Spenard Community Council
Traffic Calming

Traffic Calming Study Memorandum

September 2024

Prepared for:
Municipality of Anchorage
Traffic Engineering Department
4700 Elmore Road, 2nd Floor
Anchorage, AK 99519

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LIST OF ACRONYMS

ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
DCM	Design Construction Manual
FHWA	Federal Highway Administration
HDL	HDL Engineering Consultants, LLC
ITE	Institute of Transportation Engineers
MOA	Municipality of Anchorage
MPH	Miles per Hour
OS&HP	Official Streets and Highways Plan
QSL	Qualified Streets List
ROW	Right-of-Way
TCPM	Traffic Calming Protocol Manual
TDMS	Traffic Data Management System
NTCPM	Neighborhood Traffic Calming Policy Manual
VPD	Vehicles Per Day

1.0 INTRODUCTION

HDL Engineering Consultants, LLC (HDL) was requested by the Municipality of Anchorage (MOA) Traffic Engineering Department to evaluate existing conditions and provide traffic calming alternatives for the following four roadways within the Spenard Community Council area:

- West 45th Avenue between Northwood Drive and Taft Street
- West 46th Avenue between Northwood Drive and Taft Street
- West 47th Avenue between Northwood Drive and Taft Street
- West 48th Avenue between Northwood Drive and Taft Street

The study limits are shown in **Figure 1**.

Figure 1: Study Limits

West 45th Avenue and West 48th Avenue are currently identified on the MOA Qualified Streets List (QSL) of the 2024 Neighborhood Traffic Calming Program. Streets on the QSL have had speed studies performed and meet the Traffic Engineering Department's minimum criteria for traffic calming eligibility. West 46th Avenue, West 47th Avenue and Van Buren Street are identified on the MOA Cull List of the 2024 Neighborhood Traffic Calming Program. Streets on the Cull List have had speed studies performed and failed to meet the Traffic Engineering Department's minimum criteria for traffic calming eligibility. The2024 QSL ranking for each street is shown in **Table 2**.

West 45th Avenue appears to be used as a cut-through route for traffic between Tudor Road and Northwood Drive. Historically, cut-through traffic leads to higher speeds through a corridor. It is anticipated that these roads work in series with one another and if traffic calming infrastructure is installed on one road, traffic will divert to the next roadway without traffic calming infrastructure. This traffic calming alternative analysis memorandum was prepared to review, analyze, and provide alternatives/recommendations to mitigate speeding on West 45th Avenue and the possible migration of speeding to other roads in the neighborhood, including West 46th Avenue, West 47th Avenue, and West 48th Avenue.

2.0 EXISTING CONDITIONS

2.1 Roadway Classification

West 45th Avenue, West 46th Avenue, and West 47th Avenue are classified in the Official Streets & Highways Plan (OS&HP) as local streets from Northwood Drive to Taft Street. The purpose of a local street is to provide access to adjacent properties, allow for on-street parking and provide space for utility placement. West 45th Avenue, West 46th Avenue, and West 47th Avenue are utilized for all of these purposes but do not meet the lane width and speed requirements set forth in the MOA Design Construction Manual (DCM) for an urban residential local street.

West 48th Avenue from Northwood Drive to Taft Street is classified in the OS&HP as a collector street. The purpose of a collector street is to provide a means for local street traffic to flow to higher classified streets, such as arterials, while minimizing land access. West 48th Avenue is utilized for this purpose and meets the lane width requirements set forth in the DCM for a residential collector street. The DCM recommends residential collector streets have a posted speed limit of 30 miles per hour (MPH).

Sections of Northwood Drive and West 48th Avenue are within the school zone for Northwood Elementary School as shown in **Figure 2**.

All of the roadways have 25 MPH posted speed limits and are two-lane roadways with Average Daily Traffic (ADT) of less than 2,000 vehicles per day (VPD).

2.2 Facility Description

West 45th Avenue, West 46th Avenue, West 47th Avenue, and West 48th Avenue are two-lane, two-way roadways. West 45th Avenue has curb and gutter from the Northwood Drive intersection curb returns for approximately 50 feet towards Van Buren Street. The remainder of the roadway has no curb and gutter. West 46th Avenue, West 47th Avenue, and West 48th Avenue have curb and gutter on both sides of the roadway. The roadway widths are shown in **Table 1.**

Street	Measured From	Width (LF)
West 45th Avenue	Edge of pavement to edge of pavement	22
West 46th Avenue	Lip of curb to lip of curb	25
West 47th Avenue	Lip of curb to lip of curb	29
West 48th Avenue	Lip of curb to lip of curb	32

Table 1: Existing Roadway Widths

Residents appear to utilize on-street parking on all four roadways. Access to each roadway is provided directly from Northwood Drive on the west and Taft Street on the east. There are stop-controlled intersections along Van Buren Street at West 46th Avenue and West 47th Avenue with free-flowing traffic along Van Buren Street. The intersection of West 48th Avenue and Van Buren Street is all-way stop controlled and the intersection of West 45th Avenue and Van Buren Street is stop controlled with free-flowing traffic along West 45th Avenue. Residential driveways have direct access to all four streets,

recreational driveways have direct access to West 45th Avenue and West 48th Avenue, and commercial/industrial, and institutional driveways have direct access to West 48th Avenue.

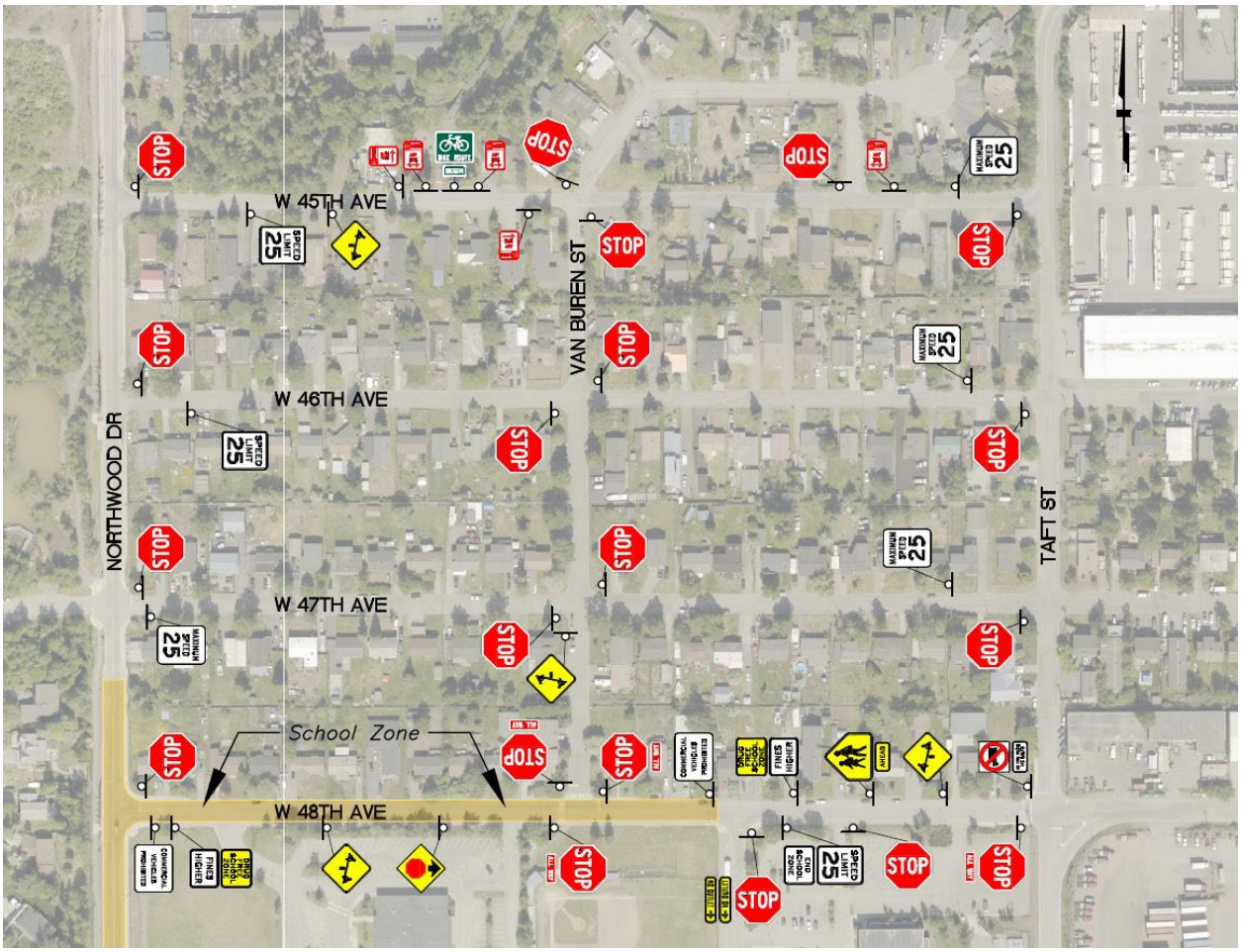


Figure 2: Existing Project Area Signage

2.3 Right of Way

The existing Right-of-Way (ROW) on West 45th Avenue is 46 feet. The existing ROW Avenue is 60 feet on West 46th Avenue, West 47th Avenue, and West 48th Avenue. There is a telecom and electrical easement on the east end of West 45th Avenue and various utility easements along West 48th Avenue.

2.4 Land Use

Land uses within the project are primarily residential. West 45th Avenue land use is predominantly Compact Mixed Residential with one recreational area at Red Bridge Park. West 46th Avenue and West 47th Avenue are adjacent to both Single-Family and Two-Family residential areas. Land use on the north side of West 48th Avenue is Single-Family and Two-Family residential, while land use on the south side is both Community Facility or Institution for Northwood Elementary School, and recreational for Brotherhood Sisterhood Park and the Spenard Community Recreation Center. See **Figure 3** for a map of the land uses throughout the project corridor.

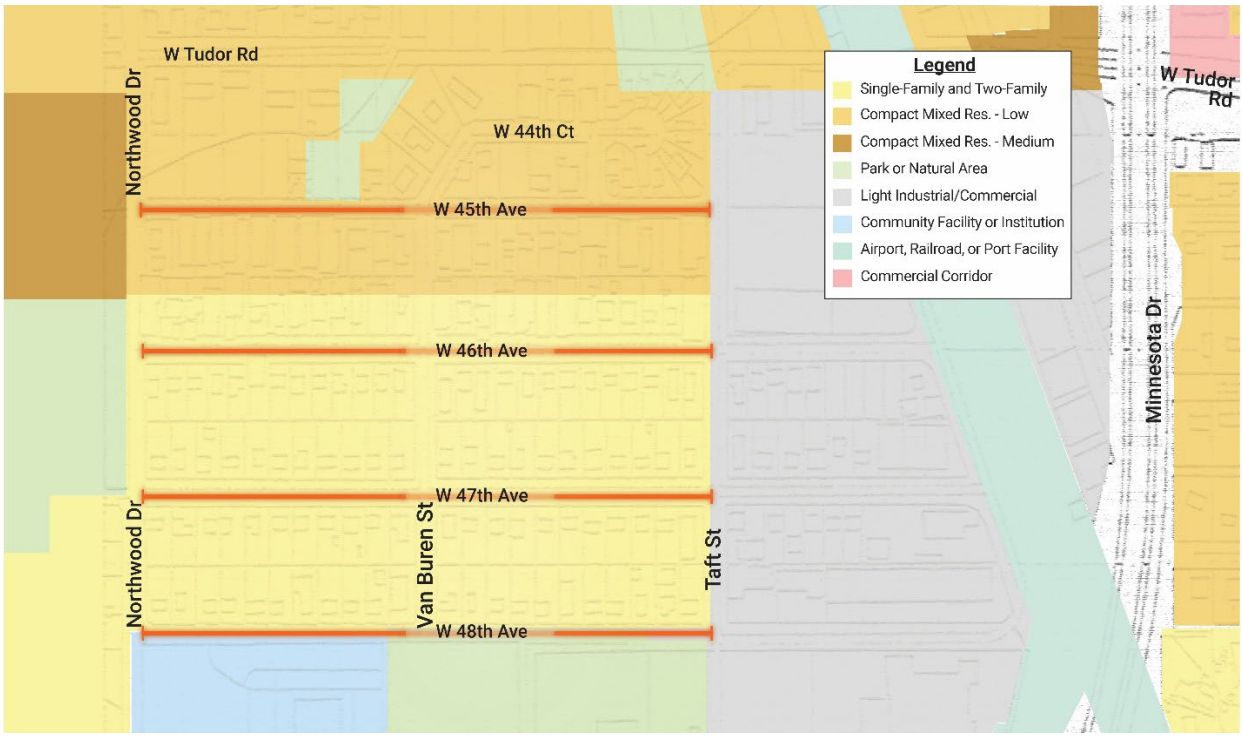


Figure 3: Land Use Map

2.5 Pedestrian Facilities

West 45th Avenue, West 46th Avenue, and West 47th Avenue have no pedestrian or bicycle facilities along either side of the roadway. The sidewalk running along Northwood Drive terminates at the intersection of West 47th Avenue.

West 48th Avenue has a continuous 5 foot concrete sidewalk along the south side of the road. The north side has an 8 foot concrete sidewalk extending 70 feet to the east from Northwood Drive and a 5 foot concrete sidewalk extending 100 feet to the east from the northeast corner of Van Buren Street. Additionally, there are three bus stop locations on the south side of the roadway and one on the north side that are no longer in use. The roadway corridor does not have dedicated bicycle facilities. Bicyclists use the roadway or sidewalk.

The 2023-2024 MOA Safe Routes to School Manual shows that the school zone for Northwood Elementary School includes sections of Northwood Drive and West 48th Avenue, as shown in **Figure 2**. Additionally, all of the roads in the study area are within the school walking boundary.

2.6 Traffic Data

Traffic volume and speed data along West 45th Avenue was obtained from the MOA Traffic Data Management System (TDMS). The data for West 46th Avenue, West 47th Avenue, West 48th Avenue, and Van Buren Street were obtained from the 2023 MOA speed studies requested for this analysis.

Table 2 shows the 85th percentile speeds, average daily traffic (ADT) data, and the 2024 QSL ranking for each street. The 85th percentile was 7 to 12 mph over the posted speed limit for West 45th Avenue and was 2 to 9 mph over the speed limit for West 48th Avenue. **Appendix B** contains the speed study data.

Street	Between	Speed Limit (MPH)	85% Speed (MPH)	ADT	Year Studied	2024 QSL Rank
Van Buren Street	West 45th Avenue to West 48th Avenue	25	23	81	2023	Does Not Qualify
West 45th Avenue	Northwood Drive to Van Buren Street	25	37	1110	2021	2
	Van Buren Street to Taft Street	25	32	1187		
West 46th Avenue	Northwood Drive to Van Buren Street	25	24	208	2023	Does Not Qualify
	Van Buren Street to Taft Street	25	22	263		
West 47th Avenue	Northwood Drive to Van Buren Street	25	24	253	2023	Does Not Qualify
	Van Buren Street to Taft Street	25	24	252		
West 48th Avenue	Northwood Drive to Van Buren Street	25	27	864	2023	3
	Van Buren Street to Taft Street	25	34	913		

Table 2: 85th Percentile Speed ADT Data

Crash data for all four corridors was obtained from the MOA TDMS. **Appendix C** contains the 2017-2021 crash data. In the most recent 5 years (2017-2021), there were 8 crashes along the corridors from Northwood Drive to Taft Street. None of the crashes were fatalities, and four of the crashes involved potential or confirmed non-incapacitating injury. **Figure 4** displays the approximate location and severity of the 8 crashes.

Street	Pedestrian	Fixed Object	Multiple Vehicle	Total Crashes
West 45th Avenue	0	1	1	**2**
West 46th Avenue	0	0	3	**3**
West 47th Avenue	0	0	2	**2**
West 48th Avenue	0	1	0	**1**

Table 3: 2017-2021 Crash Data

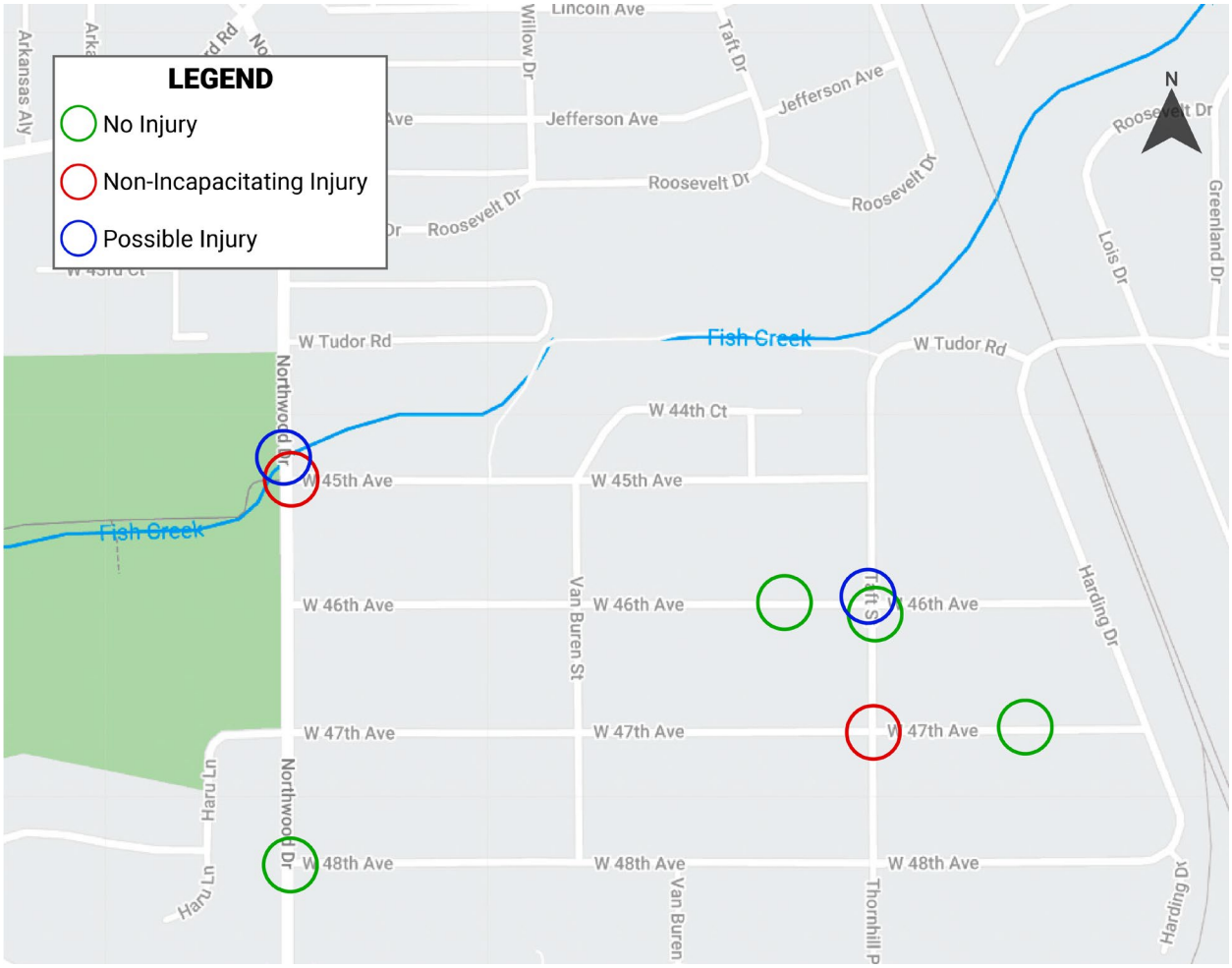


Figure 4: Crash Location and Severity

Pedestrian and bicycle volume data was obtained from 2023 MOA speed studies. **Table 4** shows the total number of vehicles, pedestrians, and bicycles that utilized the intersection of Van Buren Street and West 48th Avenue and the sidewalk along the west side of West 48th Avenue at Van Buren Street during the 24-hour traffic study.

Data Type	NB	SB	EB	WB	ALL
Vehicle Intersection Volume	0	46	533	342	921
Bicycle Intersection Volume	0	0	7	4	11
Pedestrian Pathway Volume	0	2	16	6	24
Bicycle Pathway Volume	0	1	1	0	2

Table 4: Van Buren Street/West 48th Avenue Pedestrian and Bicycle Volume Data

3.0 TRAFFIC CALMING PRINCIPLES/APPLICABILITY

3.1 General

The Institute of Transportation Engineers' (ITE) states that "Traffic calming involves changes in street alignment, installation of barriers, and other physical measures to reduce speeds and cut-through traffic volumes in the interest of street safety, livability, and other public purposes." These changes are proven effective and, when properly located, are self-enforcing in addressing unacceptable driver behavior.

3.2 Applicability

The MOA developed the 2001 Traffic Calming Protocol Manual (TCPM) and the 2016 Neighborhood Traffic Calming Policy Manual (NTCPM) to employ traffic calming principles within the Municipality. The four basic device categories of approved traffic calming measures are listed below:

- Horizontal – Traffic circles; roundabouts; lateral shifts; one-lane and two-lane chicanes; neckdowns; one-lane chokers.
- Vertical – Speed humps and cushions; speed tables; raised crosswalks; and raised intersections.
- Electrical – Radar speed signs.
- Traffic Volume Control – Full closures; half closures; diagonal diverters; and forced turn islands.

Figure 5: Raised Intersection

Figure 6: Speed Cushion

Figure 7: Speed Hump

Figure 8: Raised Crosswalk

Figure 9: Traffic Circle

Figure 10: Intersection Neckdown

Figure 11: Radar Speed Sign

HDL evaluated the use of each type of traffic calming measure for this analysis and used the 2001 TCPM and 2016 NTCPM to determine appropriate traffic calming measures on the identified streets within the Spenard Community Council area. This study focused on Horizontal, Vertical, and Electrical traffic calming improvements to reduce excessive speeding. Traffic volume control was not considered in the case of these roadways, as their daily traffic volumes are not large enough to warrant these measures.

4.0 ALTERNATIVE ANALYSIS/RECOMMENDATIONS

Proposed traffic calming alternatives are described in the following sections. A combination of these measures can be used together as a system to reduce speeds throughout the corridor. The application of traffic calming measures on a single roadway would most likely encourage cut-through traffic to reroute through to the next closest corridor. Evaluating the four corridors as a connected system provides a more complete and accurate understanding of traffic flow and possible improvements.

Planning level costs are approximate and do not include engineering design and MOA administration costs.

4.1 West 45th Avenue – Northwood Drive to Taft Street

Figure 12: West 45th Avenue

Evaluated Traffic Calming Alternatives

Traffic calming measures considered for this section of roadway included:

Speed Humps (Approximate construction cost of $11,000)

Installation of one speed hump approximately 240 feet east of Northwood Drive, and one approximately 250 feet east of Van Buren Street. According to the MOA Standard Detail for Asphalt Speed Cushions, speed cushions cannot be used on roadways less than 27.5 feet wide.

- Minimal impacts to on-street parking
- Minimal impacts to MOA Street Maintenance

Radar Speed Signs (Approximate construction cost of $330,000)

Installation of two radar speed signs on West 45th Avenue. One west facing, replacing the speed limit sign approximately 200 feet east of Northwood Drive, and one east facing, approximately 180 feet west of Taft Street.

- Provides real-time visual cues to drivers to adjust speed
- No impact to on-street parking
- No impact to MOA Street Maintenance or emergency vehicles
- Requires installation of conduit to provide power from nearest load center

- May require minimal clearing for sign visibility
- Requires periodic maintenance by MOA Traffic

Reduced Radii at Taft Street (Approximate construction cost of $36,100)

The existing return radius in the northwest quadrant of West 45th Avenue is approximately 50 feet. Reducing the radius will cause drivers to slow down when moving around the corner. The DCM states that radii where a collector street intersects a residential street shall have a radius of 30 feet. The 35 foot radius in the southwest quadrant could be reduced as well to meet DCM standards.

In addition to the alternatives listed above, the following traffic calming devices were evaluated but not recommended.

- Chokers, lateral shifts, roadway narrowing, and neckdowns are infeasible due to the existing roadway width.
- Chicanes are not recommended due to the impact on winter maintenance and their minimal effectiveness compared to other traffic calming alternatives.
- The intersection of West 45th Avenue and Van Buren Street was previously evaluated for an intersection improvement project. A raised intersection was determined to be infeasible due to the utility impacts, drainage, and grades.
- A traffic circle is not recommended due to the grades, utility impacts, roadway widths, and the skewed approach.

Preferred Alternative

HDL determined the preferred traffic calming alternative for West 45th Avenue to be the installation of speed humps. The approximate locations for the recommended devices are shown in **Appendix C.**

Radar speed signs are proven to reduce speeding initially, but issues may return as residents grow accustomed to them. Additionally, the cost of installation for radar speed signs on West 45th Avenue is high due to the proximity to existing power supplies.

The roadway width does not provide adequate room for speed cushions to be installed, but speed humps require a smaller roadway width and provide similar benefits. Data presented in the NTCPM shows that speed humps have a long-term effectiveness for reducing 85th percentile speeds by approximately 22%. Overall, speed humps will be the least expensive, yet most effective method for reducing long-term speeding issues on West 45th Avenue.

Reducing the radii at the northwest and southwest quadrants of West 45th Avenue will encourage drivers to reduce their speed around the corner. HDL recommends that the radii be reduced to 30 feet to comply with the DCM standards, or to 20 feet to match the return radii on the west end of West 46th Avenue and West 47th Avenue.

To improve pedestrian visibility, HDL recommends reconstructing the curb ramps at the intersection of West 45th Avenue and Van Buren Street. Shifting the ramps to the east and reconstructing them as parallel curb ramps will make pedestrians more visible and reduce their crossing distance.

4.2 West 46th Avenue – Northwood Drive to Taft Street

Figure 13: West 46th Avenue

Evaluated Traffic Calming Alternative

Traffic calming measures considered for this section of roadway included:

Combined Speed Cushion and Radar Speed Sign (Approximate construction cost of $255,000)

Installation of one speed cushion approximately 250 feet west of Van Buren Street, and one east facing radar speed sign on the luminaire approximately 120 feet west of Taft Street.

- Speed cushion allows emergency vehicles to bypass, reducing delays to emergency response times
- Radar speed sign has no impact on emergency vehicles
- Minimal impacts to on-street parking
- Speed cushion has minimal impacts on MOA Street Maintenance
- Radar speed sign requires periodic maintenance by MOA Traffic
- Radar speed sign requires installation of conduit to provide power from nearest load center
- May require minimal clearing for radar speed sign visibility

Standalone Radar Speed Signs (Approximate construction cost of $345,000)

Installation of two radar speed signs on West 46th Avenue. One west facing, mounted on the luminaire approximately 220 feet east of Northwood Drive, and one east facing, on the luminaire approximately 120 feet west of Taft Street.

- Provides real-time visual cues to drivers to adjust speed
- No impact to on-street parking
- No impact to MOA Street Maintenance or emergency vehicles
- Requires installation of conduit to provide power from nearest load center
- May require minimal clearing for sign visibility
- Requires periodic maintenance by MOA Traffic

Traffic Circle (Approximate construction cost of $90,000)

Installation of traffic circle at the intersection of West 46th Avenue and Van Buren Street.

- Minimal impacts to MOA Street Maintenance or emergency vehicles
- Minimal impacts to on-street parking
- Requires adjustments to existing utilities

In addition to the alternatives listed above, the following traffic calming devices were evaluated but not recommended.

- A second speed cushion east of Van Buren Street is not recommended due to lack of location to effectively slow traffic.
- Chokers and roadway narrowing are not recommended due to on-street parking and the large number of driveways.
- Lateral shifts, and neckdowns are infeasible due to existing roadway width.
- Chicanes are not recommended due to the impact on winter maintenance and their minimal effectiveness compared to other traffic calming alternatives.

Preferred Alternative

HDL determined the preferred traffic calming alternative for West 46th Avenue to be the installation of one speed cushion west of Van Buren Street and one radar speed sign east of Van Buren Street. This alternative was selected over installing two radar speed signs or installing a traffic circle due to its cost and effectiveness. The approximate locations for the recommended devices are shown in **Appendix C.**

The MOA NTCPM shows that speed cushions have a long-term effectiveness for reducing 85th percentile speeds by approximately 27%. The intersection and driveway locations along West 46th Avenue do not provide adequate space for a speed cushion east of Van Buren Street, but the installation of one speed cushion west and one radar speed sign east of Van Buren Street would provide a reduction in speeding in both directions throughout the roadway.

While the installation of a traffic circle at Van Buren Street would be another effective alternative, additional traffic calming measures would likely be needed to reduce speeding throughout the length of the corridor. The combination of one speed cushion and one radar speed sign would provide the greatest reduction in speeding throughout West 46th Avenue.

4.3 West 47th Avenue – Northwood Drive to Taft Street

Figure 14: West 47th Avenue

Evaluated Traffic Calming Alternative

Traffic calming measures considered for this section of roadway included:

Speed Cushions (Approximate construction cost of $60,000)

Installation of one speed cushion approximately 360 feet west of Van Buren Street and one approximately 290 feet west of Taft Street.

- Allows emergency vehicles to bypass, reducing delays to emergency response times
- Minimal impacts to on-street parking
- Minimal impacts to MOA Street Maintenance

Radar Speed Signs (Approximate construction cost of $245,000)

Installation of two radar speed signs on West 47th Avenue. One west facing, approximately 200 feet east of Northwood Drive, and one east facing, replacing the speed limit sign approximately 140 feet west of Taft Street.

- Provides real-time visual cues to drivers to adjust speed
- No impact to on-street parking
- No impact to MOA Street Maintenance or emergency vehicles
- Requires installation of conduit to provide power from nearest load center
- Requires periodic maintenance by MOA traffic

Intersection Neckdown (Approximate construction cost of $265,000)

Installation of intersection neckdown on West 47th Avenue at Van Buren Street.

- Reduces pedestrian crossing distance
- Increases pedestrian visibility and improves pedestrian safety
- No impact on emergency vehicles
- Minimal impacts on MOA street maintenance
- Minimal impacts on on-street parking
- Requires adjustments to utilities
- May require upgrades to storm drain system

- Requires upgrades to surrounding ADA facilities
- Requires upgrades to adjacent driveways

Traffic Circle (Approximate construction cost of $90,000)

Installation of traffic circle at the intersection of West 47th Avenue and Van Buren Street.

- Minimal impacts to MOA Street Maintenance or emergency vehicles
- Minimal impacts to on-street parking
- Requires adjustments to existing utilities

In addition to the alternatives listed above, the following traffic calming devices were evaluated but not recommended.

- Chokers, lateral shifts, and roadway narrowing are not recommended due to on-street parking and the large number of driveways.
- Chicanes are not recommended due to the impact on winter maintenance and their minimal effectiveness compared to other traffic calming alternatives.

Preferred Alternative

HDL determined the preferred traffic calming alternative for West 47th Avenue to be the installation of two speed cushions. This alternative was selected over installing two radar speed signs, constructing an intersection neckdown, or installing a traffic circle due to its cost and effectiveness. The approximate locations for the recommended devices are shown in **Appendix C.**

While both an intersection neckdown and a traffic circle on West 47th Avenue at Van Buren Street would decrease speeding near the intersection, it is likely that additional traffic calming devices would be needed to effectively reduce speeding throughout the entire roadway. Additionally, both of these devices would decrease the available on street parking which is frequently utilized. The locations recommended for speed cushions would have minimal impact to on-street parking and would provide the greatest reduction in speeding throughout West 47th Avenue for the cost.

4.4 West 48th Avenue – Northwood Drive to Taft Street

Figure 15: West 48th Avenue

Evaluated Traffic Calming Alternative

A stop sign warrant evaluation was performed for the intersection of West 48th Avenue and Van Buren Street in March 2024. The evaluation was requested by the MOA Traffic Engineering Department due to the anticipated traffic calming improvements on West 48th Avenue. The intersection was evaluated to determine if the all way stop condition is still recommended. The warrant evaluation memo can be found in **Appendix D.** Based on the evaluation, the all way stop at the intersection of West 48th Avenue and Van Buren Street is not warranted and the stop signs on West 48th Avenue may be removed with permission from the Municipal Traffic Engineer.

Traffic calming measures considered for this section of roadway included:

Speed Cushions (Approximate construction cost of $60,000)

Installation of one speed cushion approximately 410 feet west of Van Buren Street and one approximately 240 feet west of Taft Street.

- Allows emergency vehicles to bypass, reducing delays to emergency response times
- Minimal impacts to on-street parking
- Minimal impacts to MOA Street Maintenance

Radar Speed Signs (Approximate construction cost of $220,000)

Installation of two radar speed signs on West 48th Avenue. One west facing, approximately 380 feet east of Northwood Drive, and one east facing, mounted on the luminaire approximately 150 feet west of Taft Street.

- Provides real-time visual cues to drivers to adjust speed
- No impact to on-street parking
- No impact to MOA street maintenance or emergency vehicles
- Requires installation of conduit to provide power from nearest load center
- May require minimal clearing for sign visibility
- Requires periodic maintenance by MOA traffic

Raised Crosswalk with Roadway Narrowing (Approximate construction cost of $445,000)

Replacement of the crosswalk west of Van Buren Street with a raised crosswalk.

- Increases pedestrian visibility and improves pedestrian safety
- Allows emergency vehicles to traverse with minor speed loss
- Reduces cut-through traffic
- Minimal impacts on MOA Street Maintenance
- Minimal impacts to on-street parking
- Requires adjustments to existing utilities, including the possible relocation of the existing utility pole on the north side of West 48th Avenue
- Requires roadway bulb out, on the north side of roadway, to extend sidewalk to the intersection, improve the sight distance, and minimize impacts to the adjacent driveway
- Requires upgrades to surrounding ADA facilities, including the installation of two curb ramps on the north side of West 48th Avenue and one curb ramp on the south side of West 48th Avenue
- Requires upgrades to adjacent driveways
- May require relocation of storm drain catch basin on south side of West 48th Avenue

Raised Intersection (Approximate construction cost of $682,000)

Installation of a raised intersection on West 48th Avenue at Van Buren Street.

- Increases pedestrian visibility and improves pedestrian safety
- Allows emergency vehicles to traverse with minor speed loss
- Reduces cut-through traffic
- Minimal impacts on MOA Street Maintenance
- Minimal impacts to on-street parking
- Requires adjustments to existing utilities, including the possible relocation of the existing utility pole on the north side of West 48th Avenue
- Requires relocation of storm drain catch basin on south side of West 48th Avenue and installation of two catch basins on Van Buren Street
- Requires upgrades to surrounding ADA facilities, including the installation of three curb ramps on the north side of West 48th Avenue and one curb ramp on the south side of West 48th Avenue
- Requires upgrades to adjacent driveways

Intersection Neckdown (Approximate construction cost of $662,000)

Installation of an intersection neckdown on West 48th Avenue at Van Buren Street.

- Reduces pedestrian crossing distance
- Increases pedestrian visibility and improves pedestrian safety
- No impact on emergency vehicles
- Provides snow storage
- Minimal impacts on MOA Street Maintenance
- Minimal impacts to on-street parking
- Requires adjustments to existing utilities, including the relocation of the existing utility pole on the north side of West 48th Avenue
- Requires relocation of storm drain catch basin on south side of West 48th Avenue
- Requires upgrades to surrounding ADA facilities, including the installation of four curb ramps on the north side of West 48th Avenue and one curb ramp at the path on the south side of West 48th Avenue
- Requires upgrades to adjacent driveways

In addition to the alternatives listed above, the following traffic calming devices were evaluated but not recommended.

- The intersection of West 48th Avenue and Van Buren Street does not meet the conditions from FHWA for a rectangular rapid-flashing beacon (RRFB). Additionally, RRFBs require frequent maintenance to remain effective.
- Chokers, lateral shifts, and roadway narrowing are not recommended due to on-street parking and the large number of driveways.
- Chicanes are not recommended due to the impact on winter maintenance and their minimal effectiveness compared to other traffic calming alternatives.
- A traffic circle is not recommended due to the frequent school bus traffic.

Preferred Alternative

HDL determined the preferred traffic calming alternative for West 48th Avenue to be the construction of a raised crosswalk or raised intersection with an intersection neckdown and speed cushions. The approximate locations for the recommended devices are shown in **Appendix C.** Additionally, the stop sign warrant evaluation determined that the all way stop is not warranted and the stop signs on West 48th Avenue at the intersection of West 48th Avenue and Van Buren Street should be removed.

While speed cushions and radar speed signs alone would be an effective means of reducing speeding in this area, the proximity to Northwood Elementary School increases the importance of pedestrian safety measures. Similarly, an intersection neckdown on its own at Van Buren Street would decrease speeding, but would not provide significant improvements to pedestrian safety.

Data from the NTCPM shows that raised crosswalks have a long-term effectiveness for reducing 85th percentile speeds by approximately 18%. In addition to reducing speeding, the construction of a raised crosswalk or intersection at Van Buren Street would increase pedestrian visibility, improve ADA facilities and reduce pedestrian crossing distance. The construction of a raised crosswalk or intersection in conjunction with a neckdown is the most effective method for reducing speeding throughout the roadway while increasing pedestrian safety.

APPENDIX A

2021-2023 Speed Study

Location: 45th 292' E of Northwood
Site Code: 06282103
Counter # 34617
06/30/2021

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99507
907-343-8406

06-30 045 & Northwood_Spd
Site Code: 06282103
Station ID: 34617

EB TH

Start Time	0 MPH 10 MPH	11 MPH 15 MPH	16 MPH 20 MPH	21 MPH 25 MPH	26 MPH 30 MPH	31 MPH 35 MPH	36 MPH 40 MPH	41 MPH 45 MPH	46 MPH 50 MPH	51 MPH 55 MPH	56 MPH 60 MPH	61 MPH 65 MPH	66 MPH Above	Total
06/30/21	0	0	2	1	1	0	0	0	0	0	0	0	0	4
01:00	1	0	0	1	0	0	0	0	0	0	0	0	0	2
02:00	1	1	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
04:00	0	0	2	0	0	0	0	0	0	0	0	0	0	2
05:00	1	1	1	3	1	0	0	0	0	0	0	0	0	7
06:00	1	1	5	9	0	0	0	0	0	0	0	0	0	16
07:00	0	1	7	21	4	0	0	0	0	0	0	0	0	33
08:00	0	1	9	21	3	0	0	0	0	0	0	0	0	34
09:00	0	1	7	19	1	1	0	0	0	0	0	0	0	29
10:00	1	0	8	15	4	0	0	0	0	0	0	0	0	28
11:00	0	3	11	11	5	0	0	0	0	0	0	0	0	30
12 PM	1	2	9	14	8	0	0	0	0	0	0	0	0	34
13:00	1	1	15	8	5	0	0	0	0	0	0	0	0	30
14:00	2	1	14	14	3	0	0	0	0	0	0	0	0	34
15:00	0	2	21	13	1	1	0	0	0	0	0	0	0	38
16:00	1	0	15	11	5	0	0	0	0	0	0	0	0	32
17:00	2	0	10	17	0	0	0	0	0	0	0	0	0	29
18:00	0	1	7	16	3	0	0	0	0	0	0	0	0	27
19:00	1	4	9	8	1	0	0	0	0	0	0	0	0	23
20:00	0	1	10	6	0	0	0	0	0	0	0	0	0	17
21:00	2	3	6	7	0	0	0	0	0	0	0	0	0	18
22:00	0	1	4	1	0	0	0	0	0	0	0	0	0	6
23:00	0	0	2	3	0	0	0	0	0	0	0	0	0	5
Total	15	25	175	220	45	2	0	0	0	0	0	0	0	482

Statistics 85th Percentile : 24 MPH

Location: 45th 292' E of Northwood
Site Code: 06282103
Counter # 34617
06/30/2021

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99507
907-343-8406

06-30 045 & Northwood_Spd
Site Code: 06282103
Station ID: 34617

WB TH

Start Time	0 MPH 10 MPH	11 MPH 15 MPH	16 MPH 20 MPH	21 MPH 25 MPH	26 MPH 30 MPH	31 MPH 35 MPH	36 MPH 40 MPH	41 MPH 45 MPH	46 MPH 50 MPH	51 MPH 55 MPH	56 MPH 60 MPH	61 MPH 65 MPH	66 MPH Above	Total
06/30/21	0	0	0	0	2	2	3	1	1	0	0	0	0	9
01:00	0	0	1	0	1	1	0	0	0	0	0	0	0	3
02:00	2	0	1	0	2	1	0	0	0	0	0	0	0	6
03:00	0	0	0	1	0	1	0	0	0	0	1	0	0	3
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	1	0	0	2	1	0	0	0	0	0	0	4
06:00	0	0	0	0	0	0	0	1	0	0	0	0	0	1
07:00	1	0	1	2	4	6	7	1	0	0	0	0	0	22
08:00	0	0	0	3	6	8	3	1	0	0	0	0	0	21
09:00	2	0	0	1	6	9	5	0	0	0	0	0	0	23
10:00	0	0	2	5	3	10	9	2	2	0	0	0	0	33
11:00	0	0	1	3	6	15	7	5	2	1	0	0	0	40
12 PM	0	0	0	2	8	12	10	5	0	0	0	0	0	37
13:00	0	0	2	6	7	11	8	2	2	0	1	0	0	39
14:00	0	0	1	1	5	16	12	3	1	0	1	0	0	40
15:00	0	3	0	3	12	14	4	6	1	0	0	0	0	43
16:00	0	2	0	4	17	18	13	8	0	0	0	0	0	62
17:00	0	3	1	6	8	26	21	8	2	0	0	0	0	75
18:00	3	0	1	0	13	14	11	4	1	1	1	0	0	49
19:00	1	2	0	5	6	12	6	4	2	0	0	0	0	38
20:00	0	0	0	3	6	5	7	4	1	0	0	0	0	26
21:00	0	0	0	4	7	6	7	4	1	0	0	0	0	29
22:00	0	1	0	1	3	4	1	1	0	1	0	0	0	12
23:00	0	0	1	1	2	2	1	3	1	2	0	0	0	13
Total	9	11	13	51	124	195	136	63	17	5	4	0	0	628

Statistics 85th Percentile : 39 MPH

Location: 45th 292' E of Northwood
Site Code: 06282103
Counter # 34617
06/30/2021

Municipality of Anchorage
Traffic Engineering
Data Division
4700 Elmore Road
Anchorage, AK 99507
907-343-8406

06-30 045 & Northwood_Spd
Site Code: 06282103
Station ID: 34617

EB TH, WB TH

Start Time	0 MPH 10 MPH	11 MPH 15 MPH	16 MPH 20 MPH	21 MPH 25 MPH	26 MPH 30 MPH	31 MPH 35 MPH	36 MPH 40 MPH	41 MPH 45 MPH	46 MPH 50 MPH	51 MPH 55 MPH	56 MPH 60 MPH	61 MPH 65 MPH	66 MPH Above	Total
06/30/21	0	0	2	1	3	2	3	1	1	0	0	0	0	13
01:00	1	0	1	1	1	1	0	0	0	0	0	0	0	5
02:00	3	1	1	0	2	1	0	0	0	0	0	0	0	8
03:00	0	0	1	2	0	1	0	0	0	0	1	0	0	5
04:00	0	0	2	0	0	0	0	0	0	0	0	0	0	2
05:00	1	1	2	3	1	2	1	0	0	0	0	0	0	11
06:00	1	1	5	9	0	0	0	1	0	0	0	0	0	17
07:00	1	1	8	23	8	6	7	1	0	0	0	0	0	55
08:00	0	1	9	24	9	8	3	1	0	0	0	0	0	55
09:00	2	1	7	20	7	10	5	0	0	0	0	0	0	52
10:00	1	0	10	20	7	10	9	2	2	0	0	0	0	61
11:00	0	3	12	14	11	15	7	5	2	1	0	0	0	70
12 PM	1	2	9	16	16	12	10	5	0	0	0	0	0	71
13:00	1	1	17	14	12	11	8	2	2	0	1	0	0	69
14:00	2	1	15	15	8	16	12	3	1	0	1	0	0	74
15:00	0	5	21	16	13	15	4	6	1	0	0	0	0	81
16:00	1	2	15	15	22	18	13	8	0	0	0	0	0	94
17:00	2	3	11	23	8	26	21	8	2	0	0	0	0	104
18:00	3	1	8	16	16	14	11	4	1	1	1	0	0	76
19:00	2	6	9	13	7	12	6	4	2	0	0	0	0	61
20:00	0	1	10	9	6	5	7	4	1	0	0	0	0	43
21:00	2	3	6	11	7	6	7	4	1	0	0	0	0	47
22:00	0	2	4	2	3	4	1	1	0	1	0	0	0	18
23:00	0	0	3	4	2	2	1	3	1	2	0	0	0	18
Total	24	36	188	271	169	197	136	63	17	5	4	0	0	1110

Statistics 85th Percentile : 37 MPH

Location: 45th 60' E of Van Buren
Site Code: 05252106
Counter # 28229
05/26/2021

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99507
907-343-8406

045 & Van Buren_Spd
Site Code: 05252106
Station ID: 28229

EB TH

Start Time	0 MPH 10 MPH	11 MPH 15 MPH	16 MPH 20 MPH	21 MPH 25 MPH	26 MPH 30 MPH	31 MPH 35 MPH	36 MPH 40 MPH	41 MPH 45 MPH	46 MPH 50 MPH	51 MPH 55 MPH	56 MPH 60 MPH	61 MPH 65 MPH	66 MPH Above	Total
05/26/21	0	0	5	3	0	0	0	0	0	0	0	0	0	8
01:00	0	0	2	0	0	1	0	0	0	0	0	0	0	3
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	1	0	4	1	1	0	0	0	0	0	0	0	7
04:00	1	0	0	0	2	1	0	0	0	0	0	0	0	4
05:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2
06:00	0	1	1	2	3	0	0	0	0	0	0	0	0	7
07:00	2	3	2	6	7	0	0	0	0	0	0	0	0	20
08:00	0	2	2	7	1	1	0	0	0	0	0	0	1	14
09:00	2	0	7	8	5	0	0	0	0	0	0	0	0	22
10:00	0	1	3	15	10	1	0	0	0	0	0	0	0	30
11:00	0	0	3	19	11	1	0	0	0	0	0	0	0	34
12 PM	1	0	5	18	12	0	0	0	0	0	0	0	0	36
13:00	0	2	4	20	14	3	0	0	0	0	0	0	0	43
14:00	1	2	8	21	12	0	0	0	0	0	0	0	0	44
15:00	0	1	13	23	12	0	0	0	0	0	0	0	0	49
16:00	2	0	13	23	10	3	0	0	0	0	0	0	0	51
17:00	1	0	9	29	22	0	0	0	0	0	0	0	0	61
18:00	0	0	11	23	13	1	0	0	0	0	0	0	0	48
19:00	0	1	4	7	13	0	0	0	0	0	0	0	0	25
20:00	0	1	10	18	7	1	0	0	0	0	0	0	0	37
21:00	1	2	4	18	6	0	0	0	0	0	0	0	0	31
22:00	0	0	5	7	5	1	0	0	0	0	0	0	0	18
23:00	0	2	6	5	3	2	0	0	0	0	0	0	0	18
Total	11	20	117	277	170	17	0	0	0	0	0	0	1	613

Statistics 85th Percentile : 27 MPH

Location: 45th 60' E of Van Buren
Site Code: 05252106
Counter # 28229
05/26/2021

Municipality of Anchorage
Traffic Engineering
Data Division
4700 Elmore Road
Anchorage, AK 99507
907-343-8406

045 & Van Buren_Spd
Site Code: 05252106
Station ID: 28229

WB TH

Start Time	0 MPH 10 MPH	11 MPH 15 MPH	16 MPH 20 MPH	21 MPH 25 MPH	26 MPH 30 MPH	31 MPH 35 MPH	36 MPH 40 MPH	41 MPH 45 MPH	46 MPH 50 MPH	51 MPH 55 MPH	56 MPH 60 MPH	61 MPH 65 MPH	66 MPH Above	Total
05/26/21	0	0	1	3	0	0	1	0	0	0	0	0	0	5
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:00	0	0	0	0	0	0	1	0	0	0	0	0	0	1
05:00	0	0	0	3	1	1	0	0	1	0	0	0	0	6
06:00	0	0	0	2	3	6	4	2	0	0	0	0	0	17
07:00	4	2	2	7	11	4	5	0	0	1	0	0	0	36
08:00	0	0	3	6	8	10	7	5	0	0	0	0	0	39
09:00	0	0	3	6	6	12	7	2	2	0	0	0	0	38
10:00	0	1	1	7	12	6	5	1	1	0	0	0	0	34
11:00	2	1	0	2	9	10	1	1	0	0	0	0	0	26
12 PM	1	0	1	5	8	13	5	0	0	0	0	0	0	33
13:00	0	0	4	12	19	4	4	2	0	0	0	0	0	45
14:00	0	0	6	8	9	10	4	2	0	1	0	0	0	40
15:00	0	2	1	6	16	12	6	0	0	0	0	0	0	43
16:00	0	1	4	6	12	11	2	3	0	0	0	0	0	39
17:00	0	1	2	5	15	6	4	1	1	0	0	0	0	35
18:00	0	0	3	5	13	8	4	2	0	0	0	0	0	35
19:00	0	1	1	7	11	12	2	1	0	0	0	0	0	35
20:00	0	1	1	3	7	9	1	1	0	0	0	0	0	23
21:00	0	1	2	4	8	5	3	1	0	0	0	0	0	24
22:00	0	1	2	2	2	1	1	0	0	0	0	0	0	9
23:00	0	0	2	2	3	1	0	0	1	0	0	0	0	9
Total	7	12	39	102	173	141	67	25	6	2	0	0	0	574

Statistics 85th Percentile : 36 MPH

Location: 45th 60' E of Van Buren
Site Code: 05252106
Counter # 28229
05/26/2021

Municipality of Anchorage
Traffic Engineering
Data Division
4700 Elmore Road
Anchorage, AK 99507
907-343-8406

045 & Van Buren_Spd
Site Code: 05252106
Station ID: 28229

EB TH, WB TH

Start Time	0 MPH 10 MPH	11 MPH 15 MPH	16 MPH 20 MPH	21 MPH 25 MPH	26 MPH 30 MPH	31 MPH 35 MPH	36 MPH 40 MPH	41 MPH 45 MPH	46 MPH 50 MPH	51 MPH 55 MPH	56 MPH 60 MPH	61 MPH 65 MPH	66 MPH Above	Total
05/26/21	0	0	6	6	0	0	1	0	0	0	0	0	0	13
01:00	0	0	2	0	0	1	0	0	0	0	0	0	0	3
02:00	0	1	0	1	0	0	0	0	0	0	0	0	0	2
03:00	0	1	0	4	1	1	0	1	0	0	0	0	0	8
04:00	1	0	0	0	2	1	1	0	0	0	0	0	0	5
05:00	0	0	0	4	2	1	0	0	1	0	0	0	0	8
06:00	0	1	1	4	6	6	4	2	0	0	0	0	0	24
07:00	6	5	4	13	18	4	5	0	0	1	0	0	0	56
08:00	0	2	5	13	9	11	7	5	0	0	0	0	1	53
09:00	2	0	10	14	11	12	7	2	2	0	0	0	0	60
10:00	0	2	4	22	22	7	5	1	1	0	0	0	0	64
11:00	2	1	3	21	20	11	1	1	0	0	0	0	0	60
12 PM	2	0	6	23	20	13	5	0	0	0	0	0	0	69
13:00	0	2	8	32	33	7	4	2	0	0	0	0	0	88
14:00	1	2	14	29	21	10	4	2	0	1	0	0	0	84
15:00	0	3	14	29	28	12	6	0	0	0	0	0	0	92
16:00	2	1	17	29	22	14	2	3	0	0	0	0	0	90
17:00	1	1	11	34	37	6	4	1	1	0	0	0	0	96
18:00	0	0	14	28	26	9	4	2	0	0	0	0	0	83
19:00	0	2	5	14	24	12	2	1	0	0	0	0	0	60
20:00	0	2	11	21	14	10	1	1	0	0	0	0	0	60
21:00	1	3	6	22	14	5	3	1	0	0	0	0	0	55
22:00	0	1	7	9	7	2	1	0	0	0	0	0	0	27
23:00	0	2	8	7	6	3	0	0	1	0	0	0	0	27
Total	18	32	156	379	343	158	67	25	6	2	0	0	1	1187

Statistics 85th Percentile : 32 MPH

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 46th 347 E of Northwood
Start Date: 08-31-2023

Site Code: 08302305
Station ID: R4

Direction: Westbound

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
7:00	0	0	0	2	0	1	0	0	0	0	0	0	0	3
8:00	1	0	1	2	0	0	0	0	0	0	0	0	0	4
9:00	3	0	1	3	1	0	0	0	0	0	0	0	0	8
10:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
11:00	0	1	2	1	1	0	0	0	0	0	0	0	0	5
12:00	3	0	4	0	0	0	0	0	0	0	0	0	0	7
13:00	0	0	4	2	1	0	0	0	0	0	0	0	0	7
14:00	0	0	1	3	1	1	0	0	0	0	0	0	0	6
15:00	0	0	2	4	2	1	0	0	0	0	0	0	0	9
16:00	1	3	5	2	0	0	0	0	0	0	0	0	0	11
17:00	1	5	3	0	0	0	0	0	0	0	0	0	0	9
18:00	0	1	3	3	0	0	0	0	0	0	0	0	0	7
19:00	0	3	2	1	1	0	0	0	0	0	0	0	0	7
20:00	0	1	3	0	1	0	0	0	0	0	0	0	0	5
21:00	0	1	1	1	1	0	0	0	0	0	0	0	0	4
22:00	0	0	2	1	0	0	0	0	0	0	0	0	0	3
23:00	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	10	19	36	26	9	3	0	0	0	0	0	0	0	103
Stats			Percentile Speed	85th 24										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 46th 347 E of Northwood
Start Date: 08-31-2023

Site Code: 08302305
Station ID: R4

Direction: Eastbound

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	3	0	1	0	0	0	0	0	0	0	0	0	0	4
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
3:00	0	0	0	0	1	1	0	0	0	0	0	0	0	2
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00	0	2	2	0	1	0	0	0	0	0	0	0	0	5
8:00	0	4	2	0	1	0	0	0	0	0	0	0	0	7
9:00	1	0	1	1	0	0	0	0	0	0	0	0	0	3
10:00	0	0	2	1	1	1	0	0	0	0	0	0	0	5
11:00	0	2	2	3	1	0	0	0	0	0	0	0	0	8
12:00	0	0	2	0	1	0	0	0	0	0	0	0	0	3
13:00	0	0	1	2	1	0	0	0	0	0	0	0	0	4
14:00	0	1	4	0	0	0	0	0	0	0	0	0	0	5
15:00	0	2	0	2	2	0	0	0	0	0	0	0	0	6
16:00	1	2	6	1	0	0	0	0	0	0	0	0	0	10
17:00	3	2	5	1	0	0	0	0	0	0	0	0	0	11
18:00	1	0	4	4	2	0	0	0	0	0	0	0	0	11
19:00	1	0	2	0	0	0	0	0	0	0	0	0	0	3
20:00	0	0	3	2	0	0	0	0	0	0	0	0	0	5
21:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3
22:00	1	1	4	0	0	0	0	0	0	0	0	0	0	6
23:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	11	16	44	21	11	2	0	0	0	0	0	0	0	105
Stats			Percentile Speed	85th 24										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 46th 347 E of Northwood
Start Date: 08-31-2023

Site Code: 08302305
Station ID: R4

Direction: Combined

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	3	1	1	0	0	0	0	0	0	0	0	0	0	5
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
3:00	0	0	0	0	1	1	0	0	0	0	0	0	0	2
4:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
7:00	0	2	2	2	1	1	0	0	0	0	0	0	0	8
8:00	1	4	3	2	1	0	0	0	0	0	0	0	0	11
9:00	4	0	2	4	1	0	0	0	0	0	0	0	0	11
10:00	0	0	3	2	1	1	0	0	0	0	0	0	0	7
11:00	0	3	4	4	2	0	0	0	0	0	0	0	0	13
12:00	3	0	6	0	1	0	0	0	0	0	0	0	0	10
13:00	0	0	5	4	2	0	0	0	0	0	0	0	0	11
14:00	0	1	5	3	1	1	0	0	0	0	0	0	0	11
15:00	0	2	2	6	4	1	0	0	0	0	0	0	0	15
16:00	2	5	11	3	0	0	0	0	0	0	0	0	0	21
17:00	4	7	8	1	0	0	0	0	0	0	0	0	0	20
18:00	1	1	7	7	2	0	0	0	0	0	0	0	0	18
19:00	1	3	4	1	1	0	0	0	0	0	0	0	0	10
20:00	0	1	6	2	1	0	0	0	0	0	0	0	0	10
21:00	0	1	2	3	1	0	0	0	0	0	0	0	0	7
22:00	1	1	6	1	0	0	0	0	0	0	0	0	0	9
23:00	1	0	1	0	0	0	0	0	0	0	0	0	0	2
Total	21	35	80	47	20	5	0	0	0	0	0	0	0	208
Stats			Percentile Speed	85th 24										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 46th 343' W of Taft
Start Date: 08-31-2023

Site Code: 08302306
Station ID: R6

Direction: WB TH

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	1	5	0	1	0	0	0	0	0	0	0	0	7
7:00	1	0	4	2	1	0	0	0	0	0	0	0	0	8
8:00	1	2	7	1	1	0	0	0	0	0	0	0	0	12
9:00	0	3	4	1	1	0	0	0	0	0	0	0	0	9
10:00	2	2	1	2	0	0	0	0	0	0	0	0	0	7
11:00	0	1	8	2	0	0	0	0	0	0	0	0	0	11
12:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3
13:00	2	1	6	3	0	0	0	0	0	0	0	0	0	12
14:00	0	3	2	3	0	0	0	0	0	0	0	0	0	8
15:00	2	3	1	2	1	0	0	0	0	0	0	0	0	9
16:00	2	8	5	1	0	0	0	0	0	0	0	0	0	16
17:00	5	6	1	0	0	0	0	0	0	0	0	0	0	12
18:00	0	4	5	1	0	0	0	0	0	0	0	0	0	10
19:00	0	1	3	1	0	0	0	0	0	0	0	0	0	5
20:00	0	3	0	0	1	0	0	0	0	0	0	0	0	4
21:00	1	1	3	0	0	0	0	0	0	0	0	0	0	5
22:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	16	41	58	21	6	0	0	0	0	0	0	0	0	142
Stats			Percentile Speed	85th 20										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 46th 343' W of Taft
Start Date: 08-31-2023

Site Code: 08302306
Station ID: R6

Direction: EB TH

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2
3:00	0	1	0	0	0	1	0	0	0	0	0	0	0	2
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
7:00	1	0	1	2	0	0	0	0	0	0	0	0	0	4
8:00	0	3	3	0	0	0	1	0	0	0	0	0	0	7
9:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3
10:00	1	1	3	0	0	0	0	0	0	0	0	0	0	5
11:00	1	2	2	2	1	0	0	0	0	0	0	0	0	8
12:00	0	0	0	2	1	0	0	0	0	0	0	0	0	3
13:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
14:00	0	1	0	0	0	1	0	0	0	0	0	0	0	2
15:00	0	0	4	2	1	0	0	0	0	0	0	0	0	7
16:00	6	6	3	3	0	0	0	0	0	0	0	0	0	18
17:00	6	6	6	0	0	0	0	0	0	0	0	0	0	18
18:00	2	3	4	3	0	0	0	0	0	0	0	0	0	12
19:00	1	3	5	0	0	0	0	0	0	0	0	0	0	9
20:00	0	2	0	1	0	0	0	0	0	0	0	0	0	3
21:00	0	0	2	3	0	0	0	0	0	0	0	0	0	5
22:00	0	0	3	1	0	0	0	0	0	0	0	0	0	4
23:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
Total	18	34	39	23	4	2	1	0	0	0	0	0	0	121
Stats			Percentile Speed	85th 22										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 46th 343' W of Taft
Start Date: 08-31-2023

Site Code: 08302306
Station ID: R6

Direction: Combined

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2
3:00	0	1	0	0	0	1	0	0	0	0	0	0	0	2
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	1	5	1	1	0	0	0	0	0	0	0	0	8
7:00	2	0	5	4	1	0	0	0	0	0	0	0	0	12
8:00	1	5	10	1	1	0	1	0	0	0	0	0	0	19
9:00	0	3	5	3	1	0	0	0	0	0	0	0	0	12
10:00	3	3	4	2	0	0	0	0	0	0	0	0	0	12
11:00	1	3	10	4	1	0	0	0	0	0	0	0	0	19
12:00	0	0	1	4	1	0	0	0	0	0	0	0	0	6
13:00	2	5	7	3	0	0	0	0	0	0	0	0	0	17
14:00	0	4	2	3	0	1	0	0	0	0	0	0	0	10
15:00	2	3	5	4	2	0	0	0	0	0	0	0	0	16
16:00	8	14	8	4	0	0	0	0	0	0	0	0	0	34
17:00	11	12	7	0	0	0	0	0	0	0	0	0	0	30
18:00	2	7	9	4	0	0	0	0	0	0	0	0	0	22
19:00	1	4	8	1	0	0	0	0	0	0	0	0	0	14
20:00	0	5	0	1	1	0	0	0	0	0	0	0	0	7
21:00	1	1	5	3	0	0	0	0	0	0	0	0	0	10
22:00	0	1	4	1	0	0	0	0	0	0	0	0	0	6
23:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
Total	34	75	97	44	10	2	1	0	0	0	0	0	0	263
Stats			Percentile Speed	85th 22										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 47th 406'W of Taft
Start Date: 08-31-2023

Site Code: 08302307
Station ID: R3

Direction: Eastbound

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	1	0	0	0	1	0	0	0	1	0	0	0	0	3
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:00	0	2	3	1	0	0	0	0	0	0	0	0	0	6
7:00	0	0	3	4	0	0	0	0	0	0	0	0	0	7
8:00	1	1	4	2	0	0	0	0	0	0	0	0	0	8
9:00	0	0	1	1	1	0	0	0	0	0	0	0	0	3
10:00	0	1	3	0	1	0	0	0	0	0	0	0	0	5
11:00	0	0	3	1	0	0	0	0	0	0	0	0	0	4
12:00	1	1	5	2	1	0	0	0	0	0	0	0	0	10
13:00	0	0	3	1	4	0	0	0	0	0	0	0	0	8
14:00	0	1	6	6	2	0	0	0	0	0	0	0	0	15
15:00	0	3	3	3	1	1	0	0	0	0	0	0	0	11
16:00	1	2	7	5	2	1	0	0	0	0	0	0	0	18
17:00	1	2	2	7	0	0	0	0	0	0	0	0	0	12
18:00	0	1	2	2	0	0	0	0	0	0	0	0	0	5
19:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
20:00	0	0	3	1	0	0	0	0	0	0	0	0	0	4
21:00	0	2	3	1	0	0	0	0	0	0	0	0	0	6
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	5	17	52	38	13	2	0	0	1	0	0	0	0	128
Stats			Percentile Speed	85th 24										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 47th 406'W of Taft
Start Date: 08-31-2023

Site Code: 08302307
Station ID: R3

Direction: Westbound

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
6:00	0	0	3	1	0	0	0	0	0	0	0	0	0	4
7:00	0	1	0	2	1	1	0	0	0	0	0	0	0	5
8:00	0	0	2	3	0	0	0	0	0	0	0	0	0	5
9:00	0	0	0	3	0	0	0	0	0	0	0	0	0	3
10:00	0	0	1	3	0	0	0	0	0	0	0	0	0	4
11:00	0	1	0	2	0	0	0	0	0	0	0	0	0	3
12:00	0	0	4	3	0	0	0	0	0	0	0	0	0	7
13:00	0	1	1	2	2	0	0	0	0	0	0	0	0	6
14:00	1	0	2	3	1	0	0	0	0	0	0	0	0	7
15:00	0	2	8	3	1	0	0	0	0	0	0	0	0	14
16:00	1	0	5	6	2	0	0	0	0	0	0	0	0	14
17:00	1	1	7	3	0	0	0	0	0	0	0	0	0	12
18:00	0	0	1	1	1	0	0	0	0	0	0	0	0	3
19:00	0	0	5	3	0	0	0	0	0	0	0	0	0	8
20:00	0	0	8	7	0	0	0	0	0	0	0	0	0	15
21:00	0	0	1	0	3	0	0	0	0	0	0	0	0	4
22:00	0	1	0	1	0	0	0	0	0	0	0	0	0	2
23:00	0	0	3	0	1	0	0	0	0	0	0	0	0	4
Total	3	9	52	47	12	1	0	0	0	0	0	0	0	124
Stats			Percentile Speed	85th 24										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 47th 406'W of Taft
Start Date: 08-31-2023

Site Code: 08302307
Station ID: R3

Direction: Combined

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
3:00	1	0	0	0	1	0	0	0	1	0	0	0	0	3
4:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
6:00	0	2	6	2	0	0	0	0	0	0	0	0	0	10
7:00	0	1	3	6	1	1	0	0	0	0	0	0	0	12
8:00	1	1	6	5	0	0	0	0	0	0	0	0	0	13
9:00	0	0	1	4	1	0	0	0	0	0	0	0	0	6
10:00	0	1	4	3	1	0	0	0	0	0	0	0	0	9
11:00	0	1	3	3	0	0	0	0	0	0	0	0	0	7
12:00	1	1	9	5	1	0	0	0	0	0	0	0	0	17
13:00	0	1	4	3	6	0	0	0	0	0	0	0	0	14
14:00	1	1	8	9	3	0	0	0	0	0	0	0	0	22
15:00	0	5	11	6	2	1	0	0	0	0	0	0	0	25
16:00	2	2	12	11	4	1	0	0	0	0	0	0	0	32
17:00	2	3	9	10	0	0	0	0	0	0	0	0	0	24
18:00	0	1	3	3	1	0	0	0	0	0	0	0	0	8
19:00	0	0	5	4	0	0	0	0	0	0	0	0	0	9
20:00	0	0	11	8	0	0	0	0	0	0	0	0	0	19
21:00	0	2	4	1	3	0	0	0	0	0	0	0	0	10
22:00	0	2	0	1	0	0	0	0	0	0	0	0	0	3
23:00	0	0	3	0	1	0	0	0	0	0	0	0	0	4
Total	8	26	104	85	25	3	0	0	1	0	0	0	0	252
Stats			Percentile Speed	85th 24										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 47th 395' E of Northwood
Start Date: 08-31-2023

Site Code: 08302309
Station ID: 25781

Direction: Eastbound

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	1	0	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	1	0	0	1	0	0	0	1	0	0	0	0	3
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00	1	0	2	0	0	1	0	0	0	0	0	0	0	4
8:00	1	1	2	0	0	0	0	0	0	0	0	0	0	4
9:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
10:00	0	2	5	0	0	0	0	0	0	0	0	0	0	7
11:00	0	1	1	1	0	0	0	0	0	0	0	0	0	3
12:00	1	1	2	3	2	0	0	0	0	0	0	0	0	9
13:00	0	1	4	3	0	1	0	0	0	0	0	0	0	9
14:00	0	2	4	5	5	0	1	0	0	0	0	0	0	17
15:00	1	2	5	4	1	0	0	0	0	0	0	0	0	13
16:00	1	3	10	2	3	1	0	0	0	0	0	0	0	20
17:00	2	0	2	2	2	1	0	0	0	0	0	0	0	9
18:00	0	1	2	4	0	0	0	0	0	0	0	0	0	7
19:00	0	0	2	0	0	0	0	0	0	0	0	0	0	2
20:00	1	1	2	4	3	0	0	0	0	0	0	0	0	11
21:00	0	3	4	1	0	0	0	0	0	0	0	0	0	8
22:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Total	10	21	47	31	18	4	1	0	1	0	0	0	0	133
Stats			Percentile Speed	85th 26										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 47th 395' E of Northwood
Start Date: 08-31-2023

Site Code: 08302309
Station ID: 25781

Direction: Westbound

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
2:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:00	0	0	0	2	0	0	0	0	0	0	0	0	0	2
6:00	0	0	1	2	1	0	0	0	0	0	0	0	0	4
7:00	0	1	2	1	1	0	1	0	1	0	0	0	0	7
8:00	0	1	4	2	1	0	0	0	0	0	0	0	0	8
9:00	0	0	2	1	0	0	0	0	0	0	0	0	0	3
10:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3
11:00	0	0	4	2	0	0	0	0	0	0	0	0	0	6
12:00	0	1	3	1	0	0	0	0	0	0	0	0	0	5
13:00	1	1	5	4	1	0	0	0	0	0	0	0	0	12
14:00	0	1	1	3	1	0	0	0	0	0	0	0	0	6
15:00	1	0	5	3	0	0	0	0	0	0	0	0	0	9
16:00	0	3	1	3	0	0	0	0	0	0	0	0	0	7
17:00	1	2	6	1	1	0	0	0	0	0	0	0	0	11
18:00	1	0	1	0	0	0	0	0	0	0	0	0	0	2
19:00	0	2	3	3	0	0	0	0	0	0	0	0	0	8
20:00	1	1	4	3	0	0	0	0	0	0	0	0	0	9
21:00	1	1	3	2	0	0	0	0	0	0	0	0	0	7
22:00	0	1	0	1	0	0	0	0	0	0	0	0	0	2
23:00	1	2	0	2	0	0	0	0	0	0	0	0	0	5
Total	7	19	47	39	6	0	1	0	1	0	0	0	0	120
Stats			Percentile Speed	85th 23										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 47th 395' E of Northwood
Start Date: 08-31-2023

Site Code: 08302309
Station ID: 25781

Direction: Combined

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	1	0	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
2:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:00	0	1	0	0	1	0	0	0	1	0	0	0	0	3
4:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:00	0	0	0	2	0	0	0	0	0	0	0	0	0	2
6:00	1	0	1	2	1	0	0	0	0	0	0	0	0	5
7:00	1	1	4	1	1	1	1	0	1	0	0	0	0	11
8:00	1	2	6	2	1	0	0	0	0	0	0	0	0	12
9:00	0	0	2	2	0	0	0	0	0	0	0	0	0	4
10:00	0	2	6	2	0	0	0	0	0	0	0	0	0	10
11:00	0	1	5	3	0	0	0	0	0	0	0	0	0	9
12:00	1	2	5	4	2	0	0	0	0	0	0	0	0	14
13:00	1	2	9	7	1	1	0	0	0	0	0	0	0	21
14:00	0	3	5	8	6	0	1	0	0	0	0	0	0	23
15:00	2	2	10	7	1	0	0	0	0	0	0	0	0	22
16:00	1	6	11	5	3	1	0	0	0	0	0	0	0	27
17:00	3	2	8	3	3	1	0	0	0	0	0	0	0	20
18:00	1	1	3	4	0	0	0	0	0	0	0	0	0	9
19:00	0	2	5	3	0	0	0	0	0	0	0	0	0	10
20:00	2	2	6	7	3	0	0	0	0	0	0	0	0	20
21:00	1	4	7	3	0	0	0	0	0	0	0	0	0	15
22:00	0	1	0	2	1	0	0	0	0	0	0	0	0	4
23:00	1	4	0	2	0	0	0	0	0	0	0	0	0	7
Total	17	40	94	70	24	4	2	0	2	0	0	0	0	253
Stats			Percentile Speed	85th 24										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: Van Buren 157' N of 47th
Start Date: 08-31-2023

Site Code: 08302308
Station ID: 25777

Direction: Northbound

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00	1	0	2	2	0	0	0	0	0	0	0	0	0	5
9:00	1	1	2	1	1	0	0	0	0	0	0	0	0	6
10:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
11:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
12:00	1	0	1	1	0	0	0	0	0	0	0	0	0	3
13:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
14:00	0	1	0	1	1	0	0	0	0	0	0	0	0	3
15:00	1	2	1	1	1	0	0	0	0	0	0	0	0	6
16:00	0	3	2	4	0	0	0	0	0	0	0	0	0	9
17:00	0	0	0	2	0	0	0	0	0	0	0	0	0	2
18:00	0	0	2	3	0	0	0	0	0	0	0	0	0	5
19:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
Total	4	7	16	19	3	0	0	0	0	0	0	0	0	49
Stats			Percentile Speed	85th 23										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: Van Buren 157' N of 47th
Start Date: 08-31-2023

Site Code: 08302308
Station ID: 25777

Direction: Southbound

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	1	0	3	1	2	0	0	0	0	0	0	0	0	7
9:00	3	1	0	1	0	0	0	0	0	0	0	0	0	5
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	1	1	1	1	0	0	0	0	0	0	0	0	4
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	1	0	0	1	0	0	0	0	0	0	0	0	0	2
14:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
15:00	0	1	2	2	0	0	0	0	0	0	0	0	0	5
16:00	0	0	2	0	0	0	0	0	0	0	0	0	0	2
17:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
18:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	5	5	10	9	3	0	0	0	0	0	0	0	0	32
Stats			Percentile Speed	85th 24										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: Van Buren 157' N of 47th
Start Date: 08-31-2023

Site Code: 08302308
Station ID: 25777

Direction: Combined

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
7:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00	2	0	5	3	2	0	0	0	0	0	0	0	0	12
9:00	4	2	2	2	1	0	0	0	0	0	0	0	0	11
10:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
11:00	0	1	2	2	1	0	0	0	0	0	0	0	0	6
12:00	1	0	1	1	0	0	0	0	0	0	0	0	0	3
13:00	1	0	1	1	0	0	0	0	0	0	0	0	0	3
14:00	0	1	1	2	1	0	0	0	0	0	0	0	0	5
15:00	1	3	3	3	1	0	0	0	0	0	0	0	0	11
16:00	0	3	4	4	0	0	0	0	0	0	0	0	0	11
17:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3
18:00	0	2	2	3	0	0	0	0	0	0	0	0	0	7
19:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
Total	9	12	26	28	6	0	0	0	0	0	0	0	0	81
Stats			Percentile Speed	85th 23										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 48th 320' E of Northwood
Start Date: 08-31-2023

Site Code: 08302310
Station ID: 34594

Direction: Eastbound

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	1	1	0	0	0	1	0	0	0	0	0	0	3
1:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1
2:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
3:00	0	1	0	0	1	0	0	0	0	0	0	0	0	2
4:00	0	0	1	1	0	0	1	0	0	0	0	0	0	3
5:00	0	0	0	3	1	4	0	0	0	0	0	0	0	8
6:00	0	0	2	5	4	1	3	0	0	0	0	0	0	15
7:00	0	1	6	19	12	6	0	0	0	0	0	0	0	44
8:00	0	2	17	27	11	2	2	0	0	0	0	0	0	61
9:00	0	3	6	11	8	1	1	0	0	0	0	0	0	30
10:00	0	0	6	5	5	0	0	0	0	0	0	0	0	16
11:00	0	0	17	19	5	1	0	0	0	0	0	0	0	42
12:00	0	1	8	8	13	3	0	0	0	0	0	0	0	33
13:00	1	2	9	9	5	2	1	0	0	0	0	0	0	29
14:00	1	1	10	11	4	3	1	0	0	0	0	0	0	31
15:00	0	6	14	17	8	2	0	0	0	0	0	0	0	47
16:00	2	0	5	19	13	2	1	0	0	0	0	0	0	42
17:00	0	1	1	12	15	1	1	0	0	0	0	0	0	31
18:00	0	0	7	4	7	4	0	0	0	0	0	0	0	22
19:00	0	1	1	3	1	0	0	0	0	0	0	0	0	6
20:00	0	1	0	3	2	1	0	0	0	0	0	0	0	7
21:00	0	1	1	2	3	0	0	0	0	0	0	0	0	7
22:00	0	1	3	1	2	0	0	0	0	0	0	0	0	7
23:00	0	1	1	0	1	0	0	0	0	0	0	0	0	3
Total	4	24	116	180	121	34	12	0	0	0	0	0	0	491
Stats			Percentile Speed	85th 28										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 48th 320' E of Northwood
Start Date: 08-31-2023

Site Code: 08302310
Station ID: 34594

Direction: Westbound

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	0	1	1	1	0	0	0	0	0	0	0	0	3
1:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
2:00	0	1	0	1	1	1	0	0	0	0	0	0	0	4
3:00	0	1	0	1	0	0	0	0	0	0	0	0	0	2
4:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:00	0	1	1	0	1	1	0	0	0	0	0	0	0	4
6:00	0	0	1	4	3	0	0	0	0	0	0	0	0	8
7:00	0	1	2	5	0	0	0	0	0	0	0	0	0	8
8:00	1	5	10	17	2	0	0	0	0	0	0	0	0	35
9:00	0	0	3	9	3	0	0	0	0	0	0	0	0	15
10:00	0	2	5	6	5	0	0	0	0	0	0	0	0	18
11:00	1	3	9	16	4	0	0	0	0	0	0	0	0	33
12:00	1	1	6	13	3	0	0	0	0	0	0	0	0	24
13:00	0	1	6	8	3	1	0	0	0	0	0	0	0	19
14:00	0	2	7	15	10	1	0	0	0	0	0	0	0	35
15:00	0	5	20	12	7	2	0	0	0	0	0	0	0	46
16:00	0	2	8	11	8	1	0	0	0	0	0	0	0	30
17:00	0	3	6	7	7	1	0	0	0	0	0	0	0	24
18:00	1	0	6	6	7	1	0	0	0	0	0	0	0	21
19:00	0	1	4	5	3	0	0	0	0	0	0	0	0	13
20:00	0	2	1	8	6	0	0	0	0	0	0	0	0	17
21:00	0	0	0	4	0	0	0	0	0	0	0	0	0	4
22:00	0	0	3	2	1	0	0	0	0	0	0	0	0	6
23:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Total	4	32	100	152	76	9	0	0	0	0	0	0	0	373
Stats			Percentile Speed	85th 26										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 48th 320' E of Northwood
Start Date: 08-31-2023

Site Code: 08302310
Station ID: 34594

Direction: Combined

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	1	2	1	1	0	1	0	0	0	0	0	0	6
1:00	0	0	1	1	0	1	0	0	0	0	0	0	0	3
2:00	0	1	0	2	1	1	0	0	0	0	0	0	0	5
3:00	0	2	0	1	1	0	0	0	0	0	0	0	0	4
4:00	0	1	1	1	0	0	1	0	0	0	0	0	0	4
5:00	0	1	1	3	2	5	0	0	0	0	0	0	0	12
6:00	0	0	3	9	7	1	3	0	0	0	0	0	0	23
7:00	0	2	8	24	12	6	0	0	0	0	0	0	0	52
8:00	1	7	27	44	13	2	2	0	0	0	0	0	0	96
9:00	0	3	9	20	11	1	1	0	0	0	0	0	0	45
10:00	0	2	11	11	10	0	0	0	0	0	0	0	0	34
11:00	1	3	26	35	9	1	0	0	0	0	0	0	0	75
12:00	1	2	14	21	16	3	0	0	0	0	0	0	0	57
13:00	1	3	15	17	8	3	1	0	0	0	0	0	0	48
14:00	1	3	17	26	14	4	1	0	0	0	0	0	0	66
15:00	0	11	34	29	15	4	0	0	0	0	0	0	0	93
16:00	2	2	13	30	21	3	1	0	0	0	0	0	0	72
17:00	0	4	7	19	22	2	1	0	0	0	0	0	0	55
18:00	1	0	13	10	14	5	0	0	0	0	0	0	0	43
19:00	0	2	5	8	4	0	0	0	0	0	0	0	0	19
20:00	0	3	1	11	8	1	0	0	0	0	0	0	0	24
21:00	0	1	1	6	3	0	0	0	0	0	0	0	0	11
22:00	0	1	6	3	3	0	0	0	0	0	0	0	0	13
23:00	0	1	1	0	2	0	0	0	0	0	0	0	0	4
Total	8	56	216	332	197	43	12	0	0	0	0	0	0	864
Stats			Percentile Speed	85th 27										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 48th 62' E of Van Buren
Start Date: 08-31-2023

Site Code: 08302311
Station ID: 30302

Direction: Eastbound

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	0	2	0	0	0	0	0	0	0	1	0	0	3
1:00	0	0	1	0	0	0	1	0	0	0	0	0	0	2
2:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:00	0	0	0	0	0	1	0	0	0	1	0	0	0	2
5:00	0	1	2	1	0	1	0	0	2	0	0	0	0	7
6:00	0	1	2	0	3	2	3	0	0	0	0	0	0	11
7:00	0	1	3	6	12	8	6	3	0	0	0	0	0	39
8:00	0	3	6	11	14	17	7	6	0	2	0	0	0	66
9:00	0	5	8	3	10	7	2	1	0	0	1	0	0	37
10:00	0	2	8	4	2	1	2	0	0	0	0	0	0	19
11:00	0	2	8	10	12	4	2	2	0	0	0	0	0	40
12:00	0	3	11	4	4	3	6	1	2	0	0	0	0	34
13:00	0	1	6	6	6	3	2	2	0	0	0	0	0	26
14:00	0	5	14	3	3	6	6	1	1	0	0	1	1	41
15:00	0	4	21	9	9	17	10	8	1	0	0	0	0	79
16:00	0	3	9	4	14	9	5	2	1	1	1	0	0	49
17:00	0	3	4	1	7	11	6	5	1	0	0	0	1	39
18:00	2	1	5	3	2	7	1	3	2	0	0	0	0	26
19:00	0	2	3	1	2	1	0	1	0	0	0	0	0	10
20:00	0	0	0	0	2	1	0	1	1	0	0	0	0	5
21:00	0	0	1	0	3	2	0	1	0	0	0	0	0	7
22:00	0	0	2	0	2	2	1	0	0	0	0	0	0	7
23:00	0	0	0	0	2	2	0	0	0	0	0	0	0	4
Total	2	37	116	67	109	105	60	38	11	4	3	1	2	555
Stats			Percentile Speed	85th 37										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 48th 62' E of Van Buren
Start Date: 08-31-2023

Site Code: 08302311
Station ID: 30302

Direction: Westbound

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
2:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	2	0	1	0	0	0	0	0	0	0	0	3
5:00	0	3	3	1	0	0	0	0	0	0	0	0	0	7
6:00	0	5	5	2	0	0	0	0	0	0	0	0	0	12
7:00	1	4	8	0	0	1	0	0	0	0	0	0	0	14
8:00	1	11	19	9	0	1	0	0	0	0	0	0	0	41
9:00	2	7	11	2	0	0	0	0	0	0	0	0	0	22
10:00	1	2	10	4	0	0	0	0	0	0	0	0	0	17
11:00	0	2	14	5	0	0	0	0	0	0	0	0	0	21
12:00	0	7	11	3	0	0	0	0	0	0	0	0	0	21
13:00	0	3	8	6	1	0	0	0	0	0	0	0	0	18
14:00	0	12	13	6	0	0	0	0	0	0	0	0	0	31
15:00	1	5	13	15	1	0	1	0	0	0	0	0	0	36
16:00	0	5	8	8	1	0	0	0	0	0	0	0	0	22
17:00	1	0	11	7	1	1	0	0	0	0	0	0	0	21
18:00	0	5	11	4	0	0	0	0	0	0	0	0	0	20
19:00	0	2	7	2	0	1	0	0	0	0	0	0	0	12
20:00	1	2	7	7	0	0	0	0	0	0	0	0	0	17
21:00	0	1	6	0	0	0	0	0	0	0	0	0	0	7
22:00	0	2	5	2	0	0	0	0	0	0	0	0	0	9
23:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	8	80	175	85	5	4	1	0	0	0	0	0	0	358
Stats			Percentile Speed	85th 21										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 48th 62' E of Van Buren
Start Date: 08-31-2023

Site Code: 08302311
Station ID: 30302

Direction: Combined

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	1	2	0	0	0	0	0	0	0	1	0	0	4
1:00	0	1	2	0	0	0	1	0	0	0	0	0	0	4
2:00	0	0	1	3	0	0	0	0	0	0	0	0	0	4
3:00	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:00	0	0	2	0	1	1	0	0	0	1	0	0	0	5
5:00	0	4	5	2	0	1	0	0	2	0	0	0	0	14
6:00	0	6	7	2	3	2	3	0	0	0	0	0	0	23
7:00	1	5	11	6	12	9	6	3	0	0	0	0	0	53
8:00	1	14	25	20	14	18	7	6	0	2	0	0	0	107
9:00	2	12	19	5	10	7	2	1	0	0	1	0	0	59
10:00	1	4	18	8	2	1	2	0	0	0	0	0	0	36
11:00	0	4	22	15	12	4	2	2	0	0	0	0	0	61
12:00	0	10	22	7	4	3	6	1	2	0	0	0	0	55
13:00	0	4	14	12	7	3	2	2	0	0	0	0	0	44
14:00	0	17	27	9	3	6	6	1	1	0	0	1	1	72
15:00	1	9	34	24	10	17	11	8	1	0	0	0	0	115
16:00	0	8	17	12	15	9	5	2	1	1	1	0	0	71
17:00	1	3	15	8	8	12	6	5	1	0	0	0	1	60
18:00	2	6	16	7	2	7	1	3	2	0	0	0	0	46
19:00	0	4	10	3	2	2	0	1	0	0	0	0	0	22
20:00	1	2	7	7	2	1	0	1	1	0	0	0	0	22
21:00	0	1	7	0	3	2	0	1	0	0	0	0	0	14
22:00	0	2	7	2	2	2	1	0	0	0	0	0	0	16
23:00	0	0	1	0	2	2	0	0	0	0	0	0	0	5
Total	10	117	291	152	114	109	61	38	11	4	3	1	2	913
Stats			Percentile Speed	85th 34										

APPENDIX B

MOA Traffic Data Management System 2017-2021 Crash Data

Analysis Information

Date: **1/1/2017 - 12/31/2021**
Intersection Related: **All**

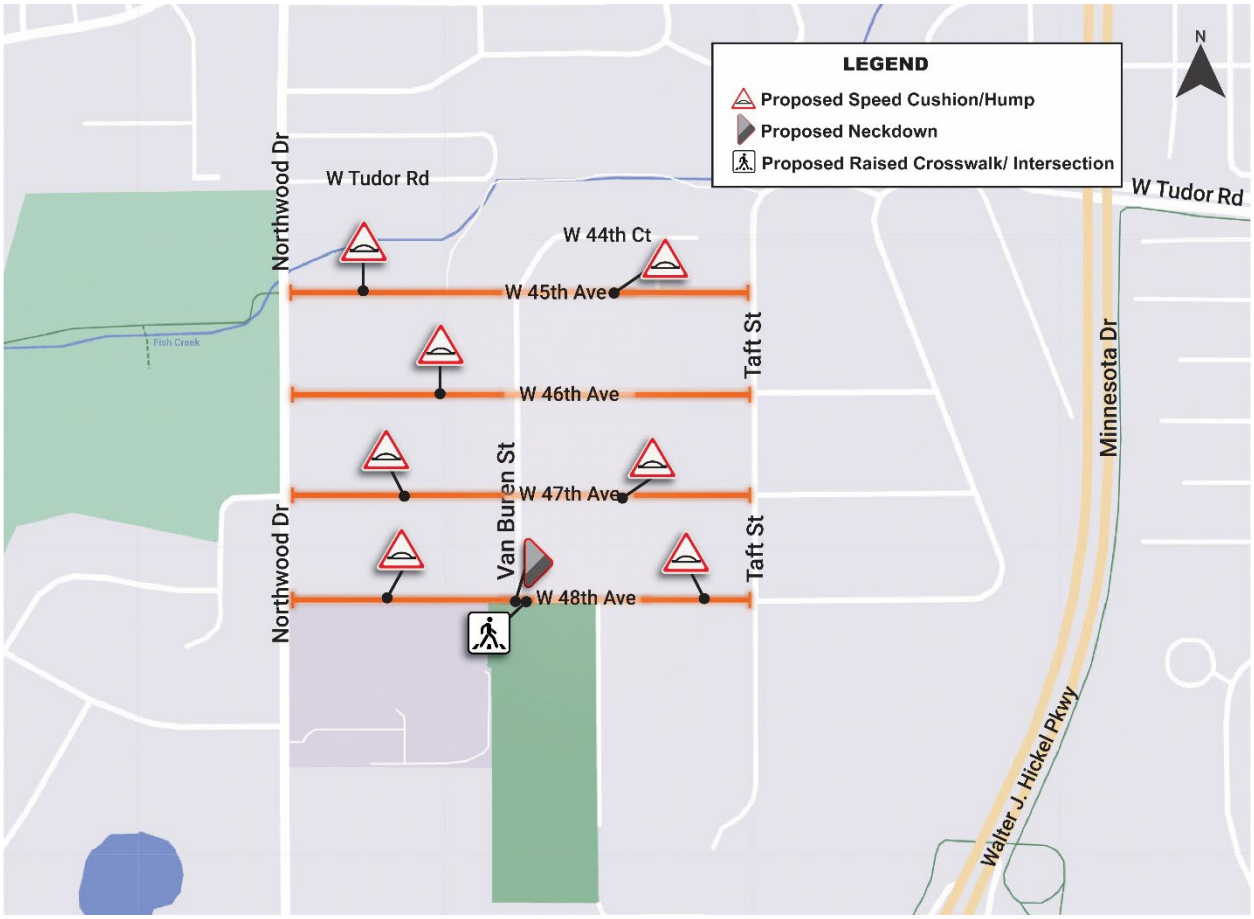
Date	Time	Peak	Dist	Dir	Street	Cross Reference	Event Location	Most Harmful Event	Impact	Lighting
2/4/2018	AM 02:37		0 ft.	None	WEST 48TH AVENUE, ANCHORAGE	NORTHWOOD DRIVE, ANCHORAGE	Roadside	Fence	Not a Collision with a Motor Vehicle In-Transport	Dark, unknown lighting
2/4/2018	AM 02:37		0 ft.	None	WEST 48TH AVENUE, ANCHORAGE	NORTHWOOD DRIVE, ANCHORAGE	Roadside	Fence	Not a Collision with a Motor Vehicle In-Transport	Dark, unknown lighting
5/11/2018	AM 09:20	AM	0 ft.	None	WEST 47TH AVENUE, ANCHORAGE	TAFT STREET, ANCHORAGE	Roadway	Motor Vehicle In-Transport	Angle	Daylight
5/11/2018	AM 09:20	AM	0 ft.	None	WEST 47TH AVENUE, ANCHORAGE	TAFT STREET, ANCHORAGE	Roadway	Motor Vehicle In-Transport	Angle	Daylight
11/22/2018	AM 07:52	AM	100 ft.	North	NORTHWOOD DRIVE, ANCHORAGE	WEST 45TH AVENUE, ANCHORAGE	Roadside	Other Post, Other Pole or Other Supports	Not a Collision with a Motor Vehicle In-Transport	Dark, unknown lighting
11/22/2018	AM 07:52	AM	100 ft.	North	NORTHWOOD DRIVE, ANCHORAGE	WEST 45TH AVENUE, ANCHORAGE	Roadside	Other Post, Other Pole or Other Supports	Not a Collision with a Motor Vehicle In-Transport	Dark, unknown lighting
2/24/2019	PM 07:00		239 ft.	West	WEST 46TH AVENUE, ANCHORAGE	TAFT STREET, ANCHORAGE	Roadside	Parked Motor Vehicle	Sideswipe - Same Direction	Other
2/24/2019	PM 07:00		239 ft.	West	WEST 46TH AVENUE, ANCHORAGE	TAFT STREET, ANCHORAGE	Roadside	Parked Motor Vehicle	Sideswipe - Same Direction	Other
6/8/2019	AM 02:39		210 ft.	East	WEST 47TH AVENUE, ANCHORAGE	TAFT STREET, ANCHORAGE	Roadside	Parked Motor Vehicle	Other	Dark, roadway not lighted
6/8/2019	AM 02:39		210 ft.	East	WEST 47TH AVENUE, ANCHORAGE	TAFT STREET, ANCHORAGE	Roadside	Parked Motor Vehicle	Other	Dark, roadway not lighted
6/8/2019	AM 02:39		210 ft.	East	WEST 47TH AVENUE, ANCHORAGE	TAFT STREET, ANCHORAGE	Roadside	Parked Motor Vehicle	Other	Dark, roadway not lighted
1/24/2020	PM 01:16	Midday	0 ft.	None	WEST 46TH AVENUE, ANCHORAGE	TAFT STREET, ANCHORAGE	Roadway	Motor Vehicle In-Transport	Angle	Daylight
1/24/2020	PM 01:16	Midday	0 ft.	None	WEST 46TH AVENUE, ANCHORAGE	TAFT STREET, ANCHORAGE	Roadway	Motor Vehicle In-Transport	Angle	Daylight
11/11/2020	PM 05:59	PM	0 ft.	None	WEST 45TH AVENUE, ANCHORAGE	NORTHWOOD DRIVE, ANCHORAGE	Roadway	Motor Vehicle In-Transport	Angle	Dark, unknown lighting
11/11/2020	PM 05:59	PM	0 ft.	None	WEST 45TH AVENUE, ANCHORAGE	NORTHWOOD DRIVE, ANCHORAGE	Roadway	Motor Vehicle In-Transport	Angle	Dark, unknown lighting
3/28/2021	AM 10:13		0 ft.	None	WEST 46TH AVENUE, ANCHORAGE	TAFT STREET, ANCHORAGE	Roadway	Motor Vehicle In-Transport	Angle	Daylight
3/28/2021	AM 10:13		0 ft.	None	WEST 46TH AVENUE, ANCHORAGE	TAFT STREET, ANCHORAGE	Roadway	Motor Vehicle In-Transport	Angle	Daylight
3/28/2021	AM 10:13		0 ft.	None	WEST 46TH AVENUE, ANCHORAGE	TAFT STREET, ANCHORAGE	Roadway	Motor Vehicle In-Transport	Angle	Daylight

Weather 1	Weather 2	Roadway Surface	Unit No.	Most Contributing Unit	Dir. of Travel	Traffic Control	Unit Event	Vehicle Action
Clear	No Additional Atmospheric Conditions	Ice	1	Yes	West	Stop Sign	Ran Off Roadway-Left	Turning left
Clear	No Additional Atmospheric Conditions	Ice	1	Yes	West	Stop Sign	Ran Off Roadway-Left	Turning left
Cloudy	Rain	Wet	1	Yes	East	Stop Sign	Motor Vehicle In-Transport	Straight ahead
Cloudy	Rain	Wet	2	No	North	No Controls	Motor Vehicle In-Transport	Straight ahead
Clear	No Additional Atmospheric Conditions	Ice	1	Yes	North	No Controls	Cross Median	Straight ahead
Clear	No Additional Atmospheric Conditions	Ice	1	Yes	North	No Controls	Cross Median	Straight ahead
Other	No Additional Atmospheric Conditions	Snow	1	No	West	No Controls	Motor Vehicle In-Transport	Parked
Other	No Additional Atmospheric Conditions	Snow	2	Yes	West	No Controls	Parked Motor Vehicle	Straight ahead
Clear	No Additional Atmospheric Conditions	Dry	1	Yes	East	No Controls	Parked Motor Vehicle	Leaving traffic lane
Clear	No Additional Atmospheric Conditions	Dry	2	No	South	No Controls	Not-In-Motion or Working Motor Vehicle is Struck by Motor Vehicle In-Transport	Parked
Clear	No Additional Atmospheric Conditions	Dry	3	No	South	No Controls	Not-In-Motion or Working Motor Vehicle is Struck by Motor Vehicle In-Transport	Parked
Clear	No Additional Atmospheric Conditions	Snow	1	Yes	East	Stop Sign	Motor Vehicle In-Transport	Starting in traffic
Clear	No Additional Atmospheric Conditions	Snow	2	No	South	No Controls	Motor Vehicle In-Transport	Straight ahead
Clear	No Additional Atmospheric Conditions	Ice	1	Yes	West	Stop Sign	Motor Vehicle In-Transport	Turning right
Clear	No Additional Atmospheric Conditions	Ice	2	No	North	Traffic Control Signal (on colors) not known whether or not Pedestrian Signal	Motor Vehicle In-Transport	Straight ahead
Cloudy	No Additional Atmospheric Conditions	Ice	1	Yes	East	Stop Sign	Motor Vehicle In-Transport	Straight ahead
Cloudy	No Additional Atmospheric Conditions	Ice	1	Yes	East	Stop Sign	Motor Vehicle In-Transport	Straight ahead
Cloudy	No Additional Atmospheric Conditions	Ice	2	No	South	No Controls	Motor Vehicle In-Transport	Straight ahead

Roadway Circumstance 1	Sex	Age	Human Circum 1	Human Circum 2	Poss. Alc / Drug	Occupant Type	Restraint / Airbag	Injury Status	Int Related
None	M	19	Unsafe speed	HR	No / No	Occupant	Unknown	None	Related
None	M	19	Unsafe speed	HR	No / No	Operator	Unknown	None	Related
None	F	33	Failure to yield		No / No	Operator	Shoulder and Lap Belt Used	None	Related
None	M	52	No improper driving		No / No	Operator	Shoulder and Lap Belt Used	Non-incapacitating	Related
Road Surface Condition (wet, icy, snow, slush, etc.)	M	39	Unsafe speed	HR	Unknown / Unknown	Occupant	Shoulder and Lap Belt Used	Non-incapacitating	Not Related
Road Surface Condition (wet, icy, snow, slush, etc.)	M	39	Unsafe speed	HR	Unknown / Unknown	Operator	Unknown	Possible	Not Related
Road Surface Condition (wet, icy, snow, slush, etc.)						No Operator			Not Related
None	Unk		Other	HR	No / No	Operator	Shoulder and Lap Belt Used	None	Not Related
None	F	23	OUI	HR	Yes / Unknown	Operator	Shoulder and Lap Belt Used	None	Not Related
None						No Operator			Not Related
None						No Operator			Not Related
None	F	46	Failure to yield		No / No	Operator	Shoulder and Lap Belt Used	Possible	Related
Road Surface Condition (wet, icy, snow, slush, etc.)	M	47	No improper driving		No / No	Operator	Shoulder and Lap Belt Used	None	Related
Road Surface Condition (wet, icy, snow, slush, etc.)	M	32	Aggressive Erratic Operation	Stop sign violation	No / No	Operator	Shoulder and Lap Belt Used	Non-incapacitating	Related
Road Surface Condition (wet, icy, snow, slush, etc.)	M	18	No improper driving		No / No	Operator	Shoulder and Lap Belt Used	Non-incapacitating	Related
Road Surface Condition (wet, icy, snow, slush, etc.)	F	70	Failure to yield		No / No	Occupant	Shoulder and Lap Belt Used	None	Related
Road Surface Condition (wet, icy, snow, slush, etc.)	F	70	Failure to yield		No / No	Operator	Shoulder and Lap Belt Used	None	Related
Road Surface Condition (wet, icy, snow, slush, etc.)	F	52	No improper driving		No / No	Operator	Shoulder and Lap Belt Used	None	Related

APPENDIX C

Proposed Traffic Calming Alternative Figure


LEGEND
Proposed Speed Cushion/Hump
Proposed Neckdown
Proposed Raised Crosswalk/ Intersection
N
W Tudor Rd
Northwood Dr
W 44th Ct
W 45th Ave
W 46th Ave
W 47th Ave
W 48th Ave
Van Buren St
Taft St
Minnesota Dr
Walter J. Hickel Pkwy
Fish Creek

APPENDIX D

Stop Sign Warrant Evaluation

HDL ENGINEERING Consultants LLC

MEMORANDUM

Date: September 27, 2024

To: Kris Langley, Traffic Safety Division Manager
MOA Traffic Engineering Department

From: Matthew Coburn, PE MC

Subject: West 48th Avenue at Van Buren Street Stop Sign Warrant Evaluation
Spenard Community Council - Northwood Dr to Taft St Traffic Calming
(TRF-SF-23-005)

Civil Engineering

Geotechnical Engineering

Transportation Engineering

Aviation Engineering

W/WW Engineering

Environmental Services

Surveying & Mapping

Construction Administration

Material Testing

The Municipality of Anchorage (MOA) Traffic Engineering Department has requested HDL Engineering Consultants, LLC (HDL) provide a stop sign warrant analysis and recommendations for the West 48th Avenue and Van Buren Street intersection. This evaluation was requested due to anticipated traffic calming improvements within the West 48th Avenue corridor.

Project Location and Characteristics

The West 48th Avenue and Van Buren Street roadways are urban streets located in west Anchorage within the Spenard Community Council (See **Figure 1**).

Figure 1. Location and Vicinity Map

3335 Arctic Boulevard, Suite 100, Anchorage, Alaska 99503 907.564.2120
1617 S. Industrial Way, Suite 3, Palmer, Alaska 99645 907.746.5230
110 Trading Bay, Unit 120, Kenai, AK 99611 907.564.2120

West 48th Avenue is classified as an eastbound/westbound neighborhood collector roadway in the Official Streets & Highways Plan (OS&HP). The roadway consists of two striped lanes (one lane for each direction of travel) with curb and gutter on both sides of the roadway. Pedestrian facilities include a continuous sidewalk on the south side and short segments of sidewalk on the north side of the roadway east of the Northwood Drive and Van Buren Street intersections, which provide access to previously abandoned transit stops. Residents appear to utilize on-street parking on the roadway.

Van Buren Street is classified as a northbound/southbound local road in the OS&HP and is a two-lane roadway with curb and gutter on both sides, with no striping delineating lanes. There are no pedestrian facilities located adjacent to the Van Buren Street corridor. The table below identifies other roadway characteristics.

	West 48th Avenue	**Van Buren Street**
Street Width (Ft)	32	29
Approach Grade (%)	0.5-2	0.5-2
Right-of-Way (ROW) Width (Ft)	60	53
Speed Limit (MPH)	25	25

Table 1. Roadway Characteristics

The three-legged West 48th Avenue and Van Buren Street intersection consists of north, east, and west stop-controlled approaches. Van Buren Street intersects West 48th Avenue at approximately a 90-degree approach angle. There is a north/south pedestrian crosswalk located on the west side of Van Buren Street and an east/west crosswalk at Van Buren Street. Both crosswalks use high-visibility markings. Residential housing is located on the north side of West 48th Avenue and Northwood Elementary School, Sisterhood Park, and the Spenard Recreation Center are located adjacent to the south side of the roadway. The Northwood Elementary school zone extends from Northwood Drive to approximately 300 feet east of Van Buren Street, including the two existing crosswalks at the Van Buren Street intersection. "Commercial Traffic Prohibited" signing is located east of the Van Buren Street intersection to discourage use by traffic through the neighborhood from commercial and industrial properties east of the corridor.

Design Standards and Guidelines

Stop-Controlled Intersection Engineering Practices

The Manual on Uniform Traffic Control Devices, 2023 Edition (MUTCD) was used to identify traffic control warrants. The MUTCD SIGNING FOR RIGHT-OF-WAY AT INTERSECTIONS Sections 2B.06 through 2B.20 have guidance for stop control and placement. Sections 2B.12 through 2B.17 describe the All-Way Stop Control Warrants recommended to be evaluated for determining the applicability of all-way stop control at intersections. These sections of the MUTCD are attached to this memorandum. As specified in the

MUTCD, meeting a warrant is not conclusive justification to provide all-way stop control. Instead, due to the unique characteristics of each intersection that affects its operational performance or safety, an engineering study should be the basis to provide all-way stop control.

Data Collection

HDL researched traffic and crash data, evaluated Google Earth imagery, consulted records of the September 2023 site visit, and met on-site with MOA Traffic Engineering to review the intersection.

Site Visit

As described above, the intersection is a three-legged, urban intersection. During the site visit, HDL observed and documented the existing signing, crosswalk locations, illumination, landscaping, intersection layout, and other roadway features. **Figure 2** shows the existing intersection configuration, traffic control, and illumination.

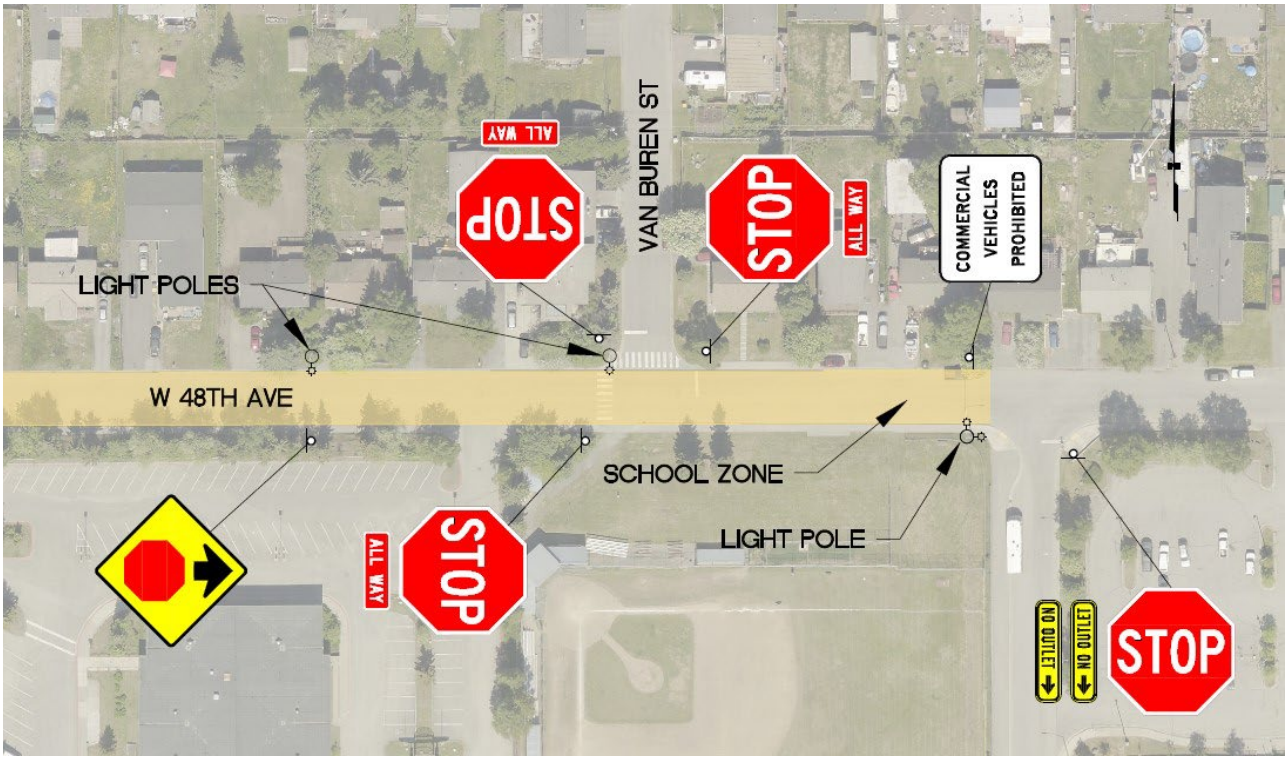


Figure 2. West 48th Avenue and Van Buren Street Existing Traffic Control and Illumination

Traffic Volume and Speed Data

Traffic volume and speed data for the West 48th Avenue and Van Buren Street intersection was collected from MOA 24 hour intersection volume and speed studies conducted on August 31, 2023 and is summarized below in **Table 2**. See the attached speed study data for more information.

	West 48th Avenue	Van Buren Street
Average Daily Traffic 2023 (VPD)	875	46
Combined 85th Percentile Speed 2023 (MPH)	34	N/A

Table 2. Summary of Traffic Data

Pedestrian and Bicycle Volume Data

Pedestrian and bicycle volume data for the West 48th Avenue and Van Buren Street intersection was collected from a MOA 24 hour intersection volume study conducted on August 31, 2023 and is summarized in **Table 3**. See the attached volume report for more information.

Data Type	Van Buren Street	West 48th Avenue	Combined
Bicycle Intersection Volume	0	11	11
Pedestrian Pathway Volume	2	22	24
Bicycle Pathway Volume	1	1	2

Table 3. Summary of Pedestrian and Bicycle Data

Vehicle Crash Data

Vehicle crash data near the intersection of West 48th Avenue and Van Buren Street was collected from the MOA Traffic Data Management System and analyzed to determine if intersection control could have reduced the probability of a crash or if intersection control was the cause of a crash. In the most recent 5 years (2017-2022), there were no crashes near the intersection of West 48th Avenue and Van Buren Street. Since 2013, the only recorded incident occurred in May of 2015, which included a rear-end collision with a vehicle stopped at the intersection on West 48th Avenue.

Other Considerations

The MOA Traffic Engineering Department and HDL is currently completing a traffic calming corridor study for the Spenard Community Council area. The study provides traffic calming alternatives for four roadways within the Spenard Community Council area including West 45th Avenue through West 48th Avenue between Northwood Drive and Taft Street. The selected alternative for the intersection of West 48th Avenue and Van Buren Street is anticipated to provide traffic calming as well as pedestrian, minor drainage, and traffic control improvements. The traffic calming improvements on West 48th Avenue will include speed cushions/humps and an intersection neckdown combined with a raised crosswalk or raised intersection at Van Buren Street. Proposed crosswalks will be anticipated to remain in their existing configuration.

The West 48th Avenue improvements enhance pedestrian safety by:

- Increasing the visibility of pedestrians and the crosswalk
- Providing drivers vertical and horizontal visual cues that a speed reduction is needed
- Discouraging use of the road by large commercial vehicles, potentially reducing traffic volumes
- Reducing the pedestrian crossing length
- Improving sight distance

HDL also evaluated the intersection sight distance for the existing conditions and proposed improvements at the West 48th Avenue approach. The MOA Design Criteria Manual (DCM) requires an intersection departure sight distance of 280 feet for a 25 miles per hour (mph) speed limit. Based on the evaluation, the existing sight distance for stopped traffic on Van Buren Street is restricted to approximately 225 feet for westbound turning movements and 235 feet for eastbound turning movements, which are both below the minimum requirements of Section 1.9E of the DCM, due to trees located on private property outside of the MOA ROW. With the proposed traffic calming improvements, it appears the intersection could meet the 280 foot sight distance requirement of the DCM, with approval by the Municipal Traffic Engineer for the encroachments of vertical obstructions. Clearing/pruning of trees may be required to provide and maintain sight distance. **Figure 3** shows the sight distance triangles with the proposed improvements for the West 48th Avenue intersection.

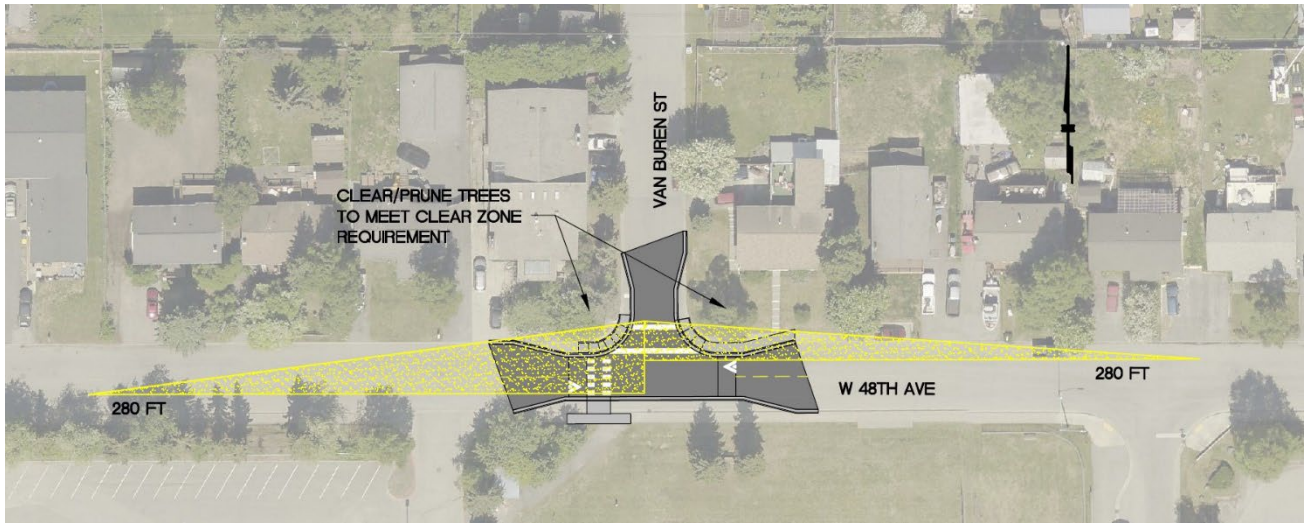


Figure 3. West 48th Avenue and Van Buren Street Proposed Improvements with Sight Triangles

Stop Sign Warrant Evaluation

HDL evaluated the all-way stop at the West 48th Avenue and Van Buren Street intersection using the guidance listed previously. Additionally, we evaluated the intersection based on the MOA's proposed traffic calming and pedestrian improvements. Below is the evaluation criteria that were considered for this study:

- **West 48th Avenue Stop Sign Warrant Analysis**
    - Section 2B.13 Warrant A: Crash Experience – **Criteria not met.** No crashes occurred over the past 5 years at the stop-controlled intersection. One incident beyond the 5 year period, recorded in 2015, was a rear-end collision, potentially related to the existing stop signs on West 48th Avenue.
    - Section 2B.14 Warrant B: Sight Distance – **Criteria met (existing) / Criteria not met (proposed).** Adequate sight distance may be provided with clearing in accordance with the DCM upon completing the proposed improvements.
    - Section 2B.15 Warrant C: Transition to Signal Control or Transition to Yield Control at a Circular Intersection – **Criteria not met.** All-way stop control as an interim measure is not needed as traffic signals and circular intersections are not currently under consideration for this location.
    - Section 2B.16 Warrant D: 8-Hour Volume (Vehicle, Pedestrian, Bicycles) – **Criteria not met.** Vehicle volumes do not reach the thresholds described in the MUTCD.
    - Section 2B.17 Warrant E: Other Factors
        - Need to control left-turn conflicts – The existing crosswalk on West 48th Avenue has the potential for conflicts with left-turning traffic. Proposed improvements would not eliminate left-turn conflict. However, narrowing the roadway and raising the crossing would reduce pedestrian crossing distances, enhance pedestrian visibility by increasing the height of the pedestrian, enhance crossing location visibility with colored concrete and ladder style crosswalk markings, comply with ADA standards, improve sight distance, provide a narrow and vertically deflected section of roadway which may lead drivers to slow down, eliminate parking near the intersection, and potentially reduce traffic volumes.
        - Intersection of two residential neighborhood collectors of similar design and operating characteristics – Van Buren Street has different design characteristics and significantly lower traffic volumes than West 48th Avenue.
        - Pedestrian and/or bicycle movements support the installation of all-way stop control – Pedestrian movements are anticipated due to the crossings proximity with the elementary school, park, recreation center. However, proposed narrowing and raised crossing improvements would reduce pedestrian crossing distances, enhance pedestrian visibility by increasing the height of the pedestrian, enhance crossing location visibility with colored concrete and ladder style crosswalk markings, comply with ADA standards, improve sight distance, provide a narrow and vertically deflected section of roadway which may lead drivers to slow down, eliminate parking near the intersection, and potentially reduce traffic volumes.

Recommendations

Based on the stop sign warrant evaluation, planned MOA improvements, and engineering best practices, with concurrence from the Municipal Traffic Engineer and Municipal Engineer on sight distance clear zones and proposed pedestrian enhancements, HDL recommends that the stop signs controlling eastbound/westbound traffic on West 48th Avenue be removed. The Van Buren Street approach should remain stop-controlled. Removal of the eastbound/westbound stop signs should not occur until the Van Buren Street intersection improvements are completed and sight distance is provided in compliance with requirements of the DCM. The following information provides the justification for these recommendations.

- There were no vehicle/pedestrian-related crashes recorded in the past 5 years.
- The sight distance on Van Buren Street, with appropriate clearing and roadway narrowing, is adequate to see conflicting traffic on West 48th Avenue.
- This intersection does not meet the traffic volume guidance shown in the MUTCD.
- By removing the stop signs, the operational characteristics should improve.
- Proposed traffic calming and pedestrian improvements will address the elevated speed through the West 48th Avenue corridor and will improve pedestrian safety.

Attach: Traffic Volume, Pedestrian Volume, and Speed Data (15 Pages)
MUTCD Sections 2B.06 through 2B.20 (9 Pages)

DataSource: MOA Data
Location: VAN BUREN STREET, ANCHORAGE **and:** WEST 48TH AVENUE, ANCHORAGE (WEST SIDE)
At: Intersection **Station: Type:** Intersection Volume **Report Date:** 08/31/2023

Study Type: Intersection Volume

START_TIME	8/31/2023 Thursday SBL	8/31/2023 Thursday SBR	8/31/2023 Thursday EBL	8/31/2023 Thursday EBT	8/31/2023 Thursday WBT	8/31/2023 Thursday WBR	NB	SB	EB	WB	ALL
12:00 AM	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	1	4	0	0	0	1	4	5
5:15 AM	0	0	0	2	0	0	0	0	2	0	2
5:30 AM	0	0	0	2	0	0	0	0	2	0	2
5:45 AM	0	0	0	3	1	0	0	0	3	1	4
6:00 AM	0	0	0	2	3	0	0	0	2	3	5
6:15 AM	0	0	0	0	2	0	0	0	0	2	2
6:30 AM	0	1	0	2	2	0	0	1	2	2	5
6:45 AM	0	0	0	8	0	0	0	0	8	0	8
7:00 AM	1	0	0	13	0	0	0	1	13	0	14
7:15 AM	0	1	0	6	3	1	0	1	6	4	11
7:30 AM	0	0	0	10	2	1	0	0	10	3	13
7:45 AM	0	1	0	16	3	0	0	1	16	3	20
8:00 AM	0	0	1	19	10	0	0	0	20	10	30
8:15 AM	0	0	0	22	6	0	0	0	22	6	28
8:30 AM	0	1	2	9	6	0	0	1	11	6	18
8:45 AM	0	5	2	22	9	1	0	5	24	10	39
9:00 AM	0	3	3	16	5	0	0	3	19	5	27
9:15 AM	0	0	0	10	5	0	0	0	10	5	15
9:30 AM	0	0	0	5	2	1	0	0	5	3	8
9:45 AM	2	0	0	4	4	2	0	2	4	6	12
10:00 AM	0	0	1	4	3	1	0	0	5	4	9
10:15 AM	0	0	0	2	4	0	0	0	2	4	6
10:30 AM	0	0	0	4	4	0	0	0	4	4	8
10:45 AM	0	0	0	2	5	0	0	0	2	5	7
11:00 AM	0	0	0	12	4	0	0	0	12	4	16
11:15 AM	0	2	1	15	8	0	0	2	16	8	26

11:30 AM	0	0	0	1	3	0	0	0	1	3	4
11:45 AM	0	1	0	13	6	0	0	1	13	6	20
12:00 PM	0	0	1	11	6	0	0	0	12	6	18
12:15 PM	0	1	1	3	9	0	0	1	4	9	14
12:30 PM	0	0	0	12	6	0	0	0	12	6	18
12:45 PM	0	0	0	4	3	0	0	0	4	3	7
1:00 PM	0	1	1	9	4	1	0	1	10	5	16
1:15 PM	0	0	0	8	2	0	0	0	8	2	10
1:30 PM	0	0	1	3	7	0	0	0	4	7	11
1:45 PM	0	1	1	5	3	0	0	1	6	3	10
2:00 PM	1	1	1	9	16	0	0	2	10	16	28
2:15 PM	0	1	1	10	5	0	0	1	11	5	17
2:30 PM	1	1	0	5	5	0	0	2	5	5	12
2:45 PM	0	0	1	8	8	0	0	0	9	8	17
3:00 PM	0	3	0	8	8	1	0	3	8	9	20
3:15 PM	0	2	0	10	11	0	0	2	10	11	23
3:30 PM	0	1	4	27	8	1	0	1	31	9	41
3:45 PM	1	1	3	14	10	1	0	2	17	11	30
4:00 PM	0	1	0	16	9	0	0	1	16	9	26
4:15 PM	1	0	4	8	4	0	0	1	12	4	17
4:30 PM	0	2	1	11	6	0	0	2	12	6	20
4:45 PM	0	0	1	7	6	3	0	0	8	9	17
5:00 PM	0	0	1	13	6	1	0	0	14	7	21
5:15 PM	0	1	0	10	5	0	0	1	10	5	16
5:30 PM	1	0	0	4	7	0	0	1	4	7	12
5:45 PM	1	0	1	9	5	0	0	1	10	5	16
6:00 PM	0	0	0	7	5	0	0	0	7	5	12
6:15 PM	1	0	1	6	2	0	0	1	7	2	10
6:30 PM	1	0	1	7	4	0	0	1	8	4	13
6:45 PM	0	0	0	1	9	0	0	0	1	9	10
7:00 PM	0	0	0	2	4	0	0	0	2	4	6
7:15 PM	0	0	0	1	4	0	0	0	1	4	5
7:30 PM	0	0	1	1	3	0	0	0	2	3	5
7:45 PM	0	0	0	1	1	1	0	0	1	2	3
8:00 PM	0	0	0	2	6	0	0	0	2	6	8
8:15 PM	0	0	0	1	9	0	0	0	1	9	10
8:30 PM	0	0	1	0	0	0	0	0	1	0	1
8:45 PM	1	0	0	2	2	0	0	1	2	2	5
9:00 PM	0	0	0	2	3	0	0	0	2	3	5
9:15 PM	0	0	0	3	0	0	0	0	3	0	3
9:30 PM	0	0	0	2	1	0	0	0	2	1	3
9:45 PM	1	0	1	0	2	0	0	1	1	2	4
10:00 PM	0	0	0	4	2	1	0	0	4	3	7
10:15 PM	0	1	0	1	2	0	0	1	1	2	4
10:30 PM	0	0	1	1	2	0	0	0	2	2	4
10:45 PM	0	0	0	1	1	0	0	0	1	1	2
11:00 PM	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Volumes

AM Peak	SBL	SBR	EBL	EBT	WBT	WBR	NB	SB	EB	WB	ALL
08:00 AM - 09:00 AM	0	6	5	72	31	1	0	6	77	32	115

Approach %	0.00%	100.00%	6.49%	93.51%	96.88%	3.13%	0.00%	5.22%	66.96%	27.83%	

Midday Peak	SBL	SBR	EBL	EBT	WBT	WBR	NB	SB	EB	WB	ALL
02:00 PM - 03:00 PM	2	3	3	32	34	0	0	5	35	34	74
Approach %	40.00%	60.00%	8.57%	91.43%	100.00%	0.00%	0.00%	6.76%	47.30%	45.95%	

PM Peak	SBL	SBR	EBL	EBT	WBT	WBR	NB	SB	EB	WB	ALL
03:15 PM - 04:15 PM	1	5	7	67	38	2	0	6	74	40	120
Approach %	16.67%	83.33%	9.46%	90.54%	95.00%	5.00%	0.00%	5.00%	61.67%	33.33%	

Off Peak	SBL	SBR	EBL	EBT	WBT	WBR	NB	SB	EB	WB	ALL
07:30 PM - 08:30 PM	0	0	1	5	19	1	0	0	6	20	26
Approach %	0.00%	0.00%	16.67%	83.33%	95.00%	5.00%	0.00%	0.00%	23.08%	76.92%	

Daily Total

TIME SPAN	SBL	SBR	EBL	EBT	WBT	WBR	NB	SB	EB	WB	ALL
24 Hour	13	33	39	494	325	17	0	46	533	342	921
Approach %	28.26%	71.74%	7.32%	92.68%	95.03%	4.97%	0.00%	4.99%	57.87%	37.13%	

DataSource: MOA Data

Location: VAN BUREN STREET, ANCHORAGE **and:** WEST 48TH AVENUE, ANCHORAGE (WEST SIDE)
At: Intersection **Station: Type:** Pedestrian Pathway Volume **Report Date:** 08/31/2023

Study Type: Pedestrian Pathway Volume

START_TIME	8/31/2023 Thursday SBT	8/31/2023 Thursday EBT	8/31/2023 Thursday WBT	NB	SB	EB	WB	ALL
12:00 AM	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0
5:15 AM	1	0	0	0	1	0	0	1
5:30 AM	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	1	0	1
8:45 AM	0	3	0	0	0	3	0	3
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0

11:15 AM	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	3	0	0	0	3	3
3:30 PM	0	11	0	0	0	11	0	11
3:45 PM	0	0	3	0	0	0	3	3
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	1	1	0	0	1	1	0	2
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0

Peak Hour Volumes

AM Peak	SBT	EBT	WBT	NB	SB	EB	WB	ALL

08:30 AM - 09:30 AM	0	4	0	0	0	4	0	4
Approach %	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	

Midday Peak	SBT	EBT	WBT	NB	SB	EB	WB	ALL
02:00 PM - 03:00 PM	0	0	0	0	0	0	0	0
Approach %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	

PM Peak	SBT	EBT	WBT	NB	SB	EB	WB	ALL
03:15 PM - 04:15 PM	0	11	6	0	0	11	6	17
Approach %	0.00%	100.00%	100.00%	0.00%	0.00%	64.71%	35.29%	

Off Peak	SBT	EBT	WBT	NB	SB	EB	WB	ALL
05:00 AM - 06:00 AM	1	0	0	0	1	0	0	1
Approach %	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	

Daily Total

TIME SPAN	SBT	EBT	WBT	NB	SB	EB	WB	ALL
24 Hour	2	16	6	0	2	16	6	24
Approach %	100.00%	100.00%	100.00%	0.00%	8.33%	66.67%	25.00%	

DataSource: MOA Data
Location: VAN BUREN STREET, ANCHORAGE **and:** WEST 48TH AVENUE, ANCHORAGE (WEST SIDE)
At: Intersection **Station: Type:** Bicycle Intersection Volume **Report Date:** 08/31/2023

Study Type: Bicycle Intersection Volume

START_TIME	8/31/2023 Thursday SBL	8/31/2023 Thursday SBR	8/31/2023 Thursday EBL	8/31/2023 Thursday EBT	8/31/2023 Thursday WBT	8/31/2023 Thursday WBR	NB	SB	EB	WB	ALL
12:00 AM	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	1	0	0	0	0	1	0	1
5:30 AM	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0

11:45 AM	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	1	0	0	0	0	1	0	1
2:15 PM	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	1	0	0	0	0	0	1	0	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	1	0	0	0	0	1	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	2	0	0	0	0	3	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	1	0	0	0	0	1	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	3	0	0	0	0	3	3
7:00 PM	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Volumes

AM Peak	SBL	SBR	EBL	EBT	WBT	WBR	NB	SB	EB	WB	ALL
09:00 AM - 10:00 AM	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	

Midday Peak	SBL	SBR	EBL	EBT	WBT	WBR	NB	SB	EB	WB	ALL
02:00 PM - 03:00 PM	0	0	0	1	0	0	0	0	1	0	1
Approach %	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	

PM Peak	SBL	SBR	EBL	EBT	WBT	WBR	NB	SB	EB	WB	ALL
06:00 PM - 07:00 PM	0	0	0	0	4	0	0	0	0	4	4
Approach %	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	

Off Peak	SBL	SBR	EBL	EBT	WBT	WBR	NB	SB	EB	WB	ALL
05:00 AM - 06:00 AM	0	0	0	1	0	0	0	0	1	0	1
Approach %	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	

Daily Total

TIME SPAN	SBL	SBR	EBL	EBT	WBT	WBR	NB	SB	EB	WB	ALL
24 Hour	0	0	2	5	4	0	0	0	7	4	11
Approach %	0.00%	0.00%	28.57%	71.43%	100.00%	0.00%	0.00%	0.00%	63.64%	36.36%	

DataSource: MOA Data

Location: VAN BUREN STREET, ANCHORAGE **and:** WEST 48TH AVENUE, ANCHORAGE (WEST SIDE)
At: Intersection **Station: Type:** Bicycle Pathway Volume **Report Date:** 08/31/2023

Study Type: Bicycle Pathway Volume

START_TIME	8/31/2023 Thursday SBT	8/31/2023 Thursday EBT	8/31/2023 Thursday WBT	NB	SB	EB	WB	ALL
12:00 AM	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0

8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	1	0	0	0	1	0	1
3:45 PM	1	0	0	0	1	0	0	1
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0

7:30 PM	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0

Peak Hour Volumes

AM Peak	SBT	EBT	WBT	NB	SB	EB	WB	ALL
09:00 AM - 10:00 AM	0	0	0	0	0	0	0	0
Approach %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	

Midday Peak	SBT	EBT	WBT	NB	SB	EB	WB	ALL
02:00 PM - 03:00 PM	0	0	0	0	0	0	0	0
Approach %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	

PM Peak	SBT	EBT	WBT	NB	SB	EB	WB	ALL
03:30 PM - 04:30 PM	1	1	0	0	1	1	0	2
Approach %	100.00%	100.00%	0.00%	0.00%	50.00%	50.00%	0.00%	

Off Peak	SBT	EBT	WBT	NB	SB	EB	WB	ALL
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0
Approach %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	

Daily Total

TIME SPAN	SBT	EBT	WBT	NB	SB	EB	WB	ALL
24 Hour	1	1	0	0	1	1	0	2
Approach %	100.00%	100.00%	0.00%	0.00%	50.00%	50.00%	0.00%	

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 48th 62' E of Van Buren
Start Date: 08-31-2023

Site Code: 08302311
Station ID: 30302

Direction: Eastbound

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	0	2	0	0	0	0	0	0	0	1	0	0	3
1:00	0	0	1	0	0	0	1	0	0	0	0	0	0	2
2:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:00	0	0	0	0	0	1	0	0	0	1	0	0	0	2
5:00	0	1	2	1	0	1	0	0	2	0	0	0	0	7
6:00	0	1	2	0	3	2	3	0	0	0	0	0	0	11
7:00	0	1	3	6	12	8	6	3	0	0	0	0	0	39
8:00	0	3	6	11	14	17	7	6	0	2	0	0	0	66
9:00	0	5	8	3	10	7	2	1	0	0	1	0	0	37
10:00	0	2	8	4	2	1	2	0	0	0	0	0	0	19
11:00	0	2	8	10	12	4	2	2	0	0	0	0	0	40
12:00	0	3	11	4	4	3	6	1	2	0	0	0	0	34
13:00	0	1	6	6	6	3	2	2	0	0	0	0	0	26
14:00	0	5	14	3	3	6	6	1	1	0	0	1	1	41
15:00	0	4	21	9	9	17	10	8	1	0	0	0	0	79
16:00	0	3	9	4	14	9	5	2	1	1	1	0	0	49
17:00	0	3	4	1	7	11	6	5	1	0	0	0	1	39
18:00	2	1	5	3	2	7	1	3	2	0	0	0	0	26
19:00	0	2	3	1	2	1	0	1	0	0	0	0	0	10
20:00	0	0	0	0	2	1	0	1	1	0	0	0	0	5
21:00	0	0	1	0	3	2	0	1	0	0	0	0	0	7
22:00	0	0	2	0	2	2	1	0	0	0	0	0	0	7
23:00	0	0	0	0	2	2	0	0	0	0	0	0	0	4
Total	2	37	116	67	109	105	60	38	11	4	3	1	2	555
Stats			Percentile Speed	85th 37										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 48th 62' E of Van Buren
Start Date: 08-31-2023

Site Code: 08302311
Station ID: 30302

Direction: Westbound

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
2:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	2	0	1	0	0	0	0	0	0	0	0	3
5:00	0	3	3	1	0	0	0	0	0	0	0	0	0	7
6:00	0	5	5	2	0	0	0	0	0	0	0	0	0	12
7:00	1	4	8	0	0	1	0	0	0	0	0	0	0	14
8:00	1	11	19	9	0	1	0	0	0	0	0	0	0	41
9:00	2	7	11	2	0	0	0	0	0	0	0	0	0	22
10:00	1	2	10	4	0	0	0	0	0	0	0	0	0	17
11:00	0	2	14	5	0	0	0	0	0	0	0	0	0	21
12:00	0	7	11	3	0	0	0	0	0	0	0	0	0	21
13:00	0	3	8	6	1	0	0	0	0	0	0	0	0	18
14:00	0	12	13	6	0	0	0	0	0	0	0	0	0	31
15:00	1	5	13	15	1	0	1	0	0	0	0	0	0	36
16:00	0	5	8	8	1	0	0	0	0	0	0	0	0	22
17:00	1	0	11	7	1	1	0	0	0	0	0	0	0	21
18:00	0	5	11	4	0	0	0	0	0	0	0	0	0	20
19:00	0	2	7	2	0	1	0	0	0	0	0	0	0	12
20:00	1	2	7	7	0	0	0	0	0	0	0	0	0	17
21:00	0	1	6	0	0	0	0	0	0	0	0	0	0	7
22:00	0	2	5	2	0	0	0	0	0	0	0	0	0	9
23:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	8	80	175	85	5	4	1	0	0	0	0	0	0	358
Stats			Percentile Speed	85th 21										

Municipality of Anchorage
Traffic Engineering
Data Division

4700 Elmore Road
Anchorage, AK 99501
907-343-8406

Location: 48th 62' E of Van Buren
Start Date: 08-31-2023

Site Code: 08302311
Station ID: 30302

Direction: Combined

8/31/2023 Time	0 - 10 MPH	> 10 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 MPH	Total
0:00	0	1	2	0	0	0	0	0	0	0	1	0	0	4
1:00	0	1	2	0	0	0	1	0	0	0	0	0	0	4
2:00	0	0	1	3	0	0	0	0	0	0	0	0	0	4
3:00	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:00	0	0	2	0	1	1	0	0	0	1	0	0	0	5
5:00	0	4	5	2	0	1	0	0	2	0	0	0	0	14
6:00	0	6	7	2	3	2	3	0	0	0	0	0	0	23
7:00	1	5	11	6	12	9	6	3	0	0	0	0	0	53
8:00	1	14	25	20	14	18	7	6	0	2	0	0	0	107
9:00	2	12	19	5	10	7	2	1	0	0	1	0	0	59
10:00	1	4	18	8	2	1	2	0	0	0	0	0	0	36
11:00	0	4	22	15	12	4	2	2	0	0	0	0	0	61
12:00	0	10	22	7	4	3	6	1	2	0	0	0	0	55
13:00	0	4	14	12	7	3	2	2	0	0	0	0	0	44
14:00	0	17	27	9	3	6	6	1	1	0	0	1	1	72
15:00	1	9	34	24	10	17	11	8	1	0	0	0	0	115
16:00	0	8	17	12	15	9	5	2	1	1	1	0	0	71
17:00	1	3	15	8	8	12	6	5	1	0	0	0	1	60
18:00	2	6	16	7	2	7	1	3	2	0	0	0	0	46
19:00	0	4	10	3	2	2	0	1	0	0	0	0	0	22
20:00	1	2	7	7	2	1	0	1	1	0	0	0	0	22
21:00	0	1	7	0	3	2	0	1	0	0	0	0	0	14
22:00	0	2	7	2	2	2	1	0	0	0	0	0	0	16
23:00	0	0	1	0	2	2	0	0	0	0	0	0	0	5
Total	10	117	291	152	114	109	61	38	11	4	3	1	2	913
Stats			Percentile Speed	85th 34										

SIGNING FOR RIGHT-OF-WAY AT INTERSECTIONS

Section 2B.06 General Considerations

Support:

01 Unsignalized intersections represent the most common form of intersection right-of-way control. Selection of control type might be impacted by specific requirements of State law or local ordinances.

02 Roundabouts and traffic circles are circular intersection designs and are not traffic control devices. The decision to convert an intersection from a conventional intersection to a circular intersection is an engineering design decision and not a traffic control device decision. As such, criteria for conversion from a conventional intersection to a circular intersection are not included in the MUTCD.

Guidance:

03 *The type of traffic control used at an unsignalized intersection should be the least restrictive that provides appropriate levels of safety and efficiency for all road users.*

Support:

04 Some types of right-of-way control that can exist at an unsignalized intersection in order from the least restrictive to the most restrictive are the following:

A. No intersection control (see Section 2B.09): There are no right-of-way traffic control devices on any of the approaches to the intersection.
B. Yield control (see Section 2B.10): YIELD signs are placed on all approaches (for a circular intersection), on opposing approaches for a four-leg intersection, on a single approach for a three-leg intersection, or in the median of a divided highway. The YIELD signs are placed on the minor road.
C. Minor road stop control (see Section 2B.11): STOP signs are typically placed on opposing approaches (for a four-leg intersection) or on a single approach (for a three-leg intersection). The STOP signs are normally placed on the minor road. Section 2B.07 contains guidance on selecting the minor road.
D. All-way stop control (see Section 2B.12): STOP signs are placed on all approaches to the intersection.

Guidance:

05 *When selecting a form of intersection control, the following factors should be considered:*

A. Motor vehicle, bicycle, and pedestrian traffic volumes on all approaches; where the term units/day or units/hour is indicated, it should be the total of motor vehicle, bicycle, and pedestrian volume;
B. Driver yielding behavior with regard to all modes of conflicting traffic, including bicyclists and pedestrians;
C. Number and angle of approaches;
D. Approach speeds;
E. Sight distance available on each approach;
F. Reported crash experience; and
G. The presence of a grade crossing near the intersection.

Standard:

06 **YIELD or STOP signs shall not be used for speed control.**

Support:

07 Appropriate traffic calming or other speed control measures are available to control vehicle speeds, such as those that do not have the potential to diminish the effectiveness of traffic control devices when used for their specified purpose.

Standard:

08 **Because the potential for conflicting commands could create driver confusion, YIELD or STOP signs shall not be used in conjunction with any traffic control signal operation, except in the following cases:**

A. If the signal indication for an approach is a flashing red at all times;
B. If a minor street or driveway is located within or adjacent to the area controlled by the traffic control signal, but does not require separate traffic signal control because an extremely low potential for conflict exists; or
C. If a channelized turn lane is separated from the adjacent travel lanes by an island and the channelized turn lane is not controlled by a traffic control signal.

09 **STOP signs and YIELD signs shall not be installed on different approaches to the same unsignalized intersection if those approaches conflict with or oppose each other, except as provided for in Items A and B in Paragraph 3 of Section 2B.10.**

10 **Portable or part-time STOP or YIELD signs shall not be used except for emergency and temporary traffic control zone purposes.**

11 **A portable or part-time (folding) STOP sign that is manually placed into view and manually removed from view shall not be used during a power outage to control a signalized approach unless the maintaining agency establishes that the signal indication that will first be displayed to that approach upon restoration of power is a flashing red signal indication and that the portable STOP sign will be manually removed from view prior to resuming stop-and-go operation of the traffic control signal.**

Option:

12 A portable or part-time (folding) STOP sign that is electrically or mechanically operated such that it only displays the stop message during a power outage and ceases to display the stop message upon restoration of power may be used during a power outage to control a signalized approach.

Support:

13 The use of STOP signs at grade crossings is described in Sections 8B.04 and 8B.05.

14 Section 9B.01 contains provisions regarding the assignment of priority where a shared-use path crosses a roadway.

Section 2B.07 Determining the Minor Road for Unsignalized Intersections

Guidance:

01 *The selection of the minor road to be controlled by YIELD or STOP signs should be based on one or more of the following criteria:*

A. A roadway intersecting a designated through or numbered highway,
B. A roadway with the lower functional classification,
C. A roadway with the lower traffic volume,
D. A roadway with the lower speed limit, and/or
E. A roadway that intersects with a roadway that has a higher priority for one or more modes of travel.

02 *When two roadways that have relatively equal volumes, speeds, and/or other characteristics intersect, the following factors should be considered in selecting the minor road for installation of YIELD or STOP signs:*

A. Controlling the direction that conflicts the most with established pedestrian crossing activity or school walking routes;
B. Controlling the direction that has obscured vision, dips, or bumps that already require drivers to use lower operating speeds; and
C. Controlling the direction that has the best sight distance from a controlled position to observe conflicting traffic.

Section 2B.08 Right-of-Way Intersection Control Considerations

Guidance:

01 *Before converting to a more restrictive form of right-of-way control at an unsignalized intersection, the following alternative treatments to address safety, operational, or other concerns should be among those to be considered:*

A. Where yield or stop controlled, installing Yield Ahead or Stop Ahead signs on the appropriate approaches to the intersection;
B. Removing parking on one or more approaches;
C. Removing sight distance obstructions;
D. Installing signs along the major street to warn road users approaching the intersection;
E. Relocating the stop line(s) and making other changes to improve the sight distance at the intersection;
F. Installing measures designed to reduce speeds on the approaches;
G. Installing an Intersection Control Beacon (see Section 4S.02) or Stop Beacon (see Section 4S.05) at the intersection to supplement STOP sign control;
H. Installing a Warning Beacon (see Section 4S.03) on warning signs in advance of a stop-controlled intersection on major-street and/or minor-street approaches;
I. Adding one or more lanes on a minor-street approach to reduce the number of vehicles per lane on the approach;
J. Revising the geometrics at the intersection to channelize vehicular movements and reduce the time required for a vehicle to complete a movement, which could also assist pedestrians;
K. Revising the geometrics at the intersection to add pedestrian median refuge islands and/or curb extensions;
L. Installing roadway lighting if a disproportionate number of crashes occur at night;
M. Restricting one or more turning movements on a full-time or part-time basis if alternate routes are available;

N. Installing on the major street a pedestrian-actuated device: Warning Beacon (see Section 4S.03), rectangular rapid-flashing beacon (see Section 4L.01), or In-Roadway Warning Lights (see Chapter 4U), if pedestrian safety is the major concern;
O. If the warrant is satisfied, installing all-way stop control;
P. Installing a pedestrian hybrid beacon (see Chapter 4J) on the major street to address pedestrian safety;
Q. Installing a circular intersection; and
R. Employing other alternatives, depending on conditions at the intersection.

Section 2B.09 No Intersection Control

Guidance:

01 *The decision not to use intersection control should be based on engineering judgment.*

Option:

02 The following factors may be considered:

A. Intersection sight distance is adequate on all approaches.
B. All approaches to the intersection are a single lane and there are no separate turn lanes.
C. The combined motor vehicle, bicycle, and pedestrian volume (existing or projected) entering the intersection from all approaches averages less than 1,000 units per day or 80 units in the peak hour.
D. There are no marked crosswalks or bicycle lanes on any approach.
E. None of the approaches to the intersection are for a through highway, main road, or higher functional classification.
F. The angle of intersection is between 90 and 75 degrees.
G. The functional classification of the intersecting streets is either the intersection of two local streets or the intersection of a local street with a collector street.

Section 2B.10 Yield Control

Guidance:

01 *At intersections where a full stop is not necessary at all times, consideration should first be given to using less restrictive measures such as YIELD signs.*

02 *Yield control should be considered when engineering judgment indicates that all of the following conditions exist:*

A. Intersection sight distance is adequate on the approaches to be controlled by YIELD signs.
B. All approaches to the intersection are a single lane and there are no separate turn lanes.
C. One of the following crash-related criteria applies:
D. For changing from no intersection control to yield control, there have been two or more reported crashes in the previous 12 months that are susceptible to correction by the installation of a YIELD sign.
E. For changing from minor road stop control to yield control, there have been two or fewer reported crashes in the previous 12 months.
F. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection averages less than 1,800 units per day or 140 units in the peak hour.
G. The angle of intersection is between 90 and 75 degrees.
H. The functional classification of the intersecting streets is either the intersection of two local streets or the intersection of a local street with a collector street.

Option:

03 YIELD signs may be installed at an intersection when any of the following conditions apply:

A. At the second intersection of a divided highway crossing or median break functioning as two separate intersections (see Figure 2B-19). In this case, a YIELD sign may be installed at the entrance to the second intersection.
B. For a channelized turn lane that is separated from the adjacent travel lanes by an island, even if the adjacent lanes at the intersection are controlled by a highway traffic control signal or by a STOP sign.
C. At an intersection where a special problem exists and where engineering judgment indicates the problem to be susceptible to correction by the use of the YIELD sign.
D. Facing the entering roadway for a merge-type movement if engineering judgment indicates that control is needed because acceleration geometry and/or sight distance is not adequate for merging traffic operation.
E. On low-volume rural roads if engineering judgment indicates that a YIELD sign would provide adequate control.
F. On an approach to an intersection where the only permissible movement is a right-turn movement with an intersection geometry similar to a channelized right-turn lane or an approach to a roundabout.

Guidance:

04 *The YIELD signs should be installed on opposing minor-street approaches (for a four-leg intersection) or on the minor-street approach (for a three-leg intersection). When two intersecting roadways have relatively equal volumes, speeds, and other characteristics, yield control should be installed on the approach that conflicts the most with established pedestrian crossing activity, school walking routes, or bicycle crossing activity.*

Standard:

05 **A YIELD sign shall be used to require road users to yield the right-of-way to other traffic at the entrance to a roundabout. YIELD signs at roundabouts shall be used to control the approach roadways and shall not be used to control the circulatory roadway.**

06 **YIELD signs shall not be placed on all of the approaches to an intersection, except at roundabouts.**

Section 2B.11 Minor Road Stop Control

Guidance:

01 *Stop control on the minor-road approach or approaches to an intersection should be considered when engineering judgment indicates that one or more of the following conditions exist:*

- *A. A restricted view exists that requires road users to stop in order to adequately observe conflicting traffic on the through street or highway.*
- *B. Crash records indicate that:*
  - *1. For a four-leg intersection, there are three or more reported crashes in a 12-month period or six or more reported crashes in a 36-month period. The crashes should be susceptible to correction by installation of minor-road stop control.*
  - *2. For a three-leg intersection, there are three or more reported crashes in a 12-month period or five or more reported crashes in a 36-month period. The crashes should be susceptible to correction by installation of minor-road stop control.*
- *C. The intersection is of a lower functional classification road with a higher functional classification road.*
- *D. Conditions that previously supported the installation of all-way stop control no longer exist.*

02 *On low-volume rural roads, a STOP sign should be considered at an intersection where engineering judgment indicates that Item C in Paragraph 1 of this Section is applicable or where the intersection has inadequate sight distance for the operating vehicle speeds.*

Section 2B.12 All-Way Stop Control

Support:

01 The provisions in the following sections describe warrants for the recommended engineering study to determine all-way stop control. Warrants are not a substitute for engineering judgment. The fact that a warrant for a particular traffic control device is met is not conclusive justification to install or not install all-way stop control. Because each intersection will have unique characteristics that affect its operational performance or safety, it is the engineering study for a given intersection that is ultimately the basis for a decision to install or not install all-way stop control.

02 All-way stop controls at intersections with substantially differing approach volumes can reduce the effectiveness of these devices for all roadway users.

Guidance:

03 *The decision to establish all-way stop control at an unsignalized intersection should be based on an engineering study. The engineering study for all-way stop control should include an analysis of factors related to the existing operation and safety at the intersection, the potential to improve these conditions, and the applicable factors contained in the following all-way stop control warrants:*

- *A. All-Way Stop Control Warrant A: Crash Experience (see Section 2B.13)*
- *B. All-Way Stop Control Warrant B: Sight Distance (see Section 2B.14)*
- *C. All-Way Stop Control Warrant C: Transition to Signal Control or Transition to Yield Control at a Circular Intersection (see Section 2B.15)*
- *D. All-Way Stop Control Warrant D: 8-Hour Volume (Vehicles, Pedestrians, Bicycles) (see Section 2B.16)*
- *E. All-Way Stop Control Warrant E: Other Factors (see Section 2B.17)*

Option:

04 The decision to install all-way stop control on site roadways open to public travel may be based on engineering judgment.

Standard:

05 **The satisfaction of an all-way stop control warrant or warrants shall not in itself require the installation of all-way stop control at an unsignalized intersection.**

Section 2B.13 All-Way Stop Control Warrant A: Crash Experience

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates that:

A. For a four-leg intersection, there are five or more reported crashes in a 12-month period or six or more reported crashes in a 36-month period that were of a type susceptible to correction by the installation of all-way stop control.
B. For a three-leg intersection, there are four or more reported crashes in a 12-month period or five or more reported crashes in a 36-month period that were of a type susceptible to correction by the installation of all-way stop control.

Section 2B.14 All-Way Stop Control Warrant B: Sight Distance

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates that sight distance on the minor-road approaches controlled by a STOP sign is not adequate for a vehicle to turn onto or cross the major (uncontrolled) road.

Support:

02 At such a location, a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop.

Section 2B.15 All-Way Stop Control Warrant C: Transition to Signal Control or Transition to Yield Control at a Circular Intersection

Option:

01 All-way stop control may be installed at locations where all-way stop control is an interim measure that can be installed to control traffic while arrangements are being made for the installation of a traffic control signal (see Chapter 4C) at the intersection or for the installation of yield control at a circular intersection.

Section 2B.16 All-Way Stop Control Warrant D: 8-Hour Volume (Vehicles, Pedestrians, Bicycles)

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates:

A. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection from the major-street approaches is at least 300 units per hour for each of any 8 hours of a typical day; and
B. The combined motor vehicle, bicycle, and pedestrian volume entering the intersection from the minor-street approaches is at least 200 units per hour for each of any of the same 8 hours.

02 If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants may be reduced to 70 percent of the values given in Items A and B in Paragraph 1 of this Section.

Section 2B.17 All-Way Stop Control Warrant E: Other Factors

Option:

01 All-way stop control may be installed at an intersection where an engineering study indicates that all-way stop control is needed due to other factors not addressed in the other all-way stop control warrants. Such other factors may include, but are not limited to, the following:

A. The need to control left-turn conflicts,
B. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where all-way stop control would improve traffic operational characteristics of the intersection, or
C. Where pedestrian and/or bicyclist movements support the installation of all-way stop control.

Section 2B.18 STOP Sign or YIELD Sign Placement

Standard:

01 **The STOP or YIELD sign shall be installed on the near side of the intersection on the right-hand side of the approach to which it applies. When the STOP or YIELD sign is installed at this required location and the sign visibility is restricted, a Stop Ahead sign (see Section 2C.35) shall be installed in advance of the STOP sign or a Yield Ahead sign (see Section 2C.35) shall be installed in advance of the YIELD sign.**

02 **The STOP or YIELD sign shall be located as close as practicable to the intersection it regulates, while optimizing its visibility to the road user it is intended to regulate.**

03 **STOP signs and YIELD signs shall not be mounted on the same post.**

Support:

04 Section 2A.05 contains information about mounting signs back-to-back with a STOP or YIELD sign.

Guidance:

05 *STOP or YIELD signs should not be placed farther than 50 feet from the edge of the pavement of the intersected roadway (see Drawing F in Figure 2A-3).*

06 *Supplemental plaques used in conjunction with a STOP or YIELD sign should be limited to those specified for such use in this Manual.*

Option:

07 Where drivers proceeding straight ahead must yield to traffic approaching from the opposite direction, such as at a one-lane bridge, a TO ONCOMING TRAFFIC (R1-2aP) plaque (see Figure 2B-1) may be mounted below the YIELD sign.

08 Where drivers must yield to traffic in a multi-lane roundabout, a TO TRAFFIC IN CIRCLE (R1-2bP) or TO ALL LANES (R1-2cP) plaque (see Figure 2B-1) may be mounted below the YIELD sign.

Support:

09 Figure 2A-3 shows examples of some typical placements of STOP signs and YIELD signs.

10 Section 2A.13 contains additional information about separate and combined mounting of other signs with STOP or YIELD signs.

Guidance:

11 *Stop lines that are used to supplement a STOP sign should be located as described in Section 3B.19. Yield lines that are used to supplement a YIELD sign should be located as described in Section 3B.19.*

12 *Where there is a marked crosswalk at the intersection, the STOP sign should be installed in advance of the edge of the crosswalk that is nearest to the approaching traffic.*

13 *Except at roundabouts and channelized right-turn lanes, where there is a marked crosswalk at the intersection, the YIELD sign should be installed in advance of the edge of the crosswalk that is nearest to the approaching traffic.*

14 *Where two roads intersect at an acute angle, the STOP or YIELD sign should be positioned at an angle, or shielded, so that the legend is out of view of traffic to which it does not apply.*

15 *If a raised splitter island is available on the left-hand side of a multi-lane roundabout approach, an additional YIELD sign should be placed on the left-hand side of the approach.*

Option:

16 If a raised splitter island is available on the left-hand side of a single-lane roundabout approach, an additional YIELD sign may be placed on the left-hand side of the approach.

17 At wide-throat intersections or where two or more approach lanes of traffic exist on the signed approach, an additional STOP or YIELD sign may be installed on the left-hand side of the road and/or a stop or yield line may be used to improve observance of the right-of-way control. At channelized intersections or at divided roadways separated by a median or divisional island, the additional STOP or YIELD sign may be placed on a channelizing island, or in the median or on the divisional island. An additional STOP or YIELD sign may also be placed overhead facing the approach at the intersection to improve observance of the right-of-way control.

Standard:

18 **More than one STOP sign or more than one YIELD sign shall not be placed on the same support facing in the same direction.**

Option:

19 For a yield-controlled channelized right-turn movement onto a roadway without an acceleration lane and for an entrance ramp onto a freeway or expressway without an acceleration lane, a NO MERGE AREA (W4-5aP) supplemental plaque (see Section 2C.45) may be mounted below a Yield Ahead (W3-2) sign and/or below a YIELD (R1-2) sign when engineering judgment indicates that road users would expect an acceleration lane to be present.

Section 2B.19 Yield Here To Pedestrians Signs and Stop Here For Pedestrians Signs (R1-5 Series)

Support:

01 The R1-5 series signs are intended to mitigate the scenario that can place pedestrians at risk by blocking other drivers' view of pedestrians and by blocking the pedestrians' view of the vehicles approaching in the adjacent lanes.

Standard:

02 **Yield Here to (Stop Here for) Pedestrians (R1-5, R1-5a, R1-5b, R1-5c, R1-5d, and R1-5e) signs (see Figure 2B-2) shall be used if yield (stop) lines are used in advance of a marked crosswalk only where it crosses an uncontrolled multi-lane approach. The Stop Here for Pedestrians signs shall only be used where the law specifically requires that a driver must stop for a pedestrian in a crosswalk. The legend STATE LAW shall not be displayed on the R1-5 series signs.**

Guidance:

03 *If yield (stop) lines and Yield Here to (Stop Here for) Pedestrians signs are used in advance of a crosswalk that crosses an uncontrolled multi-lane approach, the signs should be placed 20 to 50 feet in advance of the nearest edge of the crosswalk (see Section 3B.19 and Figure 3B-16).*

Standard:

04 **When used with a School Crossing assembly within school zones (see Part 7), the R1-5a and R1-5c signs shall be used in place of the R1-5 and R1-5b signs in accordance with Paragraph 2 of this Section.**

05 **When used with a Trail Crossing assembly (see Section 2C.54), the R1-5d and R1-5e signs shall be used in place of the R1-5 and R1-5b signs in accordance with Paragraph 2 of this Section.**

Guidance:

06 *When Yield Here to (Stop Here for) Pedestrians signs are provided in advance of a crosswalk across an multi-lane approach, parking should be prohibited in the area between the yield (stop) line and the crosswalk.*

07 *Yield (stop) lines and Yield Here to (Stop Here for) Pedestrians signs should not be used in advance of crosswalks that cross an approach to or departure from a roundabout.*

Option:

08 Yield Here to (Stop Here for) Pedestrians signs may be used in accordance with Paragraphs 2 through 4 of this Section even if yield (stop) lines are not used.

09 A Pedestrian Crossing (W11-2) warning sign may be placed overhead or may be post-mounted with a diagonal downward-pointing arrow (W16-7P) plaque at the crosswalk location where Yield Here to (Stop Here for) Pedestrians signs have been installed in advance of the crosswalk.

Standard:

10 **If a W11-2 sign is post-mounted at the crosswalk location where a Yield Here to (Stop Here for) Pedestrians sign is used on the approach, the Yield Here to (Stop Here for) Pedestrians sign shall not be placed on the same post as the W11-2 sign.**

Option:

11 An advance Pedestrian Crossing (W11-2) warning sign with an AHEAD or a distance supplemental plaque may be used in conjunction with a Yield Here to (Stop Here for) Pedestrians sign on the approach to the same crosswalk.

12 In-Street Pedestrian Crossing signs and Yield Here to (Stop Here for) Pedestrians signs may be used together at the same crosswalk.

Section 2B.20 In-Street and Overhead Pedestrian and Trail Crossing Signs (R1-6 and R1-9 Series)

Option:

01 The In-Street Pedestrian Crossing (R1-6 or R1-6a) sign (see Figure 2B-2), In-Street Trail Crossing (R1-6d or R1-6e) sign (see Figure 2B-2), the Overhead Pedestrian Crossing (R1-9 or R1-9a) sign (see Figure 2B-2), or the Overhead Trail Crossing (R1-9d or R1-9e) sign (see Figure 2B-2) may be used to remind road users of laws regarding right-of-way at an unsignalized crosswalk. The legend STATE LAW may be displayed at the top of the R1-6 series and R1-9 series signs if applicable. On the R1-6 series signs, the legends STOP or YIELD may be used instead of the appropriate STOP sign or YIELD sign symbol.

02 Highway agencies may develop and apply criteria for determining the applicability of In-Street Pedestrian Crossing signs.

Figure 2B-2. Unsignalized Pedestrian Crosswalk Signs

R1-5

R1-5b

R1-5d

R1-5e

R1-6 *

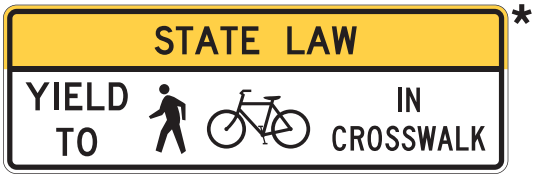
R1-6a *

R1-6d *

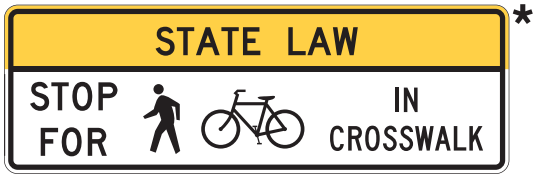
R1-6e *

R1-9 *

R1-9a *



R1-9d *



R1-9e *

* The legend STATE LAW is optional. A fluorescent yellow-green background color may be used instead of yellow for this sign.

Signs are not shown in proportion to their designated sizes.

Standard:

03 **The STOP FOR legend shall only be used in States where the State law specifically requires that a driver must stop for a pedestrian or a bicyclist in a crosswalk.**

04 **If used, In-Street Pedestrian or Trail Crossing signs shall only be placed in the roadway at the crosswalk location on the center line, on a median island, on a lane line, or on an edge line.**

05 **The In-Street Pedestrian or Trail Crossing sign shall not be post-mounted on the left-hand or right-hand side of the roadway.**

Support:

06 Section 3I.02 contains information about the use of tubular markers to provide additional emphasis for a pedestrian crossing.

Standard:

07 **If used, the Overhead Pedestrian or Trail Crossing sign shall be placed over the roadway at the crosswalk location.**

08 **When used at an uncontrolled crossing, the In-Street or Overhead Pedestrian Crossing sign shall be used only as a supplement to a Pedestrian Crossing (W11-2) warning sign with a diagonal downward-pointing arrow (W16-7P) plaque at the crosswalk location.**

09 **When used at an uncontrolled crossing, the In-Street or Overhead Trail Crossing sign shall be used only as a supplement to a Trail Crossing (W11-15) warning sign with a diagonal downward-pointing arrow (W16-7P) plaque at the crosswalk location.**

10 **An In-Street or Overhead Pedestrian or Trail Crossing sign shall not be placed in advance of the crosswalk to educate road users about the State law prior to reaching the crosswalk, nor shall it be installed as an educational display that is not near any crosswalk.**

Guidance:

11 *If an island (see Chapter 3J) is available, the In-Street Pedestrian or Trail Crossing sign, if used, should be placed on the island.*

Option:

12 In-Street Pedestrian or Trail Crossing signs may be mounted back-to-back in the median or on the center line of an undivided roadway.

Standard:

13 **The In-Street Pedestrian or Trail Crossing sign and the Overhead Pedestrian Crossing or Trail sign shall not be used at crosswalks on approaches controlled by a traffic control signal, pedestrian hybrid beacon, or an emergency-vehicle hybrid beacon.**

14 **Except where the In-Street Crossing sign is placed on a physical island, the sign support shall be designed to bend over and then bounce back to its normal vertical position when struck by a vehicle.**

Option:

15 The In-Street and Overhead Pedestrian and Trail Crossing sign may be used at intersections or midblock pedestrian crossings with flashing beacons.

Support:

16 The provisions of Section 2A.15 concerning mounting height are not applicable for the In-Street Pedestrian Crossing sign. Section 2A.18 contains information about sign mounting methods.

Standard:

17 **The top of an In-Street Pedestrian or Trail Crossing sign shall be a maximum of 4 feet above the pavement surface. The top of an In-Street Pedestrian or Trail Crossing sign placed in an island shall be a maximum of 4 feet above the island surface.**

Option:

18 The In-Street Pedestrian Crossing or Trail Crossing signs may be used seasonally to prevent damage in winter because of plowing operations, and may be removed at night if the pedestrian activity at night is minimal.

19 Both sign mounting types, In-Street Crossing (R1-6 series) signs and Overhead Crossing (R1-9 series) signs, may be used together at the same crosswalk.