicle movement on the western half of the corridor while significantly increasing transit capacity and service on the eastern half. Where light rail is present, vehicular capacity would be very constrained. Sidewalk space would be functional and comfortable for moving along the corridor. Much of Washington Avenue would remain uncomfortable for even the most confident cyclists, but protected bike lanes on Center Street could be bikeable for all ages.

Safe for all Users

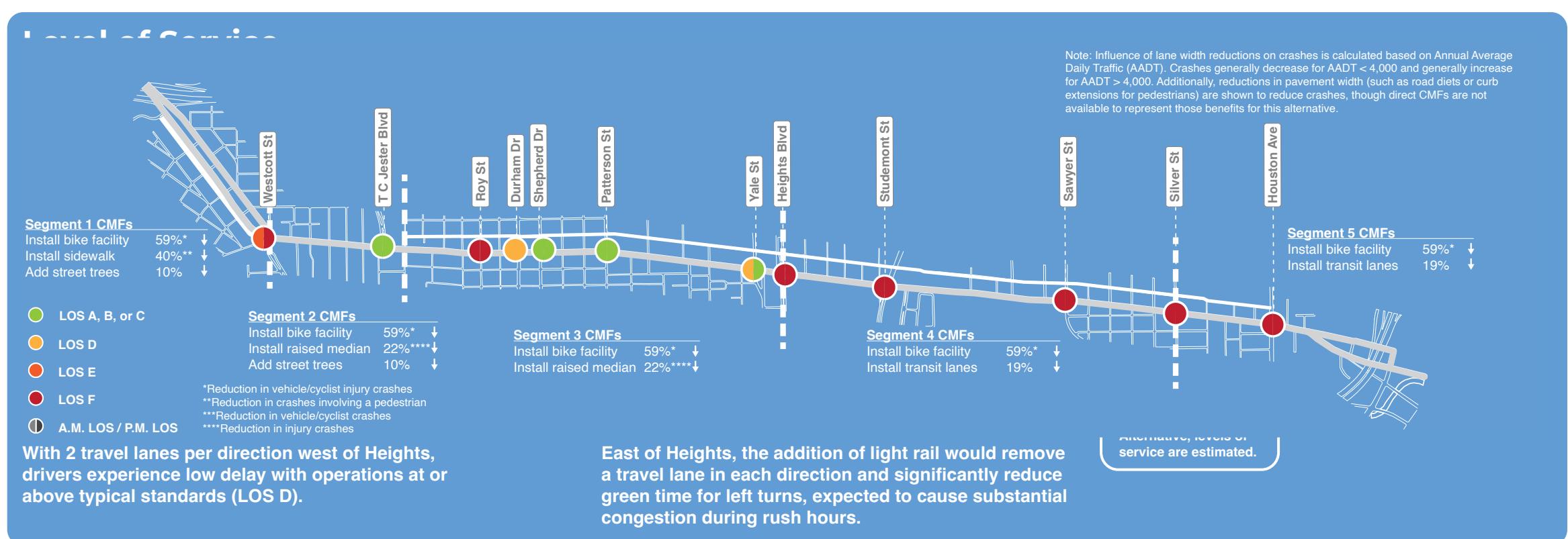


With design features that reduce driver speed and additional protected bike facilities, some safety improvements can be expected with this alternative—but long crossing distances still leave travelers somewhat vulnerable, especially when outside of a vehicle.

Connects into a Network



This alternative Connects into a Network by providing a direct path for bicyclists to travel Washington Avenue.

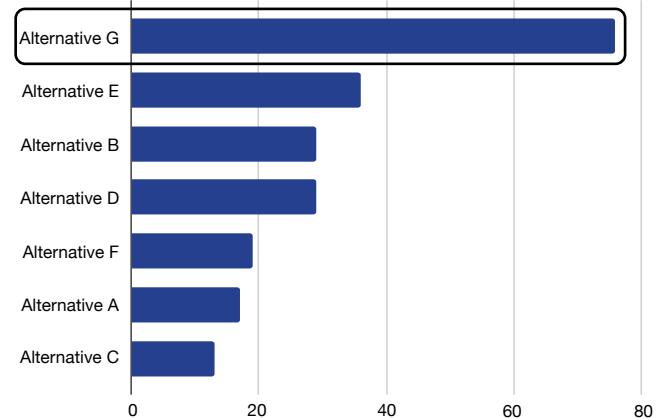


Alternative G Public Feedback

Public engagement participants ranked each of the seven alternatives from their top choice to their last choice for the future corridor design. Alternative G was the most favored by participants in the engagement process: 35% of people ranked Alternative G as their first choice for the future Washington Avenue corridor.

Considering the strengths and weaknesses of each alternative, please rank the alternatives:

Count of Respondent's First Ranked Alternative



When taking into account people's ranked choices, Alternative G scored at #1 of the seven alternative options, ranking at #3.32 on average.

“My current bus route to my office in the heights that goes along Washington is an hour; any of these options that include improvements for bus or the addition of light rail would greatly improve my quality of life and I assume it would do the same for many others!!”

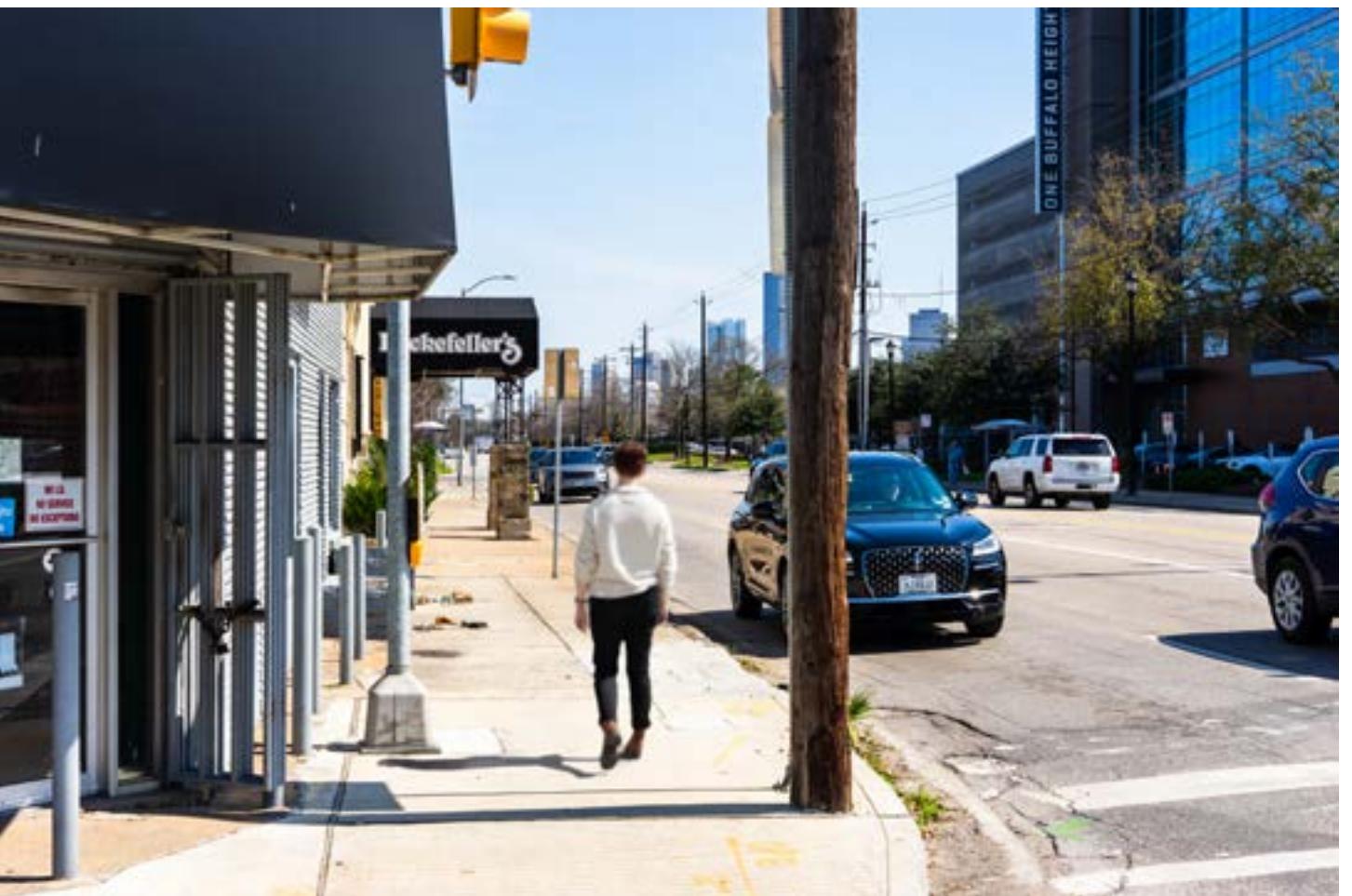
Alternative G was most people's first choice, and the majority of those who ranked Alternative G first ranked Alternative F second. People who chose Alternative G as their top choice noted the importance of walkability increasing with increased transit infrastructure. Many people commented that light rail connecting downtown with all of Washington Avenue and Memorial Park would reimagine what is possible for Houston and the neighborhood. Participants noted the high-capacity vehicular facilities immediately north and south of Washington Avenue (IH-10 and Memorial Drive) and the importance of prioritizing local transit service on Washington Avenue.

Participants were asked about the factors that matter most when choosing their top alternative, and “Improve walking/rolling conditions on sidewalks” and “improves biking conditions” was most important to participants who chose Alt E, F, and G. “Improve bus reliability” was most important to participants who chose Alt F and G.

“Great presentation, loved the data on sidewalks. Alternative G is incredible, but all of the Alternatives are a great improvement. As a power chair user, Washington is unusable, scary, and depressing. 6” sidewalks would be insufficient w/ bistro seating and would violate ADA, as I understand. Hoping for much wider!”



Similar condition: Fulton Street



Alternative G Evaluation

Traffic Modeling

All alternatives include a number of intersection treatments that could improve vehicular operations like removing channelized turn lanes and slip lanes, removing extra receiving lanes, adding dual left-turn lanes in key locations, implementing signal phasing and timing modifications, and signalizing select additional intersections throughout the corridor. Alternatives F and G, which both incorporate the addition of light rail to the Washington Avenue corridor, were unmodeled for the purposes of this study due to limitations on Synchro software to adequately model the complex operations that occur when light rail infrastructure is provided on street.

Level of Service

- The corridor likely meets LOS F at intersections, but no traffic analysis was done for this alternative.
- The reduced cross-section north of the roundabout may require a significant amount of traffic to shift, particularly in the northbound direction, which has been reduced to one lane – up to 52% of the northbound volume for up to 9 hours each weekday and up to 22% of the southbound volume for up to 5 hours each weekday. On the segment east of the roundabout, the need for traffic to shift is most pronounced for eastbound Washington (up to 39% for 4-11 hours/weekday). Westbound, the shift is expected to be up to 28% for 0-8 hours/weekday. The need for traffic to shift is highest near Studemont and lowest east of Houston and west of TC Jester to the roundabout.

Safety Outcomes

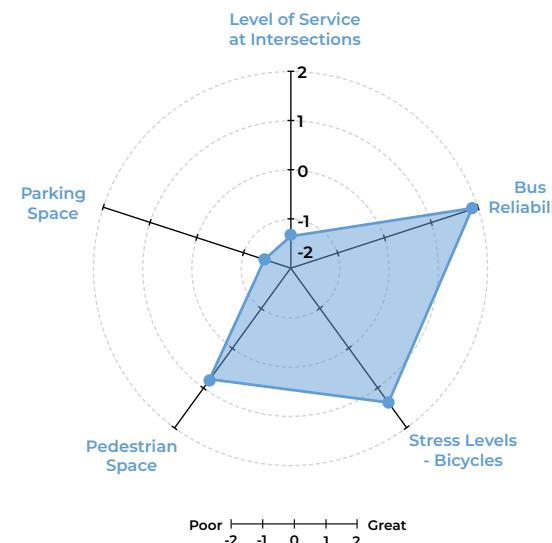
- Safety benefits from the addition of bike facilities (some of which are on Center, not Washington).
- Adding transit lanes with transit priority at signals is shown to reduce crashes at intersections.
- Street trees also have a traffic calming effect that benefits safety, as well as providing a buffer between vehicles and pedestrians.
- While there is an adverse CMF for narrowing travel lanes on streets that carry > 4,000 vehicles daily (like Washington does), narrower lanes are correlated with lower speeds and are therefore expected to reduce crash severity.

Bike Level of Stress

- The addition of protected lanes at the far east and west ends of the corridor and on Center would allow most people to feel comfortable biking end to end.

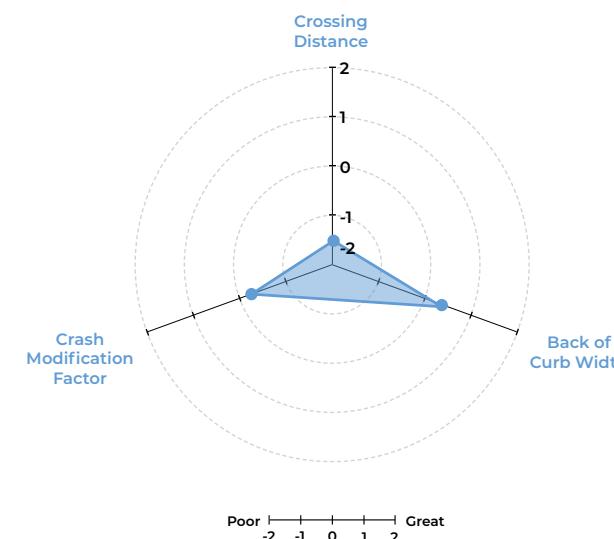
The appendix has more details on evaluation criteria.

Works Effectively



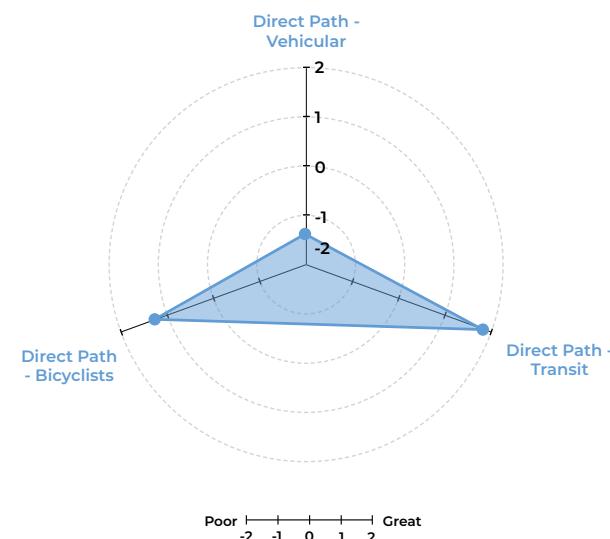
Transit capacity and service is highly prioritized, resulting in reduced lanes and significant increases in driver delay due to substantial constraints on turning traffic. Sidewalk space would provide a basic level of comfort for moving along the corridor. Much of Washington Avenue would remain uncomfortable for even the most confident cyclists, but protected bike lanes on Center Street could be bikeable for all ages.

Safe for all Users



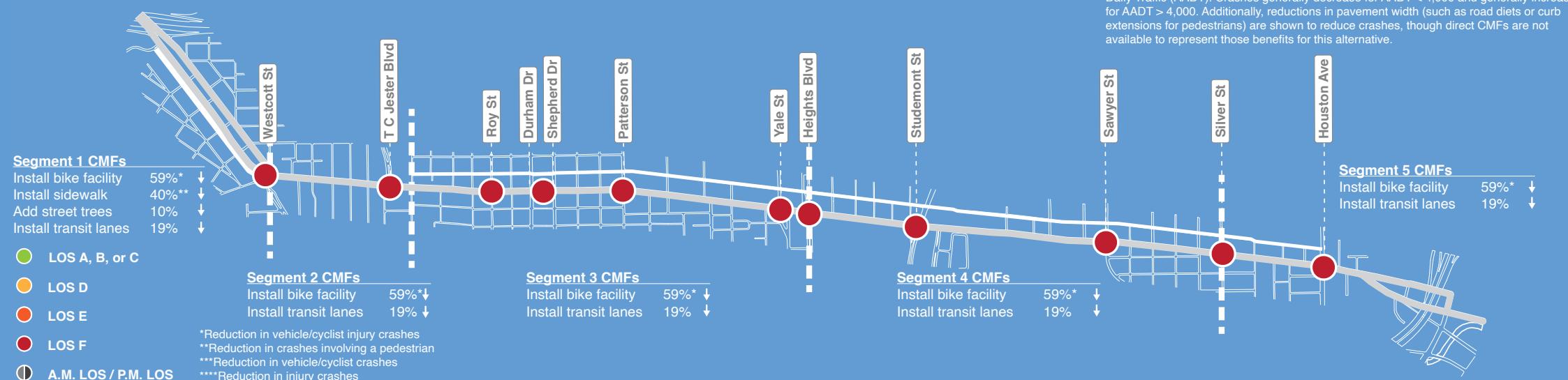
With design features that reduce driver speed and additional protected bike facilities, some safety improvements can be expected with this alternative—but long crossing distances still leave travelers somewhat vulnerable, especially when outside of a vehicle.

Connects into a Network



This alternative Connects into a Network by providing a direct path for transit and bicyclists to travel Washington Avenue.

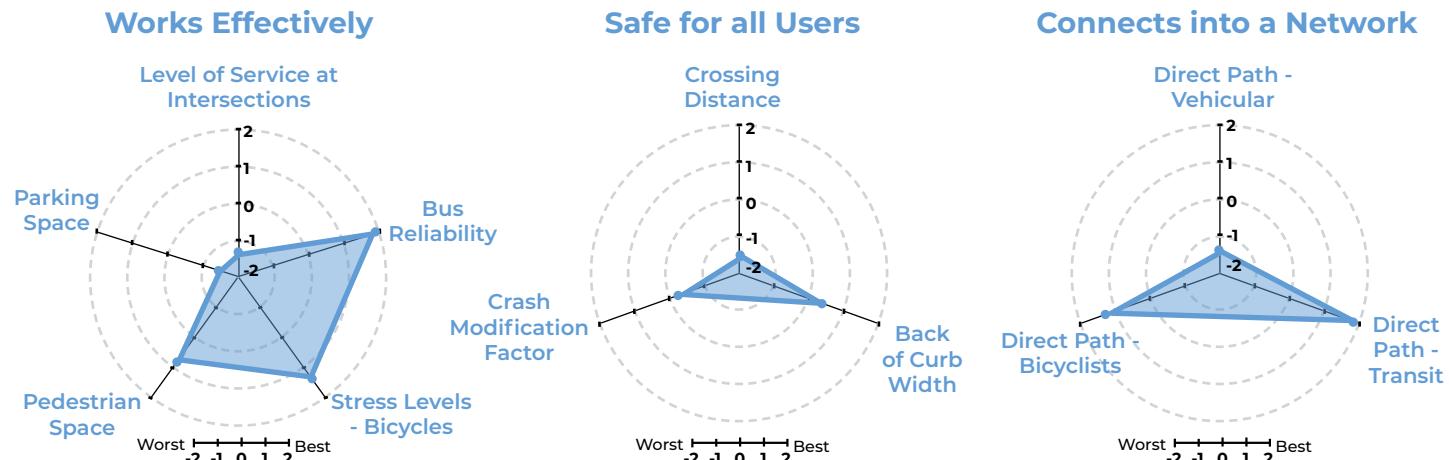
Level of Service



The addition of light rail would remove a travel lane in each direction and significantly reduce green time for left turns, expected to cause substantial congestion during rush hours.

APPENDIX C RECOMMENDATIONS

Community Preferred Vision: Evaluation Results

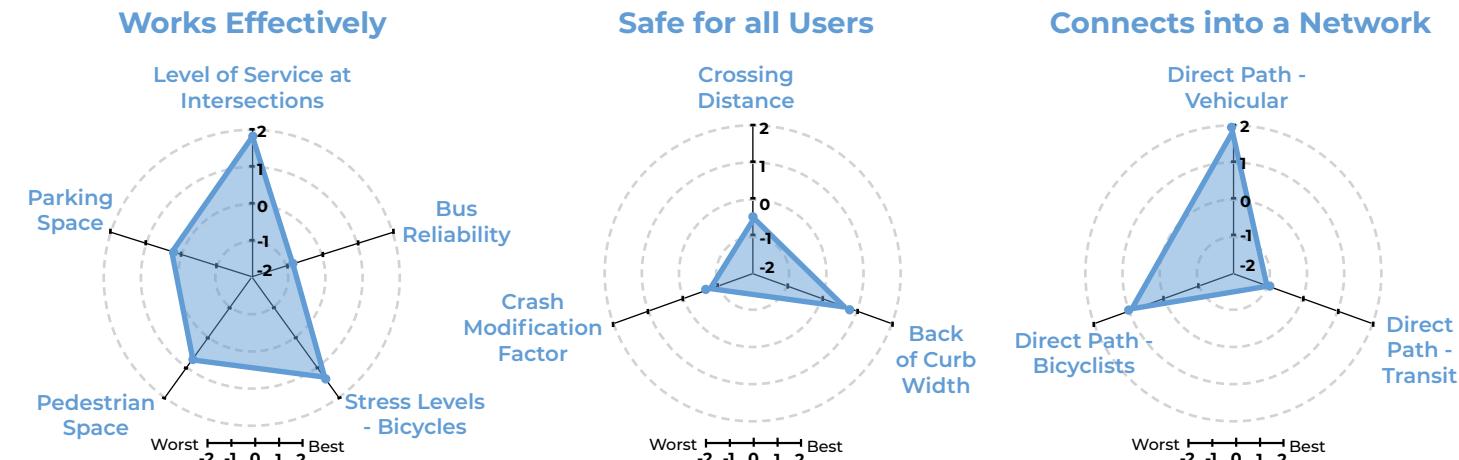


Transit capacity and service is highly prioritized, resulting in reduced lanes and significant increases in driver delay due to substantial constraints on turning traffic. Sidewalk space would provide a basic level of comfort for moving along the corridor. Much of Washington Avenue would remain uncomfortable for even the most confident cyclists, but protected bike lanes on Center Street could be comfortable for all ages.

With design features that reduce driver speed and additional protected bike facilities, some safety improvements can be expected with this alternative—but long crossing distances still leave travelers somewhat vulnerable, especially when outside of a vehicle.

This alternative Connects into a Network by providing a direct path for transit and bicyclists to travel Washington Avenue.

Baseline Constrained Alternative: Evaluation Results

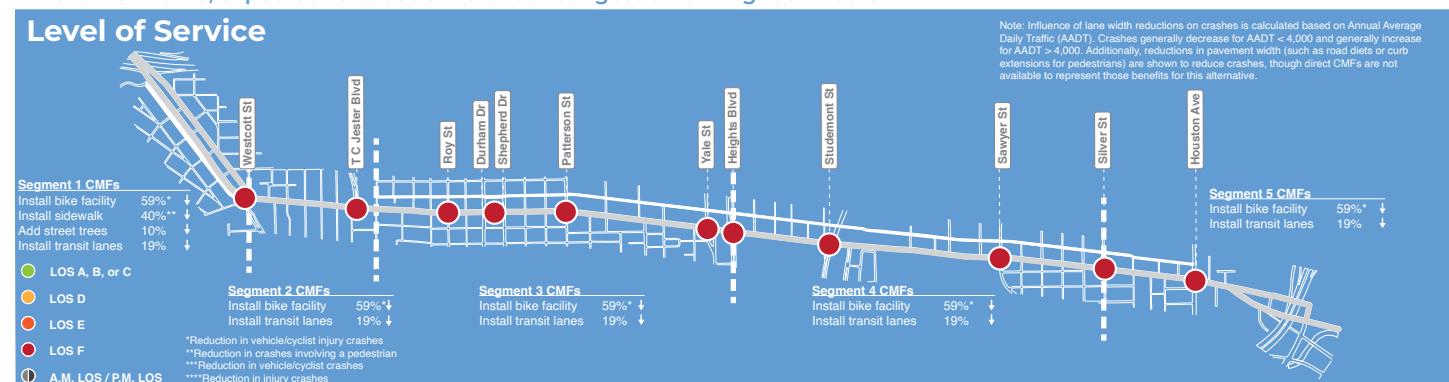


Vehicle movement is prioritized though narrower lanes are correlated with lower travel speeds for improved safety. Bus reliability would be similar to today. Much of Washington Avenue would remain uncomfortable for even the most confident cyclists, but protected bike lanes on Center Street could be comfortable for all ages.

With design features that reduce driver speed and additional protected bike facilities, some safety improvements can be expected with this alternative—but long crossing distances still leave travelers vulnerable, especially when outside of a vehicle.

This alternative Connects into a Network by providing a direct path for vehicles and bicycles to travel Washington Avenue.

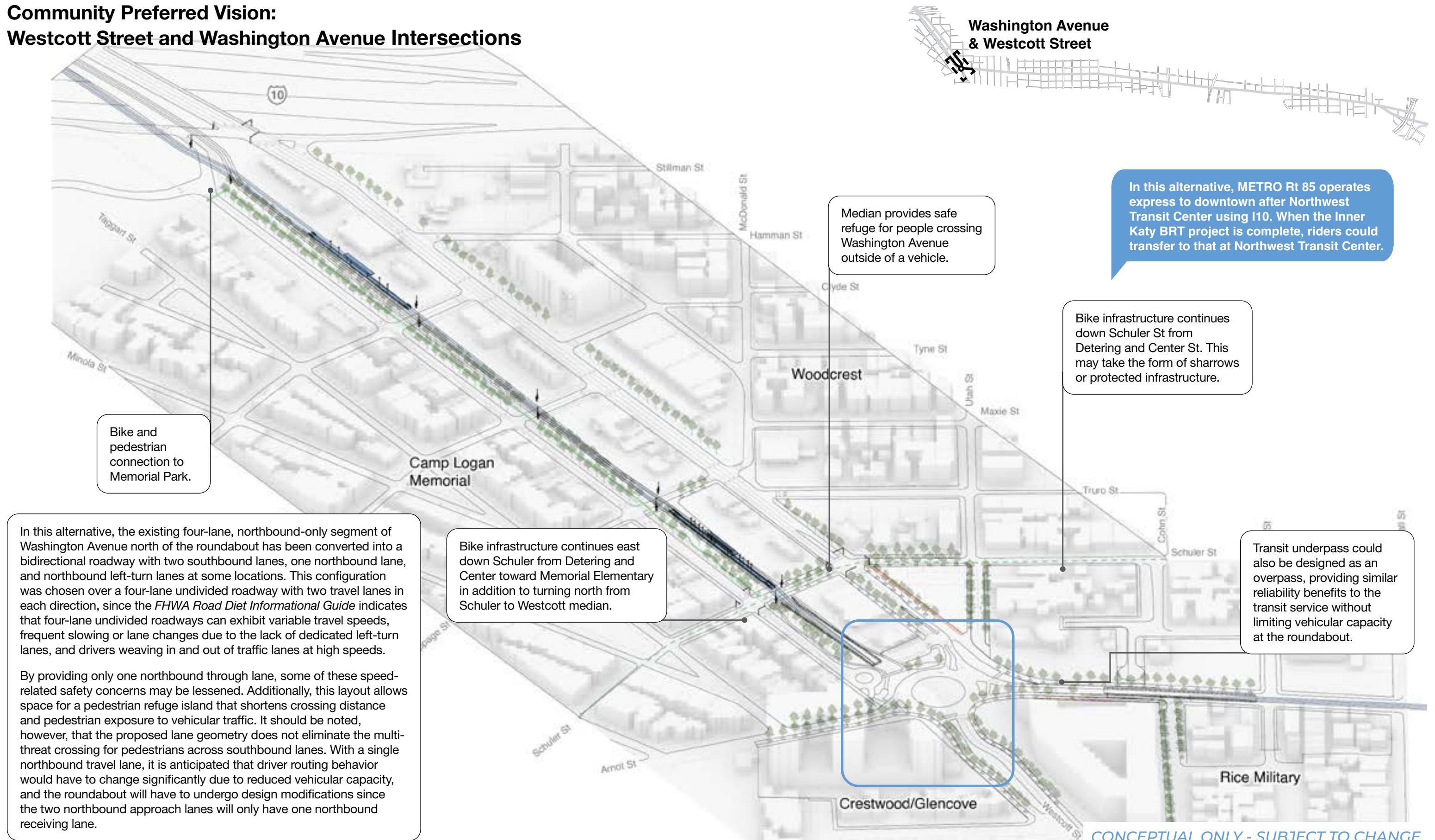
The addition of light rail would remove a travel lane in each direction and significantly reduce green time for left turns, expected to cause substantial congestion during rush hours.



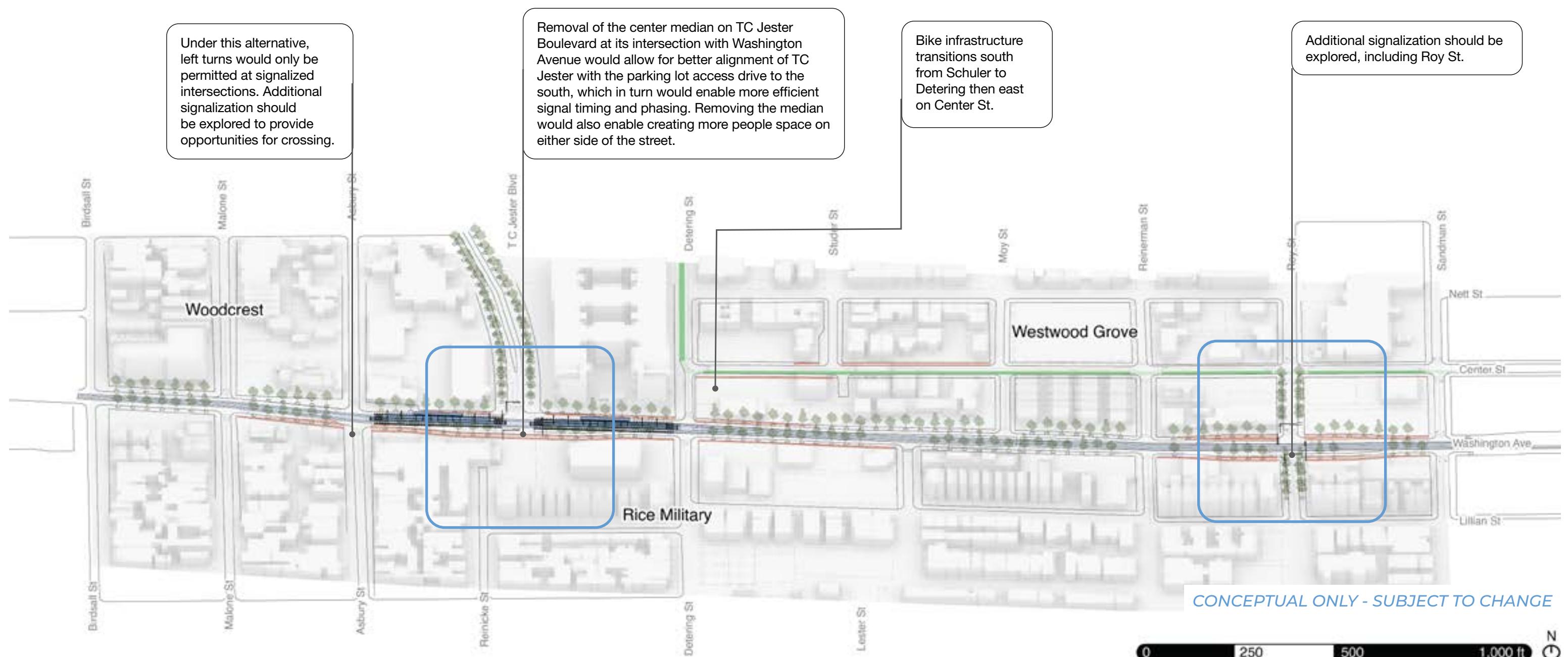
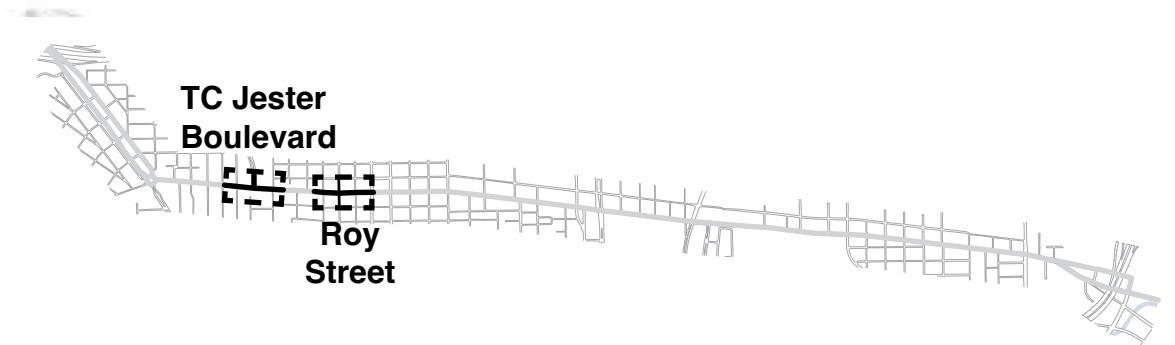
*Unmodeled Alternative, levels of service are estimated.



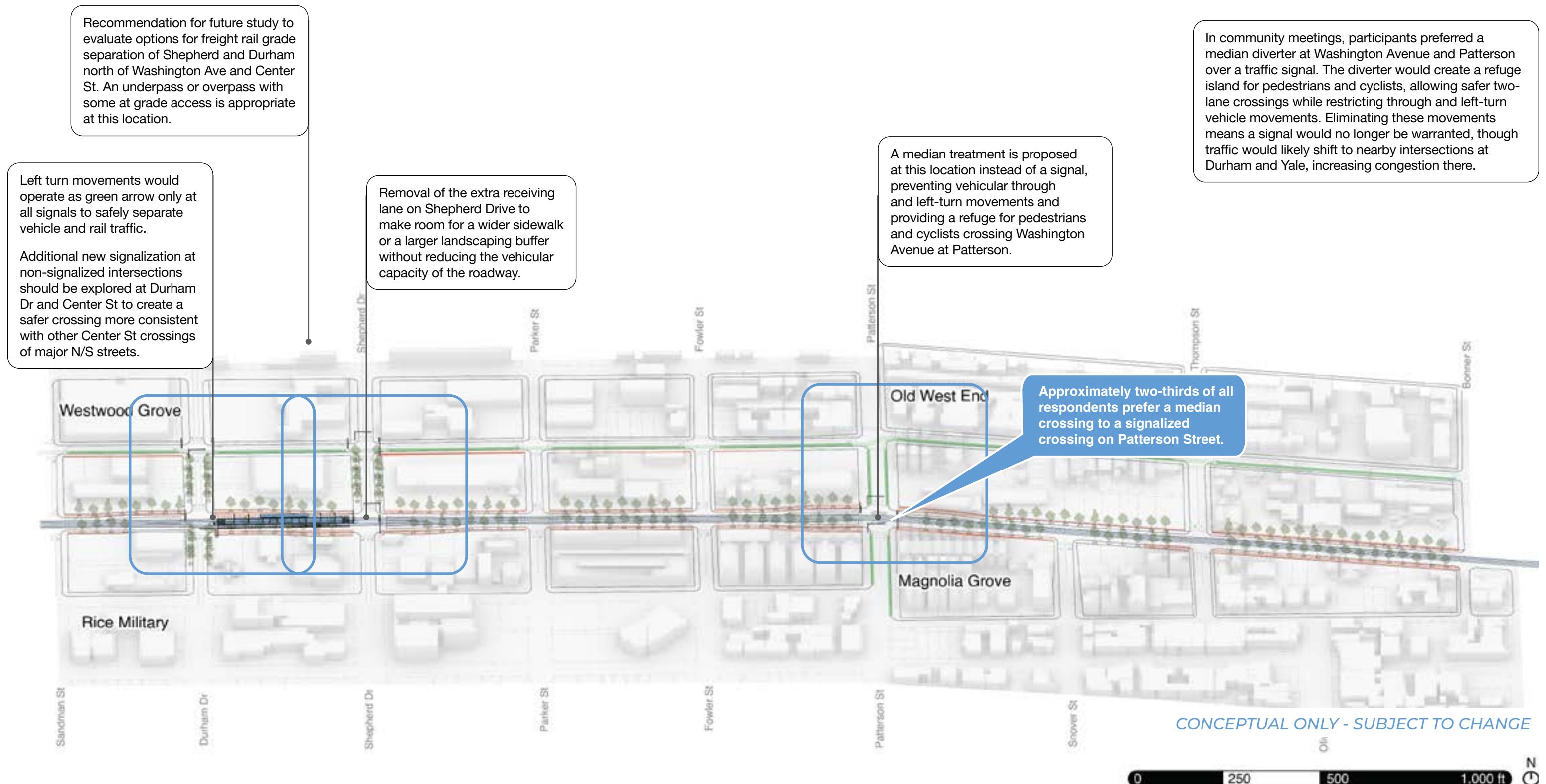
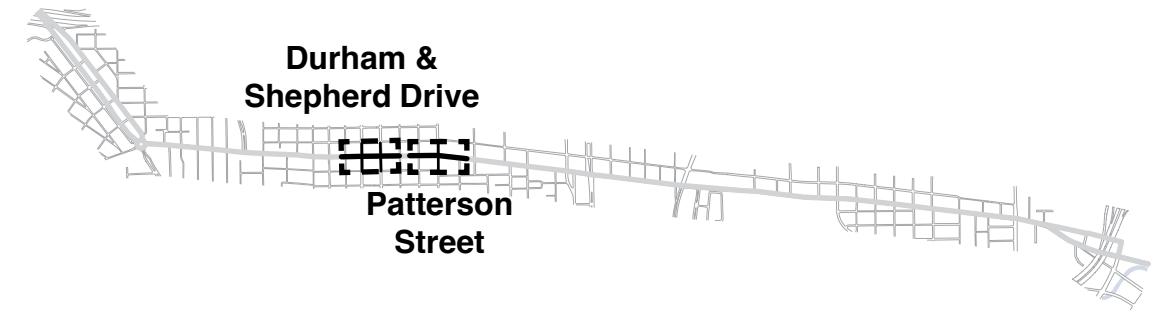
Community Preferred Vision: Westcott Street and Washington Avenue Intersections



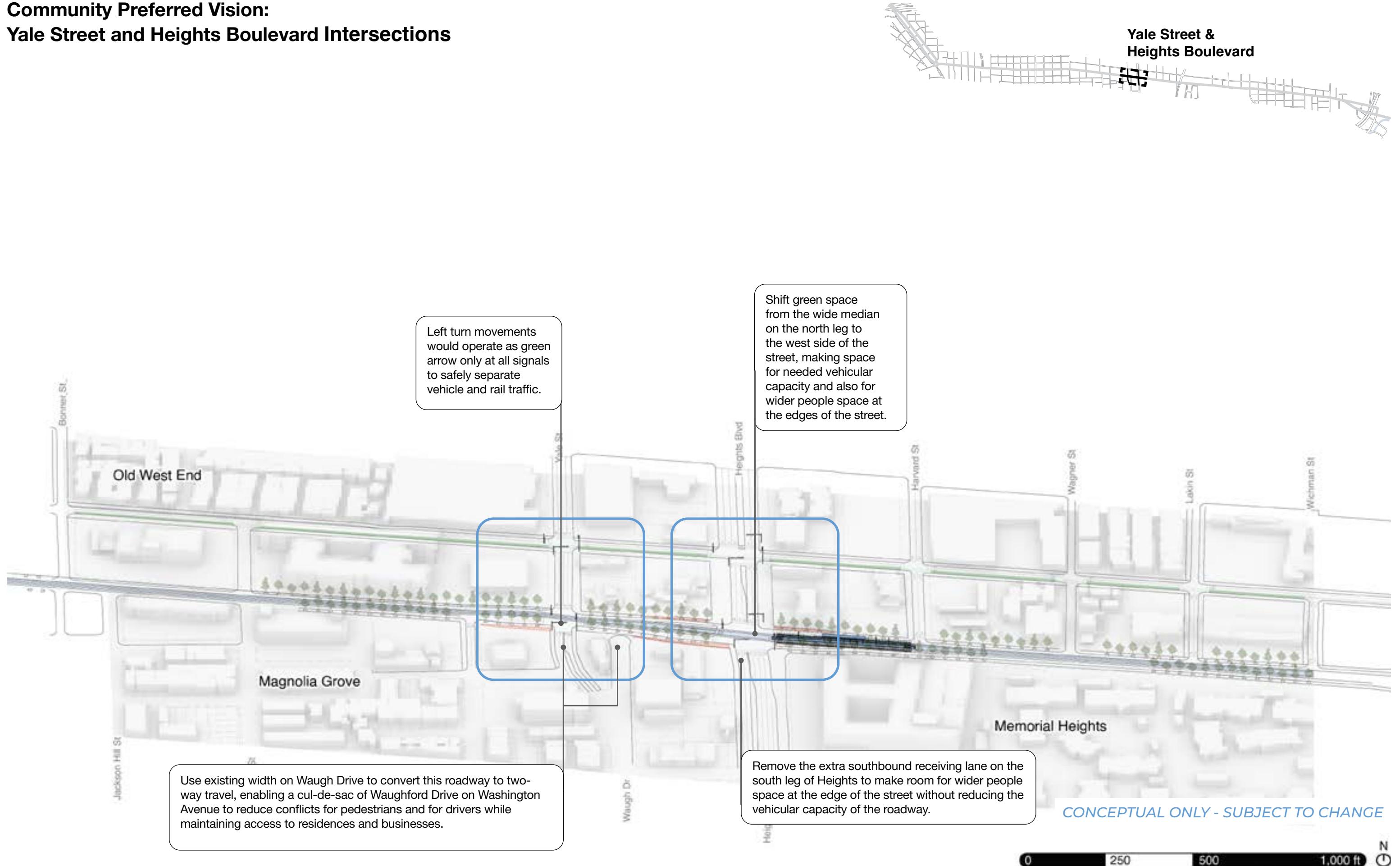
Community Preferred Vision: TC Jester Boulevard and Roy Street Intersections



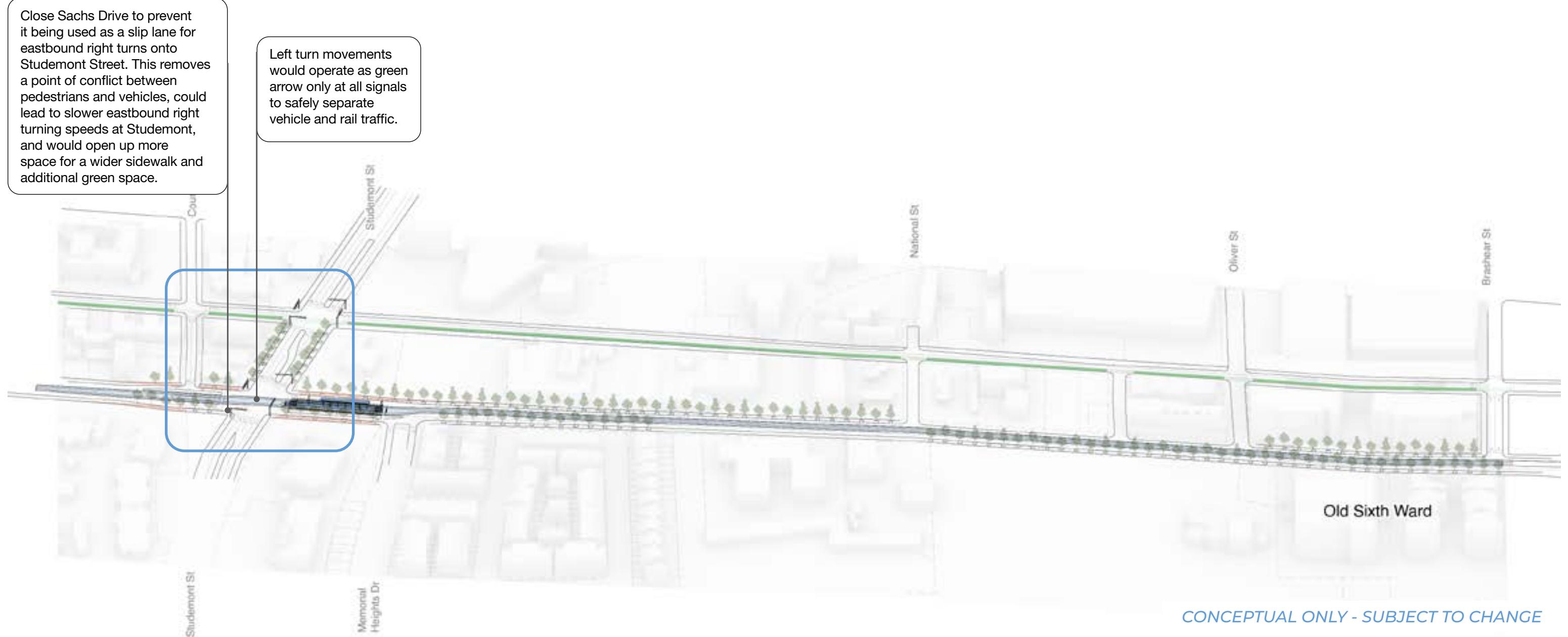
Community Preferred Vision: Durham Drive, Shepherd Drive, and Patterson St Intersections



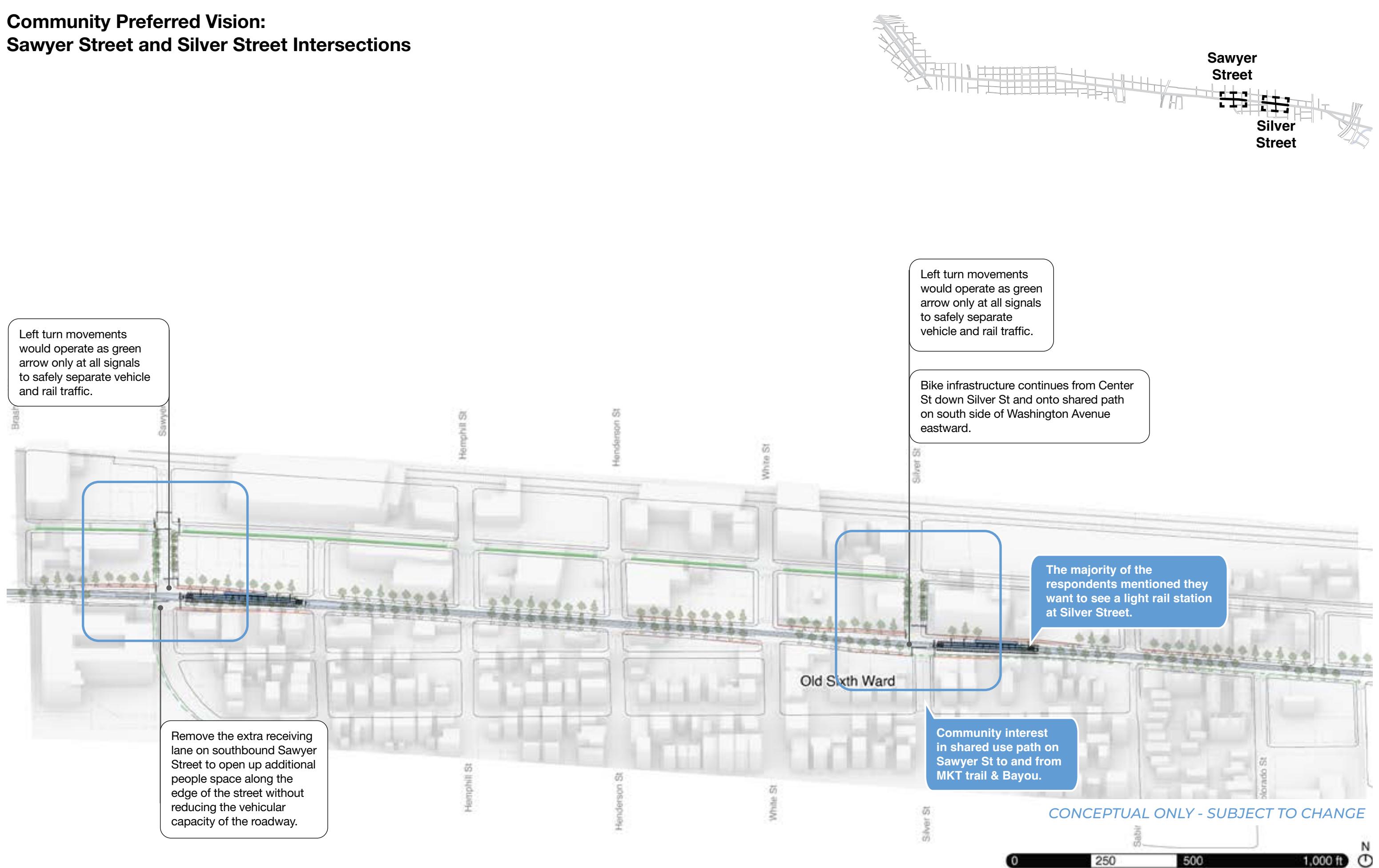
Community Preferred Vision: Yale Street and Heights Boulevard Intersections



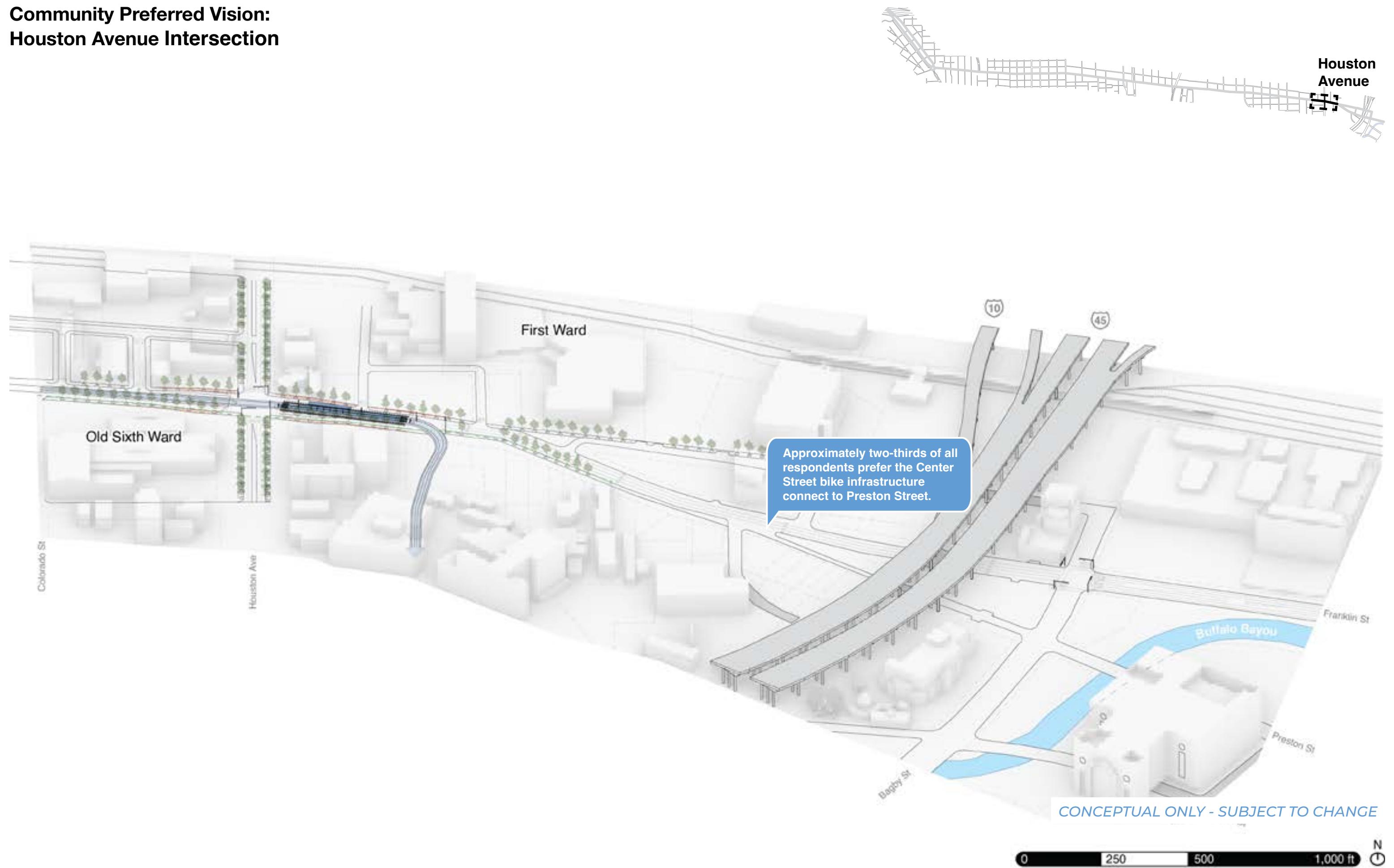
Community Preferred Vision: Studemont Street Intersection



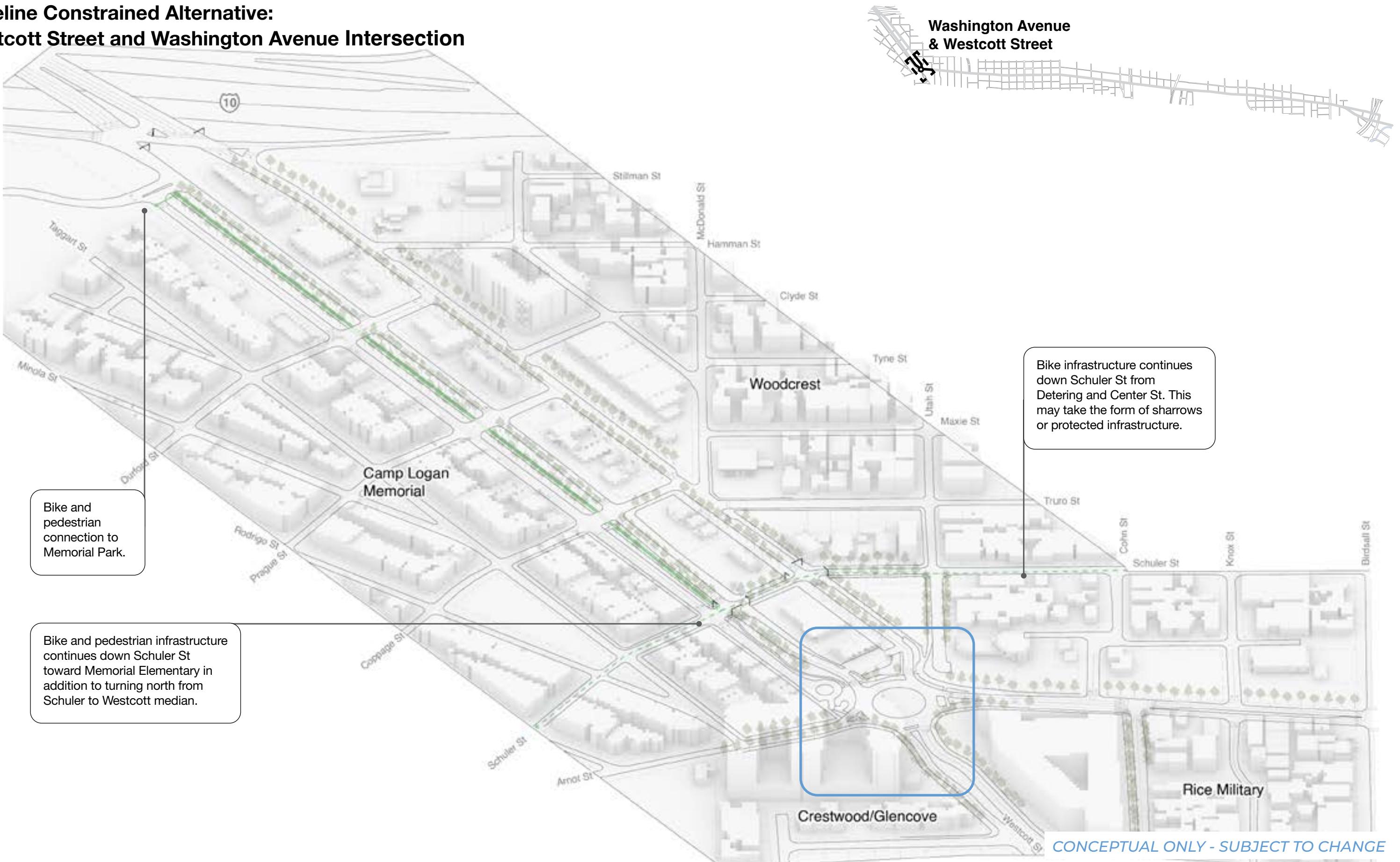
Community Preferred Vision: Sawyer Street and Silver Street Intersections



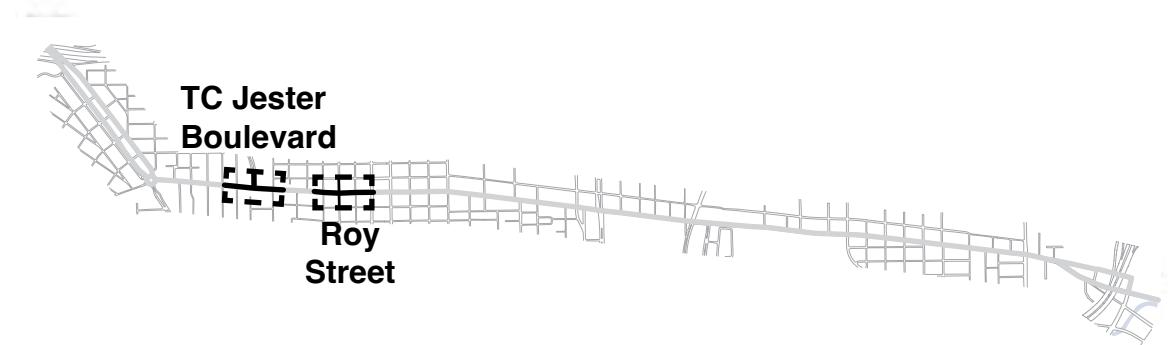
Community Preferred Vision: Houston Avenue Intersection



Baseline Constrained Alternative: Westcott Street and Washington Avenue Intersection

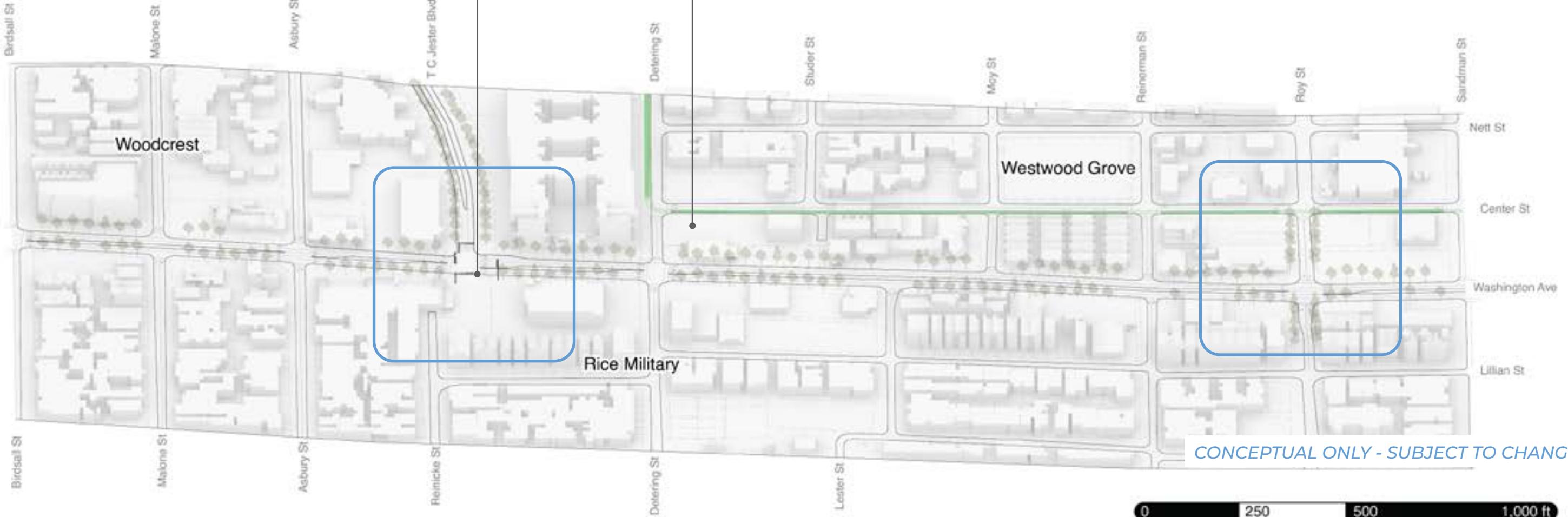


Baseline Constrained Alternative: TC Jester Boulevard and Roy Street Intersections

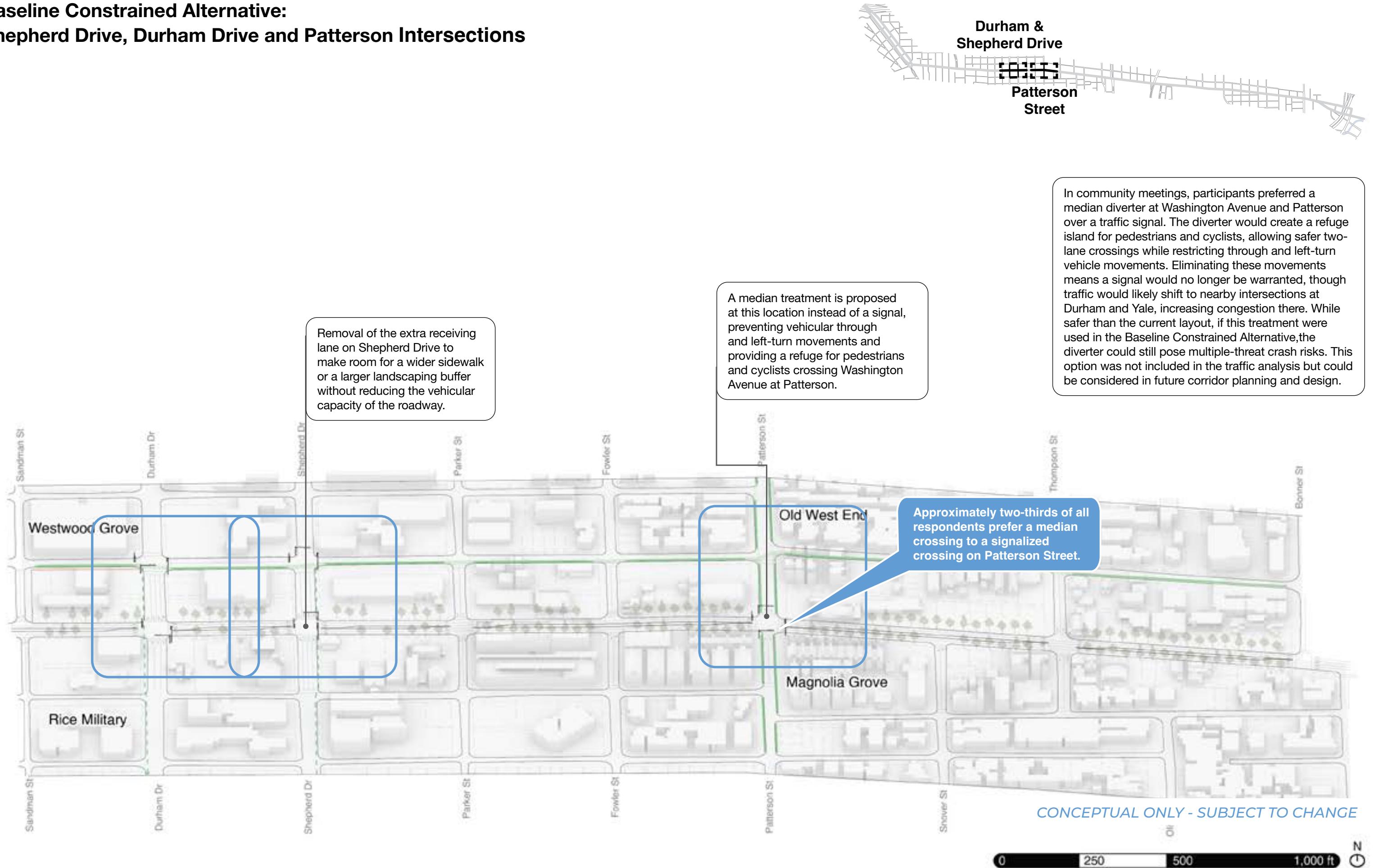


Removal of the center median on TC Jester Boulevard at its intersection with Washington Avenue to allow for better alignment of TC Jester with the parking lot access drive to the south, which in turn would enable more efficient signal timing and phasing. Removing the median would also enable creating more people space on either side of the street. Traffic analysis showed that this configuration will work acceptably in Year 2045, even if TC Jester is reduced to two lanes to create even more sidewalk space.

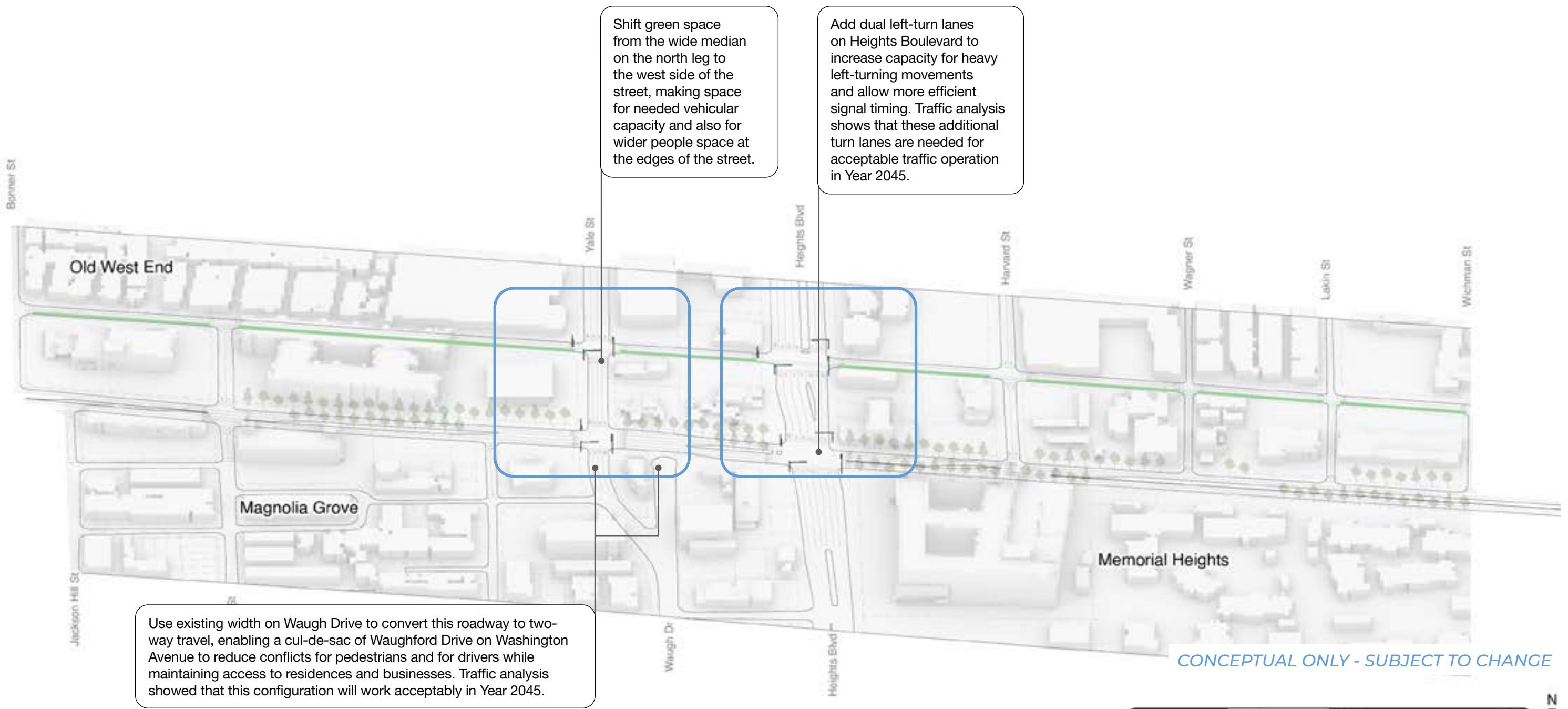
Bike infrastructure continues north and west on Detering St and Schuler St when Center St ends.



Baseline Constrained Alternative: Shepherd Drive, Durham Drive and Patterson Intersections

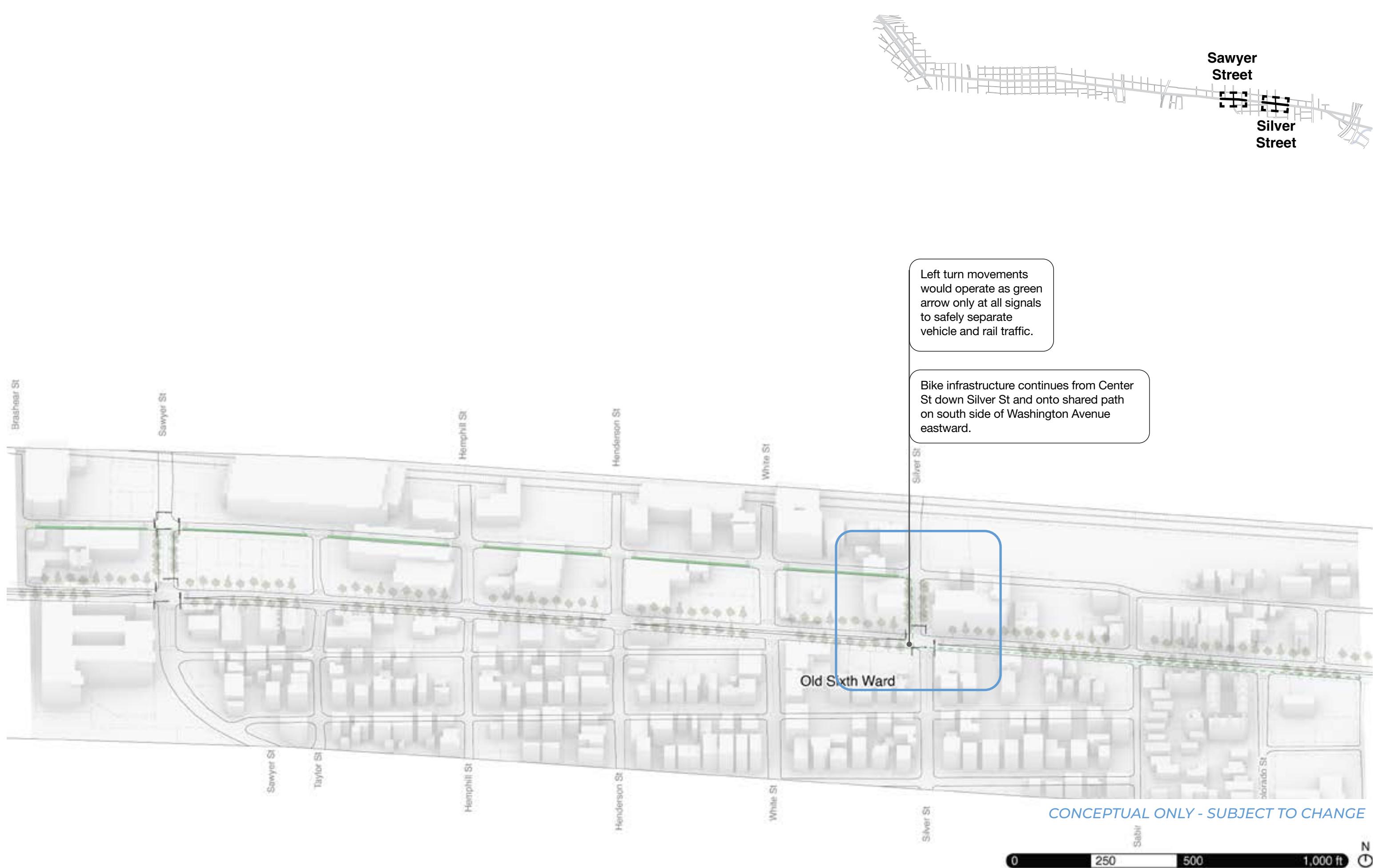


Baseline Constrained Alternative: Yale Street and Heights Boulevard Intersections

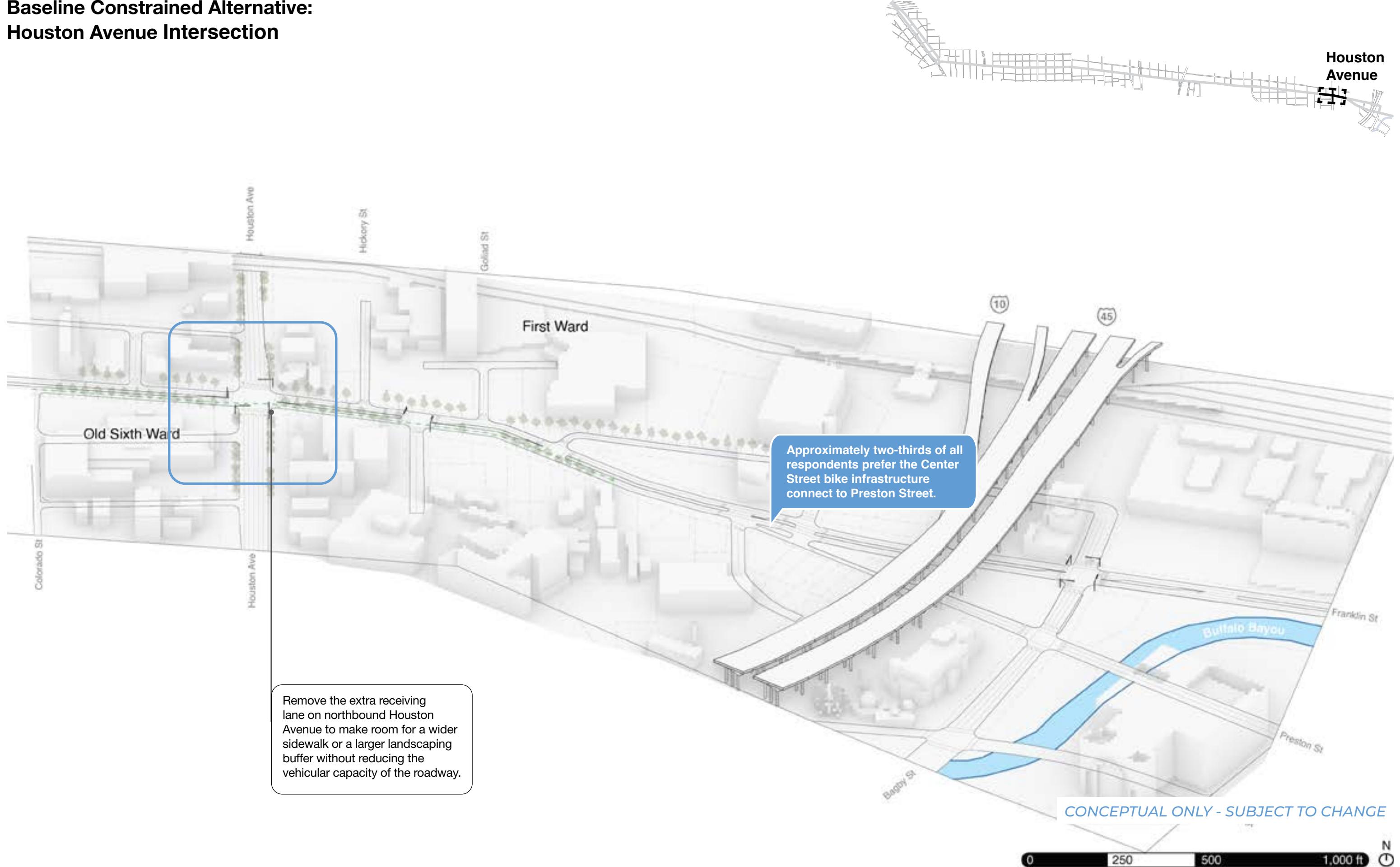


Baseline Constrained Alternative: Studemont Street Intersection





Baseline Constrained Alternative: Houston Avenue Intersection



APPENDIX D PUBLIC FEEDBACK

Over 300 people contributed to the results of this study.

We appreciate the time energy of the members of the public whose insights shaped this plan:

Abbie Culver
Abhi Sreerama
Abi Pineda
Akhil Ganesh
Alejandro Alegria
Alejandro Hagan
Alex Gardner
Alexander Carranza
Alexander spike
Alice Bailey
Alyson Landry
Alyssa Charsky
Amy Jones
Andrew Munoz
Andy Waggenspack
Anthony Hernandez
Arielle Castle
Arlene Gillman
Auhona Hoq
Austin Pooley
Avi Levy
Barbara Burda
Belinda Munsell
Ben Helms
Ben Russell
Ben Zimmerman
Bill Records
Bob Choate
Bob Korby
Bobby Carter
Brad Begault
Braunger
Brian Rausch
Briana Barr
Britt Jones

Bryce Gurick
Cade Herbert
Carla Cantrell
Carlos Iniguez
Caroline Griffin
Caroline Roberts
Cathy Colburn
Cecilia Tetlow
Chandler Barton
Elise Sheppard
Elise Westhoff
Chris Burns
Chris Fohlin
Chris Haine
Chris Parma
Chris Smith
Chris Whaley
Citlaly Estrada
Clayton Price
Connie Hutch
Cory Miles
Courtney Blechle
Crag Schofer
Dan Warden
DARIUS
David Comeaux
David Fields
David Roberts
David Shonnon
Davis Burton
Davis Land
Debbie Chance
Denise St. John
Derry Vann
Dev Amlis
Dexter Handy
Diana Nguyen
Dillon Garner
DJ Meyers
Dominic Mazoch

Donna Carnahan
Donna Kacmar
Doug Gallardo Jr
Dough Sweet
Dougie Steinbach
Eddie Millard
Eileen Wolfowicz
Eleni Pappas
Elise Sheppard
Elise Westhoff
Elizabeth Chambers
Ellie Morse
Emily Preston
Emmanual Nunez
Erica DeLaney
Ethan Campbell
Evan Bernard
Felix Palacios
Frank Blake
Frank Fagan
Gabriella
greentyco
Hanieh Nasizadeh
Herschel Rothchild
Hunter Johnson
Ian Johnson
Inaki Sagarzow
Itay Porat
Jack Valinski
Jorge
Jorge Alcalá Garcia
Jorge Bustamante
Jose Garcia
Joy Roth
Judy Reed-Wells
Julian Villarreal
Justin Silhavy
Justin Welling
KAIA
Kaitlin Fohlin
Jackson Hurst
Jacob Russell
Jahnavi Jagannath
Jake Juliet
James Ronje
James Schriver
James and Lee Walton
Jeana Nam
Jennifer Ostlind
Jennifer Wingard

Jeremiah Russell
Jeremy Kubicek
Jesse Bellow
Jim von Suskil
Jing Chen
Jintae Park
Joe Bailey
Joe Cutrufo
Joe Hood
Joe U
Joe Upcauecm
John Brems
John Cejka
John Curtis
John Leask
John White
john zavala
Jonathan Myers
Jonathan Styrt
Jorge
Jorge Alcalá Garcia
Jorge Bustamante
Jose Garcia
Joy Roth
Judy Reed-Wells
Julian Villarreal
Justin Silhavy
Justin Welling
KAIA
Kaitlin Fohlin
Jackson Hurst
Jacob Russell
Jahnavi Jagannath
Jake Juliet
James Ronje
James Schriver
James and Lee Walton
Jeana Nam
Jennifer Ostlind
Jennifer Wingard

Kenan Sizemore
Kenneth Browning
Kerri Meaney
Kevin
Kevin Gault
Kevin Parker
Kevin Quist
Kevin Strickland
Kimberly Davis
Kira Elbert
Kirsten Dorrier
Kristin Andrichik
Kristin Laymon
KyMara Guidry
Laura Cuervo
Laura Parker
Lauren
Lauren Friese
Lawrence Goldberg
Leah Chambers
Leah Fretwell
Leann Gaver
Letha Allen
Lex Perez
Linda Trevino
Lindsey Anderson
Lisa Graiff
Luke Lewis
Madeline Farrell
Manuel Perez
Margaret (Meg) Poissant
Marian Wright
Marie Carlisle
Marika Mohr
Mark Bair
Mark Fairchild
Mark Kosiara
Mark reeves

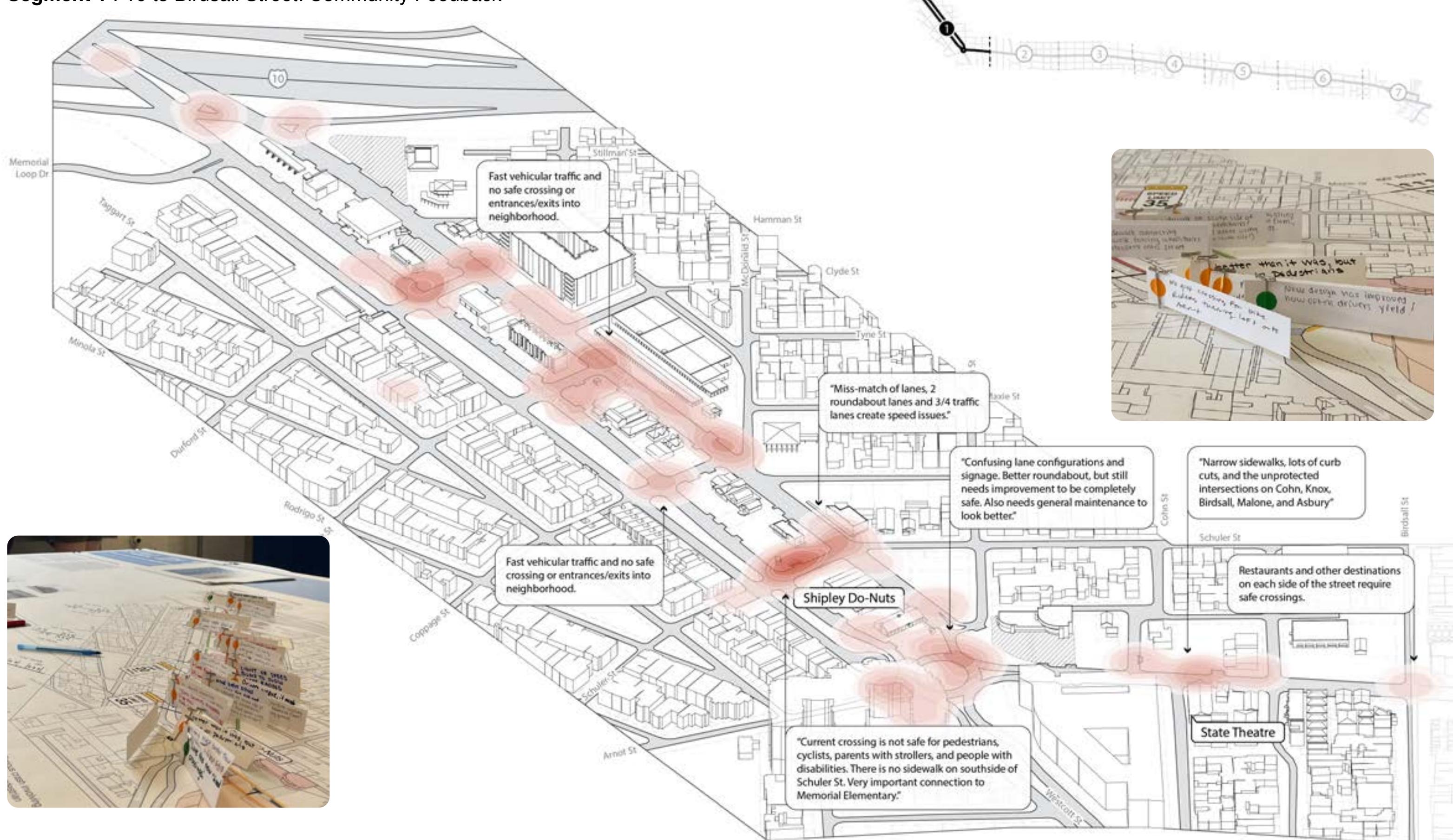
Marsha Schenau
Matt Tetlow
Matt Thomas
Matthew Michal
Mauri
Mauri Lucas
Meagan Oglesby
Michael
Michael Adams-Hurta
Michael Dorn
Michael Herman
Micheal Donatti
Micheal Kavalerchik
Micheal Mcauley
Michelle Buckley
Michelle Jasmin
Michelle Wolpert
Mike and Maria Garcia
Mike Feewey
Mike McAuley
Mike Perez
Mike VanDusen
MMoritz
Morgan Munoz
Muizz Akhtar
Neyvin Deleon
Nick Huch
Oksang Haby
Oscar Orias
Patrick
Patrick Anstine
Paul Herrera
Payton Arens
Payton Finch
Peter Eccles
Ranjan Roy
Renee Lieber
Richard Otwell
Rick Robyak

Ricki Hanson
Ricky Cardenes
Robert Davis
Robert Grobe
Robin Holzer
Ronald Richards
Ross Griffey
Ross Mattern
Ruben Garza
Ruben Rios
Russell Etherton
Ryan Colburn
Ryan Weller
Sallie Alcorn
Samuel Wagner
Sandra Puente
Sara Jane Kleber
Sara Passone
Sara Pybus
Sarah
Scott Currasw
Sebastian Lecourt
Shannon Cheng
Sherry Weesner
Simone
Stacie Fairchild
Stefanie Thomas
Steven chiara
Susan Rogers
Syd Sepulveda
Sydney Sepulveda
Tanner Oetjen
Thomas Metke
Tiffanie Vaughan
Tom Kornegay
Tom Rommel
Tony Asch
Trevor Reichman
Troy Kleber

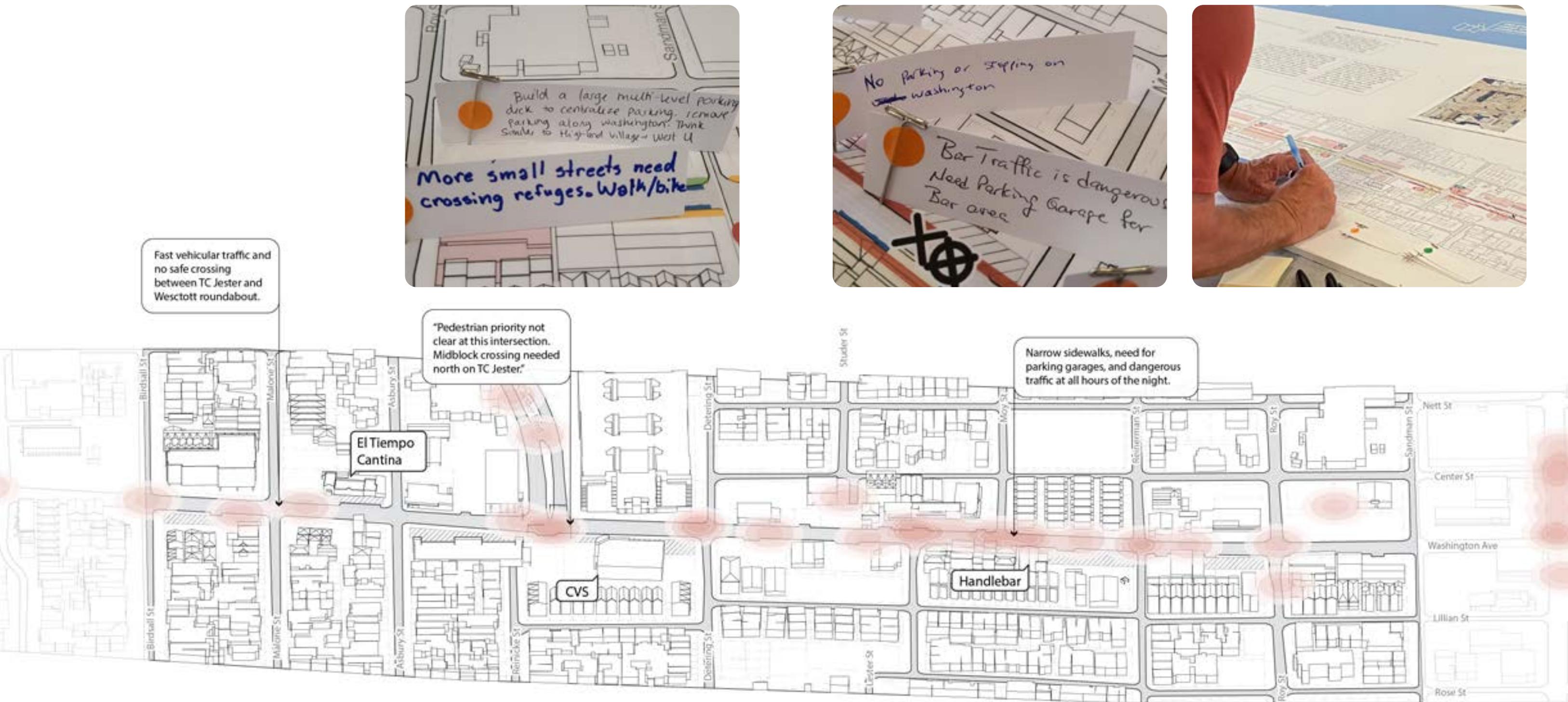
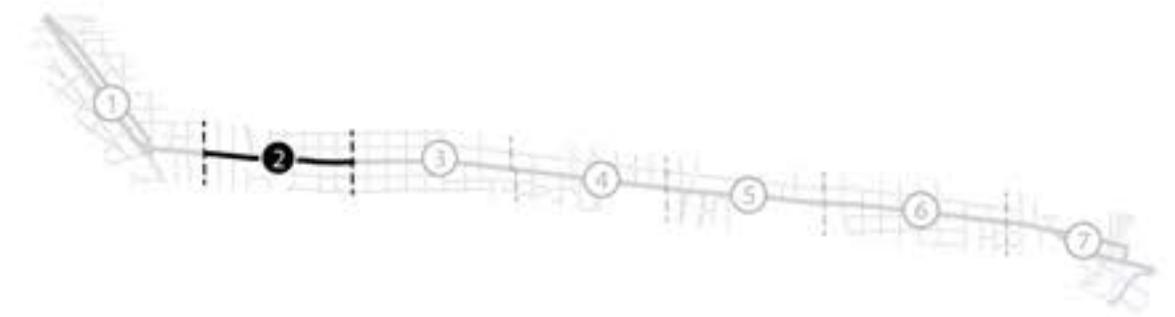
Troy Reed
Ty Joplin
Val Brock
Victoria Mota
Virginia Lynn
Wei Xiao
Wendy and Will Wilkinson
Wendy Cooper
Wilfredo
Will
William Ratnoff
WJones
Zaach Taylor
Zoe Belden
and 76 others.

We appreciate Memorial Elementary, Messiah Lutheran Church, and St. Theresa Catholic Church for hosting public meetings for the study.

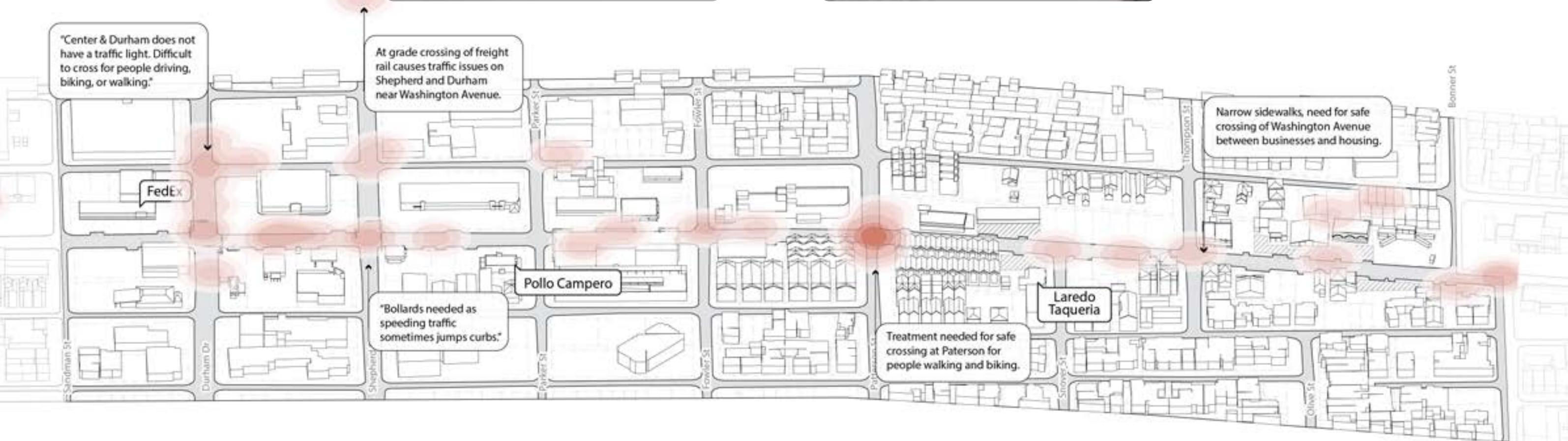
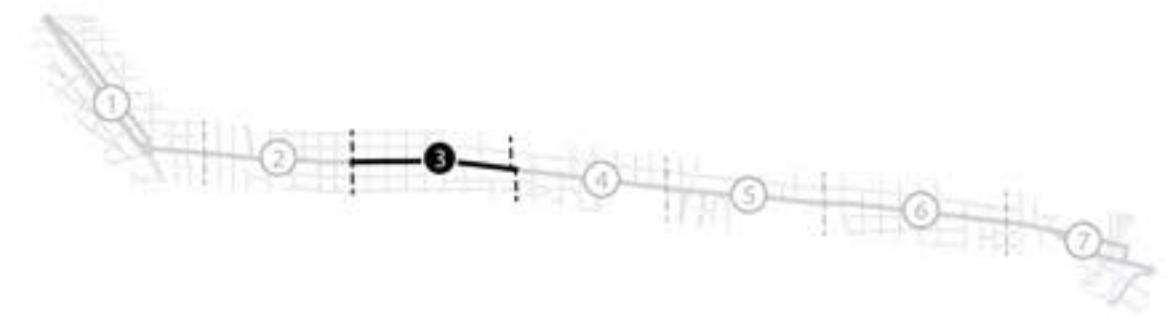
Segment 1 I-10 to Birdsall Street: Community Feedback



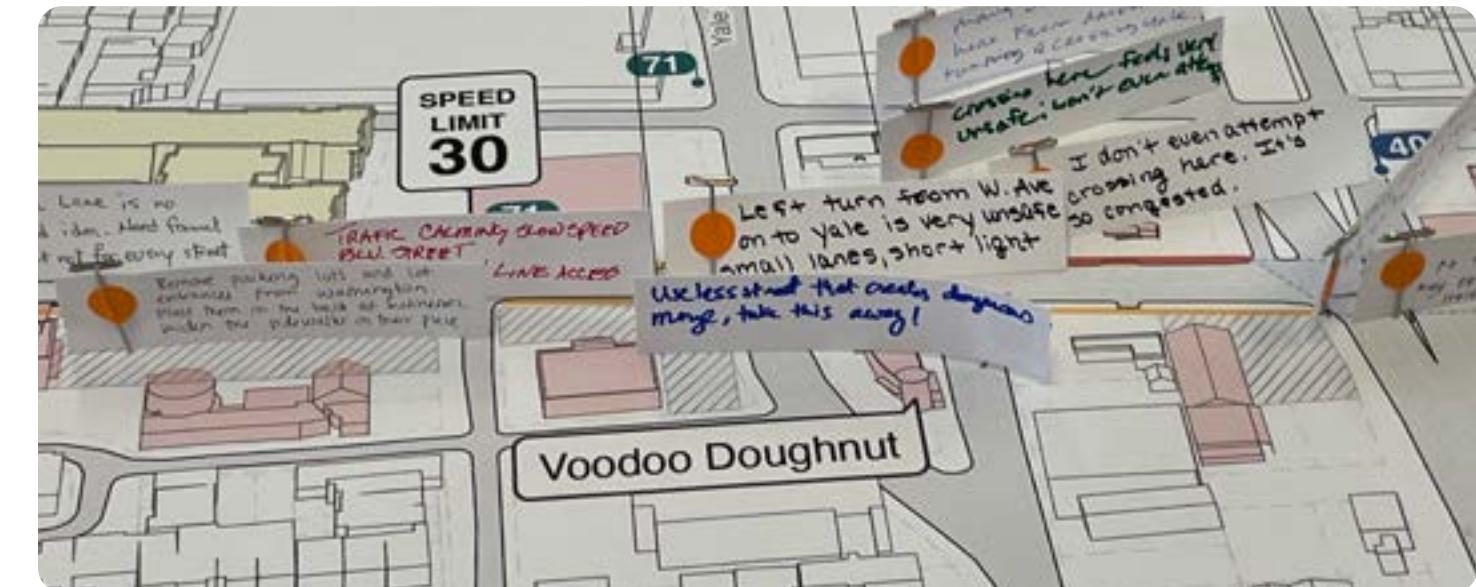
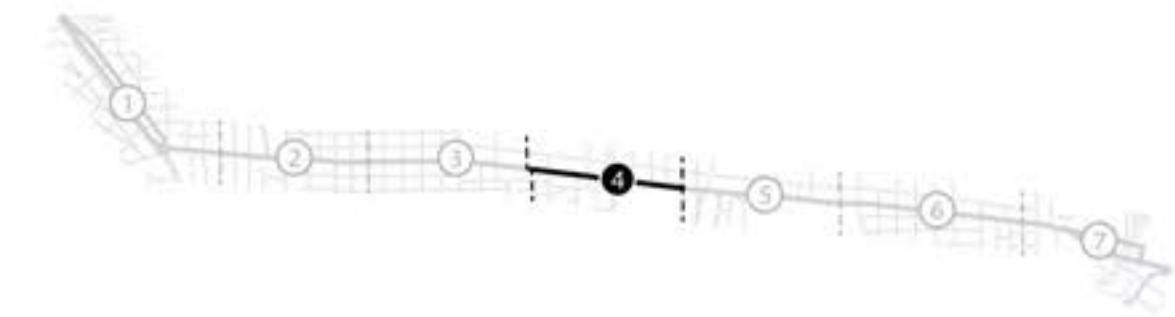
Segment 2 Birdsall Street to Sandman Street: Community Feedback



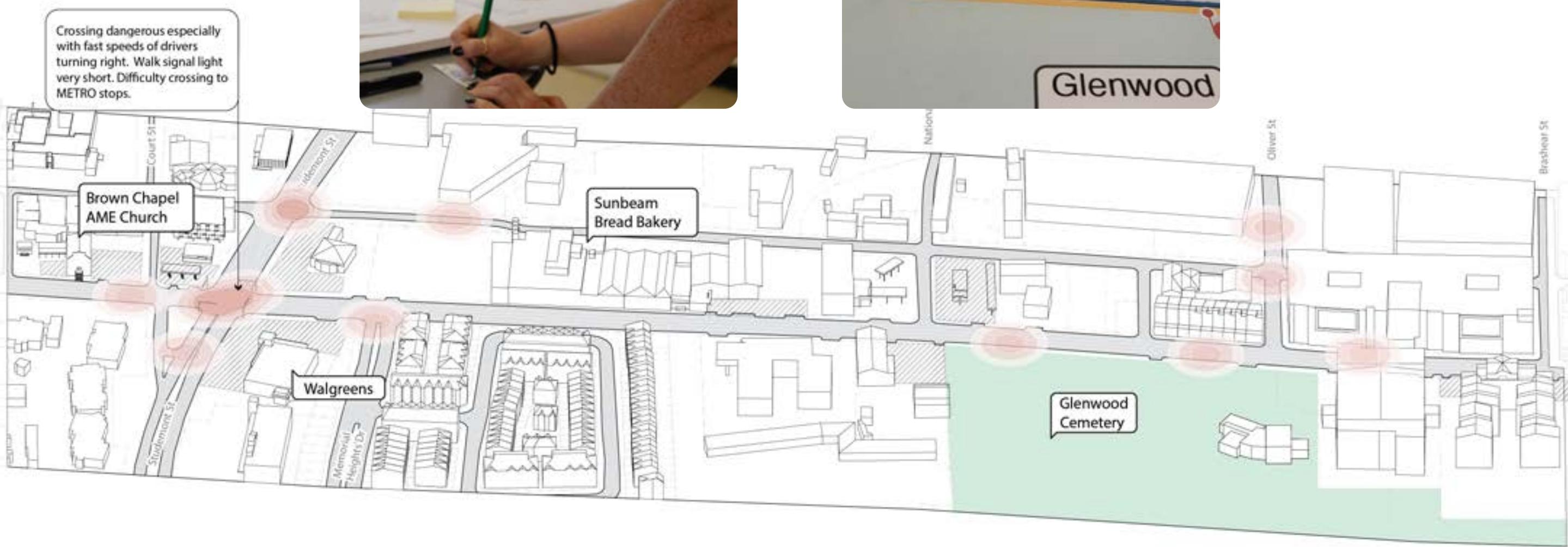
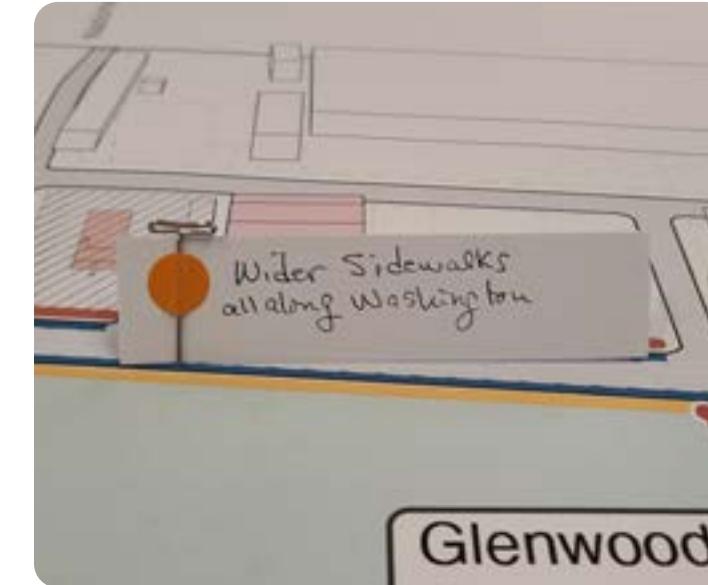
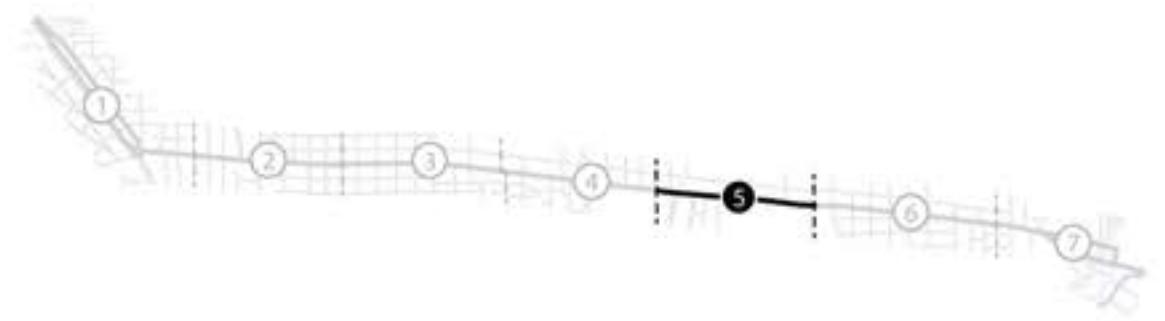
Segment 3 Sandman Street to Bonner Street: Community Feedback



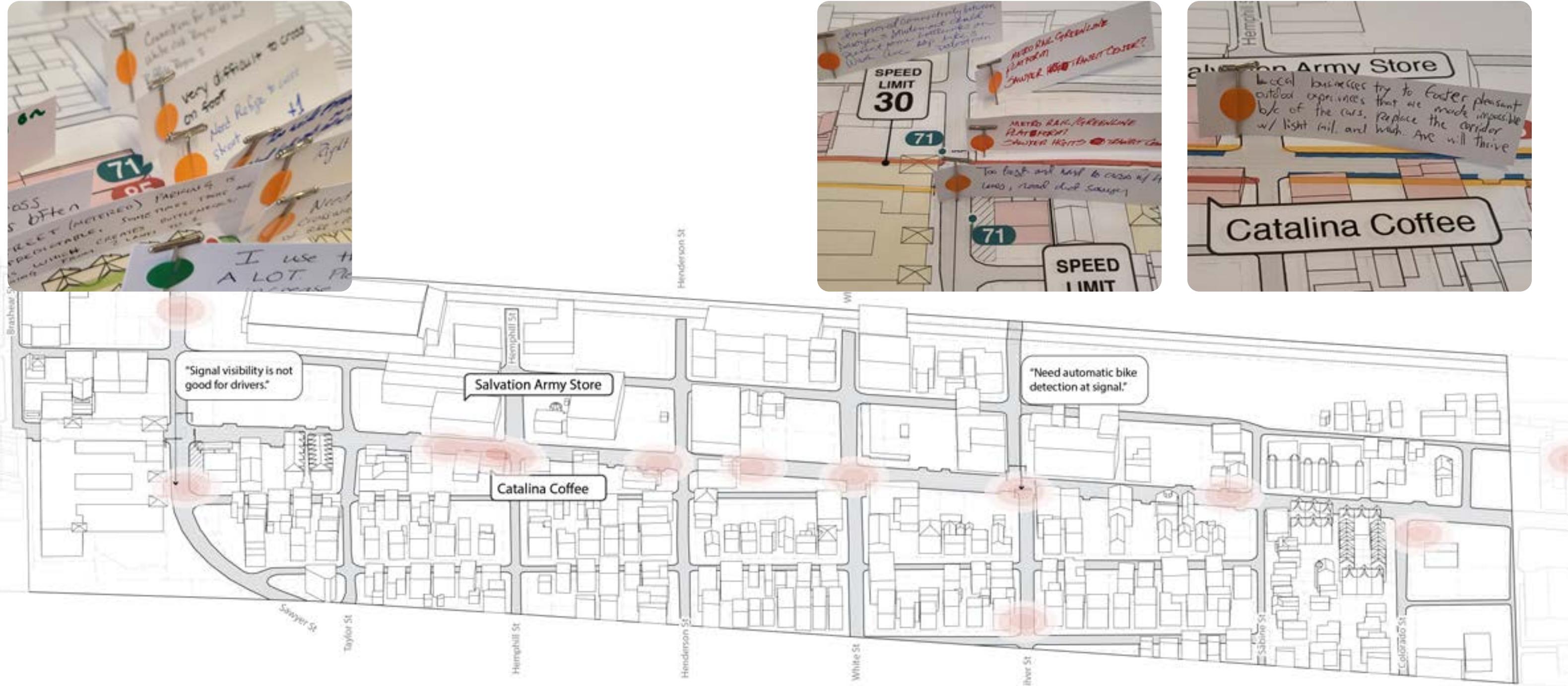
Segment 4 Bonner Street to Wichman Street: Community Feedback



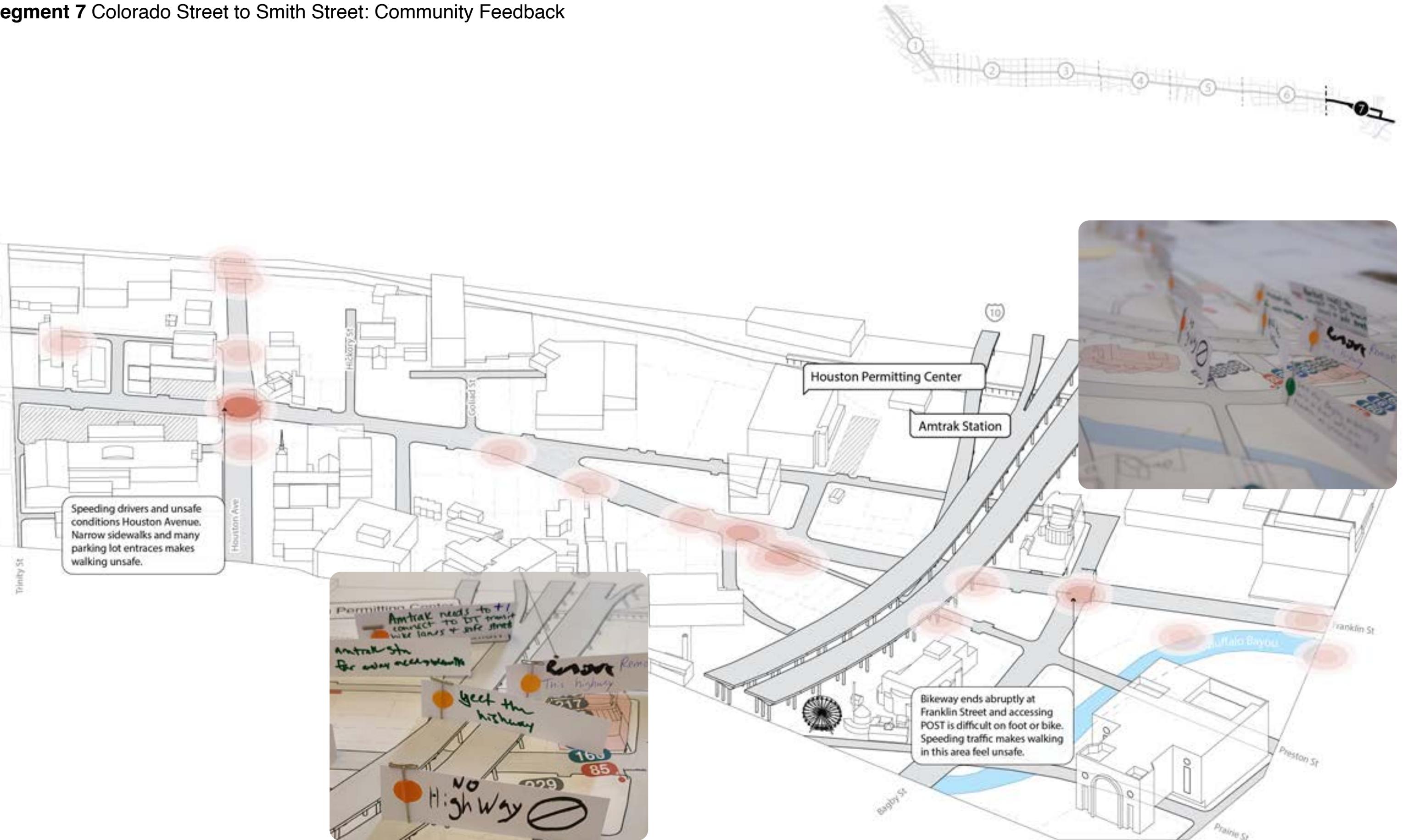
Segment 5 Wichman Street to Brashear Street: Community Feedback



Segment 6 Brashear Street to Colorado Street: Community Feedback



Segment 7 Colorado Street to Smith Street: Community Feedback



Alternatives Survey Questions



Please give your feedback on the Washington Avenue Corridor Study Design Options.

If you have not reviewed the alternatives, please [visit the project website](#) for more information about each of them.

⌚ Takes 4 minutes

Give feedback

press Enter ↴

→ Considering the strengths and weaknesses of each alternative, please rank the alternatives:

If bike infrastructure is not mentioned in the description below, it is being provided on Center St through painted sharrows or protected bike lanes.

Drag and drop to rank options

- Alternative A: Two wide vehicular lanes each direction with turn lanes
- Alternative B: Two vehicular lanes each direction with a median and turn lanes
- Alternative C: One vehicular lane and one bus-only lane with right turns
- Alternative D: One vehicular lane with a right turn lane and wide sidewalks
- Alternative E: One vehicular lane and off-street bike lanes on Washington
- Alternative F: One vehicular lane plus center-running transit through Heights Blvd
- Alternative G: One vehicular lane plus center-running transit through I-10

2 → Which of these factors was important to you when choosing your top alternative? (check all that apply)*

Choose as many as you like

- Mitigates congestion
- Improves driving safety
- Improves bus reliability
- Improves walking/rolling conditions on sidewalks
- Improves biking conditions
- Other

5 → Please enter your home zip code.*

Type your answer here...

7 → What age range are you in?*

- Under 18
- 19 to 34
- 35 to 49
- 50 to 64
- 65 and older

3 → OPTIONAL: Do you have any additional comments?

Type your answer here...

Shift + Enter ↴ to make a line break

OK press Enter ↴

4 → If you could only choose between the four alternatives listed below, please pick your top choice: Alternative A, Alternative B, Alternative C, Alternative D*

- Alternative A: Two wide vehicular lanes each direction with turn lanes
- Alternative B: Two vehicular lanes each direction with a median and turn lanes
- Alternative C: One vehicular lane and one bus-only lane with right turns
- Alternative D: One vehicular lane with a right turn lane and wide sidewalks

OK

5 → OPTIONAL: Why is that your top choice?

Type your answer here...

Shift + Enter ↴ to make a line break

OK press Enter ↴

8 → OPTIONAL: How do you describe yourself? Select all that apply.

Choose as many as you like

- Asian or Asian American
- Black or African American
- Hispanic or Latino/a
- Middle Eastern or North African
- Native American or Alaska Native
- Native Hawaiian or Pacific Islander
- White or European
- Other

9 → OPTIONAL: To which gender do you most identify?

- Woman
- Man
- Prefer not to say
- Other

10 → Would you like future updates about the Washington Avenue Corridor Study?

name@example.com

Submit press Enter ↴

Alternatives Survey Questions: Employee-specific questions

11. Employee*

Description (optional)

What is your first and last name?*

Type your answer here...

What is the name of the place you work in the Washington Avenue Corridor?*

Type your answer here...

What is the address of the location where you work?*

Type your answer here...

How many days of the week do you typically work on Washington Avenue?*

A 6 – 7 days a week

B 4 – 5 days a week

C 2 – 3 days a week

D One day a week

E A few times a month

F Once a month

G Less than monthly

What days of the week are you at the Washington Avenue location? Select all that apply.*

A Monday

B Tuesday

C Wednesday

D Thursday

E Friday

F Saturday

G Sunday

During which of the following time periods are you commuting on a typical weekday? Select all that apply.*

A Weekdays 6:00am-9:00am

B Weekdays 9:00am-3:00pm

C Weekdays 3:00pm-6:00pm

D Weekdays 6:00pm-10:00pm

E Weekdays 10:00pm-6:00am

F None of these times

During which of the following time periods are you commuting on a typical weekend? Select all that apply.*

A Saturday 6:00am-9:00am

B Saturday 9:00am-3:00pm

C Saturday 3:00pm-6:00pm

D Saturday 6:00pm-10:00pm

E Saturday 10:00pm-6:00am

F Sunday 6:00am-9:00am

G Sunday 9:00am-3:00pm

H Sunday 3:00pm-6:00pm

I Sunday 6:00pm-10:00pm

J Sunday 10:00pm-6:00am

K None of these times

Alternatives Survey Questions: Employer-specific questions

12. Employer Survey*

Description (optional)

Your Name:*

Type your answer here...

Your Title:*

Type your answer here...

Company Name:*

Type your answer here...

Address:*

Type your answer here...

Which category does your business align with best?*

A Food and Beverage

B Hotel

C Health and Beauty

D Legal

E Financial Services

F Education

G Retail

H Residential/Apartment

I Other

Does your business primarily serve people in the neighborhood or people coming from throughout the region?*

A Neighborhood

B Region

C 50/50

If you employ full time/permanent employees, please list the number here:*

Type your answer here...

If you employ part time/contractor employees, please list the number here:*

Type your answer here...

How do your customers get to the business? Select all that apply.*

A Walk or use a mobility device

B Car

C Carpool

D Transit

E Bike

F Scooter

G Other

If you employ seasonal employees, please list the number here:*

Type your answer here...

For which season(s) does your company hire seasonal employees? Select all that apply and leave blank if not applicable.

A Spring

B Summer

C Fall

D Winter

When do shifts start? Select all that apply.*

A before 5:00 am

B 5:00 am to 10:00 am

C between 10:00 am and 4:00 pm

D between 4:00 pm and 8:00 pm

E after 8:00 pm

Do any employees end work at the following times? Select all that apply.*

A before 5:00 am

B between 5:00 am to 10:00 am

C between 10:00 am and 4:00 pm

D between 4:00 pm and 8:00 pm

E after 8:00 pm

Has access to the Washington Avenue area impacted hiring employees to your worksite?*

Y Yes

N No

Do any of your employees express concerns about commuting issues?*

Y Yes

N No

Does your company provide employee parking?*

Y Yes

N No

If yes, is it free or paid?

If no, do your employees use a paid parking lot if they travel by car?

Type your answer here...

Are you willing to send our survey about the Washington Avenue study to your employees? A survey link and suggested language can be provided for an email or newsletter?*

Y Yes

N No

Do you need the employee survey translated into a language other than English?*

Y Yes

N No

How does your establishment handle deliveries and loading needs?*

A All deliveries happen on-property (in a parking lot)

B All deliveries happen from Washington Avenue

C All deliveries happen from side streets

D All deliveries happen from Center Street

E A mix of street and on-property deliveries

F No deliveries

Short Term Recommendations Survey Questions



Please give your feedback on the Washington Avenue Corridor Study short term improvements.

© Takes 3 minutes

Start

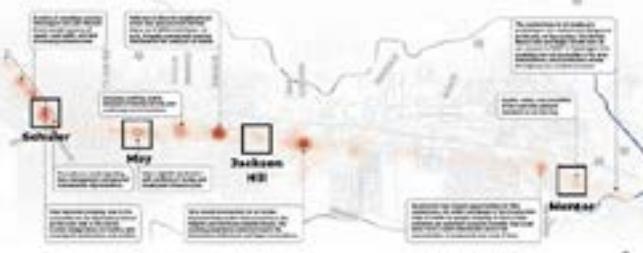
press Enter ↵

1+ These questions will help the project team prioritize short-term recommendations:

a. How important is a safer pedestrian crossing of Washington Ave and Westcott St at Schuler St to you? *

A safer crossing at Schuler in the short term could include a HAWK signal/pedestrian hybrid beacon (a traffic control device used to stop road traffic and allow pedestrians to cross safely), additional lighting, a raised crosswalk, and/or pedestrian refuge islands.

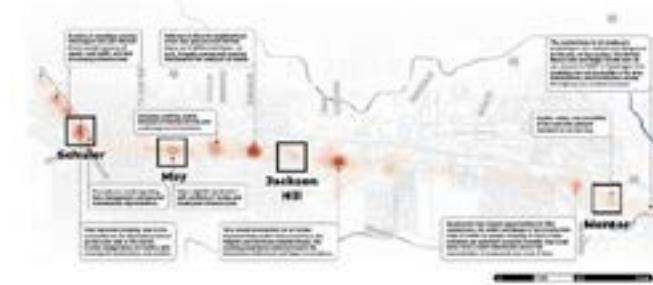
1 star is Not Important; 5 stars is Very Important



b. How important is a safer pedestrian crossing of Washington Ave at Moy St to you? *

A safer crossing at Moy in the short term could include additional lighting and a midblock pedestrian refuge.

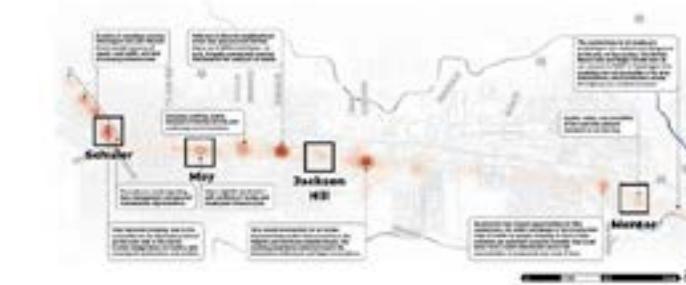
1 star is Not Important; 5 stars is Very Important



c. How important is a safer pedestrian crossing of Washington Ave at Mentor St to you? *

A safer crossing at Mentor in the short term could include additional lighting and a midblock pedestrian refuge.

1 star is Not Important; 5 stars is Very Important



f. How important is a safer crossing at Center St and Durham Dr to you? *

1 star is Not Important; 5 stars is Very Important



g. How important is safer bike infrastructure along Center St to you? *

1 star is Not Important; 5 stars is Very Important



h. How important is a safer bike connection between Downtown and Center St to you? *

1 star is Not Important; 5 stars is Very Important



i. How important is increased and improved wayfinding for people walking, rolling, and biking along the corridor to you? *

1 star is Not Important; 5 stars is Very Important



j. Are there any specific areas or destinations that you think need better wayfinding?

Type your answer here...

Start or < Enter > to make a line draw

Short Term Recommendations Survey Questions (cont)

2 → OPTIONAL: Do you have any additional comments?

Type your answer here...

Shift + Enter ↵ to make a line break

7 → Would you like future updates about the Washington Avenue Corridor Study? If so, please add your email address below:

name@example.com

Submit (Press Ctrl + Enter ↵)

3 → Please enter your home zip code.*

Type your answer here...

4 → What age range are you in?*

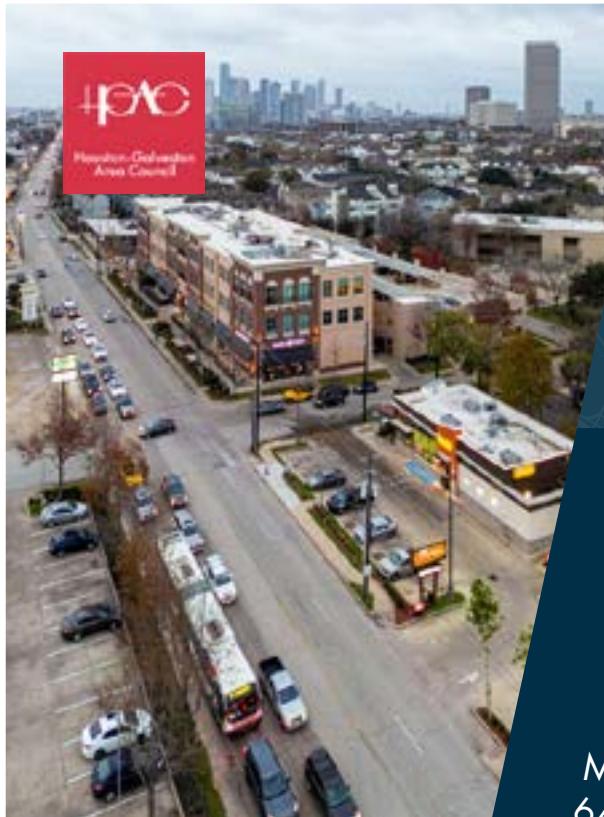
- A Under 18
- B 19 to 34
- C 35 to 49
- D 50 to 64
- E 65 and older

5 → OPTIONAL: How do you describe yourself? Select all that apply.

- A Asian or Asian American
- B Black or African American
- C Hispanic or Latino/a
- D Middle Eastern or North African
- E Native American or Alaska Native
- F White or European
- G Other

6 → OPTIONAL: To which gender do you most identify?

- A Man
- B Woman
- C Prefer not to say
- D Other



WASHINGTON AVENUE CORRIDOR STUDY

**Corridor-wide Mobility Plan
Meeting: May 11, 2024
10 AM - 12 PM**

Presentation and Q&A
starts at 10:30 AM

Memorial Elementary School Cafeteria
6401 Arnot Street, Houston, TX 77007

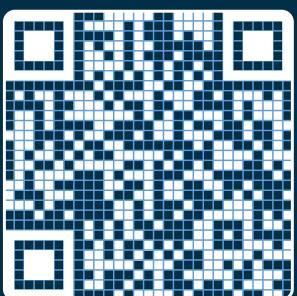
LET'S CREATE A BETTER WASHINGTON AVENUE FOR ALL!



Register for project updates and give feedback by scanning the QR code or visiting the website at:

<https://engage.h-gac.com/WACS>

This meeting is accessible via METRO Rt. 85, biking along Blossom Street or Schuler Street via Buffalo or White Oak Bayous, or by driving to the address above.



ESTUDIO DE LA AVENIDA WASHINGTON

**Plan de Movilidad del Corredor
Reunión: 11 de mayo del 2024
10 AM - 12 PM**

Presentación y sesión de preguntas
comienza a las 10:30 AM

Cafetería de la escuela Memorial Elementary
6401 Arnot Street, Houston, TX 77007

¡CONSTRUYAMOS UNA MEJOR AVENIDA WASHINGTON PARA TODOS!



Regístrate para recibir actualizaciones del proyecto y dar comentarios adicionales usando el código QR o visitando la página web:

<https://engage.h-gac.com/WACS>

Esta reunión es accesible a través de METRO Rt 85, en bicicleta por Blossom Street o Schuler Street a través de Buffalo o White Oak Bayous, o en coche manejando a la dirección en este folleto





WASHINGTON AVENUE CORRIDOR STUDY

Super Neighborhood 22
Meeting: May 16, 2024
6:30 PM - 8:00 PM

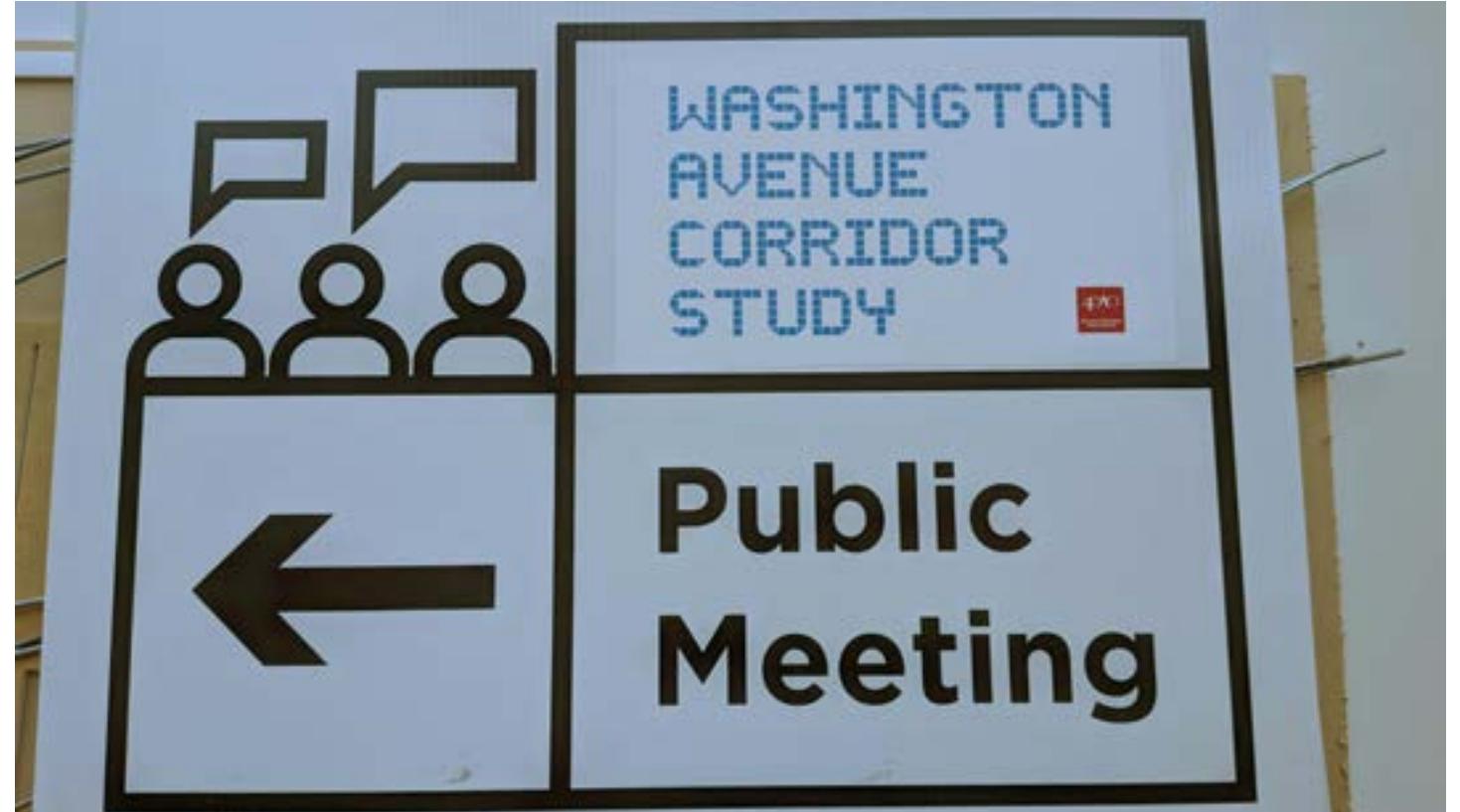
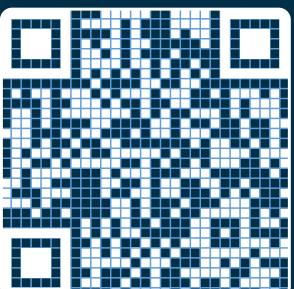
Messiah Lutheran Church
Fellowship Hall
816 Roy Street
Houston, TX 77007

LET'S CREATE A
BETTER WASHINGTON
AVENUE FOR ALL!



Register for project updates and give
feedback by scanning the QR code or
visiting the website at:

<https://engage.h-gac.com/WACS>





WASHINGTON AVENUE CORRIDOR STUDY

Round 3 Public Meeting:

Thursday, May 29, 2025
6:00 PM - 7:30 PM

MECA
1900 Kane St.
Houston, TX 77007

Short presentation at 6:30pm

Review and provide feedback on the final alternatives!



Learn about the project by scanning the QR code or visiting:

<https://engage.h-gac.com/WACS>

In compliance with the Americans with Disabilities Act (ADA), H-GAC will provide for reasonable accommodations for persons attending H-GAC functions. Requests from persons needing special accommodations should be received by H-GAC staff 24 hours before a function. The public meeting will be conducted in English, and requests for language interpreters or other special communication needs should be made at least two working days before a function. Call 832-681-2629 for assistance.



ESTUDIO DEL CORREDOR DE WASHINGTON AVENUE

Tercera Reunión Pública:

Jueves, 29 de mayo de 2025
6:00 PM - 7:30 PM

MECA
1900 Kane St.
Houston, TX 77007

Presentación breve a las 6:30 pm

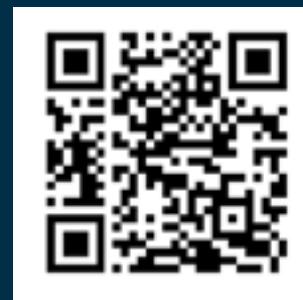
¡Revise las alternativas finales y comparta sus comentarios!



Infórmese sobre el proyecto escaneando el código QR o visitando:

<https://engage.h-gac.com/WACS>

En cumplimiento con la Ley de Estadounidenses con Discapacidades (ADA), H-GAC proporcionará adaptaciones razonables para las personas que asistan a eventos de H-GAC. Las solicitudes de personas que necesiten adaptaciones especiales deben ser recibidas por el personal de H-GAC al menos 24 horas antes del evento. La reunión pública se llevará a cabo en inglés, y las solicitudes de intérpretes de idiomas u otras necesidades especiales de comunicación deben hacerse al menos dos días hábiles antes del evento. Llame al 832-681-2629 para obtener asistencia.



**This meeting was rained out

**This meeting was rained out



WASHINGTON AVENUE CORRIDOR STUDY

Round 3 Public Meeting:

Monday, June 23, 2025
6:00 PM - 7:30 PM

St. Theresa Catholic Church's
Fellowship Hall
6622 Haskell St
Houston, TX 77007

Review and provide
feedback on the
final alternatives!



Learn about the project by scanning the
QR code or visiting:

<https://engage.h-gac.com/WACS>

In compliance with the Americans with Disabilities Act (ADA), H-GAC will provide for reasonable accommodations for persons attending H-GAC functions. Requests from persons needing special accommodations should be received by H-GAC staff 24 hours before a function. The public meeting will be conducted in English, and requests for language interpreters or other special communication needs should be made at least two working days before a function. Call 832-681-2629 for assistance.



ESTUDIO DEL CORREDOR DE WASHINGTON AVENUE

Tercera Reunión Pública:

Lunes, 23 de junio de 2025
6:00 p.m. - 7:30 p.m.

St. Theresa Catholic Church's
Fellowship Hall
6622 Haskell St
Houston, TX 77007

¡Revise las alternativas
finales y comparta sus
comentarios!

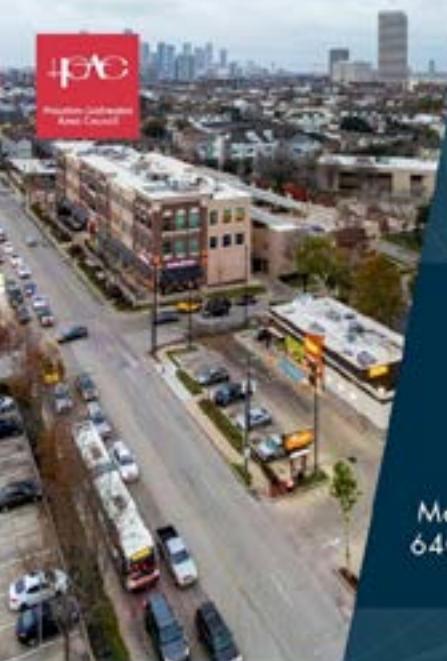


Infórmese sobre el proyecto escaneando
el código QR o visitando:

<https://engage.h-gac.com/WACS>

En cumplimiento con la Ley de Estadounidenses con Discapacidades (ADA), H-GAC proporcionará adaptaciones razonables para las personas que asistan a eventos de H-GAC. Las solicitudes de personas que necesiten adaptaciones especiales deben ser recibidas por el personal de H-GAC al menos 24 horas antes del evento. La reunión pública se llevará a cabo en inglés, y las solicitudes de intérpretes de idiomas u otras necesidades especiales de comunicación deben hacerse al menos dos días hábiles antes del evento. Llame al 832-681-2629 para obtener asistencia.





WASHINGTON AVENUE CORRIDOR STUDY

Corridor-Wide Mobility Plan
May 11, 2024
10 AM - 12 PM

Presentation and Q&A start at 10:30 AM

Memorial Elementary School Cafeteria
6401 Arnot Street, Houston, TX 77007

LET'S CREATE A BETTER WASHINGTON AVENUE FOR ALL!

<https://engage.h-gac.com/WACS>

hougalvareacog Let's pave the way for a better Washington Avenue! 🌟

The Houston-Galveston Area Council and the city of Houston are teaming up to develop a corridor mobility plan, and your voice matters. 🌟

Join us on May 11 from 10am-12pm at Memorial Elementary School Cafeteria, 6401 Arnot Street, Houston, TX 77007, for our first public meeting – an opportunity to shape the future of this historic avenue.

Don't worry if you can't make it in person – your input is valued virtually too! Visit engage.h-gac.com/WACS to share your thoughts on the interactive map and pinboard. If you need accessibility accommodations, please email Caroline Bailey at caroline.bailey@h-gac.com by May 9.

We look forward to this conversation and prioritizing safety, accessibility, and sustainability to create a better Washington Avenue!

#HGAC #HGACRegion
#HoustonGalvestonAreaCouncil #WACS



Liked by jytoplin and 32 others
May 7, 2024

Add a comment... Post



WASHINGTON AVENUE CORRIDOR STUDY

Public Meeting
6 - 7:30 p.m.
Monday, June 23, 2025

Short presentation at 6:30pm

St. Theresa Catholic Church's Fellowship Hall
6622 Haskell St.
Houston, TX 77007

REVIEW AND PROVIDE FEEDBACK ON THE FINAL ALTERNATIVES!

<https://engage.h-gac.com/WACS>

hougalvareacog 🌟 Don't miss your chance to weigh in!

Join us for the next public meeting of the Washington Avenue Corridor Study and help shape the future of this vital corridor.

6 - 7:30 p.m.
Short presentation at 6:30 p.m.
Monday, June 23, 2025
St. Theresa Catholic Church's Fellowship Hall, 6622 Haskell St, Houston, TX 77007

This is your opportunity to review the final proposed alternatives and share your feedback before the plan is finalized. Make your voice heard!

Learn more and share your input: <https://engage.h-gac.com/WACS>

#WashingtonAve #PublicMeeting
#CommunityInput #HGAC #CorridorStudy
#HoustonPlanning #YourVoiceMatters
#HGACRegion #HoustonGalvestonAreaCouncil

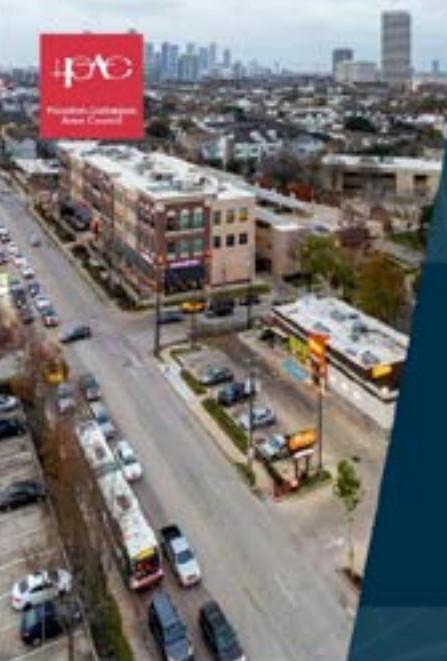
No pierdas la oportunidad de participar!

Acompáñanos en la próxima reunión pública y déjame tu voz en el futuro de este corredor vital.



Liked by parma_chris and 13 others
June 18

Add a comment... Post



WASHINGTON AVENUE CORRIDOR STUDY

Super Neighborhood 22 Meeting: May 16, 2024
6:30 PM - 8:00 PM

Messiah Lutheran Church Fellowship Hall
816 Roy Street
Houston, TX 77007

LET'S CREATE A BETTER WASHINGTON AVENUE FOR ALL!

<https://engage.h-gac.com/WACS>

hougalvareacog Missed our initial gathering on the Washington Avenue Corridor Study? No problem!

Join us for the second meeting from 6:30 - 8 p.m. on Thursday, May 16, at the Messiah Lutheran Church Fellowship Hall (816 Roy Street, Houston, TX 77007). Your voice is crucial as the Houston-Galveston Area Council and the city of Houston collaborate on a corridor mobility plan.

Can't attend in person? Your virtual input is just as valuable! Visit engage.h-gac.com/WACS to share your thoughts on our interactive map and pinboard. For accessibility accommodations, reach out to Caroline Bailey at caroline.bailey@h-gac.com.

Let's engage in this dialogue, prioritizing safety, accessibility, and sustainability for a better Washington Avenue! 🌟

#HGAC #HGACRegion
#HoustonGalvestonAreaCouncil #WACS
#HoustonMobility #CommunityEngagement
#HGACPublicMeeting #WashingtonAve
#HoustonRoads



74W
Liked by dcopelandloredo and 14 others
May 13, 2024

Add a comment... Post



WASHINGTON AVENUE CORRIDOR STUDY

The Washington Avenue Corridor Study is wrapping up!

We're asking for your feedback on which short-term improvements matter most.

Survey open through July 28

HELP PRIORITIZE IMPROVEMENTS ON WASHINGTON AVENUE!

bit.ly/washingtonave_survey

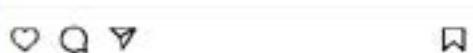
hougalvareacog Washington Avenue & Center Street – What Matters Most to You?

We're wrapping up the Washington Avenue Corridor Study and want your help prioritizing short-term improvements. Whether you walk, bike, drive, or ride – your feedback can help shape what's next.

The survey is open through July 28 – take a moment to share your thoughts!

bit.ly/washingtonave_survey

#HoustonPlanning #TransportationStudy
#WashingtonAve #HGAC #HGACRegion
#HoustonGalvestonAreaCouncil



Liked by classicroyan17 and 6 others
July 22

Add a comment... Post

APPENDIX E

TECHNICAL DATA

Washington Avenue & Houston Avenue - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125850, Location: 29.76728, -95.37233



Leg Direction	Houston Ave Southbound						Washington Ave Westbound						Houston Ave Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:00AM	49	754	89	0	892	3	46	77	79	0	202	5	101	201	78	0	380	3	204	243	47	0	494	8	1968
8:00AM	104	884	174	0	1162	1	61	104	89	0	254	12	147	275	111	0	533	1	203	357	67	0	627	2	2576
4:00PM	118	403	97	1	619	3	140	192	90	0	422	1	91	667	173	0	931	3	232	295	199	0	726	2	2698
5:00PM	119	490	94	0	703	2	179	244	105	0	528	2	108	899	186	0	1193	5	202	342	244	0	788	3	3212
6:00PM	127	476	99	0	702	3	93	145	108	0	346	0	150	662	169	0	981	8	244	323	171	0	738	2	2767
Total	517	3007	553	1	4078	12	519	762	471	0	1752	20	597	2704	717	0	4018	20	1085	1560	728	0	3373	17	13221
% Approach	12.7%	73.7%	13.6%	0%	-	-	29.6%	43.5%	26.9%	0%	-	-	14.9%	67.3%	17.8%	0%	-	-	32.2%	46.2%	21.6%	0%	-	-	-
% Total	3.9%	22.7%	4.2%	0%	30.8%	-	3.9%	5.8%	3.6%	0%	13.3%	-	4.5%	20.5%	5.4%	0%	30.4%	-	8.2%	11.8%	5.5%	0%	25.5%	-	-
Lights	513	2958	545	1	4017	-	512	732	469	0	1713	-	594	2672	700	0	3966	-	1056	1522	717	0	3295	-	12991
% Lights	99.2%	98.4%	98.6%	100%	98.5%	-	98.7%	96.1%	99.6%	0%	97.8%	-	99.5%	98.8%	97.6%	0%	98.7%	-	97.3%	97.6%	98.5%	0%	97.7%	-	98.3%
Single-Unit Trucks	3	27	5	0	35	-	6	5	2	0	13	-	3	15	12	0	30	-	18	12	9	0	39	-	117
% Single-Unit Trucks	0.6%	0.9%	0.9%	0%	0.9%	-	1.2%	0.7%	0.4%	0%	0.7%	-	0.5%	0.6%	1.7%	0%	0.7%	-	1.7%	0.8%	1.2%	0%	1.2%	-	0.9%
Articulated Trucks	0	6	1	0	7	-	0	0	0	0	0	-	0	1	3	0	4	-	9	0	0	0	9	-	20
% Articulated Trucks	0%	0.2%	0.2%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0.4%	0%	0.1%	-	0.8%	0%	0%	0%	0.3%	-	0.2%
Buses	1	16	2	0	19	-	1	24	0	0	25	-	0	16	2	0	18	-	2	26	2	0	30	-	92
% Buses	0.2%	0.5%	0.4%	0%	0.5%	-	0.2%	3.1%	0%	0%	1.4%	-	0%	0.6%	0.3%	0%	0.4%	-	0.2%	1.7%	0.3%	0%	0.9%	-	0.7%
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%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	10	-	-	-	-	-	19	-	-	-	-	-	20	-	-	-	-	-	15	
% Pedestrians	-	-	-	-	-	83.3%	-	-	-	-	-	95.0%	-	-	-	-	-	100%	-	-	-	-	-	88.2%	-
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	
% Bicycles on Crosswalk	-	-	-	-	-	16.7%	-	-	-	-	-	5.0%	-	-	-	-	-	0%	-	-	-	-	-	11.8%	-

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

Washington Avenue & Houston Avenue - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125850, Location: 29.76728, -95.37233

**GHA GEWALT HAMILTON
ASSOCIATES, INC.**

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

[N] Houston Ave

Total: 8030

In: 4078

Out: 3952

517

3007

553
1

[W] Washington Ave

Total: 5369

In: 3373 Out: 1996

1085

1560

728

8

9

519
762
471

Out: 2710

In: 1752

Total: 4462

[E] Washington Ave

Out: 4563

In: 4018

Total: 8581

[S] Houston Ave

Out: 4563

In: 4018

Total: 8581

12

717

2704

597

8

4

16

5

Washington Avenue & Houston Avenue - TMC

Wed Nov 1, 2023

AM Peak (8 AM - 9 AM)

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

All Movements

ID: 1125850, Location: 29.76728, -95.37233



Leg Direction	Houston Ave Southbound						Washington Ave Westbound						Houston Ave Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 8:00AM	23	239	49	0	311	0	13	15	24	0	52	4	42	62	30	0	134	0	46	84	15	0	145	1	642
8:15AM	25	209	35	0	269	1	12	40	26	0	78	1	31	62	25	0	118	0	58	85	18	0	161	0	626
8:30AM	25	230	42	0	297	0	12	25	16	0	53	4	45	69	21	0	135	1	52	90	18	0	160	1	645
8:45AM	31	206	48	0	285	0	24	24	23	0	71	3	29	82	35	0	146	0	47	98	16	0	161	0	663
Total	104	884	174	0	1162	1	61	104	89	0	254	12	147	275	111	0	533	1	203	357	67	0	627	2	2576
% Approach	9.0%	76.1%	15.0%	0%	-	-	24.0%	40.9%	35.0%	0%	-	-	27.6%	51.6%	20.8%	0%	-	-	32.4%	56.9%	10.7%	0%	-	-	-
% Total	4.0%	34.3%	6.8%	0%	45.1%	-	2.4%	4.0%	3.5%	0%	9.9%	-	5.7%	10.7%	4.3%	0%	20.7%	-	7.9%	13.9%	2.6%	0%	24.3%	-	-
PHF	0.839	0.925	0.888	-	0.934	-	0.635	0.650	0.856	-	0.814	-	0.817	0.838	0.793	-	0.913	-	0.875	0.911	0.931	-	0.974	-	0.971
Lights	101	868	171	0	1140	-	57	98	88	0	243	-	147	268	106	0	521	-	191	350	64	0	605	-	2509
% Lights	97.1%	98.2%	98.3%	0%	98.1%	-	93.4%	94.2%	98.9%	0%	95.7%	-	100%	97.5%	95.5%	0%	97.7%	-	94.1%	98.0%	95.5%	0%	96.5%	-	97.4%
Single-Unit Trucks	3	11	2	0	16	-	4	1	1	0	6	-	0	3	3	0	6	-	9	1	3	0	13	-	41
% Single-Unit Trucks	2.9%	1.2%	1.1%	0%	1.4%	-	6.6%	1.0%	1.1%	0%	2.4%	-	0%	1.1%	2.7%	0%	1.1%	-	4.4%	0.3%	4.5%	0%	2.1%	-	1.6%
Articulated Trucks	0	2	0	0	2	-	0	0	0	0	0	-	0	0	2	0	2	-	3	0	0	0	3	-	7
% Articulated Trucks	0%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	1.8%	0%	0.4%	-	1.5%	0%	0%	0%	0.5%	-	0.3%
Buses	0	3	1	0	4	-	0	5	0	0	5	-	0	4	0	0	4	-	0	6	0	0	6	-	19
% Buses	0%	0.3%	0.6%	0%	0.3%	-	0%	4.8%	0%	0%	2.0%	-	0%	1.5%	0%	0%	0.8%	-	0%	1.7%	0%	0%	1.0%	-	0.7%
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	-	-	-	-	-	11	-	-	-	-	-	1	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	91.7%	-	-	-	-	-	100%	-	-	-	-	-	50.0%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	8.3%	-	-	-	-	-	0%	-	-	-	-	-	50.0%	-

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

Washington Avenue & Houston Avenue - TMC

Wed Nov 1, 2023

AM Peak (8 AM - 9 AM)

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

All Movements

ID: 1125850, Location: 29.76728, -95.37233

GHA GEWALT HAMILTON ASSOCIATES, INC.

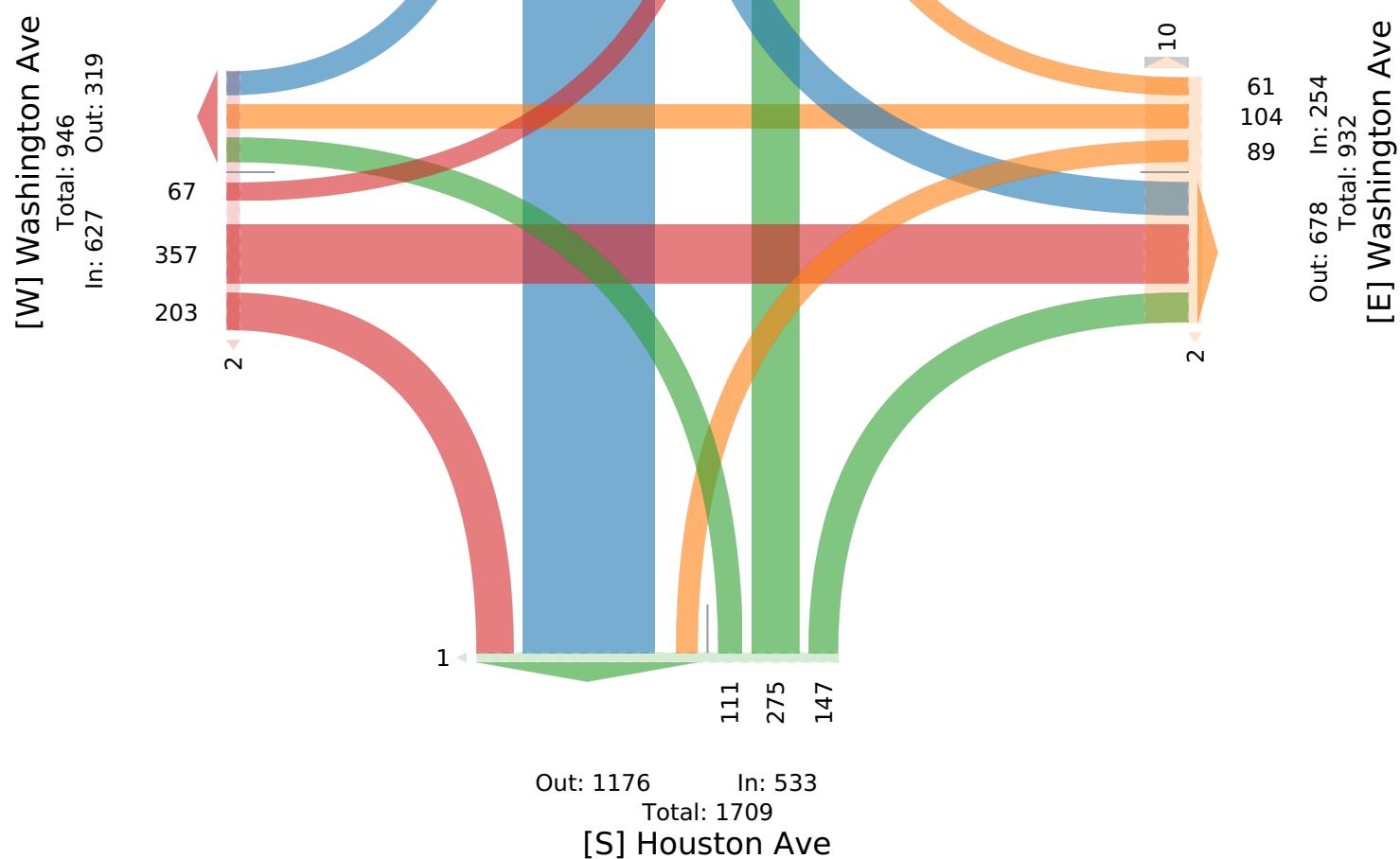
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Houston Ave

Total: 1565

In: 1162

Out: 403



Washington Avenue & Houston Avenue - TMC

Wed Nov 1, 2023

PM Peak (5 PM - 6 PM) - Overall Peak Hour

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

All Movements

ID: 1125850, Location: 29.76728, -95.37233



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

Leg Direction	Houston Ave Southbound						Washington Ave Westbound						Houston Ave Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 5:00PM	26	116	23	0	165	0	50	71	41	0	162	1	30	202	40	0	272	3	47	130	75	0	252	0	851
5:15PM	23	112	23	0	158	1	39	53	19	0	111	0	29	240	50	0	319	0	55	68	57	0	180	3	768
5:30PM	40	124	27	0	191	0	42	68	29	0	139	0	21	210	42	0	273	1	46	86	63	0	195	0	798
5:45PM	30	138	21	0	189	1	48	52	16	0	116	1	28	247	54	0	329	1	54	58	49	0	161	0	795
Total	119	490	94	0	703	2	179	244	105	0	528	2	108	899	186	0	1193	5	202	342	244	0	788	3	3212
% Approach	16.9%	69.7%	13.4%	0%	-	-	33.9%	46.2%	19.9%	0%	-	-	9.1%	75.4%	15.6%	0%	-	-	25.6%	43.4%	31.0%	0%	-	-	-
% Total	3.7%	15.3%	2.9%	0%	21.9%	-	5.6%	7.6%	3.3%	0%	16.4%	-	3.4%	28.0%	5.8%	0%	37.1%	-	6.3%	10.6%	7.6%	0%	24.5%	-	-
PHF	0.744	0.888	0.870	-	0.920	-	0.895	0.856	0.640	-	0.813	-	0.900	0.910	0.861	-	0.907	-	0.918	0.658	0.813	-	0.782	-	0.943
Lights	119	486	93	0	698	-	179	236	105	0	520	-	107	892	181	0	1180	-	198	338	242	0	778	-	3176
% Lights	100%	99.2%	98.9%	0%	99.3%	-	100%	96.7%	100%	0%	98.5%	-	99.1%	99.2%	97.3%	0%	98.9%	-	98.0%	98.8%	99.2%	0%	98.7%	-	98.9%
Single-Unit Trucks	0	2	0	0	2	-	0	2	0	0	2	-	1	4	5	0	10	-	1	1	2	0	4	-	18
% Single-Unit Trucks	0%	0.4%	0%	0%	0.3%	-	0%	0.8%	0%	0%	0.4%	-	0.9%	0.4%	2.7%	0%	0.8%	-	0.5%	0.3%	0.8%	0%	0.5%	-	0.6%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	3	0	0	0	3	-	3
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	1.5%	0%	0%	0%	0.4%	-	0.1%
Buses	0	2	1	0	3	-	0	5	0	0	5	-	0	3	0	0	3	-	0	3	0	0	3	-	14
% Buses	0%	0.4%	1.1%	0%	0.4%	-	0%	2.0%	0%	0%	0.9%	-	0%	0.3%	0%	0%	0.3%	-	0%	0.9%	0%	0%	0.4%	-	0.4%
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%	0.4%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	2	-	-	-	-	2	-	-	-	-	-	5	-	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	0%	

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

Washington Avenue & Houston Avenue - TMC

Wed Nov 1, 2023

PM Peak (5 PM - 6 PM) - Overall Peak Hour

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

All Movements

ID: 1125850, Location: 29.76728, -95.37233

**GHA GEWALT HAMILTON
ASSOCIATES, INC.**

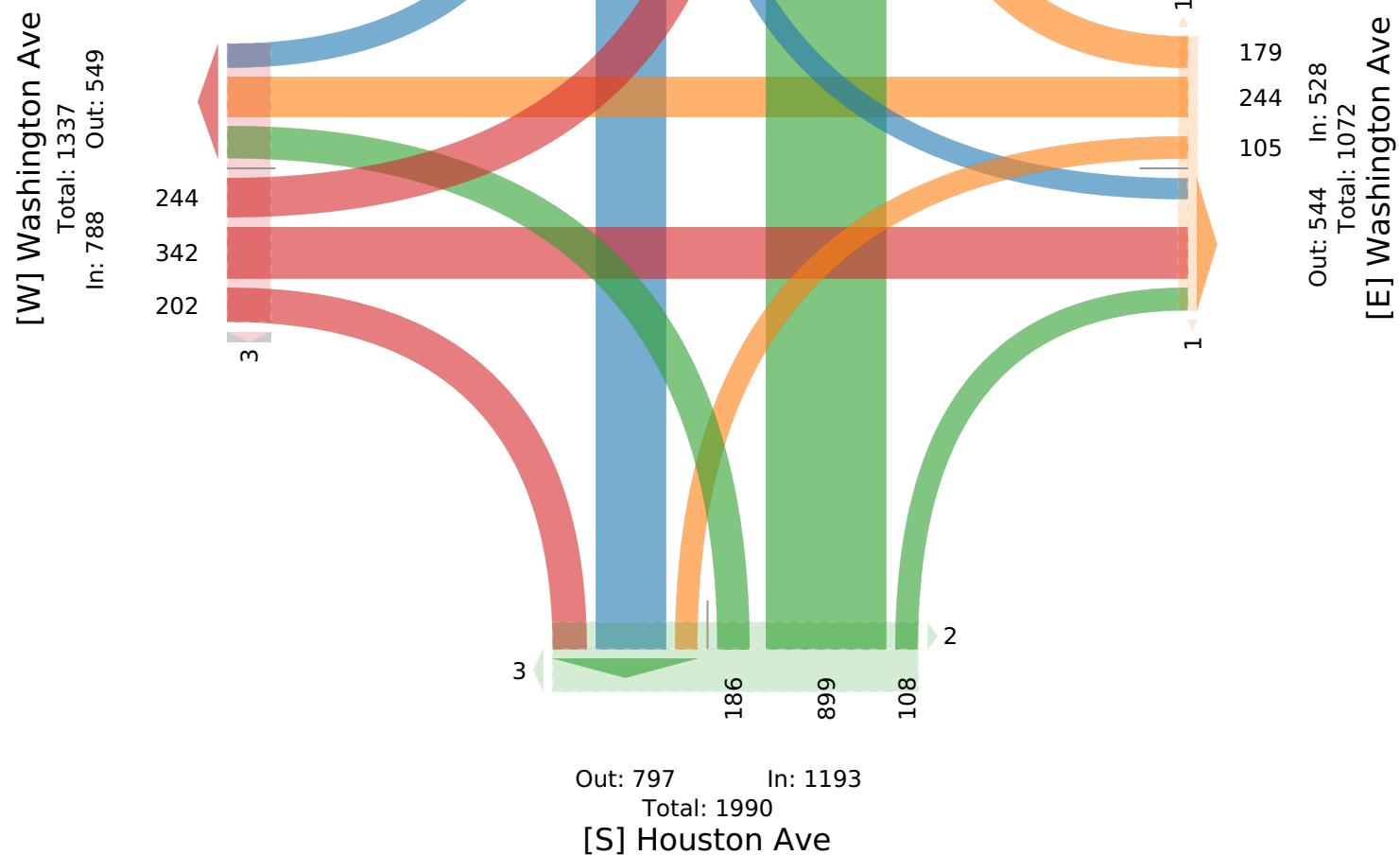
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Houston Ave

Total: 2025

In: 703

Out: 1322



Washington Avenue & Silver Street - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125854, Location: 29.767783, -95.377185



Leg Direction	Silver St Southbound						Washington Ave Westbound						Silver St Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:00AM	50	26	29	0	105	0	3	187	3	0	193	2	9	6	4	0	19	2	11	475	14	0	500	3	817
8:00AM	39	15	33	0	87	0	7	274	6	0	287	0	8	3	4	0	15	3	11	619	21	0	651	1	1040
4:00PM	37	10	16	0	63	5	24	480	3	0	507	4	21	13	16	0	50	1	13	672	63	0	748	4	1368
5:00PM	47	12	15	0	74	6	27	529	7	0	563	9	18	12	25	0	55	2	20	759	59	0	838	6	1530
6:00PM	44	8	13	0	65	5	25	419	14	0	458	4	22	14	21	0	57	4	13	754	52	0	819	10	1399
Total	217	71	106	0	394	16	86	1889	33	0	2008	19	78	48	70	0	196	12	68	3279	209	0	3556	24	6154
% Approach	55.1%	18.0%	26.9%	0%	-	-	4.3%	94.1%	1.6%	0%	-	-	39.8%	24.5%	35.7%	0%	-	-	1.9%	92.2%	5.9%	0%	-	-	-
% Total	3.5%	1.2%	1.7%	0%	6.4%	-	1.4%	30.7%	0.5%	0%	32.6%	-	1.3%	0.8%	1.1%	0%	3.2%	-	1.1%	53.3%	3.4%	0%	57.8%	-	-
Lights	212	67	102	0	381	-	84	1831	31	0	1946	-	74	44	68	0	186	-	66	3203	207	0	3476	-	5989
% Lights	97.7%	94.4%	96.2%	0%	96.7%	-	97.7%	96.9%	93.9%	0%	96.9%	-	94.9%	91.7%	97.1%	0%	94.9%	-	97.1%	97.7%	99.0%	0%	97.8%	-	97.3%
Single-Unit Trucks	1	0	4	0	5	-	1	22	0	0	23	-	2	0	0	0	2	-	0	36	1	0	37	-	67
% Single-Unit Trucks	0.5%	0%	3.8%	0%	1.3%	-	1.2%	1.2%	0%	0%	1.1%	-	2.6%	0%	0%	0%	1.0%	-	0%	1.1%	0.5%	0%	1.0%	-	1.1%
Articulated Trucks	1	1	0	0	2	-	0	5	0	0	5	-	0	0	0	0	0	-	0	8	0	0	8	-	15
% Articulated Trucks	0.5%	1.4%	0%	0%	0.5%	-	0%	0.3%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0.2%
Buses	1	0	0	0	1	-	0	31	1	0	32	-	1	0	1	0	2	-	0	30	0	0	30	-	65
% Buses	0.5%	0%	0%	0%	0.3%	-	0%	1.6%	3.0%	0%	1.6%	-	1.3%	0%	1.4%	0%	1.0%	-	0%	0.9%	0%	0%	0.8%	-	1.1%
Bicycles on Road	2	3	0	0	5	-	1	0	1	0	2	-	1	4	1	0	6	-	2	2	1	0	5	-	18
% Bicycles on Road	0.9%	4.2%	0%	0%	1.3%	-	1.2%	0%	3.0%	0%	0.1%	-	1.3%	8.3%	1.4%	0%	3.1%	-	2.9%	0.1%	0.5%	0%	0.1%	-	0.3%
Pedestrians	-	-	-	-	-	16	-	-	-	-	-	18	-	-	-	-	-	12	-	-	-	-	-	-	20
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	94.7%	-	-	-	-	-	100%	-	-	-	-	-	-	83.3%
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	-	4
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	5.3%	-	-	-	-	-	0%	-	-	-	-	-	-	16.7%

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

Washington Avenue & Silver Street - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125854, Location: 29.767783, -95.377185

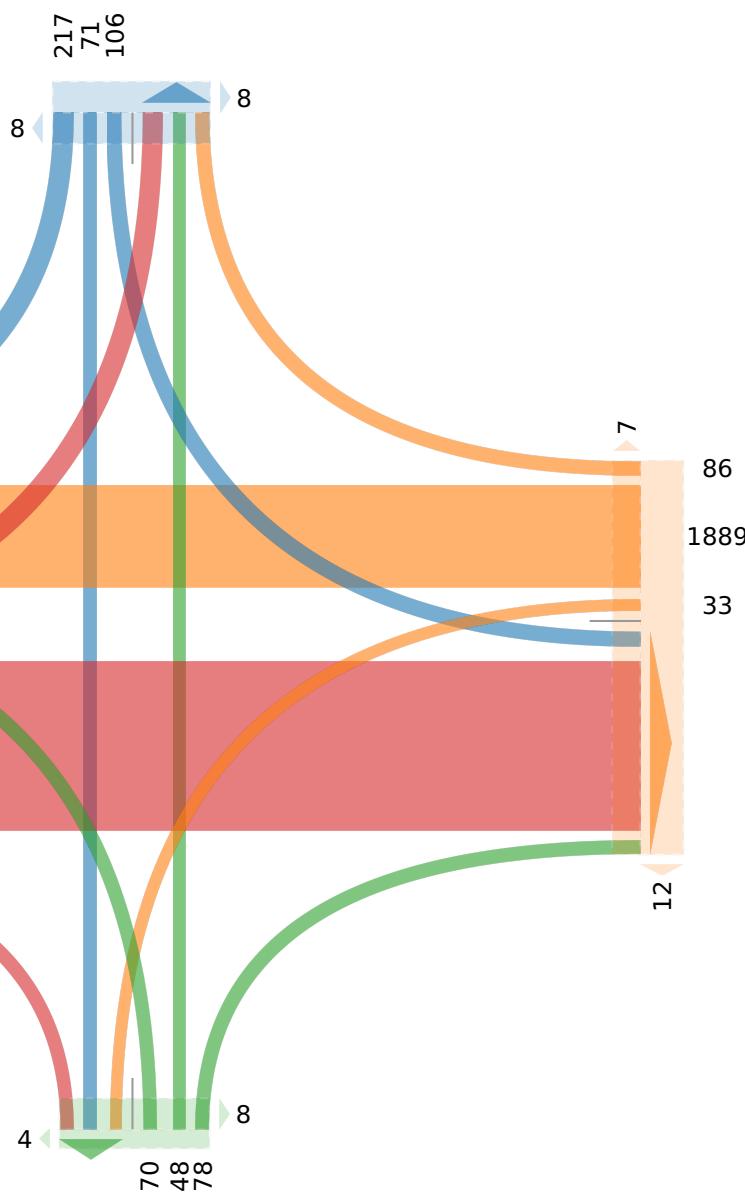
GHA GEWALT HAMILTON ASSOCIATES, INC.

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

[N] Silver St

Total: 737

In: 394 Out: 343



Out: 172 In: 196

Total: 368

[S] Silver St

Washington Avenue & Silver Street - TMC

Wed Nov 1, 2023

AM Peak (7:45 AM - 8:45 AM)

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

All Movements

ID: 1125854, Location: 29.767783, -95.377185



Leg Direction	Silver St Southbound					Washington Ave Westbound					Silver St Northbound					Washington Ave Eastbound									
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:45AM	27	15	14	0	56	0	1	48	1	0	50	1	5	3	0	0	8	1	2	168	6	0	176	1	290
8:00AM	8	4	12	0	24	0	1	58	1	0	60	0	1	0	0	0	1	1	4	158	7	0	169	0	254
8:15AM	10	4	6	0	20	0	2	68	4	0	74	0	4	0	0	0	4	0	3	149	3	0	155	0	253
8:30AM	8	1	5	0	14	0	3	72	0	0	75	0	3	1	3	0	7	1	1	168	7	0	176	0	272
Total	53	24	37	0	114	0	7	246	6	0	259	1	13	4	3	0	20	3	10	643	23	0	676	1	1069
% Approach	46.5%	21.1%	32.5%	0%	-	-	2.7%	95.0%	2.3%	0%	-	-	65.0%	20.0%	15.0%	0%	-	-	1.5%	95.1%	3.4%	0%	-	-	-
% Total	5.0%	2.2%	3.5%	0%	10.7%	-	0.7%	23.0%	0.6%	0%	24.2%	-	1.2%	0.4%	0.3%	0%	1.9%	-	0.9%	60.1%	2.2%	0%	63.2%	-	-
PHF	0.491	0.411	0.661	-	0.514	-	0.583	0.854	0.375	-	0.863	-	0.650	0.375	0.250	-	0.679	-	0.625	0.957	0.821	-	0.960	-	0.926
Lights	51	22	37	0	110	-	7	234	6	0	247	-	12	3	3	0	18	-	10	620	23	0	653	-	1028
% Lights	96.2%	91.7%	100%	0%	96.5%	-	100%	95.1%	100%	0%	95.4%	-	92.3%	75.0%	100%	0%	90.0%	-	100%	96.4%	100%	0%	96.6%	-	96.2%
Single-Unit Trucks	0	0	0	0	0	-	0	4	0	0	4	-	0	0	0	0	0	-	0	13	0	0	13	-	17
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	1.6%	0%	0%	1.5%	-	0%	0%	0%	0%	0%	-	0%	2.0%	0%	0%	1.9%	-	1.6%
Articulated Trucks	1	1	0	0	2	-	0	3	0	0	3	-	0	0	0	0	0	-	0	2	0	0	2	-	7
% Articulated Trucks	1.9%	4.2%	0%	0%	1.8%	-	0%	1.2%	0%	0%	1.2%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.3%	-	0.7%
Buses	1	0	0	0	1	-	0	5	0	0	5	-	1	0	0	0	1	-	0	8	0	0	8	-	15
% Buses	1.9%	0%	0%	0%	0.9%	-	0%	2.0%	0%	0%	1.9%	-	7.7%	0%	0%	0%	5.0%	-	0%	1.2%	0%	0%	1.2%	-	1.4%
Bicycles on Road	0	1	0	0	1	-	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	2
% Bicycles on Road	0%	4.2%	0%	0%	0.9%	-	0%	0%	0%	0%	0%	-	0%	25.0%	0%	0%	5.0%	-	0%	0%	0%	0%	0%	-	0.2%
Pedestrians	-	-	-	-	-	0	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	1		
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%		
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0		
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%		

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

Washington Avenue & Silver Street - TMC

Wed Nov 1, 2023

AM Peak (7:45 AM - 8:45 AM)

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

All Movements

ID: 1125854, Location: 29.767783, -95.377185

GHA GEWALT HAMILTON ASSOCIATES, INC.

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

[N] Silver St

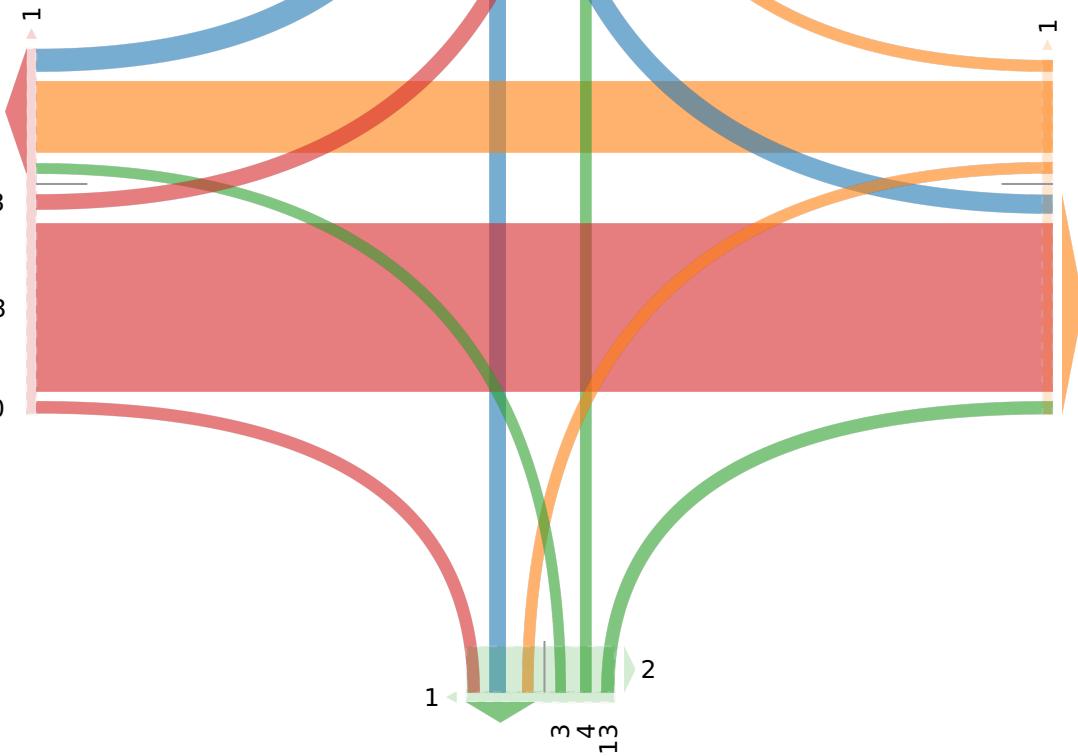
Total: 148

In: 114 Out: 34

53 24 37

[W] Washington Ave
Total: 978
In: 676 Out: 302

[E] Washington Ave
Total: 952
In: 259 Out: 693



Out: 40 In: 20

Total: 60

[S] Silver St

Washington Avenue & Silver Street - TMC

Wed Nov 1, 2023

PM Peak (5 PM - 6 PM) - Overall Peak Hour

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

All Movements

ID: 1125854, Location: 29.767783, -95.377185



Leg Direction	Silver St Southbound						Washington Ave Westbound						Silver St Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 5:00PM	6	5	3	0	14	1	12	139	3	0	154	1	8	1	5	0	14	1	6	205	12	0	223	1	405
5:15PM	10	3	5	0	18	2	6	116	2	0	124	2	1	6	6	0	13	0	5	194	10	0	209	2	364
5:30PM	12	1	3	0	16	2	8	148	1	0	157	3	6	2	7	0	15	1	4	186	16	0	206	1	394
5:45PM	19	3	4	0	26	1	1	126	1	0	128	3	3	3	7	0	13	0	5	174	21	0	200	2	367
Total	47	12	15	0	74	6	27	529	7	0	563	9	18	12	25	0	55	2	20	759	59	0	838	6	1530
% Approach	63.5%	16.2%	20.3%	0%	-	-	4.8%	94.0%	1.2%	0%	-	-	32.7%	21.8%	45.5%	0%	-	-	2.4%	90.6%	7.0%	0%	-	-	-
% Total	3.1%	0.8%	1.0%	0%	4.8%	-	1.8%	34.6%	0.5%	0%	36.8%	-	1.2%	0.8%	1.6%	0%	3.6%	-	1.3%	49.6%	3.9%	0%	54.8%	-	-
PHF	0.605	0.600	0.750	-	0.702	-	0.563	0.894	0.500	-	0.895	-	0.563	0.550	0.893	-	0.900	-	0.792	0.929	0.702	-	0.941	-	0.944
Lights	46	12	14	0	72	-	26	516	6	0	548	-	18	11	25	0	54	-	19	749	58	0	826	-	1500
% Lights	97.9%	100%	93.3%	0%	97.3%	-	96.3%	97.5%	85.7%	0%	97.3%	-	100%	91.7%	100%	0%	98.2%	-	95.0%	98.7%	98.3%	0%	98.6%	-	98.0%
Single-Unit Trucks	0	0	1	0	1	-	1	7	0	0	8	-	0	0	0	0	0	-	0	3	1	0	4	-	13
% Single-Unit Trucks	0%	0%	6.7%	0%	1.4%	-	3.7%	1.3%	0%	0%	1.4%	-	0%	0%	0%	0%	0%	-	0%	0.4%	1.7%	0%	0.5%	-	0.8%
Articulated Trucks	0	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%	0.4%	0%	0%	0.4%	-	0.2%
Buses	0	0	0	0	0	0	0	6	0	0	6	-	0	0	0	0	0	-	0	3	0	0	3	-	9
% Buses	0%	0%	0%	0%	0%	-	0%	1.1%	0%	0%	1.1%	-	0%	0%	0%	0%	0%	-	0%	0.4%	0%	0%	0.4%	-	0.6%
Bicycles on Road	1	0	0	0	1	-	0	0	1	0	1	-	0	1	0	0	1	-	1	1	0	0	2	-	5
% Bicycles on Road	2.1%	0%	0%	0%	1.4%	-	0%	0%	14.3%	0%	0.2%	-	0%	8.3%	0%	0%	1.8%	-	5.0%	0.1%	0%	0%	0.2%	-	0.3%
Pedestrians	-	-	-	-	-	6	-	-	-	-	9	-	-	-	-	-	2	-	-	-	-	-	-	4	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	66.7%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	2	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	33.3%	

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

Washington Avenue & Silver Street - TMC

Wed Nov 1, 2023

PM Peak (5 PM - 6 PM) - Overall Peak Hour

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

All Movements

ID: 1125854, Location: 29.767783, -95.377185

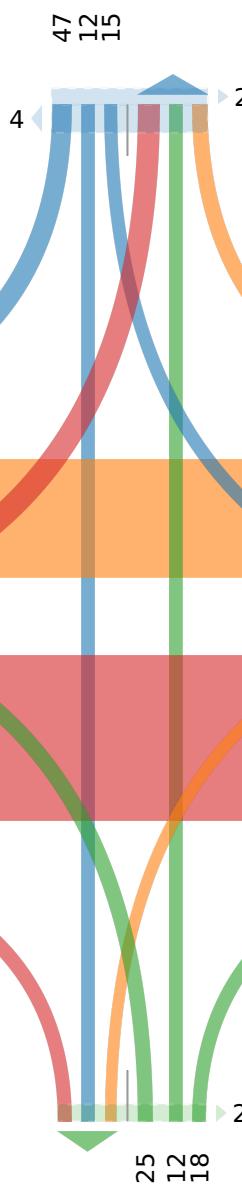
GHA GEWALT HAMILTON ASSOCIATES, INC.

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

[N] Silver St

Total: 172

In: 74 Out: 98



[W] Washington Ave

Total: 1439
In: 838 Out: 601

[E] Washington Ave
Out: 792 In: 563
Total: 1355

Out: 39 In: 55

Total: 94

[S] Silver St

Washington Avenue & Sawyer Street - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125853, Location: 29.7683, -95.382756



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

Leg Direction	Sawyer St Southbound						Washington Ave Westbound						Sawyer St Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:00AM	97	175	134	0	406	1	17	206	2	0	225	1	6	37	26	0	69	1	105	356	57	0	518	0	1218
8:00AM	124	205	180	0	509	1	35	272	8	0	315	1	8	46	30	0	84	1	131	516	67	0	714	1	1622
4:00PM	196	103	113	0	412	2	71	486	6	0	563	3	9	134	75	0	218	5	74	614	171	0	859	1	2052
5:00PM	189	114	117	0	420	5	90	502	17	0	609	3	15	184	98	0	297	4	80	703	171	0	954	9	2280
6:00PM	197	144	171	0	512	2	78	422	17	0	517	10	16	128	75	0	219	3	71	641	188	0	900	12	2148
Total	803	741	715	0	2259	11	291	1888	50	0	2229	18	54	529	304	0	887	14	461	2830	654	0	3945	23	9320
% Approach	35.5%	32.8%	31.7%	0%	-	-	13.1%	84.7%	2.2%	0%	-	-	6.1%	59.6%	34.3%	0%	-	-	11.7%	71.7%	16.6%	0%	-	-	-
% Total	8.6%	8.0%	7.7%	0%	24.2%	-	3.1%	20.3%	0.5%	0%	23.9%	-	0.6%	5.7%	3.3%	0%	9.5%	-	4.9%	30.4%	7.0%	0%	42.3%	-	-
Lights	793	726	707	0	2226	-	290	1819	50	0	2159	-	54	520	298	0	872	-	448	2759	643	0	3850	-	9107
% Lights	98.8%	98.0%	98.9%	0%	98.5%	-	99.7%	96.3%	100%	0%	96.9%	-	100%	98.3%	98.0%	0%	98.3%	-	97.2%	97.5%	98.3%	0%	97.6%	-	97.7%
Single-Unit Trucks	8	7	5	0	20	-	1	32	0	0	33	-	0	3	2	0	5	-	8	33	7	0	48	-	106
% Single-Unit Trucks	1.0%	0.9%	0.7%	0%	0.9%	-	0.3%	1.7%	0%	0%	1.5%	-	0%	0.6%	0.7%	0%	0.6%	-	1.7%	1.2%	1.1%	0%	1.2%	-	1.1%
Articulated Trucks	0	0	2	0	2	-	0	5	0	0	5	-	0	0	0	0	0	-	0	6	0	0	6	-	13
% Articulated Trucks	0%	0%	0.3%	0%	0.1%	-	0%	0.3%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0.1%
Buses	0	5	0	0	5	-	0	29	0	0	29	-	0	6	0	0	6	-	1	30	2	0	33	-	73
% Buses	0%	0.7%	0%	0%	0.2%	-	0%	1.5%	0%	0%	1.3%	-	0%	1.1%	0%	0%	0.7%	-	0.2%	1.1%	0.3%	0%	0.8%	-	0.8%
Bicycles on Road	2	3	1	0	6	-	0	3	0	0	3	-	0	0	4	0	4	-	4	2	2	0	8	-	21
% Bicycles on Road	0.2%	0.4%	0.1%	0%	0.3%	-	0%	0.2%	0%	0%	0.1%	-	0%	0%	1.3%	0%	0.5%	-	0.9%	0.1%	0.3%	0%	0.2%	-	0.2%
Pedestrians	-	-	-	-	-	11	-	-	-	-	-	13	-	-	-	-	-	14	-	-	-	-	-	21	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	72.2%	-	-	-	-	-	100%	-	-	-	-	-	91.3%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	2	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	27.8%	-	-	-	-	-	0%	-	-	-	-	-	8.7%	-

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

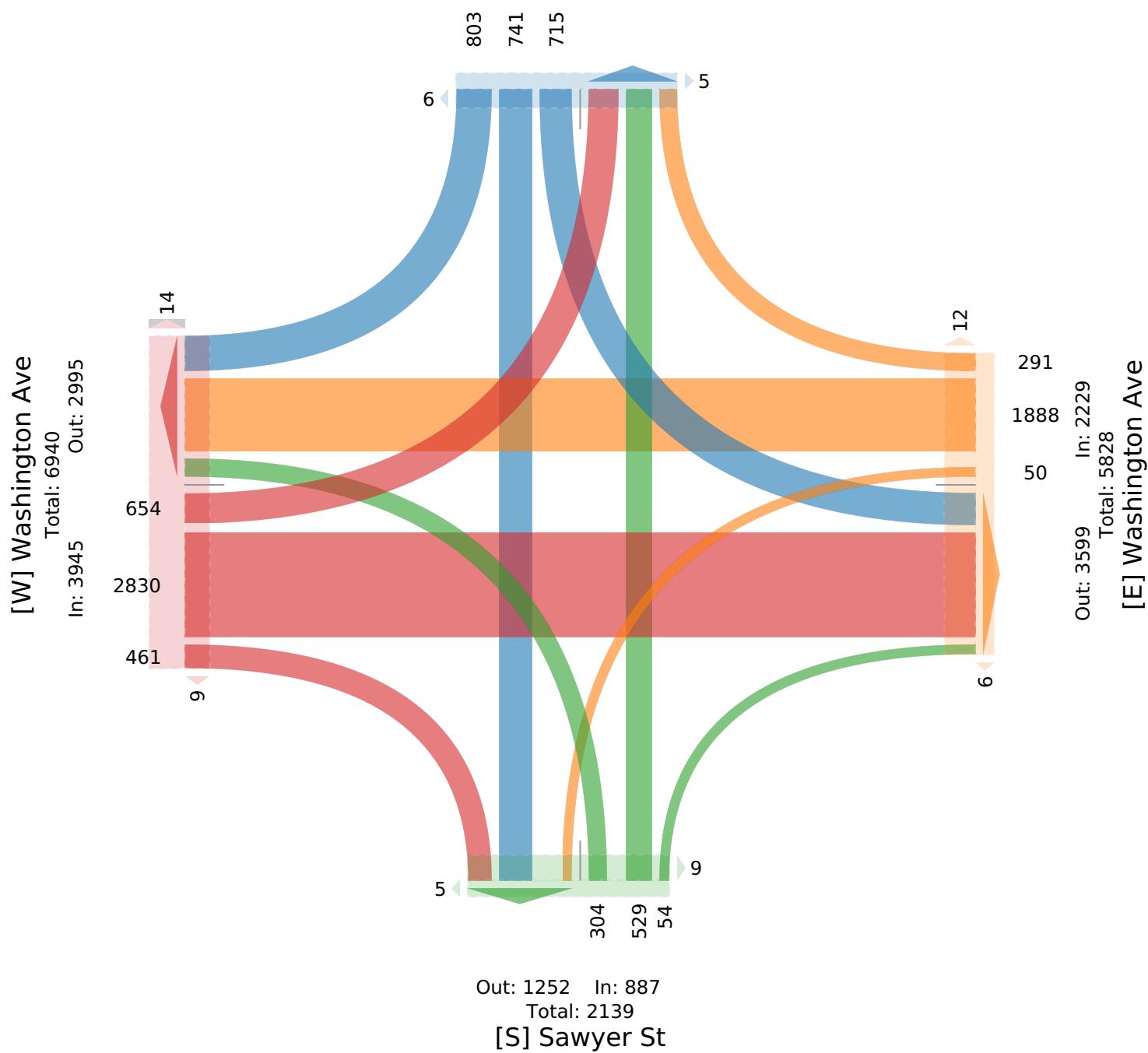
Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125853, Location: 29.7683, -95.382756

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US**[N] Sawyer St**Total: 3733
In: 2259 Out: 1474

Washington Avenue & Sawyer Street - TMC

Wed Nov 1, 2023

AM Peak (7:45 AM - 8:45 AM)

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

All Movements

ID: 1125853, Location: 29.7683, -95.382756



Leg Direction	Sawyer St Southbound					Washington Ave Westbound					Ped*	Sawyer St Northbound					Washington Ave Eastbound								
Time	R	T	L	U	App	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int	
2023-11-01 7:45AM	38	53	46	0	137	0	5	72	1	0	78	0	0	12	10	0	22	1	43	136	13	0	192	0	429
8:00AM	36	51	38	0	125	0	9	67	1	0	77	0	3	9	9	0	21	0	37	129	16	0	182	0	405
8:15AM	17	44	50	0	111	1	6	75	1	0	82	0	3	10	5	0	18	0	28	120	16	0	164	0	375
8:30AM	37	69	47	0	153	0	13	62	2	0	77	0	0	13	3	0	16	1	29	131	18	0	178	1	424
Total	128	217	181	0	526	1	33	276	5	0	314	0	6	44	27	0	77	2	137	516	63	0	716	1	1633
% Approach	24.3%	41.3%	34.4%	0%	-	-	10.5%	87.9%	1.6%	0%	-	-	7.8%	57.1%	35.1%	0%	-	-	19.1%	72.1%	8.8%	0%	-	-	-
% Total	7.8%	13.3%	11.1%	0%	32.2%	-	2.0%	16.9%	0.3%	0%	19.2%	-	0.4%	2.7%	1.7%	0%	4.7%	-	8.4%	31.6%	3.9%	0%	43.8%	-	-
PHF	0.842	0.794	0.900	-	0.862	-	0.635	0.920	0.625	-	0.957	-	0.500	0.846	0.675	-	0.875	-	0.797	0.949	0.875	-	0.932	-	0.950
Lights	124	214	176	0	514	-	32	258	5	0	295	-	6	42	27	0	75	-	134	500	59	0	693	-	1577
% Lights	96.9%	98.6%	97.2%	0%	97.7%	-	97.0%	93.5%	100%	0%	93.9%	-	100%	95.5%	100%	0%	97.4%	-	97.8%	96.9%	93.7%	0%	96.8%	-	96.6%
Single-Unit Trucks	4	2	3	0	9	-	1	11	0	0	12	-	0	1	0	0	1	-	2	9	4	0	15	-	37
% Single-Unit Trucks	3.1%	0.9%	1.7%	0%	1.7%	-	3.0%	4.0%	0%	0%	3.8%	-	0%	2.3%	0%	0%	1.3%	-	1.5%	1.7%	6.3%	0%	2.1%	-	2.3%
Articulated Trucks	0	0	1	0	1	-	0	3	0	0	3	-	0	0	0	0	0	-	0	1	0	0	1	-	5
% Articulated Trucks	0%	0%	0.6%	0%	0.2%	-	0%	1.1%	0%	0%	1.0%	-	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.1%	-	0.3%
Buses	0	0	0	0	0	-	0	4	0	0	4	-	0	1	0	0	1	-	1	6	0	0	7	-	12
% Buses	0%	0%	0%	0%	0%	-	0%	1.4%	0%	0%	1.3%	-	0%	2.3%	0%	0%	1.3%	-	0.7%	1.2%	0%	0%	1.0%	-	0.7%
Bicycles on Road	0	1	1	0	2	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	2
% Bicycles on Road	0%	0.5%	0.6%	0%	0.4%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	0%	

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

Washington Avenue & Sawyer Street - TMC

Wed Nov 1, 2023

AM Peak (7:45 AM - 8:45 AM)

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

All Movements

ID: 1125853, Location: 29.7683, -95.382756

GHA GEWALT HAMILTON ASSOCIATES, INC.

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

[N] Sawyer St

Total: 666
In: 526 Out: 140

128 217 181

[W] Washington Ave

Total: 1147
In: 716 Out: 431

1 63 516 137

33 276 5
Out: 703 In: 1017 Total: 1017
[E] Washington Ave

Out: 359 In: 77

Total: 436

[S] Sawyer St

27

44 6

Washington Avenue & Sawyer Street - TMC

Wed Nov 1, 2023

PM Peak (5:15 PM - 6:15 PM) - Overall Peak Hour

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

All Movements

ID: 1125853, Location: 29.7683, -95.382756



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

Leg Direction	Sawyer St Southbound						Washington Ave Westbound						Sawyer St Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 5:15PM	52	33	31	0	116	2	26	112	4	0	142	0	4	43	18	0	65	0	20	169	50	0	239	3	562
5:30PM	50	29	33	0	112	0	17	147	3	0	167	0	3	45	20	0	68	1	12	178	44	0	234	2	581
5:45PM	40	24	27	0	91	0	23	128	6	0	157	2	1	46	25	0	72	0	22	174	38	0	234	3	554
6:00PM	61	53	56	0	170	1	22	118	6	0	146	3	4	32	23	0	59	2	16	173	39	0	228	5	603
Total	203	139	147	0	489	3	88	505	19	0	612	5	12	166	86	0	264	3	70	694	171	0	935	13	2300
% Approach	41.5%	28.4%	30.1%	0%	-	-	14.4%	82.5%	3.1%	0%	-	-	4.5%	62.9%	32.6%	0%	-	-	7.5%	74.2%	18.3%	0%	-	-	-
% Total	8.8%	6.0%	6.4%	0%	21.3%	-	3.8%	22.0%	0.8%	0%	26.6%	-	0.5%	7.2%	3.7%	0%	11.5%	-	3.0%	30.2%	7.4%	0%	40.7%	-	-
PHF	0.828	0.656	0.656	-	0.718	-	0.846	0.859	0.792	-	0.916	-	0.750	0.902	0.840	-	0.910	-	0.795	0.975	0.845	-	0.976	-	0.955
Lights	202	138	147	0	487	-	88	495	19	0	602	-	12	163	84	0	259	-	70	680	169	0	919	-	2267
% Lights	99.5%	99.3%	100%	0%	99.6%	-	100%	98.0%	100%	0%	98.4%	-	100%	98.2%	97.7%	0%	98.1%	-	100%	98.0%	98.8%	0%	98.3%	-	98.6%
Single-Unit Trucks	0	0	0	0	0	-	0	5	0	0	5	-	0	1	0	0	1	-	0	6	0	0	6	-	12
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	1.0%	0%	0%	0.8%	-	0%	0.6%	0%	0%	0.4%	-	0%	0.9%	0%	0%	0.6%	-	0.5%
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%	0.3%	0%	0%	0.2%	-	0.1%
Buses	0	1	0	0	1	-	0	5	0	0	5	-	0	2	0	0	2	-	0	6	0	0	6	-	14
% Buses	0%	0.7%	0%	0%	0.2%	-	0%	1.0%	0%	0%	0.8%	-	0%	1.2%	0%	0%	0.8%	-	0%	0.9%	0%	0%	0.6%	-	0.6%
Bicycles on Road	1	0	0	0	1	-	0	0	0	0	0	-	0	0	2	0	2	-	0	0	2	0	2	-	5
% Bicycles on Road	0.5%	0%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	2.3%	0%	0.8%	-	0%	0%	1.2%	0%	0.2%	-	0.2%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	11	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	60.0%	-	-	-	-	-	100%	-	-	-	-	-	84.6%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	2	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	40.0%	-	-	-	-	-	0%	-	-	-	-	-	15.4%	-

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

Washington Avenue & Sawyer Street - TMC

Wed Nov 1, 2023

PM Peak (5:15 PM - 6:15 PM) - Overall Peak Hour

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

All Movements

ID: 1125853, Location: 29.7683, -95.382756

**GHA GEWALT HAMILTON
ASSOCIATES, INC.**

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

[N] Sawyer St

Total: 914

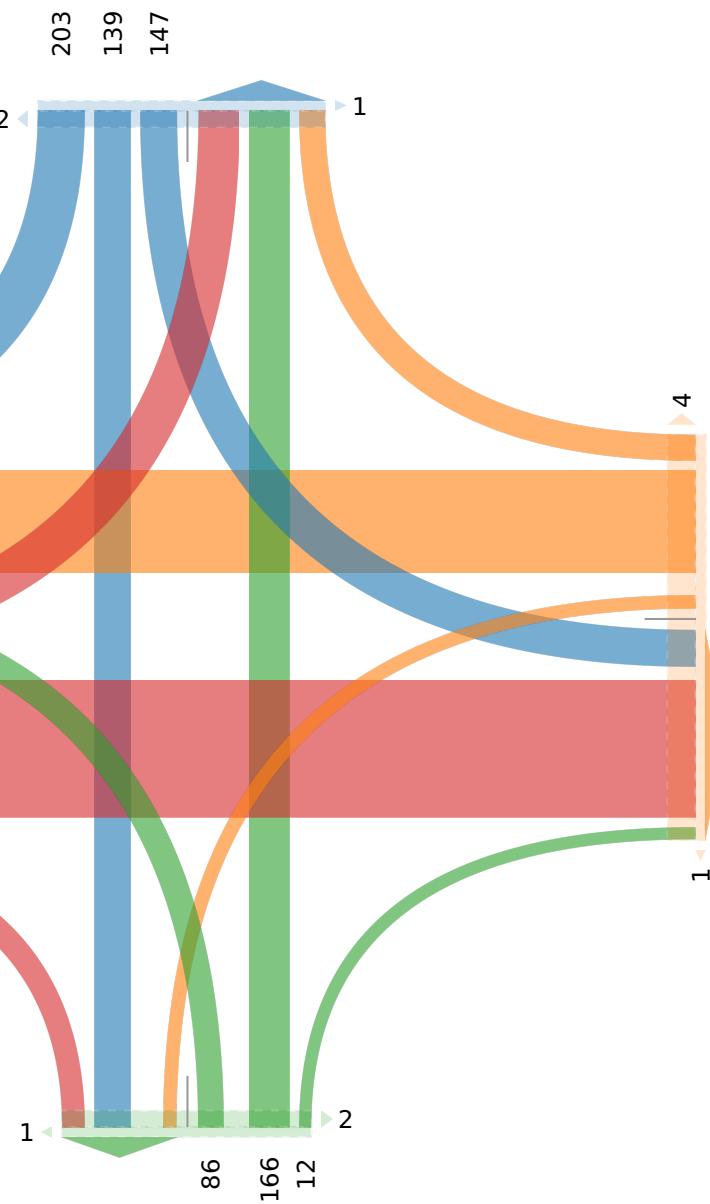
In: 489 Out: 425

203
139
147

[W] Washington Ave
Total: 1729
In: 935 Out: 794

6
171
694
70

88
505
19
Out: 853 In: 612
Total: 1465
[E] Washington Ave



Out: 228 In: 264

Total: 492

[S] Sawyer St

Leg Direction	Studemont St Southbound					Washington Ave Westbound					Studemont St Northbound					Washington Ave Eastbound									
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:00AM	63	1009	114	0	1186	2	99	180	91	1	371	3	55	535	51	0	641	2	2	243	84	0	329	3	2527
8:00AM	88	1183	135	0	1406	5	94	264	121	0	479	5	103	567	77	0	747	6	9	357	82	0	448	3	3080
4:00PM	147	931	164	0	1242	0	138	432	165	0	735	7	80	973	160	0	1213	15	8	518	159	0	685	3	3875
5:00PM	144	930	183	0	1257	4	158	479	157	1	795	11	69	1005	173	0	1247	7	10	539	154	0	703	4	4002
6:00PM	119	964	148	0	1231	4	165	426	159	0	750	8	108	911	144	0	1163	10	10	576	152	0	738	3	3882
Total	561	5017	744	0	6322	15	654	1781	693	2	3130	34	415	3991	605	0	5011	40	39	2233	631	0	2903	16	17366
% Approach	8.9%	79.4%	11.8%	0%	-	-	20.9%	56.9%	22.1%	0.1%	-	-	8.3%	79.6%	12.1%	0%	-	-	1.3%	76.9%	21.7%	0%	-	-	-
% Total	3.2%	28.9%	4.3%	0%	36.4%	-	3.8%	10.3%	4.0%	0%	18.0%	-	2.4%	23.0%	3.5%	0%	28.9%	-	0.2%	12.9%	3.6%	0%	16.7%	-	-
Lights	559	4938	736	0	6233	-	643	1728	688	2	3061	-	409	3919	602	0	4930	-	37	2176	622	0	2835	-	17059
% Lights	99.6%	98.4%	98.9%	0%	98.6%	-	98.3%	97.0%	99.3%	100%	97.8%	-	98.6%	98.2%	99.5%	0%	98.4%	-	94.9%	97.4%	98.6%	0%	97.7%	-	98.2%
Single-Unit Trucks	2	29	6	0	37	-	11	17	1	0	29	-	3	23	3	0	29	-	0	27	4	0	31	-	126
% Single-Unit Trucks	0.4%	0.6%	0.8%	0%	0.6%	-	1.7%	1.0%	0.1%	0%	0.9%	-	0.7%	0.6%	0.5%	0%	0.6%	-	0%	1.2%	0.6%	0%	1.1%	-	0.7%
Articulated Trucks	0	10	1	0	11	-	0	4	1	0	5	-	2	4	0	0	6	-	0	2	3	0	5	-	27
% Articulated Trucks	0%	0.2%	0.1%	0%	0.2%	-	0%	0.2%	0.1%	0%	0.2%	-	0.5%	0.1%	0%	0%	0.1%	-	0%	0.1%	0.5%	0%	0.2%	-	0.2%
Buses	0	40	1	0	41	-	0	29	3	0	32	-	1	45	0	0	46	-	1	27	2	0	30	-	149
% Buses	0%	0.8%	0.1%	0%	0.6%	-	0%	1.6%	0.4%	0%	1.0%	-	0.2%	1.1%	0%	0%	0.9%	-	2.6%	1.2%	0.3%	0%	1.0%	-	0.9%
Bicycles on Road	0	0	0	0	0	-	0	3	0	0	3	-	0	0	0	0	0	-	1	1	0	0	2	-	5
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	2.6%	0%	0%	0%	0.1%	-	0%
Pedestrians	-	-	-	-	-	15	-	-	-	-	-	30	-	-	-	-	-	35	-	-	-	-	-	13	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	88.2%	-	-	-	-	-	87.5%	-	-	-	-	-	81.3%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	5	-	-	-	-	-	3	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	11.8%	-	-	-	-	-	12.5%	-	-	-	-	-	18.8%	

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

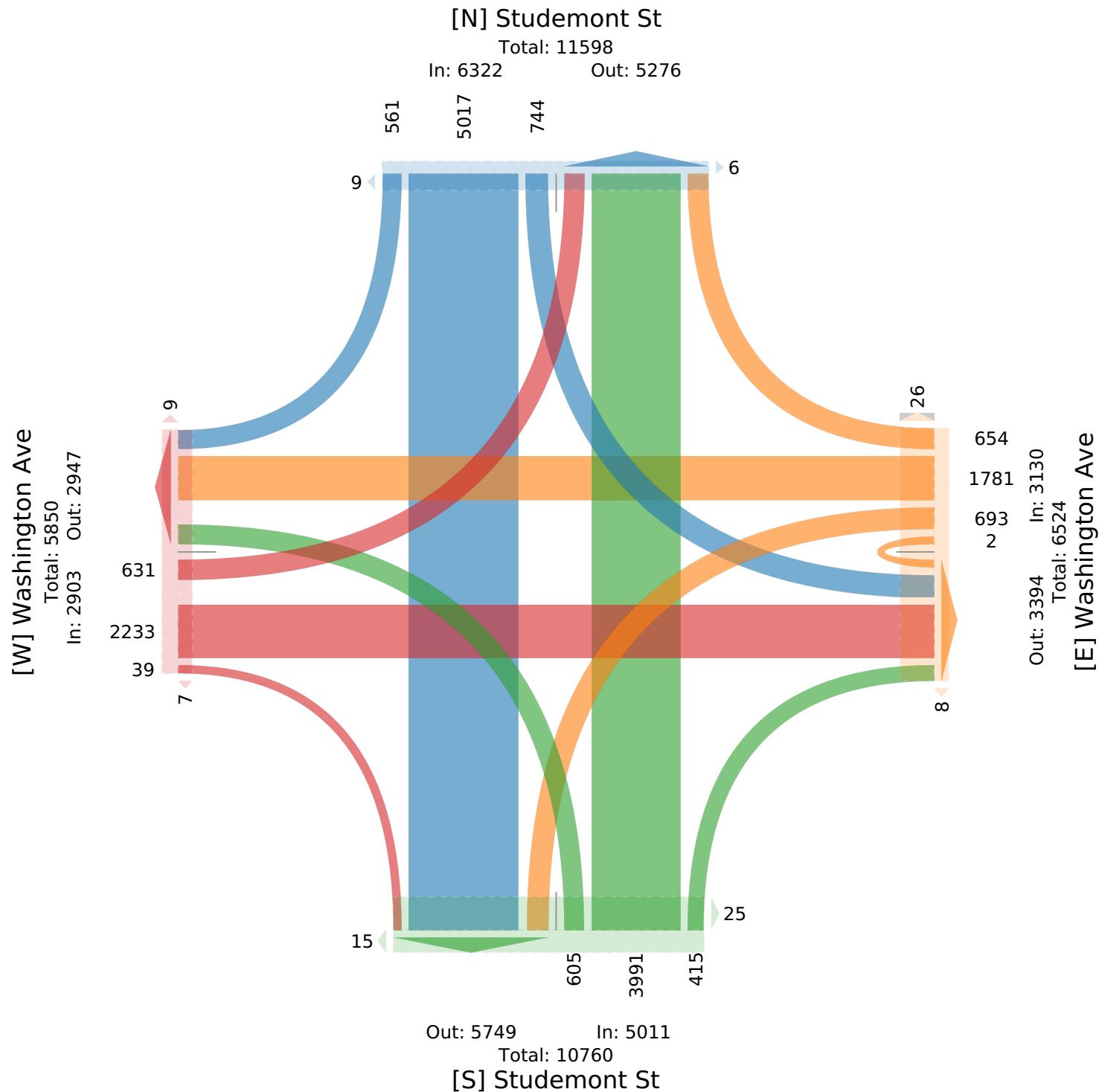
Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125849, Location: 29.768872, -95.391869



Leg Direction	Studemont St Southbound						Washington Ave Westbound						Studemont St Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:45AM	23	330	41	0	394	0	16	69	38	0	123	1	22	150	19	0	191	2	1	79	28	0	108	0	816
8:00AM	20	246	43	0	309	2	25	72	30	0	127	0	19	121	20	0	160	2	1	90	19	0	110	1	706
8:15AM	27	316	30	0	373	0	25	64	28	0	117	2	19	163	13	0	195	0	3	79	27	0	109	0	794
8:30AM	27	301	33	0	361	1	22	64	34	0	120	0	29	143	23	0	195	1	3	84	17	0	104	0	780
Total	97	1193	147	0	1437	3	88	269	130	0	487	3	89	577	75	0	741	5	8	332	91	0	431	1	3096
% Approach	6.8%	83.0%	10.2%	0%	-	-	18.1%	55.2%	26.7%	0%	-	-	12.0%	77.9%	10.1%	0%	-	-	1.9%	77.0%	21.1%	0%	-	-	-
% Total	3.1%	38.5%	4.7%	0%	46.4%	-	2.8%	8.7%	4.2%	0%	15.7%	-	2.9%	18.6%	2.4%	0%	23.9%	-	0.3%	10.7%	2.9%	0%	13.9%	-	-
PHF	0.898	0.904	0.855	-	0.912	-	0.880	0.934	0.855	-	0.959	-	0.767	0.885	0.815	-	0.950	-	0.667	0.922	0.813	-	0.980	-	0.949
Lights	95	1170	144	0	1409	-	88	252	129	0	469	-	87	565	75	0	727	-	8	320	88	0	416	-	3021
% Lights	97.9%	98.1%	98.0%	0%	98.1%	-	100%	93.7%	99.2%	0%	96.3%	-	97.8%	97.9%	100%	0%	98.1%	-	100%	96.4%	96.7%	0%	96.5%	-	97.6%
Single-Unit Trucks	2	11	3	0	16	-	0	10	0	0	10	-	1	3	0	0	4	-	0	7	1	0	8	-	38
% Single-Unit Trucks	2.1%	0.9%	2.0%	0%	1.1%	-	0%	3.7%	0%	0%	2.1%	-	1.1%	0.5%	0%	0%	0.5%	-	0%	2.1%	1.1%	0%	1.9%	-	1.2%
Articulated Trucks	0	3	0	0	3	-	0	2	1	0	3	-	1	1	0	0	2	-	0	0	2	0	2	-	10
% Articulated Trucks	0%	0.3%	0%	0%	0.2%	-	0%	0.7%	0.8%	0%	0.6%	-	1.1%	0.2%	0%	0%	0.3%	-	0%	0%	2.2%	0%	0.5%	-	0.3%
Buses	0	9	0	0	9	-	0	5	0	0	5	-	0	8	0	0	8	-	0	5	0	0	5	-	27
% Buses	0%	0.8%	0%	0%	0.6%	-	0%	1.9%	0%	0%	1.0%	-	0%	1.4%	0%	0%	1.1%	-	0%	1.5%	0%	0%	1.2%	-	0.9%
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	-	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	5	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	

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

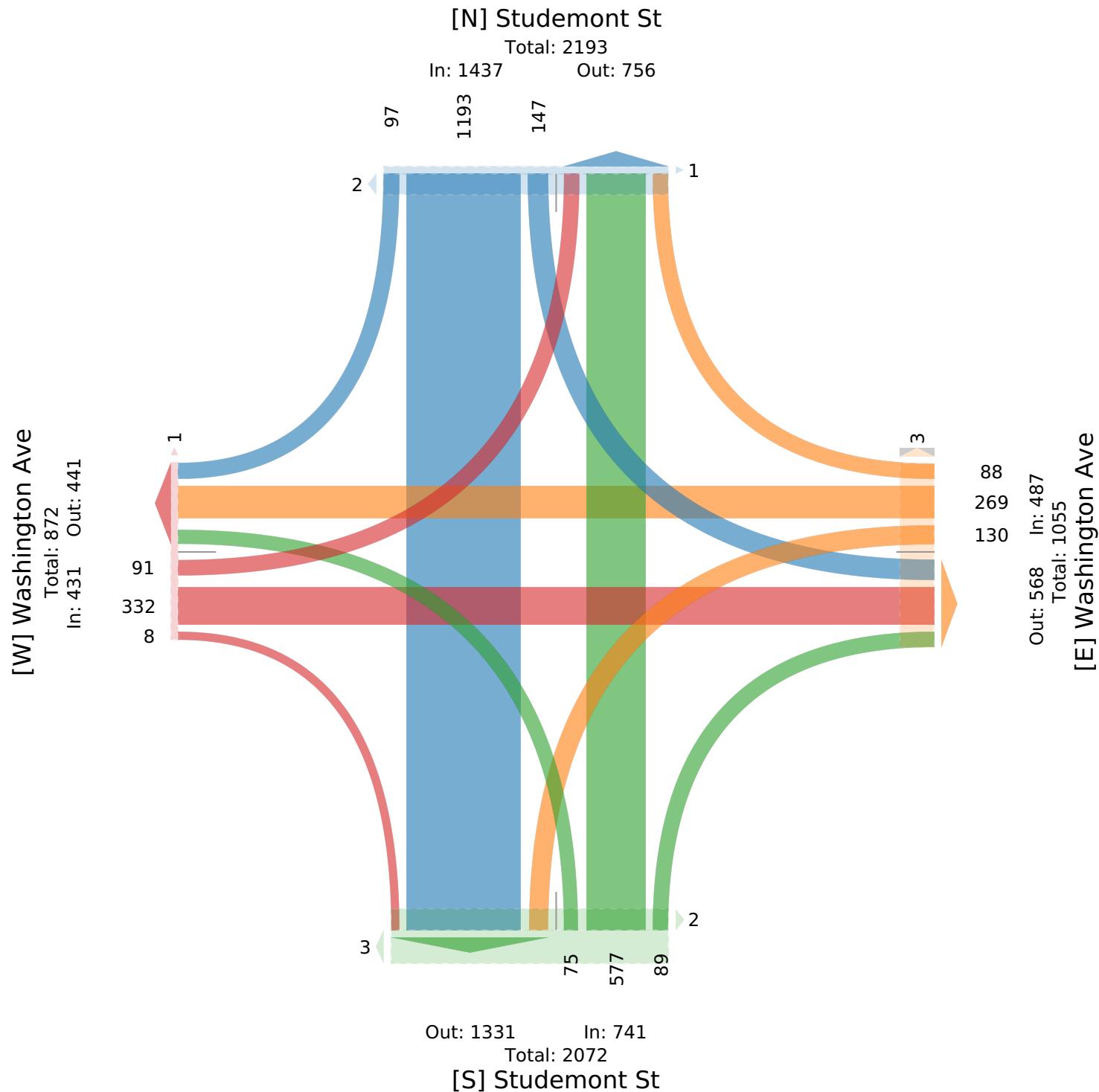
Wed Nov 1, 2023

AM Peak (7:45 AM - 8:45 AM)

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

All Movements

ID: 1125849, Location: 29.768872, -95.391869

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

Washington & Studemont - TMC

Wed Nov 1, 2023

PM Peak (5:30 PM - 6:30 PM) - Overall Peak Hour

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

All Movements

ID: 1125849, Location: 29.768872, -95.391869



Leg Direction	Studemont St Southbound						Washington Ave Westbound						Studemont St Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 5:30PM	37	264	40	0	341	1	42	127	39	0	208	0	24	247	44	0	315	0	3	126	33	0	162	2	1026
5:45PM	29	250	46	0	325	2	33	131	38	1	203	4	19	251	40	0	310	3	5	146	43	0	194	0	1032
6:00PM	20	303	31	0	354	1	44	114	43	0	201	4	29	224	21	0	274	2	3	146	38	0	187	2	1016
6:15PM	36	253	29	0	318	0	40	104	48	0	192	0	29	234	39	0	302	2	1	122	39	0	162	0	974
Total	122	1070	146	0	1338	4	159	476	168	1	804	8	101	956	144	0	1201	7	12	540	153	0	705	4	4048
% Approach	9.1%	80.0%	10.9%	0%	-	-	19.8%	59.2%	20.9%	0.1%	-	-	8.4%	79.6%	12.0%	0%	-	-	1.7%	76.6%	21.7%	0%	-	-	-
% Total	3.0%	26.4%	3.6%	0%	33.1%	-	3.9%	11.8%	4.2%	0%	19.9%	-	2.5%	23.6%	3.6%	0%	29.7%	-	0.3%	13.3%	3.8%	0%	17.4%	-	-
PHF	0.824	0.883	0.793	-	0.945	-	0.903	0.906	0.875	0.250	0.965	-	0.871	0.952	0.818	-	0.953	-	0.600	0.925	0.890	-	0.909	-	0.980
Lights	122	1060	145	0	1327	-	158	466	168	1	793	-	100	941	144	0	1185	-	12	530	152	0	694	-	3999
% Lights	100%	99.1%	99.3%	0%	99.2%	-	99.4%	97.9%	100%	100%	98.6%	-	99.0%	98.4%	100%	0%	98.7%	-	100%	98.1%	99.3%	0%	98.4%	-	98.8%
Single-Unit Trucks	0	3	0	0	3	-	1	3	0	0	4	-	1	4	0	0	5	-	0	5	1	0	6	-	18
% Single-Unit Trucks	0%	0.3%	0%	0%	0.2%	-	0.6%	0.6%	0%	0%	0.5%	-	1.0%	0.4%	0%	0%	0.4%	-	0%	0.9%	0.7%	0%	0.9%	-	0.4%
Articulated Trucks	0	0	1	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Articulated Trucks	0%	0%	0.7%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses	0	7	0	0	7	-	0	6	0	0	6	-	0	11	0	0	11	-	0	5	0	0	5	-	29
% Buses	0%	0.7%	0%	0%	0.5%	-	0%	1.3%	0%	0%	0.7%	-	0%	1.2%	0%	0%	0.9%	-	0%	0.9%	0%	0%	0.7%	-	0.7%
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%	0.2%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	4	-	-	-	-	-	8	-	-	-	-	-	7	-	-	-	-	-	4	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	

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

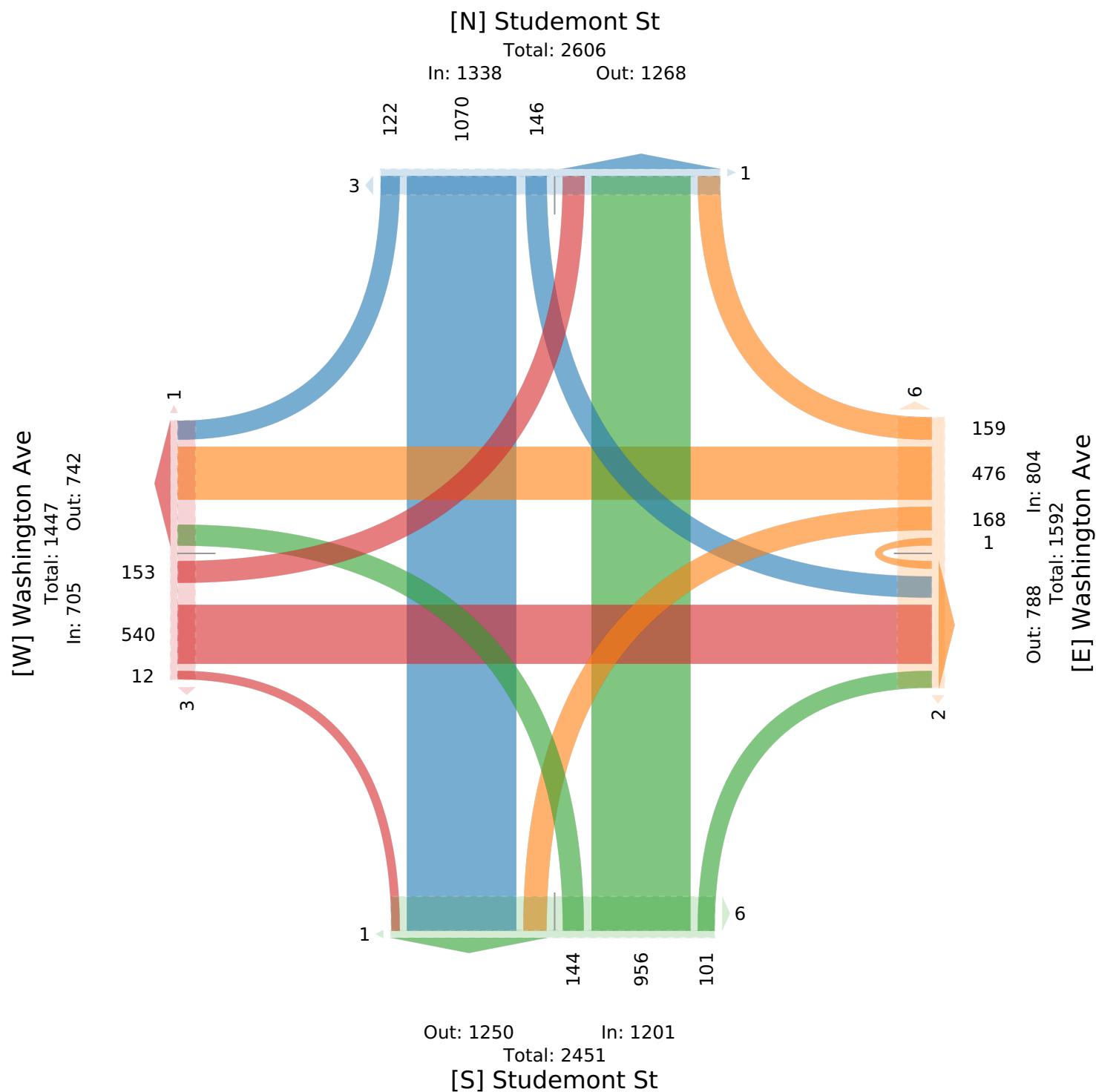
Wed Nov 1, 2023

PM Peak (5:30 PM - 6:30 PM) - Overall Peak Hour

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

All Movements

ID: 1125849, Location: 29.768872, -95.391869



Washington and Heights Blvd - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125848, Location: 29.769514, -95.397244



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

Leg Direction	Heights Blvd Southbound						Washington Ave Westbound						Heights Blvd Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:00AM	72	391	67	1	531	2	29	217	49	0	295	4	63	276	111	0	450	2	58	344	1	1	404	0	1680
8:00AM	92	654	96	0	842	2	45	324	89	0	458	7	129	412	123	0	664	0	73	447	2	0	522	1	2486
4:00PM	96	415	119	0	630	1	102	570	122	0	794	15	232	922	338	1	1493	6	53	590	0	0	643	3	3560
5:00PM	96	329	136	0	561	6	115	650	118	0	883	22	243	913	448	1	1605	5	90	525	0	0	615	2	3664
6:00PM	84	452	137	1	674	8	104	538	111	0	753	29	261	841	386	0	1488	21	96	597	1	0	694	3	3609
Total	440	2241	555	2	3238	19	395	2299	489	0	3183	77	928	3364	1406	2	5700	34	370	2503	4	1	2878	9	14999
% Approach	13.6%	69.2%	17.1%	0.1%	-	-	12.4%	72.2%	15.4%	0%	-	-	16.3%	59.0%	24.7%	0%	-	-	12.9%	87.0%	0.1%	0%	-	-	-
% Total	2.9%	14.9%	3.7%	0%	21.6%	-	2.6%	15.3%	3.3%	0%	21.2%	-	6.2%	22.4%	9.4%	0%	38.0%	-	2.5%	16.7%	0%	0%	19.2%	-	-
Lights	437	2214	546	2	3199	-	388	2253	485	0	3126	-	920	3325	1398	2	5645	-	365	2454	4	1	2824	-	14794
% Lights	99.3%	98.8%	98.4%	100%	98.8%	-	98.2%	98.0%	99.2%	0%	98.2%	-	99.1%	98.8%	99.4%	100%	99.0%	-	98.6%	98.0%	100%	100%	98.1%	-	98.6%
Single-Unit Trucks	2	12	7	0	21	-	2	13	3	0	18	-	5	15	6	0	26	-	3	23	0	0	26	-	91
% Single-Unit Trucks	0.5%	0.5%	1.3%	0%	0.6%	-	0.5%	0.6%	0.6%	0%	0.6%	-	0.5%	0.4%	0.4%	0%	0.5%	-	0.8%	0.9%	0%	0%	0.9%	-	0.6%
Articulated Trucks	0	0	2	0	2	-	3	2	0	0	5	-	1	2	1	0	4	-	0	0	0	0	0	-	11
% Articulated Trucks	0%	0%	0.4%	0%	0.1%	-	0.8%	0.1%	0%	0%	0.2%	-	0.1%	0.1%	0.1%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0.1%
Buses	0	13	0	0	13	-	1	29	1	0	31	-	1	20	1	0	22	-	1	25	0	0	26	-	92
% Buses	0%	0.6%	0%	0%	0.4%	-	0.3%	1.3%	0.2%	0%	1.0%	-	0.1%	0.6%	0.1%	0%	0.4%	-	0.3%	1.0%	0%	0%	0.9%	-	0.6%
Bicycles on Road	1	2	0	0	3	-	1	2	0	0	3	-	1	2	0	0	3	-	1	1	0	0	2	-	11
% Bicycles on Road	0.2%	0.1%	0%	0%	0.1%	-	0.3%	0.1%	0%	0%	0.1%	-	0.1%	0.1%	0%	0%	0.1%	-	0.3%	0%	0%	0%	0.1%	-	0.1%
Pedestrians	-	-	-	-	-	19	-	-	-	-	67	-	-	-	-	-	33	-	-	-	-	-	-	7	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	87.0%	-	-	-	-	-	97.1%	-	-	-	-	-	-	77.8%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	10	-	-	-	-	-	1	-	-	-	-	-	-	2	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	13.0%	-	-	-	-	-	2.9%	-	-	-	-	-	-	22.2%	

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

Washington and Heights Blvd - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

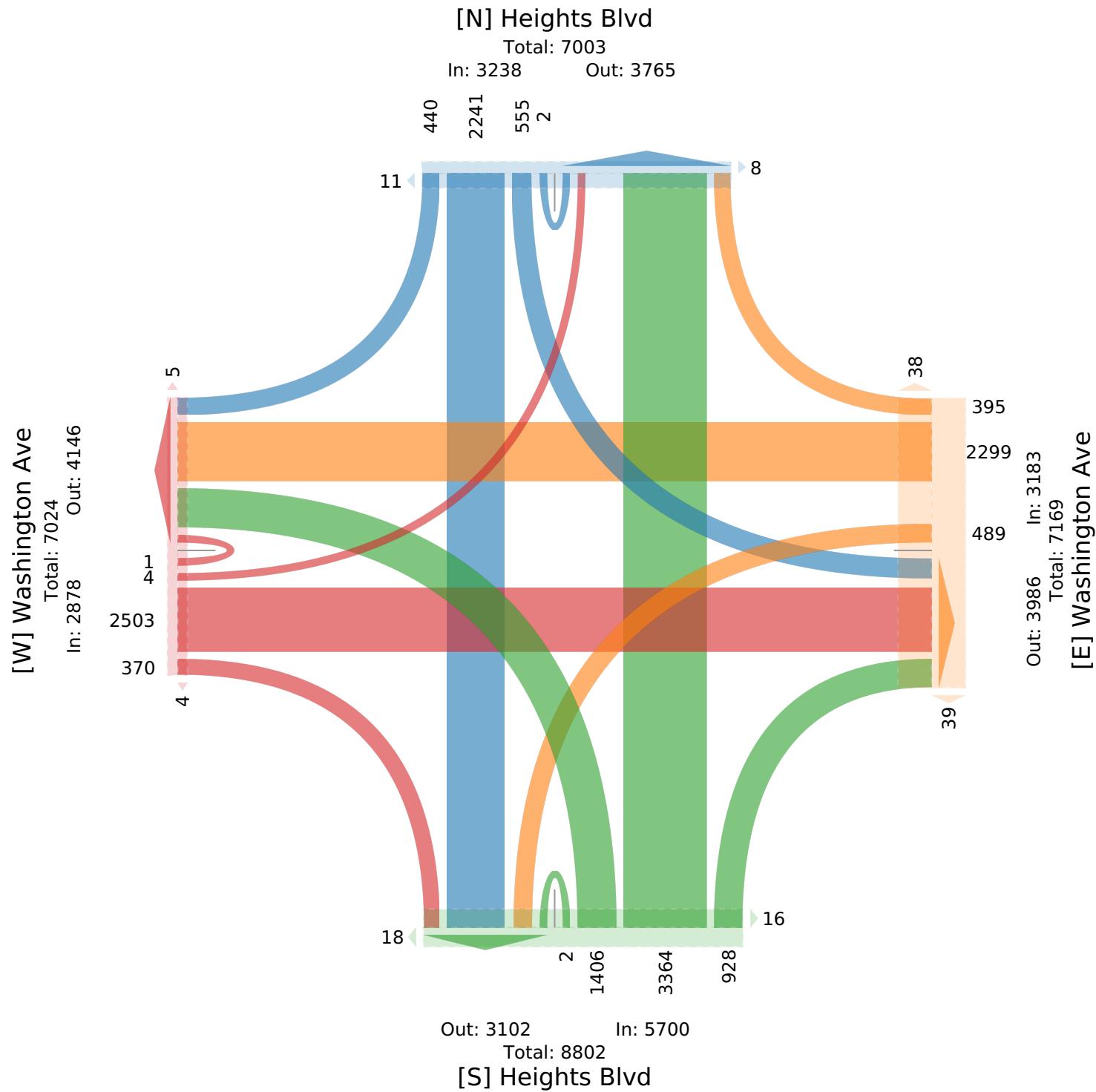
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1125848, Location: 29.769514, -95.397244

GHA GEWALT HAMILTON ASSOCIATES, INC.

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



Washington and Heights Blvd - TMC

Wed Nov 1, 2023

AM Peak (8 AM - 9 AM)

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

All Movements

ID: 1125848, Location: 29.769514, -95.397244



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

Leg Direction	Heights Blvd Southbound						Washington Ave Westbound						Heights Blvd Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 8:00AM	24	135	18	0	177	0	7	74	13	0	94	2	37	98	35	0	170	0	24	101	0	0	125	0	566
8:15AM	23	164	20	0	207	0	14	86	29	0	129	1	32	102	21	0	155	0	20	118	1	0	139	0	630
8:30AM	24	194	23	0	241	0	13	79	17	0	109	2	26	106	36	0	168	0	13	100	0	0	113	0	631
8:45AM	21	161	35	0	217	2	11	85	30	0	126	2	34	106	31	0	171	0	16	128	1	0	145	1	659
Total	92	654	96	0	842	2	45	324	89	0	458	7	129	412	123	0	664	0	73	447	2	0	522	1	2486
% Approach	10.9%	77.7%	11.4%	0%	-	-	9.8%	70.7%	19.4%	0%	-	-	19.4%	62.0%	18.5%	0%	-	-	14.0%	85.6%	0.4%	0%	-	-	-
% Total	3.7%	26.3%	3.9%	0%	33.9%	-	1.8%	13.0%	3.6%	0%	18.4%	-	5.2%	16.6%	4.9%	0%	26.7%	-	2.9%	18.0%	0.1%	0%	21.0%	-	-
PHF	0.958	0.841	0.686	-	0.872	-	0.804	0.942	0.742	-	0.888	-	0.865	0.972	0.854	-	0.969	-	0.760	0.873	0.500	-	0.900	-	0.942
Lights	90	647	93	0	830	-	42	308	85	0	435	-	126	407	120	0	653	-	71	433	2	0	506	-	2424
% Lights	97.8%	98.9%	96.9%	0%	98.6%	-	93.3%	95.1%	95.5%	0%	95.0%	-	97.7%	98.8%	97.6%	0%	98.3%	-	97.3%	96.9%	100%	0%	96.9%	-	97.5%
Single-Unit Trucks	2	3	3	0	8	-	1	8	3	0	12	-	2	1	2	0	5	-	2	8	0	0	10	-	35
% Single-Unit Trucks	2.2%	0.5%	3.1%	0%	1.0%	-	2.2%	2.5%	3.4%	0%	2.6%	-	1.6%	0.2%	1.6%	0%	0.8%	-	2.7%	1.8%	0%	0%	1.9%	-	1.4%
Articulated Trucks	0	0	0	0	0	-	2	1	0	0	3	-	0	0	0	0	0	-	0	0	0	0	0	-	3
% Articulated Trucks	0%	0%	0%	0%	0%	-	4.4%	0.3%	0%	0%	0.7%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Buses	0	3	0	0	3	-	0	7	1	0	8	-	0	4	1	0	5	-	0	6	0	0	6	-	22
% Buses	0%	0.5%	0%	0%	0.4%	-	0%	2.2%	1.1%	0%	1.7%	-	0%	1.0%	0.8%	0%	0.8%	-	0%	1.3%	0%	0%	1.1%	-	0.9%
Bicycles on Road	0	1	0	0	1	-	0	0	0	0	0	-	1	0	0	0	1	-	0	0	0	0	0	-	2
% Bicycles on Road	0%	0.2%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0.8%	0%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	2	-	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	85.7%	-	-	-	-	-	-	-	-	-	-	-	0%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	14.3%	-	-	-	-	-	-	-	-	-	-	-	100%	

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

Washington and Heights Blvd - TMC

Wed Nov 1, 2023

AM Peak (8 AM - 9 AM)

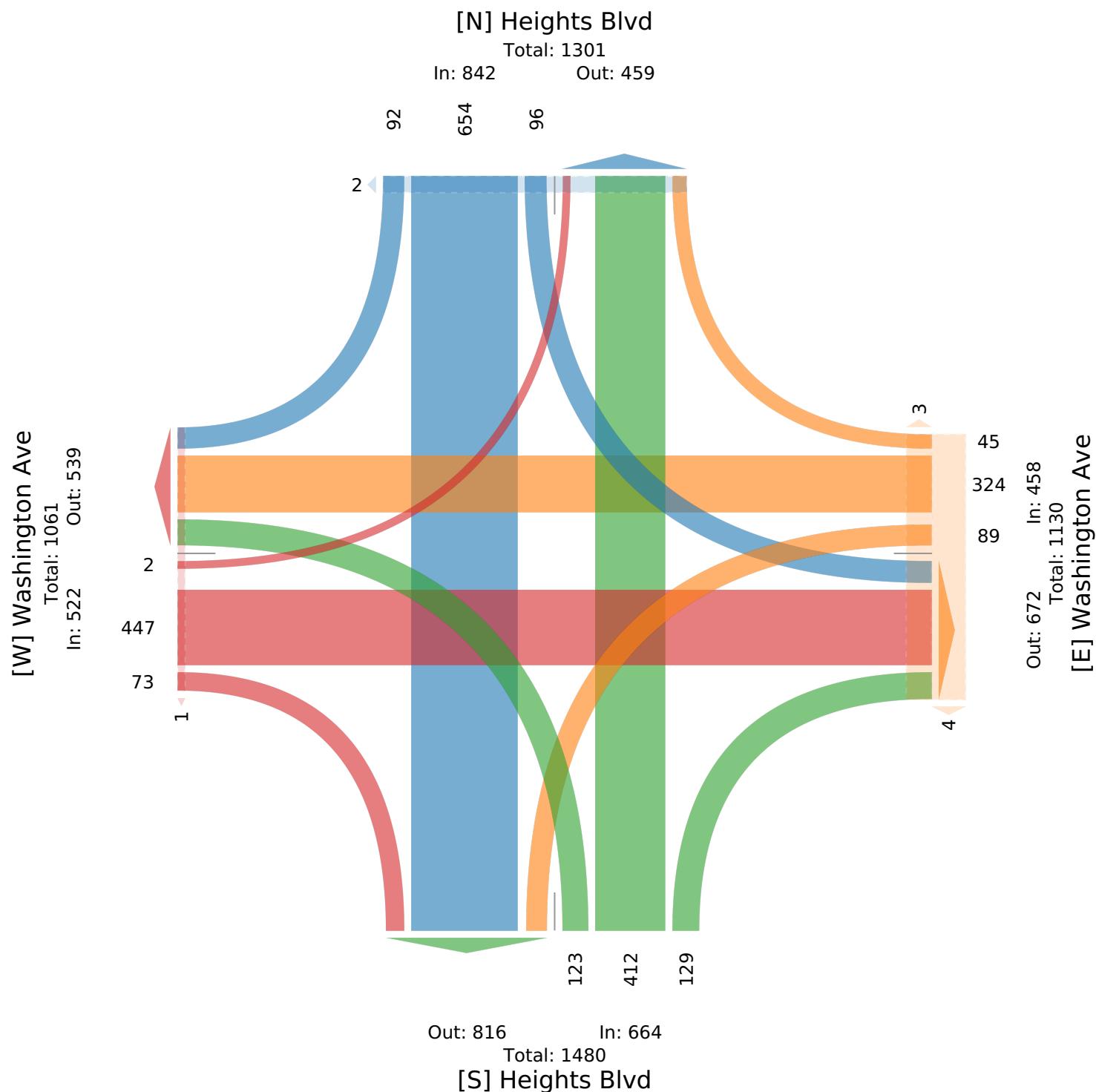
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1125848, Location: 29.769514, -95.397244

GHA GEWALT HAMILTON ASSOCIATES, INC.

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



Washington and Heights Blvd - TMC

Wed Nov 1, 2023

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

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

All Movements

ID: 1125848, Location: 29.769514, -95.397244



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

Leg Direction	Heights Blvd Southbound						Washington Ave Westbound						Heights Blvd Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 4:45PM	33	142	40	0	215	0	30	149	32	0	211	4	69	259	95	1	424	0	14	148	0	0	162	0	1012
5:00PM	30	88	35	0	153	0	41	177	40	0	258	5	43	237	88	1	369	2	20	153	0	0	173	0	953
5:15PM	27	82	37	0	146	0	25	141	20	0	186	2	57	232	120	0	409	1	22	134	0	0	156	0	897
5:30PM	23	70	33	0	126	4	24	183	29	0	236	9	83	217	118	0	418	1	22	129	0	0	151	1	931
Total	113	382	145	0	640	4	120	650	121	0	891	20	252	945	421	2	1620	4	78	564	0	0	642	1	3793
% Approach	17.7%	59.7%	22.7%	0%	-	-	13.5%	73.0%	13.6%	0%	-	-	15.6%	58.3%	26.0%	0.1%	-	-	12.1%	87.9%	0%	0%	-	-	-
% Total	3.0%	10.1%	3.8%	0%	16.9%	-	3.2%	17.1%	3.2%	0%	23.5%	-	6.6%	24.9%	11.1%	0.1%	42.7%	-	2.1%	14.9%	0%	0%	16.9%	-	-
PHF	0.848	0.673	0.906	-	0.743	-	0.726	0.888	0.756	-	0.862	-	0.759	0.912	0.877	0.500	0.955	-	0.886	0.922	-	-	0.928	-	0.937
Lights	112	376	144	0	632	-	119	641	121	0	881	-	252	936	419	2	1609	-	77	558	0	0	635	-	3757
% Lights	99.1%	98.4%	99.3%	0%	98.8%	-	99.2%	98.6%	100%	0%	98.9%	-	100%	99.0%	99.5%	100%	99.3%	-	98.7%	98.9%	0%	0%	98.9%	-	99.1%
Single-Unit Trucks	0	4	1	0	5	-	0	2	0	0	2	-	0	4	2	0	6	-	0	3	0	0	3	-	16
% Single-Unit Trucks	0%	1.0%	0.7%	0%	0.8%	-	0%	0.3%	0%	0%	0.2%	-	0%	0.4%	0.5%	0%	0.4%	-	0%	0.5%	0%	0%	0.5%	-	0.4%
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	0	2	0	0	2	-	0	7	0	0	7	-	0	5	0	0	5	-	1	3	0	0	4	-	18
% Buses	0%	0.5%	0%	0%	0.3%	-	0%	1.1%	0%	0%	0.8%	-	0%	0.5%	0%	0%	0.3%	-	1.3%	0.5%	0%	0%	0.6%	-	0.5%
Bicycles on Road	1	0	0	0	1	-	1	0	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	2
% Bicycles on Road	0.9%	0%	0%	0%	0.2%	-	0.8%	0%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	4	-	-	-	-	-	18	-	-	-	-	-	4	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	90.0%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	10.0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

Washington and Heights Blvd - TMC

Wed Nov 1, 2023

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

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

All Movements

ID: 1125848, Location: 29.769514, -95.397244

**GHA GEWALT HAMILTON
ASSOCIATES, INC.**

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

[N] Heights Blvd

Total: 1705

In: 640 Out: 1065

113
382
145

[W] Washington Ave
Total: 1826
In: 642 Out: 1184

1

564

78

2

2

945

252

2

9

11

[E] Washington Ave
Out: 961 In: 891
Total: 1852

Out: 583 In: 1620

Total: 2203

[S] Heights Blvd

Washington and Yale St/Waugh Dr - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125847, Location: 29.769691, -95.398575



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

Leg Direction	Yale St Southbound					Washington Ave Westbound					Waugh Dr Northbound					Washington Ave Eastbound									
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:00AM	66	1380	122	0	1568	1	92	244	2	0	338	0	0	0	0	0	0	0	185	278	106	0	569	3	2475
8:00AM	62	1370	143	0	1575	3	90	340	3	0	433	1	3	0	0	0	3	2	258	377	81	0	716	6	2727
4:00PM	108	670	150	0	928	0	340	661	3	0	1004	2	0	0	0	0	0	8	219	486	150	0	855	7	2787
5:00PM	98	644	175	0	917	5	402	724	2	0	1128	1	0	0	0	0	4	239	535	179	0	953	6	2998	
6:00PM	81	819	137	0	1037	6	326	625	6	0	957	0	0	0	0	0	0	2	332	503	158	0	993	3	2987
Total	415	4883	727	0	6025	15	1250	2594	16	0	3860	4	3	0	0	0	3	16	1233	2179	674	0	4086	25	13974
% Approach	6.9%	81.0%	12.1%	0%	-	-	32.4%	67.2%	0.4%	0%	-	-	100%	0%	0%	0%	-	-	30.2%	53.3%	16.5%	0%	-	-	-
% Total	3.0%	34.9%	5.2%	0%	43.1%	-	8.9%	18.6%	0.1%	0%	27.6%	-	0%	0%	0%	0%	0%	-	8.8%	15.6%	4.8%	0%	29.2%	-	-
Lights	415	4856	722	0	5993	-	1248	2543	16	0	3807	-	3	0	0	0	3	-	1224	2122	670	0	4016	-	13819
% Lights	100%	99.4%	99.3%	0%	99.5%	-	99.8%	98.0%	100%	0%	98.6%	-	100%	0%	0%	0%	100%	-	99.3%	97.4%	99.4%	0%	98.3%	-	98.9%
Single-Unit Trucks	0	16	5	0	21	-	1	25	0	0	26	-	0	0	0	0	0	-	8	26	0	0	34	-	81
% Single-Unit Trucks	0%	0.3%	0.7%	0%	0.3%	-	0.1%	1.0%	0%	0%	0.7%	-	0%	0%	0%	0%	0%	-	0.6%	1.2%	0%	0%	0.8%	-	0.6%
Articulated Trucks	0	1	0	0	1	-	0	2	0	0	2	-	0	0	0	0	0	-	1	1	3	0	5	-	8
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0.1%	0%	0.4%	0%	0.1%	-	0.1%
Buses	0	10	0	0	10	-	1	22	0	0	23	-	0	0	0	0	0	-	0	30	1	0	31	-	64
% Buses	0%	0.2%	0%	0%	0.2%	-	0.1%	0.8%	0%	0%	0.6%	-	0%	0%	0%	0%	0%	-	0%	1.4%	0.1%	0%	0.8%	-	0.5%
Bicycles on Road	0	0	0	0	0	-	0	2	0	0	2	-	0	0	0	0	0	-	0	0	0	0	0	-	2
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	15	-	-	-	-	-	3	-	-	-	-	-	15	-	-	-	-	-	24	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	75.0%	-	-	-	-	-	93.8%	-	-	-	-	-	96.0%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	25.0%	-	-	-	-	-	6.3%	-	-	-	-	-	4.0%	-

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

Washington and Yale St/Waugh Dr - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125847, Location: 29.769691, -95.398575

**GHA GEWALT HAMILTON
ASSOCIATES, INC.**

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

[N] Yale St

Total: 7949

In: 6025 Out: 1924

[W] Washington Ave

Total: 7095
In: 4086 Out: 3009

1233
2179
674

13

415

4883

727

6

1250
2594
16

Out: 2909 In: 3860
Total: 6769
[E] Washington Ave

Out: 6132 In: 3
Total: 6135
[S] Waugh Dr

Washington and Yale St/Waugh Dr - TMC

Wed Nov 1, 2023

AM Peak (7:45 AM - 8:45 AM)

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

All Movements

ID: 1125847, Location: 29.769691, -95.398575



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

Leg Direction	Yale St Southbound						Washington Ave Westbound						Waugh Dr Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:45AM	16	376	40	0	432	0	34	92	1	0	127	0	0	0	0	0	0	0	64	92	43	0	199	0	758
8:00AM	16	362	40	0	418	1	18	84	2	0	104	0	3	0	0	0	3	0	58	97	22	0	177	3	702
8:15AM	17	304	28	0	349	0	20	85	0	0	105	0	0	0	0	0	0	0	68	98	23	0	189	0	643
8:30AM	15	371	35	0	421	0	24	80	1	0	105	1	0	0	0	0	0	1	72	79	21	0	172	1	698
Total	64	1413	143	0	1620	1	96	341	4	0	441	1	3	0	0	0	3	1	262	366	109	0	737	4	2801
% Approach	4.0%	87.2%	8.8%	0%	-	-	21.8%	77.3%	0.9%	0%	-	-	100%	0%	0%	0%	-	-	35.5%	49.7%	14.8%	0%	-	-	-
% Total	2.3%	50.4%	5.1%	0%	57.8%	-	3.4%	12.2%	0.1%	0%	15.7%	-	0.1%	0%	0%	0%	0.1%	-	9.4%	13.1%	3.9%	0%	26.3%	-	-
PHF	0.941	0.939	0.894	-	0.938	-	0.706	0.927	0.500	-	0.868	-	0.250	-	-	-	0.250	-	0.910	0.934	0.634	-	0.926	-	0.924
Lights	64	1403	143	0	1610	-	96	321	4	0	421	-	3	0	0	0	3	-	257	349	108	0	714	-	2748
% Lights	100%	99.3%	100%	0%	99.4%	-	100%	94.1%	100%	0%	95.5%	-	100%	0%	0%	0%	100%	-	98.1%	95.4%	99.1%	0%	96.9%	-	98.1%
Single-Unit Trucks	0	8	0	0	8	-	0	15	0	0	15	-	0	0	0	0	0	-	4	11	0	0	15	-	38
% Single-Unit Trucks	0%	0.6%	0%	0%	0.5%	-	0%	4.4%	0%	0%	3.4%	-	0%	0%	0%	0%	0%	-	1.5%	3.0%	0%	0%	2.0%	-	1.4%
Articulated Trucks	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	1	0	1	0	2	-	3
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0.4%	0%	0.9%	0%	0.3%	-	0.1%
Buses	0	2	0	0	2	-	0	4	0	0	4	-	0	0	0	0	0	-	0	6	0	0	6	-	12
% Buses	0%	0.1%	0%	0%	0.1%	-	0%	1.2%	0%	0%	0.9%	-	0%	0%	0%	0%	0%	-	0%	1.6%	0%	0%	0.8%	-	0.4%
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	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	4	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	

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

Washington and Yale St/Waugh Dr - TMC

Wed Nov 1, 2023

AM Peak (7:45 AM - 8:45 AM)

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

All Movements

ID: 1125847, Location: 29.769691, -95.398575

GHA GEWALT HAMILTON ASSOCIATES, INC.

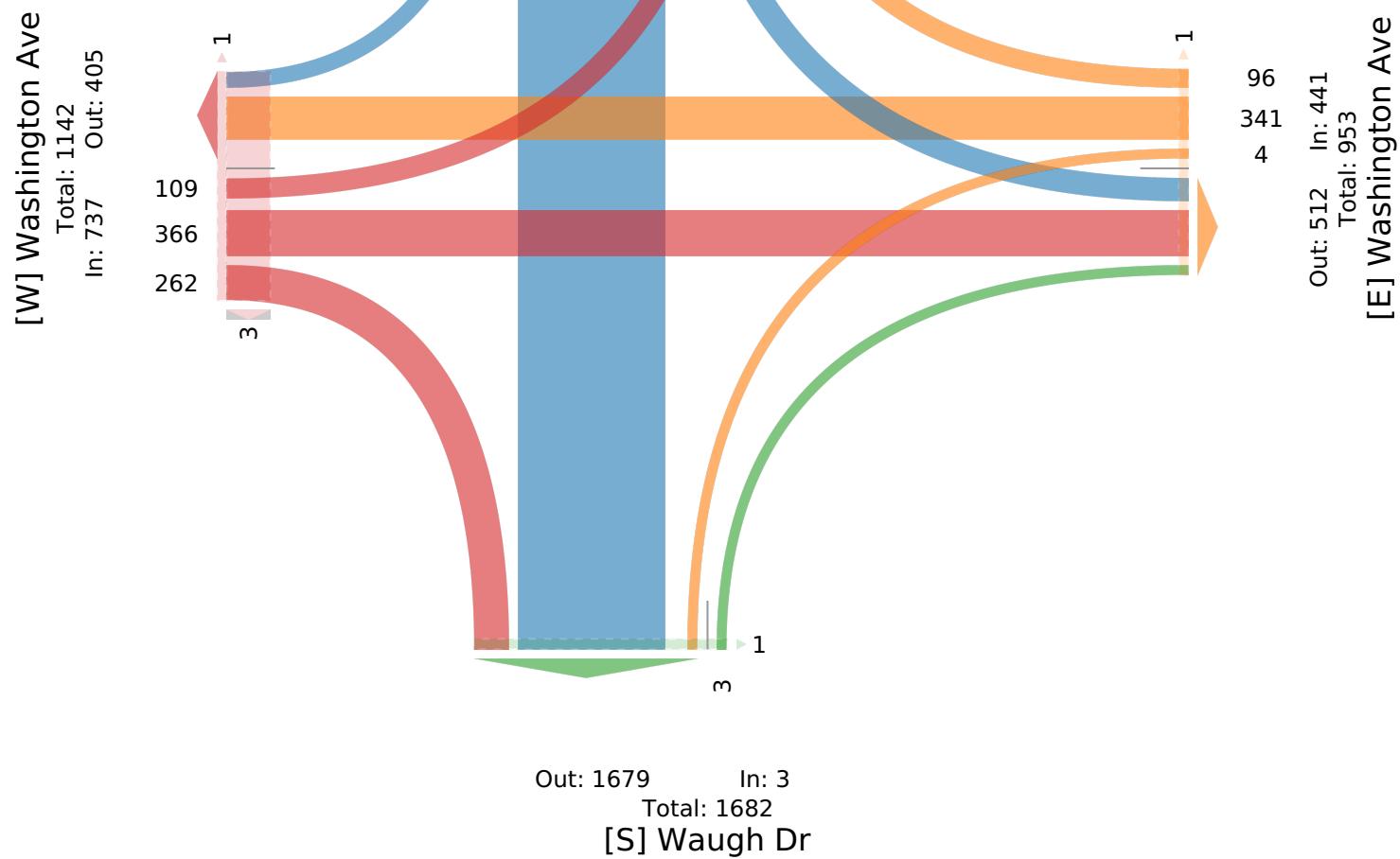
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Yale St

Total: 1825

In: 1620

Out: 205



Washington and Yale St/Waugh Dr - TMC

Wed Nov 1, 2023

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

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

All Movements

ID: 1125847, Location: 29.769691, -95.398575



Leg Direction	Yale St Southbound						Washington Ave Westbound						Waugh Dr Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 4:45PM	32	184	50	0	266	0	97	172	0	0	269	1	0	0	0	0	0	2	61	121	39	0	221	2	756
5:00PM	27	185	40	0	252	0	87	186	2	0	275	0	0	0	0	0	0	2	62	145	50	0	257	2	784
5:15PM	23	173	40	0	236	1	97	174	0	0	271	0	0	0	0	0	0	0	52	134	39	0	225	4	732
5:30PM	19	161	57	0	237	3	114	197	0	0	311	1	0	0	0	0	0	0	61	125	36	0	222	0	770
Total	101	703	187	0	991	4	395	729	2	0	1126	2	0	0	0	0	4	236	525	164	0	925	8	3042	
% Approach	10.2%	70.9%	18.9%	0%	-	-	35.1%	64.7%	0.2%	0%	-	-	0%	0%	0%	0%	-	-	25.5%	56.8%	17.7%	0%	-	-	-
% Total	3.3%	23.1%	6.1%	0%	32.6%	-	13.0%	24.0%	0.1%	0%	37.0%	-	0%	0%	0%	0%	0%	-	7.8%	17.3%	5.4%	0%	30.4%	-	-
PHF	0.789	0.950	0.820	-	0.931	-	0.866	0.925	0.250	-	0.905	-	-	-	-	-	-	0.952	0.905	0.820	-	0.900	-	0.970	
Lights	101	702	187	0	990	-	395	717	2	0	1114	-	0	0	0	0	0	-	235	518	164	0	917	-	3021
% Lights	100%	99.9%	100%	0%	99.9%	-	100%	98.4%	100%	0%	98.9%	-	0%	0%	0%	0%	-	-	99.6%	98.7%	100%	0%	99.1%	-	99.3%
Single-Unit Trucks	0	0	0	0	0	-	0	5	0	0	5	-	0	0	0	0	0	-	1	3	0	0	4	-	9
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0.7%	0%	0%	0.4%	-	0%	0%	0%	0%	-	-	0.4%	0.6%	0%	0%	0.4%	-	0.3%
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%
Buses	0	1	0	0	1	-	0	7	0	0	7	-	0	0	0	0	0	-	0	4	0	0	4	-	12
% Buses	0%	0.1%	0%	0%	0.1%	-	0%	1.0%	0%	0%	0.6%	-	0%	0%	0%	0%	-	-	0%	0.8%	0%	0%	0.4%	-	0.4%
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%
Pedestrians	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	7	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	50.0%	-	-	-	-	-	75.0%	-	-	-	-	-	87.5%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	50.0%	-	-	-	-	-	25.0%	-	-	-	-	-	12.5%	

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

Washington and Yale St/Waugh Dr - TMC

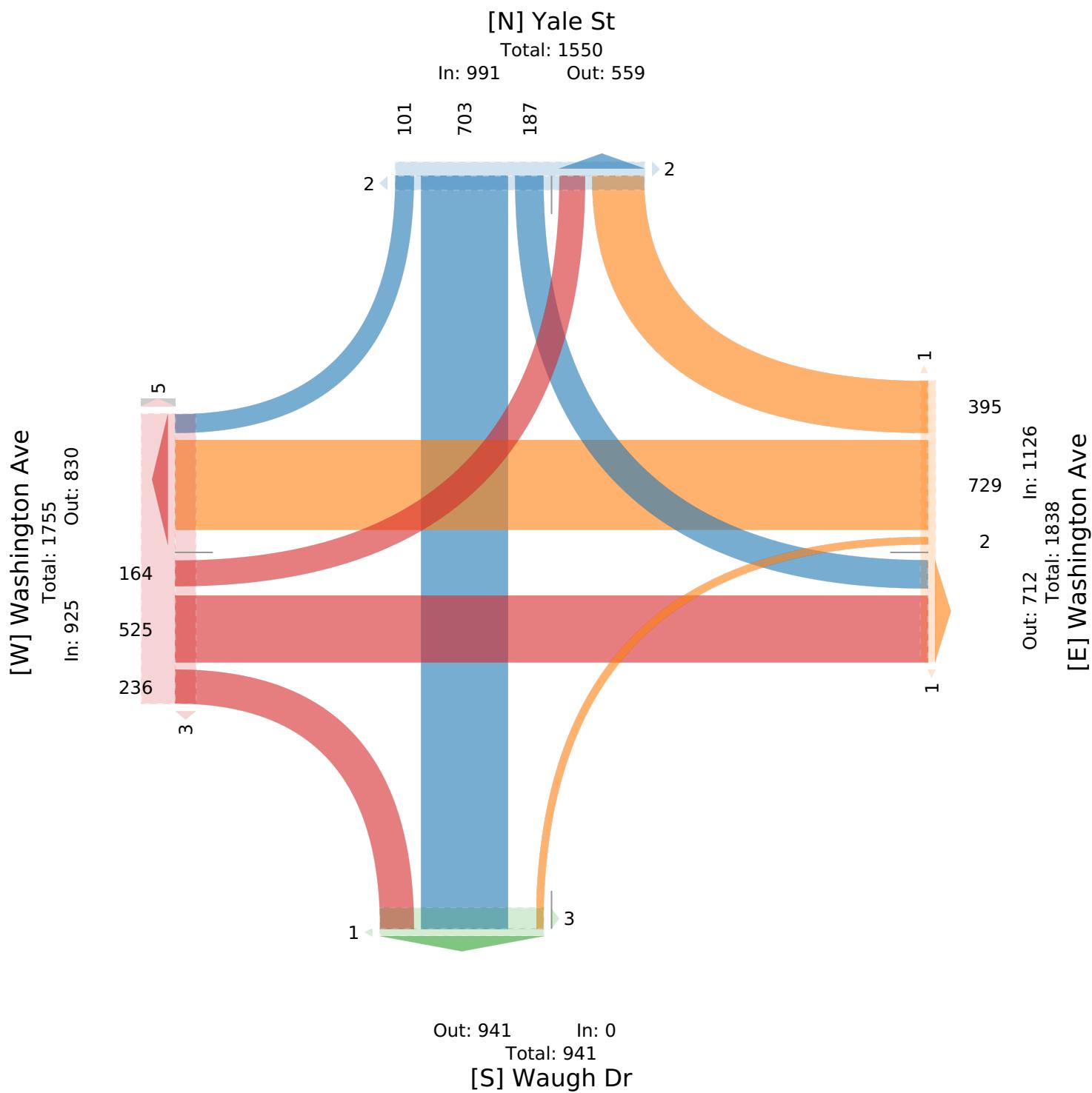
Wed Nov 1, 2023

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

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

All Movements

ID: 1125847, Location: 29.769691, -95.398575



Washington Avenue & Patterson Street - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125852, Location: 29.770499, -95.406142



Leg Direction	Patterson St Southbound						Washington Ave Westbound						Patterson St Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:00AM	61	16	54	0	131	1	40	318	4	0	362	0	15	11	5	0	31	0	9	470	39	0	518	2	1042
8:00AM	52	16	59	0	127	1	33	351	12	0	396	2	12	10	1	0	23	2	5	586	32	0	623	0	1169
4:00PM	48	10	38	0	96	1	90	558	18	0	666	0	11	8	3	0	22	5	7	697	65	0	769	1	1553
5:00PM	54	13	39	0	106	3	177	658	18	0	853	0	18	3	2	0	23	4	10	770	75	1	856	3	1838
6:00PM	55	13	60	0	128	1	83	531	4	0	618	1	18	10	4	0	32	3	7	863	66	0	936	0	1714
Total	270	68	250	0	588	7	423	2416	56	0	2895	3	74	42	15	0	131	14	38	3386	277	1	3702	6	7316
% Approach	45.9%	11.6%	42.5%	0%	-	-	14.6%	83.5%	1.9%	0%	-	-	56.5%	32.1%	11.5%	0%	-	-	1.0%	91.5%	7.5%	0%	-	-	-
% Total	3.7%	0.9%	3.4%	0%	8.0%	-	5.8%	33.0%	0.8%	0%	39.6%	-	1.0%	0.6%	0.2%	0%	1.8%	-	0.5%	46.3%	3.8%	0%	50.6%	-	-
Lights	264	61	245	0	570	-	413	2363	56	0	2832	-	74	38	15	0	127	-	36	3311	277	1	3625	-	7154
% Lights	97.8%	89.7%	98.0%	0%	96.9%	-	97.6%	97.8%	100%	0%	97.8%	-	100%	90.5%	100%	0%	96.9%	-	94.7%	97.8%	100%	100%	97.9%	-	97.8%
Single-Unit Trucks	4	1	4	0	9	-	5	17	0	0	22	-	0	1	0	0	1	-	0	40	0	0	40	-	72
% Single-Unit Trucks	1.5%	1.5%	1.6%	0%	1.5%	-	1.2%	0.7%	0%	0%	0.8%	-	0%	2.4%	0%	0%	0.8%	-	0%	1.2%	0%	0%	1.1%	-	1.0%
Articulated Trucks	0	0	0	0	0	-	1	5	0	0	6	-	0	0	0	0	0	-	0	4	0	0	4	-	10
% Articulated Trucks	0%	0%	0%	0%	0%	-	0.2%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0.1%
Buses	0	0	1	0	1	-	0	28	0	0	28	-	0	0	0	0	0	-	0	31	0	0	31	-	60
% Buses	0%	0%	0.4%	0%	0.2%	-	0%	1.2%	0%	0%	1.0%	-	0%	0%	0%	0%	0%	-	0%	0.9%	0%	0%	0.8%	-	0.8%
Bicycles on Road	2	6	0	0	8	-	4	3	0	0	7	-	0	3	0	0	3	-	2	0	0	0	2	-	20
% Bicycles on Road	0.7%	8.8%	0%	0%	1.4%	-	0.9%	0.1%	0%	0%	0.2%	-	0%	7.1%	0%	0%	2.3%	-	5.3%	0%	0%	0%	0.1%	-	0.3%
Pedestrians	-	-	-	-	-	6	-	-	-	-	2	-	-	-	-	-	14	-	-	-	-	-	-	5	
% Pedestrians	-	-	-	-	-	85.7%	-	-	-	-	66.7%	-	-	-	-	-	100%	-	-	-	-	-	-	83.3%	
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	14.3%	-	-	-	-	33.3%	-	-	-	-	-	0%	-	-	-	-	-	-	16.7%	

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

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125852, Location: 29.770499, -95.406142

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

[N] Patterson St

Total: 1330
In: 588 Out: 742

270 68 250

2 5

[W] Washington Ave
Total: 6404
In: 3702 Out: 2702

277
3386
38

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Out: 162 In: 131
Total: 293

[S] Patterson St

7 15 42 74

423
2416
56
[E] Washington Ave
Out: 3710 In: 2895
Total: 6605

Washington Avenue & Patterson Street - TMC

Wed Nov 1, 2023

AM Peak (7:45 AM - 8:45 AM)

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

All Movements

ID: 1125852, Location: 29.770499, -95.406142



Leg Direction	Patterson St Southbound						Washington Ave Westbound						Patterson St Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:45AM	22	7	24	0	53	0	16	103	3	0	122	0	4	2	0	0	6	0	3	143	18	0	164	2	345
8:00AM	16	0	16	0	32	0	12	88	4	0	104	0	3	1	0	0	4	0	1	154	9	0	164	0	304
8:15AM	17	6	16	0	39	0	12	86	1	0	99	1	6	4	0	0	10	1	2	133	9	0	144	0	292
8:30AM	11	4	17	0	32	0	2	94	3	0	99	1	2	1	0	0	3	1	1	154	9	0	164	0	298
Total	66	17	73	0	156	0	42	371	11	0	424	2	15	8	0	0	23	2	7	584	45	0	636	2	1239
% Approach	42.3%	10.9%	46.8%	0%	-	-	9.9%	87.5%	2.6%	0%	-	-	65.2%	34.8%	0%	0%	-	-	1.1%	91.8%	7.1%	0%	-	-	-
% Total	5.3%	1.4%	5.9%	0%	12.6%	-	3.4%	29.9%	0.9%	0%	34.2%	-	1.2%	0.6%	0%	0%	1.9%	-	0.6%	47.1%	3.6%	0%	51.3%	-	-
PHF	0.727	0.583	0.760	-	0.726	-	0.656	0.900	0.688	-	0.869	-	0.625	0.500	-	-	0.575	-	0.417	0.948	0.625	-	0.966	-	0.895
Lights	62	14	70	0	146	-	39	356	11	0	406	-	15	8	0	0	23	-	5	562	45	0	612	-	1187
% Lights	93.9%	82.4%	95.9%	0%	93.6%	-	92.9%	96.0%	100%	0%	95.8%	-	100%	100%	0%	0%	100%	-	71.4%	96.2%	100%	0%	96.2%	-	95.8%
Single-Unit Trucks	2	0	2	0	4	-	3	9	0	0	12	-	0	0	0	0	0	-	0	16	0	0	16	-	32
% Single-Unit Trucks	3.0%	0%	2.7%	0%	2.6%	-	7.1%	2.4%	0%	0%	2.8%	-	0%	0%	0%	0%	0%	-	0%	2.7%	0%	0%	2.5%	-	2.6%
Articulated Trucks	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	2	0	0	2	-	3
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.3%	-	0.2%
Buses	0	0	1	0	1	-	0	5	0	0	5	-	0	0	0	0	0	-	0	4	0	0	4	-	10
% Buses	0%	0%	1.4%	0%	0.6%	-	0%	1.3%	0%	0%	1.2%	-	0%	0%	0%	0%	0%	-	0%	0.7%	0%	0%	0.6%	-	0.8%
Bicycles on Road	2	3	0	0	5	-	0	0	0	0	0	-	0	0	0	0	0	-	2	0	0	0	2	-	7
% Bicycles on Road	3.0%	17.6%	0%	0%	3.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	28.6%	0%	0%	0%	0.3%	-	0.6%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	50.0%	-	-	-	-	-	100%	-	-	-	-	-	50.0%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	50.0%	-	-	-	-	-	0%	-	-	-	-	-	50.0%	

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

Wed Nov 1, 2023

AM Peak (7:45 AM - 8:45 AM)

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

All Movements

ID: 1125852, Location: 29.770499, -95.406142

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

[N] Patterson St

Total: 251

In: 156 Out: 95

66 17 73

[W] Washington Ave

Total: 1073
In: 636 Out: 437

584

7

45

2

Out: 35 In: 23

Total: 58

[S] Patterson St

42
371
11

Out: 672 In: 424

Total: 1096

[E] Washington Ave

8
15

2

Washington Avenue & Patterson Street - TMC

Wed Nov 1, 2023

PM Peak (5 PM - 6 PM) - Overall Peak Hour

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

All Movements

ID: 1125852, Location: 29.770499, -95.406142



Leg Direction	Patterson St Southbound					Washington Ave Westbound					Patterson St Northbound					Washington Ave Eastbound									
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 5:00PM	13	4	5	0	22	0	40	170	4	0	214	0	7	1	2	0	10	0	2	197	19	1	219	1	465
5:15PM	9	4	13	0	26	0	51	163	4	0	218	0	5	0	0	0	5	1	4	184	20	0	208	1	457
5:30PM	17	3	8	0	28	3	53	163	5	0	221	0	3	0	0	0	3	1	1	182	21	0	204	1	456
5:45PM	15	2	13	0	30	0	33	162	5	0	200	0	3	2	0	0	5	2	3	207	15	0	225	0	460
Total	54	13	39	0	106	3	177	658	18	0	853	0	18	3	2	0	23	4	10	770	75	1	856	3	1838
% Approach	50.9%	12.3%	36.8%	0%	-	-	20.8%	77.1%	2.1%	0%	-	-	78.3%	13.0%	8.7%	0%	-	-	1.2%	90.0%	8.8%	0.1%	-	-	-
% Total	2.9%	0.7%	2.1%	0%	5.8%	-	9.6%	35.8%	1.0%	0%	46.4%	-	1.0%	0.2%	0.1%	0%	1.3%	-	0.5%	41.9%	4.1%	0.1%	46.6%	-	-
PHF	0.794	0.813	0.750	-	0.883	-	0.846	0.972	0.900	-	0.967	-	0.643	0.375	0.250	-	0.575	-	0.625	0.930	0.893	0.250	0.951	-	0.989
Lights	52	12	39	0	103	-	176	649	18	0	843	-	18	3	2	0	23	-	10	758	75	1	844	-	1813
% Lights	96.3%	92.3%	100%	0%	97.2%	-	99.4%	98.6%	100%	0%	98.8%	-	100%	100%	100%	0%	100%	-	100%	98.4%	100%	100%	98.6%	-	98.6%
Single-Unit Trucks	2	1	0	0	3	-	0	1	0	0	1	-	0	0	0	0	0	-	0	5	0	0	5	-	9
% Single-Unit Trucks	3.7%	7.7%	0%	0%	2.8%	-	0%	0.2%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0.6%	0%	0%	0.6%	-	0.5%
Articulated Trucks	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	1	0	0	1	-	2
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0.1%
Buses	0	0	0	0	0	-	0	6	0	0	6	-	0	0	0	0	0	-	0	6	0	0	6	-	12
% Buses	0%	0%	0%	0%	0%	-	0%	0.9%	0%	0%	0.7%	-	0%	0%	0%	0%	0%	-	0%	0.8%	0%	0%	0.7%	-	0.7%
Bicycles on Road	0	0	0	0	0	-	1	1	0	0	2	-	0	0	0	0	0	-	0	0	0	0	0	-	2
% Bicycles on Road	0%	0%	0%	0%	0%	-	0.6%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	0%	

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

Washington Avenue & Patterson Street - TMC

Wed Nov 1, 2023

PM Peak (5 PM - 6 PM) - Overall Peak Hour

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

All Movements

ID: 1125852, Location: 29.770499, -95.406142

**GHA GEWALT HAMILTON
ASSOCIATES, INC.**

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

[N] Patterson St

Total: 361
In: 106 Out: 255

54 139
1 2

[W] Washington Ave
Total: 1571
In: 856 Out: 715

1

1

75

770

10

2

177

658

18

Out: 827 Total: 1680

In: 853
[E] Washington Ave

Out: 41 In: 23

Total: 64

[S] Patterson St

2 2 3 18

Washington & Shepherd/Durham - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125845, Location: 29.770403, -95.410566



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Shepherd/Durham SB Southbound					Washington Ave Westbound					Shepherd/Durham SB Northbound					Washington Ave Eastbound										
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int	
2023-11-01 7:00AM	43	1560	175	0	1778	3	3	348	44	0	395	0	0	0	0	0	0	1	272	340	0	0	612	1	2785	
8:00AM	55	1872	233	0	2160	0	0	350	46	0	396	0	0	0	0	0	0	4	271	351	0	0	622	1	3178	
4:00PM	68	1073	235	0	1376	1	0	672	78	0	750	1	0	0	0	0	0	12	234	461	0	0	695	2	2821	
5:00PM	90	1204	271	2	1567	1	0	796	72	0	868	0	1	0	0	0	1	11	236	516	0	0	752	5	3188	
6:00PM	73	1242	335	0	1650	8	0	630	84	0	714	6	0	0	0	0	0	12	233	479	0	0	712	4	3076	
Total	329	6951	1249	2	8531	13	3	2796	324	0	3123	7	1	0	0	0	1	40	1246	2147	0	0	3393	13	15048	
% Approach	3.9%	81.5%	14.6%	0%	-	-	0.1%	89.5%	10.4%	0%	-	-	100%	0%	0%	0%	-	-	36.7%	63.3%	0%	0%	-	-	-	
% Total	2.2%	46.2%	8.3%	0%	56.7%	-	0%	18.6%	2.2%	0%	20.8%	-	0%	0%	0%	0%	-	-	8.3%	14.3%	0%	0%	22.5%	-	-	
Lights	326	6868	1230	2	8426	-	3	2748	321	0	3072	-	1	0	0	0	1	-	1232	2093	0	0	3325	-	14824	
% Lights	99.1%	98.8%	98.5%	100%	98.8%	-	100%	98.3%	99.1%	0%	98.4%	-	100%	0%	0%	0%	100%	-	98.9%	97.5%	0%	0%	98.0%	-	98.5%	
Single-Unit Trucks	2	53	17	0	72	-	0	14	3	0	17	-	0	0	0	0	0	-	10	23	0	0	33	-	122	
% Single-Unit Trucks	0.6%	0.8%	1.4%	0%	0.8%	-	0%	0.5%	0.9%	0%	0.5%	-	0%	0%	0%	0%	0%	-	0.8%	1.1%	0%	0%	1.0%	-	0.8%	
Articulated Trucks	1	5	1	0	7	-	0	4	0	0	4	-	0	0	0	0	0	-	1	1	0	0	2	-	13	
% Articulated Trucks	0.3%	0.1%	0.1%	0%	0.1%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0.1%	0%	0%	0%	0.1%	-	0.1%	
Buses	0	25	1	0	26	-	0	29	0	0	29	-	0	0	0	0	0	-	3	30	0	0	33	-	88	
% Buses	0%	0.4%	0.1%	0%	0.3%	-	0%	1.0%	0%	0%	0.9%	-	0%	0%	0%	0%	0%	-	0.2%	1.4%	0%	0%	1.0%	-	0.6%	
Bicycles on Road	0	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	-	0	0	0	0	0	-	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%	-	0%
Pedestrians	-	-	-	-	-	12	-	-	-	-	-	6	-	-	-	-	-	38	-	-	-	-	-	13		
% Pedestrians	-	-	-	-	-	92.3%	-	-	-	-	-	85.7%	-	-	-	-	-	95.0%	-	-	-	-	-	100%	-	
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	0		
% Bicycles on Crosswalk	-	-	-	-	-	7.7%	-	-	-	-	-	14.3%	-	-	-	-	-	5.0%	-	-	-	-	-	0%	-	

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

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125845, Location: 29.770403, -95.410566

Provided by: Gewalt Hamilton Associates Inc.

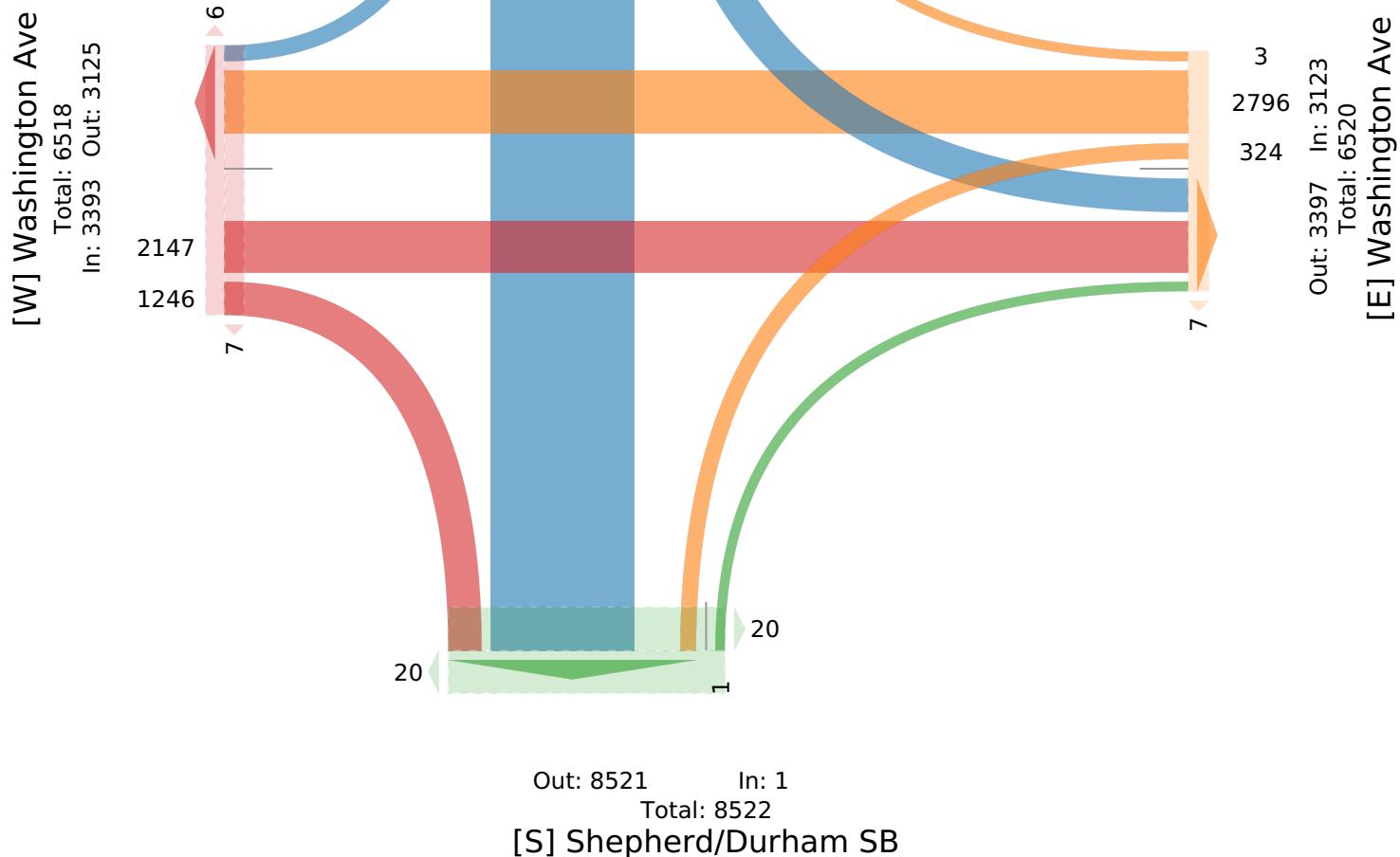
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Shepherd/Durham SB

Total: 8536

In: 8531

Out: 5



Washington & Shepherd/Durham - TMC

Wed Nov 1, 2023

AM Peak (7:45 AM - 8:45 AM)

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

All Movements

ID: 1125845, Location: 29.770403, -95.410566



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Shepherd/Durham SB Southbound					Washington Ave Westbound					Shepherd/Durham SB Northbound					Washington Ave Eastbound									
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:45AM	11	479	57	0	547	0	0	95	15	0	110	0	0	0	0	0	0	0	58	105	0	0	163	0	820
8:00AM	6	458	50	0	514	0	0	93	8	0	101	0	0	0	0	0	1	75	95	0	0	170	0	785	
8:15AM	14	463	55	0	532	0	0	89	18	0	107	0	0	0	0	0	1	50	79	0	0	129	0	768	
8:30AM	18	506	64	0	588	0	0	92	12	0	104	0	0	0	0	0	0	73	97	0	0	170	1	862	
Total	49	1906	226	0	2181	0	0	369	53	0	422	0	0	0	0	0	2	256	376	0	0	632	1	3235	
% Approach	2.2%	87.4%	10.4%	0%	-	-	0%	87.4%	12.6%	0%	-	-	0%	0%	0%	0%	-	-	40.5%	59.5%	0%	0%	-	-	-
% Total	1.5%	58.9%	7.0%	0%	67.4%	-	0%	11.4%	1.6%	0%	13.0%	-	0%	0%	0%	0%	-	7.9%	11.6%	0%	0%	19.5%	-	-	
PHF	0.681	0.942	0.883	-	0.927	-	-	0.971	0.736	-	0.959	-	-	-	-	-	-	0.853	0.895	-	-	0.929	-	0.938	
Lights	48	1872	215	0	2135	-	0	359	51	0	410	-	0	0	0	0	-	250	366	0	0	616	-	3161	
% Lights	98.0%	98.2%	95.1%	0%	97.9%	-	0%	97.3%	96.2%	0%	97.2%	-	0%	0%	0%	0%	-	-	97.7%	97.3%	0%	0%	97.5%	-	97.7%
Single-Unit Trucks	1	27	10	0	38	-	0	4	2	0	6	-	0	0	0	0	-	4	6	0	0	10	-	54	
% Single-Unit Trucks	2.0%	1.4%	4.4%	0%	1.7%	-	0%	1.1%	3.8%	0%	1.4%	-	0%	0%	0%	0%	-	-	1.6%	1.6%	0%	0%	1.6%	-	1.7%
Articulated Trucks	0	0	1	0	1	-	0	1	0	0	1	-	0	0	0	0	-	0	0	0	0	0	-	2	
% Articulated Trucks	0%	0%	0.4%	0%	0%	-	0%	0.3%	0%	0%	0.2%	-	0%	0%	0%	0%	-	-	0%	0%	0%	0%	0%	-	0.1%
Buses	0	7	0	0	7	-	0	5	0	0	5	-	0	0	0	0	-	2	4	0	0	6	-	18	
% Buses	0%	0.4%	0%	0%	0.3%	-	0%	1.4%	0%	0%	1.2%	-	0%	0%	0%	0%	-	-	0.8%	1.1%	0%	0%	0.9%	-	0.6%
Bicycles on Road	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%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	1	
% 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

Washington & Shepherd/Durham - TMC

Wed Nov 1, 2023

AM Peak (7:45 AM - 8:45 AM)

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

All Movements

ID: 1125845, Location: 29.770403, -95.410566

**GHA GEWALT HAMILTON
ASSOCIATES, INC.**

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

[N] Shepherd/Durham SB

Total: 2181

In: 2181

Out: 0

49 1906 226

[W] Washington Ave

Total: 1050
In: 632 Out: 418

376

256

1

369
53

Out: 602 In: 422

[E] Washington Ave

Total: 1024

[S] Shepherd/Durham SB

Out: 2215 In: 0

Total: 2215

2

Washington & Shepherd/Durham - TMC

Wed Nov 1, 2023

PM Peak (5:30 PM - 6:30 PM) - Overall Peak Hour

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

All Movements

ID: 1125845, Location: 29.770403, -95.410566



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Shepherd/Durham SB Southbound						Washington Ave Westbound						Shepherd/Durham SB Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 5:30PM	20	273	65	1	359	1	0	215	16	0	231	0	0	0	0	0	0	0	67	145	0	0	212	2	802
5:45PM	31	342	90	0	463	0	0	215	20	0	235	0	0	0	0	0	0	7	51	121	0	0	172	1	870
6:00PM	18	318	67	0	403	0	0	183	18	0	201	0	0	0	0	0	0	1	65	119	0	0	184	1	788
6:15PM	30	358	75	0	463	5	0	148	16	0	164	2	0	0	0	0	0	1	62	123	0	0	185	2	812
Total	99	1291	297	1	1688	6	0	761	70	0	831	2	0	0	0	0	0	9	245	508	0	0	753	6	3272
% Approach	5.9%	76.5%	17.6%	0.1%	-	-	0%	91.6%	8.4%	0%	-	-	0%	0%	0%	0%	-	-	32.5%	67.5%	0%	0%	-	-	-
% Total	3.0%	39.5%	9.1%	0%	51.6%	-	0%	23.3%	2.1%	0%	25.4%	-	0%	0%	0%	0%	0%	-	7.5%	15.5%	0%	0%	23.0%	-	-
PHF	0.798	0.902	0.825	0.250	0.911	-	-	0.885	0.875	-	0.884	-	-	-	-	-	-	-	0.914	0.876	-	-	0.888	-	0.940
Lights	99	1284	297	1	1681	-	0	752	69	0	821	-	0	0	0	0	0	-	244	500	0	0	744	-	3246
% Lights	100%	99.5%	100%	100%	99.6%	-	0%	98.8%	98.6%	0%	98.8%	-	0%	0%	0%	0%	-	-	99.6%	98.4%	0%	0%	98.8%	-	99.2%
Single-Unit Trucks	0	4	0	0	4	-	0	3	1	0	4	-	0	0	0	0	0	-	0	3	0	0	3	-	11
% Single-Unit Trucks	0%	0.3%	0%	0%	0.2%	-	0%	0.4%	1.4%	0%	0.5%	-	0%	0%	0%	0%	-	-	0%	0.6%	0%	0%	0.4%	-	0.3%
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%
Buses	0	3	0	0	3	-	0	6	0	0	6	-	0	0	0	0	0	-	1	5	0	0	6	-	15
% Buses	0%	0.2%	0%	0%	0.2%	-	0%	0.8%	0%	0%	0.7%	-	0%	0%	0%	0%	-	-	0.4%	1.0%	0%	0%	0.8%	-	0.5%
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%
Pedestrians	-	-	-	-	-	5	-	-	-	-	-	2	-	-	-	-	-	8	-	-	-	-	-	6	
% Pedestrians	-	-	-	-	-	-83.3%	-	-	-	-	-	100%	-	-	-	-	-	-	-88.9%	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-16.7%	-	-	-	-	-	0%	-	-	-	-	-	-	11.1%	-	-	-	-	-	0%

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

Washington & Shepherd/Durham - TMC

Wed Nov 1, 2023

PM Peak (5:30 PM - 6:30 PM) - Overall Peak Hour

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

All Movements

ID: 1125845, Location: 29.770403, -95.410566

**GHA GEWALT HAMILTON
ASSOCIATES, INC.**

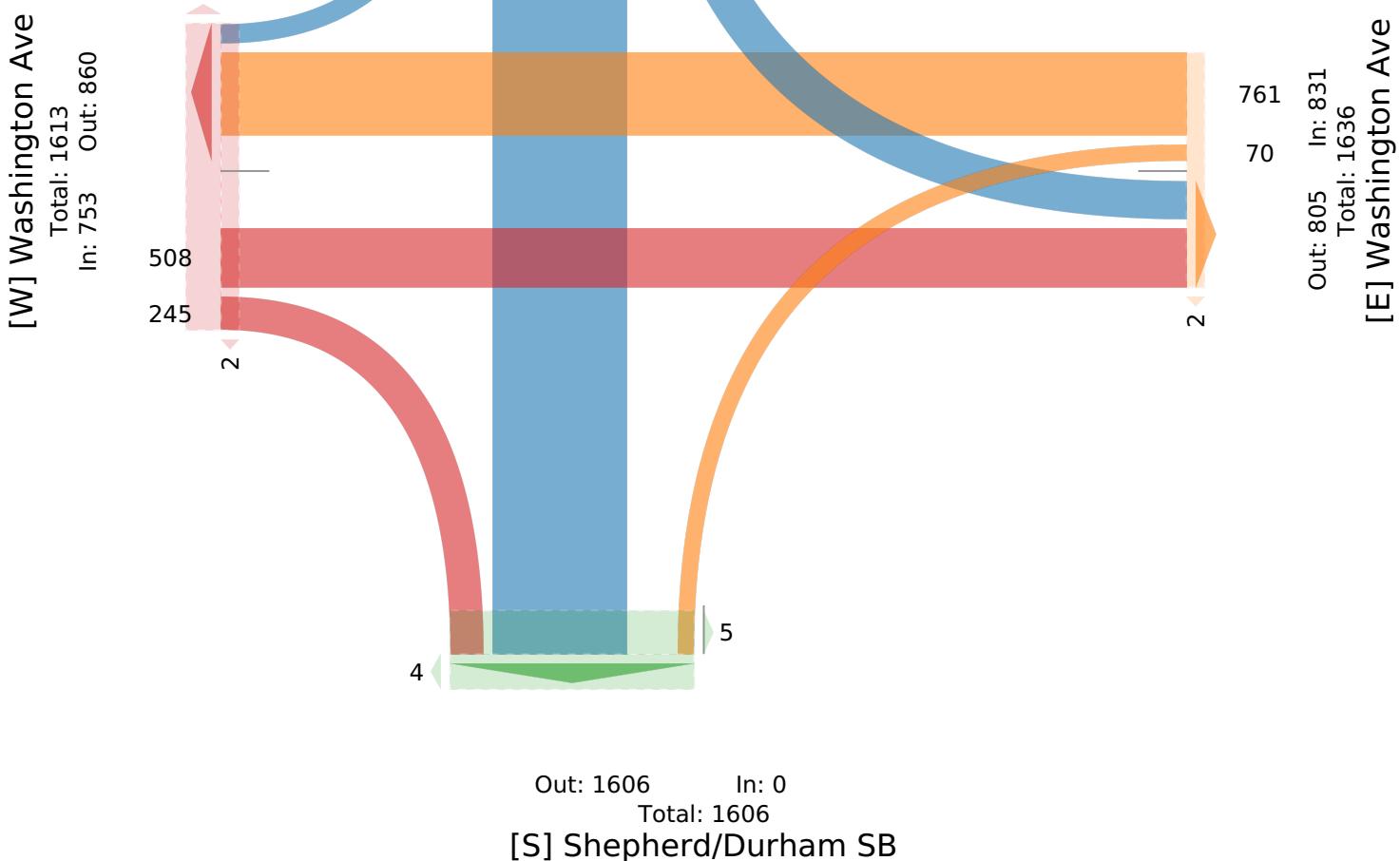
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Shepherd/Durham SB

Total: 1689

In: 1688

Out: 1



Washington & Shepherd/Durham - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125846, Location: 29.770403, -95.40945



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Shepherd/Durham NB Southbound		Washington Ave Westbound						Shepherd/Durham NB Northbound						Washington Ave Eastbound										
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:00AM	0	0	0	0	0	0	65	230	0	0	295	0	77	694	137	0	908	6	0	470	24	0	494	8	1697
8:00AM	0	0	0	0	0	2	74	242	0	0	316	6	72	877	163	0	1112	3	0	555	25	0	580	6	2008
4:00PM	0	0	0	0	0	0	130	437	0	0	567	4	151	1992	331	0	2474	11	0	625	55	0	680	4	3721
5:00PM	0	0	0	0	0	3	107	435	0	0	542	6	148	1983	423	0	2554	8	0	687	81	0	768	1	3864
6:00PM	0	0	0	0	0	3	113	431	0	0	544	9	171	1838	275	0	2284	11	0	720	77	0	797	7	3625
Total	0	0	0	0	0	8	489	1775	0	0	2264	25	619	7384	1329	0	9332	39	0	3057	262	0	3319	26	14915
% Approach	0%	0%	0%	0%	-	-	21.6%	78.4%	0%	0%	-	-	6.6%	79.1%	14.2%	0%	-	-	0%	92.1%	7.9%	0%	-	-	-
% Total	0%	0%	0%	0%	0%	-	3.3%	11.9%	0%	0%	15.2%	-	4.2%	49.5%	8.9%	0%	62.6%	-	0%	20.5%	1.8%	0%	22.3%	-	-
Lights	0	0	0	0	0	-	480	1726	0	0	2206	-	613	7282	1321	0	9216	-	0	2990	256	0	3246	-	14668
% Lights	0%	0%	0%	0%	-	-	98.2%	97.2%	0%	0%	97.4%	-	99.0%	98.6%	99.4%	0%	98.8%	-	0%	97.8%	97.7%	0%	97.8%	-	98.3%
Single-Unit Trucks	0	0	0	0	0	-	7	13	0	0	20	-	5	72	6	0	83	-	0	36	5	0	41	-	144
% Single-Unit Trucks	0%	0%	0%	0%	-	-	1.4%	0.7%	0%	0%	0.9%	-	0.8%	1.0%	0.5%	0%	0.9%	-	0%	1.2%	1.9%	0%	1.2%	-	1.0%
Articulated Trucks	0	0	0	0	0	-	2	3	0	0	5	-	0	3	0	0	3	-	0	2	1	0	3	-	11
% Articulated Trucks	0%	0%	0%	0%	-	-	0.4%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0.1%	0.4%	0%	0.1%	-	0.1%
Buses	0	0	0	0	0	-	0	31	0	0	31	-	1	27	2	0	30	-	0	29	0	0	29	-	90
% Buses	0%	0%	0%	0%	-	-	0%	1.7%	0%	0%	1.4%	-	0.2%	0.4%	0.2%	0%	0.3%	-	0%	0.9%	0%	0%	0.9%	-	0.6%
Bicycles on Road	0	0	0	0	0	-	0	2	0	0	2	-	0	0	0	0	0	-	0	0	0	0	0	-	2
% Bicycles on Road	0%	0%	0%	0%	-	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	7	-	-	-	-	-	20	-	-	-	-	-	38	-	-	-	-	-	-	26
% Pedestrians	-	-	-	-	-	87.5%	-	-	-	-	-	80.0%	-	-	-	-	-	97.4%	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	-	12.5%	-	-	-	-	-	20.0%	-	-	-	-	-	2.6%	-	-	-	-	-	-	0%

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

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125846, Location: 29.770403, -95.40945

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

[N] Shepherd/Durham NB

Total: 8135
In: 0 Out: 8135

[W] Washington Ave
Total: 6423
In: 3319 Out: 3104

Out: 0 In: 9332
Total: 9332

[S] Shepherd/Durham NB

[E] Washington Ave
Out: 3676 In: 2264
Total: 5940

Leg Direction	Shepherd/Durham NB Southbound		Washington Ave Westbound						Shepherd/Durham NB Northbound						Washington Ave Eastbound										
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:45AM	0	0	0	0	0	0	24	57	0	0	81	0	28	207	42	0	277	0	0	143	6	0	149	5	507
8:00AM	0	0	0	0	0	0	15	66	0	0	81	3	22	209	49	0	280	1	0	142	4	0	146	3	507
8:15AM	0	0	0	0	0	0	17	53	0	0	70	0	15	229	48	0	292	0	0	125	4	0	129	0	491
8:30AM	0	0	0	0	0	2	16	70	0	0	86	3	16	235	36	0	287	0	0	151	9	0	160	2	533
Total	0	0	0	0	0	2	72	246	0	0	318	6	81	880	175	0	1136	1	0	561	23	0	584	10	2038
% Approach	0%	0%	0%	0%	-	-	22.6%	77.4%	0%	0%	-	-	7.1%	77.5%	15.4%	0%	-	-	0%	96.1%	3.9%	0%	-	-	-
% Total	0%	0%	0%	0%	0%	-	3.5%	12.1%	0%	0%	15.6%	-	4.0%	43.2%	8.6%	0%	55.7%	-	0%	27.5%	1.1%	0%	28.7%	-	-
PHF	-	-	-	-	-	-	0.750	0.879	-	-	0.924	-	0.723	0.936	0.893	-	0.973	-	-	0.929	0.639	-	0.913	-	0.956
Lights	0	0	0	0	0	-	69	234	0	0	303	-	81	853	173	0	1107	-	0	539	22	0	561	-	1971
% Lights	0%	0%	0%	0%	-	-	95.8%	95.1%	0%	0%	95.3%	-	100%	96.9%	98.9%	0%	97.4%	-	0%	96.1%	95.7%	0%	96.1%	-	96.7%
Single-Unit Trucks	0	0	0	0	0	-	2	7	0	0	9	-	0	19	1	0	20	-	0	17	1	0	18	-	47
% Single-Unit Trucks	0%	0%	0%	0%	-	-	2.8%	2.8%	0%	0%	2.8%	-	0%	2.2%	0.6%	0%	1.8%	-	0%	3.0%	4.3%	0%	3.1%	-	2.3%
Articulated Trucks	0	0	0	0	0	-	1	0	0	0	1	-	0	1	0	0	1	-	0	1	0	0	1	-	3
% Articulated Trucks	0%	0%	0%	0%	-	-	1.4%	0%	0%	0%	0.3%	-	0%	0.1%	0%	0%	0.1%	-	0%	0.2%	0%	0%	0.2%	-	0.1%
Buses	0	0	0	0	0	-	0	5	0	0	5	-	0	7	1	0	8	-	0	4	0	0	4	-	17
% Buses	0%	0%	0%	0%	-	-	0%	2.0%	0%	0%	1.6%	-	0%	0.8%	0.6%	0%	0.7%	-	0%	0.7%	0%	0%	0.7%	-	0.8%
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%
Pedestrians	-	-	-	-	-	2	-	-	-	-	6	-	-	-	-	-	1	-	-	-	-	-	10		
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0		
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	

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

Wed Nov 1, 2023

AM Peak (7:45 AM - 8:45 AM)

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

All Movements

ID: 1125846, Location: 29.770403, -95.40945

Provided by: Gewalt Hamilton Associates Inc.

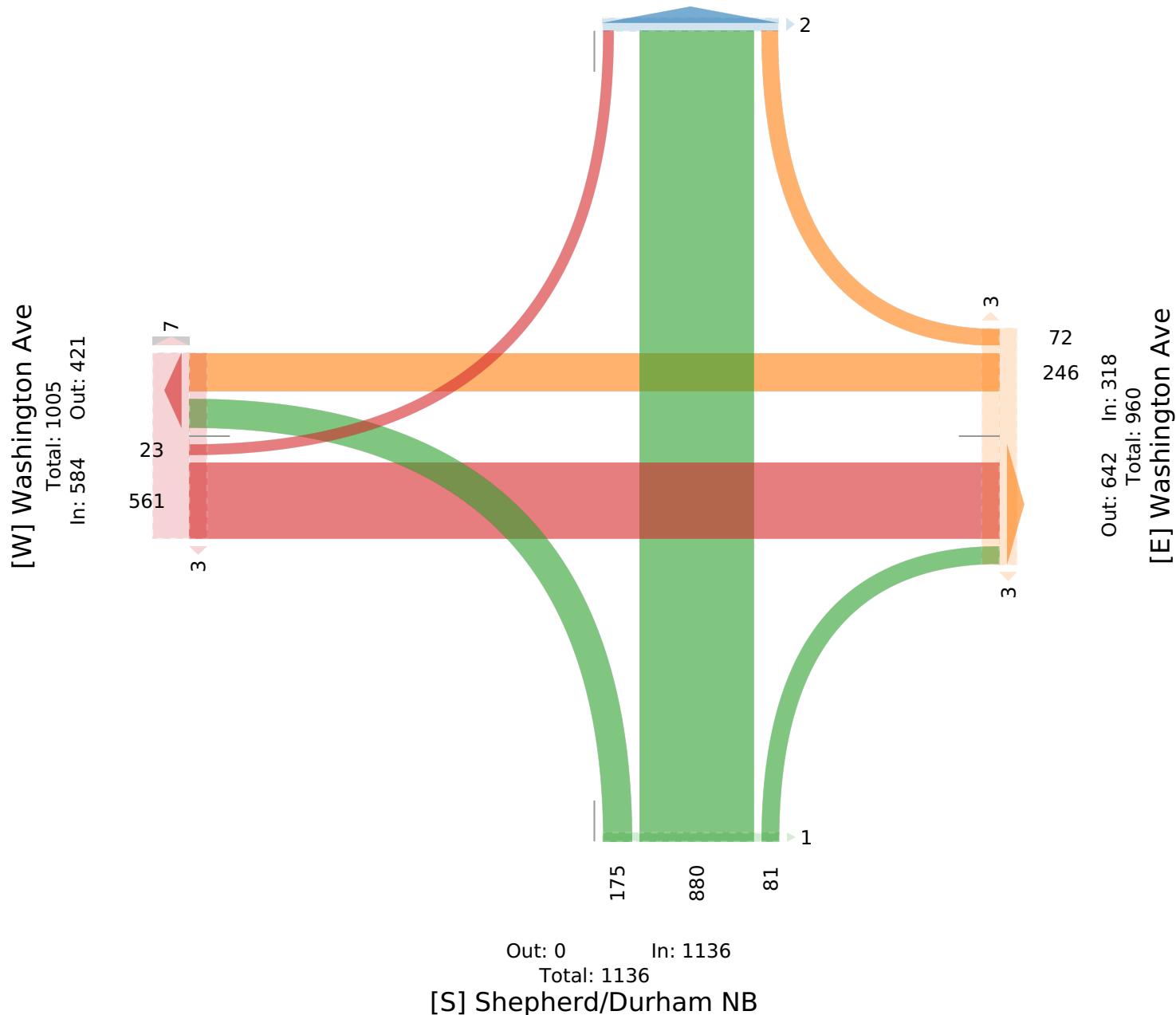
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Shepherd/Durham NB

Total: 975

In: 0

Out: 975



Washington & Shepherd/Durham - TMC

Wed Nov 1, 2023

PM Peak (5:15 PM - 6:15 PM) - Overall Peak Hour

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

All Movements

ID: 1125846, Location: 29.770403, -95.40945



Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Shepherd/Durham NB Southbound					Washington Ave Westbound					Ped*	Shepherd/Durham NB Northbound					Washington Ave Eastbound								
Time	R	T	L	U	App	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int	
2023-11-01 5:15PM	0	0	0	0	0	1	31	80	0	0	111	3	38	532	121	0	691	2	0	144	13	0	157	0	959
5:30PM	0	0	0	0	0	2	20	117	0	0	137	3	35	474	111	0	620	0	0	185	31	0	216	0	973
5:45PM	0	0	0	0	0	0	22	124	0	0	146	0	51	515	104	0	670	5	0	178	15	0	193	0	1009
6:00PM	0	0	0	0	0	1	32	123	0	0	155	2	38	504	76	0	618	1	0	172	21	0	193	2	966
Total	0	0	0	0	0	4	105	444	0	0	549	8	162	2025	412	0	2599	8	0	679	80	0	759	2	3907
% Approach	0%	0%	0%	0%	-	-	19.1%	80.9%	0%	0%	-	-	6.2%	77.9%	15.9%	0%	-	-	0%	89.5%	10.5%	0%	-	-	-
% Total	0%	0%	0%	0%	0%	-	2.7%	11.4%	0%	0%	14.1%	-	4.1%	51.8%	10.5%	0%	66.5%	-	0%	17.4%	2.0%	0%	19.4%	-	-
PHF	-	-	-	-	-	-	0.820	0.893	-	-	0.890	-	0.794	0.952	0.851	-	0.940	-	-	0.918	0.645	-	0.878	-	0.968
Lights	0	0	0	0	0	-	104	434	0	0	538	-	160	2007	409	0	2576	-	0	672	79	0	751	-	3865
% Lights	0%	0%	0%	0%	-	-	99.0%	97.7%	0%	0%	98.0%	-	98.8%	99.1%	99.3%	0%	99.1%	-	0%	99.0%	98.8%	0%	98.9%	-	98.9%
Single-Unit Trucks	0	0	0	0	0	-	1	2	0	0	3	-	2	13	3	0	18	-	0	4	1	0	5	-	26
% Single-Unit Trucks	0%	0%	0%	0%	-	-	1.0%	0.5%	0%	0%	0.5%	-	1.2%	0.6%	0.7%	0%	0.7%	-	0%	0.6%	1.3%	0%	0.7%	-	0.7%
Articulated Trucks	0	0	0	0	0	-	0	1	0	0	1	-	0	1	0	0	1	-	0	0	0	0	0	-	2
% Articulated Trucks	0%	0%	0%	0%	-	-	0%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Buses	0	0	0	0	0	-	0	6	0	0	6	-	0	4	0	0	4	-	0	3	0	0	3	-	13
% Buses	0%	0%	0%	0%	-	-	0%	1.4%	0%	0%	1.1%	-	0%	0.2%	0%	0%	0.2%	-	0%	0.4%	0%	0%	0.4%	-	0.3%
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%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	5	-	-	-	-	-	7	-	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	75.0%	-	-	-	-	-	62.5%	-	-	-	-	-	87.5%	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	25.0%	-	-	-	-	-	37.5%	-	-	-	-	-	12.5%	-	-	-	-	-	0%	

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

Washington & Shepherd/Durham - TMC

Wed Nov 1, 2023

PM Peak (5:15 PM - 6:15 PM) - Overall Peak Hour

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

All Movements

ID: 1125846, Location: 29.770403, -95.40945

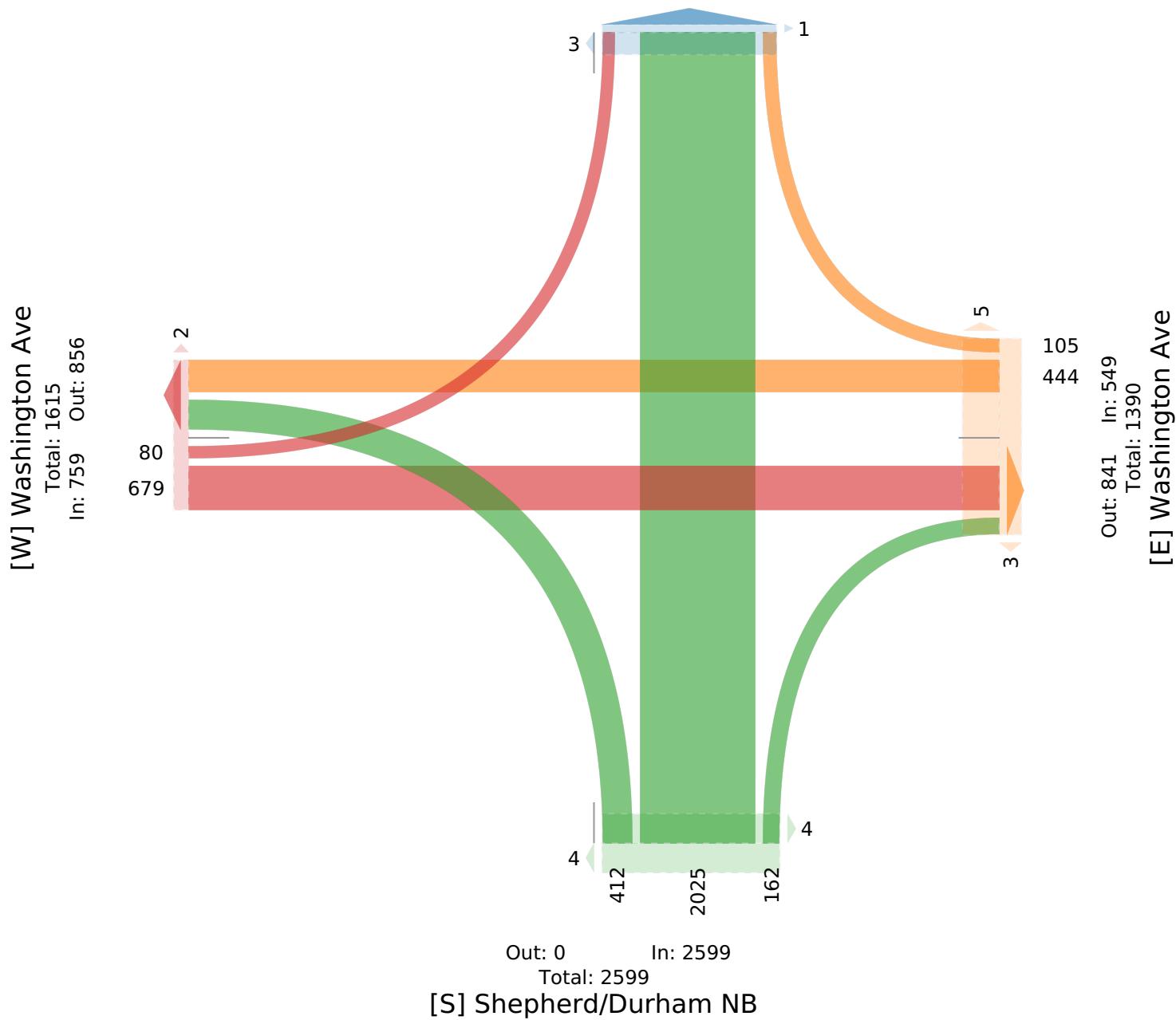
GEWALT HAMILTON ASSOCIATES, INC.

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

[N] Shepherd/Durham NB

Total: 2210

In: 0 Out: 2210



Washington Avenue & Roy Street - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125851, Location: 29.770423, -95.412505



Leg Direction	Roy St Southbound						Washington Ave Westbound						Roy St Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:00AM	21	19	10	0	50	1	22	328	9	0	359	0	8	1	14	0	23	1	73	672	19	0	764	0	1196
8:00AM	32	21	19	0	72	4	24	378	9	0	411	0	8	9	11	0	28	6	91	664	15	0	770	1	1281
4:00PM	18	15	5	0	38	1	45	653	15	0	713	1	15	11	17	0	43	4	44	751	16	0	811	3	1605
5:00PM	32	16	12	0	60	1	51	800	9	0	860	0	12	9	22	0	43	8	94	807	30	0	931	0	1894
6:00PM	22	6	13	0	41	0	48	600	11	0	659	2	9	4	26	0	39	33	76	779	32	1	888	2	1627
Total	125	77	59	0	261	7	190	2759	53	0	3002	3	52	34	90	0	176	52	378	3673	112	1	4164	6	7603
% Approach	47.9%	29.5%	22.6%	0%	-	-	6.3%	91.9%	1.8%	0%	-	-	29.5%	19.3%	51.1%	0%	-	-	9.1%	88.2%	2.7%	0%	-	-	-
% Total	1.6%	1.0%	0.8%	0%	3.4%	-	2.5%	36.3%	0.7%	0%	39.5%	-	0.7%	0.4%	1.2%	0%	2.3%	-	5.0%	48.3%	1.5%	0%	54.8%	-	-
Lights	124	75	57	0	256	-	189	2711	52	0	2952	-	50	34	89	0	173	-	375	3610	111	1	4097	-	7478
% Lights	99.2%	97.4%	96.6%	0%	98.1%	-	99.5%	98.3%	98.1%	0%	98.3%	-	96.2%	100%	98.9%	0%	98.3%	-	99.2%	98.3%	99.1%	100%	98.4%	-	98.4%
Single-Unit Trucks	0	1	1	0	2	-	0	16	1	0	17	-	1	0	0	0	1	-	3	27	0	0	30	-	50
% Single-Unit Trucks	0%	1.3%	1.7%	0%	0.8%	-	0%	0.6%	1.9%	0%	0.6%	-	1.9%	0%	0%	0%	0.6%	-	0.8%	0.7%	0%	0%	0.7%	-	0.7%
Articulated Trucks	0	0	1	0	1	-	1	3	0	0	4	-	0	0	0	0	0	-	0	4	0	0	4	-	9
% Articulated Trucks	0%	0%	1.7%	0%	0.4%	-	0.5%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0.1%
Buses	0	0	0	0	0	0	0	28	0	0	28	-	1	0	0	0	1	-	0	32	0	0	32	-	61
% Buses	0%	0%	0%	0%	0%	-	0%	1.0%	0%	0%	0.9%	-	1.9%	0%	0%	0%	0.6%	-	0%	0.9%	0%	0%	0.8%	-	0.8%
Bicycles on Road	1	1	0	0	2	-	0	1	0	0	1	-	0	0	1	0	1	-	0	0	1	0	1	-	5
% Bicycles on Road	0.8%	1.3%	0%	0%	0.8%	-	0%	0%	0%	0%	0%	-	0%	0%	1.1%	0%	0.6%	-	0%	0%	0.9%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	6	-	-	-	-	-	3	-	-	-	-	-	51	-	-	-	-	-	-	5
% Pedestrians	-	-	-	-	-	85.7%	-	-	-	-	-	100%	-	-	-	-	-	98.1%	-	-	-	-	-	-	83.3%
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	-	1
% Bicycles on Crosswalk	-	-	-	-	-	14.3%	-	-	-	-	-	0%	-	-	-	-	-	1.9%	-	-	-	-	-	-	16.7%

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

Washington Avenue & Roy Street - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125851, Location: 29.770423, -95.412505

GHA GEWALT HAMILTON ASSOCIATES, INC.

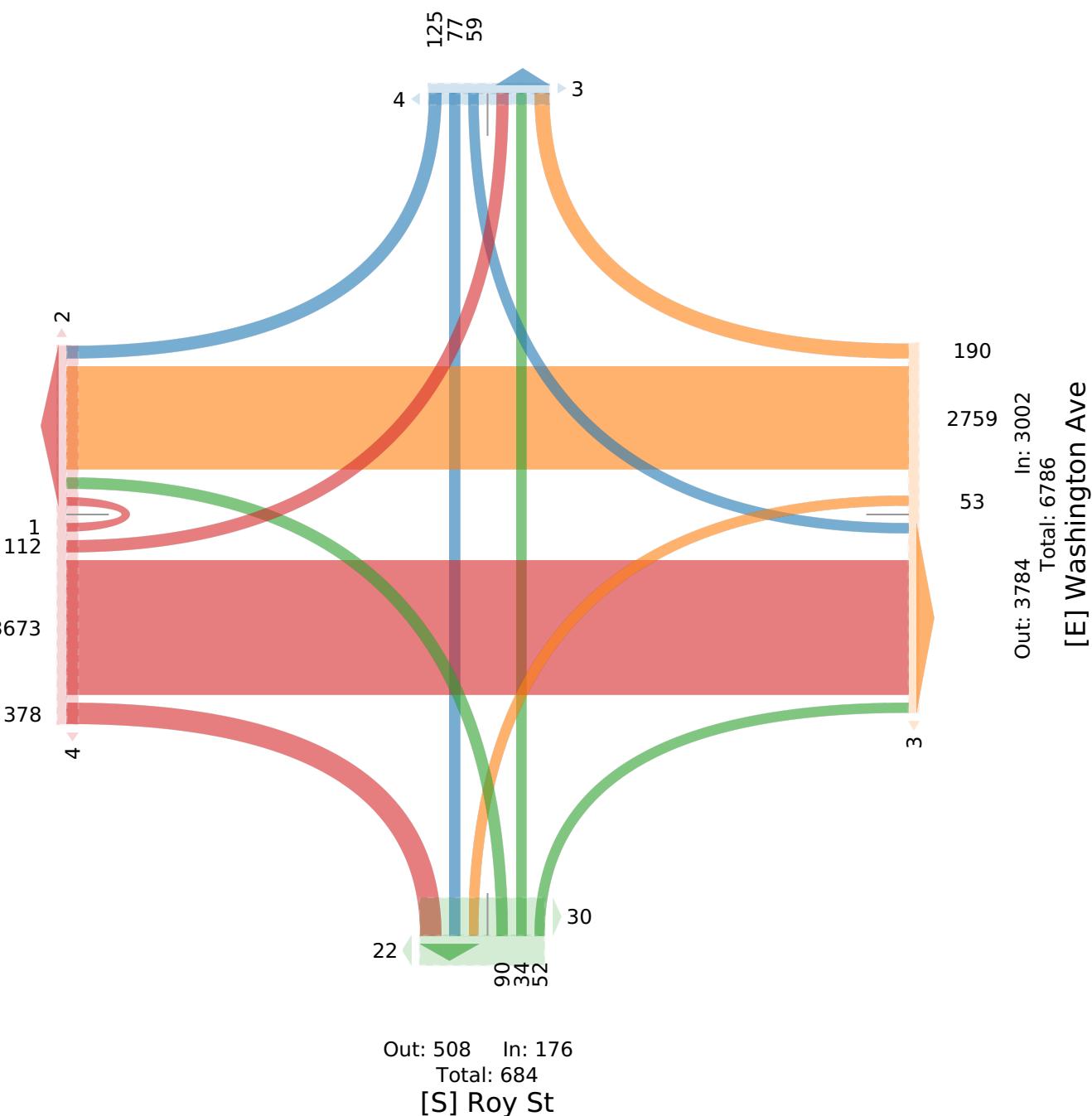
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Roy St

Total: 597

In: 261 Out: 336

[W] Washington Ave
Total: 7139
In: 4164 Out: 2975



Washington Avenue & Roy Street - TMC

Wed Nov 1, 2023

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

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

All Movements

ID: 1125851, Location: 29.770423, -95.412505



Leg Direction	Roy St Southbound						Washington Ave Westbound						Roy St Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:30AM	3	6	2	0	11	0	9	102	3	0	114	0	1	0	6	0	7	1	24	183	5	0	212	0	344
7:45AM	10	9	4	0	23	0	7	88	4	0	99	0	3	0	4	0	7	0	34	184	7	0	225	0	354
8:00AM	11	4	4	0	19	2	1	95	1	0	97	0	1	5	1	0	7	2	23	174	2	0	199	1	322
8:15AM	8	3	2	0	13	1	6	95	0	0	101	0	2	1	1	0	4	0	29	158	9	0	196	0	314
Total	32	22	12	0	66	3	23	380	8	0	411	0	7	6	12	0	25	3	110	699	23	0	832	1	1334
% Approach	48.5%	33.3%	18.2%	0%	-	-	5.6%	92.5%	1.9%	0%	-	-	28.0%	24.0%	48.0%	0%	-	-	13.2%	84.0%	2.8%	0%	-	-	-
% Total	2.4%	1.6%	0.9%	0%	4.9%	-	1.7%	28.5%	0.6%	0%	30.8%	-	0.5%	0.4%	0.9%	0%	1.9%	-	8.2%	52.4%	1.7%	0%	62.4%	-	-
PHF	0.727	0.611	0.750	-	-0.717	-	0.639	0.931	0.500	-	-0.901	-	0.583	0.300	0.500	-	-0.893	-	0.809	0.950	0.639	-	-0.924	-	0.942
Lights	32	22	12	0	66	-	23	369	7	0	399	-	7	6	12	0	25	-	108	681	23	0	812	-	1302
% Lights	100%	100%	100%	0%	100%	-	100%	97.1%	87.5%	0%	97.1%	-	100%	100%	100%	0%	100%	-	98.2%	97.4%	100%	0%	97.6%	-	97.6%
Single-Unit Trucks	0	0	0	0	0	-	0	5	1	0	6	-	0	0	0	0	0	-	2	8	0	0	10	-	16
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	1.3%	12.5%	0%	1.5%	-	0%	0%	0%	0%	0%	-	1.8%	1.1%	0%	0%	1.2%	-	1.2%
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%	0.1%	0%	0%	0.1%	-	0.1%
Buses	0	0	0	0	0	-	0	6	0	0	6	-	0	0	0	0	0	-	0	9	0	0	9	-	15
% Buses	0%	0%	0%	0%	0%	-	0%	1.6%	0%	0%	1.5%	-	0%	0%	0%	0%	0%	-	0%	1.3%	0%	0%	1.1%	-	1.1%
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	-	-	-	-	-	3	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	0%	

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

Washington Avenue & Roy Street - TMC

Wed Nov 1, 2023

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

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

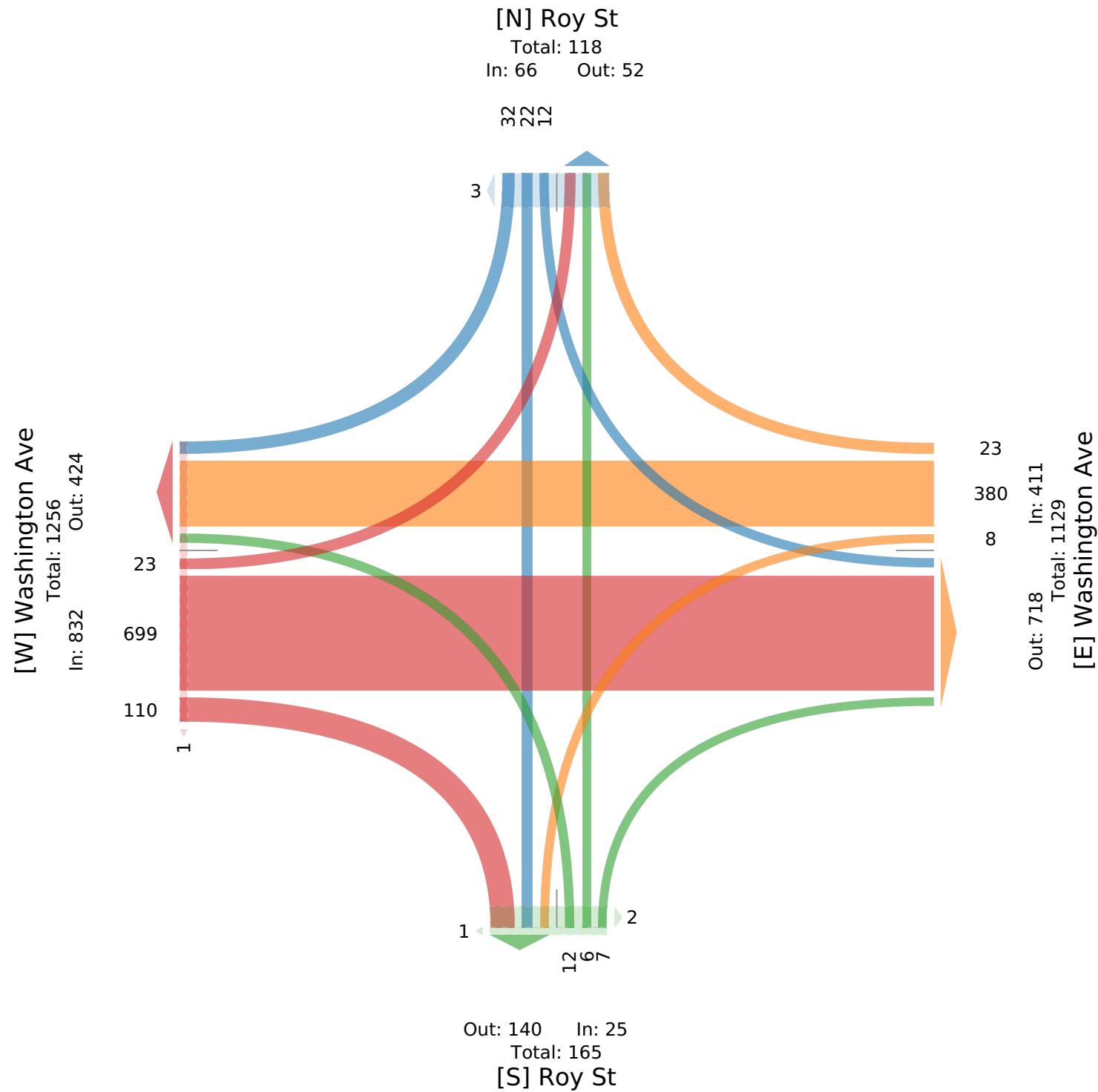
All Movements

ID: 1125851, Location: 29.770423, -95.412505

GHA GEWALT HAMILTON ASSOCIATES, INC.

Provided by: Gewalt Hamilton Associates Inc.

625 Forest Edge Drive, Vernon Hills, IL, 60061, US



Washington Avenue & Roy Street - TMC

Wed Nov 1, 2023

PM Peak (5 PM - 6 PM) - Overall Peak Hour

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

All Movements

ID: 1125851, Location: 29.770423, -95.412505



Leg Direction	Roy St Southbound						Washington Ave Westbound						Roy St Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 5:00PM	6	3	5	0	14	0	15	175	4	0	194	0	2	1	6	0	9	2	20	190	2	0	212	0	429
5:15PM	9	3	1	0	13	0	9	180	2	0	191	0	2	3	5	0	10	3	26	202	13	0	241	0	455
5:30PM	9	6	2	0	17	0	15	214	1	0	230	0	6	2	7	0	15	0	29	201	6	0	236	0	498
5:45PM	8	4	4	0	16	1	12	231	2	0	245	0	2	3	4	0	9	3	19	214	9	0	242	0	512
Total	32	16	12	0	60	1	51	800	9	0	860	0	12	9	22	0	43	8	94	807	30	0	931	0	1894
% Approach	53.3%	26.7%	20.0%	0%	-	-	5.9%	93.0%	1.0%	0%	-	-	27.9%	20.9%	51.2%	0%	-	-	10.1%	86.7%	3.2%	0%	-	-	-
% Total	1.7%	0.8%	0.6%	0%	3.2%	-	2.7%	42.2%	0.5%	0%	45.4%	-	0.6%	0.5%	1.2%	0%	2.3%	-	5.0%	42.6%	1.6%	0%	49.2%	-	-
PHF	0.889	0.667	0.600	-	0.882	-	0.850	0.865	0.563	-	0.877	-	0.500	0.750	0.750	-	0.700	-	0.810	0.943	0.558	-	0.965	-	0.927
Lights	32	15	12	0	59	-	51	792	9	0	852	-	12	9	21	0	42	-	94	796	29	0	919	-	1872
% Lights	100%	93.8%	100%	0%	98.3%	-	100%	99.0%	100%	0%	99.1%	-	100%	100%	95.5%	0%	97.7%	-	100%	98.6%	96.7%	0%	98.7%	-	98.8%
Single-Unit Trucks	0	1	0	0	1	-	0	1	0	0	1	-	0	0	0	0	0	-	0	4	0	0	4	-	6
% Single-Unit Trucks	0%	6.3%	0%	0%	1.7%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0.5%	0%	0%	0.4%	-	0.3%
Articulated Trucks	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	1	0	0	1	-	2
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0.1%
Buses	0	0	0	0	0	-	0	5	0	0	5	-	0	0	0	0	0	-	0	6	0	0	6	-	11
% Buses	0%	0%	0%	0%	0%	-	0%	0.6%	0%	0%	0.6%	-	0%	0%	0%	0%	0%	-	0%	0.7%	0%	0%	0.6%	-	0.6%
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	1	-	0	0	1	0	1	-	0	0	1	0	1	-	3
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	4.5%	0%	2.3%	-	0%	0%	3.3%	0%	0.1%	-	0.2%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	8	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	

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

Washington Avenue & Roy Street - TMC

Wed Nov 1, 2023

PM Peak (5 PM - 6 PM) - Overall Peak Hour

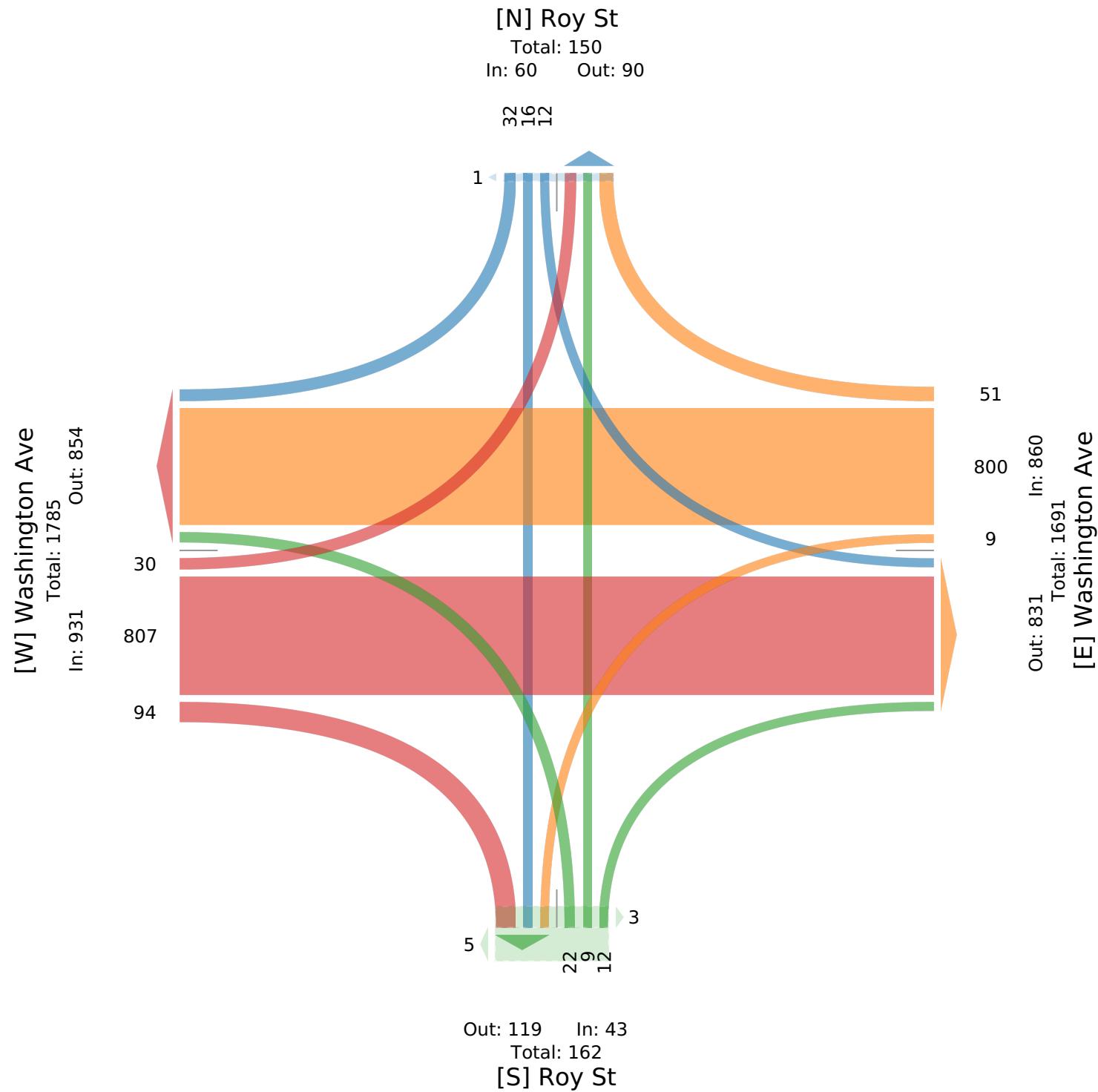
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1125851, Location: 29.770423, -95.412505

GHA GEWALT HAMILTON ASSOCIATES, INC.

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



Washington Avenue & T C Jester Boulevard - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125844, Location: 29.770657, -95.417563



Leg Direction	T C Jester Blvd Southbound						Washington Ave Westbound						Access Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:00AM	112	9	273	1	395	1	95	302	1	0	398	1	5	8	3	0	16	0	8	532	60	0	600	2	1409
8:00AM	96	5	286	1	388	1	136	292	2	0	430	1	4	14	6	0	24	1	13	558	57	0	628	0	1470
4:00PM	104	16	218	4	342	5	291	411	9	0	711	4	11	31	10	0	52	5	12	544	106	0	662	4	1767
5:00PM	129	22	227	10	388	4	361	522	14	0	897	9	8	40	16	0	64	4	33	693	145	0	871	1	2220
6:00PM	121	27	209	7	364	5	260	427	13	0	700	8	9	41	21	0	71	3	32	625	126	2	785	1	1920
Total	562	79	1213	23	1877	16	1143	1954	39	0	3136	23	37	134	56	0	227	13	98	2952	494	2	3546	8	8786
% Approach	29.9%	4.2%	64.6%	1.2%	-	-	36.4%	62.3%	1.2%	0%	-	-	16.3%	59.0%	24.7%	0%	-	-	2.8%	83.2%	13.9%	0.1%	-	-	-
% Total	6.4%	0.9%	13.8%	0.3%	21.4%	-	13.0%	22.2%	0.4%	0%	35.7%	-	0.4%	1.5%	0.6%	0%	2.6%	-	1.1%	33.6%	5.6%	0%	40.4%	-	-
Lights	550	77	1202	23	1852	-	1136	1912	38	0	3086	-	37	132	54	0	223	-	98	2892	489	2	3481	-	8642
% Lights	97.9%	97.5%	99.1%	100%	98.7%	-	99.4%	97.9%	97.4%	0%	98.4%	-	100%	98.5%	96.4%	0%	98.2%	-	100%	98.0%	99.0%	100%	98.2%	-	98.4%
Single-Unit Trucks	9	0	7	0	16	-	4	9	0	0	13	-	0	2	0	0	2	-	0	26	1	0	27	-	58
% Single-Unit Trucks	1.6%	0%	0.6%	0%	0.9%	-	0.3%	0.5%	0%	0%	0.4%	-	0%	1.5%	0%	0%	0.9%	-	0%	0.9%	0.2%	0%	0.8%	-	0.7%
Articulated Trucks	1	0	3	0	4	-	1	3	0	0	4	-	0	0	0	0	0	-	0	1	0	0	1	-	9
% Articulated Trucks	0.2%	0%	0.2%	0%	0.2%	-	0.1%	0.2%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Buses	0	0	1	0	1	-	2	28	0	0	30	-	0	0	0	0	0	-	0	33	0	0	33	-	64
% Buses	0%	0%	0.1%	0%	0.1%	-	0.2%	1.4%	0%	0%	1.0%	-	0%	0%	0%	0%	0%	-	0%	1.1%	0%	0%	0.9%	-	0.7%
Bicycles on Road	2	2	0	0	4	-	0	2	1	0	3	-	0	0	2	0	2	-	0	0	4	0	4	-	13
% Bicycles on Road	0.4%	2.5%	0%	0%	0.2%	-	0%	0.1%	2.6%	0%	0.1%	-	0%	0%	3.6%	0%	0.9%	-	0%	0%	0.8%	0%	0.1%	-	0.1%
Pedestrians	-	-	-	-	-	16	-	-	-	-	-	23	-	-	-	-	-	13	-	-	-	-	-	8	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

Washington Avenue & T C Jester Boulevard - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125844, Location: 29.770657, -95.417563

**GHA GEWALT HAMILTON
ASSOCIATES, INC.**

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

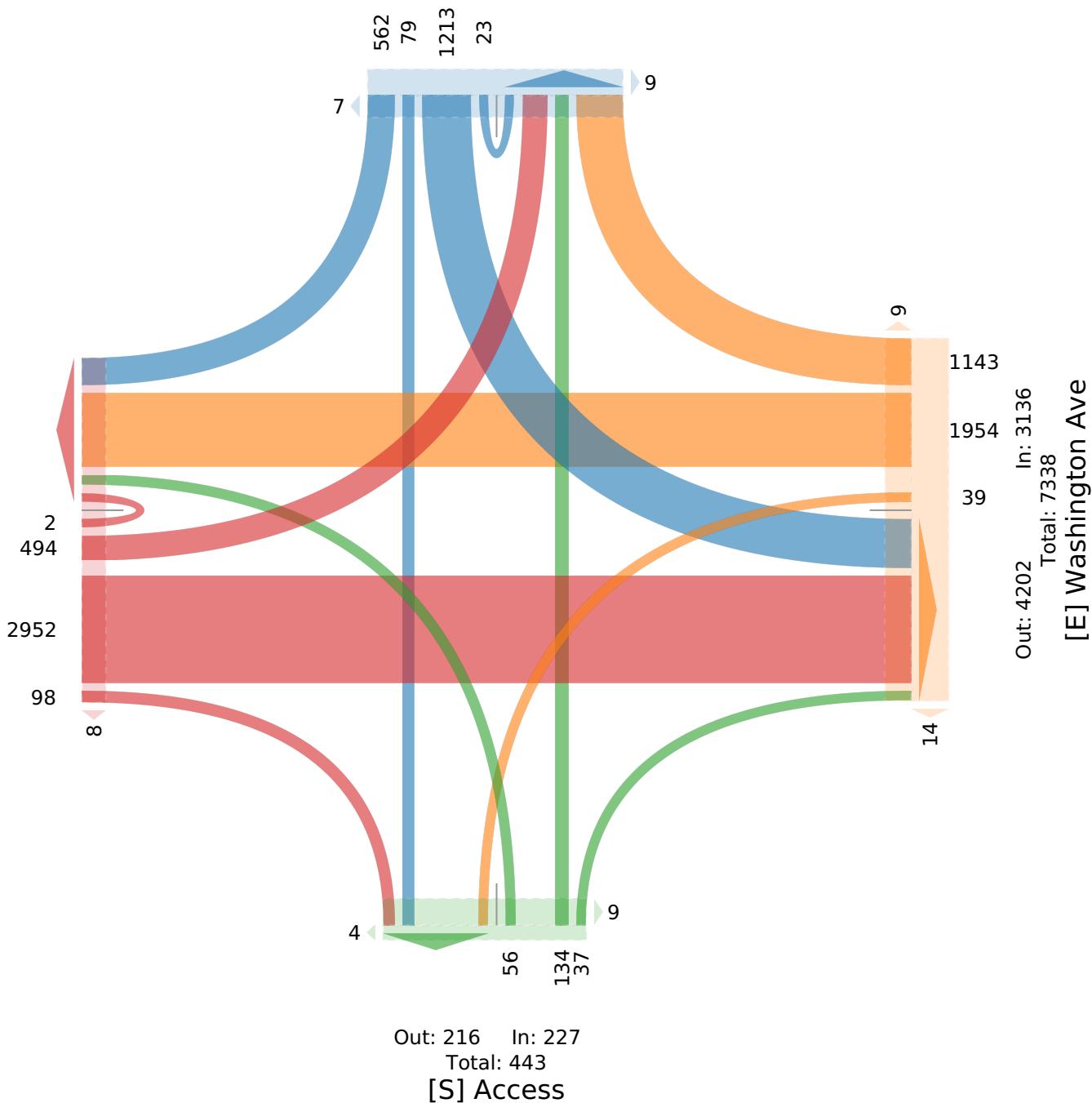
[N] T C Jester Blvd

Total: 3671

In: 1877

Out: 1794

[W] Washington Ave
Total: 6120
In: 3546 Out: 2574



Washington Avenue & T C Jester Boulevard - TMC

Wed Nov 1, 2023

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

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

All Movements

ID: 1125844, Location: 29.770657, -95.417563



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

Leg Direction	T C Jester Blvd Southbound						Washington Ave Westbound				Access Northbound				Washington Ave Eastbound										
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:30AM	17	0	83	0	100	0	22	78	0	0	100	0	1	1	1	0	3	0	6	132	20	0	158	0	361
7:45AM	38	5	91	0	134	0	31	94	0	0	125	0	2	1	1	0	4	0	2	164	12	0	178	0	441
8:00AM	21	1	85	0	107	0	34	68	0	0	102	0	0	4	2	0	6	0	5	135	12	0	152	0	367
8:15AM	23	1	66	0	90	1	41	83	0	0	124	1	1	1	3	0	5	1	3	149	16	0	168	0	387
Total	99	7	325	0	431	1	128	323	0	0	451	1	4	7	7	0	18	1	16	580	60	0	656	0	1556
% Approach	23.0%	1.6%	75.4%	0%	-	-	28.4%	71.6%	0%	0%	-	-	22.2%	38.9%	38.9%	0%	-	-	2.4%	88.4%	9.1%	0%	-	-	-
% Total	6.4%	0.4%	20.9%	0%	27.7%	-	8.2%	20.8%	0%	0%	29.0%	-	0.3%	0.4%	0.4%	0%	1.2%	-	1.0%	37.3%	3.9%	0%	42.2%	-	-
PHF	0.651	0.350	0.893	-	0.804	-	0.780	0.859	-	-	0.902	-	0.500	0.438	0.583	-	0.750	-	0.667	0.884	0.776	-	0.920	-	0.882
Lights	94	7	322	0	423	-	126	316	0	0	442	-	4	6	7	0	17	-	16	565	58	0	639	-	1521
% Lights	94.9%	100%	99.1%	0%	98.1%	-	98.4%	97.8%	0%	0%	98.0%	-	100%	85.7%	100%	0%	94.4%	-	100%	97.4%	96.7%	0%	97.4%	-	97.8%
Single-Unit Trucks	4	0	1	0	5	-	1	1	0	0	2	-	0	1	0	0	1	-	0	5	1	0	6	-	14
% Single-Unit Trucks	4.0%	0%	0.3%	0%	1.2%	-	0.8%	0.3%	0%	0%	0.4%	-	0%	14.3%	0%	0%	5.6%	-	0%	0.9%	1.7%	0%	0.9%	-	0.9%
Articulated Trucks	1	0	2	0	3	-	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	4
% Articulated Trucks	1.0%	0%	0.6%	0%	0.7%	-	0%	0.3%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.3%
Buses	0	0	0	0	0	-	1	5	0	0	6	-	0	0	0	0	0	-	0	10	0	0	10	-	16
% Buses	0%	0%	0%	0%	0%	-	0.8%	1.5%	0%	0%	1.3%	-	0%	0%	0%	0%	0%	-	0%	1.7%	0%	0%	1.5%	-	1.0%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	1	-	1
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	1.7%	0%	0.2%	-	0.1%
Pedestrians	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-	

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

Washington Avenue & T C Jester Boulevard - TMC

Wed Nov 1, 2023

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

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

All Movements

ID: 1125844, Location: 29.770657, -95.417563

**GHA GEWALT HAMILTON
ASSOCIATES, INC.**

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

[N] T C Jester Blvd

Total: 626

In: 431 Out: 195

99

7

325

[W] Washington Ave

Total: 1085

In: 656 Out: 429

580

16

128

323

Out: 909 In: 451

Total: 1360

[E] Washington Ave

Out: 23 In: 18

Total: 41

[S] Access

7

7

4

1

Washington Avenue & T C Jester Boulevard - TMC

Wed Nov 1, 2023

PM Peak (5:15 PM - 6:15 PM) - Overall Peak Hour

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

All Movements

ID: 1125844, Location: 29.770657, -95.417563



Leg Direction	T C Jester Blvd Southbound						Washington Ave Westbound						Access Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 5:15PM	32	5	74	2	113	0	72	130	1	0	203	0	1	5	3	0	9	0	7	160	34	0	201	1	526
5:30PM	26	9	41	1	77	0	102	134	7	0	243	0	2	15	6	0	23	0	9	197	38	0	244	0	587
5:45PM	30	5	62	6	103	3	98	149	3	0	250	4	0	10	4	0	14	2	7	175	36	0	218	0	585
6:00PM	38	7	43	2	90	0	81	124	6	0	211	2	3	15	6	0	24	0	7	171	43	1	222	0	547
Total	126	26	220	11	383	3	353	537	17	0	907	6	6	45	19	0	70	2	30	703	151	1	885	1	2245
% Approach	32.9%	6.8%	57.4%	2.9%	-	-	38.9%	59.2%	1.9%	0%	-	-	8.6%	64.3%	27.1%	0%	-	-	3.4%	79.4%	17.1%	0.1%	-	-	-
% Total	5.6%	1.2%	9.8%	0.5%	17.1%	-	15.7%	23.9%	0.8%	0%	40.4%	-	0.3%	2.0%	0.8%	0%	3.1%	-	1.3%	31.3%	6.7%	0%	39.4%	-	-
PHF	0.829	0.857	0.743	0.458	0.843	-	0.865	0.905	0.571	-	0.912	-	0.500	0.750	0.792	-	-0.729	-	0.833	0.892	0.872	0.250	0.909	-	0.959
Lights	125	24	220	11	380	-	352	529	16	0	897	-	6	45	19	0	70	-	30	694	150	1	875	-	2222
% Lights	99.2%	92.3%	100%	100%	99.2%	-	99.7%	98.5%	94.1%	0%	98.9%	-	100%	100%	100%	0%	100%	-	100%	98.7%	99.3%	100%	98.9%	-	99.0%
Single-Unit Trucks	1	0	0	0	1	-	1	1	0	0	2	-	0	0	0	0	0	-	0	3	0	0	3	-	6
% Single-Unit Trucks	0.8%	0%	0%	0%	0.3%	-	0.3%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0.4%	0%	0%	0.3%	-	0.3%
Articulated Trucks	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses	0	0	0	0	0	-	0	5	0	0	5	-	0	0	0	0	0	-	0	6	0	0	6	-	11
% Buses	0%	0%	0%	0%	0%	-	0%	0.9%	0%	0%	0.6%	-	0%	0%	0%	0%	0%	-	0%	0.9%	0%	0%	0.7%	-	0.5%
Bicycles on Road	0	2	0	0	2	-	0	1	1	0	2	-	0	0	0	0	0	-	0	0	1	0	1	-	5
% Bicycles on Road	0%	7.7%	0%	0%	0.5%	-	0%	0.2%	5.9%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0.7%	0%	0.1%	-	0.2%
Pedestrians	-	-	-	-	-	3	-	-	-	-	6	-	-	-	-	-	2	-	-	-	-	-	-	1	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	0%	

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

Washington Avenue & T C Jester Boulevard - TMC

Wed Nov 1, 2023

PM Peak (5:15 PM - 6:15 PM) - Overall Peak Hour

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

All Movements

ID: 1125844, Location: 29.770657, -95.417563

**GHA GEWALT HAMILTON
ASSOCIATES, INC.**

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

[N] T C Jester Blvd

Total: 943

In: 383

Out: 560

126
26
220
11

[W] Washington Ave
Total: 1568
In: 885 Out: 683

151

30

1

703

2

1

[E] Washington Ave
Total: 1836
In: 907
Out: 929

353

537

17

5

Out: 73 In: 70

Total: 143

[S] Access

Washington Avenue & Westcott Street - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125855, Location: 29.77106, -95.423515



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

Leg Direction	Westcott St Southbound						Washington Ave Westbound						Westcott St Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:00AM	61	947	408	0	1416	11	247	117	95	0	459	2	36	425	45	0	506	4	67	92	83	0	242	3	2623
8:00AM	31	1101	459	0	1591	3	256	44	91	0	391	0	48	462	28	0	538	5	26	13	33	0	72	0	2592
4:00PM	25	909	525	1	1460	0	272	62	103	0	437	0	60	762	36	1	859	6	35	42	75	0	152	0	2908
5:00PM	37	959	598	0	1594	6	333	103	116	1	553	0	54	800	83	0	937	22	25	115	65	0	205	0	3289
6:00PM	41	960	548	0	1549	17	255	71	89	0	415	0	82	569	75	0	726	8	40	85	72	0	197	0	2887
Total	195	4876	2538	1	7610	37	1363	397	494	1	2255	2	280	3018	267	1	3566	45	193	347	328	0	868	3	14299
% Approach	2.6%	64.1%	33.4%	0%	-	-	60.4%	17.6%	21.9%	0%	-	-	7.9%	84.6%	7.5%	0%	-	-	22.2%	40.0%	37.8%	0%	-	-	-
% Total	1.4%	34.1%	17.7%	0%	53.2%	-	9.5%	2.8%	3.5%	0%	15.8%	-	2.0%	21.1%	1.9%	0%	24.9%	-	1.3%	2.4%	2.3%	0%	6.1%	-	-
Lights	193	4818	2489	0	7500	-	1328	390	488	0	2206	-	275	2990	266	0	3531	-	192	343	325	0	860	-	14097
% Lights	99.0%	98.8%	98.1%	0%	98.6%	-	97.4%	98.2%	98.8%	0%	97.8%	-	98.2%	99.1%	99.6%	0%	99.0%	-	99.5%	98.8%	99.1%	0%	99.1%	-	98.6%
Single-Unit Trucks	2	50	19	1	72	-	5	1	5	0	11	-	4	17	1	1	23	-	0	0	2	0	2	-	108
% Single-Unit Trucks	1.0%	1.0%	0.7%	100%	0.9%	-	0.4%	0.3%	1.0%	0%	0.5%	-	1.4%	0.6%	0.4%	100%	0.6%	-	0%	0%	0.6%	0%	0.2%	-	0.8%
Articulated Trucks	0	2	1	0	3	-	5	0	1	0	6	-	0	1	0	0	1	-	0	0	0	0	0	-	10
% Articulated Trucks	0%	0%	0%	0%	0%	-	0.4%	0%	0.2%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Buses	0	6	29	0	35	-	25	3	0	1	29	-	0	5	0	0	5	-	0	3	1	0	4	-	73
% Buses	0%	0.1%	1.1%	0%	0.5%	-	1.8%	0.8%	0%	100%	1.3%	-	0%	0.2%	0%	0%	0.1%	-	0%	0.9%	0.3%	0%	0.5%	-	0.5%
Bicycles on Road	0	0	0	0	0	-	0	3	0	0	3	-	1	5	0	0	6	-	1	1	0	0	2	-	11
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0.8%	0%	0%	0.1%	-	0.4%	0.2%	0%	0%	0.2%	-	0.5%	0.3%	0%	0%	0.2%	-	0.1%
Pedestrians	-	-	-	-	-	35	-	-	-	-	-	2	-	-	-	-	-	42	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	94.6%	-	-	-	-	-	100%	-	-	-	-	-	93.3%	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	5.4%	-	-	-	-	-	0%	-	-	-	-	-	6.7%	-	-	-	-	-	0%	

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

Washington Avenue & Westcott Street - TMC

Wed Nov 1, 2023

Full Length (7 AM-9 AM, 4 PM-7 PM)

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

All Movements

ID: 1125855, Location: 29.77106, -95.423515

**GHA GEWALT HAMILTON
ASSOCIATES, INC.**

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

[N] Westcott St

Total: 12320

In: 7610

Out: 4710

[W] Washington Ave

Total: 1727

In: 868

Out: 859

328

347

193

1 2

195
19

4876

2538
1

18

1363
397
494
1

Out: 3166

In: 2255

Total: 5421

[E] Washington Ave

Out: 5564

In: 3566

Total: 9130

[S] Westcott St

17

267

3018

280

Washington Avenue & Westcott Street - TMC

Wed Nov 1, 2023

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

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

All Movements

ID: 1125855, Location: 29.77106, -95.423515



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

Leg Direction	Westcott St Southbound						Washington Ave Westbound						Westcott St Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 7:15AM	22	211	103	0	336	3	62	45	32	0	139	2	9	105	12	0	126	0	12	29	32	0	73	2	674
7:30AM	12	264	114	0	390	2	63	28	19	0	110	0	13	119	19	0	151	3	22	25	32	0	79	1	730
7:45AM	14	272	110	0	396	6	84	25	25	0	134	0	8	149	6	0	163	0	15	19	10	0	44	0	737
8:00AM	12	297	106	0	415	0	70	8	26	0	104	0	11	125	10	0	146	2	12	2	10	0	24	0	689
Total	60	1044	433	0	1537	11	279	106	102	0	487	2	41	498	47	0	586	5	61	75	84	0	220	3	2830
% Approach	3.9%	67.9%	28.2%	0%	-	-	57.3%	21.8%	20.9%	0%	-	-	7.0%	85.0%	8.0%	0%	-	-	27.7%	34.1%	38.2%	0%	-	-	-
% Total	2.1%	36.9%	15.3%	0%	54.3%	-	9.9%	3.7%	3.6%	0%	17.2%	-	1.4%	17.6%	1.7%	0%	20.7%	-	2.2%	2.7%	3.0%	0%	7.8%	-	-
PHF	0.682	0.879	0.950	-	0.926	-	0.830	0.589	0.797	-	0.876	-	0.833	0.836	0.618	-	0.897	-	0.693	0.647	0.656	-	0.696	-	0.960
Lights	60	1025	423	0	1508	-	272	106	101	0	479	-	39	497	47	0	583	-	61	73	84	0	218	-	2788
% Lights	100%	98.2%	97.7%	0%	98.1%	-	97.5%	100%	99.0%	0%	98.4%	-	95.1%	99.8%	100%	0%	99.5%	-	100%	97.3%	100%	0%	99.1%	-	98.5%
Single-Unit Trucks	0	18	5	0	23	-	1	0	1	0	2	-	1	1	0	0	2	-	0	0	0	0	0	-	27
% Single-Unit Trucks	0%	1.7%	1.2%	0%	1.5%	-	0.4%	0%	1.0%	0%	0.4%	-	2.4%	0.2%	0%	0%	0.3%	-	0%	0%	0%	0%	0%	-	1.0%
Articulated Trucks	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Articulated Trucks	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses	0	0	5	0	5	-	6	0	0	0	6	-	0	0	0	0	0	-	0	2	0	0	2	-	13
% Buses	0%	0%	1.2%	0%	0.3%	-	2.2%	0%	0%	0%	1.2%	-	0%	0%	0%	0%	0%	-	0%	2.7%	0%	0%	0.9%	-	0.5%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	1	0	0	0	1	-	0	0	0	0	0	-	1
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	2.4%	0%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	11	-	-	-	-	-	2	-	-	-	-	-	5	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	

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

Washington Avenue & Westcott Street - TMC

Wed Nov 1, 2023

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

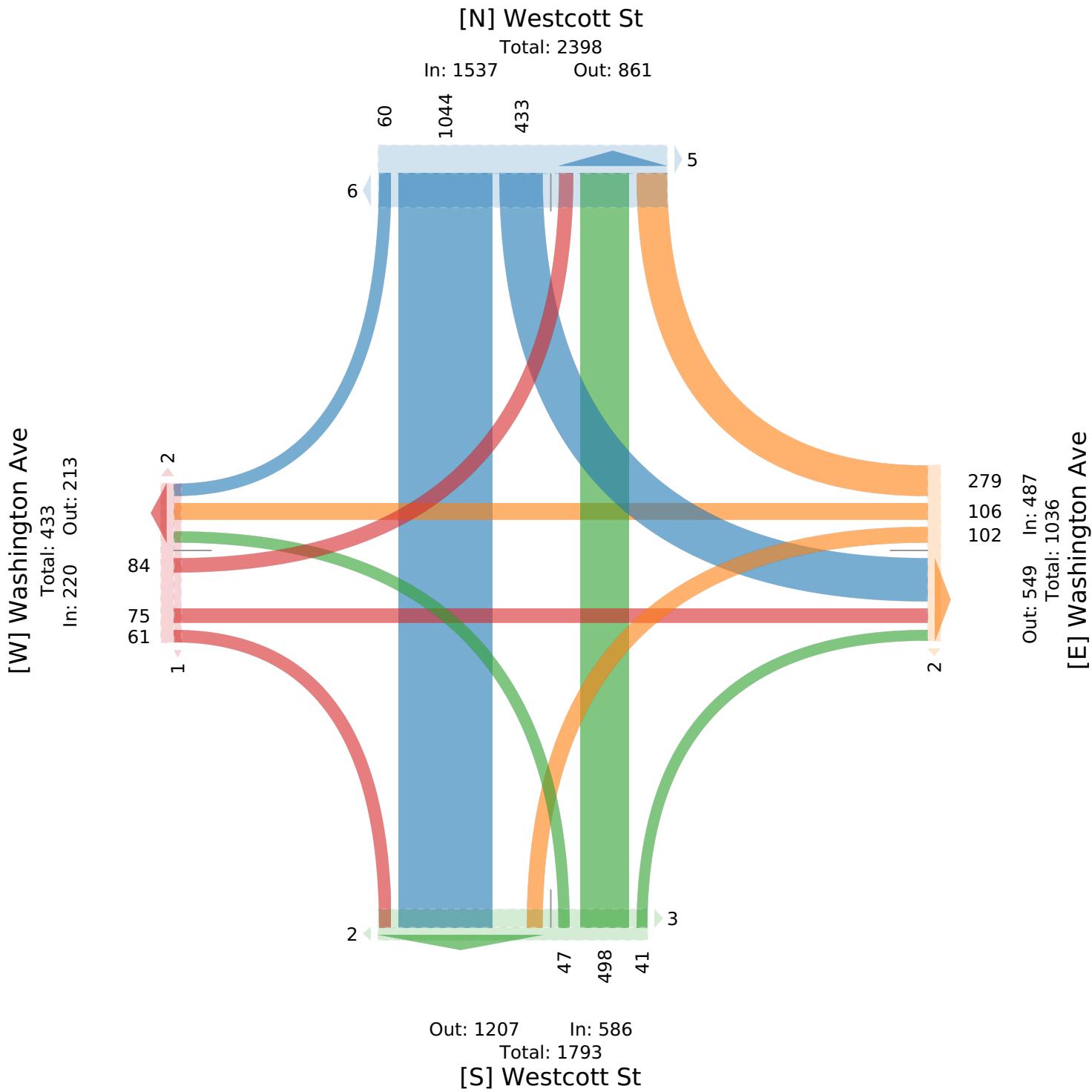
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 1125855, Location: 29.77106, -95.423515

GEWALT HAMILTON ASSOCIATES, INC.

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



Washington Avenue & Westcott Street - TMC

Wed Nov 1, 2023

PM Peak (5:15 PM - 6:15 PM) - Overall Peak Hour

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

All Movements

ID: 1125855, Location: 29.77106, -95.423515



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

Leg Direction	Westcott St Southbound						Washington Ave Westbound						Westcott St Northbound						Washington Ave Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-11-01 5:15PM	7	247	146	0	400	0	80	37	27	0	144	0	17	209	15	0	241	5	5	31	15	0	51	0	836
5:30PM	12	246	172	0	430	0	90	28	27	0	145	0	9	196	18	0	223	6	7	24	16	0	47	0	845
5:45PM	8	245	133	0	386	3	95	22	35	1	153	0	16	178	22	0	216	6	4	43	10	0	57	0	812
6:00PM	10	278	134	0	422	5	77	24	17	0	118	0	22	179	14	0	215	1	14	21	20	0	55	0	810
Total	37	1016	585	0	1638	8	342	111	106	1	560	0	64	762	69	0	895	18	30	119	61	0	210	0	3303
% Approach	2.3%	62.0%	35.7%	0%	-	-	61.1%	19.8%	18.9%	0.2%	-	-	7.2%	85.1%	7.7%	0%	-	-	14.3%	56.7%	29.0%	0%	-	-	-
% Total	1.1%	30.8%	17.7%	0%	49.6%	-	10.4%	3.4%	3.2%	0%	17.0%	-	1.9%	23.1%	2.1%	0%	27.1%	-	0.9%	3.6%	1.8%	0%	6.4%	-	-
PHF	0.771	0.914	0.850	-	0.952	-	0.900	0.750	0.757	0.250	0.915	-	0.727	0.911	0.784	-	0.928	-	0.536	0.692	0.763	-	0.921	-	0.977
Lights	37	1012	579	0	1628	-	334	110	106	0	550	-	64	760	69	0	893	-	30	119	61	0	210	-	3281
% Lights	100%	99.6%	99.0%	0%	99.4%	-	97.7%	99.1%	100%	0%	98.2%	-	100%	99.7%	100%	0%	99.8%	-	100%	100%	100%	0%	100%	-	99.3%
Single-Unit Trucks	0	2	1	0	3	-	2	0	0	0	2	-	0	1	0	0	1	-	0	0	0	0	0	-	6
% Single-Unit Trucks	0%	0.2%	0.2%	0%	0.2%	-	0.6%	0%	0%	0%	0.4%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0.2%
Articulated Trucks	0	1	0	0	1	-	1	0	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	2
% Articulated Trucks	0%	0.1%	0%	0%	0.1%	-	0.3%	0%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Buses	0	1	5	0	6	-	5	1	0	1	7	-	0	1	0	0	1	-	0	0	0	0	0	-	14
% Buses	0%	0.1%	0.9%	0%	0.4%	-	1.5%	0.9%	0%	100%	1.3%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0.4%
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	-	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	16	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	75.0%	-	-	-	-	-	-	-	-	-	-	-	88.9%	-	-	-	-	-	-	
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	25.0%	-	-	-	-	-	-	-	-	-	-	-	11.1%	-	-	-	-	-	-	

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

Washington Avenue & Westcott Street - TMC

Wed Nov 1, 2023

PM Peak (5:15 PM - 6:15 PM) - Overall Peak Hour

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

All Movements

ID: 1125855, Location: 29.77106, -95.423515

**GHA GEWALT HAMILTON
ASSOCIATES, INC.**

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

[N] Westcott St

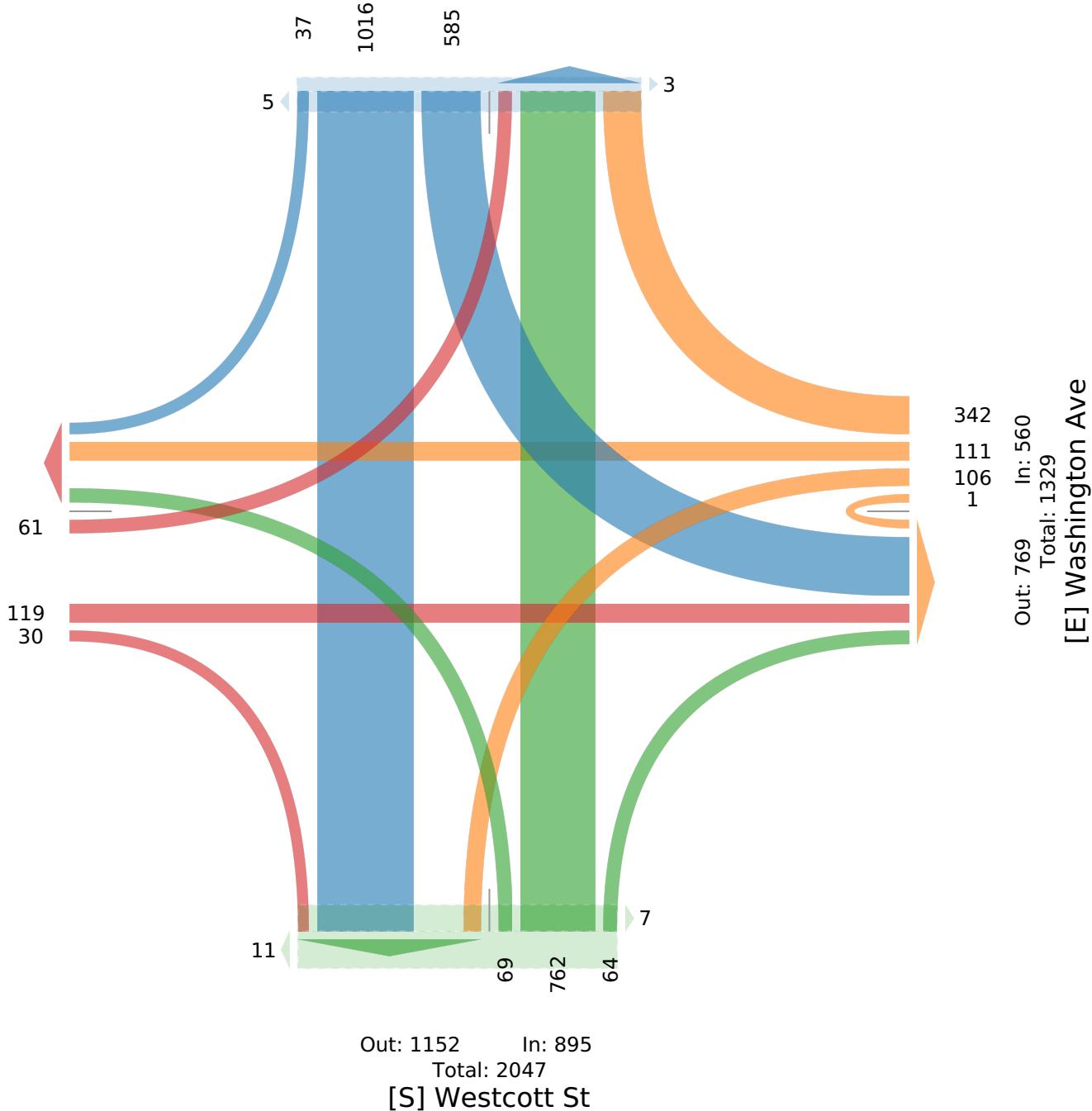
Total: 2803

In: 1638

Out: 1165

[W] Washington Ave

Total: 427
In: 210 Out: 217



CITIZENS' TRANSPORTATION COALITION WASHINGTON AVENUE WALK AUDIT & SIDEWALK IMPROVEMENT REPORT
EXECUTIVE SUMMARY

The City of Houston has a Vision Zero Action Plan, a Complete Streets Plan, and a Master Bicycle Plan. What's missing is the Sidewalk Plan.

One of the goals of the City of Houston Vision Zero Action Plan, approved in December 2020, identifies the framework for a sidewalk plan, including the development of a "user-friendly Pedestrian Access Route Audit Tool to enable the public and City to collect uniform, useful sidewalk information."

This action plan attempts to jump start this process with the development of a prototype walk audit tool, based on the AARP Walk Audit Toolkit & Worksheets (April 2022).

The action plan lays out the automated tool kit environment, which is based on the use of cellular enabled smart phones/tablets and Google Workspace applications, including Google Cloud, Google Survey Forms, Google Photos, Google Sheets, and Google My Maps.

A pilot walk audit project was selected, with Houston Texas's Washington Avenue as the target street. This 4.5-mile section runs from IH-10 all the way to downtown (Bagby Street). This street contains restaurants, coffee shops, convenience stores, a major supermarket, bars, smoke shops, and more.

The sidewalks, bus stops, crosswalks, traffic signals, and pathways were analyzed during the months of July – August, with a team of 80+ volunteers and the support of neighborhood coalitions, civic clubs, and city officials.

Over 900 geo-tagged photos of sidewalks, bus stops, crosswalks, traffic signals, and pathways were captured by smart phones and loaded into 290 Google Survey Forms, which were then exported to a spreadsheet and also geographically mapped to "Google My Maps" along with the documented findings associated with each photo.

The information is ready for sharing and further review by the City of Houston Transportation Planners. Future plans include replicating this process for walk audits across the rest of the city.

We discovered, after ten walk audits, 122 blocks (61 + on each side of the street), lots of sweat, and over 960 photos:

- We found that Sidewalk Widths, Curb Cuts & ADA Compliance - Varied Block by Block
- Crosswalk Striping Needs Repainting - the entire length of Washington Avenue
- Bus Stops Need Crosswalks and Connectivity – at the intersections and at midblock stops.
- Most Bus Stops do not have shelters for weather protection, and we know METRO is actively addressing this.
- **14 blocks, or 11% of the audit area had GREAT Sidewalks** that were very pedestrian friendly for all users – with shade/trees, buffers between road and sidewalk - the sidewalk was in good condition with even surfaces and no obstructions. Notably, sidewalks with at least 4' buffers serve as a safety feature – keeping cars further apart from pedestrians.
- **48 blocks or 39% had ACCEPTABLE Sidewalks**, where the area is mostly pedestrian-friendly and safe and the sidewalk is in good condition MOST of the block. These sidewalks were safe, but not appealing.
- **38 blocks, or 31% had MIXED Sidewalks**. They were somewhat pedestrian-friendly and safe with sidewalks along some of the block. And sometimes, what made the sidewalk appealing became an obstruction. Examples included trees or utility poles in the middle of the walk path. A person using a wheelchair may not be able to continue along this block.
- **Finally, 23 blocks, or 19% had POOR Sidewalks**. These were absolutely not pedestrian-friendly or safe. They either had no sidewalk or sidewalk with major obstructions, uneven pavement, or in disrepair. These sidewalks would not be possible to navigate if you were using a wheelchair or had other mobility limitations.

Half of our sidewalks need some sort of repair. Many have obstructions or uneven surfaces.

Many intersections had no crosswalk, and many that have crosswalks are very difficult to see for both drivers and pedestrians.

Only 15% of intersections have a clearly visible crosswalk. In one instance, we came across a poorly striped elementary school crosswalk that thankfully also has a school crossing guard before and after school to slow down traffic.

To that effect we discovered that Most intersections need high visibility crosswalks, including a major intersection at a newly constructed Grocery Store at the intersection of Washington and Heights, which also includes several apartment complexes. This area is very difficult to cross safely as a pedestrian.

Our preliminary recommendations include the following:

- Restripe Crosswalks – Make All Crosswalks High Visibility
- Install Crosswalks at All Bus Stops
- Install Bus Shelters (With Benches & Shade)
- Repair/Widen Mixed/Poor Sidewalk Areas to 5' – Minimum width according to our city code.
 - Fix Cracks – to eliminate tripping.
 - Remove Debris – to eliminate tripping and enhance appeal.
 - Initiate “Adopt A Sidewalk” Program – where civic clubs can maintain certain blocks.
 - Get Commercial Property Owners to Repair Their Sections of the Public Realm
 - Remove Obstructions (Poles, Hydrants, Tree Roots, Etc.) – to meet ADA requirements.

We found this project to be a success for the following reasons:

- We were able to convert a cumbersome, difficult to use in practicality, paper-based tool - to an automated tool that now simply requires a cell phone with a camera and location services enabled.
- We were able to upload the photos and a comprehensive evaluation of each location onto Google’s Cloud-based spreadsheet and google maps, enabling anyone to easily click on a location and view the full evaluation of that location with photos.
- We were able to put together a comprehensive, well detailed evaluation with supported recommendations to present to the City of Houston’s Transportation Planner and their Traffic Analysis Team.
- We developed a cadre of volunteers who now have training and experience in conducting walk audits.
- We developed a walk audit methodology that can be replicated nationally.

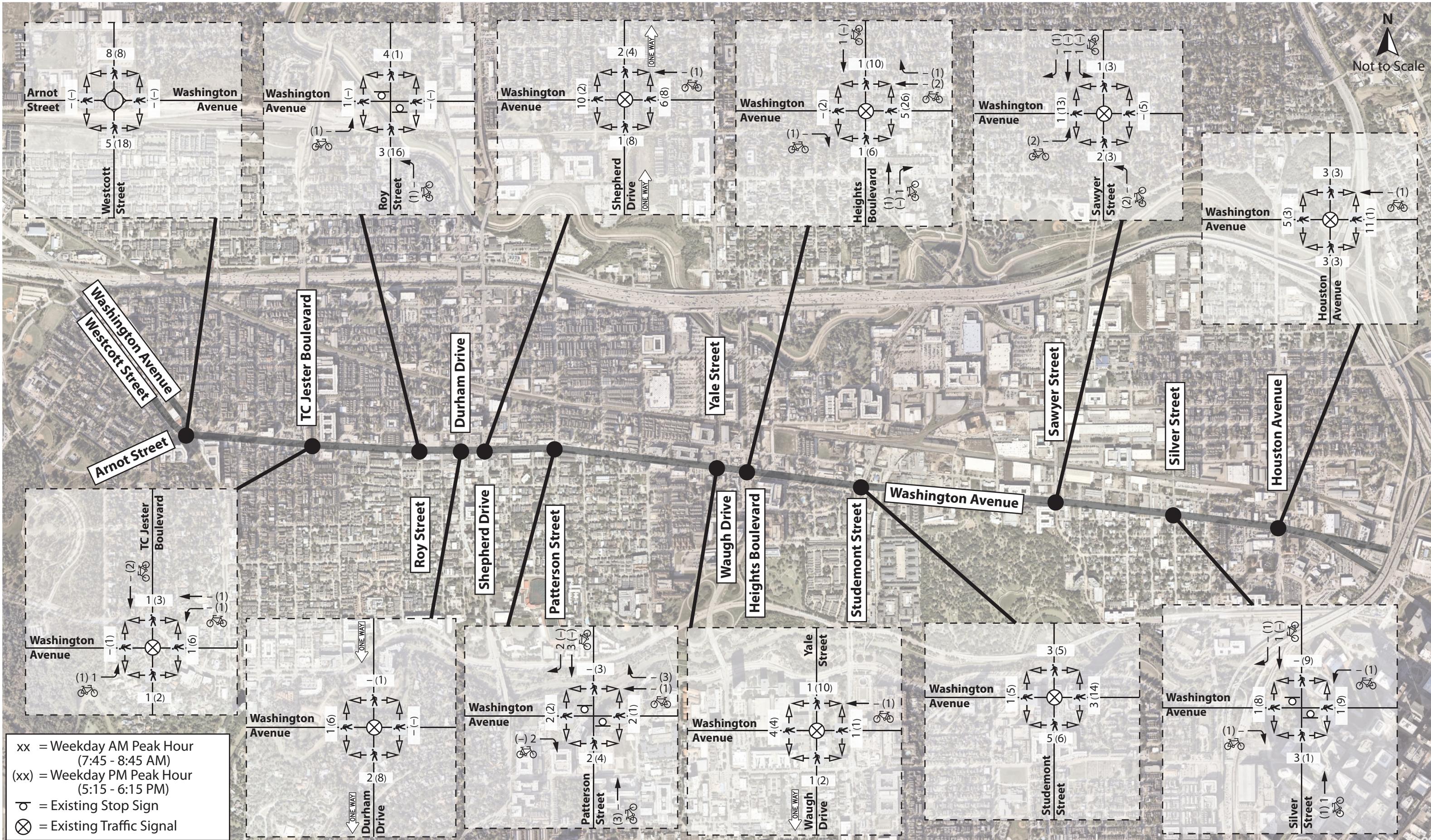
The following links to our tools, training webinar, survey form, photos, videos, and current products are below:

- [AARP Walk Audit Toolkit \(April 2022\)](#)
- [AARP Walk Audit Worksheets \(April 2022\)](#)
- [Washington Avenue Walk Audit Training Webinar](#)
- [Washington Avenue Walk Audit Signup Link](#)
- [Washington Avenue Walk Audit Survey Form - Gmail Account Enabled Phones/Tablets](#)
- [Washington Avenue Walk Audit Survey Form - Non Gmail Account Phones/Tablets](#)
- [Washington Avenue Walk Audit Photos & Video Clips: 1 July – 26 August 2023](#)
- [Washington Avenue Walk Audit Spreadsheet – November 1 Update](#)
- [Washington Avenue Walk Audit Photos and Findings on Google My Maps – Nov 1 Update](#)

The complete [Washington Avenue Walk Audit & Sidewalk Improvement Report](#) can be found at this link.

The details, progress, and analysis of this action plan follow.

//Signed//
DEXTER R. HANDY, Lt Colonel, United States Air Force Retired
Chair Citizens' Transportation Coalition
Chair Greater Houston Coalition for Complete Streets
Chair Rice Military Civic Club Transportation Committee
Vice President Super Neighborhood 22





Existing (2023) Conditions Level of Service Analysis
Signalized Intersections

Intersection & Approach	Weekday AM Peak Hour					Weekday PM Peak Hour				
	Lane Group	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	Lane Group	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & TC Jester Boulevard / CVS Access										
Eastbound	L	0.12	34.9	C	71	L	0.80	79.9	E	232
	TR	0.40	19.5	B	238	TR	0.44	19.0	B	268
Westbound	L	0.01	32.0	C	2	L	0.18	77.1	E	25
	TR	0.76	23.5	C	237	TR	0.68	5.8	A	52
Northbound	LTR	0.11	39.6	D	37	LTR	0.51	65.1	E	104
Southbound	L	0.56	50.6	D	214	L	0.39	45.5	D	158
	LT	0.55	49.8	D	214	LT	0.38	45.1	D	160
	R	0.28	2.9	A	11	R	0.31	8.3	A	50
	Intersection	26.7	C			Intersection	22.1	C		
Washington Avenue & Durham Drive										
Eastbound	TR	0.85	42.9	D	153	TR	0.90	95.3	F	376
Westbound	L	0.41	50.9	D	85	L	0.50	45.9	D	54
	T	0.38	35.2	D	215	T	0.72	39.4	D	280
Southbound	LT	0.77	21.3	C	589	LT	0.59	19.2	B	382
	R	0.06	2.5	A	15	R	0.12	3.5	A	28
	Intersection	27.5	C			Intersection	42.5	D		
Washington Avenue & Shepherd Drive										
Eastbound	L	0.05	7.9	A	7	L	0.34	34.7	C	58
	T	0.39	10.7	B	101	T	0.67	84.0	F	366
Westbound	TR	0.31	51.2	D	160	TR	0.84	32.5	C	239
Northbound	L	0.27	24.3	C	146	L	0.44	15.9	B	249
	TR	0.50	26.4	C	245	TR	0.79	21.8	C	530
	Intersection	25.2	C			Intersection	34.2	C		
Washington Avenue & Waugh Drive / Yale Street										
Eastbound	L	0.27	9.3	A	39	L	0.42	8.5	A	33
	TR	0.45	9.4	A	88	TR	0.39	4.5	A	55
Westbound	T	0.33	29.8	C	184	T	0.48	32.1	C	280
	R	0.17	14.8	B	82	R	0.47	10.7	B	116
Southbound	LTR	0.90	40.0	D	530	LTR	0.69	40.2	D	285
	Intersection	29.8	C			Intersection	23.4	C		
Washington Avenue & Heights Boulevard										
Eastbound	T	0.43	29.9	C	144	T	0.77	44.4	D	288
	R	0.13	0.3	A	0	R	0.20	2.7	A	18
Westbound	L	0.56	49.8	D	126	L	0.76	94.0	F	127
	TR	0.24	29.2	C	195	TR	0.59	13.3	B	136
Northbound	L	1.03	142.4	F	238	L	1.12	110.6	F	547
	T	0.45	39.3	D	192	T	0.66	32.0	C	374
	R	0.23	4.7	A	33	R	0.34	3.9	A	52
Southbound	L	0.54	63.8	E	120	L	0.94	115.1	F	232
	T	0.60	39.6	D	296	T	0.49	46.4	D	177
	R	0.16	1.8	A	12	R	0.19	0.9	A	0
	Intersection	38.4	D			Intersection	43.1	D		
Washington Avenue & Studemont Street										
Eastbound	L	0.38	29.1	C	63	L	0.81	46.7	D	133
	TR	0.55	34.5	C	99	TR	0.80	43.7	D	296
Westbound	L	0.52	55.5	E	162	L	0.81	75.0	E	186
	TR	0.58	61.8	E	197	TR	0.91	79.3	E	367
Northbound	L	0.42	56.1	E	108	L	0.56	54.9	D	186
	TR	0.46	24.8	C	249	TR	0.74	33.4	C	452
Southbound	L	0.78	77.6	E	218	L	0.85	85.7	F	257
	T	0.77	32.3	C	542	T	0.79	39.0	D	461
	R	0.13	2.3	A	21	R	0.18	4.4	A	34
	Intersection	37.0	D			Intersection	47.9	D		
Washington Avenue & Sawyer Street										
Eastbound	L	0.16	11.9	B	58	L	0.55	23.1	C	137
	TR	0.45	13.9	B	220	TR	0.48	15.3	B	331
Westbound	L	0.02	23.2	C	9	L	0.09	25.4	C	23
	TR	0.21	24.4	C	142	TR	0.36	27.1	C	222
Northbound	L	0.07	19.2	B	29	L	0.29	26.8	C	89
	TR	0.07	17.2	B	44	TR	0.26	23.9	C	146
Southbound	L	0.32	22.6	C	148	L	0.33	26.4	C	135
	TR	0.46	22.5	C	256	TR	0.50	22.9	C	247
	Intersection	18.8	B			Intersection	21.9	C		

Existing (2023) Conditions Level of Service Analysis
Signalized Intersections

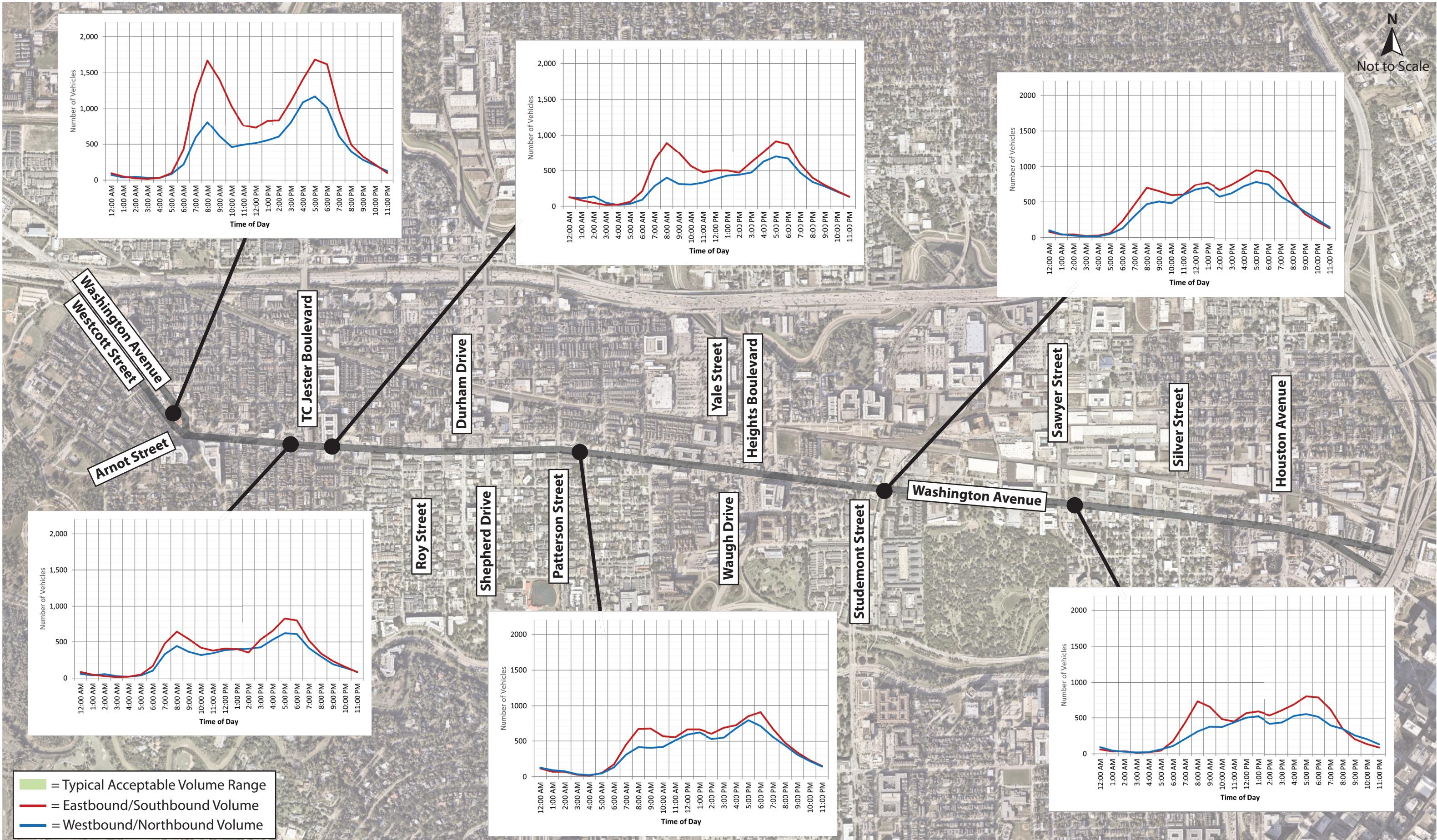
Intersection & Approach	Weekday AM Peak Hour					Weekday PM Peak Hour				
	Lane Group	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	Lane Group	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Houston Avenue										
Eastbound	L	0.51	78.6	E	90	L	0.77	89.4	F	289
	TR	0.61	45.2	D	233	TR	0.49	49.9	D	233
Westbound	L	0.56	65.3	E	124	L	0.56	61.8	E	134
	TR	0.15	21.6	C	59	TR	0.41	24.1	C	122
Northbound	L	0.82	97.2	F	185	L	0.93	99.9	F	293
	T	0.24	32.7	C	117	T	0.80	43.1	D	410
	R	0.26	4.6	A	37	R	0.20	5.0	A	35
Southbound	L	0.71	65.9	E	186	L	0.79	92.8	F	172
	TR	0.83	40.7	D	465	TR	0.67	40.3	D	296
	Intersection		43.5	D	Intersection		48.9	D		

Notes: L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service.

Existing (2023) Conditions Level of Service Analysis
Unsignalized Intersections

Intersection & Approach	Weekday AM Peak Hour					Weekday PM Peak Hour				
	Lane Group	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	Lane Group	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Arnot Street / Westcott Street										
Eastbound	LTR	0.36	20.6	C	50	LTR	0.67	34.2	D	100
Westbound	LTR	0.29	8.4	A	25	LTR	0.46	13.8	B	50
	R	0.30	7.9	A	25	R	0.47	12.7	B	50
Northbound	LT	0.38	9.2	A	50	LT	0.66	18.8	C	125
	TR	0.39	8.8	A	50	TR	0.67	17.7	C	125
Southbound	LT	0.71	13.8	B	150	LT	0.73	15.3	C	175
	TR	0.80	18.0	C	225	TR	0.82	20.7	C	250
	Intersection		13.4	B		Intersection		18.4	C	
Washington Avenue & Roy Street										
Eastbound (Left)	L	0.02	8.3	A	3	L	0.06	10.2	B	5
Westbound (Left)	L	0.01	9.8	A	0	L	0.02	10.0	B	0
Northbound	LTR	0.15	25.1	D	13	LTR	0.64	103.2	F	75
Southbound	LTR	0.26	21.5	C	25	LTR	0.50	62.5	F	57
Washington Avenue & Patterson Street										
Eastbound (Left)	L	0.05	8.4	A	3	L	0.09	9.8	A	8
Westbound (Left)	L	0.01	8.9	A	0	L	0.02	9.5	A	3
Northbound	LTR	0.10	18.5	C	8	LTR	0.12	26.6	D	10
Southbound	LT	0.50	39.4	E	63	LT	0.63	92.0	F	75
	R	0.09	10.2	B	8	R	0.09	11.7	B	8
Washington Avenue & Silver Street										
Eastbound (Left)	L	0.02	7.8	A	3	L	0.07	8.9	A	5
Westbound (Left)	L	0.01	9.0	A	0	L	0.01	9.5	A	0
Northbound	LTR	0.08	16.3	C	8	LTR	0.38	46.8	E	40
Southbound	LTR	0.31	17.9	C	33	LTR	0.35	26.4	D	38

Notes: L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service.

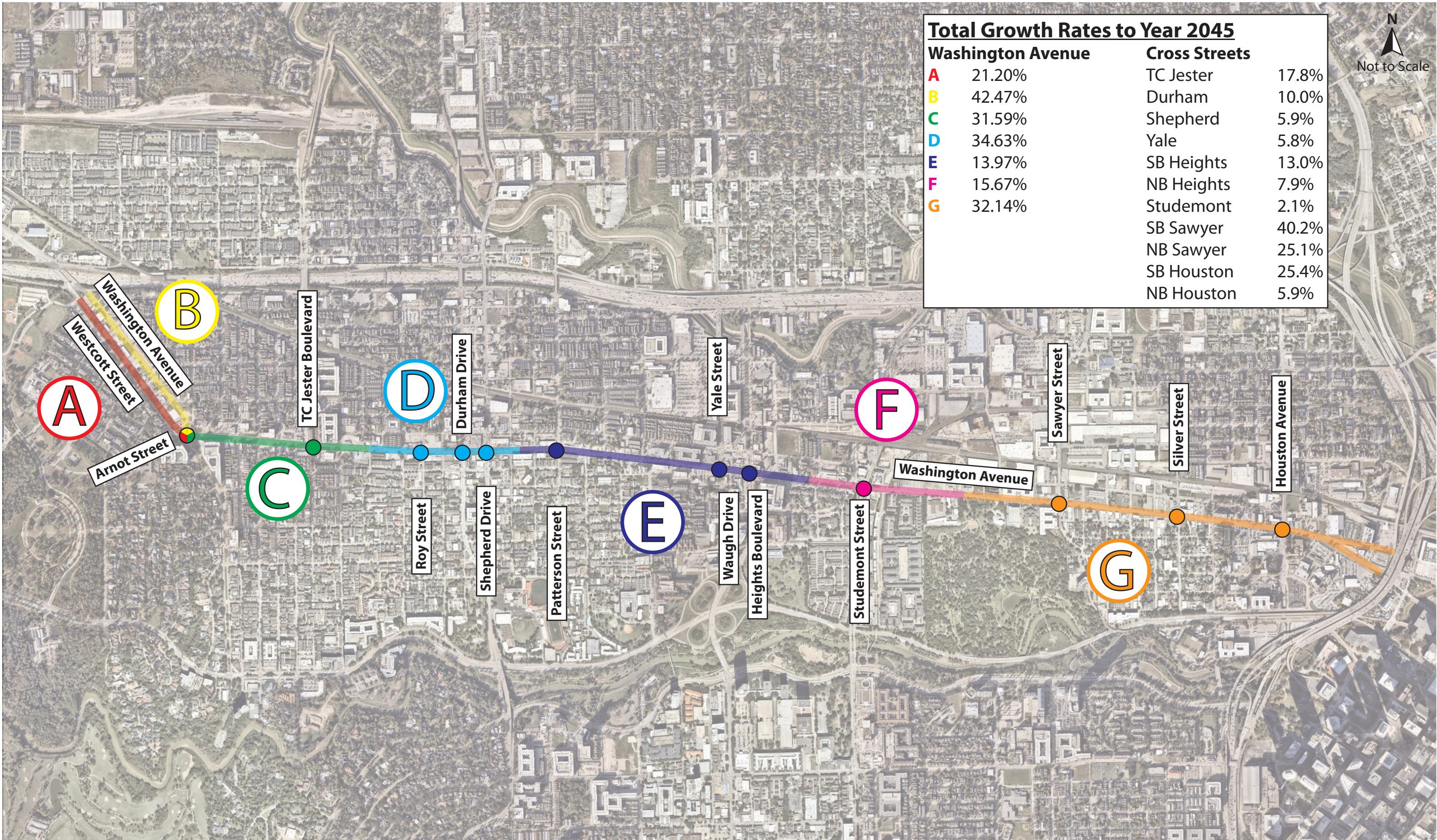


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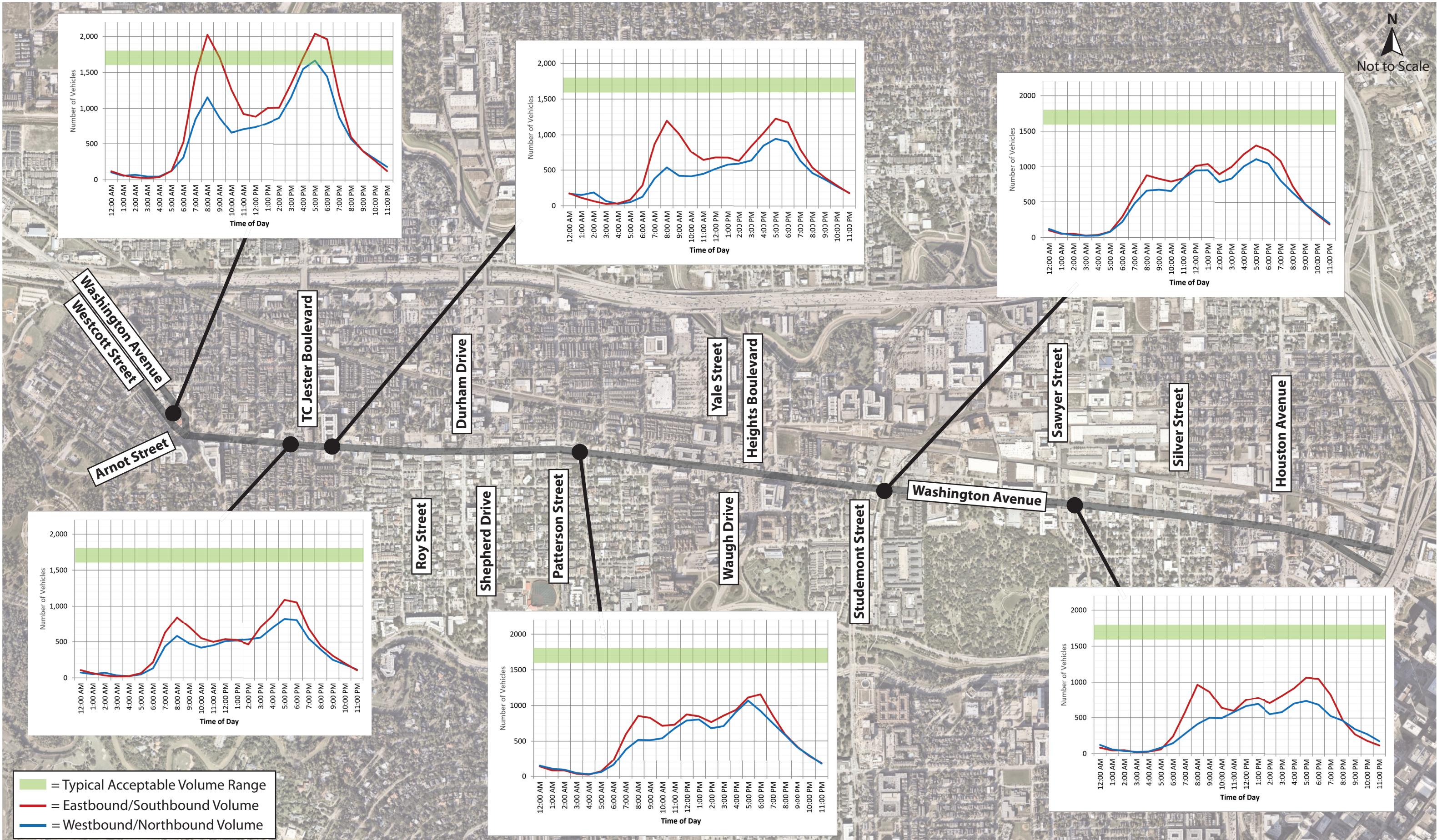
Figure 1

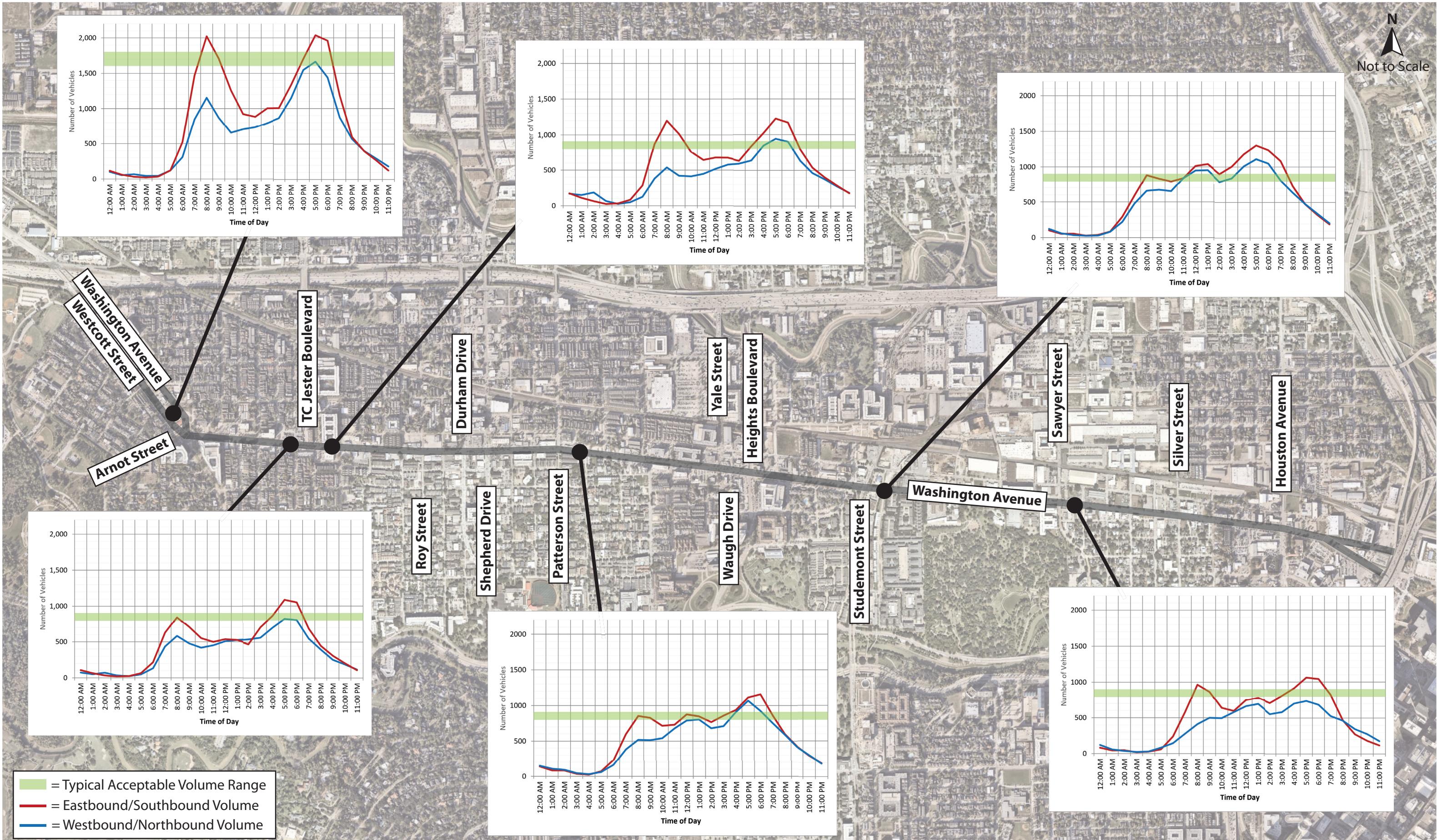
Existing (Year 2023) Hourly Traffic Volumes













MEMORANDUM

DATE: August 21, 2025
FROM: Kathleen Murphy, PE and Sara Disney Haufe, PE, PTOE
SUBJECT: Washington Avenue Corridor Traffic Analysis

In support of the Washington Avenue Corridor Study, TYLin performed traffic analyses to help inform the development of alternatives and the selection of a preferred alternative for the study corridor. Washington Avenue is part of the City of Houston's "High Injury Network," and so multimodal safety is a top priority of the study, along with the development of multimodal transportation options, reduced congestion, improved air quality, and enhanced corridor aesthetics and community quality of life. Accordingly, these traffic analyses were presented to the Steering Committee and at community meetings as one of many considerations in the eventual selection of a Community-Preferred Alternative. As the planning process for the future of the Washington Avenue Corridor proceeds, these analyses provide a basis for understanding the traffic impacts of the alternatives considered. Traffic analyses were performed for existing (Year 2023) conditions, a Future Baseline (Year 2045) scenario, and three Future Alternative (Year 2045) scenarios. Seven alternatives, lettered A through G, were presented at community meetings in March 2025. TYLin created three traffic analysis models for the improved corridor, which provide a reasonable approximation of five of the alternatives, as briefly described below:

- **Model 1** maintains two vehicular lanes in each direction on Washington Avenue and represents the "Baseline Alternative", which was shown as Alternative B at the community meetings in March 2025. Model 1 is also a reasonable, slightly conservative approximation of Alternative A.
- **Model 2** removes the outside vehicular lanes in each direction on Washington Avenue, leaving a single general travel lane in each direction. This scenario models Alternative C as it was shown at the community meetings in March 2025, which converts the outside vehicular lanes into dedicated bus lanes. It also represents a reasonable approximation of Alternative D, which converts the outside vehicular lanes into additional sidewalk space.
- **Model 3** reduces Washington Avenue to a single lane of travel in each direction and assumes raised, sidewalk-level bike lanes in both directions. This scenario models Alternative E as it was shown at the community meetings in March 2025.

Alternatives F and G, which both incorporate the addition of light rail to the Washington Avenue corridor, were unmodeled for the purposes of this study due to limitations on Synchro software to adequately model the complex operations that occur when light rail infrastructure is provided on street.

Regardless of the selected alternative, TYLin identified a number of intersection treatments that could be implemented throughout the corridor and serve to increase pedestrian and vehicle safety as well as some that could improve vehicular operations. These recommended treatments are listed below:

- Shift green space from medians to the edges to provide more people space and reduce crash exposure for all roadway users
- Remove channelized turn lanes and slip lanes to slow turning speeds and reduce points of conflict between vehicles and pedestrians

- Remove extra receiving lanes to create more people space on the corners and shorten crossing distances for pedestrians
- Add dual left-turn lanes to increase capacity for heavy left-turning volumes where they exist
- Implement signal phasing and timing modifications to optimize intersection traffic operations
- Signalize the intersection of Washington Avenue and Patterson Street and consider signalization at additional intersections throughout the corridor as the project advances to improve intersection vehicular operations and create more safe crossing locations for pedestrians, cyclists, and drivers

With the implementation of the above-listed modifications, the traffic analyses for the Model 1 found that Washington Avenue would be projected to continue to operate similar to existing conditions from a vehicular standpoint. With the removal of a vehicular lane in each direction of Washington Avenue, the analyses for Model 2 showed increasing delays and queues throughout the corridor, with the projected delay at many intersection approaches exceeding typical standards. Model 3 exhibited further increased delays and queues compared to Model 2, primarily because right-turning vehicles at high-volume intersections would be severely constrained by short protected-only right-turn phases, which are necessitated by the sidewalk-level bicycle lanes. Diversion of traffic volumes to nearby parallel routes, such as the Katy Freeway or Memorial Drive, would likely be necessary under both Model 2 and Model 3 conditions in order to maintain acceptable traffic operations during peak hours. These analyses are described in detail in this memorandum.

Existing Conditions

Physical Conditions

The Washington Avenue Corridor has two distinct sections within the study area. The western section, which begins immediately south of the interchange with the Katy Freeway (I-10) and continues to the Washington on Westcott (WoW) roundabout, is a pair of one-way roadways separated by privately-owned parcels that are approximately 100 to 150 feet wide. In this section, Washington Avenue is generally a four-lane northbound roadway and Westcott Street is generally a three-lane southbound roadway. Both roadways are classified as Principal Arterials by the Texas Department of Transportation (TxDOT) and have posted speed limits of 35 MPH. Westcott Street narrows from three lanes to two approximately 200 feet north of its entrance to the roundabout. Similarly, Washington Avenue widens from a two-lane section exiting the roundabout to its standard four-lane configuration approximately 200 feet north of the roundabout.

The eastern section of the corridor runs from the WoW roundabout to Washington Avenue's eastern terminus immediately west of the Gulf Freeway (I-45). In the eastern section, Washington Avenue generally provides two travel lanes in each direction (eastbound and westbound) and a flush median that accommodates dedicated left-turn lanes at signalized intersections and a two-way left-turn lane elsewhere. This section of Washington Avenue is classified as a Minor Arterial by TxDOT and has a posted speed limit of 30 MPH. In many locations throughout this section, on-street parking is permitted in the curbside lanes outside of peak hours, which are defined as 6-9AM and 3-6PM on Mondays through Saturdays. There are shared lane bicycle pavement markings in the outside lanes in each direction of Washington Avenue east of Yale Street; however, most have faded and are no longer visible.

There are two additional roadway segments that were included in the Corridor Study but, based on the scope laid out by H-GAC, were not part of the traffic analyses: Center Street from Detering Street to Houston Avenue and Franklin Street from Washington Avenue to Congress Street.

Data Collection and Observations

Turning movement counts were conducted in November 2023 during the morning (7-9AM) and evening (4-7PM) peak periods along the corridor described above. All signalized intersections on the corridor and the WoW roundabout were included in this data collection effort per direction from the Houston-Galveston Area Council (H-GAC), and a few representative unsignalized intersections were also included based on discussions between H-GAC and the consultant team. One of the counted intersections, Washington Avenue and Silver Street, was unsignalized at the time of data collection, but has since been signalized. The intersections where turning movement counts were conducted, referred to herein as the "study intersections," are listed below:

- Washington Avenue at Westcott Street/Arnot Street (roundabout)
- Washington Avenue and TC Jester Boulevard (signalized)
- Washington Avenue and Roy Street (unsignalized)
- Washington Avenue and Durham Drive (signalized)
- Washington Avenue and Shepherd Drive (signalized)
- Washington Avenue and Patterson Street (unsignalized)
- Washington Avenue and Yale Street/Waugh Drive (signalized)
- Washington Avenue and Heights Boulevard (signalized)
- Washington Avenue and Studemont Street (signalized)
- Washington Avenue and Sawyer Street (signalized)
- Washington Avenue and Silver Street (unsignalized at time of data collection)
- Washington Avenue and Houston Avenue (signalized)

Additionally, Average Daily Traffic (ADT) counts were conducted for a week (Tuesday-Monday) in November 2023 at six locations, which were chosen to represent segments along the corridor. These counts were conducted at the following locations:

- Washington Avenue and Westcott Street north of the roundabout
- Washington Avenue west of TC Jester Boulevard
- Washington Avenue east of TC Jester Boulevard
- Washington Avenue east of Patterson Street
- Washington Avenue east of Studemont Street
- Washington Avenue east of Sawyer Street

In addition to collecting the above count data, TYLin visited the study area in December 2023 to observe traffic conditions along the corridor, with a specific focus on the study intersections. These observations included noting estimated queue lengths, lane usage, parking regulations, traffic controls, and other traffic characteristics to inform the detailed traffic analysis described in the next section.

Existing Traffic Volumes

The ADT counts collected along the study corridor were summarized onto line graphs showing hourly volumes throughout each day of the week at each of the six count locations. These graphs showed that volumes during the morning and evening peak periods were generally highest on Tuesday through Thursday. Although Fridays generally exhibited the highest overall traffic volumes, traffic was spread more

evenly throughout the day, with most of the increase in volumes compared to other weekdays occurring around midday and in the late evening hours. Volumes on Saturday, Sunday, and Monday were generally lower than on the other four days of the week. Based on these noted trends, the hourly volumes from Tuesday through Thursday were averaged to represent typical weekday traffic and were then plotted onto the simplified line graphs shown in the attached **Figure 1**. Like most roadways, the volume of vehicular traffic on Washington Avenue is generally highest during the morning and evening rush hours. However, there are some exceptions where lunchtime traffic is higher than the morning peak in one or both directions:

- Westbound traffic east of TC Jester Boulevard
- Eastbound and westbound traffic east of Patterson Street
- Eastbound and westbound traffic east of Studemont Street
- Westbound traffic east of Sawyer Street

Based on the intersection count data, the observed peak hours took place from 7:45-8:45AM in the morning and from 5:15-6:15PM in the evening. Individual intersection movement volumes were rounded to the nearest multiple of five. Since most of the study intersections are widely spaced with several smaller intersections and driveways between them, the volumes were only balanced in a few locations. Between Roy Street and Shepherd Drive (including the intermediate intersection at Durham Drive), volumes were balanced in both directions. Eastbound volumes between Yale Street and Heights Boulevard were balanced; the westbound imbalance between these two intersections was assumed to be caused by vehicles turning left onto Waughford Street and was not balanced. Between Heights Boulevard and Studemont Street, volumes were not balanced, but the eastbound imbalance was noted to likely be caused by right turns onto Sachs Street, which serves as a slip lane onto southbound Studemont Street. The resulting peak hour vehicular volumes along the Washington Avenue Corridor are shown in the attached **Figure 2**. As evidenced by the traffic volumes shown in Figures 1 and 2, the corridor exhibits some unique travel patterns that reflect its role in the area transportation network:

- On the western section of the corridor, traffic volumes are roughly two to three times higher than the remainder of the corridor during the morning peak hour; during the evening peak, volumes are 52 to 119 percent higher than the rest of Washington Avenue.
- Traffic volumes are also significantly higher in the “inbound” direction (toward downtown Houston) at nearly all hours of the day, suggesting that drivers are more likely to shift to Washington Avenue from I-10 when traveling toward downtown. This imbalance in directional traffic is presumably a reflection of northbound left-turn delay from northbound Washington Avenue onto westbound I-10.
- Notably, a substantial portion of drivers use Washington Avenue as a connection from the surrounding neighborhood to the busy north-south arterials that cross the study area. At Houston Avenue, nearly 50 to 60 percent of drivers turn off of Washington Avenue to go north or south during the peak hours; at all other signalized study intersections, between 20 and 40 percent of east-west drivers leave Washington Avenue.

Existing Intersection Capacity Analysis

The operational effectiveness of transportation facilities is measured in terms of Level of Service (LOS). LOS ranges from LOS A to LOS F, with LOS A reflecting the lowest level of vehicular delay and LOS F being the highest. LOS A represents free-flow conditions where motorists experience a high level of comfort and convenience. LOS E represents saturated or at-capacity conditions, and LOS F represents oversaturated conditions. During peak periods, it is not uncommon for heavily traveled urban arterial roadways to operate at LOS E or LOS F due to a combination of heavy demand and physical constraints. An additional

performance measure that is considered when analyzing traffic operations is the volume-to-capacity (v/c) ratio, which compares the volume on a roadway to its maximum capacity. A v/c ratio greater than 1.0 represents oversaturated conditions.

Capacity analysis was performed to analyze the study intersections for the two peak hours using Synchro capacity analysis software. Additional analysis was performed for the Washington on Westcott roundabout using SIDRA traffic analysis software. Detailed existing condition capacity analysis results are shown in the attached **Table 1**.

These results show that traffic operation along the Washington Avenue corridor generally exceeds typical standards, with most of the east-west through movements operating at LOS C or better during the peak hours. Congestion appears in the traffic model on eastbound Washington Avenue at Durham Drive and on westbound Washington Avenue at Studemont Street, matching field observations at these two locations. Near Durham Drive, a primary factor in this congestion is a heavy eastbound right-turn movement for drivers heading to the south, as well as an access management issue for adjacent commercial properties with valet operations that spill out onto the street. At Studemont Street, congestion is due to the very short green light allocated to Washington Avenue, since signal timings favor heavier demand on the north-south street. These circumstances—busy north-south streets and the challenge of access management along the corridor—affect operation and safety for all users on Washington Avenue.

Future Baseline Analysis

Future Traffic Projections

Based on discussions between the Houston-Galveston Area Council (H-GAC) and the City of Houston, TYLin developed future traffic projections for a Year 2045 design horizon. TYLin coordinated with H-GAC, who developed Year 2045 ADT projections for the six segments along Washington Avenue where ADT counts were collected and for the major north-south cross streets (TC Jester Boulevard, Durham Drive, Shepherd Drive, Yale Street, Heights Boulevard, Studemont Street, Sawyer Street, and Houston Avenue). These projections consider a “No-Build” scenario in which the cross-section of Washington Avenue remains as-is with no lane reductions.

Based on these projections, TYLin derived traffic growth rates to Year 2045 for each segment of Washington Avenue and the major cross streets, which ranged from approximately 2% to 42%. The growth rates and the segments to which each corresponds are shown in **Figure 3**.

Respective growth rates were applied to the existing Year 2023 traffic volumes at the study intersections, with one exception: no growth was applied to volumes entering and exiting the parking lot that aligns opposite TC Jester Boulevard. The cross street growth rates were applied only to northbound and southbound through movements, while the Washington Avenue growth rates were applied to all turning movements and to through movements on Washington Avenue. Since the cross street growth rates were generally lower than those for Washington Avenue, this provided a conservative estimate of future traffic. The resulting background growth volumes were rounded to the nearest multiple of five and balanced only in the locations detailed in the “Existing Traffic Volumes” section above.

In addition to the background growth detailed above, site-related traffic from three approved developments near the Washington Avenue Corridor was included in the future traffic projections. TYLin obtained traffic studies from the City of Houston for the following developments: an office, retail and restaurant development at 3800 Washington Avenue; the Portman Residential development at 3520 Center Street; and Phases 2 and 3 of the Buffalo Heights development on the southeast quadrant of Washington Avenue and Heights Boulevard. Site-generated traffic from these studies was added to the

intersections included in each study and carried through to adjacent intersections within the same growth rate segment, as defined on Figure 3. As an example, site-generated traffic volumes from the Portman Residential development that were shown at Washington Avenue and Heights Boulevard in the traffic study were carried through to the intersections of Washington Avenue and Yale Street and Washington Avenue and Patterson Street.

The background growth and development site traffic volumes detailed above were added to the existing Year 2023 peak hour volumes to obtain preliminary Year 2045 traffic projections. An initial analysis was performed at the WoW roundabout in SIDRA using these volumes, which resulted in v/c ratios greater than 1 and queues up to a quarter mile long on Westcott Street during the evening peak hour. Because of these severely constrained conditions, it was assumed based on discussions with H-GAC that a percentage of traffic traveling along Washington Avenue and Westcott Street would divert to avoid traveling through the roundabout during the evening peak hour. Accordingly, southbound through and left-turn volumes as well as northbound through volumes were each reduced by 10 percent during the evening peak hour only, to reduce the v/c ratios at the roundabout to just below 1. The resulting Future Baseline Year 2045 traffic projections are shown in the attached **Figure 4**.

Future Projected ADT Analysis

The growth rates developed using the Year 2045 ADT projections from H-GAC were also applied to the existing (Year 2023) hourly ADT counts. These projected hourly volumes were then summarized onto line graphs, similar to those developed for the existing ADT counts, which are shown in the attached **Figures 5** and **6**. As a point of reference, these line graphs include an indication of the "typical acceptable volume range" for hourly vehicular volume based on the number of travel lanes provided per direction. This range is based on information found in traffic engineering resource materials, including the Federal Highway Administration (FHWA) *Road Diet Informational Guide*, as well as TYLin's professional experience evaluating vehicular capacity per lane at signalized intersections. Figure 5 illustrates that, except for the one-way pair section of Washington Avenue and Westcott Street on the west end of the corridor, the projected Year 2045 hourly volumes are projected to be well below the typical acceptable volume range for a four-lane roadway, even during the peak periods. Figure 6 shows that if Washington Avenue were reduced to one vehicular lane in each direction, traffic diversions may be necessary for between zero and 11 hours of a typical day, depending on the segment and direction of travel. A maximum diversion of 39% during the peak hour and an average diversion of 15% during the over-capacity hours could be necessary to reduce volumes to a level that matches the capacity of the narrower cross-section. Notably, however, Figure 6 also shows that westbound traffic projections at most locations throughout the corridor would be expected to remain under or within the acceptable volume range throughout the entire day, meaning that traffic diversion would only be required in the eastbound direction.

Signal Warrants

With the addition of background growth and expected development traffic, TYLin performed signal warrant analyses under Future Baseline conditions at the corridor's two unsignalized study intersections. TYLin evaluated Year 2045 projected volumes against Manual on Uniform Traffic Control Devices (MUTCD) Warrant 2, Four-Hour Vehicular Volume, which is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. In order to evaluate Warrant 2, existing volumes for the five hours in which turning movements were counted (7:00-9:00AM and 4:00-7:00PM) were grown to Future Baseline levels. The background growth rates detailed in Figure 3 were applied to all of the corresponding intersection's volumes. Then, planned development peak hour traffic was added to each of the analyzed hours: morning peak hour traffic was added to the 7-8AM and 8-9AM volumes and evening peak hour traffic was added to the 4-5PM, 5-6PM, and 6-7PM volumes. This assumption should be considered conservative, as the projected peak hour development traffic would only occur during one hour of each peak period.

As part of signal warrant analyses, the MUTCD stipulates that "the study should consider the effects of the right-turn vehicles from the minor-street approaches. Engineering judgement should be used to determine what, if any, portion of the right-turn traffic is subtracted from the minor-street traffic count when evaluating the count" (MUTCD Section 4C.01, Paragraph 08). Accordingly, minor-leg right turns were reduced between 20 to 60 percent depending on the presence of a dedicated right-turn lane and percentage of right-turns compared to overall approach volume, utilizing a methodology called Pagone's Theorem. Based on the above methodology, projected peak hour volumes were adjusted and compared to signal warrant criteria, as shown below for Patterson Street (**Exhibit 1**) and Roy Street (**Exhibit 2**).

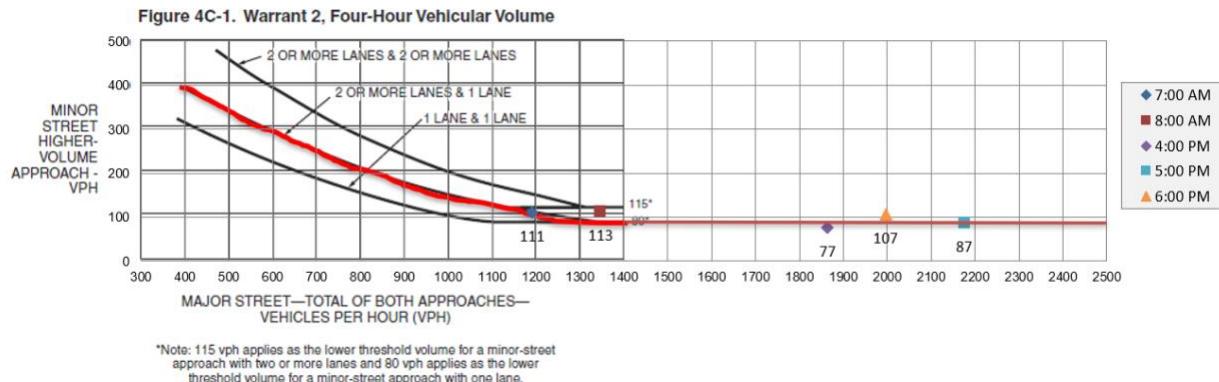


Exhibit 1: Washington Avenue & Patterson Street – Year 2045 Future Baseline Conditions

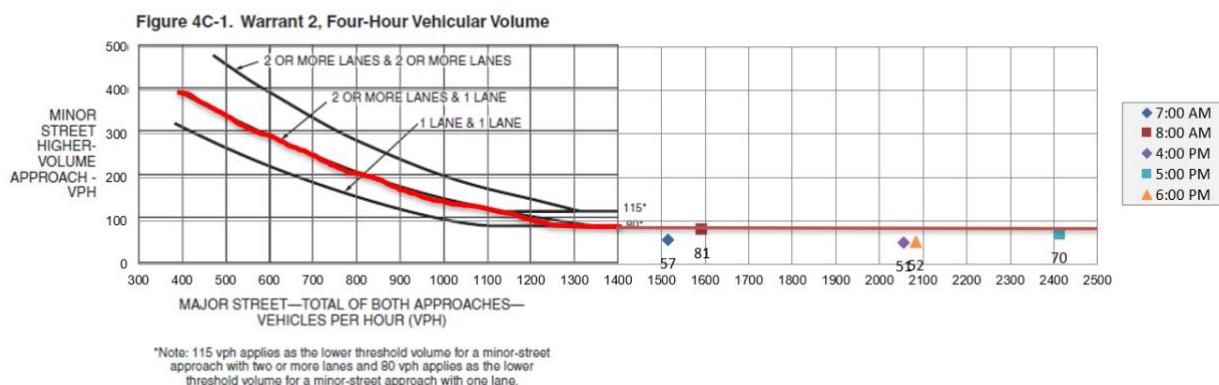


Exhibit 2: Washington Avenue & Roy Street – Year 2045 Future Baseline Conditions

As shown, the intersection of Washington Avenue and Patterson Street is projected to have four hours exceeding warrant criteria. As such, a signal was assumed to be installed at this location under all future conditions. At the intersection of Washington Avenue and Roy Street, Warrant 2 is not projected to be met based on low minor-leg traffic; this intersection was therefore assumed to remain under two-way stop control under future conditions.

In the above charts, the second curve is traced in red to reflect the existing configuration of Washington Avenue, which provides two travel lanes in each direction. It should be noted that under a future condition where Washington Avenue is narrowed to a single lane of travel in each direction, the referenced curve would shift to the bottommost line. Under this condition, the results of these signal warrant analyses would not change.

During the community meetings held as part of the study, community members expressed a preference for installing a diverter in the median of Washington Avenue at its intersection with Patterson instead of

signalizing the intersection. This treatment would serve as a refuge island for pedestrians and cyclists, enabling them to cross Washington Avenue two lanes at a time rather than crossing all five lanes at once, while preventing motor vehicles from making through and left-turn movements. Without these through and left-turn volumes at Patterson, a signal would no longer be warranted according to the analysis described earlier in this section. However, these volumes would likely divert to nearby signalized intersections, most notably Durham and Yale, and, in turn, increase delay and congestion at those intersections. Additionally, while a median diverter would provide a safer crossing than the existing configuration, if this treatment were used in the Baseline Constrained Alternative, there would still be a risk of multiple-threat crashes. These types of crashes occur when a vehicle in one lane stops to allow a person to cross and a vehicle in the other lane traveling in the same direction fails to stop. This treatment was not specifically included in any of the future traffic analyses described herein and can be explored further in future stages of corridor study and design.

Future Baseline Intersection Capacity Analysis

Capacity analysis was performed for the Year 2045 Future Baseline condition using Synchro and SIDRA capacity analysis software packages. For this analysis, signal control was added at two intersections that were analyzed as unsignalized in the existing condition: Washington Avenue and Silver Street, where a signal was installed in early 2024, and Washington Avenue and Patterson Street, based on the above signal warrant analysis. Detailed Future Baseline capacity analysis results are shown in the attached **Table 2**.

These results show that, with the addition of expected background and development-related traffic, traffic operation is expected to show increasing levels of congestion at the locations that were noted in the existing capacity analysis. Additional congestion is projected on westbound Washington Avenue at Shepherd Drive during the evening peak hour, which is attributable to the very short green light for Washington Avenue traffic due to the high northbound volumes on Shepherd Drive. Traffic operation is expected to improve for cross-street movements at the two locations where new signals were included in the Future Baseline analysis: at Patterson Street and at Silver Street.

Future Alternatives Analysis

Intersection Treatments

Based on the Future Baseline capacity analysis and industry best practices for safe and functional intersection design, TYLin identified a number of treatments that should be made to the study intersections regardless of the selected corridor alternatives. Those treatments and the locations where they were included in the Future Alternatives capacity analyses are detailed in this section.

Shift Green Space from Median to Edges

On southbound TC Jester Boulevard and southbound Heights Boulevard, there are wide center medians that increase the size of the intersections, which makes them less efficient and less safe by increasing crossing distances for all modes. Shifting green space from these medians to the edges of the roadway behind the curb could provide several benefits: reduced crash exposure for drivers, pedestrians, and cyclists due to reduced travel distance through the intersection; an opportunity for more efficient signal timing and phasing; and increased people space (for sidewalks, landscaping, bus shelters, outdoor seating for restaurants, or other amenities) without necessarily having to reduce the vehicular space.

Consolidate Excess Channelization

At three of the study intersections, there are channelized turn lanes or slip lanes, which add points of conflict to the pedestrian path, increase the size of intersections, and serve to accelerate driver speed through turns. Closing the slip lanes at Waugh Drive (Waughford Street) and at Studemont Street (Sachs

Street) and removing excess channelization for turn lanes on Heights Boulevard could lead to reduced vehicular turning speeds, reduced crash exposure for all roadway users, and an opportunity to create more direct pedestrian crossing paths. In order to continue allowing access between the existing businesses and residences along Waughford Street and Washington Avenue, the portion of Waugh Drive between Waughford Street and Washington Avenue could be converted to two-way traffic flow, making the intersection of Washington Avenue and Yale Street/Waugh Drive a four-way intersection.

Remove Extra Receiving Lanes

Another condition identified at multiple locations along the corridor that is detrimental to pedestrian safety is the presence of extra receiving lanes on the intersecting streets. As one example, at Washington Avenue and Heights Boulevard, although there are only two southbound through lanes on Heights Boulevard, there are three receiving lanes south of the intersection. Removing these excess receiving lanes at the intersection could lead to reduced crash exposure for all roadway users and increased people/sidewalk space without a reduction in vehicular capacity. These extra receiving lanes currently exist at the following locations: Washington Avenue north of the WoW roundabout, Shepherd Drive, Waugh Drive, Heights Boulevard, Sawyer Street, and Houston Avenue.

Add Dual-Left Turn Lanes

In addition to the safety-focused treatments noted above, a few other treatments were identified specifically to improve vehicular operations. First, dual left-turn lanes are recommended on both directions of Heights Boulevard in order to accommodate the heavy left-turning movements there.

When preliminary concept drawings of the Washington Avenue and Heights Boulevard intersection were presented at the community meetings for this study, some community members expressed a desire to maintain pedestrian refuge islands on Heights, which had been reduced due to the treatments described above. It can be noted that, even with dual left-turn lanes provided on Heights, reallocating the extra space currently taken up by wide grass medians, channelization, and an extra receiving lane could allow the crossing distance to decrease from about 130 feet to under 80 feet on the north leg and from 110 feet to about 80 feet on the south leg. This significant decrease in crossing distance would allow pedestrians to cross the street more quickly and eliminate the need for two-stage crossing by providing sufficient signal time to cross the entire street at once. However, if the community preference is still to provide pedestrian refuge islands at this location, they could likely be included in future design concepts while still maintaining a significantly shorter crossing distance.

Implement Signal Phasing Modifications

Signal phasing modifications are also recommended at two intersections: TC Jester Boulevard and Sawyer Street. At TC Jester Boulevard, the northbound and southbound movements currently operate under split phasing, with each approach having its own separate green phase. This is a function of the asymmetry of the north and south legs that result in overlapping left-turning paths that cannot safely operate at the same time. With the removal of the median creating a more compact intersection, as noted above, it was assumed that split phasing would no longer be necessary at this location and that the northbound and southbound through movements could operate simultaneously, along with permitted left-turn movements. At Sawyer Street, northbound and southbound protected-permitted left-turn phases are recommended to improve traffic operation while allocating the same amount of green time to Sawyer Street.

All of the intersection treatments detailed above were included in the three future alternatives analyses. Several adjustments were made to the Future Baseline volumes based on these intersection treatments recommendations to arrive at the Year 2045 Future Alternatives traffic projections shown in **Figure 7**. These adjustments are listed below:

- Southbound U-turns were removed at TC Jester Boulevard and Washington Avenue because of the recommended removal of the wide median at this location. It was assumed that these existing U-turns would be able to access their intended destination north of Washington Avenue directly with the removal of the median.
- The volume of eastbound right turns at Sachs Street was estimated based on the imbalance in traffic volumes on Washington Avenue between Heights Boulevard and Studemont Street. This right-turning volume was added to the intersection of Washington Avenue and Studemont Street to account for the proposed closure of Sachs Street.
- The volume of westbound left turns at Waughford Street was estimated based on the imbalance in traffic volumes on Washington Avenue between Heights Boulevard and Yale Street/Waugh Drive. This left-turning volume was added to the intersection of Washington Avenue and Yale Street/Waugh Drive to account for the proposed cul-de-sac of Waughford Street at Washington Avenue. To further account for this closure, it was assumed that 10 vehicles would be turning in each direction from Waughford Street (northbound left and northbound right) onto Washington Avenue in each peak hour. These volumes were reassigned to the new northbound leg of Waugh Drive at Washington Avenue.

Future Alternatives

TYLin created three traffic analysis models for the improved corridor, which provide a reasonable approximation of five of the alternatives that were developed and are detailed below. It should be noted that the Year 2045 traffic projections provide a conservative baseline scenario of future traffic demand for Models 2 and 3, since they were developed for a scenario in which Washington Avenue maintains two vehicular lanes in each direction. If the H-GAC travel demand model were modified to assess a scenario in which Washington Avenue provides one vehicular travel lane per direction, the baseline Year 2045 ADTs would be expected to decrease, reflecting traffic diversions to other parallel routes such as the Katy Freeway (I-10) or Memorial Drive in response to the capacity reduction on Washington Avenue.

Model 1

Model 1 was created to assess a future condition that would maintain two vehicular lanes of travel on Washington Avenue. This Model represents Alternative B, which was identified as the "Baseline Alternative" within the Corridor Study, and is also a reasonable, slightly conservative approximation of Alternative A. In accordance with Alternative B, all travel lanes on Washington Avenue (including turn lanes) were assumed to be 10 feet wide. Some minor alterations to existing signal timings were also incorporated based on slightly decreased capacity at intersections caused by the lanes being narrowed in some locations.

Model 2

Model 2 removes the outside vehicular lanes in each direction on Washington Avenue, leaving a single general travel lane in each direction. This scenario models Alternative C, which converts the outside vehicular lanes into dedicated bus lanes. It also represents a reasonable approximation of Alternative D, which converts the outside vehicular lanes into additional sidewalk space. At intersections, right-turning vehicles are also permitted to use the dedicated bus lanes in Alternative C. As such, the model's Washington Avenue geometry was updated to provide a single through lane and a shared bus/right-turn lane at each intersection, plus any existing left-turn lanes. Additional model changes related to these modifications included:

- Through and left-turn lanes on Washington Avenue were assumed to each be 10 feet in width.
- An 11-foot-wide bus lane/right-turn lane was provided in each direction.
- Most near-side bus stops were relocated to be far-side bus stops and, accordingly, the bus

blockages were removed from capacity analyses. The existing near-side bus stop on eastbound Washington Avenue at Waugh Drive was assumed to remain in place for better proximity to adjacent land uses.

- Modifications were made to optimize the signal timing and corridor progression.

Model 3

Model 3 reduces Washington Avenue to a single lane of travel in each direction and assumes raised, sidewalk-level bike lanes in both directions. This scenario models Alternative E. Because the MUTCD requires a separate bicycle signal phase for any bike lane to the right of a vehicular right-turn only lane, Washington Avenue was assumed to provide shared through/right-turn lanes as a default, with dedicated right-turn lanes provided only in instances with high right-turning volumes. Per MUTCD requirements, intersections with dedicated right-turn lanes were assumed to feature protected-only right-turn phasing, dedicated bicycle clearance intervals, and No Right Turn on Red (RTOR) signage. Additional model changes related to these modifications included:

- Through and left-turn lanes on Washington Avenue were assumed to each be 11 feet in width.
- Modifications were made to optimize the signal timing and corridor progression.

Unmodeled Alternatives

Alternatives F and G, which both incorporate the addition of light rail to the Washington Avenue corridor, were unmodeled for the purposes of this study due to limitations on Synchro software to adequately model the complex operations that occur when light rail infrastructure is provided on street.

Future Capacity Analysis

Capacity analysis was performed for the three Models described above using Synchro and SIDRA capacity analysis software packages. Detailed capacity analysis results are shown in the attached **Tables 3, 4, and 5** for Models 1, 2, and 3, respectively.

As shown, after incorporating the recommended intersection treatments, Model 1 is expected to operate with less overall vehicular delay when compared to the Future Baseline condition. During the assessed peak hours, most intersections approaches are projected to meet the typical standard of LOS D or better. Additionally, as was previously shown in Figure 5, the projected Year 2045 hourly volumes on the eastern section of Washington Avenue are projected to be well below the typical acceptable volume range for a four-lane roadway, even during the peak periods. As in the Baseline condition, higher delays are expected at Washington Avenue's intersections with heavily traveled cross streets (e.g., Durham Drive, Heights Boulevard, Studemont Street, Houston Avenue). Similarly, drivers on unsignalized minor streets (such as Roy Street) or at the WoW roundabout would be expected to experience high delays as they do under existing conditions. Queuing on Washington Avenue is generally expected to be accommodated within existing storage space without extending upstream to adjacent intersections.

With the removal of a dedicated travel lane on Washington Avenue, delays are projected to increase in Model 2 relative to Model 1 and Future Baseline conditions. As was previously shown in Figure 6, traffic diversions may be necessary during some hours of a typical day to reduce volumes to acceptable levels, particularly in the eastbound direction. However, Figure 6 also shows that one lane in each direction provides enough capacity for the expected traffic in many of the off-peak hours, especially in the westbound direction. At most signalized intersections with Washington Avenue, projected delay is expected to exceed typical standards (LOS E or LOS F) during peak hours on one or more approaches. With fewer travel lanes provided to accommodate queuing and higher delays, projected queues on Washington Avenue are expected to extend to upstream intersections, particularly in locations with tightly spaced intersections (Durham Drive and Shepherd Drive, Waugh Drive and Heights Boulevard). At

intersections, the flexible bus-only lanes are projected to provide relatively low delay for right-turning vehicles.

Under Model 3, with a single lane of travel in each direction for all vehicles (including buses) and bike signal separation at major intersections, vehicular delays are projected to increase substantially relative to other modeled conditions. As in Model 2, most signalized intersections with Washington Avenue are projected to have multiple approaches operating with delay exceeding typical standards (LOS E or LOS F). Unlike in Model 2, right-turning vehicles at high-volume intersections would be greatly constrained by short protected-only right-turn phases, necessitated by the inclusion of bicycle signal phases. This constrained condition is further exacerbated by the unusually high turning volumes from Washington Avenue onto the busy north-south arterials that cross it that were noted earlier in this memorandum. With the increased right-turn delays and queues, vehicle queuing on Washington Avenue is expected to worsen, leading to compounding queues (queues that take more than one green light to clear) along the length of the corridor.

Conclusion

TYLin performed traffic analyses for the Washington Avenue Corridor Study for Existing (Year 2023), Future Baseline (Year 2045), and three Future Alternative (Year 2045) conditions. The three future traffic analysis models are briefly described below:

- **Model 1** maintains two vehicular lanes in each direction on Washington Avenue and represents the “Baseline Alternative.”
- **Model 2** removes the outside vehicular lanes in each direction on Washington Avenue, leaving a single general travel lane in each direction and dedicated right-turn lanes at intersections.
- **Model 3** reduces Washington Avenue to a single lane of travel in each direction and assumes raised, sidewalk-level bike lanes in both directions, which necessitate the addition of protected-only right-turn phases at several intersections.

Alternatives F and G, which both incorporate the addition of light rail to the Washington Avenue corridor, were unmodeled for the purposes of this study due to limitations on Synchro software to adequately model the complex operations that occur when light rail infrastructure is provided on street.

TYLin identified a number of intersection treatments that could be implemented throughout the corridor and serve to increase pedestrian and vehicle safety as well as some that could improve vehicular operations. These recommended improvements are listed below:

- Shift green space from medians to the edges to provide more people space and reduce crash exposure for all roadway users
- Remove channelized turn lanes and slip lanes to slow turning speeds and reduce points of conflict between vehicles and pedestrians
- Remove extra receiving lanes to create more people space on the corners and shorten crossing distances for pedestrians
- Add dual left-turn lanes to increase capacity for heavy left-turning volumes where they exist
- Implement signal phasing and timing modifications to optimize intersection traffic operations
- Signalize the intersection of Washington Avenue and Patterson Street and consider signalization at additional intersections throughout the corridor as the project advances to improve intersection vehicular operations and create more safe crossing locations for pedestrians, cyclists, and drivers

With the implementation of the above-listed modifications, the traffic analyses for the Model 1 found that Washington Avenue would be projected to continue to operate similar to existing conditions from a vehicular standpoint. With the removal of a vehicular lane in each direction of Washington Avenue, the analyses for Model 2 showed increasing delays and queues throughout the corridor, with the projected delay at many intersection approaches exceeding typical standards. Model 3 exhibited further increased delays and queues compared to Model 2, primarily because right-turning vehicles at high-volume intersections would be severely constrained by short protected-only right-turn phases, which are necessitated by the sidewalk-level bicycle lanes. Diversion of traffic volumes to nearby parallel routes, such as the Katy Freeway or Memorial Drive, would likely be necessary under both Model 2 and Model 3 conditions in order to maintain peak hour traffic operations that meet typical jurisdictional standards.

Table 1. Existing (Year 2023) Levels of Service

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Arnot Street / Westcott Street⁴									
Eastbound	LTR	0.68	52.4	F	100	1.09	124.0	F	300
Westbound	LTR	0.49	14.8	B	75	0.78	35.2	E	175
	R	0.50	13.5	B	75	0.77	30.9	D	175
Northbound	LT	0.64	17.5	C	125	1.00	65.9	F	375
	TR	0.65	16.5	C	125	1.01	63.1	F	400
Southbound	LT	0.93	33.1	D	375	0.90	30.2	D	325
	TR	1.05	61.0	F	600	1.01	52.8	F	500
<i>Intersection</i>			35.3	E			52.7	F	
Washington Avenue & TC Jester Boulevard / CVS Access¹									
Eastbound	L	0.30	53.1	D	82	0.80	79.9	E	232
	TR	0.40	19.5	B	238	0.44	19.0	B	268
Westbound	L	0.01	32.0	C	2	0.18	77.1	E	25
	TR	0.42	13.4	B	227	0.68	5.8	A	52
Northbound	LTR	0.11	39.6	D	37	0.51	65.1	E	104
Southbound	L	0.56	50.6	D	214	0.39	45.5	D	158
	LT	0.55	49.8	D	214	0.38	45.1	D	160
	R	0.28	2.9	A	11	0.31	8.3	A	50
<i>Intersection</i>			24.4	C			22.1	C	
Washington Avenue & Roy Street²									
Eastbound (Left)	L	0.02	8.3	A	3	0.06	10.2	B	5
Westbound (Left)	L	0.01	9.8	A	0	0.02	10.0	B	0
Northbound	LTR	0.16	25.5	D	13	0.68	116.1	F	80
Southbound	LTR	0.26	21.5	C	25	0.51	64.5	F	60
Washington Avenue & Durham Drive¹									
Eastbound	TR	0.85	42.9	D	153	0.90	95.3	F	376
Westbound	L	0.41	50.9	D	85	0.50	45.9	D	54
	T	0.38	35.2	D	215	0.72	39.4	D	280
Southbound	LT	0.77	21.3	C	589	0.59	19.2	B	382
	R	0.06	2.5	A	15	0.12	3.5	A	28
<i>Intersection</i>			27.5	C			42.5	D	

Table 1. Existing (Year 2023) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour			Weekday PM Peak Hour			Queue Length (ft)
		v/c Ratio	Delay (sec)	LOS	v/c Ratio	Delay (sec)	LOS	
Washington Avenue & Shepherd Drive¹								
Eastbound	L	0.05	7.9	A	7	0.34	34.7	C
	T	0.39	10.7	B	101	0.67	84.0	F
Westbound	TR	0.31	51.2	D	160	0.84	32.5	C
Northbound	L	0.27	24.3	C	146	0.44	15.9	B
	TR	0.50	26.4	C	245	0.79	21.8	C
<i>Intersection</i>		25.2	C			34.2	C	
Washington Avenue & Patterson Street²								
Eastbound (Left)	L	0.05	8.4	A	3	0.09	9.8	A
Westbound (Left)	L	0.01	8.9	A	0	0.02	9.5	A
Northbound	LTR	0.10	18.6	C	8	0.12	26.8	D
Southbound	LT	0.51	40.8	E	65	0.65	96.8	F
	R	0.09	10.2	B	8	0.09	11.7	B
Washington Avenue & Waugh Drive / Yale Street¹								
Eastbound	L	0.27	9.3	A	39	0.42	8.5	A
	TR	0.45	9.4	A	88	0.39	4.5	A
Westbound	T	0.33	29.8	C	184	0.48	32.1	C
	R	0.17	14.8	B	82	0.47	10.7	B
Southbound	LTR	0.90	40.0	D	530	0.69	40.2	D
<i>Intersection</i>		29.8	C			23.4	C	
Washington Avenue & Heights Boulevard¹								
Eastbound	T	0.43	29.9	C	144	0.77	44.4	D
	R	0.13	0.3	A	0	0.20	2.7	A
Westbound	L	0.56	49.8	D	126	0.76	94.0	F
	TR	0.24	29.2	C	195	0.59	13.3	B
Northbound	L	1.03	142.4	F	238	1.12	110.6	F
	T	0.45	39.3	D	192	0.66	32.0	C
	R	0.23	4.7	A	33	0.34	3.9	A
Southbound	L	0.54	63.8	E	120	0.94	115.1	F
	T	0.60	39.6	D	296	0.49	46.4	D
	R	0.16	1.8	A	12	0.19	0.9	A
<i>Intersection</i>		38.4	D			43.1	D	

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection²Two-Way Stop-Controlled Intersection³All-Way Stop-Controlled Intersection⁴Roundabout

Table 1. Existing (Year 2023) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Studemont Street¹									
Eastbound	L	0.38	29.1	C	63	0.81	46.7	D	133
	TR	0.55	34.5	C	99	0.80	43.7	D	296
Westbound	L	0.52	55.5	E	162	0.81	75.0	E	186
	TR	0.58	61.8	E	197	0.91	79.3	E	367
Northbound	L	0.42	56.1	E	108	0.56	54.9	D	186
	TR	0.46	24.8	C	249	0.74	33.4	C	452
Southbound	L	0.78	77.6	E	218	0.85	85.7	F	257
	T	0.77	32.3	C	542	0.79	39.0	D	461
	R	0.13	2.3	A	21	0.18	4.4	A	34
<i>Intersection</i>			37.0	D			47.9	D	
Washington Avenue & Sawyer Street¹									
Eastbound	L	0.16	11.9	B	58	0.55	23.1	C	137
	TR	0.45	13.9	B	220	0.48	15.3	B	331
Westbound	L	0.02	23.2	C	9	0.09	25.4	C	23
	TR	0.21	24.4	C	142	0.36	27.1	C	222
Northbound	L	0.07	19.2	B	29	0.29	26.8	C	89
	TR	0.07	17.2	B	44	0.26	23.9	C	146
Southbound	L	0.32	22.6	C	148	0.33	26.4	C	135
	TR	0.46	22.5	C	256	0.50	22.9	C	247
<i>Intersection</i>			18.8	B			21.9	C	
Washington Avenue & Silver Street²									
Eastbound (Left)	L	0.02	7.8	A	3	0.07	8.9	A	5
Westbound (Left)	L	0.01	9.0	A	0	0.01	9.5	A	0
Northbound	LTR	0.08	16.4	C	8	0.39	48.5	E	43
Southbound	LTR	0.31	18.0	C	33	0.36	27.0	D	38

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection²Two-Way Stop-Controlled Intersection³All-Way Stop-Controlled Intersection⁴Roundabout

Table 1. Existing (Year 2023) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Houston Avenue¹									
Eastbound	L	0.51	78.6	E	90	0.77	89.4	F	289
	TR	0.61	45.2	D	233	0.49	49.9	D	233
Westbound	L	0.56	65.3	E	124	0.56	61.8	E	134
	TR	0.15	21.6	C	59	0.41	24.1	C	122
Northbound	L	0.82	97.2	F	185	0.93	99.9	F	293
	T	0.24	32.7	C	117	0.80	43.1	D	410
	R	0.26	4.6	A	37	0.20	5.0	A	35
Southbound	L	0.71	65.9	E	186	0.79	92.8	F	172
	TR	0.83	40.7	D	465	0.67	40.3	D	296
<i>Intersection</i>			43.5	D			48.9	D	

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection

²Two-Way Stop-Controlled Intersection

³All-Way Stop-Controlled Intersection

4 Roundabout

Table 2. Future Baseline (Year 2045) Levels of Service

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Arnot Street / Westcott Street⁴									
Eastbound	LTR	0.68	52.4	F	100	1.09	124.0	F	300
Westbound	LTR	0.49	14.8	B	75	0.78	35.2	E	175
	R	0.50	13.5	B	75	0.77	30.9	D	175
Northbound	LT	0.64	17.5	C	125	1.00	65.9	F	375
	TR	0.65	16.5	C	125	1.01	63.1	F	400
Southbound	LT	0.93	33.1	D	375	0.90	30.2	D	325
	TR	1.05	61.0	F	600	1.01	52.8	F	500
<i>Intersection</i>			35.3	E			52.7	F	
Washington Avenue & TC Jester Boulevard / CVS Access¹									
Eastbound	L	0.20	41.6	D	95	1.04	125.7	F	322
	TR	0.53	21.7	C	332	0.62	27.4	C	349
Westbound	L	0.01	51.0	D	3	0.13	68.9	E	21
	TR	0.79	24.0	C	311	0.90	19.7	B	460
Northbound	LTR	0.11	39.7	D	37	0.52	65.6	E	105
Southbound	L	0.73	59.2	E	293	0.51	48.6	D	200
	LT	0.71	57.1	E	278	0.50	48.1	D	204
<i>Intersection</i>	R	0.37	6.6	A	42	0.38	8.5	A	59
			29.8	C			33.5	C	
Washington Avenue & Roy Street²									
Eastbound (Left)	L	0.03	8.7	A	3	0.11	12.2	B	10
Westbound (Left)	L	0.03	11.3	B	3	0.03	11.7	B	3
Northbound	LTR	0.48	70.0	F	53	Error	Error	F	Error
Southbound	LTR	0.58	53.1	F	78	3.15	1284.4	F	250
Washington Avenue & Durham Drive¹									
Eastbound	TR	1.04	74.6	E	299	1.17	120.2	F	653
Westbound	L	0.54	64.5	E	106	0.56	38.8	D	47
	T	0.43	36.5	D	282	0.82	39.7	D	252
Southbound	LT	0.96	36.8	D	879	0.76	27.1	C	525
	R	0.09	4.9	A	29	0.17	9.8	A	66
<i>Intersection</i>			45.4	D			54.1	D	

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection²Two-Way Stop-Controlled Intersection³All-Way Stop-Controlled Intersection⁴Roundabout

Table 2. Future Baseline (Year 2045) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Shepherd Drive¹									
Eastbound	L	0.08	7.7	A	8	0.57	43.5	D	66
	T	0.53	11.0	B	112	0.90	86.5	F	415
Westbound	TR	0.43	48.3	D	220	1.13	105.1	F	467
Northbound	L	0.36	26.0	C	196	0.59	33.6	C	373
	TR	0.54	27.1	C	268	0.86	24.6	C	616
<i>Intersection</i>			25.2	C			51.3	D	
Washington Avenue & Patterson Street¹									
Eastbound	L	0.10	1.1	A	3	0.21	5.7	A	25
	TR	0.36	2.6	A	185	0.38	7.7	A	186
Westbound	L	0.02	2.5	A	1	0.03	0.9	A	1
	TR	0.28	9.7	A	262	0.43	1.9	A	48
Northbound	LTR	0.11	22.3	C	36	0.12	27.1	C	30
Southbound	LT	0.72	69.4	E	154	0.59	70.1	E	99
	R	0.31	11.7	B	43	0.34	13.3	B	35
<i>Intersection</i>			10.6	B			7.2	A	
Washington Avenue & Waugh Drive / Yale Street¹									
Eastbound	L	0.36	11.7	B	49	0.61	24.6	C	102
	TR	0.61	13.0	B	129	0.49	9.4	A	209
Westbound	T	0.44	30.7	C	229	0.65	66.2	E	339
	R	0.24	13.6	B	102	0.57	11.0	B	84
Southbound	LTR	0.99	54.3	D	671	0.79	44.2	D	337
<i>Intersection</i>			37.5	D			35.3	D	

Table 2. Future Baseline (Year 2045) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Heights Boulevard¹									
Eastbound	T	0.64	32.9	C	266	1.04	85.5	F	462
	R	0.15	1.0	A	3	0.25	4.7	A	20
Westbound	L	0.69	48.8	D	120	0.89	102.4	F	145
	TR	0.36	28.9	C	258	0.90	23.4	C	202
Northbound	L	1.36	245.7	F	322	1.42	230.9	F	873
	T	0.60	43.5	D	239	0.82	37.8	D	500
	R	0.28	6.7	A	46	0.39	6.6	A	88
Southbound	L	1.34	223.3	F	429	1.74	391.4	F	453
	T	0.78	45.1	D	398	0.64	49.9	D	232
	R	0.20	4.0	A	31	0.24	1.5	A	0
<i>Intersection</i>			59.1	E			82.7	F	
Washington Avenue & Studemont Street¹									
Eastbound	L	0.80	66.3	E	137	1.18	110.0	F	163
	TR	0.80	54.9	D	185	1.01	49.6	D	288
Westbound	L	1.07	127.5	F	293	1.26	186.2	F	356
	TR	0.89	76.1	E	326	1.18	143.5	F	539
Northbound	L	0.58	61.9	E	155	0.72	63.4	E	256
	TR	0.52	25.9	C	281	0.85	38.6	D	541
Southbound	L	0.95	104.3	F	300	1.01	117.8	F	324
	T	0.88	39.2	D	587	0.83	41.0	D	492
	R	0.24	6.0	A	58	0.25	6.1	A	55
<i>Intersection</i>			52.1	D			72.2	E	
Washington Avenue & Sawyer Street¹									
Eastbound	L	0.24	12.4	B	60	1.00	71.4	E	197
	TR	0.60	16.4	B	378	0.63	19.0	B	426
Westbound	L	0.03	8.8	A	4	0.17	6.5	A	9
	TR	0.28	12.2	B	59	0.48	7.8	A	62
Northbound	L	0.15	21.1	C	40	0.56	39.0	D	138
	TR	0.08	17.4	B	52	0.33	24.9	C	181
Southbound	L	0.43	24.9	C	202	0.48	30.4	C	185
	TR	0.63	27.4	C	386	0.67	29.5	C	382
<i>Intersection</i>			18.9	B			23.3	C	

Table 2. Future Baseline (Year 2045) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Silver Street¹									
Eastbound	L	0.05	17.9	B	34	0.15	25.3	C	89
	TR	0.38	18.5	B	367	0.45	27.0	C	481
Westbound	L	0.01	26.8	C	7	0.06	26.5	C	13
	TR	0.17	22.6	C	134	0.38	28.6	C	252
Northbound	LTR	0.32	35.8	D	40	0.52	54.9	D	92
Southbound	LTR	0.71	55.7	E	166	0.63	38.1	D	96
<i>Intersection</i>			23.9	C			29.1	C	
Washington Avenue & Houston Avenue¹									
Eastbound	L	0.66	73.6	E	139	1.02	103.9	F	425
	TR	0.82	42.1	D	331	0.68	30.0	C	318
Westbound	L	0.71	74.0	E	171	0.64	62.8	E	166
	TR	0.21	22.9	C	75	0.54	29.7	C	178
Northbound	L	1.10	159.2	F	259	1.23	181.9	F	407
	T	0.28	35.2	D	126	0.85	46.3	D	439
	R	0.35	6.9	A	58	0.25	5.7	A	46
Southbound	L	0.79	68.5	E	238	0.99	132.0	F	234
	TR	1.04	72.5	E	709	0.86	49.0	D	403
<i>Intersection</i>			59.0	E			56.8	E	

Table 3. Model 1 (Year 2045) Levels of Service

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Arnot Street / Westcott Street⁴									
Eastbound	LTR	0.68	52.4	F	100	1.09	124.0	F	300
Westbound	LTR	0.49	14.8	B	75	0.78	35.2	E	175
	R	0.50	13.5	B	75	0.77	30.9	D	175
Northbound	LT	0.64	17.5	C	125	1.00	65.9	F	375
	TR	0.65	16.5	C	125	1.01	63.1	F	400
Southbound	LT	0.93	33.1	D	375	0.90	30.2	D	325
	TR	1.05	61.0	F	600	1.01	52.8	F	500
<i>Intersection</i>			35.3	E			52.7	F	
Washington Avenue & TC Jester Boulevard / CVS Access¹									
Eastbound	L	0.19	19.8	B	66	0.53	29.6	C	182
	TR	0.50	20.5	C	348	0.46	14.9	B	306
Westbound	L	0.00	16.0	B	1	0.05	6.7	A	0
	TR	0.45	9.9	A	85	0.89	25.9	C	564
Northbound	L	0.06	55.0	D	19	0.28	61.4	E	42
	TR	0.20	46.4	D	32	0.42	60.1	E	77
Southbound	L	0.91	58.2	E	436	0.91	72.6	E	291
	TR	0.28	5.4	A	47	0.38	9.3	A	72
<i>Intersection</i>			24.3	C			27.2	C	
Washington Avenue & Roy Street²									
Eastbound (Left)	L	0.03	8.7	A	3	0.11	12.2	B	10
Westbound (Left)	L	0.03	11.3	B	3	0.03	11.7	B	3
Northbound	LTR	0.48	70.0	F	53	Error	Error	F	Error
Southbound	LTR	0.58	53.1	F	78	3.15	1284.4	F	250
Washington Avenue & Durham Drive¹									
Eastbound	TR	0.94	58.5	E	499	0.86	43.6	D	515
Westbound	L	0.57	48.7	D	70	0.63	43.6	D	54
	T	0.40	25.9	C	192	0.69	22.3	C	300
Southbound	LT	1.00	48.3	D	879	0.91	41.0	D	650
	R	0.10	5.1	A	29	0.20	13.4	B	77
<i>Intersection</i>			47.1	D			36.1	D	

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection²Two-Way Stop-Controlled Intersection³All-Way Stop-Controlled Intersection⁴Roundabout

Table 3. Model 1 (Year 2045) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Shepherd Drive¹									
Eastbound	L	0.09	9.1	A	9	0.55	25.7	C	44
	T	0.53	13.1	B	138	0.74	30.2	C	315
Westbound	TR	0.32	11.5	B	91	0.73	17.6	B	140
Northbound	L	0.36	26.0	C	196	0.67	27.4	C	450
	TR	0.54	27.1	C	268	0.98	43.3	D	794
<i>Intersection</i>			19.7	B			34.3	C	
Washington Avenue & Patterson Street¹									
Eastbound	L	0.10	1.2	A	6	0.21	2.7	A	14
	TR	0.36	1.6	A	46	0.38	3.1	A	101
Westbound	L	0.02	2.3	A	1	0.03	1.6	A	1
	TR	0.28	4.9	A	235	0.43	7.6	A	502
Northbound	LTR	0.11	22.3	C	36	0.12	27.1	C	30
Southbound	LT	0.72	69.4	E	154	0.59	70.1	E	99
	R	0.31	11.7	B	43	0.34	13.3	B	35
<i>Intersection</i>			8.4	A			7.7	A	
Washington Avenue & Waugh Drive / Yale Street¹									
Eastbound	L	0.56	41.7	D	110	0.77	56.5	E	194
	TR	0.98	71.3	E	367	0.66	26.7	C	295
Westbound	L	0.88	76.5	E	149	0.46	20.5	C	33
	T	0.58	27.0	C	185	0.77	25.1	C	322
	R	0.30	3.8	A	23	0.75	13.6	B	229
Northbound	L	0.14	58.9	E	28	0.13	58.5	E	26
	TR	0.11	29.2	C	21	0.10	30.3	C	20
Southbound	L	0.25	19.8	B	170	0.35	31.7	C	228
	TR	1.00	51.7	D	985	0.71	37.1	D	446
<i>Intersection</i>			49.9	D			28.6	C	

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection²Two-Way Stop-Controlled Intersection³All-Way Stop-Controlled Intersection⁴Roundabout

Table 3. Model 1 (Year 2045) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Heights Boulevard¹									
Eastbound	T	0.63	27.7	C	301	0.78	53.9	D	388
	R	0.15	1.2	A	4	0.21	7.7	A	36
Westbound	L	0.45	36.4	D	0	0.70	45.1	D	115
	TR	0.40	35.5	D	271	0.82	44.3	D	480
Northbound	L	0.53	57.5	E	104	0.89	65.5	E	326
	T	0.52	39.5	D	238	0.94	52.2	D	585
	R	0.25	6.3	A	46	0.45	14.1	B	151
Southbound	L	0.65	57.6	E	139	0.90	87.5	F	177
	TR	0.91	52.7	D	502	0.70	46.3	D	275
<i>Intersection</i>			40.1	D			49.8	D	
Washington Avenue & Studemont Street¹									
Eastbound	L	0.60	35.6	D	119	0.94	86.0	F	242
	T	0.63	37.5	D	156	0.82	38.2	D	275
	R	0.55	15.9	B	106	0.54	13.9	B	87
Westbound	L	0.75	39.7	D	167	0.98	84.0	F	277
	TR	0.66	30.7	C	269	1.02	64.4	E	462
Northbound	L	0.89	107.4	F	209	0.91	93.8	F	303
	T	0.56	36.3	D	278	0.93	54.0	D	548
	R	0.26	8.3	A	57	0.31	11.4	B	82
Southbound	L	0.79	72.6	E	254	0.95	100.3	F	313
	T	0.97	54.5	D	682	0.96	58.9	E	580
	R	0.26	7.9	A	68	0.29	8.4	A	66
<i>Intersection</i>			41.7	D			55.7	E	

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection²Two-Way Stop-Controlled Intersection³All-Way Stop-Controlled Intersection⁴Roundabout

Table 3. Model 1 (Year 2045) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Sawyer Street¹									
Eastbound	L	0.26	19.0	B	47	0.84	57.1	E	160
	TR	0.62	20.1	C	191	0.65	14.0	B	163
Westbound	L	0.03	29.8	C	12	0.17	32.4	C	46
	TR	0.38	29.1	C	198	0.71	40.1	D	418
Northbound	L	0.14	19.6	B	36	0.64	40.8	D	104
	TR	0.10	24.2	C	62	0.42	34.2	C	213
Southbound	L	0.46	26.3	C	185	0.52	31.3	C	158
	TR	0.71	36.4	D	462	0.85	48.3	D	497
<i>Intersection</i>			26.1	C			32.9	C	
Washington Avenue & Silver Street¹									
Eastbound	L	0.05	6.2	A	13	0.18	9.2	A	58
	TR	0.41	6.2	A	259	0.49	10.5	B	471
Westbound	L	0.01	14.0	B	3	0.06	18.5	B	10
	TR	0.17	10.0	A	58	0.36	18.2	B	225
Northbound	LTR	0.32	35.9	D	40	0.52	54.9	D	92
Southbound	LTR	0.71	55.7	E	166	0.63	38.1	D	96
<i>Intersection</i>			13.2	B			16.3	B	
Washington Avenue & Houston Avenue¹									
Eastbound	L	0.55	56.7	E	112	0.96	76.4	E	406
	TR	0.89	43.5	D	375	0.77	24.2	C	266
Westbound	L	0.92	113.8	F	215	0.78	80.6	F	206
	TR	0.24	26.6	C	83	0.72	39.7	D	202
Northbound	L	0.99	128.3	F	248	0.83	70.1	E	327
	T	0.25	32.8	C	122	0.81	42.4	D	433
	R	0.33	6.3	A	56	0.24	3.6	A	32
Southbound	L	0.79	68.5	E	238	0.77	79.8	E	189
	TR	0.99	59.8	E	684	0.91	55.7	E	440
<i>Intersection</i>			54.0	D			47.1	D	

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection²Two-Way Stop-Controlled Intersection³All-Way Stop-Controlled Intersection⁴Roundabout

Table 4. Model 2 (Year 2045) Levels of Service

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Arnot Street / Westcott Street⁴									
Eastbound	LTR	0.68	52.4	F	100	1.09	124.0	F	300
Westbound	LTR	0.49	14.8	B	75	0.78	35.2	E	175
	R	0.50	13.5	B	75	0.77	30.9	D	175
Northbound	LT	0.64	17.5	C	125	1.00	65.9	F	375
	TR	0.65	16.5	C	125	1.01	63.1	F	400
Southbound	LT	0.93	33.1	D	375	0.90	30.2	D	325
	TR	1.05	61.0	F	600	1.01	52.8	F	500
<i>Intersection</i>		35.3	E			52.7	F		
Washington Avenue & TC Jester Boulevard / CVS Access¹									
Eastbound	L	0.18	19.5	B	66	0.54	29.7	C	182
	T	0.93	44.4	D	1046	0.82	28.9	C	960
	R	0.01	0.0	A	0	0.03	0.1	A	0
Westbound	L	0.01	14.0	B	1	0.08	5.9	A	0
	T	0.56	14.0	B	136	1.00	30.7	C	406
	R	0.25	1.1	A	8	0.54	2.3	A	31
Northbound	L	0.06	55.0	D	19	0.28	61.4	E	42
	TR	0.20	46.5	D	32	0.43	60.2	E	77
	TR	0.91	58.2	E	436	0.91	72.7	E	291
<i>Intersection</i>		33.3	C			28.5	C		
Washington Avenue & Roy Street²									
Eastbound (Left)	L	0.03	8.7	A	3	0.11	12.2	B	10
Westbound (Left)	L	0.03	11.1	B	3	0.03	11.7	B	3
Northbound	LTR	0.52	80.6	F	57	Error	Error	F	Error
Southbound	LTR	0.74	85.1	F	105	4.06	1770.2	F	265

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection²Two-Way Stop-Controlled Intersection³All-Way Stop-Controlled Intersection⁴Roundabout

Table 4. Model 2 (Year 2045) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Durham Drive¹									
Eastbound	T	1.00	103.1	F	569	0.97	98.6	F	808
	R	0.71	34.5	C	250	0.53	21.4	C	185
Westbound	L	0.55	46.0	D	62	0.62	39.8	D	44
	T	0.76	36.5	D	455	1.21	128.2	F	1158
Southbound	LT	1.02	60.6	E	879	1.00	94.7	F	650
	R	0.10	5.1	A	29	0.23	14.0	B	77
<i>Intersection</i>			59.7	E			94.1	F	
Washington Avenue & Shepherd Drive¹									
Eastbound	L	0.09	8.7	A	8	0.88	56.0	E	43
	T	0.99	63.7	E	699	1.38	198.3	F	1065
Westbound	T	0.45	24.9	C	251	1.10	95.4	F	765
	R	0.14	9.5	A	50	0.27	16.4	B	81
Northbound	L	0.37	26.1	C	197	0.67	84.8	F	451
	TR	0.54	27.1	C	268	0.98	43.7	D	796
<i>Intersection</i>			37.4	D			86.0	F	
Washington Avenue & Patterson Street¹									
Eastbound	L	0.10	3.6	A	9	0.20	4.0	A	12
	T	0.68	6.7	A	158	0.70	14.1	B	189
	R	0.65	32.7	C	162	0.37	6.6	A	36
Westbound	L	0.03	2.0	A	1	0.04	1.5	A	1
	T	0.47	8.0	A	372	0.63	13.2	B	493
	R	0.30	7.1	A	38	0.75	9.1	A	141
Northbound	LTR	0.12	22.2	C	36	0.12	27.1	C	30
Southbound	LT	0.72	69.3	E	153	0.59	70.2	E	99
	R	0.31	11.7	B	43	0.34	13.4	B	35
<i>Intersection</i>			11.7	B			13.9	B	

Table 4. Model 2 (Year 2045) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Waugh Drive / Yale Street¹									
Eastbound	L	0.78	60.8	E	138	0.85	67.7	E	237
	T	1.21	159.4	F	745	0.85	91.9	F	684
	R	0.65	32.7	C	162	0.37	6.6	A	36
Westbound	L	0.88	72.8	E	149	0.46	14.9	B	27
	T	1.11	109.2	F	617	1.47	236.3	F	994
	R	0.30	7.1	A	38	0.75	9.1	A	141
Northbound	L	0.14	58.9	E	28	0.13	58.5	E	26
	TR	0.11	29.2	C	21	0.10	285.0	F	20
Southbound	L	0.25	19.8	B	170	0.35	102.6	F	228
	TR	1.01	51.9	D	985	0.72	37.1	D	447
<i>Intersection</i>			70.7	E			96.3	F	
Washington Avenue & Heights Boulevard¹									
Eastbound	T	1.20	127.5	F	581	1.48	258.8	F	1060
	R	0.15	1.2	A	4	0.21	7.5	A	25
Westbound	L	0.68	44.3	D	97	0.85	52.7	D	103
	T	0.61	43.0	D	399	1.22	148.5	F	741
	R	0.14	9.0	A	33	0.31	12.4	B	73
Northbound	L	0.53	62.5	E	104	0.89	90.4	F	326
	T	0.52	39.5	D	238	0.94	52.2	D	585
	R	0.25	6.4	A	46	0.47	14.3	B	153
Southbound	L	0.65	57.6	E	139	0.90	87.5	F	177
	TR	0.91	52.8	D	502	0.70	46.3	D	275
<i>Intersection</i>			60.0	E			101.1	F	

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection²Two-Way Stop-Controlled Intersection³All-Way Stop-Controlled Intersection⁴Roundabout

Table 4. Model 2 (Year 2045) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Studemont Street¹									
Eastbound	L	0.79	54.6	D	99	0.94	57.6	E	138
	T	1.20	142.3	F	452	1.55	278.7	F	625
	R	0.54	20.8	C	80	0.52	12.5	B	29
Westbound	L	0.98	97.0	F	294	1.06	79.2	E	174
	T	0.99	70.5	E	552	1.44	233.9	F	651
	R	0.22	0.9	A	0	0.39	11.9	B	23
Northbound	L	0.89	107.4	F	209	0.91	93.8	F	303
	T	0.56	36.3	D	278	0.93	54.0	D	548
	R	0.26	8.3	A	57	0.32	11.5	B	83
Southbound	L	0.79	72.6	E	254	0.95	100.3	F	313
	T	0.97	54.5	D	682	0.96	58.9	E	580
	R	0.26	7.9	A	68	0.29	8.4	A	67
<i>Intersection</i>			61.1	E			105.2	F	
Washington Avenue & Sawyer Street¹									
Eastbound	L	0.32	20.2	C	37	1.06	86.0	F	140
	T	0.91	35.5	D	277	1.12	73.8	E	226
	R	0.24	3.7	A	13	0.12	2.8	A	3
Westbound	L	0.06	33.8	C	9	0.45	53.4	D	37
	T	0.64	38.2	D	392	1.13	112.9	F	886
	R	0.08	4.7	A	15	0.20	9.7	A	57
Northbound	L	0.14	19.6	B	36	0.64	40.8	D	104
	TR	0.10	24.2	C	62	0.42	34.2	C	213
Southbound	L	0.46	26.3	C	185	0.52	31.3	C	158
	TR	0.71	36.5	D	463	0.86	49.1	D	501
<i>Intersection</i>			30.7	C			68.0	E	

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection²Two-Way Stop-Controlled Intersection³All-Way Stop-Controlled Intersection⁴Roundabout

Table 4. Model 2 (Year 2045) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Silver Street¹									
Eastbound	L	0.05	5.9	A	10	0.22	8.6	A	33
	T	0.76	12.4	B	930	0.89	19.0	B	893
	R	0.01	0.0	A	0	0.02	0.0	A	0
Westbound	L	0.02	15.4	B	3	0.11	19.7	B	10
	T	0.31	14.2	B	131	0.65	26.1	C	529
	R	0.00	0.0	A	0	0.03	0.1	A	0
Northbound	LTR	0.32	35.9	D	40	0.53	55.1	E	92
Southbound	LTR	0.71	55.9	E	166	0.63	38.1	D	96
<i>Intersection</i>			17.8	B			22.9	C	
Washington Avenue & Houston Avenue¹									
Eastbound	L	0.55	58.5	E	82	0.96	63.2	E	278
	T	1.06	92.3	F	614	0.86	39.1	D	300
	R	0.55	12.0	B	101	0.50	5.8	A	41
Westbound	L	0.92	113.8	F	215	0.78	80.6	F	206
	T	0.31	39.3	D	155	0.89	76.5	E	379
	R	0.12	0.5	A	0	0.45	9.0	A	65
Northbound	L	0.99	128.3	F	248	0.83	70.1	E	327
	T	0.25	32.8	C	122	0.81	42.4	D	433
	R	0.34	6.4	A	56	0.24	3.6	A	32
Southbound	L	0.79	68.5	E	238	0.77	79.8	E	189
	TR	0.99	60.1	E	685	0.91	55.9	E	441
<i>Intersection</i>			58.5	E			47.3	D	

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection²Two-Way Stop-Controlled Intersection³All-Way Stop-Controlled Intersection⁴Roundabout

Table 5. Model 3 (Year 2045) Levels of Service

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Arnot Street / Westcott Street⁴									
Eastbound	LTR	0.68	52.4	F	100	1.09	124.0	F	300
Westbound	LTR	0.49	14.8	B	75	0.78	35.2	E	175
	R	0.50	13.5	B	75	0.77	30.9	D	175
Northbound	LT	0.64	17.5	C	125	1.00	65.9	F	375
	TR	0.65	16.5	C	125	1.01	63.1	F	400
Southbound	LT	0.93	33.1	D	375	0.90	30.2	D	325
	TR	1.05	61.0	F	600	1.01	52.8	F	500
<i>Intersection</i>			35.3	E			52.7	F	
Washington Avenue & TC Jester Boulevard / CVS Access¹									
Eastbound	L	0.17	14.9	B	54	0.52	28.2	C	179
	TR	0.93	44.1	D	1062	0.84	30.1	C	1008
Westbound	L	0.01	7.0	A	1	0.08	5.5	A	0
	T	0.74	22.7	C	414	0.99	33.2	C	424
	R	0.97	86.0	F	309	1.55	275.7	F	482
Northbound	L	0.06	55.0	D	19	0.28	61.4	E	42
	TR	0.20	46.5	D	32	0.43	60.2	E	77
Southbound	L	0.91	58.2	E	436	0.91	72.7	E	291
	TR	0.28	5.4	A	47	0.38	9.3	A	73
<i>Intersection</i>			42.6	D			74.9	E	
Washington Avenue & Roy Street²									
Eastbound (Left)	L	0.03	8.7	A	3	0.11	12.2	B	10
Westbound (Left)	L	0.03	11.1	B	3	0.03	11.7	B	3
Northbound	LTR	0.60	100.9	F	68	Error	Error	F	Error
Southbound	LTR	0.77	93.1	F	113	5.25	2403.4	F	275

Table 5. Model 3 (Year 2045) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Durham Drive¹									
Eastbound	T	0.92	49.8	D	543	0.92	87.0	F	758
	R	1.37	214.5	F	469	0.81	45.2	D	330
Westbound	L	0.59	44.1	D	73	0.74	43.0	D	62
	T	0.70	37.1	D	461	1.17	107.7	F	1087
Southbound	LT	1.05	84.1	F	879	1.00	95.2	F	650
	R	0.10	1.3	A	11	0.22	7.3	A	50
<i>Intersection</i>			83.4	F			88.9	F	
Washington Avenue & Shepherd Drive¹									
Eastbound	L	0.09	11.1	B	10	0.86	49.7	D	54
	T	0.98	46.7	D	310	1.37	196.4	F	1099
Westbound	T	0.45	17.7	B	197	1.09	93.8	F	764
	R	0.24	23.8	C	73	0.51	46.4	D	121
Northbound	L	0.37	26.4	C	197	0.67	85.4	F	451
	TR	0.54	27.1	C	268	0.98	43.7	D	796
<i>Intersection</i>			31.7	C			86.2	F	
Washington Avenue & Patterson Street¹									
Eastbound	L	0.10	3.8	A	9	0.27	5.1	A	12
	TR	0.68	7.0	A	160	0.70	14.0	B	193
Westbound	L	0.03	2.1	A	1	0.04	0.9	A	1
	TR	0.51	9.9	A	455	0.79	11.2	B	42
Northbound	LTR	0.12	22.2	C	36	0.12	27.1	C	30
Southbound	LT	0.72	69.3	E	153	0.59	70.2	E	99
	R	0.31	11.7	B	43	0.34	13.4	B	35
<i>Intersection</i>			12.9	B			14.1	B	

Table 5. Model 3 (Year 2045) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Waugh Drive / Yale Street¹									
Eastbound	L	0.90	82.0	F	156	0.87	62.1	E	224
	T	1.16	142.3	F	731	0.82	90.2	F	662
	R	1.95	474.2	F	618	0.74	48.8	D	314
Westbound	L	0.85	66.7	E	142	0.38	11.5	B	23
	T	1.01	101.3	F	578	1.41	214.7	F	1082
	R	0.80	71.0	E	205	1.59	299.7	F	656
Northbound	L	0.14	58.9	E	28	0.13	58.5	E	26
	TR	0.11	29.2	C	21	0.10	285.0	F	20
Southbound	L	0.25	19.8	B	170	0.35	100.8	F	228
	TR	1.01	51.9	D	985	0.72	37.1	D	447
<i>Intersection</i>			111.3	F			134.7	F	
Washington Avenue & Heights Boulevard¹									
Eastbound	T	1.16	111.0	F	587	1.31	192.6	F	1028
	R	0.56	46.7	D	81	0.74	82.3	F	133
Westbound	L	0.66	45.1	D	115	0.82	52.5	D	103
	T	0.59	42.0	D	457	1.11	102.6	F	790
	R	0.32	55.0	D	113	0.67	55.9	E	189
Northbound	L	0.53	62.1	E	104	0.89	123.7	F	326
	T	0.52	39.5	D	238	1.01	68.6	E	622
	R	0.22	0.8	A	0	0.46	8.4	A	99
Southbound	L	0.65	57.6	E	139	0.90	87.5	F	177
	TR	0.91	52.8	D	502	0.79	52.5	D	300
<i>Intersection</i>			59.0	E			94.9	F	

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection²Two-Way Stop-Controlled Intersection³All-Way Stop-Controlled Intersection⁴Roundabout

Table 5. Model 3 (Year 2045) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Studemont Street¹									
Eastbound	L	0.53	25.3	C	65	0.92	54.1	D	143
	T	0.90	45.5	D	246	1.25	144.2	F	590
	R	3.91	Error	F	407	4.01	Error	F	386
Westbound	L	0.84	58.5	E	231	1.03	80.3	F	175
	T	0.76	35.7	D	469	1.14	106.2	F	580
	R	0.85	87.1	F	199	2.19	569.0	F	260
Northbound	L	0.89	107.4	F	209	0.91	93.8	F	303
	T	0.73	47.7	D	312	1.13	114.6	F	637
	R	0.27	1.3	A	0	0.35	6.9	A	53
Southbound	L	0.79	72.6	E	254	0.95	100.3	F	313
	T	1.20	137.2	F	795	1.17	129.1	F	668
	R	0.28	2.6	A	24	0.32	6.5	A	53
<i>Intersection</i>			156.0	F			193.1	F	
Washington Avenue & Sawyer Street¹									
Eastbound	L	0.31	24.3	C	50	1.02	95.0	F	161
	T	0.88	38.8	D	411	1.08	66.2	E	774
	R	0.41	34.2	C	112	0.18	19.9	B	32
Westbound	L	0.06	32.8	C	9	0.43	49.9	D	34
	T	0.61	37.0	D	383	1.09	97.1	F	868
	R	0.14	42.7	D	67	0.39	43.1	D	158
Northbound	L	0.14	19.6	B	36	0.64	40.8	D	104
	TR	0.10	24.2	C	62	0.42	34.2	C	213
Southbound	L	0.46	26.3	C	185	0.52	31.3	C	158
	TR	0.71	36.5	D	463	0.86	49.1	D	501
<i>Intersection</i>			35.0	C			64.6	E	

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection²Two-Way Stop-Controlled Intersection³All-Way Stop-Controlled Intersection⁴Roundabout

Table 5. Model 3 (Year 2045) Levels of Service (cont.)

Approach	Lane Group	Weekday AM Peak Hour				Weekday PM Peak Hour			
		v/c Ratio	Delay (sec)	LOS	Queue Length (ft)	v/c Ratio	Delay (sec)	LOS	Queue Length (ft)
Washington Avenue & Silver Street¹									
Eastbound	L	0.05	5.9	A	10	0.23	9.0	A	34
	TR	0.76	12.6	B	996	0.90	21.5	C	681
Westbound	L	0.02	8.6	A	3	0.11	11.3	B	5
	TR	0.31	9.5	A	120	0.67	16.4	B	425
Northbound	LTR	0.32	35.9	D	40	0.53	55.1	E	92
Southbound	LTR	0.71	55.9	E	166	0.63	38.1	D	96
<i>Intersection</i>			16.9	B			21.2	C	
Washington Avenue & Houston Avenue¹									
Eastbound	L	0.57	80.0	E	98	0.94	69.7	E	265
	T	0.88	44.1	D	534	0.61	18.8	B	171
	R	2.92	901.3	F	553	1.90	440.2	F	429
Westbound	L	0.88	105.7	F	211	0.76	77.9	E	200
	T	0.25	33.1	C	143	0.56	41.0	D	282
	R	0.97	158.7	F	146	2.96	938.0	F	432
Northbound	L	0.99	128.3	F	248	0.83	70.1	E	327
	T	0.30	37.8	D	131	1.13	116.7	F	586
	R	0.38	7.6	A	61	0.26	1.1	A	0
Southbound	L	0.79	68.5	E	238	0.77	79.8	E	189
	TR	1.14	111.3	F	759	1.43	237.9	F	587
<i>Intersection</i>			155.9	F			183.0	F	

L = Left Turn, T = Through, R = Right Turn

¹Signalized Intersection²Two-Way Stop-Controlled Intersection³All-Way Stop-Controlled Intersection⁴Roundabout