Safer Seward Highway Project
Seward Highway MP 98.5 to 118,
Bird Flats to Rabbit Creek

Project No.: Z566310000/0A31034

Environmental Assessment

Appendix G: Traffic and Safety Analysis

DRAFT

December 2025

Prepared for:

Alaska Department of Transportation and Public Facilities

Prepared by:

HDR, Inc.
582 E. 36th Avenue, Suite 500
Anchorage, AK 99503-4169
907-644-2000 Phone | 907-644-2022 Fax

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by DOT&PF pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated April 13, 2023, and executed by FHWA and DOT&PF.

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Executive Summary

The Alaska Department of Transportation and Public Facilities (DOT&PF) has retained HDR Engineering, Inc. (HDR) to produce a traffic and safety analysis report for the Seward Highway corridor between Mileposts (MPs) 98.5 and 118. The purpose of this report is to support the National Environmental Policy Act documentation required for determining the purpose and need, alternatives development and selection, and the preferred concept for corridor improvements.

The Build concepts at design and posted speed of 55 miles per hour (mph) are:

- C2: Two-lane highway with alternating passing lanes
- C2-M: Two-lane highway separated using a barrier and/or median, with alternating passing lanes
- C7 and C7-T: Four-lane highway separated using a barrier and/or median

Summaries of the safety and capacity analyses are provided below.

Safety Analysis

DOT&PF provided 5-year (2017–2021) historical crash data to HDR to assess the existing safety performance of the corridor. During this period, 236 crashes were reported, which included 4 fatality and 8 major injury crashes. HDR analyzed crashes to reveal trends in frequency, severity, and contributing factors. Crashes were most common during the winter months (December, January, February), on the weekends (Friday, Saturday, Sunday), during a weather event, and under daylight conditions. The most frequent crash types were single-vehicle-run-off-the-road, rear end, or head-on crashes.

HDR evaluated the three proposed Build concepts (C2, C2-M, C7 and C7-T) for future safety performance and compared these to the No-Build condition using the American Association of State Highway and Transportation Officials' (AASHTO) 2010 *Highway Safety Manual*[1] and crash modification factors from the Federal Highway Administration Crash Modification Factor Clearinghouse[2]. DOT&PF approved the analysis methodology.

A decrease in both total and fatal/injury crashes is predicted for all concepts when compared to the No-Build condition. The highest reduction in total crashes (68 percent) and fatal/injury crashes (69 percent) was reported for the four-lane divided highway Concepts C7 and C7-T. Concepts C2 and C2-M show identical safety performance, but the median included in C2-M is predicted to further reduce total crashes by at least 3 percent, and reduce fatal and severe injury crashes by 5 percent. Ultimately, it is anticipated that all proposed concepts would yield considerable improvements in safety along this segment of the Seward Highway.

[1] https://highways.dot.gov/safety/data-analysis-tools/highway-safety-manual
[2] https://cmfclearinghouse.fhwa.dot.gov/

Table ES-1 provides the percent reduction in crashes for each concept compared to the No-Build condition for year 2052.

Table ES-1. 2052 concept comparisons based on predicted crashes.

Concept	Predicted Reduction in Intersection Crashes		Predicted Reduction in Roadway Segment Crashes	
	% Total Crashes Change Compared to NB	% FI Crashes Change Compared to NB	% Total Crashes Change Compared to NB	% FI Crashes Change Compared to NB
No-Build	–	–	–	–
C2	-56	-56	-35	-35
C2-M	-56	-56	-38	-39
C7 & C7-T	-57	-59	-68	-69

Notes: FI = fatality and injury; NB = No-Build condition; green numbers denote performance metrics that are a reduction in predicted crashes compared to the No-Build condition.

Capacity Analysis

HDR used the current *Highway Capacity Manual*, Version 7 (HCM7)[3], and Highway Capacity Software (HCS)[4] to calculate performance and service levels for existing conditions as well as the No-Build and three Build concepts. DOT&PF approved use of the HCM7 methodology and current HCS.

HDR used both permanent continuous count stations and turning movement data collected during June and July 2024 to determine the average daily traffic, average annual daily traffic, design hourly volumes, and peak directional factor along the corridor. HDR grew existing 2022 traffic volumes to the 2052 design year using a 1 percent per year linear growth rate.

HCM7 uses performance and service measures to analyze how a corridor operates:

- Performance measures:
    - Average travel speed, mph
    - Percent followers, percent
- Service measures:
    - Follower density (FD), followers/mile/lane
    - Level of service (LOS)
        - LOS is determined by FD and segment density

Table ES-2 provides the 2052 segment LOS capacity results.

[3] *Highway Capacity Manual* (HCM), Version 7, Transportation Research Board, 2024
[4] Highway Capacity Software 2023, McTrans Center

Table ES-2. 2052 segment LOS capacity results.

Seward Highway Location	Segment	MP Range	LOS				
			No-Build	C2	C2-M	C7	C7-T
South of Community of Bird Creek – Boretide Road	1	98.7–103.1	E	E	E/D	A/B	A/B
Boretide Road – Indian Road	2	103.1–103.8	E	E	E/D	A/B	A/B
Indian Road – Rainbow Valley Road	3	103.8–108.4	E	D/E	D/E	A/B	A/B
Rainbow Valley Road – Potter Valley Road	4	108.4–115.4	E	D/E	D/E	A/B	B
Potter Valley Road – Potter Marsh	5	115.4–117.6	E	E/D	E	B	B

Notes: Using design hourly volumes; red-shaded cells denote service measures that do not meet the recommended LOS, and green-shaded cells denote service measures that meet or exceed the recommended LOS.

The four-lane divided highway Concepts C7 and C7-T are the only concepts that meet AASHTO's *A Policy on Geometric Design of Highways and Streets*[5] target threshold LOS B for a rural arterial.

[5] Geometric Design of Highways and Streets (GB), 2018, American Association of State Highway and Transportation Officials

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Contents

Tables

Figures

Appendices

Acronyms and Abbreviations

AADT	annual average daily traffic
AASHTO	American Association of State Highway and Transportation Officials
Accel.	Acceleration
ADT	average daily traffic
AMATS	Anchorage Metropolitan Area Transportation Solutions
ARRC	Alaska Railroad Corporation
ATS	Average Travel Speed
BOP	beginning of project
CMF	crash modification factor
CRF	crash reduction factor
D-factor	peak directional factor
DDHV	design directional hourly volume
$DDHV_s$	seasonal design directional hourly volume
Decel.	Deceleration
DHV	design hourly volume
DHV_s	seasonal design hourly volume
DOT&PF	Alaska Department of Transportation and Public Facilities
EOP	end of project
FD	follower density
FFS	free flow speed
FHWA	Federal Highway Administration
FI	fatality and injury
Gr	growth rate
HCM7	Highway Capacity Manual, Version 7
HCS	Highway Capacity Software
HDR	HDR Engineering, Inc.
HSIP	Highway Safety Improvement Program
HSM	Highway Safety Manual
IHSDM	Interactive Highway Safety Design Model
K-factor	peak hour factor
LOS	level of service
LTS	Level of Traffic Stress
L:W	length to width
MADT	monthly average daily traffic
MEV	million entering vehicles
min	minimum
MOA	Municipality of Anchorage

MOE	measures of effectiveness
MP	Milepost
mph	mile(s) per hour
MTP	Metropolitan Transportation Plan
MUT	median U-turn
MV	Motor Vehicles
MVMT	million vehicle miles traveled
N/A	not applicable
NB	northbound
NB	No-Build condition
NCHRP	National Cooperative Highway Research Program
NHS	National Highway System
OS&HP	Official Streets and Highways Plan
PDO	property damage only
PF	percent followers
PGDHS	A Policy on Geometric Design of Highways and Streets
Project	Safer Seward Highway Project, Seward Highway MP 98.5 to 118, Bird Flats to Rabbit Creek Project
RCUT	restricted crossing U-turn
ROW	right-of-way
RV	recreational vehicle
RWIS	Road Weather Information System
SB	southbound
SPF	safety performance function
STRAHNET	Strategic Highway Network
SVROR	single vehicle run off the road
V_o	initial speed
V	speed reached
veh/day	vehicles per day
VRU	Vulnerable Road Users
WOTUS	Waters of the United States

1 Introduction

The Alaska Department of Transportation and Public Facilities (DOT&PF) has retained HDR Engineering, Inc. (HDR) to produce a traffic and safety analysis report for the Seward Highway corridor between Mileposts (MPs) 98.5 and 118. Figure 1-1 shows the Safer Seward Highway Project, Seward Highway MP 98.5 to 118, Bird Flats to Rabbit Creek Project (Project) limits and highlighted landmarks throughout the corridor.

Seward Highway MPs 98.5 to 118 Information

- National Highway System (NHS) Route 1
- Classified as an Interstate (Rural)
- Mixed use by motorists, commuters, and tourists
- Railroad parallels the road corridor
- Turnagain Arm communities of Bird Creek, Indian, Rainbow, and Rabbit Creek are within the study limits
- Six major recreation sites are along this segment
- Constrained by steep terrain (Chugach Mountains) and water (Turnagain Arm)
- Posted speed of 55 miles per hour (mph)
- Designated a Highway Safety Corridor in 2006
- First designated Highway Safety Corridor in Alaska

Figure 1-1. Project limits and landmarks along the Project corridor.

1.1 Project Corridor Background

The Seward Highway corridor is a National Scenic Byway (1989), State Scenic Byway (1993), and All-American Road (2000) as well as part of the Strategic Highway Network (STRAHNET) subsystem. It is the only roadway connection between Anchorage and the Kenai Peninsula Borough, providing access to communities, commerce, recreation, and tourism.

Analysis for the proposed Project includes evaluating a range of concepts aimed at reducing crash frequency and severity as well as enhancing the overall transportation experience for commuters and travelers along this vital corridor.

1.2 Area Plans and Studies

The following area plans and studies help set the framework for the vision and goals of the corridor as well as what concerns should be considered when developing corridor concepts during the analysis process.

1.2.1 Municipality of Anchorage *Official Streets and Highways Plan – Maps, Policies, and Standards* (June 2014)[6]

The Municipality of Anchorage's (MOA's) *Official Streets and Highways Plan* (OS&HP) establishes location, classification, and minimum rights-of-way (ROWs) for those streets and highways required to accommodate the community's transportation needs in years to come. The plan identifies collectors (Class I), minor arterials (Class II), major arterials (Class III), expressways (Class IV), and freeways (Class V).

The MOA classifies the Seward Highway from Rabbit Creek Road to the southern MOA boundary as a major arterial (Class III). The guidelines for this type of roadway listed in the OS&HP are:

- Provide direct linkage between major employment and activity centers, and connect these centers with large residential areas
- Provide little or no direct land access
- Serve as the primary distribution system to and from freeways and expressways
- Provide major parallel traffic routes to the freeway system
- Prevent direct access from residential lots or smaller clusters of such lots during the design of future subdivisions along major arterials
- Control access from commercially and industrially developed areas onto major arterials
- Site major arterials in appropriate locations that prevent isolation of residential areas or neighborhoods from major service facilities, such as parks and schools
- Provide safe pedestrian access to such facilities
- Use landscaping to buffer residential or public use areas, such as parks and schools, from major arterials

[6] https://www.muni.org/Departments/OCPD/Planning/Publications/Documents/OSHP%20Complete%20Document1.26.15.pdf

Potter Valley and Rabbit Creek Roads, which intersect the Seward Highway within the Project area, are defined as collectors (Class I). Highlighted guidelines for this type of roadway are:

- Design collectors to provide priority to through-traffic movement and limited land access function to adjacent property
- Provide access to local neighborhood schools and neighborhood recreational areas with collectors
- Provide pedestrian facilities along collectors to allow for safe access between activity centers, such as schools and parks
- Design collectors within residential areas with only two travel lanes and limited widths on shoulder areas for emergency parking

Streets located within the Turnagain Arm communities of Indian, Bird Creek, and Rainbow were not listed in the OS&HP.

1.2.2 *Seward Highway Route Development Plan Reconnaissance Study* (January 2017)[7]

The *Seward Highway Route Development Plan Reconnaissance Study* is the foundation for the current Project proposed by DOT&PF. This study was completed to help guide future decisions for the segment of Seward Highway from its intersection with the Alyeska Highway to the Rabbit Creek Road interchange. This study was the first step in prioritizing enhancements to operations and improvements in safety, while protecting the recreational importance and aesthetic qualities of the corridor.

This study described existing traffic and crash trends as well as forecast traffic volumes for year 2065. A 50-year planning horizon was used due to the high cost of construction, utility relocation, shore protection, and ROW acquisition. The study used the historical annual growth rate average from 1998 to 2012, which was approximately 1 percent. It used a seasonal adjustment factor of 1.5 to reflect summertime (June, July, August) average daily traffic (ADT).

Section 6.3 (Access Management and Safety) of this study highlights that the Seward Highway's function as a major transportation facility is to improve the region's economic wellbeing by moving people and goods over long distances at higher speeds from city to city or port to port. The goal is to balance mobility and access that preserves the safety of the facility while providing the intended level of mobility base on the functional class.

[7] https://safersewardhighway.com/documents/20170103_SewardReconStudy_FinalV6.pdf

1.2.3 *2040 Metropolitan Transportation Plan* (June 2020)[8]

Table 1-1 highlights proposed projects in the *2040 Metropolitan Transportation Plan* (MTP) that relate to the Seward Highway corridor.

Table 1-1. MTP projects related to the Seward Highway corridor.

Period	Project Name	MTP #	Project Description	Purpose
Short-Term (2018–2030)	Rabbit Creek Road Reconstruction – Seward Highway to Goldenview Drive	127	Reconstruct Rabbit Creek Road with a center turn lane; project includes non-motorized improvements and considers adjacent land use	Connectivity
Illustrative (after 2040)	Seward Highway Reconstruction – Potter Weigh Station to Potter Marsh Turn Off (154th Avenue)	317	Reconstruct and widen the Seward Highway; project would include non-motorized improvements and consider adjacent land use	Safety (designated safety corridor), capacity, congestion, and freight (regional truck route)
Illustrative (after 2040)	Seward Highway: Rabbit Creek Road to Girdwood Planning and Environmental Linkages Study	318	Plan and analyze impacts of conceptual project alternatives on segments of the Seward Highway from Rabbit Creek Road to Girdwood, reducing the time required to obtain environmental approval	Safety (designated safety corridor), capacity, congestion (seasonal), and environmental sustainability

1.2.4 Anchorage Metropolitan Area Transportation Solutions' *Non-Motorized Plan* (November 2021)[9]

The Anchorage Metropolitan Area Transportation Solutions' (AMATS') *Non-motorized Plan* provides the vision for the next 10-plus years for the network of facilities for non-motorized travel within the AMATS planning area. This plan supersedes the existing *Anchorage Bicycle Plan* (March 2010) and *Anchorage Pedestrian Plan* (October 2007). It does not supersede the *Areawide Trails Plan* (April 1997; see Section 1.2.5). Two highlights of this plan are (1) the Seward Highway currently acts as a barrier to non-motorized transportation and is categorized as Level of Traffic Stress (LTS) 4 (Higher Stress), and (2) the Seward Highway section tied to this Project in the bicycle network is noted as having an existing paved shoulder as a bicycle facility. No recommendations are included in the plan for this section of the Seward Highway.

[8] https://www.muni.org/Departments/OCPD/Planning/AMATS/Pages/1_2040MTP.aspx
[9] https://www.muni.org/Departments/OCPD/Planning/AMATS/Documents/Nonmotorized/update_2020/20221019_Anchorage_Non_Motorized_Plan_Final%20Document.pdf

1.2.5 Anchorage Metropolitan Area Transportation Solutions' *Areawide Trails Plan* (April 1997)[10]

AMATS' *Areawide Trails Plan* is primarily concentrated on recreational trails. Some of the following highlighted concerns have not fully been addressed by projects since this plan was established:

- New parking improvements and a pedestrian walkway to view Dall sheep are needed at Windy Corner to provide new opportunities for the traveling public to see Dall sheep safely at close range.
- A separate trail needs to be planned and built from Potter Marsh to Portage on the seaward side of the highway. This proposed trail would connect with the parking areas along the Seward Highway north of Girdwood, new pedestrian walkway at Windy Corner, proposed Girdwood Coastal Interpretive Center, and commercial development at Portage.

1.2.6 *Anchorage Freight Mobility Study* (June 2017)[11]

The *Anchorage Freight Mobility Study* notes the Seward Highway as being part of the STRAHNET.[12] The Seward Highway has been identified as a key highway for deployment of the United States Armed Forces: "These corridors provide defense access, continuity and emergency capabilities for movement of personnel and equipment in both peace time and war"[13].

1.2.7 *Hillside District Plan* (April 2010)[14]

In the *Hillside District Plan*, the community identified the Old Seward Highway as very important for their wildlife viewing and habitat values, nature appreciation, public recreation, and scenic qualities. The Old Seward Highway parallels the Seward Highway and intersects with Potter Valley Road. This plan supports a byway character with moderated speeds and recreational access features, rather than typical arterial design.

1.2.8 *Seward Highway Corridor Partnership Plan* (1998)[15]

The *Seward Highway Corridor Partnership Plan* was required to nominate the Seward Highway to the Federal Highway Administration's (FHWA's) National Scenic Byways Program. This plan identifies four "givens" as well as three strategies for the corridor.

The four givens provided in this plan regarding the existing nature of the corridor are:

1. The Seward Highway is composed of five distinct segments. This Project falls into Segment 2: Turnagain Arm.
2. Tourism to Alaska would continue to increase, as would Alaska's resident population.

[10] https://www.muni.org/Departments/OCPD/Planning/AMATS/documents/areawide%20trails%20plan%2097.pdf
[11] https://www.muni.org/Departments/OCPD/Planning/AMATS/Documents/Freight_Mobility/Study_2016/FMS_final.pdf
[12] https://www.fhwa.dot.gov/planning/national_highway_system/
[13] https://www.sddc.army.mil/sites/TEA/Functions/SpecialAssistant/STRAHNET/_STRAHNET%20101.pdf
[14] https://www.muni.org/Departments/OCPD/Planning/Publications/Pages/HillsideDistrictPlan2010.aspx
[15] https://dot.alaska.gov/stwdplng/scenic/assets/Seward_Highway_Corridor_Partnership_Plan.pdf

3. The Seward Highway is a multipurpose corridor serving both residents and visitors for numerous recreational and commercial purposes.
4. The successful management of the Seward Highway is dependent on the cooperation of existing institutions, resource managers, and committed individuals.

Three keystone strategies established in this plan are:

1. The Seward Highway should provide a safe, aesthetic, and world-class driving experience.
2. Effective visitor management is necessary to ensure long-term development through tourism.
3. Haphazard development poses the greatest threat to the Seward Highway's ability to attract visitors and quality development.

The McHugh Creek, Bird Point, and Bird Creek scenic overlooks were developed from funds tied to Seward Highway being designated a Scenic Byway.

This plan reports that the annual average daily traffic (AADT) in 1995 did not exceed 5,000 at any location. Seasonal traffic counts were as high as 12,000 during summer peak weekends. Bottlenecks occurred along the roadway where topography, season, number of users, and type of users combined to create congestion at that time.

At Windy Corner, the curving road, Dall sheep, lack of parking, and no pedestrian space created traffic slowdowns and safety concerns.

While the majority of the road does not have serious congestion problems from the variety of users, the emergence of problems suggests that use levels are approaching the point in which problems will be more severe and occur in more locations. Per this plan[16]:

> *Seward Highway is already an All-American Road by every measurable standard. The listed critical actions will ensure that the Seward Highway maintains and enhances its standing among the world's great roads.*
>
> *One of the greatest safety issues now facing the highway is this conflict between leisure and visitor travelers, and local resident and commercial use.*

Keystone strategy 1 outlines two critical actions based on aesthetics and safety for the corridor. Highlighted recommendations for both actions that relate to traffic enhancements are:

Aesthetic:

1. Roadway Details: The use of highway appurtenances (e.g., Jersey barrier medians) in the roadway that will detract from the scenic and kinesthetic pleasure of driving the Seward Highway should be avoided.
2. Pullouts: Pullouts should be differentiated based on intended use. It should be defined where motorcoaches are prohibited. An acceleration lane should be provided to allow

[16] https://dot.alaska.gov/stwdplng/scenic/assets/Seward_Highway_Corridor_Partnership_Plan.pdf

buses to safely re-enter the main flow of traffic. Slow vehicle passing should be included within areas not offering great views.
3. Bike Paths: In accordance with Trails and Recreational Access for Alaska goals, separated path bike routes should be created wherever possible along the Seward Highway.

Safety:

1. Restricted Turning Movements: Access via left turn to some pullouts should be prohibited based on limited sight distance and the difficulty of making a left turn in heavy traffic. For very popular turnouts, a left-turn lane may provide a satisfactory solution.
2. Left-turn Lanes: Inclusion of left-turn lanes in new and developing nodes should be considered. Left-turn lanes should also be considered at high-traffic turnouts.

1.2.9 *Alaska Strategic Freight Plan* (January 2021)[17]

The *Alaska Strategic Freight Plan* highlights that the Port of Seward is primarily used for export cargo, resulting in increased freight (truck) traffic on the Seward Highway. According to this plan, the 2019 average daily truck volume was 720 along the Seward Highway south of Potter Marsh.

This plan also identifies a primary concern along the Seward Highway as the lack of truck parking. Large trucks sometimes have to park on the side of the road and obscure sight distances at intersections, which creates safety hazards.

1.2.10 *Alaska Iways Architecture Update* (November 2008)[18]

Per the *Alaska Iways Architecture Update*, the Seward Highway intelligent transportation system should strive to become an integrated "system of systems" that improves safety and mobility; enhances efficiency and convenience of travel for all residents, visitors, and commerce; and supports local, regional, state, and national transportation objectives, if practical. A long-term (5- to 10-year) project initiative highlighted in the *Alaska Iways Architecture Update* is a Variable Speed Limit System Study and implementation.

1.3 Concepts

1.3.1 2033 and 2052 – No-Build Condition: Two-Lane Roadway

The typical section of the Seward Highway corridor is:

- The segment from MPs 99.5 to 117.6 consists of two 12-foot lanes, undivided with 8-foot shoulders. Left-turn lanes are incorporated for Sawmill Road, Bird Creek, Boretide Road, and Potter Valley Road, with a posted speed of 55 mph.
- The segment from MPs 98.8 to 99.5 includes a passing lane in the northbound direction, with a posted speed of 65 mph.

[17] https://dot.alaska.gov/alaskamoves2050/docs/Tech-Memo-2-Freight-Final_070221.pdf
[18] https://dot.alaska.gov/iways/Documents/Seward_Highway_Corridor_ITS_Plan.pdf

- The segment from MPs 98.5 to 98.8 includes a passing lane in both directions, with a posted speed of 65 mph.

Existing safety enhancements include:

- Centerline and shoulder rumble strips
- Roadside delineation, guardrail reflectors, and post-top delineators
- Dynamic message sign located for southbound traffic leaving Anchorage
- Five dynamic speed signs installed throughout the Safety Corridor
- Flashing beacon at the intersection of Sawmill Road and the Seward Highway
- Separated pathway system between the beginning of project (BOP; MP 98.5) and Indian Valley Road, with connectivity
- Pedestrian crossing at Bird Creek and MP 89.9

Lighting along the corridor includes:

- Isolated intersection lighting at Potter Valley Road, Boretide Road, and Sawmill Road
- Lighting at the entrance and exit of the weigh station as well as the southbound acceleration lane
- Continuous lighting from the Rabbit Creek Shooting Range to MP 117

Road Weather Information System (RWIS) sites include:

- The MP 100 (Bird Creek) RWIS provides pavement surface and subsurface data. It is currently not active.
- The MP 111.8 (McHugh Creek) RWIS is currently not active but is planned for a future relocation.
- The MP 113.5 (Potter Marsh weigh station) RWIS includes temperature sensors for the pavement surface as well as subsurface and atmospheric data. It is currently not active.
- The MP 117.3 (Potter Marsh) RWIS and MP 113.5 (Potter Marsh weigh station) RWISs include a web camera.

1.3.2 2033 and 2052 Build Conditions

HDR developed eight Build concepts; however, HDR eliminated Concepts C1, C3 through C6, and C8 based on infeasibility, a higher design speed of 65 mph, or a hybrid version of the concept being completed. These eliminated concepts are:

- Concepts C1, C5, and C8: Based on a design and posted speed of 65 mph, an additional 14 curves would require flattening. This would cause more impacts on Alaska Railroad Corporation (ARRC) facilities and Waters of the United States (WOTUS) as well as more fill in critical Cook Inlet beluga whale habitat. These concepts would have an increased Project footprint, costs, impacts on critical habitat and park lands, and potential schedule delays.
- Concepts C3 and C4: Both concepts are materially very unbalanced projects and have extensive impacts on resources:

  - Concept C3: All impacts are tied to ARRC and WOTUS, and it would result in extensive amounts of fill and impacts on WOTUS.
  - Concept C4: All impacts are toward the mountainside with a divided median, and would result in rock blasting and extensive impacts on park lands.

- Concept C6: This preliminary concept was superseded by Concepts C7 and C7-T.

See Section 2 Alternatives of the environmental assessment for description of screening criteria, the alternatives evaluation, and alternatives considered but not advanced.

All Build concepts include:

- Consolidation of access:
  - Rainbow Trailhead parking and residents of Rainbow parking would include single point access to the Seward Highway.
  - The communities of Indian and Bird Creek would have frontage road access with single point access to the Seward Highway.
  - Potter Creek Trailhead, private residents, and the Division of Land and Water management facility would be provided single point access to Potter Valley Road.
  - Many of the existing safety features would be incorporated.
- Major approach left-turn lanes:
  - Potter Valley Road
  - Sawmill Road
  - Boretide Road
  - Rainbow Valley Road
  - McHugh Creek
  - Beluga Point
  - Windy Corner
- Improvements to existing recreational sites:
  - Beluga Point would have a single entry/exit from parking, a pedestrian crossing, and a parking lot expansion.
  - The Rainbow Trailhead would have a single entry/exit from parking and a parking lot expansion.
  - Windy Corner would have pathway access and a parking lot expansion.

1.3.2.1 CONCEPT C2: DESIGN AND POSTED SPEED OF 55 MPH

Figure 1-2 illustrates Concept C2, which is two lanes with an additional alternating passing lane.

Figure 1-2. Concept C2 rendering.

1.3.2.2 CONCEPT C2-M: DESIGN AND POSTED SPEED OF 55 MPH

Figure 1-3 illustrates Concept C2-M, which is two lanes separated using a barrier and/or medians, with an additional alternating passing lane. With the installation of a barrier and/or median, right-in/right-out-only options would be provided for numerous access points that are not determined to need left-turn access. Existing recreational access to Potter Creek/Turnagain Trailhead would be provided through frontage access to Potter Valley Road.

Figure 1-3. Concept C2-M rendering.

1.3.2.3 CONCEPTS C7 AND C7-T: DESIGN AND POSTED SPEED OF 55 MPH

Figure 1-4 illustrates Concepts C7 and C7-T, two northbound and two southbound, separated using a barrier and/or median. With the installation of a barrier and/or median, right-in/right-out-only options would be provided for numerous access points that are not determined to need left-turn access. Existing recreational access to Potter Creek/Turnagain Trailhead would be provided through frontage access to Potter Valley Road. The only difference between Concepts C7 and C7-T is that Concept C7-T is grade separated for four sections of the corridor:

- **Segment 1** starts 1,500 feet southeast of the **Falls Creek Trailhead** turnoff and ends approximately 3,500 feet southeast of the **Windy Corner** Turnout.
- **Segment 2** starts 3,000 feet northwest of the proposed **Windy Corner** (mountainside) pullout and ends approximately 1,000 feet southeast of the proposed **Rainbow** pullout.
- **Segment 3** starts approximately 1,000 feet northwest of **Beluga Point** and ends approximately 1,300 feet southeast of the proposed **McHugh Creek** Turnout.
- **Segment 4** starts approximately 500 feet northwest of the **McHugh Creek** turnoff and ends 1,000 feet southeast of the **weigh station**.

Figure 1-4. Concepts C7 and C7-T rendering.

1.4 Pedestrian and Bicyclist Level of Traffic Stress

Currently, the Seward Highway corridor, as referenced in AMATS' *Non-Motorized Plan*[19] is LTS 4. With the proposed enhancements to the corridor, the LTS would be improved to LTS 1 for all Build concepts. Table 1-2 and Figure 1-5 were developed in reference to methodology provided

[19] https://www.muni.org/Departments/OCPD/Planning/AMATS/Documents/Nonmotorized/update_2020/20221019_Anchorage_Non_Motorized_Plan_Final%20Document.pdf

in the LTS technical memorandum by GHD[20]. Three analysis categories are used when evaluating the LTS, as shown in Table 1-2.

Table 1-2. Corridor assessment based on LTS.

Analysis	Existing	Proposed Designs
Segments	• LTS 4: Shoulder use only	• LTS 1: Separated pathway with appropriate offset from roadway • Provides a link to the existing pathway system that ends at the Indian parking lot
Intersection approaches	• LTS 4: Multiple access points to cross	• LTS 1: Pathway added and shoulder access points decrease • Sight lines checked between pathway and access points • Potential additional underpasses to recreational sites and/or points of interest
Unsignalized crossings	• LTS 4: No median refuge for crossing a street posted at 45 mph or greater	• LTS 1: Median refuge at intersections and separated path with buffer • Potential additional underpasses to recreational sites and/or points of interest

Note: Red-shaded cells denote LTS 4 user category, and green shaded cells denote LTS 1 user category.

Figure 1-5. Level of Stress by user category.

Source: https://chico.ca.us/documents/A.-LTS-Methodology.pdf

[20] https://chico.ca.us/documents/A.-LTS-Methodology.pdf

2 Safety Analysis

2.1 Existing Condition Crash Analysis

DOT&PF's Central Region Traffic Safety Section provided to HDR historical crash data for the Project corridor. Data was collected for 5 years, from 2017 to 2021. The crash data was filtered to include the roadway area that is influenced by roadway improvements for all concepts. During this period, 236 crashes were reported, including 4 fatality and 8 major injury crashes. HDR used the crash data to determine existing crash frequency, trends in crash severity and crash types, and crash rates on the Seward Highway within the Project limits. HDR also considered roadway and environmental conditions to identify crash trends and associated impacts on safety performance. Appendix A includes the full historical crash dataset provided by DOT&PF in tabular format. The following sections provide a summary of findings.

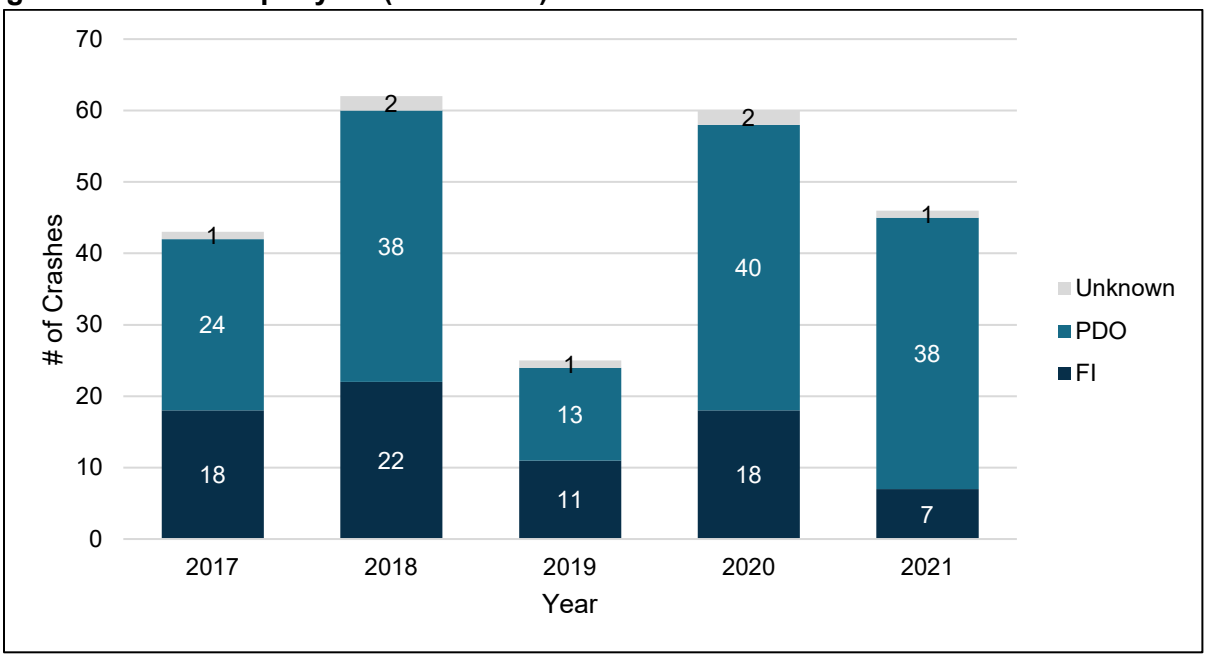
2.1.1 Descriptive Analysis

2.1.1.1 FREQUENCY AND SEVERITY BY YEAR

Figure 2-1 shows the number of crashes per year during the 5-year (2017–2021) study period for the Project corridor. Fatality and injury (FI) crashes are grouped together because they represent the worst outcomes for crashes and tend to share contributing factors; a crash that results in an injury could have very easily resulted in a fatality under the same circumstances. Additionally, strategies designed to prevent fatal crashes are likely to also prevent injury crashes. The reduction in crashes during 2019 could be attributed to the travel limitations during the summer due to the Swan Lake Fire, which started in June and ended in September, and affected the road system to and from the Kenai Peninsula Borough[21]. Crash frequency is proportional to exposure (traffic volumes), so a decrease in traffic volumes—as observed in 2019—and the inherent variability in crash frequency could explain the relatively large crash reduction for 2019.

[21] https://www.fws.gov/story/swan-lake-fire-burn-severity-story

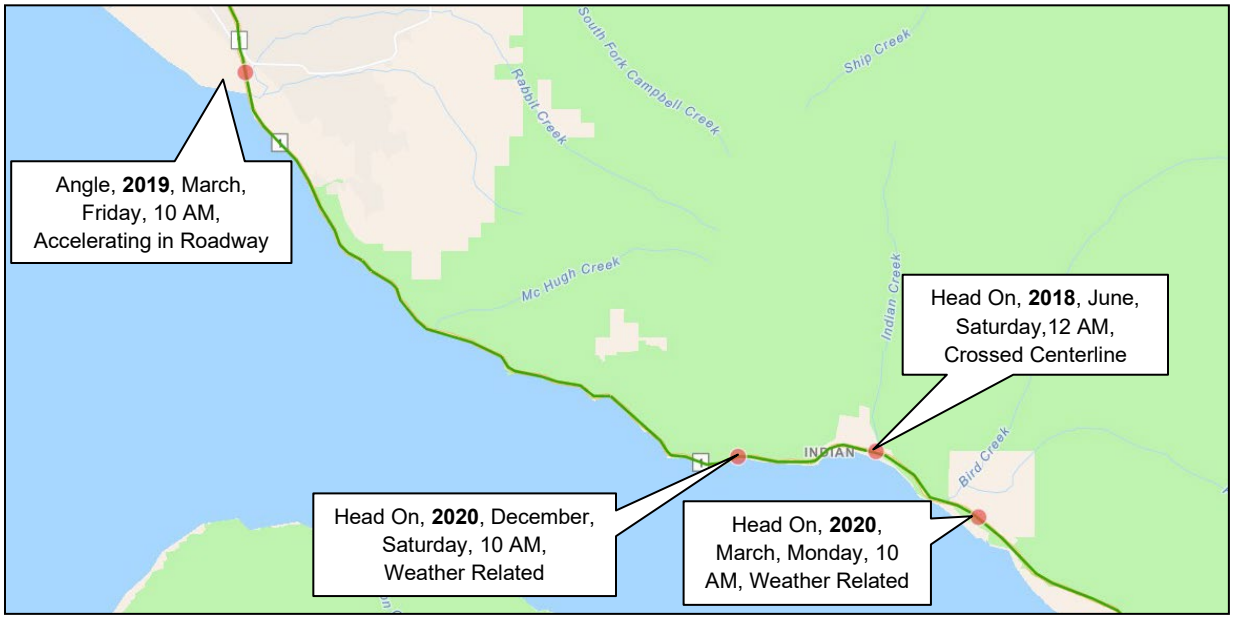
Figure 2-1. Crashes per year (2017–2021).



Source: DOT&PF Central Region
Notes: PDO = property damage only

Four crashes within the Project corridor resulted in fatalities during the 5-year study period: two in 2018, one in 2019, and on in 2021 (Figure 2-2). Three of the fatalities were from head-on crashes that occurred between MPs 102 and 104. Based on crash records, drugs and alcohol do not appear to be contributing factors in any of the fatalities.

Figure 2-2. Fatal crash locations (2017–2021).

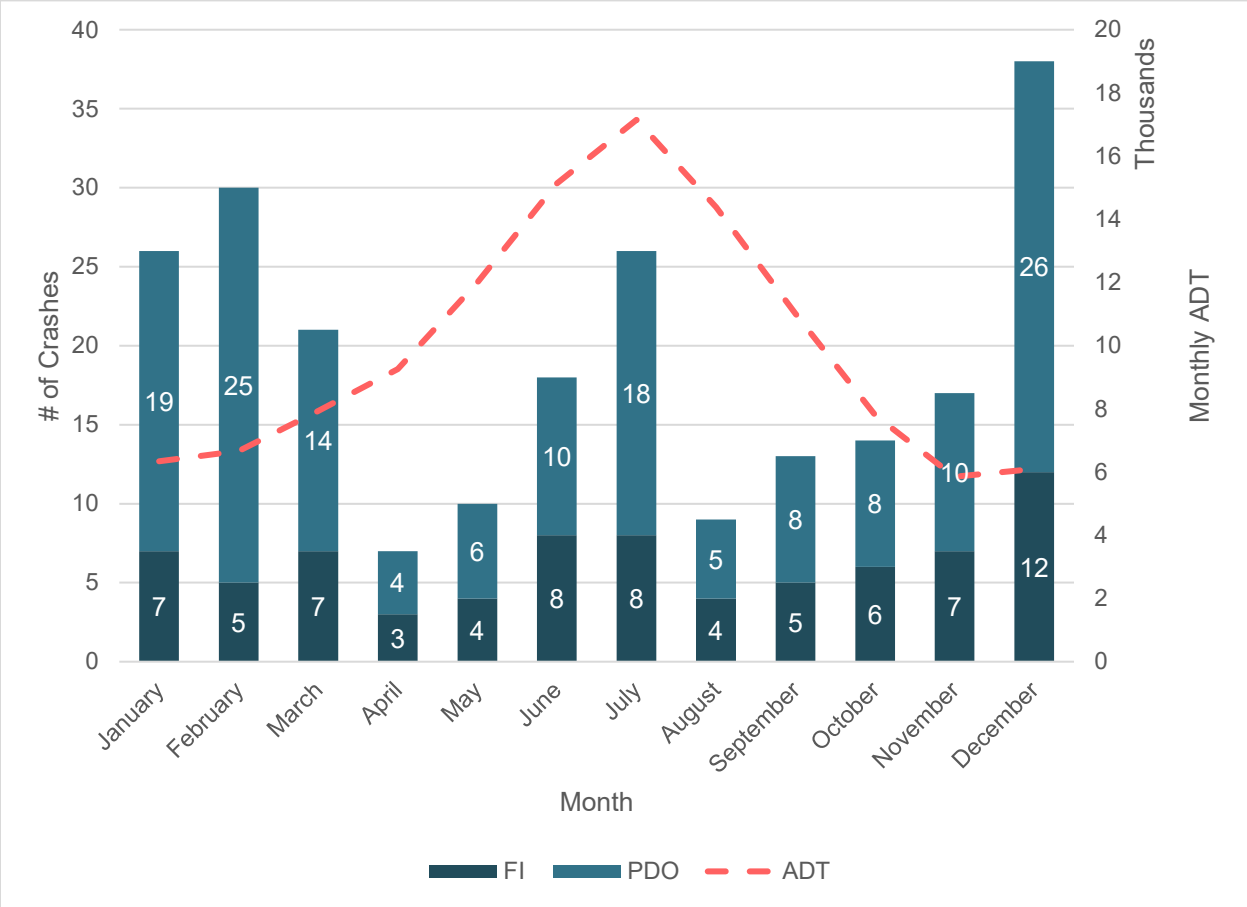


2.1.1.2 MONTH

Figure 2-3 shows that nearly 40 percent of the crashes within the Project corridor occurred during winter months (December, January, February). Alaska's harsh winters, heavy snowfall, and icy roads could explain the large proportion of crashes occurring during winter. These conditions often lead to reduced visibility, slippery roads, and longer stopping distances, all of which increase the likelihood and risk of crashes. Reduced daylight can also impact visibility for drivers, especially during morning and evening commutes.

The fourth highest month for crash frequency was July, with 11 percent of the crashes. Traffic volumes during July peak at approximately 2.5 times the volume experienced during winter months based on existing Alaska traffic data[22]. The boost in traffic volume can be attributed to summer tourism; Alaska is known to attract many visitors during summer months. Additionally, tourists tend to be less familiar with local driving conditions and roadways, adding to the overall crash risk.

Figure 2-3. Crashes per month (2017–2021).



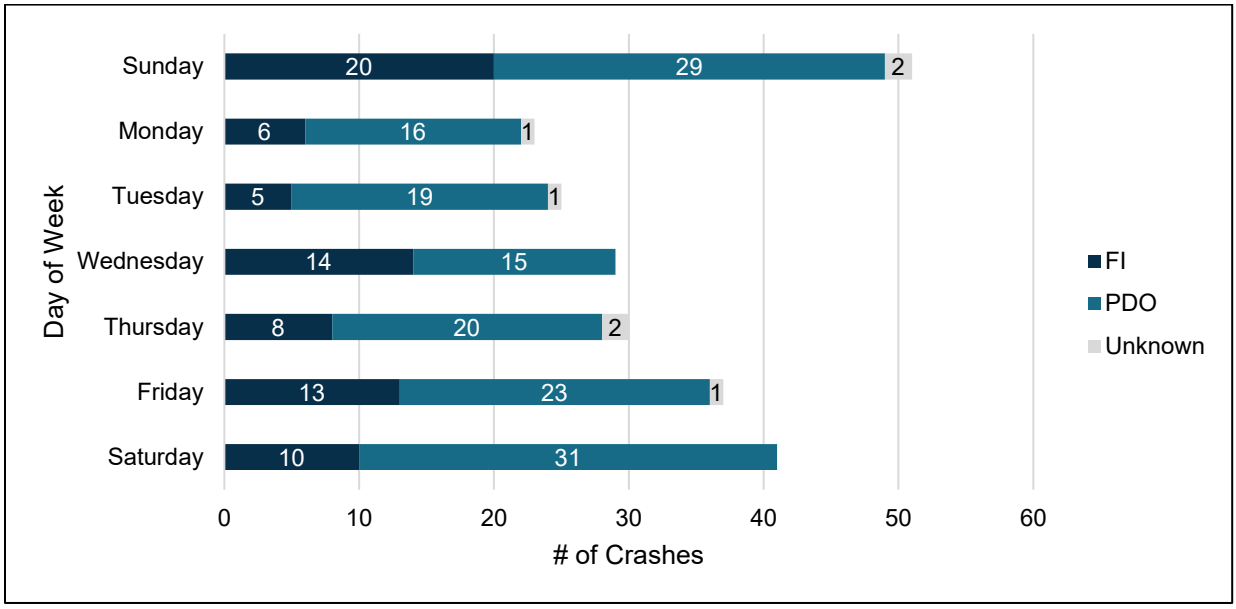
Source: DOT&PF Central Region
Notes: PDO = property damage only

[22] https://alaskatrafficdata.drakewell.com/publicmultinodemap.asp

2.1.1.3 DAY OF THE WEEK

As shown in Figure 2-4, the highest number of crashes (all severities) within the Project corridor occurred during weekends (Friday, Saturday, Sunday) for the 5-year study period. This pattern corresponds to the higher volumes experienced throughout the corridor during weekends. During the 5-year study period, Sunday had the most crashes (all severities) as well as the most FI crashes. Monday and Tuesday were the days that experienced the lowest total number of crashes (all severities) as well as the lowest number of FI crashes. Of the 14 identified alcohol-related crashes, 57 percent occurred on Saturday and Sunday. Every day of the week had one or more crashes related to alcohol.

Figure 2-4. Crashes per day (2017–2021).

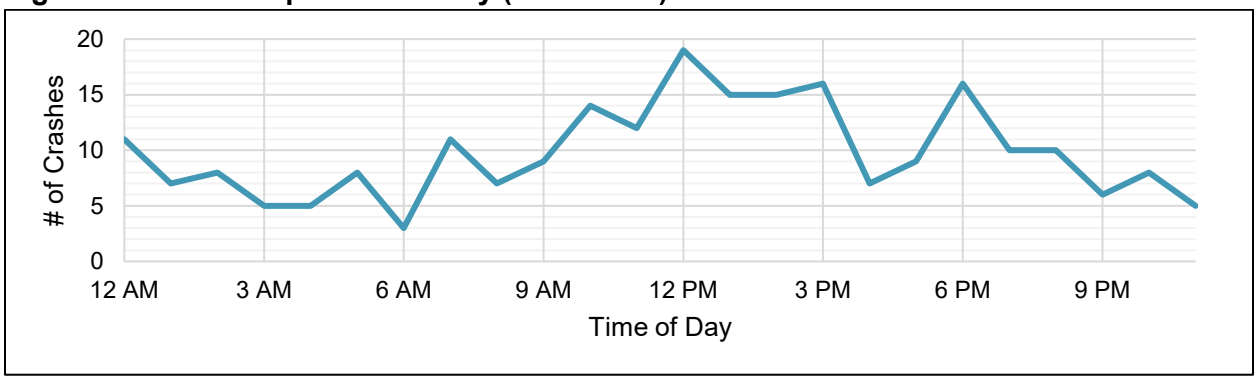


Source: DOT&PF Central Region
Notes: PDO = property damage only

2.1.1.4 TIME OF DAY

Figure 2-5 shows the number of crashes within the Project corridor by time of day during the 5-year study period. As shown in Figure 2-5, a peak in crash frequency occurred around the 12:00 p.m. hour, though this was not sharply defined. Crashes appear to have occurred with a fairly random pattern during the day. While a midday crash concentration possibly reflects factors such as increased traffic flow from increased commercial activity or lunchtime trips, this trend is inconclusive and underscores the importance of considering multiple factors when analyzing crashes.

Figure 2-5. Crashes per time of day (2017–2021).



Source: DOT&PF Central Region

2.1.1.5 ROAD CONDITION

Table 2-1 provides pavement conditions along the Project corridor observed at the time of each crash during the 5-year study period. Almost 50 percent of the crashes (all severities) occurred while the pavement had either ice or frost. Ice and frost create slippery roadway surfaces that reduce traction and consequently increase the risk of vehicles losing control, particularly during braking or turning maneuvers. The high-speed, curvilinear alignment of the Seward Highway predisposes it to frequent braking and turning maneuvers. Despite prevalent winter conditions in Alaska, a considerable percentage of the FI crashes occurred during dry pavement conditions. This suggests that adverse weather may not be the sole contributor to crashes.

Table 2-1. Percent of crashes based on roadway surface conditions (2017–2021).

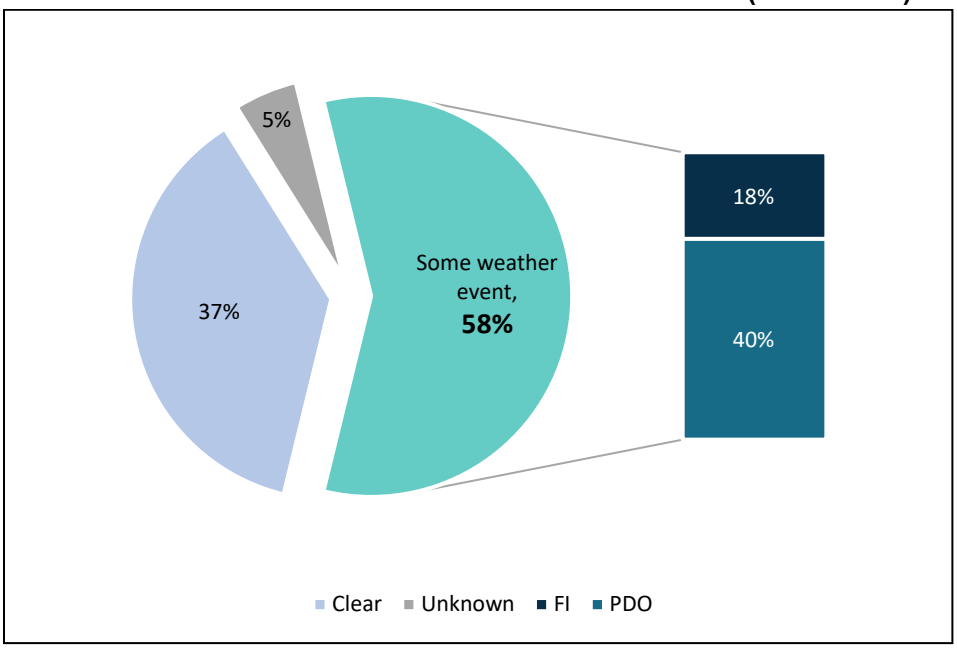
Road Surface Condition	All Severity Crashes (%)	Fatal and Injury Crashes (%)
Snow	4.7	5.3
Slush	0.4	1.3
Ice/Frost	47.5	39.5
Wet	7.6	7.9
Dry	37.3	43.4
Mud/Dirt/Gravel	0.4	1.3
Water (Standing/Moving)	0.4	0
Unknown	1.7	1.3

Source: DOT&PF Central Region

2.1.1.6 WEATHER

Within the Project corridor during the 5-year study period, weather conditions were very similar to the road surface conditions as a contributor to crashes. Most crashes occurred during weather events, which consist of snow, ice, frost, and wet conditions, as shown in Figure 2-6. A similar trend arises when evaluating just FI crashes, with 53 percent of the crashes occurring during weather events.

Figure 2-6. Percent of crashes based on weather-related events (2017–2021).



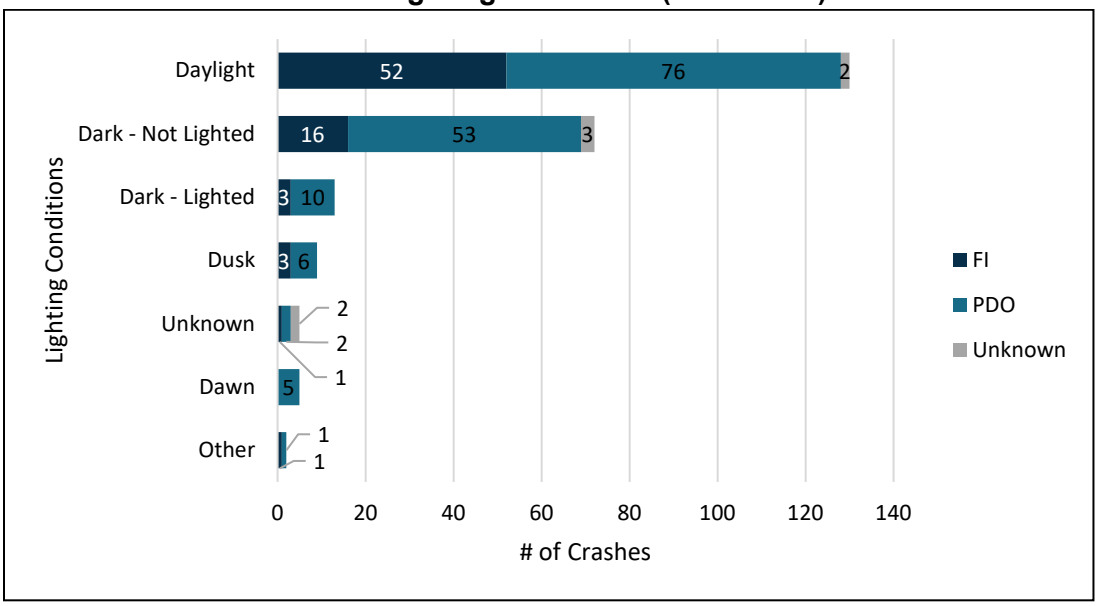
Source: DOT&PF Central Region
Notes: PDO = property damage only

2.1.1.7 LIGHTING

As shown in Figure 2-7, most crashes within the Project corridor during the 5-year study period occurred during daylight conditions. Daylight conditions vary during summer compared to winter. During summer, daylight hours are extended. In Anchorage, the sun sets as late as 12:00 a.m.; however, during December, the sunrise is around 10:00 a.m., and sunset is before 4:00 p.m. Crashes also occurred during dawn and nighttime, with varying levels of illumination. While a lower proportion of crashes occurred under low-light conditions, it is important to note that traffic flows peak during daytime hours; therefore, adjusting for exposure, low-light crashes may stand out as a more prominent problem than it appears at face value.

Especially at intersections where several conflicting movements occur, lighting plays a crucial role in improving visibility. Along the Seward Highway corridor, only certain locations include lighting, as noted in Section 1.3 Concepts.

Figure 2-7. Crashes in relation to lighting conditions (2017–2021).



Source: DOT&PF Central Region
Notes: PDO = property damage only

2.1.1.8 COLLISION TYPE

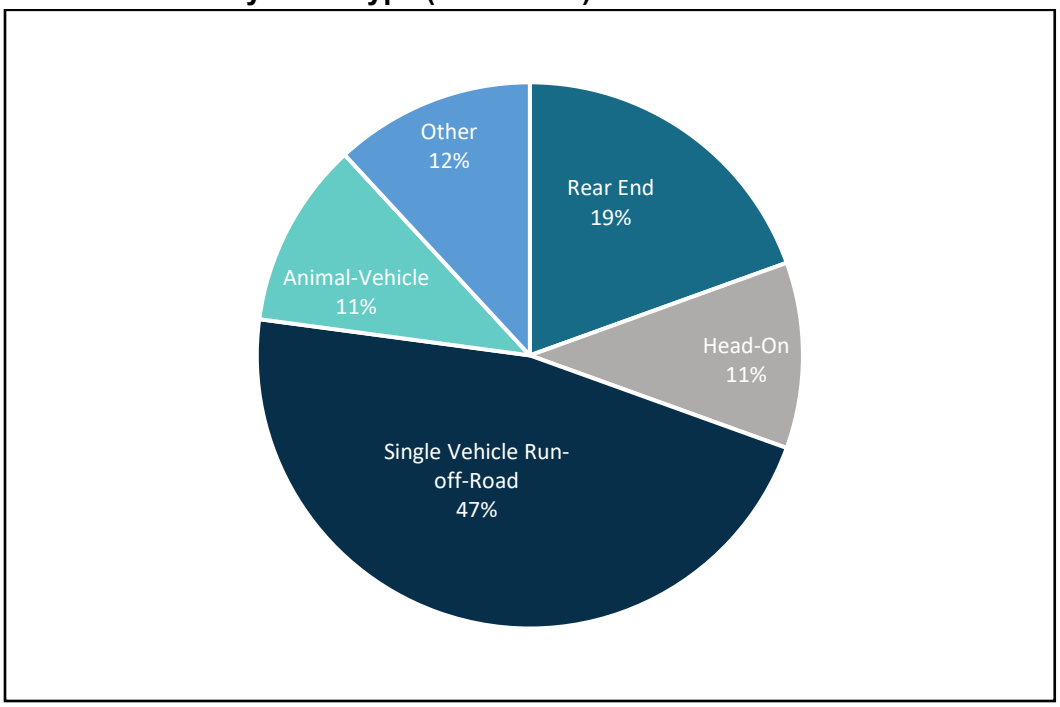
The most common crash type of all severity crashes as well as FI crashes within the Project corridor during the 5-year study period was single-vehicle-run-off-the-road (SVROR) crashes, as shown in Table 2-2, Figure 2-8, and Figure 2-9. This crash type comprised approximately 45 percent of all crashes and 42 percent of FI crashes along the corridor. Rear-end crashes were second, with 19 percent of the crashes. SVROR crashes correlate with the road surface being covered with ice, frost, wet, or snow, as typically experienced during winter months. The months of November through March recorded 70 percent of the SVROR crashes, as shown in Figure 2-10. The prevalence of rear-end crashes is typically a sign of congestion as well as driver aggression and or distraction, often characterized by short headways/gaps on highways. The majority of the rear-end crashes occurred during summer months, as shown in Figure 2-11.

Table 2-2. Number of crashes based on crash type and time of year (2017–2021).

Crash Type	All Severity, Summer Months (April – September)	FI, Summer Months (April – September)	All Severity, Winter Months (October – March)	FI, Winter Months (October – March)
Angle – Left	5	1	3	1
Angle – T-Bone	1	0	3	2
Animal-Vehicle	11	0	15	1
Bicycle	1	1	0	0
Pedestrian	0	0	1	0
Head-on	6	3	20	11
Rear-end	28	11	17	5
Rear-end Motorcycle	1	1	0	0
Sideswipe	4	1	2	1
SVROR Motorcycle	3	3	0	0
SVROR	23	10	84	20
Other	3	1	4	3
Other Motorcycle	1	0	0	0
Total	**87**	**32**	**149**	**44**

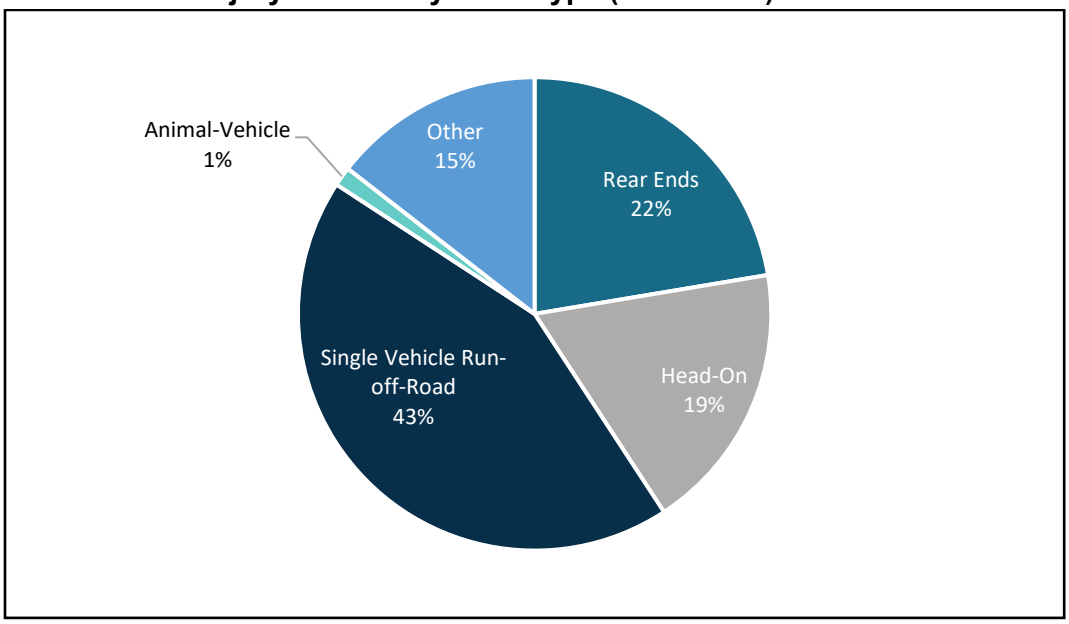
Source: DOT&PF Central Region

Figure 2-8. All crashes by crash type (2017–2021).



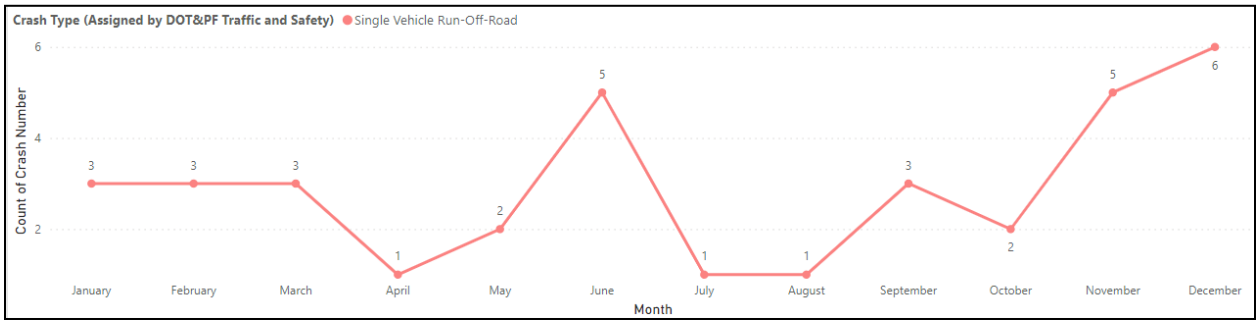
Source: DOT&PF Central Region

Figure 2-9. Fatal and injury crashes by crash type (2017–2021).



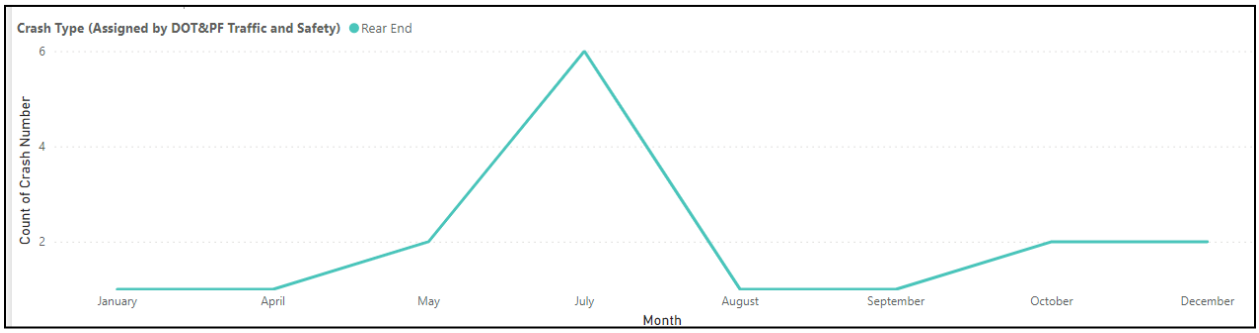
Source: DOT&PF Central Region

Figure 2-10. Fatal and injury SVROR crashes (2017–2021).



Source: DOT&PF Central Region

Figure 2-11. Fatal and injury rear-end crashes (2017–2021).

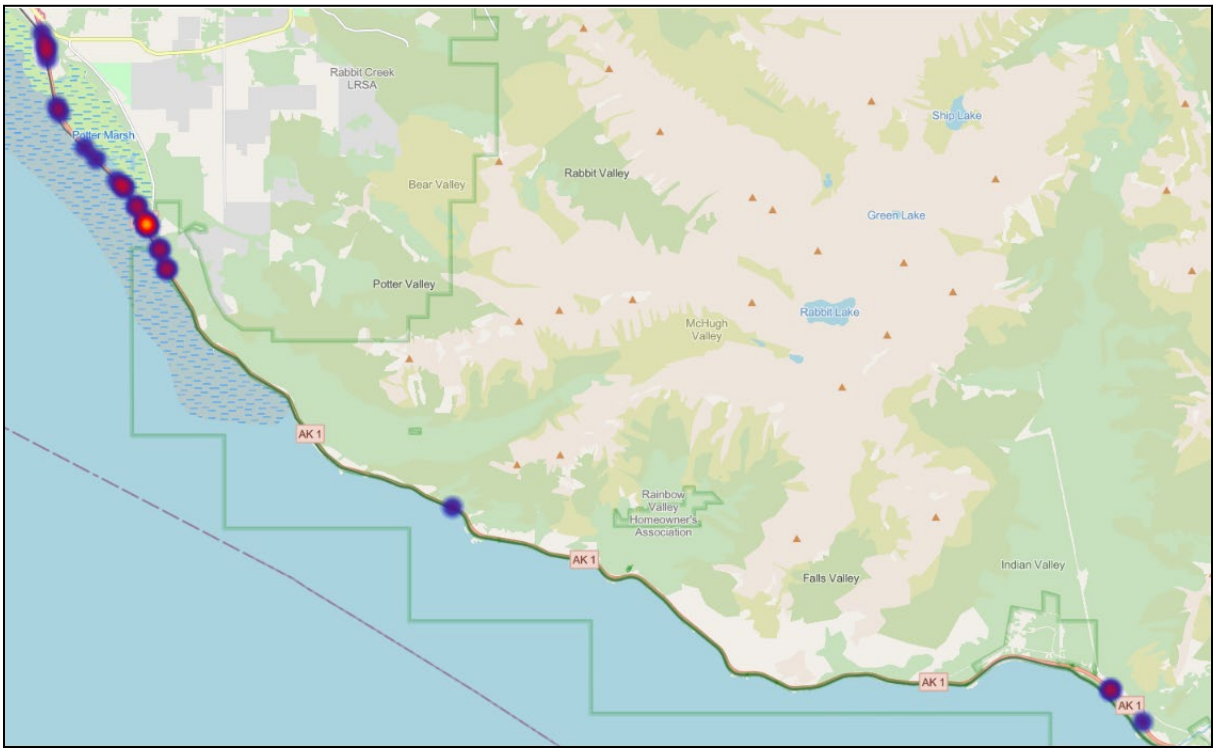


Source: DOT&PF Central Region

Twenty-six crashes along the corridor were animal related during the 5-year study period. Figure 2-12 shows a cluster of crashes around the Potter Marsh area of the corridor. Approximately 81 percent of the animal-related crashes occurred where lighting was not installed, and 54 percent of crashes occurred when the pavement was dry. Seward Highway MPs 115 to 116 were identified in the *Memorandum for DOT&PF Moose-Vehicle Collisions Priority List 2006–2010* as meeting the 75 percent threshold of concern, with eight total recorded moose vehicle collisions and an average of 1.3 collisions per mile per year[23]. Evaluating the 5-year study period data for the same segment, 13 crashes were identified, making the average collision per mile per year equal to 2.6. This amount exceeds the thresholds of the 75th percentile but is two crashes below the 95th percentile values identified in *3R Analysis Moose Accident Clarification Memorandum* dated December 2003, which is used for ranking "hot spot" sites for moose[24].

[23] https://dot.alaska.gov/creg/design/highways/Design_Guidance/Moose/14-04-14_MooseCrashRanking_CRPractice.pdf
[24] https://dot.alaska.gov/creg/design/highways/Design_Guidance/Moose/03-12-05_3RMooseCrashAnalysis_CRPractice.pdf

Figure 2-12. Animal-related crash heat map (2017–2021).



Source: DOT&PF Central Region

2.1.1.9 CRASH RATES

Annual roadway segment crash rates (crashes per million vehicle miles traveled [MVMT]) and intersection crash rates (crashes per million entering vehicles [MEV]) were calculated along the corridor for the 5-year study period for both intersections and segments, as shown in Table 2-3 and Table 2-4. The intersection crash rate included crashes that were within a 250-foot radius of the intersection. Average entering traffic volumes used in crash rate calculations are from DOT&PF's historical crash data. HDR compared observed crash rates per MEV to the statewide average crash rates in 2018, the most recently available data year. The Seward Highway-Potter Valley Road intersection is the only location to exceed the statewide average crash rate. This may be a result of the relatively high minor approach volume. Improvements to address crash frequency will be considered during advanced design.

Table 2-3. Intersecting streets crash rate comparisons (2017–2021).

Intersecting Street	Crash Count	Average Entering Traffic (veh/day)[a]	MEV	Crash Rate (crashes per MEV)	Exceeds 2018 Average Statewide Intersection Crash Rate
Whispering Bird Lane	2	7,094	12.95	0.15	No
Auriga Road	1	7,094	12.95	0.08	No
Konikson Road	1	7,246	13.22	0.08	No
Sawmill Road	5	7,100	12.96	0.39	No
Steller Jay Lane	1	7,100	12.96	0.08	No
El Rocko Lane	2	7,100	12.96	0.15	No
Bushnell Road	0	7,100	12.96	0.00	No
Bird Creek Parking/Bird Ridge	1	7,391	13.49	0.07	No
Bird Creek Access	2	7,391	13.49	0.15	No
Old Johns Road	3	7,756	14.15	0.21	No
Boretide Road	2	7,756	14.15	0.14	No

Intersecting Street	Crash Count	Average Entering Traffic (veh/day)[a]	MEV	Crash Rate (crashes per MEV)	Exceeds 2018 Average Statewide Intersection Crash Rate
Indian Road	7	7,756	14.15	0.49	No
MP 104	7	7,756	14.15	0.49	No
Falls Creek Pullout	2	7,932	14.48	0.14	No
Rainbow Valley Road	4	7,756	14.15	0.28	No
Beluga Point	4	7,756	14.15	0.28	No
McHugh Creek	1	7,515	13.71	0.07	No
Potter Creek	4	10,141	18.51	0.22	No
Potter Valley Road	13	10,755	19.63	0.66	Yes
East 154th Avenue	6	10,729	19.58	0.31	No

Source: DOT&PF Central Region
Notes: veh/day = vehicles per day; red-shaded cells denote the crash rate exceeds the 2018 average statewide intersection crash rate, and green shaded cells denote the crash rate does not exceed the 2018 average statewide intersection crash rate.
[a] Entering traffic volumes = mainline Seward volumes

Table 2-4. Segment-based crash rate comparisons (2017–2021).

	Segment	Start MP	End MP	Length (miles)	Crash Count	AADT (veh/day)	MVMT	Crash Rate (crashes per MVMT)	Exceeds 2018 Average Statewide Segment Crash Rate
1	BOP to Whispering Bird Lane	98.5	100.19	1.69	13	7,087	21.86	0.59	No
2	Whispering Bird Lane to Auriga Road	100.28	100.44	0.16	5	7,094	2.07	0.97	No
3	Auriga Road to Konikson Road	100.53	100.57	0.03	1	7,100	0.39	0.00	No
4	Konikson Road to Sawmill Road	100.66	100.77	0.11	4	7,246	1.45	0.00	No
5	Sawmill Road to Bird Creek Parking/Bird Ridge Park	100.77	101.24	0.43	5	7,100	5.18	0.77	No
6	Bird Creek Parking/Bird Ridge to Bird Access	101.24	101.6	0.43	3	7,153	4.70	0.21	No
7	Bird Access to Old Johns Road	101.24	101.6	0.36	14	7,287	17.42	0.63	No
8	Boretide Road to Indian Road	101.69	103	1.31	12	7,136	8.33	0.48	No
9	Indian Road to MP 104	103.19	103.83	0.64	1	7,399	0.41	0.00	No
10	MP 104 to Falls Creek Pullout	103.92	103.96	0.03	22	7,662	20.56	0.68	No
11	Falls Creek Pullout to Rainbow Valley Road	104.05	105.52	1.47	33	7,552	38.59	0.78	No
12	Rainbow Valley Road to Beluga Point	105.61	108.41	2.8	25	7,486	22.68	0.84	No
13	Beluga Point to McHugh Creek	110.40	111.71	1.31	18	7,964	19.04	0.89	No
14	McHugh Creek to Potter Creek	111.84	115.03	3.19	28	8,893	51.77	0.48	No
15	Potter Creek to Potter Valley Road	115.12	115.35	0.23	6	10,068	4.23	0.24	No
16	Potter Valley Road to East 154th Avenue	115.44	117.6	2.19	40	10,098	40.36	0.72	No
17	154th Avenue to EOP	117.7	118	0.37	6	11,361	5.81	0.34	No

Source: DOT&PF Central Region
Notes: EOP = end of project; veh/day = vehicles per day; red-shaded cells denote the crash rate exceeds the 2018 average statewide intersection crash rate, and green shaded cells denote the crash rate does not exceed the 2018 average statewide intersection crash rate.

2.1.2 Corridor Observations

Additional issues that influence the number and types of crashes on the corridor, and should be considered in concept development include:

- Rockfall area between MPs 104 and 114.5
- Mudslides
- High-risk icefall sites
- Driver distraction related to sightseeing opportunities throughout (Dall sheep, beluga whales, bore tide surfers)
- Limited access to incidents for emergency services
- Pedestrians crossing the road to take pictures, and see animals and sunsets
- Pedestrians crossing the railroad tracks

2.1.3 Summary of Existing Conditions

Table 2-5 provides a summary of crash evaluations during the 5-year study period within the corridor.

Table 2-5. Summary of crash evaluations (2017–2021).

2017–2021 Crash Data Evaluation	All Severity Crashes	FI Crashes
Total Number of Crashes 2017–2021	236	76
Highest/Lowest Annual Number of Crashes	2018/2019	2018/2021
Month of Year with Highest/Lowest Crashes	December/April	December/April
Day of Week with Highest/Lowest Frequency of Crashes	Sunday/Monday	Sunday/Tuesday
Time of Day with Highest/Lowest Crashes	12:00 p.m./6:00 a.m.	10:00 a.m. and 1:00 p.m./5:00 to 7:00 a.m. and 6:00 p.m.
Road Condition, Highest Percentage Annual Number of Crashes	Ice/frost	Dry
Weather Conditions, Highest Percentage Annual Number of Crashes	Weather event (ice/frost, snow, wet)	Weather event (ice/frost, snow, wet)
Lighting Conditions, Highest Annual Number of Crashes	Daylight	Daylight
Collision Type, Highest Annual Number of Crashes	SVROR	SVROR
Collision Type, Second Highest Crashes	Rear end	Rear end
Moose-Vehicle Collision Crashes at MPs 115 to 116	13	1

Source: DOT&PF Central Region

2.2 Forecast Crash Conditions

HDR predicted the future number and severity of crashes for each concept using the American Association of State Highway and Transportation Officials' (AASHTO's) *Highway Safety Manual* (HSM), First Edition[25]. Part C of this manual is the Predictive Method—a method to predict the number and type of crashes on a variety of facility types. Additionally, HDR used crash modification factors (CMFs) to estimate change in performance associated with treatments not included in the predictive method. CMFs were taken from DOT&PF, or from FHWA's Crash

[25] Highway Safety Manual (HSM), 2010, American Association of State Highway and Transportation Officials (AASHTO)

Modification Factor Clearinghouse[26] if not available from DOT&PF. Finally, HDR used FHWA's Interactive Highway Safety Design Model (IHSDM) Software, Version 17.0.0, to apply the predictive method. HDR used Microsoft Excel to post process and tabulate IHSDM outputs, and ArcGIS to graphically summarize results.

The following sections provide details of methods and analysis assumptions for each concept, and a summary of the results.

2.2.1 Analysis Details

2.2.1.1 SCOPE

The analysis included all mainline segments and major unsignalized intersections on the Seward Highway between MPs 98.7 and 117.6, where mainline geometric improvements are expected as part of the Project. HDR did not analyze local roads because the extent of proposed changes to the local road system is minimal. The study period for all analyses was 2033 to 2052; a 20-year design life beginning in the opening year. HDR applied forecasted AADT volumes developed from seasonally adjusted traffic counts taken during summer 2024. HDR estimated cumulative future year crash frequency and crash severity for a No-Build condition and each Build concept.

2.2.1.2 METHODS

Part C of AASHTO's HSM provides a method for estimating the number, severity, and type of crashes on two-lane rural highways; rural, multi-lane, divided and undivided facilities (among other facility types); and three-leg stop controlled, four-leg stop controlled, and four-leg signalized intersections on these facility types as a function of traffic volume and geometric characteristics. The estimate can be made for existing and proposed conditions. The method can be applied with and without calibration factors as a function of project needs, data availability, and scope of work. Alaska has HSM calibration factors only for two-lane rural highways; therefore, HDR did not use calibration factors in the analysis. Applying calibration to the existing facility type, but not the future proposed facility types, eliminates a fair basis of comparing safety performance between concepts.

HDR also considered the available safety performance functions. The first edition of the HSM was published in 2010, and the second edition of the HSM is anticipated during 2025. Since publication of the first edition, the National Cooperative Highway Research Program (NCHRP) Project 17-62: *Improved Prediction Models for Crash Types and Crash Severities*[27] was published. This research includes more current models for the facility/site types (segments and intersections) under consideration in this Project. Additionally, the research results from NCHRP 17-62 form the basis for the models that will be included in the second edition of the HSM. The models in NCHRP 17-62 reflect more recent driver behaviors, vehicle technologies, vehicle fleets, roadway conditions and characteristics, traffic management systems, and crash reporting techniques as compared to models in the first edition of the HSM. As such, HDR applied the

[26] https://cmfclearinghouse.fhwa.dot.gov/
[27] https://nap.nationalacademies.org/catalog/26164/improved-prediction-models-for-crash-types-and-crash-severities

predictive method for the first edition HSM using safety performance functions listed in Appendix B from NCHRP 17-62.

Additionally, HDR post-processed the results of the predictive method with CMFs to reflect more complete proposed geometric conditions. CMFs are a multiplicative factor that represent a change in crash frequency, type, or severity as a function of a particular treatment. For example, including a shoulder rumble strip[28] on a Principal Arterial/Other Freeway/Expressway has a CMF of 0.75. CMFs can be expressed as a factor, as in this example, or as a crash reduction factor (CRF), which is interpreted as a percent change. In this example, the rumble strip would be expressed as a CRF equal to 25 percent. CRFs are available from DOT&PF, and CMFs are available from the FHWA CMF Clearinghouse[29].

The existing models for rural, multi-lane segments do not have any CMF for horizontal curvature, but research (and engineering judgment) indicate that horizontal curvature affects safety performance on rural, multi-lane highways. While speed is not a direct input of the predictive method, it does generally incorporate horizontal curvature, which influences safe driving speeds. Sharper curves typically require slower speeds to navigate safely, while gentler curves allow for higher speeds. By considering curve radii, HDR's analyses account for speed variations as drivers adjust their speeds based on roadway curvature to maintain safety. The addition of turn lanes and acceleration/deceleration lanes account for speed differentials created by local traffic accessing destinations along the corridor.

Table 2-6 summarizes details of the analysis methods and assumptions for each study concept.

Table 2-6. Summary of applied safety performance functions and CMFs.

Concept	Extents	Model	Post-processed CMFs
No-Build	Sta 464+00 to Sta 1456+56	NCHRP 17-62 SPFs – Two Lane Rural Highway	None
Concept C2	Sta 100+00 to Sta 1088+90	NCHRP 17-62 SPFs – Two Lane Rural Highway	None
Concept C2-M	Sta 100+00 to Sta 1088+60	NCHRP 17-62 SPFs – Two Lane Rural Highway	None
Concepts C7 and C7T	Sta 100+00 to Sta 1087+90	NCHRP 17-62 SPFS – Multi-lane Rural Highway	Horizontal curvature CMF as a function of radius

Note: SPF = safety performance function

2.2.1.3 RESULTS

2052 Predictive Safety

The 2033–2052 cumulative predictive safety results are summarized in the sections below.

No-Build Conditions

HDR modeled the existing facility and evaluated it under the assumption that over the 20-year study period, no notable safety treatments would be applied. The model was developed to reflect the existing cross section, lane and shoulder widths, horizontal and vertical alignment,

[28] FHWA CMF Clearinghouse, CMF ID #7267, www.cmfclearinghouse.org, accessed February 6, 2024
[29] https://cmfclearinghouse.fhwa.dot.gov/

roadside hazard rating, lighting conditions, and all other geometric features. HDR applied the forecast volumes; Appendix B reports the predicted crashes.

Concept C2

The two-lane, rural highway with alternating passing lane cross section is based off a conventional, two-lane, rural highway. HDR modeled the concept as such and treated the passing lane as an adjustment factor as prescribed by the HSM procedure. HDR modeled the seven intersections included within the study area to show left- and right-turn lanes at both major approaches. Appendix B reports the results.

Concept C2-M

Similar to Concept C2, HDR also modeled Concept C2-M as a conventional, two-lane, rural highway and accounted for passing lanes using adjustment factors. A limitation for the analysis of this concept is that currently no reliable industry-accepted method exists for evaluating the presence of medians and/or barriers on a two-lane rural highway. Two-lane rural highways are conventionally undivided, and insufficient national/regional studies have been conducted on the few examples in the United States to reliably evaluate or draw conclusions regarding quantitative safety performance. As such, as of November 2024, when the Concept C2-M analysis was completed, the FHWA CMF Clearinghouse did not have any CMFs associated with this treatment to quantify the additional safety performance that would be derived from adding a barrier/median to Concept C2-M as proposed.

Anecdotal evidence from Minnesota and Oregon, as well as international examples from Scandinavia, have indicated that providing a median on a two-lane highway greatly reduces fatal and injury crashes. Table 2-7 summarizes these studies. It is important to note that for each of these examples, the median type was different; cable barriers, concrete barriers, depressed medians, and centerline buffers were used, each presenting a different level of improved safety but consistently exhibiting a large reduction in FI crashes mostly due to the sizeable—or sometimes, complete—elimination of head-on collisions. Head-on collisions often result in fatal and severe injuries; therefore, a roadway cross section that minimizes the head-on collision risk often results in a large reduction in fatal and severe crashes.

Table 2-7. Successful two-lane rural medians/barriers installation.

Study/Research	Location	Type of Treatment	Observed Safety Performance
FHWA: Safe System Roadway Design Hierarchy	Oregon, USA	• Implemented cable barriers at narrow (<8-foot) median locations • Beneficial at vertical and horizontal curve locations	29% reduction in fatal and serious injury crashes compared to conventional two-lane highways
FHWA: Safe System Roadway Design Hierarchy	Minnesota, USA	• Buffer area with rumble strips and delineators used as median	70% reduction in fatal and serious injury crashes compared to conventional two-lane highways
NCHRP 275: Application of European 2+1 Roadway Designs	Sweden	• Implemented 2+1 roads by providing a flush divider with a cable barrier between the two directions of travel instead of only separated by pavement markings • Local climate nearly identical to Alaska	55% reduction in FI crashes compared to conventional two-lane highways

The anticipated crash reduction from the median is primarily a result of reduction in head-on and sideswipe-opposite-direction collisions as well as SVROR crashes on the opposing side of the roadway; the barrier and buffer space (including inside shoulders) allow recovery and serve as a shield for opposing traffic. When a crash still occurs despite these layers of protection, the severity is often minimized. Based on these observations and engineering judgment, it is anticipated that, at a minimum, the presence of the barrier and inside shoulder/buffer would eliminate head-on and opposite-direction sideswipe collisions, and the often high-severity injuries resulting from these collision types.

As such, HDR adjusted the analysis results by excluding predicted crashes on two-lane highways that are deemed physically impossible for the proposed barrier-divided design. Head-on collisions and opposite-direction sideswipes were removed. However, SVROR-left crashes were conservatively retained for two reasons: (1) the absence of local or national data on the proportion of SVROR crashes that cross the median to the left, and (2) these crashes are more likely to result in single-vehicle, fixed-object collisions.

The results presented for Concept C2-M, reported in Appendix B, reflect a reasonable expectation of safety performance derived from a combination of the HSM method and empirical evidence (compiled and summarized in Table 2-7), supplemented by engineering judgment.

Concept C7 and C7-T

HDR modeled and analyzed Concept C7 using the rural, multi-lane, divided highway analysis procedure. The model included the four-lane cross section, proposed alignment, lane and shoulder widths, and varying median widths designed to accommodate turn lanes at intersections. HDR included the seven study intersections and modeled them to reflect proposed conditions: left-turn lanes at each major approach, but no right-turn lanes. Intersections with street lighting infrastructure under existing conditions were assumed to be maintained for future Build conditions.

The current HSM/NCHRP predictive models for rural, multi-lane segments do not account for horizontal curvature. The proposed Concept C7 alignment has several curvilinear segments, and not accounting for curvature would misrepresent the true predicted safety performance. Using a CMF (CMF Clearinghouse ID: 6855) developed through Washington research[30] to investigate the impact of horizontal alignment on crashes on rural, multi-lane highways, HDR adjusted the Concept C7 safety model to improve the accuracy of crash prediction. Concept C7-T was not independently modeled or evaluated. Its geometry is largely identical to Concept C7; therefore, the expected difference in safety performance would be minimal. As a result, the outcomes for Concept C7 are regarded as the same as those for Concept C7-T.

The results are reported in Appendix B.

Comparison of Concepts

Figure 2-13 graphically shows predicted crash reduction over the 20-year study period by concept (including intersection and roadway segment crashes).

[30] Banihashemi, M. 2015. "Is Horizontal Curvature a Significant Factor of Safety in Rural Multilane Highways?" Presented at the 94th Annual Meeting of the Transportation Research Board, Paper No. 15-1783, Washington, D.C.

Figure 2-13. Seward Highway decrease in predicted crash reduction, 2033–2052.

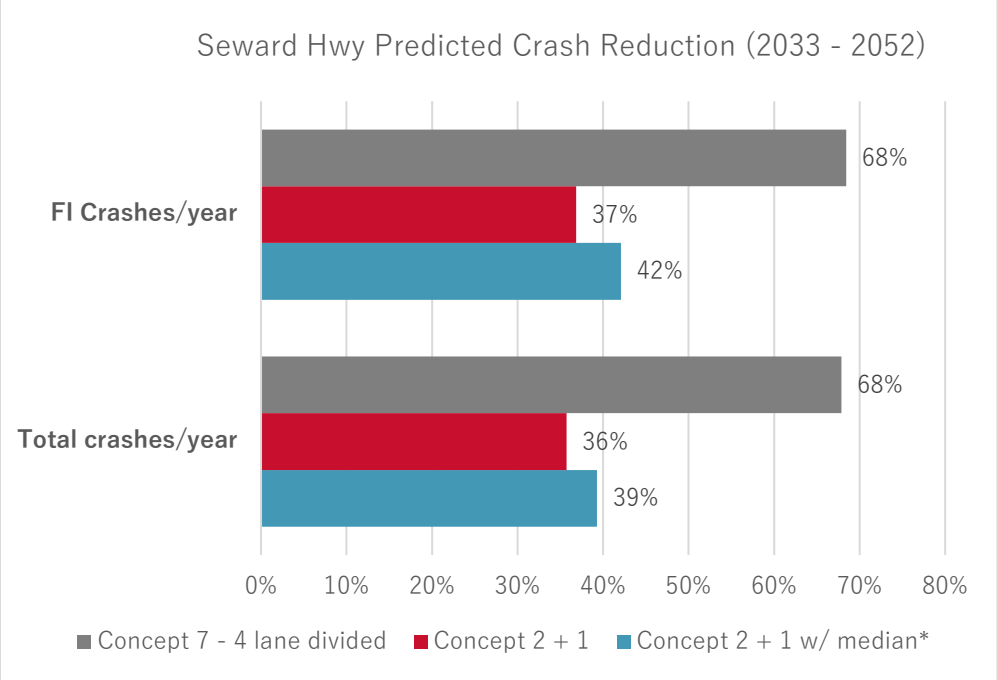


Table 2-8 summarizes and compares the performance of intersections in each Build concept with the No-Build condition. All Build concepts show a decrease in predicted crash frequency at all severity levels. Total crashes for the proposed Build concepts are predicted to decrease by 56 to 57 percent, and FI crashes are predicted to decrease by 56 to 59 percent.

Table 2-8. Predicted decrease in intersection crashes.

Concept	% Total Crashes Change Compared to NB	% FI Crashes Change Compared to NB
No-Build	—	—
C2	-56	-56
C2-M	-56	-56
C7	-57	-59

Note: NB = No-Build condition; green numbers denote performance metrics that are a reduction in predicted crashes compared to No-Build condition

The No-Build model included 13 intersections, which includes all intersections as defined by striping accommodations, signage, and/or the presence of turn lanes. The Build concepts included seven intersections, which include existing intersections, and proposed modifications such as intersection consolidation using frontage roads. The resulting reduction in intersection crashes can be attributed to the addition of turn lanes and acceleration lanes at existing intersections as well as the overall reduction in the number of mainline intersections. Turn lanes often address speed differential concerns that result in diverging conflicts or rear-end crashes, and acceleration lanes also minimize rear-end crash risk as well as angle crashes.

Table 2-9 summarizes and compares the performance of evaluated roadway segments for each concept relative to the No-Build condition.

Table 2-9. Predicted decrease in roadway segment crashes.

Concept	% Total Crashes Change Compared to NB	% FI Crashes Change Compared to NB
No-Build	—	—
C2	-35	-35
C2-M	-38	-39
C7	-68	-69

Note: NB = No-build condition; green numbers denote performance metrics that are a reduction in predicted crashes compared to No-build condition

Concept C2 shows a 35 percent reduction in segment crashes, for all severities and FI crashes. An improved alignment and addition of passing lanes are key drivers of the predicted reduction in crashes.

A 38 percent reduction in total and FI crashes is predicted for Concept C2-M. Similar to Concept C2, passing lanes and an improved alignment are major drivers of the predicted crash reduction. For Concept C2-M, however, the addition of a median barrier and inside shoulders/buffer space promises further safety benefits by the elimination of head-on and opposite-direction, sideswipe collisions due to the physical constraint (i.e., the median barrier).

Concept C7 (and consequently C7-T) shows the most promise, with up to a 68 percent reduction in total crashes and a 69 percent reduction in FI crashes. This large reduction can be attributed to a combination of factors, such as enhanced visibility from the wider overall roadway and better sightlines, which makes for a safer driving experience. The divided highway also reduces cross-median and head-on collisions. The results of Concept C7 are consistent with industry knowledge and expectations, as a multi-lane, divided cross section generally performs best for rural highways.

2.3 Safe System Approach and Assessment Framework

The safe system approach has been widely adopted in the United States by federal, state, and municipal roadway agencies—including DOT&PF—as an effective, multifaceted approach to assess and address transportation system risks. This method supplements conventional safety evaluation methodologies by assessing multiple layers of protection and redundancies in transportation systems.

The approach is founded on a combination of principles that promote safer human behaviors, safer roadway design, vehicle safety technologies, safer speeds in all roadway environments, and reliable post-crash care to enhance the survivability of crashes.

To further the safe systems objectives, FHWA recently developed the Safe System Project-based Alignment Framework for evaluating how well a proposed transportation facility aligns with the safe system principles. The tool is in its early stages of industry use and wide adoption and may not be flawless. Nonetheless, its outputs provide valuable insights worth considering. HDR applied this tool on this Project as another measure of safety. The output from the tool is a safe system score. The framework has two measures of effectiveness (MOE): one for

Vulnerable Road Users (VRU), and the second for Motor Vehicles (MV). Each of these MOEs is an aggregated score based on the following factors:

- Exposure: Considers factors that increase the exposure of a road user (driver of a motor vehicle, pedestrian, or bicyclist) to conflicts. The exposure score is driven by roadway geometry and volumes.
- Likelihood: Considers the probability or likelihood of a fatal or serious injury to occur as a function of a variety of risk factors. Examples of VRU risk factors are pedestrian and bicycle accommodation (pedestrian/bike time separation), roadside lighting, and roadway and intersection geometry. Examples of MV risk factors include roadside fixed-object density and roadway geometry (e.g., separation of opposing vehicular direction of travel).
- Severity: Uses speed to estimate the potential severity of a crash. The framework uses either operating speed or the posted speed limit plus 7 mph, if the operating speed is not available.

A lower score indicates a greater alignment with the safe system approach. No specific target value exists for the score, and the scores are intended for relative comparisons only. Table 2-10 summarizes the results of this assessment.

Table 2-10. Safe system approach scores.

Concept	VRU Score	MV Score	Total Score	%Total Score (VRU + MV) Compared to NB
No-Build	2520	2880	5400	—
C2	1440	1200	2640	-51
C2-M	1440	1200	2640	-51
C7 and C7-T	1680	1200	2880	-47

Note: Green numbers denote performance metrics that are a reduction in predicted crashes compared to No-build condition

For VRUs (pedestrians and bicyclists):

- All proposed concepts outperform existing conditions, by a much greater margin than the differences observed between the concepts themselves. The fourth lane in C7 extends the crossing distance for a VRU, thus the slight increase in score relative to C2/C2-M. The differences in VRU scores between the build concepts should be viewed cautiously, as they do not fully reflect the specific needs of a rural highway compared to an urban corridor, where high concentrations of VRU activity exist.

In terms of MV safety:

- All Build concepts show a substantial decrease in MV scores, demonstrating a better alignment with safe system principles.

2.4 Additional Considerations for all Concepts

In addition to the HSM predictive method and safe system assessment, it is valuable to consider roadway design elements and features that could supplement the overall safety of the Seward Highway and be included as concepts are further developed. These elements could be applicable to all concepts and will therefore not influence any conclusions drawn from the

alternatives analysis process. These recommendations are drawn from the *Alaska Highway Safety Improvement Program (HSIP) Handbook*, 22nd Edition, and referenced in Crash Cost Reduction Factors, revised November 2014 (Page A-12)[31]. Table 2-11 provides possible additional safety enhancements.

Table 2-11. Possible additional safety enhancements.

Treatment	Description	CMF/CRF, if available
Speed management: variable speed limits	Speed limit would vary based on road condition	30% reduction in wintertime crashes; this reduction was provided by the Alaska Statewide Traffic Engineer
Safety edge	Safety EdgeSM creates a sloped transition at the pavement edge to reduce the sudden vertical drop off	5% reduction (Alaska HSIP CRF #318); based on all crashes on rural, two-lane roads
Flatten or regrade slopes	Flatten or regrade roadside geometrics where possible to facilitate errant vehicle recovery	Variable; refer to before/after table presented in NCHRP 617
Shoulder guardrail	Guardrail installation	45% reduction (Alaska HSIP CRF #311); single-car, run-off-the-road crashes that would have been contained by the rail and resulted in fatal, serious, or minor injuries
New curve warning signs and delineators	Sign and delineator installation	20% reduction (Alaska HSIP CRF #314); all non-intersection crashes within the target curve
Illumination	New, continuous lighting installation	25% reduction (Alaska HSIP CRF #316); night crashes on currently unlighted segments to receive lighting

2.5 Safety Assessment Matrix

The complexity of the safety analysis methods makes it challenging to draw conclusions based on a single metric. To address this, HDR developed the matrix shown in Table 2-12 to summarize safety performance across various relevant factors. For each factor, a concept that improves upon the existing or No-Build condition by up to 33 percent is rated as Good, up to 66 percent as Better, and above 66 percent as Best. If a concept underperforms or matches the existing condition, it is rated Same or Worse; however, none of the concepts have this rating.

Table 2-12. Safety assessment matrix.

Factor	No-Build	C2	C2-M	C7/C7-T
FI Crashes	N/A	Better	Better	Best
Total Crash Frequency	N/A	Better	Better	Best
Safe System for Motorists	N/A	Better	Better	Better
Safe System for VRUs	N/A	Good	Good	Good
Head-on Collision Risk	N/A	Good	Better	Best

Notes: N/A = not applicable; a concept that improves upon the existing or No-Build condition by up to 33 percent is rated as Good (yellow-shaded cell), up to 66 percent as Better (light-green-shaded cell), and above 66 percent as Best (green-shaded cell).

[31] https://dot.alaska.gov/stwddes/dcstraffic/assets/pdf/hsip/2023_hsip_handbook.pdf

3 Capacity Analysis

HDR used the current *Highway Capacity Manual*, Version 7 (HCM7), and Highway Capacity Software (HCS) to calculate performance and service levels for existing conditions as well as the No-Build and three Build concepts. DOT&PF's approved version of the HCM, HCM 2010, only provides a methodology to analyze two-lane highways and does not include a methodology for analyzing two-lane highways with alternating passing lanes. HCM7 provides a methodology for analyzing two-lane highways with alternating passing lanes. HCM7 also provides the ability to analyze a corridor in segments, accounting for horizontal geometry and terrain. For this reason, HDR uses the HCM7 methodology and current HCS in this traffic analysis.

HCM7 divides the two-lane highway into segments: passing zone, passing constrained, and passing lanes. Segments can be divided further into subsegments to account for the horizontal geometry.

Collected data for this analysis includes:

- ADT
- Truck percentage

Calculated data for this analysis includes:

- AADT
- Travel time
    - The time it takes to travel through the corridor
- Monthly average daily traffic (MADT)
- Seasonal Adjustment Factor to determine design peak-hour demand
    - Average seasonal daily traffic (June through August) divided by AADT
- K-factor (peak hour factor) to determine 30th highest percentile peak-hour demand volume
    - Peak-hour volume divided by ADT
- D-factor (peak directional factor) to determine directional split of peak-hour demand volume
    - Peak-hour directional volume divided by total peak hour volume
- Average Travel Speed (ATS)
    - 85th percentile travel speed
- Percent Followers (PF)
    - Calculations based on HCM coefficients, factors, and calculations

- Follower Density (FD)
    - Calculations based on HCM coefficients, factors, and calculations

The HCM states the capacity of a two-lane highway facility is 1,700 vehicles per hour for passing zones and passing constrained segments. For sections where a passing lane is provided, the capacity is dependent on several variables, including the roadway's horizontal geometry and gradient. At the point capacity is reached along a two-lane highway, passing opportunities are theoretically impossible due to the density and platooning of the peak directional volume and the high opposing directional volumes. This greatly reduces travel speeds; increases time spent following other vehicles; results in potentially undesirable driver behavior, such as higher risk maneuvers; and results in an inability to turn onto the highway from minor approaches, turnouts, pullouts, and driveways.

The HCM uses FD as a service measure to evaluate two-lane highways. FD is the calculated number of vehicles following a lead vehicle and is measured in followers per mile per lane (followers/mile/lane). Table 3-1 provides the level of service (LOS) that corresponds to FD.

Table 3-1. Level of service and Follower Density

LOS	FD (followers/mile/lane)
A	≤ 2.0
B	> 2.0–4.0
C	> 4.0–8.0
D	> 8.0–12.0
E	> 12.0

LOS F only occurs when demand exceeds capacity, or 1,700 vehicles per hour. The HCM also provides two additional performance measures: PF and ATS. PF is the calculated number of follower vehicles divided by the total number of vehicles.

The latest version of the HCS applies the HCM7 methodology described above. HDR used HCS to calculate the segment capacity for existing conditions, 2052 No-Build, and each corridor concept previously described. Appendix C provides the HCS results.

Per the *Alaska Preconstruction Manual*[32], if target LOS goals are not established, the 2011 AASHTO's *A Policy on Geometric Design of Highways and Streets* (GB)[33] will take precedence. AASHTO's recommendations for appropriate LOS thresholds are based on functional classification and area/terrain types shown in Table 3-2. The Seward Highway is recommended to provide a LOS B.

Table 3-2. LOS based on terrain and functional class.

Functional Class	Appropriate LOS for Specified Combinations of Area and Terrain Type			
	Rural Level	Rural Rolling	Rural Mountainous	Urban and Suburban
Freeway	B	B	C	C
Arterial	B	B	C	C
Collector	C	C	D	D
Local	D	D	D	D

[32] Alaska Preconstruction Manual (PCM) published by the DOT&PF
[33] Geometric Design of Highways and Streets (GB), 2011, American Association of State Highway and transportation Officials (AASHTO)

3.1 Existing Condition

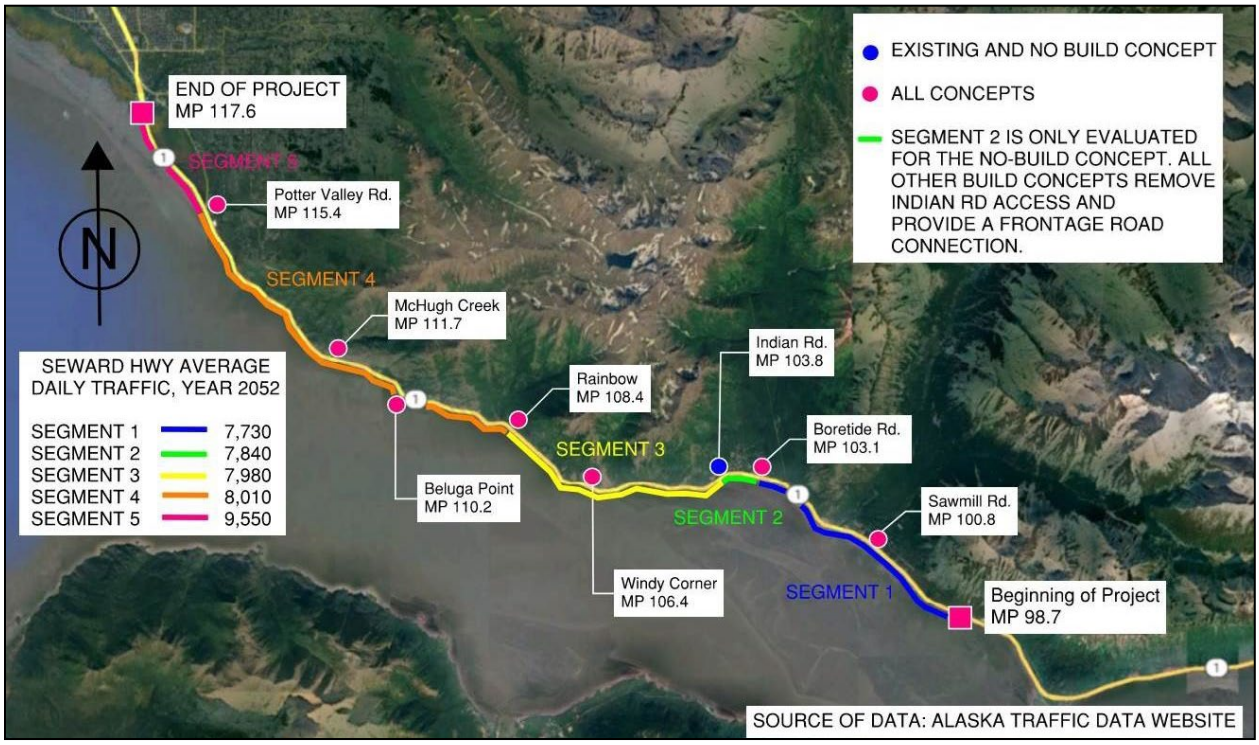
3.1.1 2022 Existing Traffic Volumes

The 2022 AADT along the Seward Highway between MPs 98.7 and 117.6 ranged between 7,730 and 9,550 vehicles per day. ADT was collected at two permanent traffic data collection stations, one located south of the community of Bird Creek at MP 100 and the other near the Potter Marsh area at MP 117.5. Temporary traffic data collection stations located between Potter Marsh and just past Rainbow Valley Road, between Rainbow Valley and Indian Roads as well as between Indian and Boretide Roads, were also used to determine ADT along the corridor. Table 3-3 shows the 2022 AADT at each of the five locations, and Figure 3-1 shows the 2022 AADT for each segment of the Seward Highway.

Table 3-3. 2022 existing AADT.

Seward Highway Location	Milepost	AADT
South of Community of Bird Creek – Boretide Road	98.7–103.1	7,730
Boretide Road – Indian Road	103.1–103.8	7,840
Indian Road – Rainbow Valley Road	103.8–108.4	7,980
Rainbow Valley Road – Potter Valley Road	108.4–115.4	8,010
Potter Valley Road – Potter Marsh	115.4–117.6	9,550

Figure 3-1. Roadway segments, 2022 AADT.



Source: Alaska Traffic Data website

Tourism during the summer months causes the MADT to vary greatly during summer compared to other months. Figure 3-2 and Table 3-4 show the MADT at MP 100, near the community of Bird Creek; and MP 117.5, around the Potter Marsh traffic counter locations.

Figure 3-2. MADT volumes for the Seward Highway, 2022.

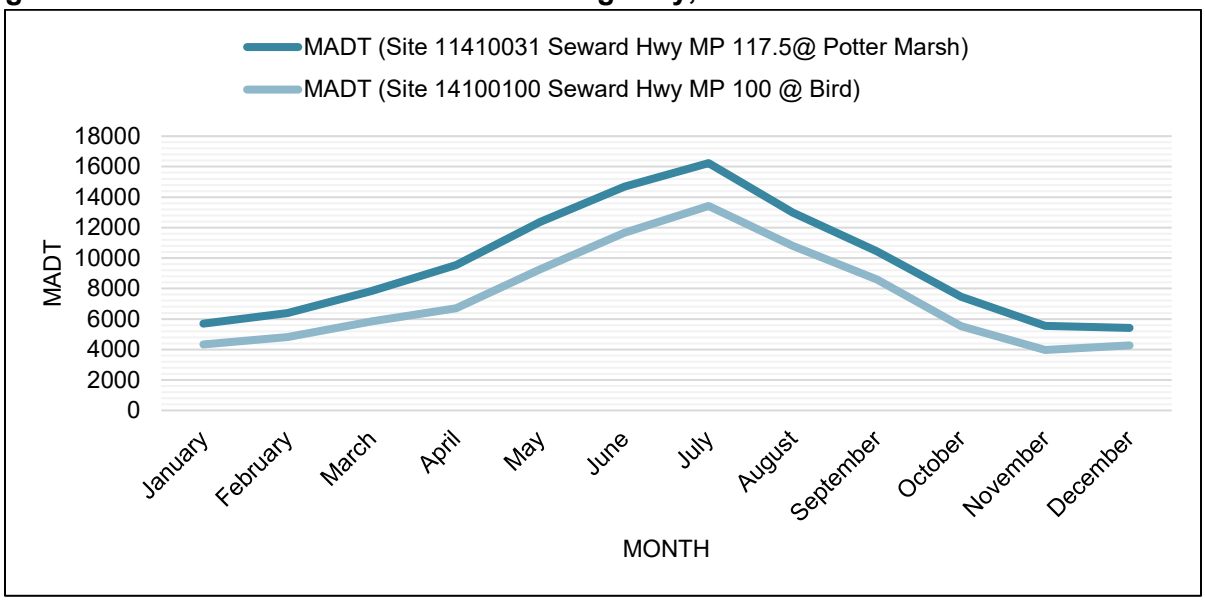


Table 3-4. 2022 existing MADT volumes.

Year 2022	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
MADT (Site 14100100 Seward Highway MP 100 at Bird)	4,324	4,824	5,842	6,702	9,263	11,654	13,419	10,792	8,601	5,534	3,968	4,279
MADT (Site 11410031 Seward Highway MP 117.5 at Potter Marsh)	5,699	6,390	7,831	9,545	12,367	14,683	16.232	12,993	10,439	7,458	5,560	5,416

3.1.2 2022 Adjusted Existing Traffic Volumes

The 2022 MADT between June and August ranged between 10,792 and 16,232 vehicles per day, with some days exceeding 22,000 vehicles per day. Using 2022 traffic count data[34], the average MADT during June through August was 11,955 vehicles at MP 100 and 14,363 vehicles at MP 117.5. Due to the large fluctuations in MADT, a seasonal adjustment factor is necessary to determine the highway capacity during the months when traffic volumes are highest.

The seasonal adjustment factor is calculated by dividing the average MADT at Bird and Potter Marsh by the AADT for each location, respectively; this results in a seasonal adjustment factor of 1.61 at MP 100 and 1.53 at MP 117.5. Multiplying the AADT with the seasonal adjustment factor results in a seasonal adjusted AADT of 11,955 and 14,987 vehicles at Bird and Potter

[34] https://alaskatrafficdata.drakewell.com/publicmultinodemap.asp

Marsh, respectively. Based on these adjusted seasonal volumes, the 2022 design ADT was determined to be 13,471. HDR applied a 1 percent linear growth rate to the 2022 seasonal adjusted volumes to determine the 2024 design ADT, totaling 13,740 vehicles.

HCM methodology uses the design hourly volume (DHV) to calculate the operational performance of the roadway. DHV is equivalent to the 30th highest hourly volume. Using the historical traffic data from the permanent traffic count stations, HDR determined that the 30th highest hourly volume serves 15 percent of the seasonal ADT. This is represented by a K-factor of 0.15. Applying the K-factor to the seasonal AADT equates to a 2024 seasonal design hourly volume (DHV_s) of 2,061 vehicles.

The directional split of traffic is important when determining segment capacity. Directional split refers to the volume traveling in the peak direction compared to the opposing direction. HDR also used the permanent traffic count stations to determine the seasonal directional split of traffic, 46 percent versus 54 percent with a peak-hour factor of 0.88.

Table 3-5 provides the design AADT, DHV, and design directional hourly volumes (DDHV). Due to nodes within segments, the directional distribution may vary by 0.05 to 0.08 percent when compared to the HCS models.

Table 3-5. 2024 Design ADT, DHV, and DDHV.

Seward Highway Location	MP Range	K-Factor (K)	D-Factor (D)	2024 Design AADT	2024 DHV_S (Design $AADT_S$ x K)	2024 $DDHV_S$ (Design ADT_S x K x D)
South of Community of Bird Creek – Boretide Road	98.7–103.1	0.15	0.54	11,053	1,658	895
Boretide Road – Indian Road	103.1–103.8	0.15	0.54	11,153	1,673	903
Indian Road – Rainbow Valley Road	103.8–108.4	0.15	0.54	11,380	1,707	922
Rainbow Valley Road – Potter Valley Road	108.4–115.4	0.15	0.54	11,747	1,762	952
Potter Valley Road – Potter Marsh	115.4–117.6	0.15	0.54	13,740	2,061	1,112

Note: $DDHV_S$ = seasonal design directional hourly volume, Due to nodes within segments, the directional distribution may vary by 0.05 to 0.08 percent when compared to the HCS models.

Heavy freight trucks affect the capacity of two-lane highways due to their size and weight, which affect the vehicles' ability to accelerate and decelerate. Roadway terrain can also influence the ability of vehicles to maintain the posted speed limit. HDR used the percentage of heavy trucks as an input in the calculation of segment capacity.

During summer months, the traffic volume of recreational vehicles (RVs) along the Seward Highway is substantially higher compared to the rest of the year. However, due to the type of count stations used in Alaska, most of the RV percentage is accounted for in the commercial truck counts due to how the count stations classify vehicle type. Therefore, HDR did not use a separate RV percentage in calculating the segment capacity. Table 3-6 provides 2024 truck percentages.

Table 3-6. 2024 truck percentages.

Seward Highway Location	MP Range	Truck Percentage (%)
South of Community of Bird Creek – Boretide Road	98.7–103.1	8.30
Boretide Road – Indian Road	103.1–103.8	8.30
Indian Road – Rainbow Valley Road	103.8–108.4	8.30
Rainbow Valley Road – Potter Valley Road	108.4–115.4	8.30
Potter Valley Road – Potter Marsh	115.4–117.6	8.30

Along a two-lane highway, passing opportunities are present when the centerline stripe is dashed. The ability or inability to pass a slower moving vehicle affects the vehicular capacity of a two-lane highway facility. The passing opportunities in the northbound and southbound lanes along the Seward Highway are limited due to the horizontal or vertical geometry of the roadway, access points, or topography. Table 3-7 shows the passing opportunity percentage between MPs 98.5 and 117.5 in the northbound and southbound direction.

Table 3-7. Opportunity to pass along the Seward Highway.

Seward Highway Direction of Travel	Opportunity to Pass (%)
Northbound	36
Southbound	30

3.1.3 Existing Capacity Analysis

HDR calculated the ATS, PF, FD, and corresponding LOS for each roadway segment along the Seward Highway from MPs 98.7 to 117.6. Table 3-8 provides the segment capacity performance metrics. Red shading in the LOS column denotes service measures that do not meet the recommended LOS.

Table 3-8. 2024 existing condition segment capacity results.

Seward Highway Location	Segment	MP Range	Performance Measures				Service Measures		
			ATS (mph)		PF (%)		FD (followers/mile/lane)		LOS
			NB	SB	NB	SB	NB	SB	
South of Community of Bird Creek – Boretide Road	1	98.7–103.1	54.4	57.5	68.6	72.1	9.1	11.8	D
Boretide Road – Indian Road	2	103.1–103.8	57.2	56.5	67.7	70.8	8.6	11.6	D
Indian Road – Rainbow Valley Road	3	103.8–108.4	57.7	57.9	66.7	69.6	8.9	10.7	D
Rainbow Valley Road – Potter Valley Road	4	108.4–115.4	57.7	57.5	68.5	72.1	9.7	11.8	D
Potter Valley Road – Potter Marsh	5	115.4–117.6	56.5	56.6	71.0	75.5	11.4	14.5	D/E[a]

Notes: NB = northbound; SB = southbound; red-shaded cells denote service measures that do not meet the recommended LOS.
[a] Northbound/Southbound

Travel time, vehicle miles traveled, and vehicle hours of delay are good performance metrics when comparing the overall operations of different concepts. Additionally, the percent of the roadway where it is permissible to pass can be useful in understanding what leads to the FD calculated above. These metrics are not used to assign an LOS for the corridor and are referred

to as facility performance metrics. Table 3-9 provides the output of the facility performance metrics for each direction of travel.

Table 3-9. 2024 facility performance metrics.

Direction of Travel	Travel Time (minutes)	Percent Chance to Pass (%)
Existing Northbound	20	36
Existing Southbound	21	30

The Seward Highway performs at LOS D under the existing condition. FD is higher within the northern segments, where volumes are higher. ATS along the corridor during the summer peak hours are calculated to be at or higher than the posted speed limit. However, PF ranges from 68 to 77 percent, which may lead to an increase in vehicles crossing into oncoming traffic to complete a passing maneuver.

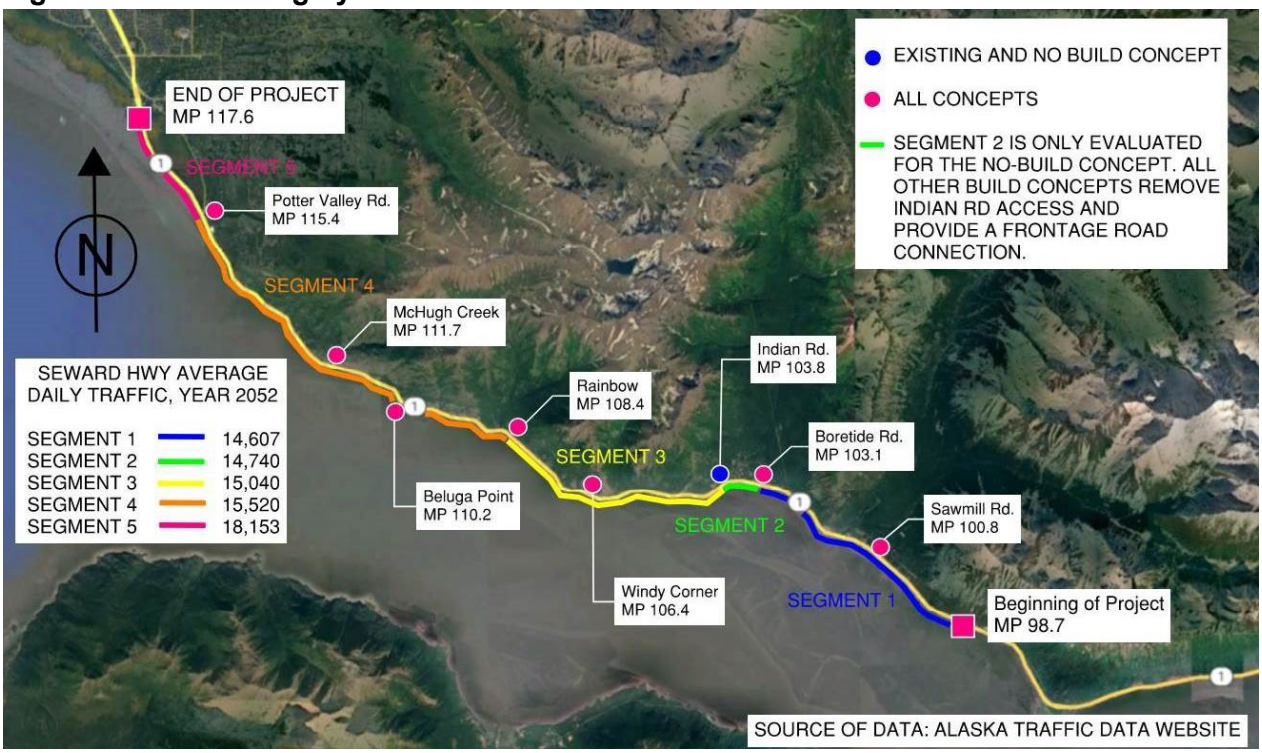
3.2 2052 Operational Analysis

An operational analysis for the 2052 design year was completed for the No-Build condition and Concepts C2, C2-M, C7, and C7-T. The following section documents how HDR projected future traffic volumes, and provides the capacity and operational results for each concept.

3.2.1 2052 Projected Traffic Volumes

HDR projected existing 2024 traffic to 2052 to determine the design-year traffic volumes using a linear growth rate of 1 percent based on the Design Designation provided in Appendix C. Figure 3-3 shows the 2052 Project design ADT volumes for each Seward Highway segment. Table 3-10 provides the 2052 adjustment factors and growth rate. Table 3-11 provides the 2052 design ADT, DHVs, and DDHVs.

Figure 3-3. 2052 design year volumes.



Source: Alaska Traffic Data website

Table 3-10. 2052 (design year) adjustment factors and growth rate.

Seward Highway Location	Segment	MP Range	K-Factor (K)	D-Factor (D)	Growth Rate (%) (Gr)
South of Community of Bird Creek – Boretide Road	1	98.7–103.1	0.15	0.54	1.0
Boretide Road – Indian Road	2	103.1–103.8	0.15	0.54	1.0
Indian Rd – Rainbow Valley Road	3	103.8–108.4	0.15	0.54	1.0
Rainbow Valley Road – Potter Valley Road	4	108.4–115.4	0.15	0.54	1.0
Potter Valley Road – Potter Marsh	5	115.4–117.6	0.15	0.54	1.0

Notes: Gr = growth rate

Table 3-11. 2052 (design year) design ADT, DHVs, and DDHVs.

Seward Highway Location	Segment	MP Range	2052 Projected Design ADT_{2052} (2024 Design ADT x Gr)	2052 DHV ($AADT_{2052}$ x K)	DDHV ($AADT_{2052}$ x K x D)
South of Community of Bird Creek – Boretide Road	1	98.7–103.1	14,607	2,191	1,183
Boretide Road – Indian Road	2	103.1–103.8	14,740	2,211	1,194
Indian Road – Rainbow Valley Road	3	103.8–108.4	15,040	2,256	1,218
Rainbow Valley Road – Potter Valley Road	4	108.4–115.4	15,520	2,328	1,257
Potter Valley Road – Potter Marsh	5	115.4–117.6	18,153	2,723	1,469

Notes: Gr = growth rate; due to intersection nodes within segments, the directional distribution may vary by 0.05 to 0.80 percent when compared to the HCS models.

The 2052 Design ADT, DHV_s, and seasonal design directional hourly volume ($DDHV_s$) are converted to passenger cars using the same HCM factors for heavy trucks. The design year assumes the same percentage of heavy trucks and RVs as the 2022 percentages shown in Table 3-6.

The projected volumes and truck percentages above are included as inputs into HCS for the No-Build condition and Concepts C2, C2-M, C7, and C7-T.

3.2.2 No-Build Capacity Analysis

Similar to the existing conditions analysis, HDR calculated the ATS, PF, FD, and LOS for each roadway segment along the Seward Highway from Bird to Potter Marsh. Table 3-12 provides the segment capacity performance metrics. Service measures that do not meet the recommended LOS for this type of facility are denoted by red cells.

Table 3-12. 2052 No-Build segment capacity results.

Seward Highway Location	Segment	MP Range	Performance Measures				Service Measures		LOS
			ATS (mph)		PF (%)		FD (followers/mile/lane)		
			NB	SB	NB	SB	NB	SB	
South of Community of Bird Creek – Boretide Road	1	98.7–103.1	54.0	52.7	75.8	84.7	13.6	19.3	E
Boretide Road – Indian Road	2	103.1–103.8	57.1	57.4	75.0	77.1	13.3	15.8	E
Indian Road – Rainbow Valley Road	3	103.8–108.4	57.7	56.1	74.1	78.2	13.3	17.0	E
Rainbow Valley Road – Potter Valley Road	4	108.4–115.4	57.5	57.0	76.0	79.4	14.3	17.4	E
Potter Valley Road – Potter Marsh	5	115.4–117.6	55.2	55.8	78.6	82.5	17.3	21.2	E

Notes: NB = northbound; SB = southbound; red-shaded cells denote service measures that do not meet the recommended LOS.

Table 3-13 provides the calculated facility performance metrics for the 2052 No-Build condition.

Table 3-13. 2052 No-Build facility performance metrics.

Direction of Travel	Travel Time (minutes)	Percent Chance to Pass (%)
Northbound	20	36
Southbound	21	30

The Seward Highway exceeds the target threshold LOS B, performing at an LOS E. PF and FD would increase as traffic volumes continue to grow. However, even with the increase in PF and FD, the calculated ATS would still be at or just above the posted speed limit during the seasonal peak hour. Travel time along the corridor is projected to remain unchanged compared to the 2022 existing condition.

3.2.3 Concept C2 Capacity Analysis

Concept C2 is a three-lane highway that provides dedicated passing lanes in the northbound and southbound direction at varying intervals along the corridor. Table 3-14 provides the

segment capacity performance metrics. For the Build concepts, Segment 2 is not included as a separate segment but is combined with Segment 3 due to the installation of a frontage road system that will connect all streets/driveways located in Indian to Boretide Road for accessing the Seward Highway. Service measures that exceed the target LOS threshold are shown in red-shaded cells.

Table 3-14. 2052 Concept C2 segment capacity results.

Seward Highway Location	Segment	MP Range	Performance Measures				Service Measures		LOS
			ATS (mph)		PF (%)		FD (followers/mile/lane)		
			NB	SB	NB	SB	NB	SB	
South of Community of Bird Creek – Boretide Road	1	98.7–103.1	50.8	56.1	82.7	81.5	16.6	15.7	E
Boretide Road – Indian Road	2	103.1–103.8	50.8	56.1	82.7	81.5	16.6	15.7	E
Indian Road – Rainbow Valley Road	3	103.8–108.4	57.0	56.3	68.5	76.0	9.3	12.6	D/E[a]
Rainbow Valley Road – Potter Valley Road	4	108.4–115.4	56.9	55.3	71.6	76.7	10.0	13.1	D/E[a]
Potter Valley Road – Potter Marsh	5	115.4–117.6	56.4	51.4	76.7	74.8	12.9	12.0	E/D[a]

Notes: NB = northbound; SB = southbound; red-shaded cells denote service measures that do not meet the recommended LOS.
[a] Northbound/Southbound

Table 3-15 provides the calculated facility performance metrics for the 2052 Concept C2.

Table 3-15. 2052 Concept C2 facility performance metrics.

Direction of Travel	Travel Time (minutes)	Percent Chance to Pass (%)
Northbound	21	39
Southbound	20	39

Concept C2 provides a 3 and 39 percent increase in chance to pass in the northbound and southbound directions, respectively. Although Concept C2 improves passing opportunities, due to the FD ranging between 9 and 16 vehicles, it is unlikely to mitigate the potential for drivers to cross the yellow skip-stripe into oncoming traffic to perform a passing maneuver. Concept C2 exceeds target threshold LOS B for all segments.

3.2.4 Concept C2-M Capacity Analysis

Concept C2-M is similar to Concept C2, but northbound and southbound traffic are separated by a median and/or barrier. Table 3-16 provides the segment capacity performance metrics. Service measures that exceed the target LOS threshold are shown in red-shaded cells.

Table 3-16. 2052 Concept C2-M segment capacity results.

Seward Highway Location	Segment	MP Range	Performance Measures				Service Measures		LOS
			ATS (mph)		PF (%)		FD (followers/mile/lane)		
			NB	SB	NB	SB	NB	SB	
South of Community of Bird Creek – Boretide Road	1	98.7–103.1	53.5	52.0	79.6	74.7	15.3	11.9	E/D[a]
Boretide Road – Indian Road	2	103.1–103.8	53.5	52.0	79.6	74.7	15.3	11.9	E/D[a]
Indian Road – Rainbow Valley Road	3	103.8–108.4	57.3	55.4	68.3	76.8	9.2	13.0	D/E[a]
Rainbow Valley Road – Potter Valley Road	4	108.4–115.4	56.9	56.5	71.4	75.9	10.0	12.5	D/E[a]
Potter Valley Road – Potter Marsh	5	115.4–117.6	56.4	56.3	76.7	81.5	12.9	15.7	E

Notes: NB = northbound; SB = southbound; service measures that do not meet the recommended LOS are shown in red-shaded cells.
[a] Northbound/Southbound

Table 3-17 provides the calculated facility performance metrics for the 2052 Concept C2-M.

Table 3-17. 2052 Concept C2-M facility performance metrics.

Direction of Travel	Travel Time (minutes)	Percent Chance to Pass (%)
Northbound	20	39
Southbound	20	39

Concept C2-M performs similar to Concept C2. Percent chance to pass is slightly different compared to Concept C2 due to termination of the barrier and/or median. Concept C2-M does not meet target threshold LOS B.

3.2.5 Concepts C7 and C7-T Capacity Analysis

Concept C7 is a four-lane highway separated using a barrier and/or median. The HCM uses a different methodology to determine the capacity of a four-lane highway compared to a two-lane highway since passing opportunities are theoretically infinite, negating PF and FD as useful performance metrics. Free flow speed (FFS) plays a critical role in the capacity of multi-lane highways. The HCM states the capacity of a multi-lane highway with an FFS of 60 mph is 2,200 passenger cars per hour per lane. At 55 mph, the capacity is reduced to 2,100 passenger cars per hour per lane.

LOS for a multi-lane highway is based on the segment density, which is a measurement of the proximity of vehicles to each other along the roadway segment. As density increases and the distance between vehicles decreases, speed also decreases, resulting in a degradation of LOS. Table 3-18 provides the HCM LOS density thresholds for a multi-lane highway.

Table 3-18. Multi-lane LOS based on FFS and density.

LOS	FFS (mph)	Segment Density (passenger car/mile/lane)
A	All	≥0–11
B	All	>11–18
C	All	>18–26
D	All	>26–35
E	60 55 50 45	>35–40 >35–41 >35–43 >35–45
F	Demand Exceeds Capacity or 60 55 50 45	Demand Exceeds Capacity or ≥40 ≥41 ≥43 ≥45

Table 3-19 provides the segment capacity performance metrics. Service measures that meet or exceed the LOS are shown in green-shaded cells.

Table 3-19. 2052 Concept C7 segment capacity results.

Seward Highway Location	Segment	MP Range	FFS (mph)		Segment Density (passenger car/mile/lane)		LOS
			NB	SB	NB	SB	
South of Community of Bird Creek – Boretide Road	1	98.7–103.1	56.0	56.1	10.6	13.3	A/B[a]
Boretide Road – Indian Road	2	103.1–103.8	56.0	56.1	10.6	13.3	A/B[a]
Indian Road – Rainbow Valley Road	3	103.8–108.4	56.7	56.9	9.9	13.0	A/B[a]
Rainbow Valley Road – Potter Valley Road	4	108.4–115.4	56.7	56.7	10.3	11.9	A/B[a]
Potter Valley Road – Potter Marsh	5	115.4–117.6	56.6	56.4	12.3	14.6	B

Notes: NB = northbound; SB = southbound; service measures that meet or exceed the LOS are shown in green-shaded cells.
[a] Northbound / Southbound

Table 3-20 provides the calculated facility performance metrics for the 2052 Concept C7.

Table 3-20. 2052 Concept C7 facility performance metrics.

Direction of Travel	Travel Time (minutes)	Percent Chance to Pass (%)
Northbound	20	99
Southbound	20	99

Concept C7 performs at an LOS B, meeting the target LOS threshold. Travel time along the corridor is relatively the same as Concepts C2 and C2-M, at around 20 minutes. Table 3-21 provides the segment capacity performance metrics. Service measures that meet or exceed the LOS are shown in green-shaded cells.

Table 3-21. 2052 Concept C7-T segment capacity results.

Seward Highway Location	Segment	MP Range	FFS (mph)		Segment Density (passenger car/mile/lane)		LOS
			NB	SB	NB	SB	
South of Community of Bird Creek – Boretide Road	1	98.7-103.1	55.9	55.9	10.6	12.2	A/B[a]
Boretide Road – Indian Road	2	103.1–103.8	55.9	55.9	10.6	12.2	A/B[a]
Indian Road – Rainbow Valley Road	3	103.8–108.4	56.8	56.8	10.7	11.6	A/B[a]
Rainbow Valley Road – Potter Valley Road	4	108.4–115.4	56.8	56.8	11.1	11.9	B
Potter Valley Road – Potter Marsh	5	115.4–117.6	56.6	56.8	12.3	13.7	B

Notes: NB = northbound; SB = southbound; service measures that meet or exceed the LOS are shown in green-shaded cells.
[a] Northbound/Southbound,

Table 3-22 provides the calculated facility performance metrics for the 2052 Concept C7-T.

Table 3-22. 2052 Concept C7-T facility performance metrics.

Direction of Travel	Travel Time (minutes)	Percent Chance to Pass (%)
Northbound	20	99
Southbound	20	99

Concept C7-T performs at an LOS A and/or B depending on direction, meeting the target LOS threshold. Travel time along the corridor is relatively the same as Concepts C2 and C2-M, at around 20 minutes.

3.2.6 Concept Comparison

The No-Build condition and Concepts C2 and C2-M do not meet the target threshold LOS B, mostly operating at LOS E, with certain directions operating at LOS D. Concepts C7 and C7-T are the only concepts that meet the target LOS threshold, mostly operating at LOS B, with some segments operating at LOS A.

Table 3-23 provides a comparison of LOS for each concept. Service measures that do not meet the target LOS threshold are denoted in red-shaded cells. Service measures that meet target LOS threshold are denoted in green-shaded cells. LOS provides a good comparison of service level between two- and multi-lane highways since two-lane and multi-lane highways use different performance metrics. Two-lane facilities use FD, while multi-lane facilities use segment density, which are not equivalent.

Table 3-23. 2052 LOS concept comparison.

MP Range	Segment	No Build LOS		C2 LOS		C2-M LOS		C7 LOS		C7-T LOS	
		NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
98.7–103.1	1	E	E	E	E	E	D	A	B	A	B
103.1–103.8	2	E	E	E	E	E	D	A	B	A	B
103.8–108.4	3	E	E	D	E	D	E	A	B	A	B
108.4–115.4	4	E	E	D	E	D	E	A	B	B	B
115.4–117.6	5	E	E	E	D	E	E	B	B	B	B

Notes: NB = northbound; SB = southbound; service measures that do not meet the recommended LOS are shown in red-shaded cells, and service measures that meet or exceed the LOS are shown in green-shaded cells.

3.2.7 Unsignalized Intersections

Appropriate design of intersections along the Seward Highway is critical to the enhancement of safety, capacity, and improved access for all modes of transportation. Each intersection would undergo a complete alternatives analysis during detailed design as part of the Design Study Report. However, to provide guidance for different intersection treatments to consider, typical and innovative intersection types are described below, highlighting both the benefits and detriments of each intersection type.

3.2.7.1 AUXILIARY LANES

Regardless of intersection type, dedicated left-turn lanes that provide deceleration length are recommended anywhere left turns from the Seward Highway are provided. Dedicated right-turn lanes from the Seward Highway that provide deceleration length may be considered based on the typical section, turning volume, and DHV. Acceleration lanes provided for traffic turning onto the Seward Highway may also be considered based on the typical section, turning volume, and DHV.

Separating left-turning traffic from through traffic reduces the potential for rear-end, sideswipe, and left-turn crashes at intersections and provides space for queued vehicles waiting to turn to find a gap in the opposing traffic prior to completing the turning movement. Separating right-turning traffic from through lanes also reduces the potential for rear-end crashes at intersections. However, unlike left turns, right turns do not oppose through traffic and only decelerate to an appropriate turn speed. For this reason, providing right-turn lanes should consider volume of turning traffic, DHV along the Seward Highway, and segment density to understand the impact on operating speeds and exposure to potential rear-end crashes if right-turn lanes are not provided.

Acceleration lanes allow turning traffic to gain speed prior to merging onto the Seward Highway. Similar to right-turn lanes, volume of turning traffic, DHV along the Seward Highway, and segment density should be considered to understand the impact on operating speeds and exposure to potential rear-end crashes if acceleration lanes are not provided.

Recommended turn lane, deceleration, and acceleration lengths are based on the 2011 AASHTO's PGDHS values shown in Table 3-24. The *Alaska Preconstruction Manual* does not define a maximum lane length value; however, the MOA standard of 400 feet is generally accepted and applied for DOT&PF Central Region. If maximum lane length (400 feet) is used, DOT&PF Central Region accepts 10 mph of deceleration in the through lane prior to the taper length during peak hours. Table 3-24 shows the recommended criteria that HDR used to determine the total lengths.

Table 3-24. Auxiliary lane length considerations for 55 mph speed limit.

Auxiliary Lanes Not Included in Capacity Model	Deceleration		Acceleration	
	Left Turn	Right Turn	Left Turn	Right Turn
Taper Length (Rate L:W)	180 feet (15:1) (Section 9.7.2 PGDHS)	180 feet (15:1) (Section 9.7.2 PGDHS)	300 feet (25:1) (Figure 10-69B PGDHS)	300 feet (25:1) (Figure 10-69B PGDHS)
Decel./Accel. Length	505 feet (V_o = 0 mph, V = 45 mph); (Table 9-22 PGDHS includes taper length)	505 feet (V_o = 15 mph, V = 45 mph); (Table 9-22 PGDHS includes taper length)	900 feet (V_o = 15 mph, V = 55 mph); (Table 10-3 PGDHS)	960 feet (V_o = 0 mph, V = 55 mph); (Table 10-3 PGDHS)
Storage Length	100 feet (min) per *Alaska Preconstruction Manual* or 95th percentile queue, whichever is greater	—	—	—
Total Length	**605 feet**	**505 feet**	**1,200 feet**	**1,260 feet**

Notes: Accel. = Acceleration; Decel. = Deceleration; L:W = length to width; min = minimum; V = speed reached, V_o = initial speed

3.2.7.2 INTERSECTION TREATMENTS

To provide guidance for different intersection treatments to consider, typical and innovative intersection types are described below, highlighting both the benefits and detriments of each.

Roundabout

Roundabouts (Figure 3-4) have been shown to greatly reduce fatal and serious injury crashes. Roundabouts reduce the number of conflict points at an intersection and provide greater speed control. Both of these safety benefits can be attributed to the reduction in crash severity. Within the United States, roundabouts have been used on high-speed corridors and Interstate facilities, often at locations where the context of the adjacent land use changes. The CMF for converting an unsignalized intersection to a roundabout on the Seward Highway would be approximately 0.56 (CMF 215, three-star rating)[35]. Within the Project limits, roundabouts should be considered along the Seward Highway at Indian Creek and Bird.

[35] https://cmfclearinghouse.fhwa.dot.gov/detail.php?facid=215

Figure 3-4. Roundabout schematic.

Source: https://www.fhwa.dot.gov/publications/research/safety/09060/006.cfm

Benefits:

- Large reduction in fatal and serious injury crashes
- Reduction in operating speed at Indian Creek and Bird, aligning with community desires
- Reduction in conflict points at intersection

Detriments:

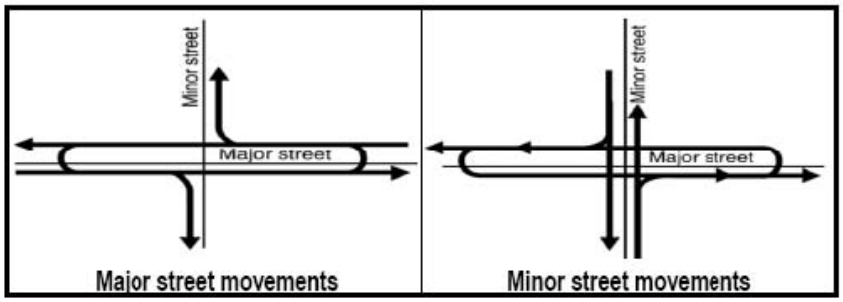
- First roundabout on an Interstate in Alaska

Median U-Turns

Median U-turns (MUT) (Figure 3-5) divert left-turn traffic from the main intersection and can either divert only the left turns from the minor approach or both the left turns from the minor and major approach. Left turns are diverted downstream to a dedicated left-turn lane, where a U-turn movement is permitted. The location of the U-turn is determined by site-specific elements such as intersection sight distance or environmentally sensitive areas; however, the recommended location for the U-turn ranges between 600 and 1,200 feet downstream of the main intersection. This limits the out-of-direction travel to no more than 0.5 mile.

MUTs reduce the number of conflict points at the main intersection and eliminate the need for a vehicle turning left from the minor approach to find an acceptable gap in traffic simultaneously in both directions. Having left turns complete the turning movement in two stages reduces delay at the intersection and the potential for drivers to make higher risk maneuvers. Within the Project limits, MUTs should be considered along the Seward Highway at all locations where left turns are provided.

Figure 3-5. MUT schematic.



Source: https://www.fhwa.dot.gov/publications/research/safety/09060/003.cfm#sec3_1

Benefits:

- Reduces conflict points at main intersections
- Reduces vehicle delay
- Reduces fatal and serious injury crashes
- Improves driver decision making

Detriments:

- Out-of-direction travel for diverted left turns
- May require acquiring ROW at U-turn locations to accommodate vehicles with larger turning radii
- When through movement from minor approach is allowed, there is no way to prevent vehicles on the major street from turning left at the intersection

Restricted Crossing U-Turn)

Restricted crossing U-turns (RCUT) (Figure 3-6 and Figure 3-7) maintain the major-approach left turns at the main intersection while diverting the left turns and through movement along the minor approach to a downstream, dedicated turning lane where a U-turn is permitted. Similar to MUTs, the location of the U-turn is determined by site-specific elements such as intersection sight distance or environmentally sensitive areas; however, the recommended location for the U-turn ranges between 600 and 1,200 feet downstream of the main intersection. This limits the out-of-direction travel to no more than 0.5 mile.

RCUTs reduce the number of conflict points at the main intersection and eliminate the need for a vehicle turning left or continuing straight from the minor approach to find an acceptable gap in traffic simultaneously in both directions. Having minor approach left turns and through movements complete the desired movement in two stages reduces delay at the intersection and the potential for drivers to make higher risk maneuvers. Unlike MUTs, RCUTs maintain all the major approach movements at the main intersection, requiring out-of-direction travel for only the minor approach left turn and through movement. The CMF for a RCUT on the Seward Highway is estimated to be 0.56 for conversion of an unsignalized intersection to a RCUT (CMF ID 4666, two-star rating)[36]. Within the Project limits, RCUTs should be considered along the Seward

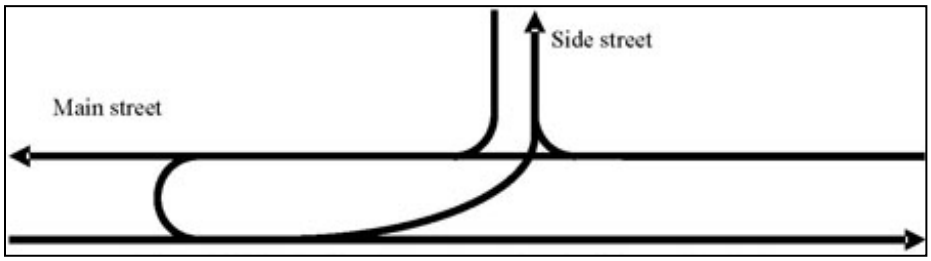
[36] https://cmfclearinghouse.fhwa.dot.gov/detail.php?facid=4666

Highway at all locations where left turns are provided, especially at the Potter Valley Road intersection, where existing crash rates exceed the statewide average.

Figure 3-6. Directional left-turn crossover at a main intersection and U-turn downstream.

Source: Tennessee Department of Transportation

Figure 3-7. RCUT schematic.



Source: https://www.fhwa.dot.gov/publications/research/safety/09060/004.cfm#sec4_1_2

Benefits:

- Reduces conflict points
- Reduces vehicle delay
- Reduces fatal and serious injury crashes
- Improves driver decision making
- Maintains all major approach movements along the Seward Highway

Detriments:

- Out-of-direction travel for minor approach left turns and through movement
- May require acquiring ROW at the U-turn location to accommodate vehicles with larger turning radii
- More challenging to plow snow

Continuous Green T Intersection

A continuous green T intersection (Figure 3-8) uses an inside auxiliary lane to reduce turning conflict points, reduce vehicle delay, and improve driver decision making. The inside auxiliary lane provides a dedicated receiving lane for the left-turning movement from the minor approach,

eliminating the turning conflict between the turning movement and through movement traveling in the desired direction of the turning movement. This eliminates the need for the driver turning left to find an acceptable gap simultaneously in both directions and reduces a conflict point associated with angle crashes that have a higher potential for serious injury or fatal crashes. The CMF for a continuous green T intersection on the Seward Highway is estimated to be 0.90 for conversion of a T intersection to a continuous green T intersection (CMF ID 8655, 8656, and 8657; all three-star ratings)[37]. Within the Project limits, continuous green T intersections should be considered along the Seward Highway at all locations where left turns from the minor approach are provided at a T intersection.

Figure 3-8. Unsignalized continuous green T intersection: OR 6 US east of Tillamook, Oregon.

Source: Google Earth; https://www.fhwa.dot.gov/publications/research/safety/09060/006.cfm

Benefits:

- Reduces turning conflict point
- Reduces vehicle delay
- Reduces fatal and serious injury crashes
- Improves driver decision making
- Maintains all major approach movements along the Seward Highway

Detriments:

- Increased maintenance

[37] CMF Clearinghouse

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Appendix A. Historical Crash Data

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Crash Number	Milepoint	Latitude	Longitude	AADT	DateTime	Year	Month	Day of Mo	Day of the	Time of Da	Street	Intersecting Street	At Intersection	Crash Severity	First Harm	Manner of Collision	Crash Type (Assigned b	Relation to	Weather	Road Surfa	Lighting	CU Direction of Travel	Time
202104229	115.5247	61.068360	-149.8226	9923	9/28/2021	2021	Septembe	28	Tuesday	1:00 AM t	SEWARD HIGHWAY	DE ARMOUN ROAD	No	Possible Injury	Ditch	Angle	Single Vehicle Run-Off-I	On Roadsi	Clear	Dry	Dark - Not	Northbound	1:24:00 AM
202001788	116.3843	61.079950	-149.8309	9923	6/7/2020	2020	June	7	Sunday	7:00 AM t	SEWARD HIGHWAY	OLD SEWARD HIGHWAY	No	No Apparent Injury	Motor Veh	Other	Single Vehicle Run-Off-I	On Roadw	Clear	Dry	Daylight	Northbound	7:04:00 AM
202002474	8.3919	61.084333	-149.8328	-1	7/31/2020	2020	July	31	Friday	4:00 AM t	SEWARD HIGHWAY SB	HUFFMAN	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Clear	Dry	Dawn	Southbound	4:39:00 AM
202005755	116.3237	61.079024	-149.8307	9923	12/8/2020	2020	December	8	Tuesday	5:00 PM t	SEWARD HIGHWAY	KNIK RIVER BRIDGE	No	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Snow	Snow	Dark - Ligh	Southbound	5:15:00 PM
201818409	114.2404	61.054148	-149.7985	9923	5/13/2018	2018	May	13	Sunday	1:00 PM t	SEWARD HIGHWAY	NEAR POTTER FLAT	No	Suspected Minor Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Southbound	1:55:00 PM
202006371	115.9046	61.073135	-149.8280	9923	12/16/202	2020	December	16	Wednesda	2:00 AM t	SEWARD HIGHWAY	NOT REPORTED	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Snow	Ice/Frost	Dark - Not	Northbound	2:00:00 AM
201823605	115.1659	61.064681	-149.8153	9923	7/5/2018	2018	July	5	Thursday	2:00 AM t	SEWARD HIGHWAY	TESARO, GIRDWOOD	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Clear	Dry	Dark - Not	Northbound	2:00:00 AM
201845855	112.8949	61.037115	-149.7803	8593	1/5/2018	2018	January	5	Friday	8:00 PM t	SEWARD HIGHWAY	ANCHORAGE	No	No Apparent Injury	Motor Veh	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Freezing R	Ice/Frost	Unknown	Southbound	8:00:00 PM
202004431	114.1888	61.053491	-149.7978	7515	6/28/2020	2020	June	28	Sunday	12:00 PM	SEWARD HIGHWAY	MILE 21 SEWARD HIGHWAY	No	No Apparent Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Dry	Daylight	Northbound	12:18:00 PM
201847812	107.4399	60.999661	-149.6459	8341	2/7/2018	2018	February	7	Wednesda	12:00 AM	SEWARD HIGHWAY	DE ARMOUN ROAD	No	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Ice/Frost	Dark - Not	Southbound	12:16:00 AM
201919989	109.8591	61.012489	-149.7099	7756	7/7/2019	2019	July	7	Sunday	4:00 PM t	SEWARD HIGHWAY	NEW SEWARD HWY	No	Possible Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Northbound	4:30:00 PM
202002390	106.8692	60.996016	-149.6318	7756	12/26/202	2020	December	26	Saturday	1:00 PM t	SEWARD HIGHWAY	OLD SEWARD OVERPASS	No	No Apparent Injury	Motor Veh	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Cloudy	Ice/Frost	Daylight	Southbound	1:21:00 PM
201853142	97.6742	60.950498	-149.3994	7101	12/18/201	2018	December	18	Tuesday	1:00 PM t	SEWARD HIGHWAY (SEWARD HIGHWAY)	ALYESKA HIGHWAY	No	No Apparent Injury	Motor Veh	Other	Rear End	On Roadw	Cloudy	Ice/Frost	Daylight	Southbound	1:57:00 PM
202107265	99.5959	60.967007	-149.4439	7101	9/26/2021	2021	Septembe	26	Sunday	8:00 AM t	SEWARD HIGHWAY	20 MILE RIVER BRIDEG	Yes	No Apparent Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Freezing R	Ice/Frost	Daylight	Southbound	8:45:00 AM
201919425	102.9765	60.985268	-149.5292	7756	7/1/2019	2019	July	1	Monday	5:00 PM t	SEWARD HIGHWAY	INDIAN VALLEY GOLD MINE MILEPOST 109	Yes	No Apparent Injury	Motor Veh	Front-To-Rear	Angle - Left Turning	On Roadw	Clear	Dry	Daylight	Eastbound	5:23:00 PM
201840977	102.8405	60.986436	-149.5261	7100	12/1/2018	2018	December	1	Saturday	9:00 PM t	SEWARD HIGHWAY	no data	Yes	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Cloudy	Ice/Frost	Dark - Not	Unknown	9:25:00 PM
201848308	109.8382	61.012340	-149.7093	8341	2/22/2018	2018	February	22	Thursday	2:00 PM t	SEWARD HIGHWAY	no data	Yes	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Ice/Frost	Daylight	Northbound	2:04:00 PM
201976971	104.542	60.984358	-149.5742	7756	1/12/2019	2019	January	12	Saturday	7:00 PM t	SEWARD HIGHWAY	NOT APPLICABLE	No	No Apparent Injury	Guardrail I	Sideswipe - Opposite Direction	Single Vehicle Run-Off-I	On Roadw	Cloudy	Ice/Frost	Dark - Not	Northbound	7:12:00 PM
201856857	105.5118	60.984605	-149.6014	7756	12/21/201	2018	December	21	Friday	12:00 PM	SEWARD HIGHWAY	NOT REPORTED	No	Suspected Minor Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Clear	Ice/Frost	Daylight	Northbound	12:10:00 PM
202003135	109.5378	61.010590	-149.7011	7756	12/24/202	2020	December	24	Thursday	2:00 AM t	SEWARD HIGHWAY	TUDOR	No	No Apparent Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Null value	Ice/Frost	Dark - Ligh	Northbound	2:22:00 AM
202104864	98.2682	60.953862	-149.4154	7101	12/14/202	2021	December	14	Tuesday	12:00 PM	SEWARD HIGHWAY	WHISPERING BIRD	No	No Apparent Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Ice/Frost	Daylight	Southbound	12:14:00 PM
201855223	100.7865	60.974570	-149.4751	7100	8/19/2018	2018	August	19	Sunday	10:00 PM	SEWARD HIGHWAY	WHISPERING BIRD LANE	No	Null value	Embankm	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Other	Dry	Dark - Not	Southbound	10:36:00 PM
201720023	104.184	60.984176	-149.5636	-79228162	7/2/2017	2017	July	2	Sunday	7:00 AM t	SEWARD HWY	ALYESKA HIGHWAY	No	No Apparent Injury	Motor Veh	Unknown	Rear End	On Roadw	Rain	Wet	Daylight	Southbound	7:30:00 AM
202001229	116.6394	61.083583	-149.8320	9923	3/16/2020	2020	March	16	Monday	7:00 PM t	NEW SEWARD HIGHWAY	RABBIT CREEK ROAD	Yes	No Apparent Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Clear	Ice/Frost	Dusk	Northbound	7:03:00 PM
201734073	115.5	61.068132	-149.8222	-79228162	11/4/2017	2017	November	4	Saturday	3:00 PM t	SEWARD	POTTER MARSH	No	No Apparent Injury	Motor Veh	Front-To-Front	Head-On	On Roadw	Cloudy	Dry	Daylight	Unknown	3:45:00 PM
201752674	116.7718	61.081804	-149.8314	10141	11/6/2017	2017	November	6	Monday	8:00 AM t	SEWARD HIGHWAY	154TH AVENUE	No	No Apparent Injury	Unknown	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Clear	Ice/Frost	Dawn	Northbound	8:12:00 AM
201852048	116.5188	61.081874	-149.8314	10341	5/24/2018	2018	May	24	Thursday	2:00 PM t	SEWARD HIGHWAY	154TH AVENUE	Yes	No Apparent Injury	Motor Veh	Not a Collision with a Motor Vehicle In-Transport	Rear End	On Roadw	Cloudy	Dry	Daylight	Northbound	2:31:00 PM
201979647	115.4671	61.067773	-149.8216	9923	9/16/2019	2019	Septembe	16	Monday	2:00 PM t	SEWARD HIGHWAY	154TH AVENUE	No	No Apparent Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Cloudy	Dry	Daylight	Northbound	2:53:00 PM
202003259	116.5388	61.082157	-149.8315	9923	11/6/2020	2020	November	6	Friday	6:00 PM t	SEWARD HIGHWAY	154TH AVENUE	Yes	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Cloudy	Snow	Dark - Not	Northbound	6:32:00 PM
201852724	114.6542	61.059395	-149.8046	9923	8/1/2018	2018	August	1	Wednesda	9:00 AM t	SEWARD HIGHWAY	MILE 116	No	Possible Injury	Pedalcycle	Not a Collision with a Motor Vehicle In-Transport	Bicycle	On Should	Cloudy	Wet	Daylight	Northbound	9:14:00 AM
202105723	114.8802	61.061720	-149.8092	9923	11/25/202	2021	November	25	Thursday	2:00 PM t	SEWARD HIGHWAY	MILE 116	Yes	No Apparent Injury	Ground	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Blowing Sr	Ice/Frost	Daylight	Southbound	2:47:00 PM
202101637	115.3539	61.066555	-149.8191	9923	2/4/2021	2021	February	4	Thursday	8:00 AM t	SEWARD HIGHWAY	MILE 116.5	Yes	No Apparent Injury	Live Anima	Angle	Animal-Vehicle	On Roadw	Null value	Dry	Dark - Not	Southbound	8:15:00 AM
201751066	115.3269	61.066323	-149.8187	10141	4/22/2017	2017	April	22	Saturday	1:00 PM t	SEWARD HIGHWAY	MILE 117	No	No Apparent Injury	Motor Veh	Angle	Sideswipe	On Roadw	Cloudy	Dry	Daylight	Southbound	1:12:00 PM
201852082	114.2051	61.053753	-149.7981	8593	5/26/2018	2018	May	26	Saturday	12:00 AM	SEWARD HIGHWAY	POTTER CREEK PARKING LOT	Yes	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Rain	Wet	Dark - Not	Northbound	12:12:00 AM
202104449	113.9087	61.049846	-149.7943	7515	10/10/202	2021	October	10	Sunday	5:00 PM t	SEWARD HIGHWAY	POTTER CREEK TRAILHEAD	Yes	Suspected Minor Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Southbound	5:15:00 PM
202000137	113.9025	61.049822	-149.7942	7515	4/26/2020	2020	April	26	Sunday	8:00 PM t	SEWARD HIGHWAY	POTTER CREEK TRAILHEAD PARKING LOT	Yes	No Apparent Injury	Motor Veh	Angle	Angle - Left Turning	On Roadw	Clear	Dry	Daylight	Southbound	8:24:00 PM
201750572	115.99	61.074372	-149.829	8606	4/29/2017	2017	April	29	Saturday	3:00 PM t	SEWARD HIGHWAY	POTTER MARSH	No	Suspected Minor Injury	Fell/Jumpe	Not a Collision with a Motor Vehicle In-Transport	Motorcycle / Single Veh	On Roadsi	Clear	Mud/Dirt/	Daylight	Southbound	3:51:00 PM
202000240	115.4379	61.067463	-149.8210	9923	1/2/2020	2020	January	2	Thursday	12:00 PM	SEWARD HIGHWAY	POTTER MARSH	Yes	No Apparent Injury	Motor Veh	Sideswipe - Same Direction	Sideswipe	On Roadw	Cloudy	Ice/Frost	Daylight	Northbound	12:33:00 PM
202104273	114.2407	61.054152	-149.7985	9923	10/28/202	2021	October	28	Thursday	12:00 PM	SEWARD HIGHWAY	POTTER MARSH	Yes	No Apparent Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Cloudy	Ice/Frost	Daylight	Northbound	12:32:00 PM
201753388	114.0423	61.048240	-149.7932	8606	12/7/2017	2017	December	7	Thursday	11:00 AM	SEWARD HIGHWAY	POTTER MARSH	No	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Freezing R	Ice/Frost	Daylight	Unknown	11:38:00 AM
201846708	116.3958	61.080115	-149.8310	10341	1/1/2018	2018	January	1	Monday	8:00 PM t	SEWARD HIGHWAY	POTTER MARSH	No	No Apparent Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Freezing R	Ice/Frost	Dark - Not	Northbound	8:33:00 PM
201977451	114.8529	61.061485	-149.8087	9923	2/22/2019	2019	February	22	Friday	7:00 AM t	SEWARD HIGHWAY	POTTER MARSH	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Clear	Ice/Frost	Dark - Not	Northbound	7:21:00 AM
202000183	113.739	61.047604	-149.7926	7515	1/11/2020	2020	January	11	Saturday	2:00 AM t	SEWARD HIGHWAY	POTTER MARSH	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Cloudy	Ice/Frost	Dark - Not	Northbound	2:30:00 AM
202001236	116.5389	61.082159	-149.8315	9923	1/11/2020	2020	January	11	Saturday	10:00 PM	SEWARD HIGHWAY	POTTER MARSH	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Clear	Ice/Frost	Dark - Ligh	Southbound	10:25:00 PM
201755566	113.7213	61.044273	-149.7883	8606	12/15/201	2017	December	15	Friday	6:00 PM t	SEWARD HIGHWAY	POTTER MARSH ROAD	No	No Apparent Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Blowing Sr	Ice/Frost	Dark - Ligh	Northbound	6:58:00 PM
201978453	114.2361	61.054149	-149.7985	9923	12/7/2019	2019	December	7	Saturday	6:00 PM t	SEWARD HIGHWAY	POTTER MARSH SCALES	Yes	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Clear	Ice/Frost	Dark - Not	Northbound	6:04:00 PM
201976691	113.11	61.039602	-149.784	7515	1/13/2019	2019	January	13	Sunday	3:00 PM t	SEWARD HIGHWAY	POTTER VALLEY	No	Suspected Serious Injury	Motor Veh	Angle	Head-On	On Roadw	Cloudy	Ice/Frost	Daylight	Northbound	3:01:00 PM
201856163	114.1966	61.053646	-149.7980	7515	12/2/2018	2018	December	2	Sunday	5:00 AM t	SEWARD HIGHWAY	POTTER VALLEY	No	No Apparent Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Clear	Ice/Frost	Dark - Not	Northbound	5:32:00 AM
201977285	114.2486	61.054308	-149.7987	9923	2/26/2019	2019	February	26	Tuesday	2:00 AM t	SEWARD HIGHWAY	POTTER VALLEY	Yes	No Apparent Injury	Live Anima	Front-To-Front	Animal-Vehicle	On Roadw	Clear	Dry	Dark - Not	Northbound	2:31:00 AM
202002360	113.60	61.04584	-149.79	9923	7/5/2020	2020	July	5	Sunday	3:00 PM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	Suspected Minor Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Cloudy	Dry	Daylight	Northbound	3:14:00 PM
201747494	113.6319	61.046290	-149.7909	8606	1/27/2017	2017	January	27	Friday	1:00 PM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	Suspected Minor Injury	Motor Veh	Angle	Head-On	On Roadw	Cloudy	Ice/Frost	Daylight	Southbound	1:19:00 PM
201752270	111.2864	61.018919	-149.7418	8606	11/28/201	2017	November	28	Tuesday	6:00 AM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	Possible Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Ice/Frost	Dark - Ligh	Southbound	6:22:00 AM
201752504	116.4084	61.076639	-149.8297	10141	10/16/201	2017	October	16	Monday	3:00 PM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	Suspected Minor Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Northbound	3:49:00 PM
201848818	114.2359	61.054146	-149.7985	10341	3/10/2018	2018	March	10	Saturday	3:00 PM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	Yes	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Wet	Daylight	Unknown	3:06:00 PM
201852060	115.7364	61.070968	-149.8261	10341	5/24/2018	2018	May	24	Thursday	11:00 PM	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	Possible Injury	Unknown	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Clear	Dry	Dusk	Southbound	11:23:00 PM
201747130	114.3317	61.055367	-149.7999	10141	1/9/2017	2017	January	9	Monday	11:00 PM	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Cloudy	Ice/Frost	Dark - Not	Southbound	11:25:00 PM
201748732	114.4997	61.057507	-149.8022	10141	5/29/2017	2017	May	29	Monday	1:00 AM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Cloudy	Dry	Dark - Not	Southbound	1:50:00 AM
201748758	114.7467	61.060398	-149.8064	10141	5/31/2017	2017	May	31	Wednesda	2:00 AM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Clear	Dry	Dusk	Southbound	2:50:00 AM
201750250	111.5095	61.024290	-149.7505	-79228162	2/25/2017	2017	February	25	Saturday	7:00 AM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	No Apparent Injury	Snow Banl	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Clear	Ice/Frost	Daylight	Southbound	7:58:00 AM
201751084	108.0651	61.002150	-149.6555	6735	7/9/2017	2017	July	9	Sunday	12:00 PM	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	Suspected Serious Injury	Motor Veh	Front-To-Front	Rear End	On Roadw	Clear	Dry	Daylight	Northbound	12:44:00 PM
201752612	109.3842	61.006667	-149.6932	6735	10/29/201	2017	October	29	Sunday	4:00 AM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	No Apparent Injury	Cable Barr	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	Outside Tr	Other	Dry	Dark - Not	Southbound	4:30:00 AM
201847664	114.2925	61.054868	-149.7993	10341	2/2/2018	2018	February	2	Friday	12:00 AM	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Clear	Dry	Dark - Not	Southbound	12:50:00 AM
201854800	110.8001	61.016832	-149.7363	7515	11/30/201	2018	November	30	Friday	8:00 AM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	Suspected Minor Injury	Boulder	Not a Collision with a Motor Vehicle In-Transport	Other	On Roadw	Other	Ice/Frost	Dark - Not	Northbound	8:30:00 AM
201855227	113.744	61.047668	-149.7927	7515	8/24/2018	2018	August	24	Friday	12:00 AM	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	Null value	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadsi	Clear	Dry	Dark - Not	Unknown	12:00:00 AM
201857531	114.2759	61.054656	-149.7991	9923	10/25/201	2018	October	25	Thursday	11:00 PM	SEWARD HIGHWAY	POTTER VALLEY ROAD	Yes	No Apparent Injury	Live Anima	Rear-To-Side	Animal-Vehicle	On Roadw	Cloudy	Wet	Dark - Not	Northbound	11:33:00 PM
202000941	113.9849	61.050906	-149.7952	7515	2/15/2020	2020	February	15	Saturday	7:00 PM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	Suspected Minor Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Clear	Dry	Dark - Not	Southbound	7:10:00 PM
202001760	114.7426	61.060356	-149.8064	9923	6/23/2020	2020	June	23	Tuesday	1:00 AM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Cloudy	Dry	Dark - Not	Northbound	1:39:00 AM
202002837	110.4082	61.015367	-149.7250	7756	7/31/2020	2020	July	31	Friday	1:00 PM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	No Apparent Injury	Motor Veh	Angle	Rear End	On Roadw	Clear	Dry	Daylight	Northbound	1:39:00 PM
202002845	114.1559	61.053127	-149.7974	7515	11/8/2020	2020	November	8	Sunday	7:00 AM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	No Apparent Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Freezing R	Ice/Frost	Dark - Not	Northbound	7:16:00 AM
202003826	114.2353	61.054084	-149.7985	7515	12/11/202	2020	December	11	Friday	6:00 PM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	No Apparent Injury	Unknown	Unknown	Single Vehicle Run-Off-I	Unknown	Null value	Unknown	Unknown	Northbound	6:48:00 PM
202101651	114.5812	61.058478	-149.8033	9923	1/9/2021	2021	January	9	Saturday	7:00 AM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	No Apparent Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Cloudy	Ice/Frost	Dark - Not	Northbound	7:16:00 AM
202102180	114.2417	61.054165	-149.7986	9923	1/8/2021	2021	January	8	Friday	10:00 PM	SEWARD HIGHWAY	POTTER VALLEY ROAD	Yes	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Clear	Ice/Frost	Dark - Not	Northbound	10:40:00 PM
202102534	114.2413	61.054160	-149.7985	9923	3/31/2021	2021	March	31	Wednesda	5:00 AM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	Yes	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Sleet or Ha	Ice/Frost	Dark - Not	Southbound	5:42:00 AM
202102753	108.252	61.003153	-149.6678	7756	5/9/2021	2021	May	9	Sunday	9:00 AM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	Null value	Motor Veh	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	Unknown	Null value	Unknown	Unknown	Unknown	9:05:00 AM
202102928	114.5026	61.057489	-149.8022	9923	6/1/2021	2021	June	1	Tuesday	1:00 AM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Rain	Wet	Dark - Not	Northbound	1:00:00 AM
202103075	109.5296	61.010518	-149.7008	7756	6/9/2021	2021	June	9	Wednesda	3:00 AM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Cloudy	Dry	Dark - Not	Southbound	3:07:00 AM
202103551	114.3472	61.055510	-149.8000	9923	7/11/2021	2021	July	11	Sunday	2:00 PM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	No	No Apparent Injury	Motor Veh	Angle	Rear End	On Roadw	Cloudy	Dry	Daylight	Southbound	2:51:00 PM
202104136	114.2407	61.054152	-149.7985	9923	10/12/202	2021	October	12	Tuesday	9:00 PM t	SEWARD HIGHWAY	POTTER VALLEY ROAD	Yes	No Apparent Injury	Motor Veh	Angle	Angle - Left Turning	On Roadw	Clear	Dry	Dark - Ligh	Southbound	9:23:00 PM
201815195	115.3528	61.066544	-149.8191	9923	4/4/2018	2018	April	4	Wednesda	5:00 PM t	SEWARD HIGHWAY	POTTERS MARSH	No	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Snow	Ice/Frost	Daylight	Southbound	5:00:00 PM
202104955	102.83	60.986552	-149.5258	7100	12/18/202	2021	December	18	Saturday	11:00 AM	SEWARD HIGHWAY	RABBIT CREEK	No	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Freezing R	Ice/Frost	Daylight	Southbound	11:21:00 AM
201847878	115.8064	61.071875	-149.8270	10341	2/9/2018	2018	February	9	Friday	8:00 AM t	SEWARD HIGHWAY	RABBIT CREEK ROAD	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Fog/Smog,	Dry	Dark - Not	Northbound	8:49:00 AM
201956881	114.8796	61.061715	-149.8091	9923	3/26/2020	2020	March	26	Thursday	2:00 PM t	SEWARD HIGHWAY	SEWARD HIGHWAY	No	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Unknown	2:00:00 PM
201854470	113.9492	61.050436	-149.7948	7515	8/24/2018	2018	August	24	Friday	4:00 AM t	SEWARD HIGHWAY (SEWARD HIGHWAY)	POTTERS CREEK	Yes	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Cloudy	Wet	Dark - Ligh	Southbound	4:57:00 AM
201751138	8.6602	61.080455	-149.8313	5070.5	6/22/2017	2017	June	22	Thursday	5:00 AM t	SEWARD HIGHWAY SB	15350 SEWARD HWY	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadsi	Cloudy	Dry	Dawn	Southbound	5:12:00 AM
201976849	8.5903	61.081538	-149.8316	-1	3/15/2019	2019	March	15	Friday	10:00 AM	SEWARD HIGHWAY SB	154TH AVENUE	Yes	Fatal Injury (Killed)	Motor Veh	Angle	Angle - T-Bone	On Roadw	Cloudy	Dry	Daylight	Eastbound	10:47:00 AM
201755738	8.5784	61.081623	-149.8316	5070.5	12/31/201	2017	December	31	Sunday	1:00 PM t	SEWARD HIGHWAY SB	154TH AVENUE	Yes	No Apparent Injury	Motor Veh	Angle	Angle - T-Bone	On Roadw	Cloudy	Ice/Frost	Daylight	Eastbound	1:40:00 PM
201753590	113.0433	61.03598	-149.7782	8606	12/23/201	2017	December	23	Saturday	3:00 AM t	SEWARD HIGHWAY	MILE 114	No	Suspected Serious Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Ice/Frost	Dark - Not	Southbound	3:54:00 AM
201751022	114.0545	61.048408	-149.7933	8606	1/28/2017	2017	January	28	Saturday	9:00 PM t	SEWARD HIGHWAY	MILE 115	Yes	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Blowing Sr	Ice/Frost	Dark - Ligh	Northbound	9:37:00 PM
202003273	113.827	61.048791	-149.7935	7515	8/16/2020	2020	August	16	Sunday	6:00 PM t	SEWARD HIGHWAY	MILE 115	No	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Northbound	6:40:00 PM
201855333	0.0021	60.986399	-149.5263	206	9/8/2018	2018	Septembe	8	Saturday	2:00 PM t	INDIAN ROAD	SEWARD HWY	Yes	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Southbound	2:46:00 PM
202102397	98.0212	60.952201	-149.4090	7101	3/14/2021	2021	March	14	Sunday	2:00 PM t	SEWARD HIGHWAY	MILE 99	No	Suspected Minor Injury	Tree (Stan	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Cloudy	Ice/Frost	Daylight	Northbound	2:54:00 PM
201856673	109.1721	61.006945	-149.6939	7756	7/22/2018	2018	July	22	Sunday	8:00 PM t	SEWARD HIGHWAY	BELUGA POINT	Yes	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Northbound	8:37:00 PM
202101812	111.4867	61.023978	-149.7500	7515	2/26/2021	2021	February	26	Friday	5:00 AM t	SEWARD HIGHWAY	BELUGA POINT	Yes	No Apparent Injury	Wall	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Ice/Frost	Dark - Not	Northbound	5:49:00 AM
202000153	100.6328	60.973509	-149.4711	7100	2/5/2020	2020	February	5	Wednesda	2:00 PM t	SEWARD HIGHWAY	BIRD CREEK	Yes	No Apparent Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Snow	Daylight	Southbound	2:12:00 PM

202005448	110.4716	61.015565	-149.7267	7756	11/21/202	2020	November	21	Saturday	6:00 PM t	SEWARD HIGHWAY	BIRD CREEK	No	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Sleet or Ha	Ice/Frost	Dark - Not	Southbound	6:55:00 PM
201752456	100.8539	60.973612	-149.4718	7391	10/22/201	2017	October	22	Sunday	12:00 AM	SEWARD HIGHWAY	BIRD CREEK ACCESS PARKING LOT	Yes	No Apparent Injury	Other Post	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Snow	Daylight	Northbound	12:00:00 AM
201855723	100.5475	60.973232	-149.4686	7100	9/5/2018	2018	Septembe	5	Wednesda	8:00 AM t	SEWARD HIGHWAY	BIRD CREEK BRIDGE	No	Suspected Serious Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Northbound	8:06:00 AM
202002447	99.8567	60.969513	-149.4498	7100	8/13/2020	2020	August	13	Thursday	5:00 PM t	SEWARD HIGHWAY	BIRD CREEK ESSENTIAL 1 GAS	Yes	Possible Injury	Motor Veh	Rear-To-Side	Motorcycle / Rear End	On Roadw	Clear	Dry	Daylight	Southbound	5:46:00 PM
201856283	101.7895	60.984613	-149.4959	7100	7/8/2018	2018	July	8	Sunday	6:00 PM t	SEWARD HIGHWAY	BIRD CREEK PARKING AREA	No	Suspected Minor Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Rain	Wet	Daylight	Northbound	6:29:00 PM
202001056	99.4914	60.966056	-149.4416	7101	2/17/2020	2020	February	17	Monday	2:00 PM t	SEWARD HIGHWAY	BIRD CREEK, AURIGA RD	Yes	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Severe Crc	Ice/Frost	Daylight	Northbound	2:21:00 PM
202002301	100.2422	60.972219	-149.4598	7100	9/8/2020	2020	Septembe	8	Tuesday	1:00 AM t	SEWARD HIGHWAY	BIRD RIDGE PARK	Yes	Null value	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	Unknown	Null value	Dry	Dark - Not	Unknown	1:34:00 AM
202001255	102.1647	60.986101	-149.5066	7100	3/16/2020	2020	March	16	Monday	6:00 PM t	SEWARD HIGHWAY	BORETIDE	Yes	No Apparent Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Ice/Frost	Daylight	Northbound	6:36:00 PM
202000293	101.8718	60.985113	-149.4981	7100	3/25/2020	2020	March	25	Wednesda	1:00 PM t	SEWARD HIGHWAY	BORETIDE ROAD	No	Suspected Minor Injury	Motor Veh	Angle	Angle - Left Turning	On Roadw	Clear	Dry	Dark - Ligh	Southbound	1:28:00 PM
202101457	102.126	60.986005	-149.5053	7100	1/24/2021	2021	January	24	Sunday	9:00 AM t	SEWARD HIGHWAY	BORETIDE ROAD	Yes	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Other	Ice/Frost	Daylight	Southbound	9:41:00 AM
202105251	101.5	60.982158	-149.4888	7100	12/30/202	2021	December	30	Thursday	7:00 AM t	SEWARD HIGHWAY	BORETIDE ROAD	No	No Apparent Injury	Live Anima	Front-To-Rear	Animal-Vehicle	On Roadw	Clear	Ice/Frost	Dark - Not	Northbound	7:11:00 AM
202003573	107.9011	61.002428	-149.6574	7756	12/6/2020	2020	December	6	Sunday	2:00 PM t	SEWARD HIGHWAY	EL ROCKO LANE	No	Suspected Minor Injury	Motor Veh	Angle	Head-On	On Roadw	Cloudy	Ice/Frost	Daylight	Southbound	2:04:00 PM
202102984	101.4975	60.982136	-149.4887	7100	6/30/2021	2021	June	30	Wednesda	2:00 AM t	SEWARD HIGHWAY	EL ROCKO LANE	No	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Clear	Dry	Dark - Not	Northbound	2:18:00 AM
201852098	104.1328	60.983924	-149.5622	8341	5/27/2018	2018	May	27	Sunday	10:00 AM	SEWARD HIGHWAY	FALLS CREEK PULL OUT	Yes	Suspected Minor Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Southbound	10:53:00 AM
202003151	104.55	60.984361	-149.574	7756	12/19/202	2020	December	19	Saturday	10:00 AM	SEWARD HIGHWAY	INDIAN	No	Fatal Injury (Killed)	Motor Veh	Front-To-Front	Head-On	On Roadw	Blowing Sr	Ice/Frost	Daylight	Southbound	10:52:00 AM
201978455	103.25	60.983108	-149.536	7100	12/25/201	2019	December	25	Wednesda	11:00 AM	SEWARD HIGHWAY	INDIAN ROAD	No	Suspected Minor Injury	Boulder	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Blowing Sr	Snow	Daylight	Northbound	11:30:00 AM
201959383	106.0575	60.988096	-149.6139	7756	5/8/2020	2020	May	8	Friday	12:00 PM	SEWARD HIGHWAY	INDIAN ROAD	No	No Apparent Injury	Cargo/Equ	Not a Collision with a Motor Vehicle In-Transport	Other	On Roadw	Cloudy	Dry	Daylight	Northbound	12:30:00 PM
202000846	102.8462	60.986389	-149.5263	7100	2/5/2020	2020	February	5	Wednesda	4:00 AM t	SEWARD HIGHWAY	INDIAN ROAD	Yes	No Apparent Injury	Guardrail	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Blowing Sr	Ice/Frost	Dark - Not	Southbound	4:58:00 AM
201856401	104.9609	60.982498	-149.5860	7756	7/7/2018	2018	July	7	Saturday	5:00 PM t	SEWARD HIGHWAY	INDIAN ROAD	No	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Northbound	5:51:00 PM
201977593	102.8793	60.986102	-149.5271	7756	1/17/2019	2019	January	17	Thursday	5:00 AM t	SEWARD HIGHWAY	INDIAN ROAD	Yes	No Apparent Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Other	Ice/Frost	Dark - Not	Southbound	5:14:00 AM
201980685	106.0593	60.988168	-149.6140	7756	12/24/201	2019	December	24	Tuesday	3:00 PM t	SEWARD HIGHWAY	INDIAN ROAD	No	No Apparent Injury	Motor Veh	Angle	Head-On	On Roadw	Blowing Sr	Ice/Frost	Dark - Not	Northbound	3:53:00 PM
201980715	104.134	60.983930	-149.5622	7756	8/17/2019	2019	August	17	Saturday	3:00 PM t	SEWARD HIGHWAY	INDIAN ROAD	No	No Apparent Injury	Motor Veh	Angle	Rear End	On Roadw	Cloudy	Dry	Daylight	Southbound	3:21:00 PM
202000200	105.8355	60.985395	-149.6107	7756	1/16/2020	2020	January	16	Thursday	12:00 PM	SEWARD HIGHWAY	INDIAN ROAD	No	No Apparent Injury	Wall	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Ice/Frost	Daylight	Northbound	12:12:00 PM
202001195	103.8334	60.983162	-149.5534	7756	5/23/2020	2020	May	23	Saturday	4:00 PM t	SEWARD HIGHWAY	INDIAN ROAD	No	Suspected Minor Injury	Motor Veh	Front-To-Front	Head-On	On Roadw	Cloudy	Dry	Daylight	Southbound	4:49:00 PM
202001269	103.5449	60.983334	-149.5448	7756	1/17/2020	2020	January	17	Friday	12:00 PM	SEWARD HIGHWAY	INDIAN ROAD	No	Suspected Minor Injury	Boulder	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	Outside Tr	Clear	Ice/Frost	Daylight	Northbound	12:29:00 PM
202002381	104.5424	60.984358	-149.5742	7756	8/16/2020	2020	August	16	Sunday	4:00 PM t	SEWARD HIGHWAY	INDIAN ROAD	No	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Dark - Ligh	Southbound	4:08:00 PM
202002700	102.8494	60.986363	-149.5264	7756	7/3/2020	2020	July	3	Friday	11:00 AM	SEWARD HIGHWAY	INDIAN ROAD	Yes	Suspected Minor Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Cloudy	Dry	Daylight	Southbound	11:33:00 AM
202002893	107.8768	61.002373	-149.6568	7756	11/23/202	2020	November	23	Monday	9:00 AM t	SEWARD HIGHWAY	INDIAN ROAD	No	No Apparent Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Freezing R	Ice/Frost	Dusk	Northbound	9:54:00 AM
202003184	102.9693	60.985294	-149.5292	7756	10/27/202	2020	October	27	Tuesday	7:00 AM t	SEWARD HIGHWAY	INDIAN ROAD	No	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Ice/Frost	Dark - Not	Southbound	7:07:00 AM
202003394	102.7441	60.987058	-149.5236	7100	11/27/202	2020	November	27	Friday	12:00 PM	SEWARD HIGHWAY	INDIAN ROAD	No	No Apparent Injury	Motor Veh	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Freezing R	Ice/Frost	Daylight	Northbound	12:32:00 PM
202102331	106.4934	60.992212	-149.6237	7756	3/8/2021	2021	March	8	Monday	5:00 PM t	SEWARD HIGHWAY	INDIAN ROAD	No	No Apparent Injury	Motor Veh	Angle	Rear End	On Roadsi	Cloudy	Dry	Daylight	Northbound	5:51:00 PM
202103087	102.973	60.985300	-149.5291	7756	6/13/2021	2021	June	13	Sunday	3:00 PM t	SEWARD HIGHWAY	INDIAN ROAD	No	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Eastbound	3:17:00 PM
202104187	103.2813	60.983037	-149.5369	7756	9/21/2021	2021	Septembe	21	Tuesday	6:00 AM t	SEWARD HIGHWAY	INDIAN ROAD	No	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Rain	Wet	Dark - Not	Southbound	6:26:00 AM
202104448	106.0305	60.987763	-149.6135	7756	11/7/2021	2021	November	7	Sunday	9:00 AM t	SEWARD HIGHWAY	INDIAN ROAD	No	No Apparent Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Ice/Frost	Daylight	Southbound	9:48:00 AM
201852582	107.3967	60.999818	-149.6447	8341	2/19/2018	2018	February	19	Monday	9:00 AM t	SEWARD HIGHWAY	INDIAN VALLEY ROAD	No	No Apparent Injury	Motor Veh	Sideswipe - Opposite Direction	Head-On	On Roadw	Cloudy	Ice/Frost	Daylight	Northbound	9:23:00 AM
201977591	109.7477	61.011793	-149.7069	7756	1/25/2019	2019	January	25	Friday	5:00 AM t	SEWARD HIGHWAY	MCHUGH CREEK	No	Suspected Serious Injury	Boulder	Not a Collision with a Motor Vehicle In-Transport	Other	On Roadw	Blowing Sa	Wet	Dark - Not	Southbound	5:00:00 AM
202002770	110.2723	61.014714	-149.7212	7756	9/18/2020	2020	Septembe	18	Friday	6:00 PM t	SEWARD HIGHWAY	MCHUGH CREEK	Yes	No Apparent Injury	Motor Veh	Angle	Motorcycle / Other	Outside Tr	Clear	Dry	Daylight	Northbound	6:55:00 PM
202106991	110.5583	61.015855	-149.7292	7756	8/17/2021	2021	August	17	Tuesday	12:00 AM	SEWARD HIGHWAY	MCHUGH CREEK	No	No Apparent Injury	Boulder	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Cloudy	Dry	Other	Northbound	12:00:00 AM
202001945	106.2061	60.989590	-149.6172	7756	6/12/2020	2020	June	12	Friday	9:00 PM t	SEWARD HIGHWAY	MCHUGH CREEK PARKING AREA	No	Possible Injury	Other Obj	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Should	Clear	Dry	Daylight	Northbound	9:30:00 PM
201914363	110.6145	61.016059	-149.7310	7515	4/27/2019	2019	April	27	Saturday	3:00 PM t	SEWARD HIGHWAY	MCHUGH CREEK RECREATION ROAD	Yes	Possible Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Eastbound	3:00:00 PM
202002670	109.3677	61.009355	-149.6968	7756	11/19/202	2020	November	19	Thursday	10:00 AM	SEWARD HIGHWAY	MCHUGH CREEK RECREATIONAL AREA RD	No	Null value	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Clear	Ice/Frost	Daylight	Southbound	10:58:00 AM
201716875	105.7872	60.985002	-149.6095	6735	2/9/2017	2017	February	9	Thursday	4:00 AM t	SEWARD HIGHWAY	MILE 107.5	Yes	No Apparent Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Should	Snow	Ice/Frost	Dusk	Northbound	4:00:00 AM
201841549	99.013	60.961495	-149.4309	7101	12/16/201	2018	December	16	Sunday	11:00 AM	SEWARD HIGHWAY	MILE 100	Yes	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Snow	Ice/Frost	Daylight	Northbound	11:00:00 AM
202101764	98.9082	60.960340	-149.4287	7101	2/18/2021	2021	February	18	Thursday	8:00 PM t	SEWARD HIGHWAY	MILE 100	No	Possible Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Blowing Sr	Ice/Frost	Dark - Not	Northbound	8:17:00 PM
201848824	99.0211	60.961533	-149.4310	7101	3/10/2018	2018	March	10	Saturday	11:00 PM	SEWARD HIGHWAY	MILE 100	No	No Apparent Injury	Motor Veh	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Cloudy	Ice/Frost	Dark - Not	Southbound	11:34:00 PM
201980683	99.0169	60.961535	-149.4310	7101	10/10/201	2019	October	10	Thursday	11:00 AM	SEWARD HIGHWAY	MILE 100 KONKINSON ROAD	No	Null value	Traffic Sigr	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	Outside Tr	Unknown	Water (Sta	Daylight	Northbound	11:36:00 AM
201744324	99.3463	60.964681	-149.4384	7041	1/22/2017	2017	January	22	Sunday	2:00 PM t	SEWARD HIGHWAY	MILE 100.3	Yes	Possible Injury	Parked Mc	Not a Collision with a Motor Vehicle In-Transport	Rear End	On Roadw	Blowing Sr	Snow	Daylight	Northbound	2:51:00 PM
201978975	100.0056	60.970764	-149.4534	7100	10/6/2019	2019	October	6	Sunday	8:00 AM t	SEWARD HIGHWAY	MILE 101	Yes	No Apparent Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Freezing R	Ice/Frost	Dusk	Northbound	8:17:00 AM
201707547	100.0047	60.970757	-149.4534	7391	3/20/2017	2017	March	20	Monday	6:00 PM t	SEWARD HIGHWAY	MILE 101	Yes	No Apparent Injury	Unknown	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Ice/Frost	Daylight	Northbound	6:15:00 PM
202102258	101.0055	60.977106	-149.4787	7100	1/5/2021	2021	January	5	Tuesday	5:00 AM t	SEWARD HIGHWAY	MILE 102	Yes	No Apparent Injury	Live Anima	Not a Collision with a Motor Vehicle In-Transport	Animal-Vehicle	On Roadw	Cloudy	Ice/Frost	Dark - Not	Northbound	5:00:00 AM
202103042	101.0056	60.977108	-149.4787	7100	5/28/2021	2021	May	28	Friday	3:00 PM t	SEWARD HIGHWAY	MILE 102	Yes	No Apparent Injury	Motor Veh	Front-To-Rear	Angle - Left Turning	On Roadw	Rain	Wet	Daylight	Southbound	3:18:00 PM
201849022	101.4899	60.982107	-149.4887	7312	3/19/2018	2018	March	19	Monday	8:00 PM t	SEWARD HIGHWAY	MILE 102.5	Yes	Suspected Minor Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Clear	Ice/Frost	Dark - Not	Northbound	8:24:00 PM
201856103	101.9735	60.985590	-149.5010	7100	12/1/2018	2018	December	1	Saturday	6:00 AM t	SEWARD HIGHWAY	MILE 103	Yes	No Apparent Injury	Boulder	Not a Collision with a Motor Vehicle In-Transport	Other	On Roadw	Cloudy	Wet	Dark - Ligh	Southbound	6:30:00 AM
201976211	101.9002	60.985260	-149.4989	7100	1/16/2019	2019	January	16	Wednesda	10:00 AM	SEWARD HIGHWAY	MILE 103	No	Suspected Minor Injury	Embankm	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Ice/Frost	Daylight	Southbound	10:06:00 AM
202102362	101.9769	60.985586	-149.5010	7100	3/3/2021	2021	March	3	Wednesda	6:00 PM t	SEWARD HIGHWAY	MILE 103	No	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Clear	Ice/Frost	Daylight	Northbound	6:11:00 PM
201744568	102.9764	60.985230	-149.5293	6735	2/11/2017	2017	February	11	Saturday	4:00 PM t	SEWARD HIGHWAY	MILE 104 (Indian Road)	Yes	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Ice/Frost	Daylight	Southbound	4:28:00 PM
201848116	102.7295	60.987121	-149.5232	7312	2/15/2018	2018	February	15	Thursday	10:00 AM	SEWARD HIGHWAY	MILE 104 (Indian Road)	No	No Apparent Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Cloudy	Ice/Frost	Daylight	Northbound	10:14:00 AM
202001307	102.7188	60.987163	-149.5228	7100	1/10/2020	2020	January	10	Friday	10:00 AM	SEWARD HIGHWAY	MILE 104 (Indian Road)	No	No Apparent Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Ice/Frost	Daylight	Northbound	10:32:00 AM
202003445	102.9718	60.985272	-149.5292	7756	9/27/2020	2020	Septembe	27	Sunday	4:00 PM t	SEWARD HIGHWAY	MILE 104 (Indian Road)	Yes	No Apparent Injury	Motor Veh	Sideswipe - Same Direction	Sideswipe	On Roadw	Cloudy	Dry	Daylight	Northbound	4:55:00 PM
202104011	102.8362	60.986505	-149.5259	7100	9/10/2021	2021	Septembe	10	Friday	7:00 AM t	SEWARD HIGHWAY	MILE 104 (Indian Road)	No	No Apparent Injury	Motor Veh	Sideswipe - Opposite Direction	Head-On	On Roadw	Cloudy	Dry	Dawn	Northbound	7:05:00 AM
201856597	102.98	60.985272	-149.529	7100	7/27/2018	2018	July	27	Friday	9:00 AM t	SEWARD HIGHWAY	MILE 104 (Indian Road)	Yes	Suspected Minor Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Freezing R	Snow	Daylight	Northbound	9:18:00 AM
202003134	104.139	60.983933	-149.5622	7756	12/23/202	2020	December	23	Wednesda	11:00 AM	SEWARD HIGHWAY	MILE 105	No	Possible Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Ice/Frost	Daylight	Unknown	11:40:00 AM
201744628	104.5904	60.984187	-149.5756	6735	2/18/2017	2017	February	18	Saturday	10:00 AM	SEWARD HIGHWAY	MILE 105.5	Yes	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Ice/Frost	Daylight	Northbound	10:09:00 AM
202103417	104.829	60.982882	-149.5820	7756	7/20/2021	2021	July	20	Tuesday	11:00 AM	SEWARD HIGHWAY	MILE 105.5 AND 106	No	No Apparent Injury	Motor Veh	Angle	Other	On Roadw	Cloudy	Dry	Daylight	Unknown	11:25:00 AM
201850504	104.6385	60.983920	-149.5769	8341	2/6/2018	2018	February	6	Tuesday	7:00 PM t	SEWARD HIGHWAY	MILE 105.6	Yes	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Snow	Ice/Frost	Dark - Not	Northbound	7:51:00 PM
201848770	104.5348	60.984370	-149.5740	8341	3/8/2018	2018	March	8	Thursday	9:00 AM t	SEWARD HIGHWAY	MILE 106	No	No Apparent Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Should	Blowing Sr	Ice/Frost	Daylight	Southbound	9:27:00 AM
201746902	105.5031	60.984572	-149.6012	6735	11/9/2017	2017	November	9	Thursday	3:00 PM t	SEWARD HIGHWAY	MILE 106.5	Yes	Suspected Minor Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Ice/Frost	Daylight	Northbound	3:06:00 PM
201826291	105.5163	60.984621	-149.6015	7756	7/21/2018	2018	July	21	Saturday	11:00 AM	SEWARD HIGHWAY	MILE 106.5	Yes	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Southbound	11:30:00 AM
201852542	105.5105	60.984600	-149.6014	8341	6/29/2018	2018	June	29	Friday	12:00 AM	SEWARD HIGHWAY	MILE 106.5	Yes	Suspected Minor Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Dry	Dark - Not	Southbound	12:53:00 AM
201852292	105.52	60.98458	-149.601	7312	6/9/2018	2018	June	9	Saturday	11:00 PM	SEWARD HIGHWAY	MILE 106.5	No	Suspected Minor Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	Outside Tr	Clear	Dry	Daylight	Northbound	11:22:00 PM
202000202	105.52	60.984589	-149.601	9923	3/8/2020	2020	March	8	Sunday	10:00 AM	SEWARD HIGHWAY	MILE 106.5	No	Suspected Minor Injury	Embankm	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Snow	Ice/Frost	Daylight	Northbound	10:54:00 AM
201745468	105.5055	60.984581	-149.6012	6735	6/18/2017	2017	June	18	Sunday	1:00 PM t	SEWARD HIGHWAY	MILE 106.5	Yes	Possible Injury	Motor Veh	Sideswipe - Same Direction	Sideswipe	On Roadw	Clear	Dry	Daylight	Southbound	1:47:00 PM
201746846	105.5657	60.984727	-149.6030	6735	12/19/201	2017	December	19	Tuesday	7:00 PM t	SEWARD HIGHWAY	MILE 106.6	Yes	Possible Injury	Motor Veh	Sideswipe - Opposite Direction	Head-On	On Roadw	Snow	Ice/Frost	Daylight	Southbound	7:06:00 PM
201850766	105.8463	60.985501	-149.6109	8341	3/3/2018	2018	March	3	Saturday	3:00 PM t	SEWARD HIGHWAY	MILE 106.8	Yes	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Ice/Frost	Daylight	Northbound	3:28:00 PM
202101382	106.0638	60.988171	-149.6140	7756	12/26/202	2021	December	26	Sunday	1:00 PM t	SEWARD HIGHWAY	MILE 107	Yes	No Apparent Injury	Embankm	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Cloudy	Ice/Frost	Daylight	Southbound	1:00:00 PM
201850934	106.9521	60.996792	-149.6335	7756	2/28/2018	2018	February	28	Wednesda	7:00 PM t	SEWARD HIGHWAY	MILE 108	Yes	No Apparent Injury	Parked Mc	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Ice/Frost	Dark - Not	Northbound	7:20:00 PM
201755712	107.1408	60.996444	-149.6327	6735	12/31/201	2017	December	31	Sunday	9:00 AM t	SEWARD HIGHWAY	MILE 108	No	No Apparent Injury	Ground	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Blowing Sr	Ice/Frost	Dusk	Northbound	9:20:00 AM
201849312	106.9093	60.996420	-149.6327	8341	4/4/2018	2018	April	4	Wednesda	5:00 PM t	SEWARD HIGHWAY	MILE 108	Yes	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Cloudy	Snow	Daylight	Southbound	5:28:00 PM
201969399	106.9219	60.996501	-149.6328	7756	9/5/2020	2020	Septembe	5	Saturday	1:00 PM t	SEWARD HIGHWAY	MILE 108	Yes	No Apparent Injury	Motor Veh	Sideswipe - Opposite Direction	Head-On	On Roadw	Clear	Dry	Daylight	Northbound	1:30:00 PM
201977623	106.9193	60.996518	-149.6329	7756	1/26/2019	2019	January	26	Saturday	6:00 PM t	SEWARD HIGHWAY	MILE 108	Yes	No Apparent Injury	Boulder	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Other	Dry	Dark - Not	Northbound	6:30:00 PM
201753978	107.6066	60.999874	-149.6441	6735	11/29/201	2017	November	29	Wednesda	7:00 AM t	SEWARD HIGHWAY	MILE 108.5	Yes	Possible Injury	Motor Veh	Front-To-Front	Head-On	On Roadw	Cloudy	Ice/Frost	Dark - Not	Northbound	7:14:00 AM
201854872	107.4947	60.999525	-149.6475	7756	7/30/2018	2018	July	30	Monday	8:00 PM t	SEWARD HIGHWAY	MILE 108.5	Yes	Suspected Serious Injury	Motor Veh	Not a Collision with a Motor Vehicle In-Transport	Motorcycle / Single Veh	On Roadw	Clear	Dry	Daylight	Northbound	8:08:00 PM
201856543	107.404	60.999793	-149.6449	7756	7/9/2018	2018	July	9	Monday	1:00 AM t	SEWARD HIGHWAY	MILE 108.5	Yes	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Should	Cloudy	Dry	Dark - Not	Northbound	1:22:00 AM
202003396	107.84	61.00216	-149.656	7756	9/12/2020	2020	Septembe	12	Saturday	7:00 PM t	SEWARD HIGHWAY	MILE 109	Yes	Suspected Serious Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Null value	Dry	Dusk	Southbound	7:38:00 PM
202006160	107.9029	61.002432	-149.6574	7756	12/23/202	2020	December	23	Wednesda	11:00 AM	SEWARD HIGHWAY	MILE 109	No	Possible Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Sleet or Ha	Ice/Frost	Daylight	Northbound	11:30:00 AM
201847632	107.7837	61.001760	-149.6544	8341	2/1/2018	2018	February	1	Thursday	10:00 AM	SEWARD HIGHWAY	MILE 109	No	Suspected Minor Injury	Motor Veh	Angle	Head-On	On Roadw	Clear	Ice/Frost	Daylight	Southbound	10:39:00 AM
202104310	107.8833	61.002380	-149.6569	7756	9/5/2021	2021	Septembe	5	Sunday	3:00 AM t	SEWARD HIGHWAY	MILE 109	Yes	Suspected Minor Injury	Boulder	Not a Collision with a Motor Vehicle In-Transport	Other	On Roadw	Rain	Wet	Dark - Not	Northbound	3:07:00 AM
202001135	107.8987	61.002432	-149.6574	7756	2/12/2020	2020	February	12	Wednesda	2:00 PM t	SEWARD HIGHWAY	MILE 109	No	Suspected Minor Injury	Boulder	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Blowing Sr	Ice/Frost	Daylight	Northbound	2:39:00 PM
201850702	107.9895	61.002622	-149.6601	8341	2/24/2018	2018	February	24	Saturday	12:00 PM	SEWARD HIGHWAY	MILE 109.1	Yes	No Apparent Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Ice/Frost	Daylight	Northbound	12:27:00 PM
201978141	108.4279	61.004083	-149.6727	7756	11/27/201	2019	November	27	Wednesda	10:00 PM	SEWARD HIGHWAY	MILE 109.5	No	Possible Injury	Boulder	Not a Collision with a Motor Vehicle In-Transport	Other	On Roadw	Severe Crc	Wet	Dark - Not	Northbound	10:56:00 PM
201964809	108.4313	61.004077	-149.6727	7756	7/17/2020	2020	July	17	Friday	9:00 PM t	SEWARD HIGHWAY	MILE 109.5	No	No Apparent Injury	Boulder	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Blowing Sr	Dry	Daylight	Northbound	9:07:00 PM
202105155	108.432	61.004082	-149.6727	7756	12/31/202	2021	December	31	Friday	12:00 PM	SEWARD HIGHWAY	MILE 109.5	Yes	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Snow	Ice/Frost	Daylight	Southbound	12:01:00 PM
201826551	108.8837	61.005614	-149.6859	7756	8/12/2018	2018	August	12	Sunday	12:00 PM	SEWARD HIGHWAY	MILE 110	No	Possible Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Northbound	12:00:00 PM
202106737	108.89	61.005619	-149.6860	7756	7/11/2021	2021	July	11	Sunday	11:00 AM	SEWARD HIGHWAY	MILE 110	Yes	Possible Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Southbound	11:15:00 AM
201750494	109.5951	61.009196	-149.6966	6735	6/22/2017	2017	June	22	Thursday	10:00 PM	SEWARD HIGHWAY	MILE 110	No	Suspected Minor Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Dry	Dusk	Northbound	10:38:00 PM

201919851	108.8837	61.005614	-149.6859	7756	7/3/2019	2019	July	3	Wednesda	12:00 PM	SEWARD HIGHWAY		MILE 110 BELUGA POINT	Yes	No Apparent Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Clear	Dry	Daylight	Southbound	12:00:00 PM
201849050	109.10	61.006303	-149.692	8341	3/21/2018	2018	March	21	Wednesda	2:00 PM	SEWARD HIGHWAY		MILE 110.3	No	Possible Injury	Motor Veh	Angle	Angle - T-Bone	On Roadw	Clear	Dry	Daylight	Eastbound	2:32:00 PM
201721957	109.86	61.01247	-149.71	6735	2/27/2017	2017	February	27	Monday	12:00 AM	SEWARD HIGHWAY		MILE 111	Yes	Null value	Motor Veh	Front-To-Front	Head-On	Unknown	Unknown	Ice/Frost	Unknown	Southbound	12:00:00 AM
202105159	109.8631	61.012486	-149.7099	7756	12/24/202	2021	December	24	Friday	1:00 AM	SEWARD HIGHWAY		MILE 111	Yes	No Apparent Injury	Snow Bank	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Should	Clear	Ice/Frost	Dark - Not	Northbound	1:02:00 AM
201745116	110.0339	61.013740	-149.7144	6735	4/23/2017	2017	April	23	Sunday	10:00 PM	SEWARD HIGHWAY		MILE 111.2	Yes	Suspected Minor Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Cloudy	Dry	Dark - Ligh	Northbound	10:29:00 PM
202103037	110.8055	61.016839	-149.7363	7515	6/13/2021	2021	June	13	Sunday	1:00 PM	SEWARD HIGHWAY		MILE 112 (MCHUGH CREEK)	Yes	Suspected Minor Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Motorcycle / Single Veh	On Roadw	Clear	Dry	Daylight	Southbound	1:45:00 PM
201747804	110.7788	61.016689	-149.7357	8606	2/17/2017	2017	February	17	Friday	8:00 PM	SEWARD HIGHWAY		MILE 112 (MCHUGH CREEK)	Yes	Suspected Minor Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Unknown	Ice/Frost	Dark - Not	Northbound	8:59:00 PM
201841103	110.8009	61.016837	-149.7363	7515	12/13/201	2018	December	13	Thursday	3:00 PM	SEWARD HIGHWAY		MILE 112 (MCHUGH CREEK)	Yes	No Apparent Injury	Motor Veh	Front-To-Front	Head-On	On Roadw	Snow	Snow	Daylight	Northbound	3:15:00 PM
201847808	109.8225	61.012237	-149.7089	8341	2/6/2018	2018	February	6	Tuesday	6:00 PM	SEWARD HIGHWAY		MILE 112 (MCHUGH CREEK)	No	No Apparent Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Blowing Sr	Ice/Frost	Dark - Not	Southbound	6:11:00 PM
201852494	110.7823	61.016711	-149.7358	8593	6/24/2018	2018	June	24	Sunday	1:00 PM	SEWARD HIGHWAY		MILE 112 (MCHUGH CREEK)	No	Possible Injury	Wall	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Dry	Daylight	Northbound	1:51:00 PM
201747472	111.3009	61.021985	-149.7465	8606	1/26/2017	2017	January	26	Thursday	9:00 PM	SEWARD HIGHWAY		MILE 112.5	No	Suspected Minor Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Rain	Ice/Frost	Dark - Not	Northbound	9:19:00 PM
201754640	111.9874	61.027315	-149.7530	8606	8/4/2017	2017	August	4	Friday	1:00 PM	SEWARD HIGHWAY		MILE 113	No	Suspected Minor Injury	Motor Veh	Front-To-Front	Head-On	On Roadw	Cloudy	Dry	Daylight	Northbound	1:06:00 PM
202103253	111.9221	61.028997	-149.7570	7515	6/29/2021	2021	June	29	Tuesday	2:00 AM	SEWARD HIGHWAY		MILE 113	No	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Dry	Dark - Not	Northbound	2:25:00 AM
202103277	111.8231	61.028220	-149.7546	7515	7/24/2021	2021	July	24	Saturday	3:00 AM	SEWARD HIGHWAY		MILE 113	Yes	No Apparent Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Dry	Dark - Not	Northbound	3:27:00 AM
201844475	111.8182	61.028214	-149.7545	7515	1/1/2019	2019	January	1	Tuesday	4:00 PM	SEWARD HIGHWAY		MILE 113 OR 113.5	Yes	No Apparent Injury	Motor Veh	Sideswipe - Opposite Direction	Head-On	On Roadw	Cloudy	Wet	Dark - Not	Southbound	4:30:00 PM
201744652	97.8828	60.951607	-149.4052	7041	2/22/2017	2017	February	22	Wednesda	7:00 AM	SEWARD HIGHWAY		MILE 98.9	Yes	No Apparent Injury	Motor Veh	Angle	Head-On	On Roadw	Blowing Sa	Snow	Dawn	Southbound	7:55:00 AM
202102509	98.0206	60.952199	-149.4089	7101	3/14/2021	2021	March	14	Sunday	5:00 PM	SEWARD HIGHWAY		MILE 99	Yes	No Apparent Injury	Parked Mo	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Ice/Frost	Daylight	Southbound	5:34:00 PM
202101650	98.5398	60.956247	-149.4218	7101	1/5/2021	2021	January	5	Tuesday	10:00 PM	SEWARD HIGHWAY		MILE 99.5	Yes	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Ice/Frost	Dark - Not	Southbound	10:10:00 PM
201846616	102.01	60.985724	-149.5021	7312	6/9/2018	2018	June	9	Saturday	12:00 AM	SEWARD HIGHWAY		OLD JOHNS RD	No	Fatal Injury (Killed)	Motor Veh	Front-To-Front	Head-On	On Roadw	Cloudy	Dry	Dark - Not	Southbound	12:23:00 AM
202002672	101.488	60.982090	-149.4886	7100	10/13/202	2020	October	13	Tuesday	12:00 AM	SEWARD HIGHWAY		OLD JOHNS RD	No	Suspected Minor Injury	Tree (Stan	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Unknown	Unknown	Unknown	Southbound	12:00:00 AM
202103323	107.2309	60.999384	-149.6399	7756	7/26/2021	2021	July	26	Monday	6:00 PM	SEWARD HIGHWAY		RAINBOW TRAILHEAD DRIVEWAY	Yes	No Apparent Injury	Motor Veh	Not a Collision with a Motor Vehicle In-Transport	Rear End	On Roadw	Clear	Dry	Daylight	Southbound	6:13:00 PM
201756256	106.2773	60.988073	-149.6138	6735	7/9/2017	2017	July	9	Sunday	7:00 PM	SEWARD HIGHWAY		RAINBOW VALLEY RD	No	No Apparent Injury	Motor Veh	Angle	Head-On	On Roadw	Clear	Dry	Daylight	Southbound	7:28:00 PM
202001321	99.7978	60.968962	-149.4485	7101	3/2/2020	2020	March	2	Monday	10:00 AM	SEWARD HIGHWAY		SAWMILL ROAD	Yes	Fatal Injury (Killed)	Motor Veh	Angle	Head-On	On Roadw	Cloudy	Slush	Daylight	Northbound	10:39:00 AM
201746352	99.8201	60.969173	-149.4490	7041	10/19/201	2017	October	19	Thursday	12:00 PM	SEWARD HIGHWAY		SAWMILL ROAD	Yes	Possible Injury	Motor Veh	Sideswipe - Same Direction	Sideswipe	On Roadw	Clear	Dry	Daylight	Northbound	12:22:00 PM
201856839	99.823	60.969200	-149.4491	7100	7/8/2018	2018	July	8	Sunday	12:00 PM	SEWARD HIGHWAY		SAWMILL ROAD	Yes	No Apparent Injury	Motor Veh	Angle	Angle - T-Bone	On Roadw	Cloudy	Dry	Daylight	Westbound	12:32:00 PM
202101428	99.8261	60.969189	-149.4490	7100	1/15/2021	2021	January	15	Friday	4:00 AM	SEWARD HIGHWAY		SAWMILL ROAD	Yes	No Apparent Injury	Motor Veh	Sideswipe - Same Direction	Angle - Left Turning	On Roadw	Blowing Sr	Ice/Frost	Dark - Not	Southbound	4:45:00 AM
202002690	104.9619	60.982496	-149.5860	7756	12/26/202	2020	December	26	Saturday	3:00 PM	SEWARD HIGHWAY		SEWARD HIGHWAY	No	No Apparent Injury	Motor Veh	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Clear	Ice/Frost	Daylight	Northbound	3:05:00 PM
202002982	109.8587	61.012486	-149.7099	7756	11/1/2020	2020	November	1	Sunday	7:00 PM	SEWARD HIGHWAY		SEWARD HIGHWAY	No	No Apparent Injury	Pedestrian	Front-To-Rear	Pedestrian	On Roadw	Clear	Dry	Dark - Not	Northbound	7:09:00 PM
202101475	110.3571	61.015150	-149.7234	7756	2/18/2021	2021	February	18	Thursday	8:00 PM	SEWARD HIGHWAY		SEWARD HIGHWAY	No	No Apparent Injury	Motor Veh	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadw	Blowing Sr	Ice/Frost	Dark - Not	Northbound	8:47:00 PM
201940233	105.5098	60.984598	-149.6013	7756	12/22/201	2019	December	22	Sunday	3:00 PM	SEWARD HIGHWAY		SEWARD HWY	No	Possible Injury	Motor Veh	Front-To-Rear	Rear End	On Roadw	Blowing Sa	Ice/Frost	Other	Southbound	3:25:00 PM
201848654	107.8882	61.002407	-149.6571	8341	3/3/2018	2018	March	3	Saturday	6:00 PM	SEWARD HIGHWAY		SEWARD HWY	Yes	No Apparent Injury	Motor Veh	Angle	Head-On	On Roadw	Cloudy	Ice/Frost	Dark - Not	Northbound	6:19:00 PM
202001789	98.5399	60.956248	-149.4218	7101	3/1/2020	2020	March	1	Sunday	4:00 PM	SEWARD HIGHWAY		SEWARD HWY	No	No Apparent Injury	Motor Veh	Angle	Rear End	On Roadw	Blowing Sr	Ice/Frost	Daylight	Northbound	4:21:00 PM
202104583	107.3622	60.999895	-149.6435	7756	10/29/202	2021	October	29	Friday	5:00 AM	SEWARD HIGHWAY		SEWARD HWY WEIGH SCALES	No	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Ice/Frost	Dark - Ligh	Northbound	5:10:00 AM
201981169	99.9012	60.969916	-149.4509	7100	9/13/2019	2019	Septembe	13	Friday	10:00 PM	SEWARD HIGHWAY		STELLAR JAY LANE	No	Suspected Minor Injury	Motor Veh	Angle	Angle - Left Turning	On Roadw	Cloudy	Wet	Dark - Not	Southbound	10:44:00 PM
201753838	112.5303	61.031651	-149.7662	8606	12/5/2017	2017	December	5	Tuesday	11:00 AM	SEWARD HIGHWAY		TURNIGAN TRAILHEAD (APP)	Yes	Suspected Minor Injury	Motor Veh	Angle	Head-On	On Roadw	Cloudy	Ice/Frost	Daylight	Northbound	11:49:00 AM
201978443	99.347	60.964687	-149.4384	7101	11/18/201	2019	November	18	Monday	2:00 PM	SEWARD HIGHWAY		WHISPERING BIRD LANE	No	Suspected Minor Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Null value	Ice/Frost	Daylight	Southbound	2:51:00 PM
202001362	99.2912	60.964160	-149.4371	7101	2/17/2020	2020	February	17	Monday	1:00 PM	SEWARD HIGHWAY		WHISPERING BIRD LANE	Yes	No Apparent Injury	Snow Bank	Unknown	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Wet	Daylight	Unknown	1:36:00 PM
202001595	99.2889	60.964138	-149.4371	7101	2/22/2020	2020	February	22	Saturday	10:00 AM	SEWARD HIGHWAY		WHISPERING BIRD LANE	Yes	No Apparent Injury	Ditch	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Should	Cloudy	Ice/Frost	Daylight	Southbound	10:48:00 AM
202005528	99.1961	60.963215	-149.4349	7101	12/30/202	2020	December	30	Wednesda	12:00 PM	SEWARD HIGHWAY		WHISPERING BIRD LANE	No	Possible Injury	Snow Bank	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Ice/Frost	Daylight	Northbound	12:21:00 PM
201853144	101.0038	60.977141	-149.4787	7100	10/31/201	2018	October	31	Wednesda	1:00 PM	SEWARD HIGHWAY (SEWARD HIGHWAY)		BIRD CREEK	No	Suspected Serious Injury	Motor Veh	Front-To-Front	Head-On	On Roadw	Clear	Ice/Frost	Daylight	Southbound	1:07:00 PM
201854328	103.0369	60.984688	-149.5307	7756	12/23/201	2018	December	23	Sunday	10:00 AM	SEWARD HIGHWAY (SEWARD HIGHWAY)		INDIAN ROAD	No	No Apparent Injury	Motor Veh	Angle	Head-On	On Roadsi	Clear	Ice/Frost	Daylight	Northbound	10:16:00 AM
201857905	102.3539	60.986575	-149.5122	7100	12/15/201	2018	December	15	Saturday	1:00 AM	SEWARD HIGHWAY (SEWARD HIGHWAY)		INDIAN ROAD	No	Suspected Minor Injury	Embankm	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Cloudy	Snow	Dark - Not	Northbound	1:52:00 AM
201853146	102.9766	60.985229	-149.5293	7756	11/14/201	2018	November	14	Wednesda	10:00 AM	SEWARD HIGHWAY (SEWARD HIGHWAY)		INDIAN VALLEY ROAD	No	Suspected Minor Injury	Overturn/I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Fog/Smog	Ice/Frost	Daylight	Northbound	10:11:00 AM
201718339	99.0159	60.961525	-149.4310	7101	6/18/2017	2017	June	18	Sunday	6:00 PM	SEWARD HIGHWAY (SEWARD HIGHWAY)		MILE 100	No	No Apparent Injury	Motor Veh	Sideswipe - Same Direction	Sideswipe	On Roadw	Clear	Dry	Daylight	Northbound	6:35:00 PM
201853140	104.546	60.984357	-149.574	7756	10/29/201	2018	October	29	Monday	12:00 PM	SEWARD HIGHWAY (SEWARD HIGHWAY)		MILE 105.5	No	Possible Injury	Motor Veh	Front-To-Front	Head-On	On Roadw	Cloudy	Ice/Frost	Daylight	Northbound	12:20:00 PM
201853440	106.9093	60.996420	-149.6327	7756	12/4/2018	2018	December	4	Tuesday	8:00 PM	SEWARD HIGHWAY (SEWARD HIGHWAY)		MILE 108	Yes	No Apparent Injury	Guardrail I	Not a Collision with a Motor Vehicle In-Transport	Single Vehicle Run-Off-I	On Roadsi	Clear	Wet	Dark - Not	Southbound	8:01:00 PM
201722849	109.0959	61.006297	-149.6921	-792281627	19/2017	2017	July	19	Wednesda	7:00 PM	SEWARD HWY		BELUGA POINT	Yes	No Apparent Injury	Motor Veh	Front-To-Rear	Angle - Left Turning	On Roadw	Clear	Unknown	Daylight	Northbound	7:30:00 PM

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Appendix B. Predicted Crash Results

Contents:

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NCHRP 17-62 Crash Prediction Models							
Site Type	**Severity**	**Model**	**a**	**b**	**c**	**d**	
Two Lane Rural Highway (2U) Segments	Total Crashes (KABCO)	$AADT^c * L^d * 365 * 10^a * e^b$	-6.0000	-0.4530	0.9270	1.0000	Table 3-4
Two Lane Rural Highway (2U) Segments	Fatal and Injuries (KABC)	$AADT^c * L^d * 365 * 10^a * e^b$	-6.0000	-1.0900	0.9770	1.0000	Table 3-4
Two Lane Rural Highway – 3-Legged Stop Controlled Intersections	Total Crashes (KABCO)	$\exp(a + (b * Ln(AADT_{maj})) + (c * Ln(AADT_{min})$	-7.924	0.656	0.295	—	Table 3-14
Two Lane Rural Highway Intersections – 3-Legged Stop Controlled Intersections	Fatal and Injuries (KABC)	$\exp(a + (b * Ln(\ 〚AADT〛\_maj\ )) + (c * Ln(\ 〚AADT〛\_min)$	-9.628	0.725	0.312	—	Table 3-14
Two Lane Rural Highway – 4-Legged Stop Controlled Intersections	Total Crashes (KABCO)	$\exp(a + (b * Ln(\ 〚AADT〛\_maj\ )) + (c * Ln(\ 〚AADT〛\_min)$	-6.620	0.451	0.339	—	Table 3-16
Two Lane Rural Highway Intersections – 4-Legged Stop Controlled Intersections	Fatal and Injuries (KABC)	$\exp(a + (d * Ln(\ 〚AADT〛\_total\ ))$	-8.747	—	—	0.825	Table 3-16
Multi-lane Rural Highway – Divided (4D) Segments	Total Crashes (KABCO)	$\exp\ 〚(a + (b * Ln(AADT)) + Ln(L\hat{}d\ 〛)$	-9.644	1.050	0.669	1.000	Table 4-11
Multi-lane Rural Highway – Divided (4D) Segments	Fatal and Major Injuries (KAB)	$\exp\ 〚(a + (b * Ln(AADT)) + Ln(L\hat{}d\ 〛)$	-10.690	0.983	2.090	1.000	Table 4-11

NCHRP 17-62 Crash Prediction Models							
Site Type	**Severity**	**Model**	**a**	**b**	**c**	**d**	
Multilane Rural Highway – Divided (4D) Segments	Fatal and Injuries (KABC)	$\exp((a + (b * Ln(AADT)) + Ln(L^d)))$	-10.817	-1.064	1.023	1.000	Table 4-11
Multilane Rural Highway – Divided 3-Legged Stop Controlled Intersections	Total Crashes (KABCO)	$\exp((a + (b * Ln(AADT_{maj})) + (c * Ln(AADT_{min}))))$	-9.118	0.776	0.270	—	Table 4-23
Multilane Rural Highway – Divided 3-Legged Stop Controlled Intersections	Fatal and Major Injuries (KAB)	$\exp((a + (b * Ln(AADT_{maj})) + (c * Ln(AADT_{min}))))$	-9.208	0.546	0.357	—	Table 4-23
Multilane Rural Highway – Divided 3-Legged Stop Controlled Intersections	Fatal and Injuries (KABC)	$\exp((a + (b * Ln(AADT_{maj})) + (c * Ln(AADT_{min}))))$	-9.392	0.659	0.346	—	Table 4-23
Multilane Rural Highway – Divided 4-Legged Stop Controlled Intersections	Total Crashes (KABCO)	$\exp((a + (b * Ln(AADT_{maj})) + (c * Ln(AADT_{min}))))$	-9.561	0.773	0.383	—	Table 4-24
Multilane Rural Highway – Divided 4-Legged Stop Controlled Intersections	Fatal and Major Injuries (KAB)	$\exp((a + (b * Ln(AADT_{maj})) + (c * Ln(AADT_{min}))))$	-8.843	0.441	0.509	—	Table 4-24

NCHRP 17-62 Crash Prediction Models							
Site Type	**Severity**	**Model**	**a**	**b**	**c**	**d**	
Multilane Rural Highway – Divided 4-Legged Stop Controlled Intersections	Fatal and Injuries (KABC)	$\exp\ (a + (b * Ln(\ [\![AADT]\!]\_(maj)\ )) + (c * Ln(\ [\![AADT]\!]\_\min\ ))$	-10.411	0.711	0.475	—	Table 4-24

Appendix B

Table of Contents

Table 1: No-Build Predicted Crash Results Summary

Evaluated Length (mi)	18.8
Average Future Road AADT (vpd)	8,175
Predicted Crashes	
Total Crashes	1,122
Fatal and Injury Crashes	378 (34%)
Property-Damage-Only Crashes	744 (66%)
Predicted Crash Density	
Crash Rate (crashes/mi/yr)	2.9843
FI Crash Rate (crashes/mi/yr)	1.006
PDO Crash Rate (crashes/mi/yr)	1.9783
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	1,121.87
Travel Crash Rate (crashes/million veh-mi)	1
Travel FI Crash Rate (crashes/million veh-mi)	0.34
Travel PDO Crash Rate (crashes/million veh-mi)	0.66

Table 2: Concept 2 Predicted Crash Results Summary

Evaluated Length (mi)	**18.7**
Average Future Road AADT (vpd)	**8,212**
Predicted Crashes	
Total Crashes	**711**
Fatal and Injury Crashes	**239 (34%)**
Property-Damage-Only Crashes	**472 (66%)**
Predicted Crash Density	
Crash Rate (crashes/mi/yr)	**1.8978**
FI Crash Rate (crashes/mi/yr)	**0.6387**
PDO Crash Rate (crashes/mi/yr)	**1.2591**

Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**1,122.71**
Travel Crash Rate (crashes/million veh-mi)	**0.63**
Travel FI Crash Rate (crashes/million veh-mi)	**0.21**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.42**

Table 3: Concept 2-M Predicted Safety Results Summary

Evaluated Length (mi)	**18.7**
Average Future Road AADT (vpd)	**8,208**
Predicted Crashes	
Total Crashes	**704**
Fatal and Injury Crashes	**237 (34%)**
Property-Damage-Only Crashes	**467 (66%)**
Predicted Crash Density	
Crash Rate (crashes/mi/yr)	**1.8804**
FI Crash Rate (crashes/mi/yr)	**0.6329**
PDO Crash Rate (crashes/mi/yr)	**1.2475**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**1,121.84**
Travel Crash Rate (crashes/million veh-mi)	**0.63**
Travel FI Crash Rate (crashes/million veh-mi)	**0.21**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.42**

Table 4: Concept 7 Predicted Crash Results Summary

Evaluated Length (mi)	**18.7**
Average Future Road AADT (vpd)	**8,209**
Predicted Crashes	
Total Crashes	**370**
Fatal and Injury Crashes	**119 (32%)**
Fatal and Serious Injury Crashes	**70 (19%)**
Property-Damage-Only Crashes	**251 (68%)**
Predicted Crash Density	
Crash Rate (crashes/mi/yr)	**0.9885**
FI Crash Rate (crashes/mi/yr)	**0.3188**
FI no/C Crash Rate (crashes/mi/yr)	**0.186**
PDO Crash Rate (crashes/mi/yr)	**0.6697**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**1,121.27**
Travel Crash Rate (crashes/million veh-mi)	**0.33**
Travel FI Crash Rate (crashes/million veh-mi)	**0.11**
Travel FI no/C Crash Rate (crashes/million veh-mi)	**0.06**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.22**

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Appendix C. Highway Capacity Software Results and Design Designation

Contents:

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HCS Two-Lane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	11/13/24
Agency	HDR	Analysis Year	2022
Jurisdiction	AK DOT&PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Existing - North Bound	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	4200
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	769	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.51

Intermediate Results

Segment Vertical Class	3	Free-Flow Speed, mi/h	60.3
Speed Slope Coefficient (m)	6.91339	Speed Power Coefficient (p)	1.00431
PF Slope Coefficient (m)	-1.05511	PF Power Coefficient (p)	0.82234
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	887	-	-	55.7
2	Horizontal Curve	258	2562	3.8	55.7
3	Tangent	402	-	-	55.7
4	Horizontal Curve	465	1957	4.4	55.7
5	Tangent	1410	-	-	55.7
6	Horizontal Curve	778	1978	4.4	55.7

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	438	331
Percentage of Heavy Vehicles (HV%), %	3.32	14.87
Initial Average Speed (Sint), mi/h	59.1	57.5
Average Speed at Midpoint (SPLmid), mi/h	60.9	55.7
Percent Followers at Midpoint (PFPLmid), %	45.8	32.8

Vehicle Results

Average Speed, mi/h	55.7	Percent Followers, %	57.3
Segment Travel Time, minutes	0.86	Follower Density (FD), followers/mi/ln	7.9
Follower Density Mid-Point, followers/mi/ln	2.6	Vehicle LOS	B

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	14100
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.5

Demand and Capacity

Directional Demand Flow Rate, veh/h	769	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.45

Intermediate Results

Segment Vertical Class	4	Free-Flow Speed, mi/h	58.7
Speed Slope Coefficient (m)	11.15511	Speed Power Coefficient (p)	0.33950
PF Slope Coefficient (m)	-2.12504	PF Power Coefficient (p)	0.73100
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	13.0
%Improvement to Percent Followers	10.4	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	19	1978	4.4	49.0
2	Tangent	2353	-	-	49.0
3	Horizontal Curve	568	4862	2.4	49.0
4	Tangent	3971	-	-	49.0
5	Horizontal Curve	2977	5752	2.0	49.0
6	Tangent	1105	-	-	49.0
7	Horizontal Curve	1799	1962	4.4	49.0
8	Tangent	464	-	-	49.0
9	Horizontal Curve	844	2865	3.6	49.0

Vehicle Results

Average Speed, mi/h	49.0	Percent Followers, %	82.7
Segment Travel Time, minutes	3.27	Follower Density (FD), followers/mi/ln	11.6
Vehicle LOS	D		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1700
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	769	Opposing Demand Flow Rate, veh/h	889
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.45

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.80662	Speed Power Coefficient (p)	0.44430
PF Slope Coefficient (m)	-1.34471	PF Power Coefficient (p)	0.76670
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	8.7
%Improvement to Percent Followers	9.6	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	435	2865	3.6	59.2
2	Tangent	1265	-	-	59.2

Vehicle Results

Average Speed, mi/h	59.2	Percent Followers, %	66.7
Segment Travel Time, minutes	0.33	Follower Density (FD), followers/mi/ln	7.8
Vehicle LOS	C		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3265
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	8.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	769	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.45

Intermediate Results

Segment Vertical Class	3	Free-Flow Speed, mi/h	59.1
Speed Slope Coefficient (m)	6.83368	Speed Power Coefficient (p)	0.59655
PF Slope Coefficient (m)	-1.36963	PF Power Coefficient (p)	0.74963
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	9.7
%Improvement to Percent Followers	8.3	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	53.7
2	Horizontal Curve	2338	4576	2.6	53.7
3	Tangent	263	-	-	53.7

Vehicle Results

Average Speed, mi/h	53.7	Percent Followers, %	67.5
Segment Travel Time, minutes	0.69	Follower Density (FD), followers/mi/ln	8.9
Vehicle LOS	D		

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3830
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	783	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.46

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	60.9
Speed Slope Coefficient (m)	4.40172	Speed Power Coefficient (p)	0.46800
PF Slope Coefficient (m)	-1.35782	PF Power Coefficient (p)	0.74651
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	9.3
%Improvement to Percent Followers	6.8	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	647	-	-	57.2
2	Horizontal Curve	1142	13000	2.0	57.2
3	Tangent	394	-	-	57.2
4	Horizontal Curve	1647	1943	4.4	57.2

Vehicle Results

Average Speed, mi/h	57.2	Percent Followers, %	67.7
Segment Travel Time, minutes	0.76	Follower Density (FD), followers/mi/ln	8.6
Vehicle LOS	D		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2506
Lane Width, ft	12	Shoulder Width, ft	6

Speed Limit, mi/h	55	Access Point Density, pts/mi	4.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	786	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.46

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.4
Speed Slope Coefficient (m)	3.85461	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33091	PF Power Coefficient (p)	0.75669
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	9.1
%Improvement to Percent Followers	6.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	132	1943	4.4	58.1
2	Tangent	1419	-	-	58.1
3	Horizontal Curve	955	1270	5.6	58.1

Vehicle Results

Average Speed, mi/h	58.1	Percent Followers, %	67.0
Segment Travel Time, minutes	0.49	Follower Density (FD), followers/mi/ln	8.5
Vehicle LOS	D		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1200
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	786	Opposing Demand Flow Rate, veh/h	921
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.46

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.3
Speed Slope Coefficient (m)	3.74558	Speed Power Coefficient (p)	0.44212
PF Slope Coefficient (m)	-1.37543	PF Power Coefficient (p)	0.75633
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	9.2
%Improvement to Percent Followers	5.6	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Horizontal Curve	15	1270	5.6	58.2
2	Tangent	1185	-	-	58.2

Vehicle Results

Average Speed, mi/h	58.2	Percent Followers, %	68.2
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	8.7
Vehicle LOS	D		

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3001
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	786	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.46

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.0
Speed Slope Coefficient (m)	3.89382	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.31192	PF Power Coefficient (p)	0.76194
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	98	-	-	58.6
2	Horizontal Curve	460	2083	4.4	58.6
3	Tangent	459	-	-	58.6
4	Horizontal Curve	535	2083	4.4	58.6
5	Tangent	1014	-	-	58.6
6	Horizontal Curve	380	1763	4.8	58.5
7	Tangent	55	-	-	58.6

Vehicle Results

Average Speed, mi/h	58.6	Percent Followers, %	66.4
Segment Travel Time, minutes	0.58	Follower Density (FD), followers/mi/ln	8.9
Vehicle LOS	D		

Segment 9

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3000

Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	786	Opposing Demand Flow Rate, veh/h	921
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.46

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.0
Speed Slope Coefficient (m)	3.80692	Speed Power Coefficient (p)	0.44212
PF Slope Coefficient (m)	-1.30516	PF Power Coefficient (p)	0.77832
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	494	-	-	58.8
2	Horizontal Curve	645	1637	5.0	58.5
3	Tangent	1049	-	-	58.8
4	Horizontal Curve	407	1144	5.8	58.5
5	Tangent	405	-	-	58.8

Vehicle Results

Average Speed, mi/h	58.7	Percent Followers, %	66.1
Segment Travel Time, minutes	0.58	Follower Density (FD), followers/mi/ln	8.9
Vehicle LOS	D		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	7199
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	786	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.46

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.5
Speed Slope Coefficient (m)	3.91065	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27764	PF Power Coefficient (p)	0.75969
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	535	-	-	58.2
2	Horizontal Curve	951	2869	3.6	58.2
3	Tangent	682	-	-	58.2
4	Horizontal Curve	658	1207	5.6	58.2
5	Tangent	1290	-	-	58.2
6	Horizontal Curve	713	1432	5.2	58.2
7	Tangent	548	-	-	58.2
8	Horizontal Curve	1156	996	6.0	52.6
9	Tangent	583	-	-	58.2
10	Horizontal Curve	83	996	6.0	52.6

Vehicle Results

Average Speed, mi/h	57.2	Percent Followers, %	65.5
Segment Travel Time, minutes	1.43	Follower Density (FD), followers/mi/ln	9.0
Vehicle LOS	D		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5500
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	786	Opposing Demand Flow Rate, veh/h	921
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.46

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.7
Speed Slope Coefficient (m)	3.81947	Speed Power Coefficient (p)	0.44212
PF Slope Coefficient (m)	-1.27342	PF Power Coefficient (p)	0.78218
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	351	996	6.0	52.6
2	Tangent	2796	-	-	58.5
3	Horizontal Curve	405	2865	3.6	58.5
4	Tangent	603	-	-	58.5
5	Horizontal Curve	712	5289	2.2	58.5

6	Tangent	633	-	-	58.5

Vehicle Results

Average Speed, mi/h	58.1	Percent Followers, %	65.2
Segment Travel Time, minutes	1.08	Follower Density (FD), followers/mi/ln	8.8
Vehicle LOS	D		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1509
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.5

Demand and Capacity

Directional Demand Flow Rate, veh/h	786	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.46

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.5
Speed Slope Coefficient (m)	3.84822	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.37033	PF Power Coefficient (p)	0.74421
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	687	-	-	58.3
2	Horizontal Curve	822	1042	5.8	52.6

Vehicle Results

Average Speed, mi/h	55.2	Percent Followers, %	68.2
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	9.7
Vehicle LOS	D		

Segment 13

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1942
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.1
Speed Slope Coefficient (m)	3.82987	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.35404	PF Power Coefficient (p)	0.74978
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	10.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	171	1042	5.8	52.6
2	Tangent	319	-	-	57.7
3	Horizontal Curve	1128	996	6.0	52.6
4	Tangent	324	-	-	57.7

Vehicle Results

Average Speed, mi/h	54.3	Percent Followers, %	68.9
Segment Travel Time, minutes	0.41	Follower Density (FD), followers/mi/ln	10.4
Vehicle LOS	D		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	650
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	8.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.4
Speed Slope Coefficient (m)	3.78233	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39232	PF Power Coefficient (p)	0.73809
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	10.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	127	-	-	57.1
2	Horizontal Curve	523	996	6.0	52.6

Vehicle Results

Average Speed, mi/h	53.4	Percent Followers, %	70.0

Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	10.7
Vehicle LOS	D		

Segment 15

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1400
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	942
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.5
Speed Slope Coefficient (m)	3.75881	Speed Power Coefficient (p)	0.44075
PF Slope Coefficient (m)	-1.37020	PF Power Coefficient (p)	0.75761
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	212	996	6.0	52.6
2	Tangent	1188	-	-	58.2

Vehicle Results

Average Speed, mi/h	57.4	Percent Followers, %	69.2
Segment Travel Time, minutes	0.28	Follower Density (FD), followers/mi/ln	9.9
Vehicle LOS	D		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1200
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.89208	Speed Power Coefficient (p)	0.41674

PF Slope Coefficient (m)	-1.37281	PF Power Coefficient (p)	0.74249
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	773	-	-	59.0
2	Horizontal Curve	427	1432	5.2	58.5

Vehicle Results

Average Speed, mi/h	58.8	Percent Followers, %	69.4
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	9.7
Vehicle LOS	D		

Segment 17

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2999
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	942
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.0
Speed Slope Coefficient (m)	3.81047	Speed Power Coefficient (p)	0.44075
PF Slope Coefficient (m)	-1.30590	PF Power Coefficient (p)	0.77764
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	89	1432	5.2	58.5
2	Tangent	67	-	-	58.7
3	Horizontal Curve	1570	4584	2.6	58.7
4	Tangent	1273	-	-	58.7

Vehicle Results

Average Speed, mi/h	58.7	Percent Followers, %	67.3
Segment Travel Time, minutes	0.58	Follower Density (FD), followers/mi/ln	9.4
Vehicle LOS	D		

Segment 18

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1800
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.9

Demand and Capacity			
Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	60.9
Speed Slope Coefficient (m)	3.82077	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.36143	PF Power Coefficient (p)	0.74753
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	545	-	-	57.6
2	Horizontal Curve	1255	1349	5.4	57.6

Vehicle Results			
Average Speed, mi/h	57.6	Percent Followers, %	69.1
Segment Travel Time, minutes	0.36	Follower Density (FD), followers/mi/ln	9.8
Vehicle LOS	D		

Segment 19

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	2700
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	942
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	61.9
Speed Slope Coefficient (m)	3.80379	Speed Power Coefficient (p)	0.44075
PF Slope Coefficient (m)	-1.31400	PF Power Coefficient (p)	0.77537
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	133	1349	5.4	58.5
2	Tangent	182	-	-	58.6
3	Horizontal Curve	769	986	6.0	52.6
4	Tangent	1616	-	-	58.6

Vehicle Results

Average Speed, mi/h	56.9	Percent Followers, %	67.6
Segment Travel Time, minutes	0.54	Follower Density (FD), followers/mi/ln	9.7
Vehicle LOS	D		

Segment 20

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2201
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.8
Speed Slope Coefficient (m)	3.87455	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33695	PF Power Coefficient (p)	0.75468
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	209	-	-	58.4
2	Horizontal Curve	539	2433	4.0	58.4
3	Tangent	261	-	-	58.4
4	Horizontal Curve	500	1070	5.8	58.4
5	Tangent	273	-	-	58.4
6	Horizontal Curve	419	2263	4.2	58.4

Vehicle Results

Average Speed, mi/h	58.4	Percent Followers, %	68.4
Segment Travel Time, minutes	0.43	Follower Density (FD), followers/mi/ln	9.6
Vehicle LOS	D		

Segment 21

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2300
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	942
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.8
Speed Slope Coefficient (m)	3.79406	Speed Power Coefficient (p)	0.44075
PF Slope Coefficient (m)	-1.32692	PF Power Coefficient (p)	0.77149
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	98	2263	4.2	58.6
2	Tangent	685	-	-	58.6
3	Horizontal Curve	390	2489	4.0	58.6
4	Tangent	1127	-	-	58.6

Vehicle Results

Average Speed, mi/h	58.6	Percent Followers, %	68.0
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	9.5
Vehicle LOS	D		

Segment 22

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2299
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.8
Speed Slope Coefficient (m)	3.87737	Speed Power Coefficient (p)	0.41674

PF Slope Coefficient (m)	-1.33326	PF Power Coefficient (p)	0.75580
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	610	-	-	58.5
2	Horizontal Curve	580	1402	5.2	58.5
3	Tangent	726	-	-	58.5
4	Horizontal Curve	383	2106	4.4	58.5

Vehicle Results

Average Speed, mi/h	58.5	Percent Followers, %	68.3
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	9.6
Vehicle LOS	D		

Segment 23

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1200
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	942
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.80876	Speed Power Coefficient (p)	0.44075
PF Slope Coefficient (m)	-1.36725	PF Power Coefficient (p)	0.75814
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	250	2106	4.4	59.1
2	Tangent	950	-	-	59.1

Vehicle Results

Average Speed, mi/h	59.1	Percent Followers, %	69.2
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	9.6
Vehicle LOS	D		

Segment 24

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1600
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.89728	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.35708	PF Power Coefficient (p)	0.74772
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	289	-	-	59.0
2	Horizontal Curve	371	2836	3.6	59.0
3	Tangent	391	-	-	59.0
4	Horizontal Curve	538	1226	5.6	58.5
5	Tangent	11	-	-	59.0

Vehicle Results

Average Speed, mi/h	58.8	Percent Followers, %	69.0
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	9.6
Vehicle LOS	D		

Segment 25

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2750
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	942
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.83157	Speed Power Coefficient (p)	0.44075

PF Slope Coefficient (m)	-1.30873	PF Power Coefficient (p)	0.77698
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	516	-	-	59.1
2	Horizontal Curve	1064	1432	5.2	58.5
3	Tangent	1170	-	-	59.1

Vehicle Results

Average Speed, mi/h	58.9	Percent Followers, %	67.4
Segment Travel Time, minutes	0.53	Follower Density (FD), followers/mi/ln	9.4
Vehicle LOS	D		

Segment 26

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	7349
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.9
Speed Slope Coefficient (m)	3.93222	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27441	PF Power Coefficient (p)	0.75996
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	647	-	-	58.4
2	Horizontal Curve	468	1129	5.8	58.4
3	Tangent	428	-	-	58.4
4	Horizontal Curve	935	1911	4.6	58.4
5	Tangent	873	-	-	58.4
6	Horizontal Curve	561	1273	5.6	58.4
7	Tangent	791	-	-	58.4
8	Horizontal Curve	528	1155	5.8	58.4
9	Tangent	438	-	-	58.4

10	Horizontal Curve	572	1687	4.8	58.4
11	Tangent	1108	-	-	58.4

Vehicle Results

Average Speed, mi/h	58.4	Percent Followers, %	66.6
Segment Travel Time, minutes	1.43	Follower Density (FD), followers/mi/ln	9.3
Vehicle LOS	D		

Segment 27

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	1899
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.0
Speed Slope Coefficient (m)	3.83751	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33009	PF Power Coefficient (p)	0.75701
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1163	-	-	57.7
2	Horizontal Curve	548	1768	4.8	57.7
3	Tangent	188	-	-	57.7

Vehicle Results

Average Speed, mi/h	57.7	Percent Followers, %	68.2
Segment Travel Time, minutes	0.37	Follower Density (FD), followers/mi/ln	9.7
Follower Density Mid-Point, followers/mi/ln	0.0	Vehicle LOS	D

Segment 28

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2026
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	820	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.1
Speed Slope Coefficient (m)	3.83391	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.35013	PF Power Coefficient (p)	0.75098
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	107	-	-	57.8
2	Horizontal Curve	81	500	4.6	46.1
3	Tangent	717	-	-	57.8
4	Horizontal Curve	499	8261	0.0	57.8
5	Tangent	622	-	-	57.8

Vehicle Results

Average Speed, mi/h	57.3	Percent Followers, %	68.8
Segment Travel Time, minutes	0.40	Follower Density (FD), followers/mi/ln	9.8
Vehicle LOS	D		

Segment 29

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3524
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.5

Demand and Capacity

Directional Demand Flow Rate, veh/h	975	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.57

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.3
Speed Slope Coefficient (m)	3.86372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.30695	PF Power Coefficient (p)	0.76297
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1563	-	-	57.6

2	Horizontal Curve	1135	3769	3.0	57.6
3	Tangent	826	-	-	57.6

Vehicle Results

Average Speed, mi/h	57.6	Percent Followers, %	72.3
Segment Travel Time, minutes	0.69	Follower Density (FD), followers/mi/ln	12.2
Vehicle LOS	E		

Segment 30

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	6250
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	975	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.65

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	6.09102	Speed Power Coefficient (p)	1.01612
PF Slope Coefficient (m)	-1.09707	PF Power Coefficient (p)	0.87474
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2590	-	-	57.1
2	Horizontal Curve	297	6515	2.0	57.1
3	Tangent	19	-	-	57.1
4	Horizontal Curve	3111	5664	2.2	57.1
5	Tangent	233	-	-	57.1

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	538	437
Percentage of Heavy Vehicles (HV%), %	3.32	14.43
Initial Average Speed (Sint), mi/h	60.2	60.0
Average Speed at Midpoint (SPLmid), mi/h	62.0	58.2
Percent Followers at Midpoint (PFPLmid), %	49.3	40.8

Vehicle Results

Average Speed, mi/h	57.1	Percent Followers, %	65.8
Segment Travel Time, minutes	1.24	Follower Density (FD), followers/mi/ln	11.2

Follower Density Mid-Point, followers/ mi/ln	3.7	Vehicle LOS	B

Segment 31

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2156
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	975	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.57

Intermediate Results

Segment Vertical Class	3	Free-Flow Speed, mi/h	59.9
Speed Slope Coefficient (m)	6.56157	Speed Power Coefficient (p)	0.59169
PF Slope Coefficient (m)	-1.40350	PF Power Coefficient (p)	0.74917
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	13.5
%Improvement to Percent Followers	18.0	%Improvement to Speed	2.0

Subsegment Data

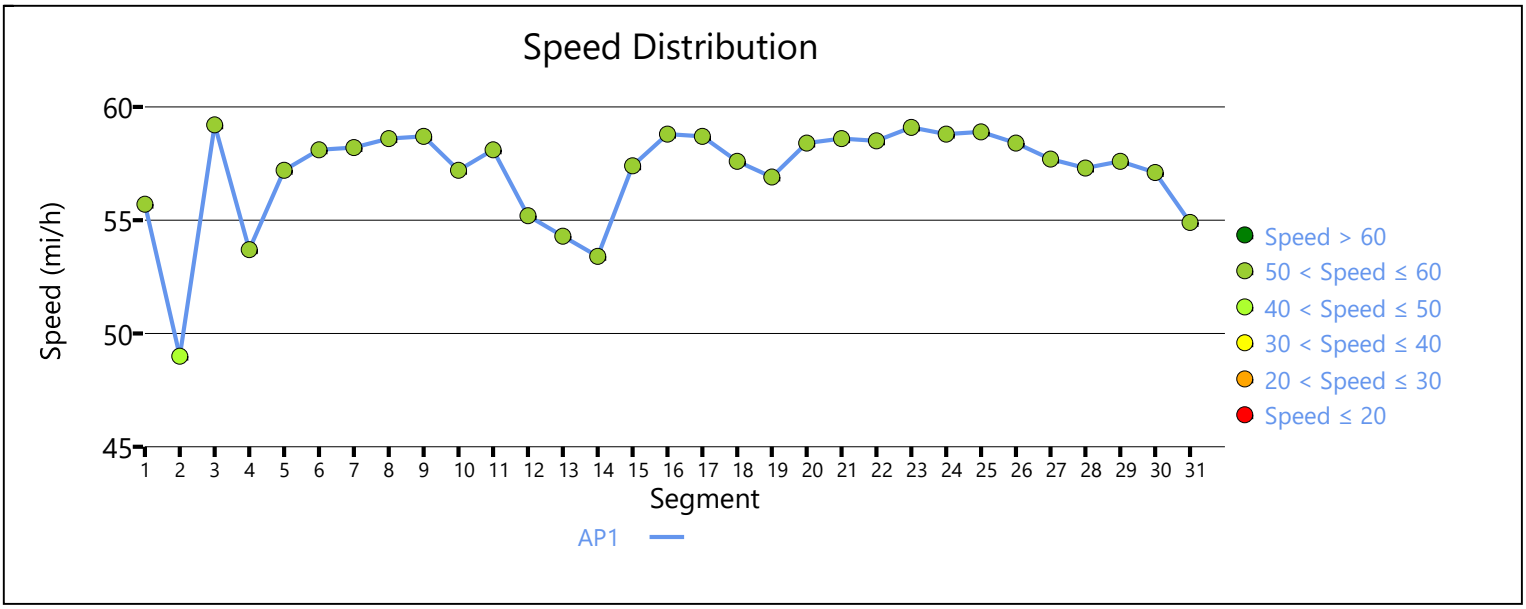
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	986	-	-	53.8
2	Horizontal Curve	670	20960	0.0	53.8
3	Tangent	500	-	-	53.8

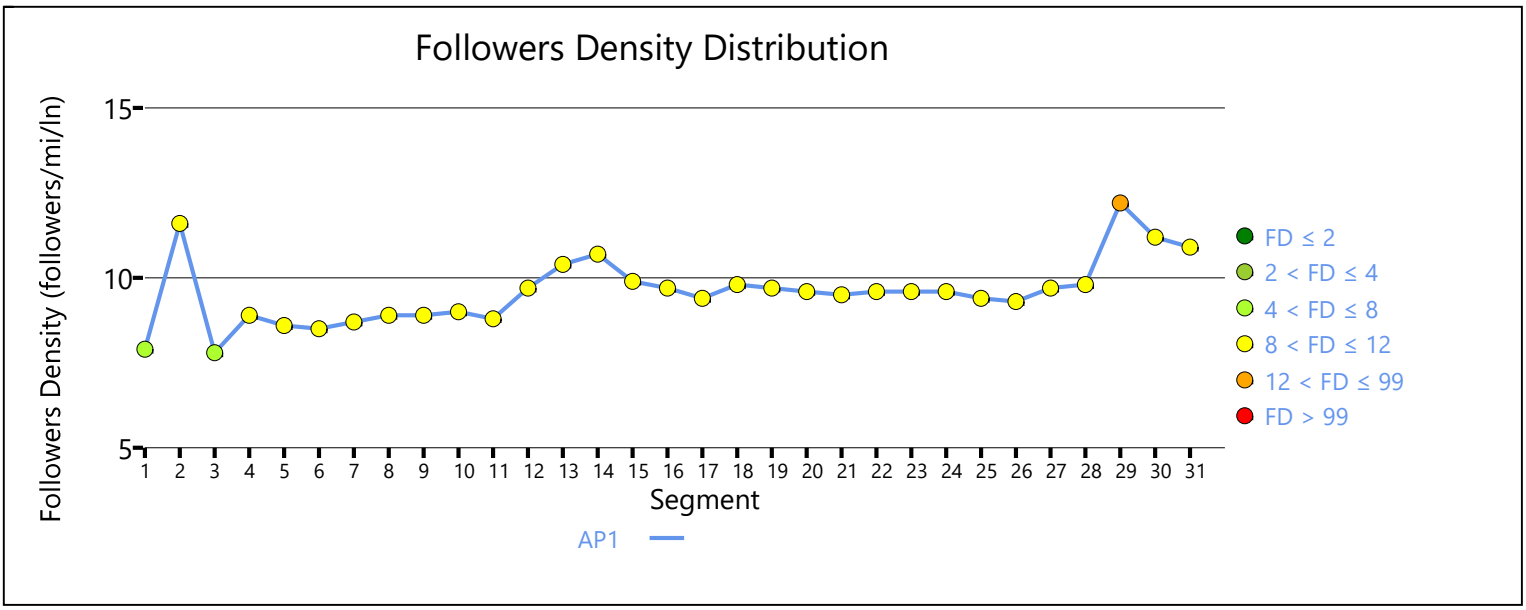
Vehicle Results

Average Speed, mi/h	54.9	Percent Followers, %	74.8
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	10.9
Vehicle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	3840	5.59	9.1	D





HCS Two-Lane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	11/14/24
Agency	HDR	Analysis Year	2022
Jurisdiction	AK DOT&PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Existing - Southbound	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2156
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	1085	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	3	Free-Flow Speed, mi/h	59.9
Speed Slope Coefficient (m)	6.56731	Speed Power Coefficient (p)	0.59192
PF Slope Coefficient (m)	-1.40336	PF Power Coefficient (p)	0.74925
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	15.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	500	-	-	53.4
2	Horizontal Curve	670	20960	0.0	53.4
3	Tangent	986	-	-	53.4

Vehicle Results

Average Speed, mi/h	53.4	Percent Followers, %	77.5
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	15.7
Vehicle LOS	E		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	6250
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1085	Opposing Demand Flow Rate, veh/h	975
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.87479	Speed Power Coefficient (p)	0.43867
PF Slope Coefficient (m)	-1.26636	PF Power Coefficient (p)	0.78052
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	233	-	-	58.6
2	Horizontal Curve	3111	5664	2.2	58.6
3	Tangent	19	-	-	58.6
4	Horizontal Curve	297	6515	2.0	58.6
5	Tangent	2590	-	-	58.6

Vehicle Results

Average Speed, mi/h	58.6	Percent Followers, %	74.1
Segment Travel Time, minutes	1.21	Follower Density (FD), followers/mi/ln	13.7
Vehicle LOS	E		

Segment 3

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3524
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1085	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.7
Speed Slope Coefficient (m)	3.88405	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.30359	PF Power Coefficient (p)	0.76390
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	826	-	-	57.8
2	Horizontal Curve	1135	3769	3.0	57.8
3	Tangent	1563	-	-	57.8

Vehicle Results

Average Speed, mi/h	57.8	Percent Followers, %	75.0
Segment Travel Time, minutes	0.69	Follower Density (FD), followers/mi/ln	14.1
Vehicle LOS	E		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2026
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	7.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.5
Speed Slope Coefficient (m)	3.79868	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.35609	PF Power Coefficient (p)	0.74946
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	622	-	-	56.9
2	Horizontal Curve	499	8261	0.0	56.9
3	Tangent	717	-	-	56.9
4	Horizontal Curve	81	500	4.6	46.0
5	Tangent	107	-	-	56.9

Vehicle Results

Average Speed, mi/h	56.5	Percent Followers, %	72.7
Segment Travel Time, minutes	0.41	Follower Density (FD), followers/mi/ln	12.1
Vehicle LOS	E		

Segment 5

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	1899

Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.0
Speed Slope Coefficient (m)	3.83751	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33009	PF Power Coefficient (p)	0.75701
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	188	-	-	57.5
2	Horizontal Curve	548	1768	4.8	57.5
3	Tangent	1163	-	-	57.5

Vehicle Results

Average Speed, mi/h	57.5	Percent Followers, %	72.0
Segment Travel Time, minutes	0.38	Follower Density (FD), followers/mi/ln	11.8
Follower Density Mid-Point, followers/mi/ln	0.0	Vehicle LOS	D

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	7349
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.9
Speed Slope Coefficient (m)	3.93222	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27441	PF Power Coefficient (p)	0.75996
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1108	-	-	58.2
2	Horizontal Curve	572	1687	4.8	58.2
3	Tangent	438	-	-	58.2
4	Horizontal Curve	528	1155	5.8	58.2
5	Tangent	791	-	-	58.2
6	Horizontal Curve	561	1273	5.6	58.2
7	Tangent	873	-	-	58.2
8	Horizontal Curve	935	1911	4.6	58.2
9	Tangent	428	-	-	58.2
10	Horizontal Curve	468	1129	5.8	58.2
11	Tangent	647	-	-	58.2

Vehicle Results

Average Speed, mi/h	58.2	Percent Followers, %	70.4
Segment Travel Time, minutes	1.43	Follower Density (FD), followers/mi/ln	11.4
Vehicle LOS	D		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1550
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	820
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.79175	Speed Power Coefficient (p)	0.44939
PF Slope Coefficient (m)	-1.34923	PF Power Coefficient (p)	0.76643
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1170	-	-	58.9
2	Horizontal Curve	380	1432	5.2	58.3

Vehicle Results

Average Speed, mi/h	58.8	Percent Followers, %	72.4
Segment Travel Time, minutes	0.30	Follower Density (FD), followers/mi/ln	11.6

Vehicle LOS	D		

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1500
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.89548	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.36236	PF Power Coefficient (p)	0.74597
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	684	1432	5.2	58.3
2	Tangent	527	-	-	58.8
3	Horizontal Curve	289	1226	5.6	58.3

Vehicle Results

Average Speed, mi/h	58.5	Percent Followers, %	72.8
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	11.7
Vehicle LOS	D		

Segment 9

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1800
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	820
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.79608	Speed Power Coefficient (p)	0.44939

PF Slope Coefficient (m)	-1.33711	PF Power Coefficient (p)	0.77049
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	249	1226	5.6	58.3
2	Tangent	391	-	-	58.9
3	Horizontal Curve	371	2836	3.6	58.9
4	Tangent	789	-	-	58.9

Vehicle Results

Average Speed, mi/h	58.8	Percent Followers, %	72.1
Segment Travel Time, minutes	0.35	Follower Density (FD), followers/mi/ln	11.5
Vehicle LOS	D		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2999
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.91818	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.30782	PF Power Coefficient (p)	0.76302
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	450	-	-	58.8
2	Horizontal Curve	633	2106	4.4	58.8
3	Tangent	726	-	-	58.8
4	Horizontal Curve	580	1402	5.2	58.3
5	Tangent	610	-	-	58.8

Vehicle Results

Average Speed, mi/h	58.7	Percent Followers, %	71.3
Segment Travel Time, minutes	0.58	Follower Density (FD), followers/mi/ln	11.4

Vehicle LOS	D		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2100
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	820
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.2
Speed Slope Coefficient (m)	3.73314	Speed Power Coefficient (p)	0.44939
PF Slope Coefficient (m)	-1.33413	PF Power Coefficient (p)	0.77154
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1127	-	-	57.7
2	Horizontal Curve	390	2489	4.0	57.7
3	Tangent	583	-	-	57.7

Vehicle Results

Average Speed, mi/h	57.7	Percent Followers, %	72.0
Segment Travel Time, minutes	0.41	Follower Density (FD), followers/mi/ln	11.8
Vehicle LOS	D		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	901
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.89208	Speed Power Coefficient (p)	0.41674

PF Slope Coefficient (m)	-1.37281	PF Power Coefficient (p)	0.74249
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	102	-	-	58.8
2	Horizontal Curve	517	2263	4.2	58.8
3	Tangent	273	-	-	58.8
4	Horizontal Curve	9	1070	5.8	58.3

Vehicle Results

Average Speed, mi/h	58.8	Percent Followers, %	73.1
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	11.7
Vehicle LOS	D		

Segment 13

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3300
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	820
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.6
Speed Slope Coefficient (m)	3.77398	Speed Power Coefficient (p)	0.44939
PF Slope Coefficient (m)	-1.29692	PF Power Coefficient (p)	0.78249
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	491	1070	5.8	58.1
2	Tangent	261	-	-	58.1
3	Horizontal Curve	539	2433	4.0	58.1
4	Tangent	1825	-	-	58.1
5	Horizontal Curve	184	986	6.0	52.5

Vehicle Results

Average Speed, mi/h	57.8	Percent Followers, %	71.0
Segment Travel Time, minutes	0.65	Follower Density (FD), followers/mi/ln	11.6

Vehicle LOS	D		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1900
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.7
Speed Slope Coefficient (m)	3.86442	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.34974	PF Power Coefficient (p)	0.75071
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	585	986	6.0	52.5
2	Tangent	182	-	-	58.1
3	Horizontal Curve	1133	1349	5.4	58.1

Vehicle Results

Average Speed, mi/h	56.4	Percent Followers, %	72.5
Segment Travel Time, minutes	0.38	Follower Density (FD), followers/mi/ln	12.1
Vehicle LOS	E		

Segment 15

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3100
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	820
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.6
Speed Slope Coefficient (m)	3.76877	Speed Power Coefficient (p)	0.44939

PF Slope Coefficient (m)	-1.30161	PF Power Coefficient (p)	0.78127
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	255	1349	5.4	58.1
2	Tangent	1818	-	-	58.1
3	Horizontal Curve	1027	4584	2.6	58.1

Vehicle Results

Average Speed, mi/h	58.1	Percent Followers, %	71.1
Segment Travel Time, minutes	0.61	Follower Density (FD), followers/mi/ln	11.5
Vehicle LOS	D		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	899
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.89208	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.37281	PF Power Coefficient (p)	0.74249
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	543	4584	2.6	58.8
2	Tangent	67	-	-	58.8
3	Horizontal Curve	289	1432	5.2	58.3

Vehicle Results

Average Speed, mi/h	58.6	Percent Followers, %	73.1
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	11.7
Vehicle LOS	D		

Segment 17

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	2401
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.2

Demand and Capacity			
Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	820
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	61.9
Speed Slope Coefficient (m)	3.77557	Speed Power Coefficient (p)	0.44939
PF Slope Coefficient (m)	-1.31840	PF Power Coefficient (p)	0.77654
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	227	1432	5.2	58.3
2	Tangent	1962	-	-	58.4
3	Horizontal Curve	212	996	6.0	52.5

Vehicle Results			
Average Speed, mi/h	57.9	Percent Followers, %	71.6
Segment Travel Time, minutes	0.47	Follower Density (FD), followers/mi/ln	11.7
Vehicle LOS	D		

Segment 18

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	650
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	8.1

Demand and Capacity			
Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	60.4
Speed Slope Coefficient (m)	3.78233	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39232	PF Power Coefficient (p)	0.73809
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.0

%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	523	996	6.0	52.5
2	Tangent	127	-	-	56.9

Vehicle Results

Average Speed, mi/h	53.3	Percent Followers, %	73.6
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	13.0
Vehicle LOS	E		

Segment 19

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1942
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	942	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.55

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.7
Speed Slope Coefficient (m)	3.86645	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.34773	PF Power Coefficient (p)	0.75134
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	324	-	-	58.1
2	Horizontal Curve	1128	996	6.0	52.5
3	Tangent	319	-	-	58.1
4	Horizontal Curve	171	1042	5.8	52.5

Vehicle Results

Average Speed, mi/h	54.3	Percent Followers, %	72.4
Segment Travel Time, minutes	0.41	Follower Density (FD), followers/mi/ln	12.6
Vehicle LOS	E		

Segment 20

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	809

Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	6.5

Demand and Capacity

Directional Demand Flow Rate, veh/h	921	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.54

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.8
Speed Slope Coefficient (m)	3.80401	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38855	PF Power Coefficient (p)	0.73897
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	809	1042	5.8	52.5

Vehicle Results

Average Speed, mi/h	52.5	Percent Followers, %	72.9
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	12.8
Vehicle LOS	E		

Segment 21

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5300
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	921	Opposing Demand Flow Rate, veh/h	786
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.54

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.4
Speed Slope Coefficient (m)	3.77867	Speed Power Coefficient (p)	0.45211
PF Slope Coefficient (m)	-1.27087	PF Power Coefficient (p)	0.78632
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	13	1042	5.8	52.5

2	Tangent	1320	-	-	58.0
3	Horizontal Curve	712	5289	2.2	58.0
4	Tangent	603	-	-	58.0
5	Horizontal Curve	405	2865	3.6	58.0
6	Tangent	2247	-	-	58.0

Vehicle Results

Average Speed, mi/h	58.0	Percent Followers, %	69.6
Segment Travel Time, minutes	1.04	Follower Density (FD), followers/mi/ln	11.1
Vehicle LOS	D		

Segment 22

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	7099
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	921	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.54

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.5
Speed Slope Coefficient (m)	3.90981	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27764	PF Power Coefficient (p)	0.76015
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	549	-	-	57.9
2	Horizontal Curve	434	996	6.0	52.5
3	Tangent	583	-	-	57.9
4	Horizontal Curve	1156	996	6.0	52.5
5	Tangent	548	-	-	57.9
6	Horizontal Curve	713	1432	5.2	57.9
7	Tangent	1290	-	-	57.9
8	Horizontal Curve	658	1207	5.6	57.9
9	Tangent	682	-	-	57.9
10	Horizontal Curve	486	2869	3.6	57.9

Vehicle Results

Average Speed, mi/h	56.7	Percent Followers, %	69.9

Segment Travel Time, minutes	1.42	Follower Density (FD), followers/mi/ln	11.4
Vehicle LOS	D		

Segment 23

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3199
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	921	Opposing Demand Flow Rate, veh/h	786
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.54

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.0
Speed Slope Coefficient (m)	3.78684	Speed Power Coefficient (p)	0.45211
PF Slope Coefficient (m)	-1.29466	PF Power Coefficient (p)	0.78407
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	465	2869	3.6	58.5
2	Tangent	939	-	-	58.5
3	Horizontal Curve	407	1144	5.8	58.4
4	Tangent	1049	-	-	58.5
5	Horizontal Curve	339	1637	5.0	58.4

Vehicle Results

Average Speed, mi/h	58.5	Percent Followers, %	70.3
Segment Travel Time, minutes	0.62	Follower Density (FD), followers/mi/ln	11.1
Vehicle LOS	D		

Segment 24

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	7507
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	921	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.54

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	61.5
Speed Slope Coefficient (m)	4.96480	Speed Power Coefficient (p)	0.48560
PF Slope Coefficient (m)	-1.32247	PF Power Coefficient (p)	0.74493
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	306	1637	5.0	57.0
2	Tangent	549	-	-	57.0
3	Horizontal Curve	380	1763	4.8	57.0
4	Tangent	1014	-	-	57.0
5	Horizontal Curve	535	2083	4.4	57.0
6	Tangent	459	-	-	57.0
7	Horizontal Curve	460	2083	4.4	57.0
8	Tangent	1283	-	-	57.0
9	Horizontal Curve	970	1270	5.6	57.0
10	Tangent	1419	-	-	57.0
11	Horizontal Curve	132	1943	4.4	57.0

Vehicle Results

Average Speed, mi/h	57.0	Percent Followers, %	71.2
Segment Travel Time, minutes	1.50	Follower Density (FD), followers/mi/ln	11.5
Vehicle LOS	D		

Segment 25

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3829
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	890	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.52

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.4
Speed Slope Coefficient (m)	3.87270	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.30079	PF Power Coefficient (p)	0.76427
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	10.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1647	1943	4.4	57.9
2	Tangent	394	-	-	57.9
3	Horizontal Curve	1142	13000	2.6	57.9
4	Tangent	646	-	-	57.9

Vehicle Results

Average Speed, mi/h	57.9	Percent Followers, %	69.6
Segment Travel Time, minutes	0.75	Follower Density (FD), followers/mi/ln	10.7
Vehicle LOS	D		

Segment 26

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	22756
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	889	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.52

Intermediate Results

Segment Vertical Class	4	Free-Flow Speed, mi/h	58.6
Speed Slope Coefficient (m)	11.37746	Speed Power Coefficient (p)	0.33950
PF Slope Coefficient (m)	-2.23956	PF Power Coefficient (p)	0.71189
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	16.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	263	-	-	48.1
2	Horizontal Curve	2338	4576	2.6	48.1
3	Tangent	1929	-	-	48.1
4	Horizontal Curve	1279	2865	3.6	48.1
5	Tangent	464	-	-	48.1
6	Horizontal Curve	1799	1962	4.4	48.1
7	Tangent	1105	-	-	48.1
8	Horizontal Curve	2977	5752	2.0	48.1
9	Tangent	3971	-	-	48.1
10	Horizontal Curve	568	4862	2.4	48.1
11	Tangent	2353	-	-	48.1

12	Horizontal Curve	797	1978	4.4	48.1
13	Tangent	1410	-	-	48.1
14	Horizontal Curve	456	1957	4.4	48.1
15	Tangent	402	-	-	48.1
16	Horizontal Curve	258	2562	3.8	48.1
17	Tangent	387	-	-	48.1

Vehicle Results

Average Speed, mi/h	48.1	Percent Followers, %	87.2
Segment Travel Time, minutes	5.38	Follower Density (FD), followers/mi/ln	16.1
Vehicle LOS	E		

Segment 27

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	500
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	889	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.52

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.91339	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.31721	PF Power Coefficient (p)	0.76037
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	10.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

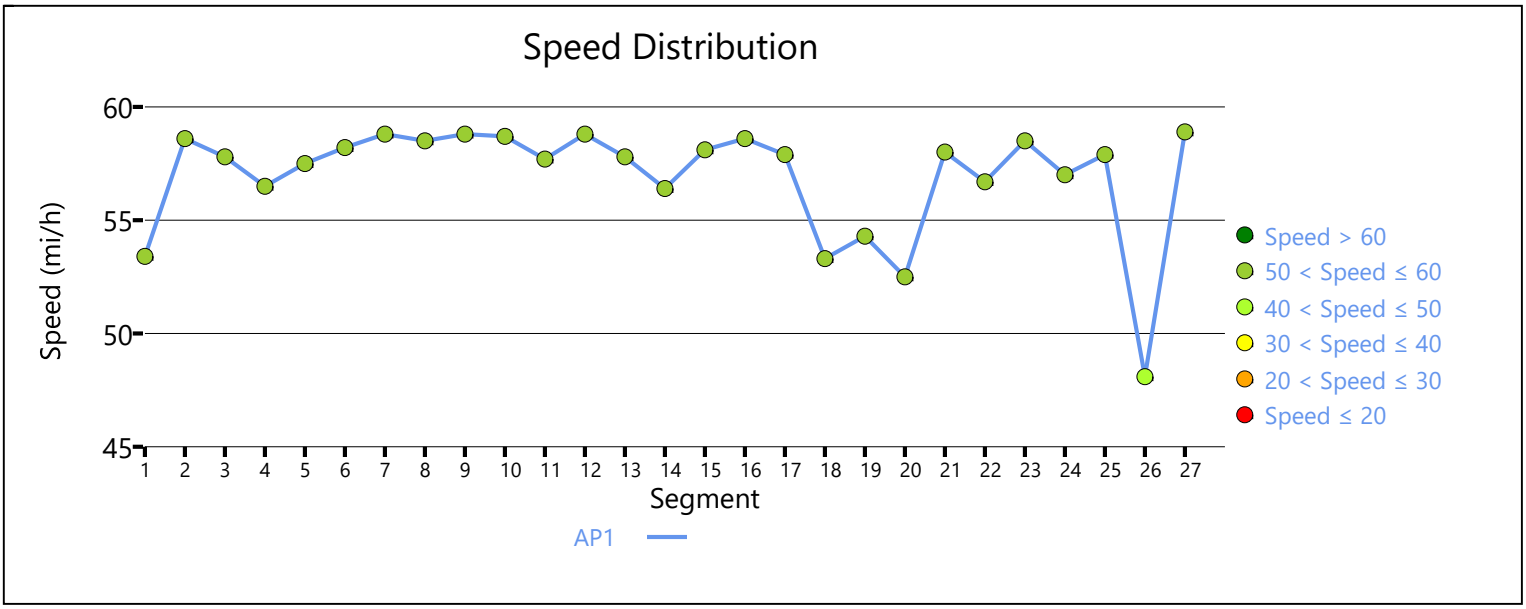
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	500	-	-	58.9

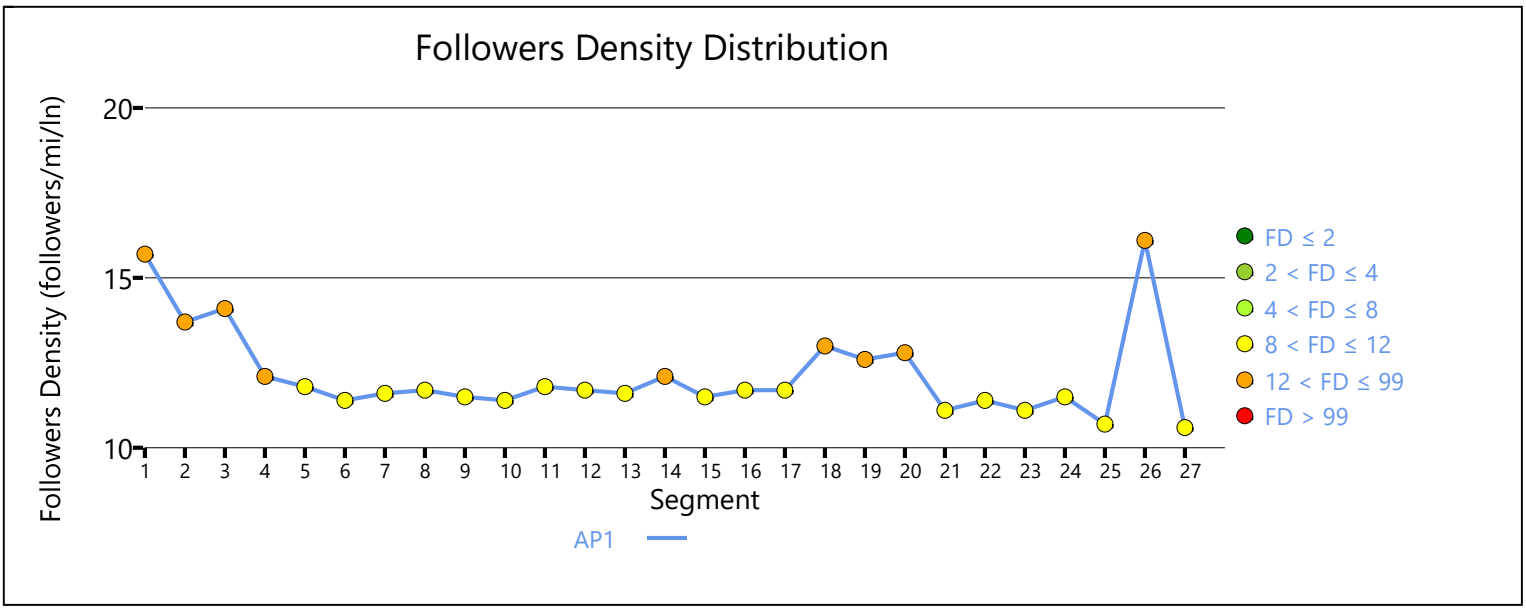
Vehicle Results

Average Speed, mi/h	58.9	Percent Followers, %	70.0
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	10.6
Follower Density Mid-Point, followers/mi/ln	0.0	Vehicle LOS	D

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	4416	7.66	12.9	E





HCS Two-Lane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	11/14/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AK DOT&PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - No Build - North Bound	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	4200
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	1016	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.68

Intermediate Results

Segment Vertical Class	3	Free-Flow Speed, mi/h	60.3
Speed Slope Coefficient (m)	6.91339	Speed Power Coefficient (p)	1.00431
PF Slope Coefficient (m)	-1.05511	PF Power Coefficient (p)	0.82234
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	887	-	-	54.0
2	Horizontal Curve	258	2562	3.8	54.0
3	Tangent	402	-	-	54.0
4	Horizontal Curve	465	1957	4.4	54.0
5	Tangent	1410	-	-	54.0
6	Horizontal Curve	778	1978	4.4	54.0

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	558	458
Percentage of Heavy Vehicles (HV%), %	3.32	14.36
Initial Average Speed (Sint), mi/h	58.4	56.6
Average Speed at Midpoint (SPLmid), mi/h	60.2	54.8
Percent Followers at Midpoint (PFPLmid), %	52.8	40.3

Vehicle Results

Average Speed, mi/h	54.0	Percent Followers, %	65.7
Segment Travel Time, minutes	0.88	Follower Density (FD), followers/mi/ln	12.4
Follower Density Mid-Point, followers/mi/ln	4.1	Vehicle LOS	C

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	14100
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.5

Demand and Capacity

Directional Demand Flow Rate, veh/h	1016	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.60

Intermediate Results

Segment Vertical Class	4	Free-Flow Speed, mi/h	58.7
Speed Slope Coefficient (m)	11.15511	Speed Power Coefficient (p)	0.33950
PF Slope Coefficient (m)	-2.12504	PF Power Coefficient (p)	0.73100
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	18.7
%Improvement to Percent Followers	8.7	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	19	1978	4.4	47.9
2	Tangent	2353	-	-	47.9
3	Horizontal Curve	568	4862	2.4	47.9
4	Tangent	3971	-	-	47.9
5	Horizontal Curve	2977	5752	2.0	47.9
6	Tangent	1105	-	-	47.9
7	Horizontal Curve	1799	1962	4.4	47.9
8	Tangent	464	-	-	47.9
9	Horizontal Curve	844	2865	3.6	47.9

Vehicle Results

Average Speed, mi/h	47.9	Percent Followers, %	88.3
Segment Travel Time, minutes	3.35	Follower Density (FD), followers/mi/ln	17.1
Vehicle LOS	E		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1700
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1016	Opposing Demand Flow Rate, veh/h	1175
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.60

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.85287	Speed Power Coefficient (p)	0.42811
PF Slope Coefficient (m)	-1.35176	PF Power Coefficient (p)	0.75812
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	12.9
%Improvement to Percent Followers	8.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	435	2865	3.6	58.7
2	Tangent	1265	-	-	58.7

Vehicle Results

Average Speed, mi/h	58.7	Percent Followers, %	74.5
Segment Travel Time, minutes	0.33	Follower Density (FD), followers/mi/ln	11.9
Vehicle LOS	D		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3265
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	8.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	1016	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.60

Intermediate Results

Segment Vertical Class	3	Free-Flow Speed, mi/h	59.1
Speed Slope Coefficient (m)	6.83368	Speed Power Coefficient (p)	0.59655
PF Slope Coefficient (m)	-1.36963	PF Power Coefficient (p)	0.74963
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	14.5
%Improvement to Percent Followers	6.6	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	52.6
2	Horizontal Curve	2338	4576	2.6	52.6
3	Tangent	263	-	-	52.6

Vehicle Results

Average Speed, mi/h	52.6	Percent Followers, %	75.0
Segment Travel Time, minutes	0.71	Follower Density (FD), followers/mi/ln	13.5
Vehicle LOS	E		

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3830
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	1035	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.61

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	60.9
Speed Slope Coefficient (m)	4.40172	Speed Power Coefficient (p)	0.46800
PF Slope Coefficient (m)	-1.35782	PF Power Coefficient (p)	0.74651
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	13.7
%Improvement to Percent Followers	5.1	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	647	-	-	56.6
2	Horizontal Curve	1142	13000	2.0	56.6
3	Tangent	394	-	-	56.6
4	Horizontal Curve	1647	1943	4.4	56.6

Vehicle Results

Average Speed, mi/h	56.6	Percent Followers, %	75.2
Segment Travel Time, minutes	0.77	Follower Density (FD), followers/mi/ln	13.0
Vehicle LOS	E		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2506
Lane Width, ft	12	Shoulder Width, ft	6

Speed Limit, mi/h	55	Access Point Density, pts/mi	4.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	1039	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.61

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.4
Speed Slope Coefficient (m)	3.85461	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33091	PF Power Coefficient (p)	0.75669
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	132	1943	4.4	57.6
2	Tangent	1419	-	-	57.6
3	Horizontal Curve	955	1270	5.6	57.6

Vehicle Results

Average Speed, mi/h	57.6	Percent Followers, %	74.6
Segment Travel Time, minutes	0.49	Follower Density (FD), followers/mi/ln	13.5
Vehicle LOS	E		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1200
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	1039	Opposing Demand Flow Rate, veh/h	1217
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.61

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.3
Speed Slope Coefficient (m)	3.79261	Speed Power Coefficient (p)	0.42628
PF Slope Coefficient (m)	-1.38278	PF Power Coefficient (p)	0.74768
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Horizontal Curve	15	1270	5.6	57.6
2	Tangent	1185	-	-	57.6

Vehicle Results

Average Speed, mi/h	57.6	Percent Followers, %	75.9
Segment Travel Time, minutes	0.24	Follower Density (FD), followers/mi/ln	13.7
Vehicle LOS	E		

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3001
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	1039	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.61

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.0
Speed Slope Coefficient (m)	3.89382	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.31192	PF Power Coefficient (p)	0.76194
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	98	-	-	58.2
2	Horizontal Curve	460	2083	4.4	58.2
3	Tangent	459	-	-	58.2
4	Horizontal Curve	535	2083	4.4	58.2
5	Tangent	1014	-	-	58.2
6	Horizontal Curve	380	1763	4.8	58.2
7	Tangent	55	-	-	58.2

Vehicle Results

Average Speed, mi/h	58.2	Percent Followers, %	74.1
Segment Travel Time, minutes	0.59	Follower Density (FD), followers/mi/ln	13.2
Vehicle LOS	E		

Segment 9

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3000

Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	1039	Opposing Demand Flow Rate, veh/h	1217
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.61

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.0
Speed Slope Coefficient (m)	3.85395	Speed Power Coefficient (p)	0.42628
PF Slope Coefficient (m)	-1.31162	PF Power Coefficient (p)	0.76947
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	494	-	-	58.2
2	Horizontal Curve	645	1637	5.0	58.2
3	Tangent	1049	-	-	58.2
4	Horizontal Curve	407	1144	5.8	58.2
5	Tangent	405	-	-	58.2

Vehicle Results

Average Speed, mi/h	58.2	Percent Followers, %	74.1
Segment Travel Time, minutes	0.59	Follower Density (FD), followers/mi/ln	13.2
Vehicle LOS	E		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	7199
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	1039	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.61

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.5
Speed Slope Coefficient (m)	3.91065	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27764	PF Power Coefficient (p)	0.75969
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	535	-	-	57.7
2	Horizontal Curve	951	2869	3.6	57.7
3	Tangent	682	-	-	57.7
4	Horizontal Curve	658	1207	5.6	57.7
5	Tangent	1290	-	-	57.7
6	Horizontal Curve	713	1432	5.2	57.7
7	Tangent	548	-	-	57.7
8	Horizontal Curve	1156	996	6.0	52.4
9	Tangent	583	-	-	57.7
10	Horizontal Curve	83	996	6.0	52.4

Vehicle Results

Average Speed, mi/h	56.8	Percent Followers, %	73.2
Segment Travel Time, minutes	1.44	Follower Density (FD), followers/mi/ln	13.4
Vehicle LOS	E		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5500
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	1039	Opposing Demand Flow Rate, veh/h	1217
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.61

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.7
Speed Slope Coefficient (m)	3.86651	Speed Power Coefficient (p)	0.42628
PF Slope Coefficient (m)	-1.27996	PF Power Coefficient (p)	0.77326
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	351	996	6.0	52.4
2	Tangent	2796	-	-	57.9
3	Horizontal Curve	405	2865	3.6	57.9
4	Tangent	603	-	-	57.9
5	Horizontal Curve	712	5289	2.2	57.9

6	Tangent	633	-	-	57.9

Vehicle Results

Average Speed, mi/h	57.6	Percent Followers, %	73.2
Segment Travel Time, minutes	1.09	Follower Density (FD), followers/mi/ln	13.2
Vehicle LOS	E		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1509
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.5

Demand and Capacity

Directional Demand Flow Rate, veh/h	1039	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.61

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.5
Speed Slope Coefficient (m)	3.84822	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.37033	PF Power Coefficient (p)	0.74421
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	687	-	-	57.8
2	Horizontal Curve	822	1042	5.8	52.4

Vehicle Results

Average Speed, mi/h	54.9	Percent Followers, %	75.6
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	14.3
Vehicle LOS	E		

Segment 13

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1942
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.1
Speed Slope Coefficient (m)	3.82987	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.35404	PF Power Coefficient (p)	0.74978
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	15.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	171	1042	5.8	52.4
2	Tangent	319	-	-	57.3
3	Horizontal Curve	1128	996	6.0	52.4
4	Tangent	324	-	-	57.3

Vehicle Results

Average Speed, mi/h	54.0	Percent Followers, %	76.2
Segment Travel Time, minutes	0.41	Follower Density (FD), followers/mi/ln	15.3
Vehicle LOS	E		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	650
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	8.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.4
Speed Slope Coefficient (m)	3.78233	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39232	PF Power Coefficient (p)	0.73809
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	15.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	127	-	-	56.6
2	Horizontal Curve	523	996	6.0	52.4

Vehicle Results

Average Speed, mi/h	53.2	Percent Followers, %	77.2

Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	15.7
Vehicle LOS	E		

Segment 15

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1400
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	1245
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.5
Speed Slope Coefficient (m)	3.80641	Speed Power Coefficient (p)	0.42512
PF Slope Coefficient (m)	-1.37690	PF Power Coefficient (p)	0.74881
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	212	996	6.0	52.4
2	Tangent	1188	-	-	57.7

Vehicle Results

Average Speed, mi/h	56.9	Percent Followers, %	76.8
Segment Travel Time, minutes	0.28	Follower Density (FD), followers/mi/ln	14.6
Vehicle LOS	E		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1200
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.89208	Speed Power Coefficient (p)	0.41674

PF Slope Coefficient (m)	-1.37281	PF Power Coefficient (p)	0.74249
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	773	-	-	58.6
2	Horizontal Curve	427	1432	5.2	58.1

Vehicle Results

Average Speed, mi/h	58.4	Percent Followers, %	76.7
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	14.2
Vehicle LOS	E		

Segment 17

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2999
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	1245
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.0
Speed Slope Coefficient (m)	3.85808	Speed Power Coefficient (p)	0.42512
PF Slope Coefficient (m)	-1.31190	PF Power Coefficient (p)	0.76869
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	89	1432	5.2	58.1
2	Tangent	67	-	-	58.1
3	Horizontal Curve	1570	4584	2.6	58.1
4	Tangent	1273	-	-	58.1

Vehicle Results

Average Speed, mi/h	58.1	Percent Followers, %	75.2
Segment Travel Time, minutes	0.59	Follower Density (FD), followers/mi/ln	14.0
Vehicle LOS	E		

Segment 18

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1800
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.9

Demand and Capacity			
Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	60.9
Speed Slope Coefficient (m)	3.82077	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.36143	PF Power Coefficient (p)	0.74753
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	545	-	-	57.2
2	Horizontal Curve	1255	1349	5.4	57.2

Vehicle Results			
Average Speed, mi/h	57.2	Percent Followers, %	76.4
Segment Travel Time, minutes	0.36	Follower Density (FD), followers/mi/ln	14.5
Vehicle LOS	E		

Segment 19

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	2700
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	1245
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	61.9
Speed Slope Coefficient (m)	3.85140	Speed Power Coefficient (p)	0.42512
PF Slope Coefficient (m)	-1.32007	PF Power Coefficient (p)	0.76643
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	133	1349	5.4	58.1
2	Tangent	182	-	-	58.1
3	Horizontal Curve	769	986	6.0	52.4
4	Tangent	1616	-	-	58.1

Vehicle Results

Average Speed, mi/h	56.5	Percent Followers, %	75.4
Segment Travel Time, minutes	0.54	Follower Density (FD), followers/mi/ln	14.5
Vehicle LOS	E		

Segment 20

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2201
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.8
Speed Slope Coefficient (m)	3.87455	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33695	PF Power Coefficient (p)	0.75468
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	209	-	-	58.0
2	Horizontal Curve	539	2433	4.0	58.0
3	Tangent	261	-	-	58.0
4	Horizontal Curve	500	1070	5.8	58.0
5	Tangent	273	-	-	58.0
6	Horizontal Curve	419	2263	4.2	58.0

Vehicle Results

Average Speed, mi/h	58.0	Percent Followers, %	75.8
Segment Travel Time, minutes	0.43	Follower Density (FD), followers/mi/ln	14.2
Vehicle LOS	E		

Segment 21

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2300
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	1245
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.8
Speed Slope Coefficient (m)	3.84167	Speed Power Coefficient (p)	0.42512
PF Slope Coefficient (m)	-1.33311	PF Power Coefficient (p)	0.76258
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	98	2263	4.2	58.0
2	Tangent	685	-	-	58.0
3	Horizontal Curve	390	2489	4.0	58.0
4	Tangent	1127	-	-	58.0

Vehicle Results

Average Speed, mi/h	58.0	Percent Followers, %	75.7
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	14.1
Vehicle LOS	E		

Segment 22

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2299
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.8
Speed Slope Coefficient (m)	3.87737	Speed Power Coefficient (p)	0.41674

PF Slope Coefficient (m)	-1.33326	PF Power Coefficient (p)	0.75580
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	610	-	-	58.0
2	Horizontal Curve	580	1402	5.2	58.0
3	Tangent	726	-	-	58.0
4	Horizontal Curve	383	2106	4.4	58.0

Vehicle Results

Average Speed, mi/h	58.0	Percent Followers, %	75.7
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	14.1
Vehicle LOS	E		

Segment 23

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1200
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	1245
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.85637	Speed Power Coefficient (p)	0.42512
PF Slope Coefficient (m)	-1.37314	PF Power Coefficient (p)	0.74930
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	250	2106	4.4	58.6
2	Tangent	950	-	-	58.6

Vehicle Results

Average Speed, mi/h	58.6	Percent Followers, %	76.7
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	14.2
Vehicle LOS	E		

Segment 24

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1600
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.89728	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.35708	PF Power Coefficient (p)	0.74772
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	289	-	-	58.6
2	Horizontal Curve	371	2836	3.6	58.6
3	Tangent	391	-	-	58.6
4	Horizontal Curve	538	1226	5.6	58.1
5	Tangent	11	-	-	58.6

Vehicle Results

Average Speed, mi/h	58.4	Percent Followers, %	76.3
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	14.1
Vehicle LOS	E		

Segment 25

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2750
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	1245
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.87918	Speed Power Coefficient (p)	0.42512

PF Slope Coefficient (m)	-1.31438	PF Power Coefficient (p)	0.76802
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	516	-	-	58.6
2	Horizontal Curve	1064	1432	5.2	58.1
3	Tangent	1170	-	-	58.6

Vehicle Results

Average Speed, mi/h	58.4	Percent Followers, %	75.3
Segment Travel Time, minutes	0.54	Follower Density (FD), followers/mi/ln	14.0
Vehicle LOS	E		

Segment 26

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	7349
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.9
Speed Slope Coefficient (m)	3.93222	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27441	PF Power Coefficient (p)	0.75996
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	647	-	-	58.0
2	Horizontal Curve	468	1129	5.8	58.0
3	Tangent	428	-	-	58.0
4	Horizontal Curve	935	1911	4.6	58.0
5	Tangent	873	-	-	58.0
6	Horizontal Curve	561	1273	5.6	58.0
7	Tangent	791	-	-	58.0
8	Horizontal Curve	528	1155	5.8	58.0
9	Tangent	438	-	-	58.0

10	Horizontal Curve	572	1687	4.8	58.0
11	Tangent	1108	-	-	58.0

Vehicle Results

Average Speed, mi/h	58.0	Percent Followers, %	74.2
Segment Travel Time, minutes	1.44	Follower Density (FD), followers/mi/ln	13.9
Vehicle LOS	E		

Segment 27

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	1899
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.0
Speed Slope Coefficient (m)	3.83751	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33009	PF Power Coefficient (p)	0.75701
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1163	-	-	57.2
2	Horizontal Curve	548	1768	4.8	57.2
3	Tangent	188	-	-	57.2

Vehicle Results

Average Speed, mi/h	57.2	Percent Followers, %	75.7
Segment Travel Time, minutes	0.38	Follower Density (FD), followers/mi/ln	14.3
Follower Density Mid-Point, followers/mi/ln	0.0	Vehicle LOS	E

Segment 28

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2026
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.1
Speed Slope Coefficient (m)	3.83391	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.35013	PF Power Coefficient (p)	0.75098
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	107	-	-	57.3
2	Horizontal Curve	81	500	4.6	46.0
3	Tangent	717	-	-	57.3
4	Horizontal Curve	499	8261	0.0	57.3
5	Tangent	622	-	-	57.3

Vehicle Results

Average Speed, mi/h	56.9	Percent Followers, %	76.2
Segment Travel Time, minutes	0.40	Follower Density (FD), followers/mi/ln	14.5
Vehicle LOS	E		

Segment 29

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3524
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.5

Demand and Capacity

Directional Demand Flow Rate, veh/h	1288	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.76

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.3
Speed Slope Coefficient (m)	3.86372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.30695	PF Power Coefficient (p)	0.76297
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1563	-	-	57.1

2	Horizontal Curve	1135	3769	3.0	57.1
3	Tangent	826	-	-	57.1

Vehicle Results

Average Speed, mi/h	57.1	Percent Followers, %	79.5
Segment Travel Time, minutes	0.70	Follower Density (FD), followers/mi/ln	17.9
Vehicle LOS	E		

Segment 30

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	6250
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1288	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.86

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	6.09102	Speed Power Coefficient (p)	1.01612
PF Slope Coefficient (m)	-1.09707	PF Power Coefficient (p)	0.87474
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2590	-	-	55.2
2	Horizontal Curve	297	6515	2.0	55.2
3	Tangent	19	-	-	55.2
4	Horizontal Curve	3111	5664	2.2	55.2
5	Tangent	233	-	-	55.2

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	683	605
Percentage of Heavy Vehicles (HV%), %	3.32	13.92
Initial Average Speed (Sint), mi/h	59.4	58.9
Average Speed at Midpoint (SPLmid), mi/h	61.3	57.0
Percent Followers at Midpoint (PFPLmid), %	56.7	50.4

Vehicle Results

Average Speed, mi/h	55.2	Percent Followers, %	74.6
Segment Travel Time, minutes	1.29	Follower Density (FD), followers/mi/ln	17.4

Follower Density Mid-Point, followers/ mi/ln	5.8	Vehicle LOS	C

Segment 31

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2156
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1288	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.76

Intermediate Results

Segment Vertical Class	3	Free-Flow Speed, mi/h	59.9
Speed Slope Coefficient (m)	6.56157	Speed Power Coefficient (p)	0.59169
PF Slope Coefficient (m)	-1.40350	PF Power Coefficient (p)	0.74917
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	20.0
%Improvement to Percent Followers	15.6	%Improvement to Speed	1.1

Subsegment Data

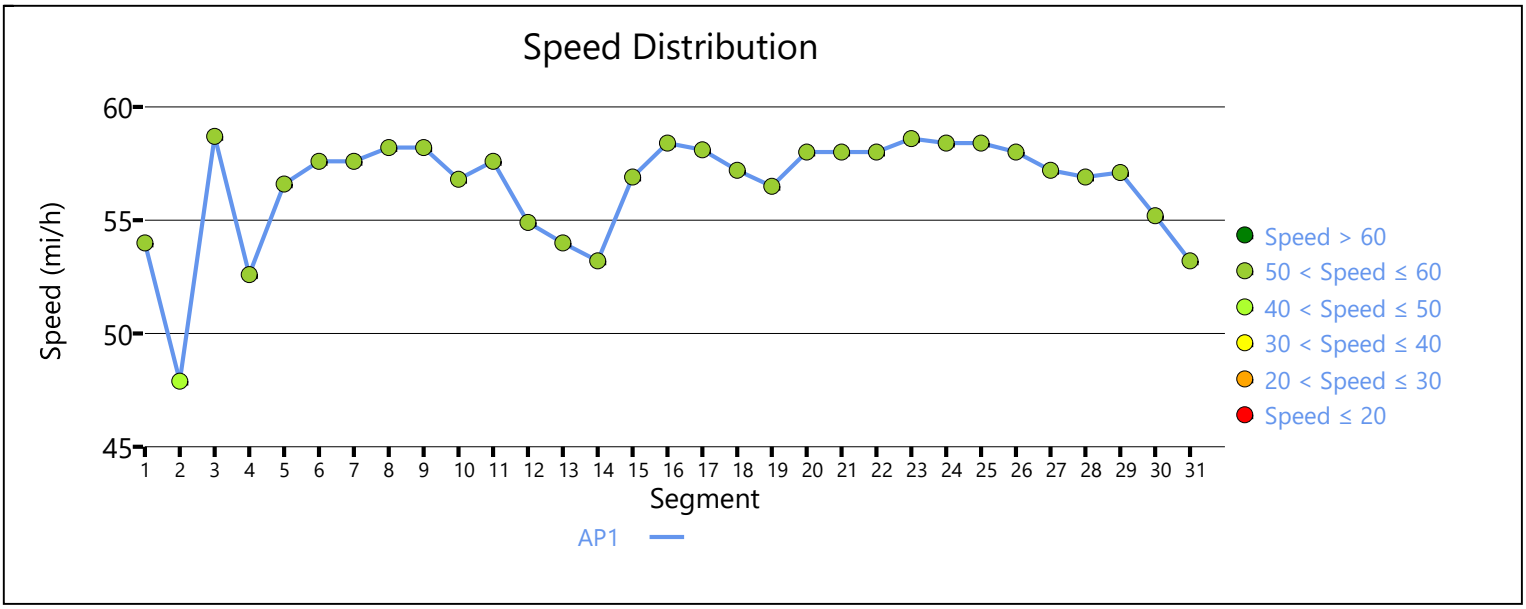
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	986	-	-	52.6
2	Horizontal Curve	670	20960	0.0	52.6
3	Tangent	500	-	-	52.6

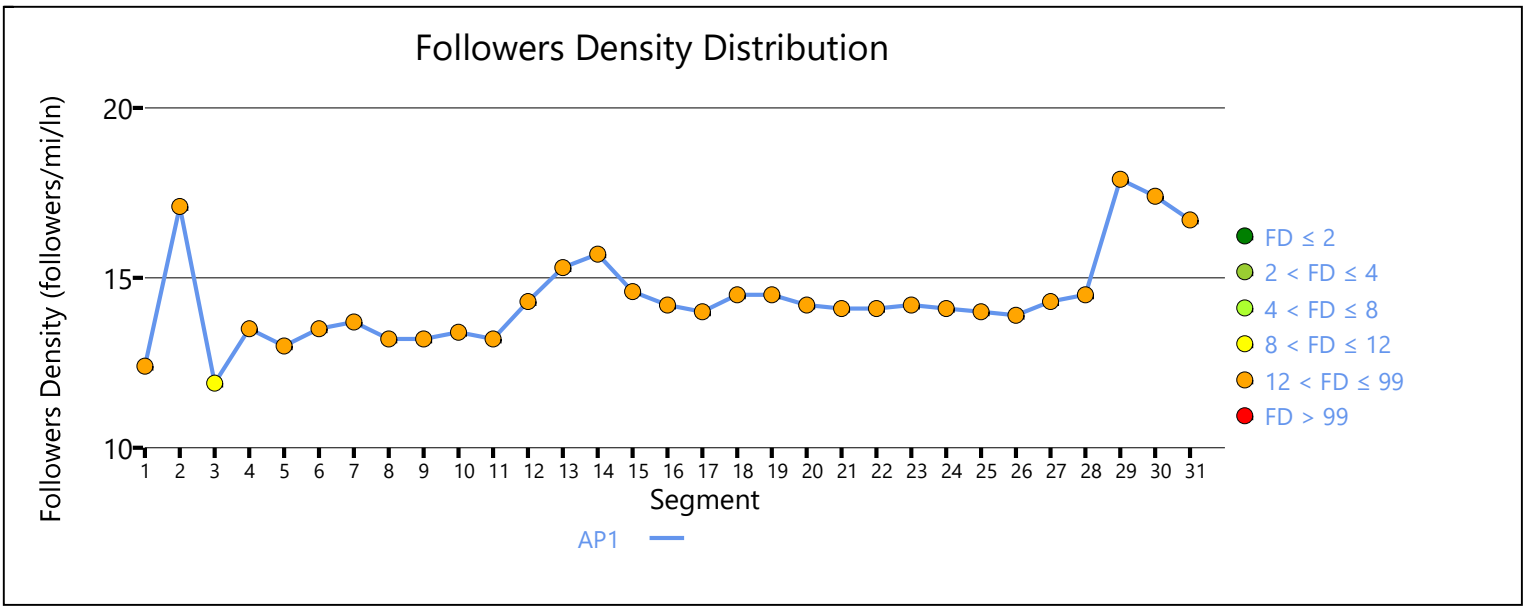
Vehicle Results

Average Speed, mi/h	53.2	Percent Followers, %	81.7
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	16.7
Vehicle LOS	E		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	5073	8.68	13.6	E





HCS Two-Lane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	11/14/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AK DOT&PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - No Build - Southbound	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2156
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	1434	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.84

Intermediate Results

Segment Vertical Class	3	Free-Flow Speed, mi/h	59.9
Speed Slope Coefficient (m)	6.56731	Speed Power Coefficient (p)	0.59192
PF Slope Coefficient (m)	-1.40336	PF Power Coefficient (p)	0.74925
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	23.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	500	-	-	52.1
2	Horizontal Curve	670	20960	0.0	52.1
3	Tangent	986	-	-	52.1

Vehicle Results

Average Speed, mi/h	52.1	Percent Followers, %	84.1
Segment Travel Time, minutes	0.47	Follower Density (FD), followers/mi/ln	23.1
Vehicle LOS	E		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	6250
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1434	Opposing Demand Flow Rate, veh/h	1288
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.84

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.92313	Speed Power Coefficient (p)	0.42345
PF Slope Coefficient (m)	-1.27115	PF Power Coefficient (p)	0.77136
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	20.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	233	-	-	58.0
2	Horizontal Curve	3111	5664	2.2	58.0
3	Tangent	19	-	-	58.0
4	Horizontal Curve	297	6515	2.0	58.0
5	Tangent	2590	-	-	58.0

Vehicle Results

Average Speed, mi/h	58.0	Percent Followers, %	81.3
Segment Travel Time, minutes	1.22	Follower Density (FD), followers/mi/ln	20.1
Vehicle LOS	E		

Segment 3

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3524
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1434	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.84

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.7
Speed Slope Coefficient (m)	3.88405	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.30359	PF Power Coefficient (p)	0.76390
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	20.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	826	-	-	57.3
2	Horizontal Curve	1135	3769	3.0	57.3
3	Tangent	1563	-	-	57.3

Vehicle Results

Average Speed, mi/h	57.3	Percent Followers, %	82.0
Segment Travel Time, minutes	0.70	Follower Density (FD), followers/mi/ln	20.5
Vehicle LOS	E		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2026
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	7.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.5
Speed Slope Coefficient (m)	3.79868	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.35609	PF Power Coefficient (p)	0.74946
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	622	-	-	56.5
2	Horizontal Curve	499	8261	0.0	56.5
3	Tangent	717	-	-	56.5
4	Horizontal Curve	81	500	4.6	45.9
5	Tangent	107	-	-	56.5

Vehicle Results

Average Speed, mi/h	56.0	Percent Followers, %	79.8
Segment Travel Time, minutes	0.41	Follower Density (FD), followers/mi/ln	17.7
Vehicle LOS	E		

Segment 5

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	1899

Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.0
Speed Slope Coefficient (m)	3.83751	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33009	PF Power Coefficient (p)	0.75701
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	188	-	-	57.0
2	Horizontal Curve	548	1768	4.8	57.0
3	Tangent	1163	-	-	57.0

Vehicle Results

Average Speed, mi/h	57.0	Percent Followers, %	79.2
Segment Travel Time, minutes	0.38	Follower Density (FD), followers/mi/ln	17.3
Follower Density Mid-Point, followers/mi/ln	0.0	Vehicle LOS	E

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	7349
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.9
Speed Slope Coefficient (m)	3.93222	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27441	PF Power Coefficient (p)	0.75996
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	16.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1108	-	-	57.7
2	Horizontal Curve	572	1687	4.8	57.7
3	Tangent	438	-	-	57.7
4	Horizontal Curve	528	1155	5.8	57.7
5	Tangent	791	-	-	57.7
6	Horizontal Curve	561	1273	5.6	57.7
7	Tangent	873	-	-	57.7
8	Horizontal Curve	935	1911	4.6	57.7
9	Tangent	428	-	-	57.7
10	Horizontal Curve	468	1129	5.8	57.7
11	Tangent	647	-	-	57.7

Vehicle Results

Average Speed, mi/h	57.7	Percent Followers, %	77.8
Segment Travel Time, minutes	1.45	Follower Density (FD), followers/mi/ln	16.8
Vehicle LOS	E		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1550
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	1083
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.83604	Speed Power Coefficient (p)	0.43257
PF Slope Coefficient (m)	-1.35786	PF Power Coefficient (p)	0.75828
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1170	-	-	58.4
2	Horizontal Curve	380	1432	5.2	57.9

Vehicle Results

Average Speed, mi/h	58.3	Percent Followers, %	79.9
Segment Travel Time, minutes	0.30	Follower Density (FD), followers/mi/ln	17.1

Vehicle LOS	E		

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1500
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.89548	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.36236	PF Power Coefficient (p)	0.74597
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	684	1432	5.2	57.9
2	Tangent	527	-	-	58.3
3	Horizontal Curve	289	1226	5.6	57.9

Vehicle Results

Average Speed, mi/h	58.1	Percent Followers, %	79.9
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	17.1
Vehicle LOS	E		

Segment 9

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1800
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	1083
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.84037	Speed Power Coefficient (p)	0.43257

PF Slope Coefficient (m)	-1.34565	PF Power Coefficient (p)	0.76230
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	249	1226	5.6	57.9
2	Tangent	391	-	-	58.4
3	Horizontal Curve	371	2836	3.6	58.4
4	Tangent	789	-	-	58.4

Vehicle Results

Average Speed, mi/h	58.3	Percent Followers, %	79.6
Segment Travel Time, minutes	0.35	Follower Density (FD), followers/mi/ln	17.0
Vehicle LOS	E		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2999
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.91818	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.30782	PF Power Coefficient (p)	0.76302
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	16.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	450	-	-	58.3
2	Horizontal Curve	633	2106	4.4	58.3
3	Tangent	726	-	-	58.3
4	Horizontal Curve	580	1402	5.2	57.9
5	Tangent	610	-	-	58.3

Vehicle Results

Average Speed, mi/h	58.2	Percent Followers, %	78.7
Segment Travel Time, minutes	0.59	Follower Density (FD), followers/mi/ln	16.8

Vehicle LOS	E		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2100
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	5.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	1083
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.2
Speed Slope Coefficient (m)	3.77744	Speed Power Coefficient (p)	0.43257
PF Slope Coefficient (m)	-1.34354	PF Power Coefficient (p)	0.76337
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1127	-	-	57.2
2	Horizontal Curve	390	2489	4.0	57.2
3	Tangent	583	-	-	57.2

Vehicle Results

Average Speed, mi/h	57.2	Percent Followers, %	79.6
Segment Travel Time, minutes	0.42	Follower Density (FD), followers/mi/ln	17.3
Vehicle LOS	E		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	901
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.89208	Speed Power Coefficient (p)	0.41674

PF Slope Coefficient (m)	-1.37281	PF Power Coefficient (p)	0.74249
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	102	-	-	58.3
2	Horizontal Curve	517	2263	4.2	58.3
3	Tangent	273	-	-	58.3
4	Horizontal Curve	9	1070	5.8	57.9

Vehicle Results

Average Speed, mi/h	58.3	Percent Followers, %	80.1
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	17.1
Vehicle LOS	E		

Segment 13

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3300
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	1083
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.6
Speed Slope Coefficient (m)	3.81828	Speed Power Coefficient (p)	0.43257
PF Slope Coefficient (m)	-1.30573	PF Power Coefficient (p)	0.77417
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	491	1070	5.8	57.6
2	Tangent	261	-	-	57.6
3	Horizontal Curve	539	2433	4.0	57.6
4	Tangent	1825	-	-	57.6
5	Horizontal Curve	184	986	6.0	52.2

Vehicle Results

Average Speed, mi/h	57.3	Percent Followers, %	78.7
Segment Travel Time, minutes	0.65	Follower Density (FD), followers/mi/ln	17.1

Vehicle LOS	E		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1900
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.7
Speed Slope Coefficient (m)	3.86442	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.34974	PF Power Coefficient (p)	0.75071
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	585	986	6.0	52.2
2	Tangent	182	-	-	57.6
3	Horizontal Curve	1133	1349	5.4	57.6

Vehicle Results

Average Speed, mi/h	56.0	Percent Followers, %	79.6
Segment Travel Time, minutes	0.39	Follower Density (FD), followers/mi/ln	17.7
Vehicle LOS	E		

Segment 15

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3100
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	1083
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.6
Speed Slope Coefficient (m)	3.81307	Speed Power Coefficient (p)	0.43257

PF Slope Coefficient (m)	-1.31049	PF Power Coefficient (p)	0.77296
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	255	1349	5.4	57.5
2	Tangent	1818	-	-	57.5
3	Horizontal Curve	1027	4584	2.6	57.5

Vehicle Results

Average Speed, mi/h	57.5	Percent Followers, %	78.8
Segment Travel Time, minutes	0.61	Follower Density (FD), followers/mi/ln	17.1
Vehicle LOS	E		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	899
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.89208	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.37281	PF Power Coefficient (p)	0.74249
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	543	4584	2.6	58.3
2	Tangent	67	-	-	58.3
3	Horizontal Curve	289	1432	5.2	57.9

Vehicle Results

Average Speed, mi/h	58.2	Percent Followers, %	80.1
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	17.1
Vehicle LOS	E		

Segment 17

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2401
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	1083
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.9
Speed Slope Coefficient (m)	3.81987	Speed Power Coefficient (p)	0.43257
PF Slope Coefficient (m)	-1.32719	PF Power Coefficient (p)	0.76829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	227	1432	5.2	57.8
2	Tangent	1962	-	-	57.8
3	Horizontal Curve	212	996	6.0	52.2

Vehicle Results

Average Speed, mi/h	57.3	Percent Followers, %	79.2
Segment Travel Time, minutes	0.48	Follower Density (FD), followers/mi/ln	17.2
Vehicle LOS	E		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	650
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	8.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.4
Speed Slope Coefficient (m)	3.78233	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39232	PF Power Coefficient (p)	0.73809
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	18.9

%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	523	996	6.0	52.2
2	Tangent	127	-	-	56.4

Vehicle Results

Average Speed, mi/h	53.1	Percent Followers, %	80.5
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	18.9
Vehicle LOS	E		

Segment 19

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1942
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.7
Speed Slope Coefficient (m)	3.86645	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.34773	PF Power Coefficient (p)	0.75134
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	18.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	324	-	-	57.7
2	Horizontal Curve	1128	996	6.0	52.2
3	Tangent	319	-	-	57.7
4	Horizontal Curve	171	1042	5.8	52.2

Vehicle Results

Average Speed, mi/h	54.0	Percent Followers, %	79.6
Segment Travel Time, minutes	0.41	Follower Density (FD), followers/mi/ln	18.3
Vehicle LOS	E		

Segment 20

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	809

Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	6.5

Demand and Capacity

Directional Demand Flow Rate, veh/h	1217	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.72

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.8
Speed Slope Coefficient (m)	3.80401	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38855	PF Power Coefficient (p)	0.73897
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	18.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	809	1042	5.8	52.3

Vehicle Results

Average Speed, mi/h	52.3	Percent Followers, %	79.9
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	18.6
Vehicle LOS	E		

Segment 21

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5310
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1217	Opposing Demand Flow Rate, veh/h	1039
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.72

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.4
Speed Slope Coefficient (m)	3.82228	Speed Power Coefficient (p)	0.43494
PF Slope Coefficient (m)	-1.28023	PF Power Coefficient (p)	0.77803
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	16.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	13	1042	5.8	52.3

2	Tangent	1320	-	-	57.4
3	Horizontal Curve	712	5289	2.2	57.4
4	Tangent	603	-	-	57.4
5	Horizontal Curve	415	2865	3.6	57.4
6	Tangent	2247	-	-	57.4

Vehicle Results

Average Speed, mi/h	57.4	Percent Followers, %	77.5
Segment Travel Time, minutes	1.05	Follower Density (FD), followers/mi/ln	16.4
Vehicle LOS	E		

Segment 22

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	7099
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	1217	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.72

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.5
Speed Slope Coefficient (m)	3.90981	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27764	PF Power Coefficient (p)	0.76015
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	16.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	549	-	-	57.4
2	Horizontal Curve	434	996	6.0	52.3
3	Tangent	583	-	-	57.4
4	Horizontal Curve	1156	996	6.0	52.3
5	Tangent	548	-	-	57.4
6	Horizontal Curve	713	1432	5.2	57.4
7	Tangent	1290	-	-	57.4
8	Horizontal Curve	658	1207	5.6	57.4
9	Tangent	682	-	-	57.4
10	Horizontal Curve	486	2869	3.6	57.4

Vehicle Results

Average Speed, mi/h	56.3	Percent Followers, %	77.3

Segment Travel Time, minutes	1.43	Follower Density (FD), followers/mi/ln	16.7
Vehicle LOS	E		

Segment 23

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3199
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	1217	Opposing Demand Flow Rate, veh/h	1039
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.72

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.0
Speed Slope Coefficient (m)	3.83035	Speed Power Coefficient (p)	0.43494
PF Slope Coefficient (m)	-1.30390	PF Power Coefficient (p)	0.77589
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	16.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	465	2869	3.6	58.0
2	Tangent	939	-	-	58.0
3	Horizontal Curve	407	1144	5.8	58.0
4	Tangent	1049	-	-	58.0
5	Horizontal Curve	339	1637	5.0	58.0

Vehicle Results

Average Speed, mi/h	58.0	Percent Followers, %	78.1
Segment Travel Time, minutes	0.63	Follower Density (FD), followers/mi/ln	16.4
Vehicle LOS	E		

Segment 24

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	7507
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	1217	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.72

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	61.5
Speed Slope Coefficient (m)	4.96480	Speed Power Coefficient (p)	0.48560
PF Slope Coefficient (m)	-1.32247	PF Power Coefficient (p)	0.74493
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	306	1637	5.0	56.3
2	Tangent	549	-	-	56.3
3	Horizontal Curve	380	1763	4.8	56.3
4	Tangent	1014	-	-	56.3
5	Horizontal Curve	535	2083	4.4	56.3
6	Tangent	459	-	-	56.3
7	Horizontal Curve	460	2083	4.4	56.3
8	Tangent	1283	-	-	56.3
9	Horizontal Curve	970	1270	5.6	56.3
10	Tangent	1419	-	-	56.3
11	Horizontal Curve	132	1943	4.4	56.3

Vehicle Results

Average Speed, mi/h	56.3	Percent Followers, %	78.4
Segment Travel Time, minutes	1.52	Follower Density (FD), followers/mi/ln	17.0
Vehicle LOS	E		

Segment 25

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3829
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	1176	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.69

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.4
Speed Slope Coefficient (m)	3.87270	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.30079	PF Power Coefficient (p)	0.76427
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	15.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1647	1943	4.4	57.4
2	Tangent	394	-	-	57.4
3	Horizontal Curve	1142	13000	2.6	57.4
4	Tangent	646	-	-	57.4

Vehicle Results

Average Speed, mi/h	57.4	Percent Followers, %	77.1
Segment Travel Time, minutes	0.76	Follower Density (FD), followers/mi/ln	15.8
Vehicle LOS	E		

Segment 26

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	22756
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	1175	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.69

Intermediate Results

Segment Vertical Class	4	Free-Flow Speed, mi/h	58.6
Speed Slope Coefficient (m)	11.37746	Speed Power Coefficient (p)	0.33950
PF Slope Coefficient (m)	-2.23956	PF Power Coefficient (p)	0.71189
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	23.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	263	-	-	46.9
2	Horizontal Curve	2338	3000	2.6	46.9
3	Tangent	1929	-	-	46.9
4	Horizontal Curve	1279	3000	3.6	46.9
5	Tangent	464	-	-	46.9
6	Horizontal Curve	1799	3000	4.4	46.9
7	Tangent	1105	-	-	46.9
8	Horizontal Curve	2977	3000	2.0	46.9
9	Tangent	3971	-	-	46.9
10	Horizontal Curve	568	4862	2.4	46.9
11	Tangent	2353	-	-	46.9

12	Horizontal Curve	797	1978	4.4	46.9
13	Tangent	1410	-	-	46.9
14	Horizontal Curve	456	1957	4.4	46.9
15	Tangent	402	-	-	46.9
16	Horizontal Curve	258	2562	3.8	46.9
17	Tangent	387	-	-	46.9

Vehicle Results

Average Speed, mi/h	46.9	Percent Followers, %	91.9
Segment Travel Time, minutes	5.51	Follower Density (FD), followers/mi/ln	23.0
Vehicle LOS	E		

Segment 27

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	500
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1175	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.69

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.91339	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.31721	PF Power Coefficient (p)	0.76037
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	15.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

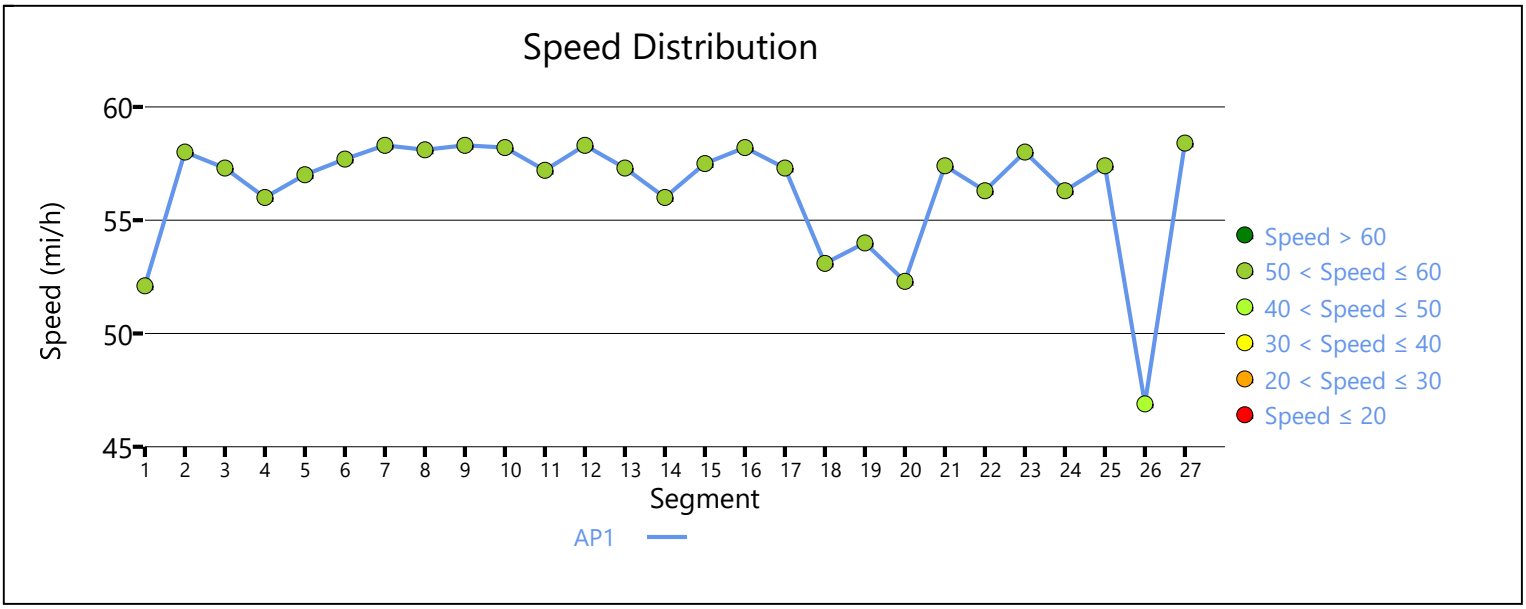
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	500	-	-	58.4

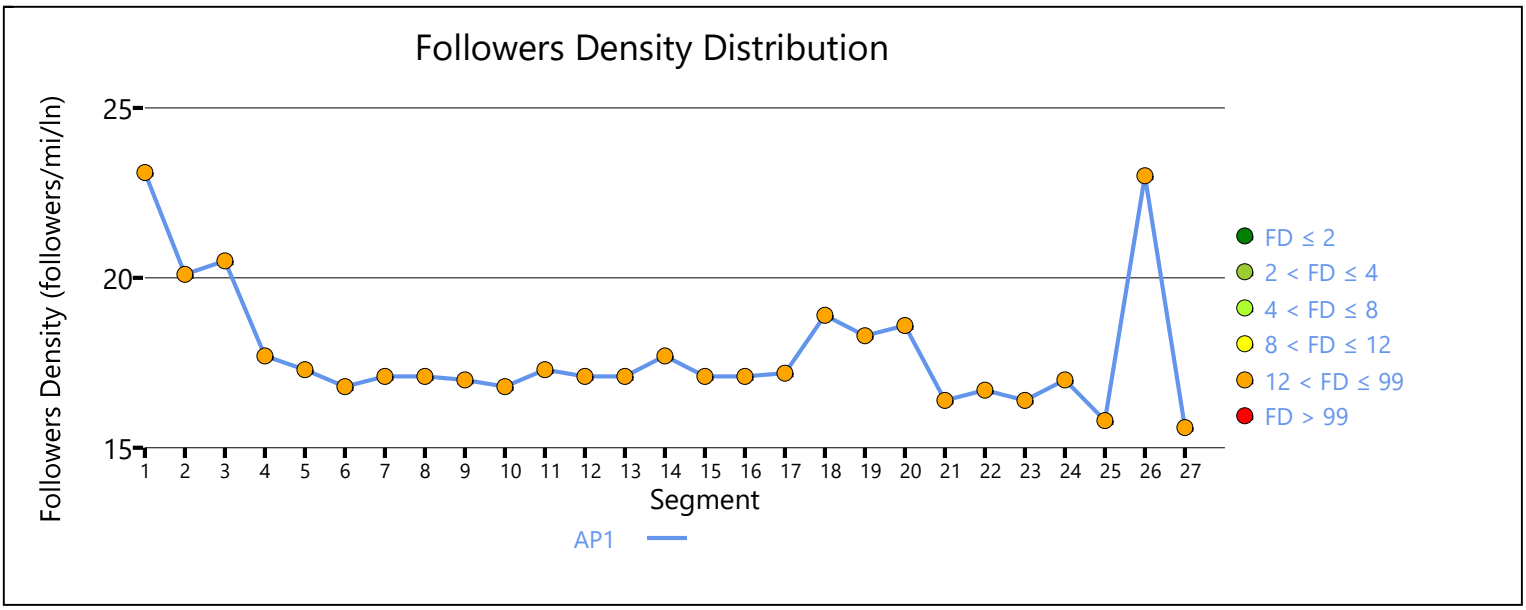
Vehicle Results

Average Speed, mi/h	58.4	Percent Followers, %	77.4
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	15.6
Follower Density Mid-Point, followers/mi/ln	0.0	Vehicle LOS	E

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	5836	11.54	18.8	E





HCS Two-Lane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	9/11/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AK DOT&PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Concept 2 55 - Northbound	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	11655
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	1016	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.60

Intermediate Results

Segment Vertical Class	4	Free-Flow Speed, mi/h	59.0
Speed Slope Coefficient (m)	10.84504	Speed Power Coefficient (p)	0.39625
PF Slope Coefficient (m)	-1.98063	PF Power Coefficient (p)	0.75337
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	18.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	768	-	-	48.5
2	Horizontal Curve	422	4590	3.4	48.5
3	Tangent	431	-	-	48.5
4	Horizontal Curve	276	1200	6.0	48.5
5	Tangent	1667	-	-	48.5
6	Horizontal Curve	451	1200	6.0	48.5
7	Tangent	2405	-	-	48.5
8	Horizontal Curve	673	4610	3.2	48.5
9	Tangent	3977	-	-	48.5
10	Horizontal Curve	585	5990	2.6	48.5

Vehicle Results

Average Speed, mi/h	48.5	Percent Followers, %	86.5
Segment Travel Time, minutes	2.73	Follower Density (FD), followers/mi/ln	18.1

Vehicle LOS	E		

Segment 2

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	2051
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	12.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	1016	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.60

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	58.8
Speed Slope Coefficient (m)	3.79970	Speed Power Coefficient (p)	0.45063
PF Slope Coefficient (m)	-1.41636	PF Power Coefficient (p)	0.73508
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	14.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	2051	5990	2.6	55.1

Vehicle Results

Average Speed, mi/h	55.1	Percent Followers, %	76.1
Segment Travel Time, minutes	0.42	Follower Density (FD), followers/mi/ln	14.0
Follower Density Mid-Point, followers/mi/ln	0.0	Vehicle LOS	E

Segment 3

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	10095
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	1016	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.60

Intermediate Results

Segment Vertical Class	4	Free-Flow Speed, mi/h	59.0
Speed Slope Coefficient (m)	10.52571	Speed Power Coefficient (p)	0.43481
PF Slope Coefficient (m)	-1.89779	PF Power Coefficient (p)	0.76338

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	413	5990	2.6	48.8
2	Tangent	1092	-	-	48.8
3	Horizontal Curve	1749	1940	5.6	48.8
4	Tangent	532	-	-	48.8
5	Horizontal Curve	1233	2850	4.6	48.8
6	Tangent	1862	-	-	48.8
7	Horizontal Curve	1088	3149	4.2	48.8
8	Tangent	925	-	-	48.8
9	Horizontal Curve	231	1300	6.0	48.8
10	Tangent	970	-	-	48.8

Vehicle Results

Average Speed, mi/h	48.8	Percent Followers, %	85.4
Segment Travel Time, minutes	2.35	Follower Density (FD), followers/mi/ln	17.8
Vehicle LOS	E		

Segment 4

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	13781
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	1039	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.69

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	61.3
Speed Slope Coefficient (m)	6.90808	Speed Power Coefficient (p)	1.53798
PF Slope Coefficient (m)	-0.95517	PF Power Coefficient (p)	0.92341
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.9
%Improvement to Percent Followers	38.8	%Improvement to Speed	5.7

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	461	-	-	55.0
2	Horizontal Curve	372	4000	3.6	55.0
3	Tangent	1046	-	-	55.0

4	Horizontal Curve	1448	1528	6.0	55.0
5	Tangent	1009	-	-	55.0
6	Horizontal Curve	1230	1700	5.8	55.0
7	Tangent	1622	-	-	55.0
8	Horizontal Curve	220	2000	5.4	55.0
9	Tangent	625	-	-	55.0
10	Horizontal Curve	509	2260	5.2	55.0
11	Tangent	882	-	-	55.0
12	Horizontal Curve	531	2500	5.0	55.0
13	Tangent	548	-	-	55.0
14	Horizontal Curve	519	1200	6.0	55.0
15	Tangent	1074	-	-	55.0
16	Horizontal Curve	441	1200	6.0	55.0
17	Tangent	769	-	-	55.0
18	Horizontal Curve	475	2750	4.6	55.0

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	568	471
Percentage of Heavy Vehicles (HV%), %	3.32	14.32
Initial Average Speed (Sint), mi/h	59.9	59.0
Average Speed at Midpoint (SPLmid), mi/h	61.7	57.1
Percent Followers at Midpoint (PFPLmid), %	45.9	36.8

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	62.8
Segment Travel Time, minutes	2.85	Follower Density (FD), followers/mi/ln	6.9
Follower Density Mid-Point, followers/mi/ln	3.6	Vehicle LOS	B

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	13654
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	1039	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.61

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.2
Speed Slope Coefficient (m)	3.99567	Speed Power Coefficient (p)	0.41674

PF Slope Coefficient (m)	-1.31617	PF Power Coefficient (p)	0.71068
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	13.2
%Improvement to Percent Followers	11.1	%Improvement to Speed	1.1

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	563	2750	4.6	58.3
2	Tangent	778	-	-	58.3
3	Horizontal Curve	432	1200	6.0	58.2
4	Tangent	2878	-	-	58.3
5	Horizontal Curve	987	1200	6.0	58.2
6	Tangent	571	-	-	58.3
7	Horizontal Curve	518	1200	6.0	58.2
8	Tangent	1521	-	-	58.3
9	Horizontal Curve	188	10302	2.0	58.3
10	Tangent	903	-	-	58.3
11	Horizontal Curve	366	2900	4.6	58.3
12	Tangent	1307	-	-	58.3
13	Horizontal Curve	95	1200	6.0	58.2
14	Tangent	1186	-	-	58.3
15	Horizontal Curve	1012	1200	6.0	58.2
16	Tangent	349	-	-	58.3

Vehicle Results

Average Speed, mi/h	59.0	Percent Followers, %	74.1
Segment Travel Time, minutes	2.63	Follower Density (FD), followers/mi/ln	11.6
Vehicle LOS	D		

Segment 6

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	6086
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.72

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.0
Speed Slope Coefficient (m)	6.04204	Speed Power Coefficient (p)	1.00816
PF Slope Coefficient (m)	-1.10363	PF Power Coefficient (p)	0.87101
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.4

%Improvement to Percent Followers	40.7	%Improvement to Speed	4.7

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	59	-	-	56.1
2	Horizontal Curve	1024	1200	6.0	56.1
3	Tangent	481	-	-	56.1
4	Horizontal Curve	734	1200	6.0	56.1
5	Tangent	1998	-	-	56.1
6	Horizontal Curve	487	1200	6.0	56.1
7	Tangent	405	-	-	56.1
8	Horizontal Curve	294	1200	6.0	56.1
9	Tangent	340	-	-	56.1
10	Horizontal Curve	264	5600	2.8	56.1

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	589	494
Percentage of Heavy Vehicles (HV%), %	3.32	14.24
Initial Average Speed (Sint), mi/h	59.5	59.2
Average Speed at Midpoint (SPLmid), mi/h	61.3	57.3
Percent Followers at Midpoint (PFPLmid), %	52.4	44.6

Vehicle Results

Average Speed, mi/h	56.1	Percent Followers, %	69.4
Segment Travel Time, minutes	1.23	Follower Density (FD), followers/mi/ln	7.6
Follower Density Mid-Point, followers/mi/ln	4.4	Vehicle LOS	C

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	11181
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.0
Speed Slope Coefficient (m)	3.96476	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29281	PF Power Coefficient (p)	0.73336
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	13.9

%Improvement to Percent Followers	10.7	%Improvement to Speed	0.2

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	532	5600	2.8	58.0
2	Tangent	805	-	-	58.0
3	Horizontal Curve	130	1200	6.0	58.0
4	Tangent	791	-	-	58.0
5	Horizontal Curve	1222	1663	5.8	58.0
6	Tangent	329	-	-	58.0
7	Horizontal Curve	327	1200	6.0	58.0
8	Tangent	359	-	-	58.0
9	Horizontal Curve	381	1200	6.0	58.0
10	Tangent	1402	-	-	58.0
11	Horizontal Curve	400	2250	5.2	58.0
12	Tangent	350	-	-	58.0
13	Horizontal Curve	521	1200	6.0	58.0
14	Tangent	461	-	-	58.0
15	Horizontal Curve	437	1800	5.8	58.0
16	Tangent	681	-	-	58.0
17	Horizontal Curve	321	2150	5.4	58.0
18	Tangent	1732	-	-	58.0

Vehicle Results

Average Speed, mi/h	58.2	Percent Followers, %	74.6
Segment Travel Time, minutes	2.18	Follower Density (FD), followers/mi/ln	12.4
Vehicle LOS	E		

Segment 8

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	8552
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.72

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.1
Speed Slope Coefficient (m)	6.17836	Speed Power Coefficient (p)	1.16338
PF Slope Coefficient (m)	-1.04421	PF Power Coefficient (p)	0.90173
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.0

%Improvement to Percent Followers	39.6	%Improvement to Speed	5.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	57	-	-	56.1
2	Horizontal Curve	531	1200	6.0	56.1
3	Tangent	773	-	-	56.1
4	Horizontal Curve	496	1890	5.6	56.1
5	Tangent	1235	-	-	56.1
6	Horizontal Curve	660	5784	2.8	56.1
7	Tangent	265	-	-	56.1
8	Horizontal Curve	417	1200	6.0	56.1
9	Tangent	699	-	-	56.1
10	Horizontal Curve	823	1250	6.0	56.1
11	Tangent	1054	-	-	56.1
12	Horizontal Curve	86	1200	6.0	56.1
13	Tangent	276	-	-	56.1
14	Horizontal Curve	94	1200	6.0	56.1
15	Tangent	352	-	-	56.1
16	Horizontal Curve	504	1200	6.0	56.1
17	Tangent	230	-	-	56.1

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	589	494
Percentage of Heavy Vehicles (HV%), %	3.32	14.24
Initial Average Speed (Sint), mi/h	59.9	59.6
Average Speed at Midpoint (SPLmid), mi/h	61.7	57.7
Percent Followers at Midpoint (PFPLmid), %	49.8	42.1

Vehicle Results

Average Speed, mi/h	56.1	Percent Followers, %	67.4
Segment Travel Time, minutes	1.73	Follower Density (FD), followers/mi/ln	7.5
Follower Density Mid-Point, followers/mi/ln	4.2	Vehicle LOS	C

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	10579
Lane Width, ft	12	Shoulder Width, ft	5
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-

Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.8
Speed Slope Coefficient (m)	3.89797	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29806	PF Power Coefficient (p)	0.73548
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	14.2
%Improvement to Percent Followers	11.1	%Improvement to Speed	0.4

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	418	-	-	56.9
2	Horizontal Curve	589	1200	6.0	56.9
3	Tangent	1079	-	-	56.9
4	Horizontal Curve	478	1200	6.0	56.9
5	Tangent	868	-	-	56.9
6	Horizontal Curve	631	1200	6.0	56.9
7	Tangent	521	-	-	56.9
8	Horizontal Curve	462	1200	6.0	56.9
9	Tangent	2204	-	-	56.9
10	Horizontal Curve	304	1200	6.0	56.9
11	Tangent	632	-	-	56.9
12	Horizontal Curve	124	1200	6.0	56.9
13	Tangent	2269	-	-	56.9

Vehicle Results

Average Speed, mi/h	57.1	Percent Followers, %	74.8
Segment Travel Time, minutes	2.10	Follower Density (FD), followers/mi/ln	12.6
Vehicle LOS	E		

Segment 10

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	6435
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.5

Demand and Capacity

Directional Demand Flow Rate, veh/h	1288	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.86

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.8

Speed Slope Coefficient (m)	6.04249	Speed Power Coefficient (p)	1.03124
PF Slope Coefficient (m)	-1.09349	PF Power Coefficient (p)	0.87601
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.6
%Improvement to Percent Followers	37.7	%Improvement to Speed	4.4

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	954	-	-	54.6
2	Horizontal Curve	1135	3700	3.8	54.6
3	Tangent	3452	-	-	54.6
4	Horizontal Curve	894	5740	2.8	54.6

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	683	605
Percentage of Heavy Vehicles (HV%), %	3.32	13.92
Initial Average Speed (Sint), mi/h	58.9	58.3
Average Speed at Midpoint (SPLmid), mi/h	60.7	56.4
Percent Followers at Midpoint (PFPLmid), %	56.6	50.2

Vehicle Results

Average Speed, mi/h	54.6	Percent Followers, %	74.5
Segment Travel Time, minutes	1.34	Follower Density (FD), followers/mi/ln	10.5
Follower Density Mid-Point, followers/mi/ln	5.9	Vehicle LOS	C

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	4823
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	1288	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.76

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.2
Speed Slope Coefficient (m)	3.92421	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28169	PF Power Coefficient (p)	0.76751
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	17.5
%Improvement to Percent Followers	12.7	%Improvement to Speed	0.2

Subsegment Data

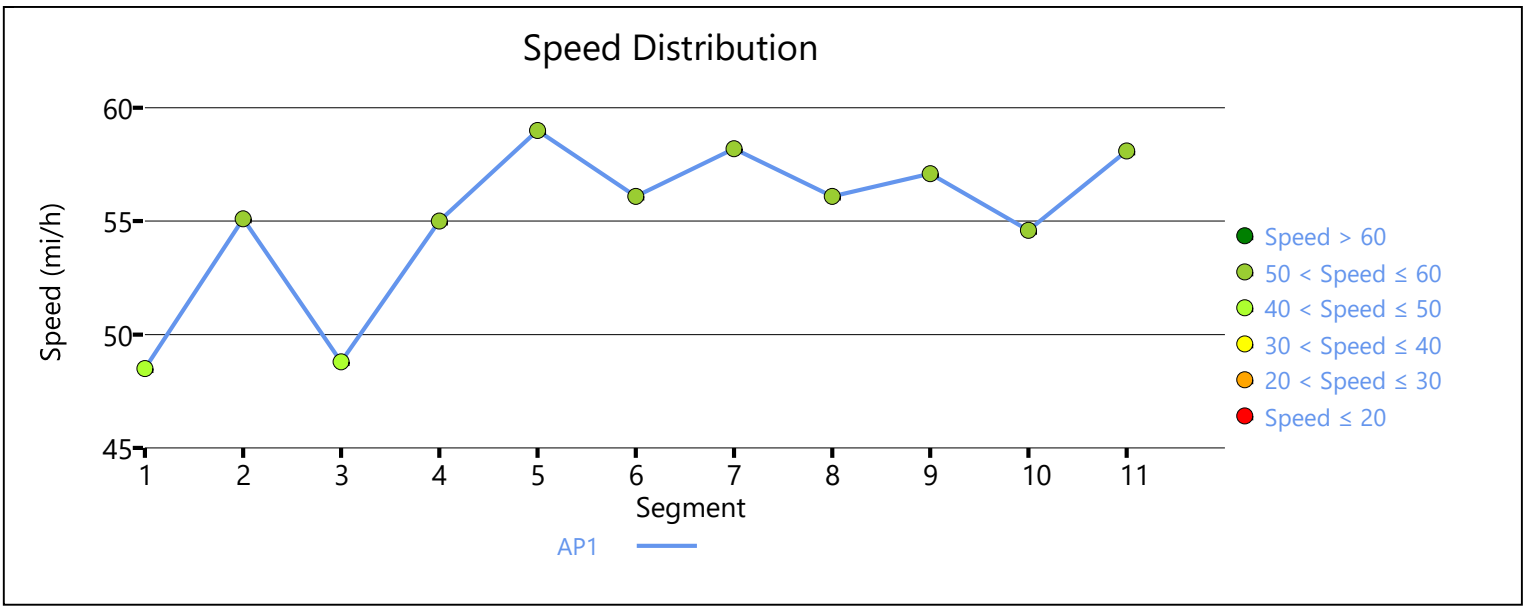
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	2523	5740	2.8	57.9
2	Tangent	2300	-	-	57.9

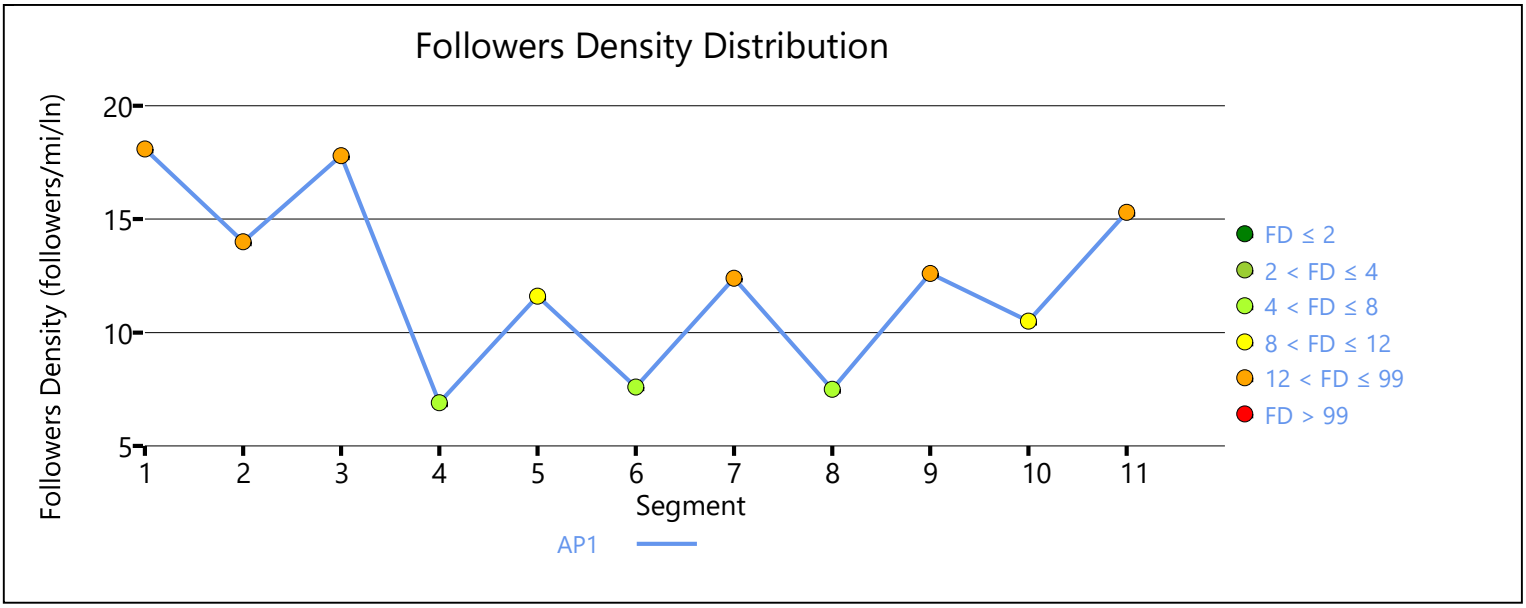
Vehicle Results

Average Speed, mi/h	58.1	Percent Followers, %	78.9
Segment Travel Time, minutes	0.94	Follower Density (FD), followers/mi/ln	15.3
Vehicle LOS	E		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	5048	9.37	10.9	D





HCS Two-Lane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	9/11/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AK DOT&PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Concept 2 - Southbound	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	2844
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	1434	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.96

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.9
Speed Slope Coefficient (m)	5.87428	Speed Power Coefficient (p)	0.80341
PF Slope Coefficient (m)	-1.27590	PF Power Coefficient (p)	0.79731
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	21.5
%Improvement to Percent Followers	38.6	%Improvement to Speed	3.3

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2300	-	-	54.5
2	Horizontal Curve	544	5740	2.8	54.5

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	747	687
Percentage of Heavy Vehicles (HV%), %	3.32	13.72
Initial Average Speed (Sint), mi/h	58.4	57.6
Average Speed at Midpoint (SPLmid), mi/h	60.3	55.6
Percent Followers at Midpoint (PFPLmid), %	66.2	60.7

Vehicle Results

Average Speed, mi/h	54.5	Percent Followers, %	81.7
Segment Travel Time, minutes	0.59	Follower Density (FD), followers/mi/ln	12.8
Follower Density Mid-Point, followers/	7.9	Vehicle LOS	C

mi/ln			

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	9875
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	1434	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.84

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.1
Speed Slope Coefficient (m)	3.96645	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28122	PF Power Coefficient (p)	0.74458
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	20.2
%Improvement to Percent Followers	8.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	2874	5740	2.8	57.7
2	Tangent	3452	-	-	57.7
3	Horizontal Curve	1135	3700	3.8	57.7
4	Tangent	2414	-	-	57.7

Vehicle Results

Average Speed, mi/h	57.7	Percent Followers, %	81.3
Segment Travel Time, minutes	1.95	Follower Density (FD), followers/mi/ln	18.6
Vehicle LOS	E		

Segment 3

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	7704
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.83

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.2

Speed Slope Coefficient (m)	6.05154	Speed Power Coefficient (p)	1.11473
PF Slope Coefficient (m)	-1.06330	PF Power Coefficient (p)	0.89089
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	16.7
%Improvement to Percent Followers	37.7	%Improvement to Speed	4.8

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	809	-	-	54.2
2	Horizontal Curve	124	1200	6.0	54.2
3	Tangent	632	-	-	54.2
4	Horizontal Curve	304	1200	6.0	54.2
5	Tangent	2204	-	-	54.2
6	Horizontal Curve	462	1200	6.0	54.2
7	Tangent	521	-	-	54.2
8	Horizontal Curve	631	1200	6.0	54.2
9	Tangent	868	-	-	54.2
10	Horizontal Curve	478	1200	6.0	54.2
11	Tangent	671	-	-	54.2

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	663	582
Percentage of Heavy Vehicles (HV%), %	3.32	13.98
Initial Average Speed (Sint), mi/h	58.5	58.0
Average Speed at Midpoint (SPLmid), mi/h	60.4	56.2
Percent Followers at Midpoint (PFPLmid), %	54.4	47.7

Vehicle Results

Average Speed, mi/h	54.2	Percent Followers, %	72.5
Segment Travel Time, minutes	1.62	Follower Density (FD), followers/mi/ln	9.9
Follower Density Mid-Point, followers/mi/ln	5.5	Vehicle LOS	C

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	11427
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.5

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.3
Speed Slope Coefficient (m)	3.98523	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29186	PF Power Coefficient (p)	0.73209
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	16.7
%Improvement to Percent Followers	9.7	%Improvement to Speed	0.1

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	408	-	-	58.1
2	Horizontal Curve	589	1200	6.0	57.9
3	Tangent	648	-	-	58.1
4	Horizontal Curve	504	1200	6.0	57.9
5	Tangent	352	-	-	58.1
6	Horizontal Curve	94	1200	6.0	57.9
7	Tangent	276	-	-	58.1
8	Horizontal Curve	86	1200	6.0	57.9
9	Tangent	1054	-	-	58.1
10	Horizontal Curve	823	1200	6.0	57.9
11	Tangent	699	-	-	58.1
12	Horizontal Curve	417	1200	6.0	57.9
13	Tangent	265	-	-	58.1
14	Horizontal Curve	660	5784	2.8	58.1
15	Tangent	1235	-	-	58.1
16	Horizontal Curve	496	1890	5.6	58.1
17	Tangent	773	-	-	58.1
18	Horizontal Curve	531	1200	6.0	57.9
19	Tangent	1517	-	-	58.1

Vehicle Results

Average Speed, mi/h	58.1	Percent Followers, %	78.1
Segment Travel Time, minutes	2.23	Follower Density (FD), followers/mi/ln	15.1
Vehicle LOS	E		

Segment 5

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	4866
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.83

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.6
Speed Slope Coefficient (m)	5.94347	Speed Power Coefficient (p)	0.93319
PF Slope Coefficient (m)	-1.15116	PF Power Coefficient (p)	0.84757
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.0
%Improvement to Percent Followers	39.1	%Improvement to Speed	4.2

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	272	-	-	54.9
2	Horizontal Curve	321	2150	5.4	54.9
3	Tangent	681	-	-	54.9
4	Horizontal Curve	437	1800	5.8	54.9
5	Tangent	461	-	-	54.9
6	Horizontal Curve	521	1200	6.0	54.9
7	Tangent	350	-	-	54.9
8	Horizontal Curve	400	2250	5.2	54.9
9	Tangent	1402	-	-	54.9
10	Horizontal Curve	21	1200	6.0	54.9

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	663	582
Percentage of Heavy Vehicles (HV%), %	3.32	13.98
Initial Average Speed (Sint), mi/h	58.6	58.1
Average Speed at Midpoint (SPLmid), mi/h	60.5	56.2
Percent Followers at Midpoint (PFPLmid), %	58.0	51.3

Vehicle Results

Average Speed, mi/h	54.9	Percent Followers, %	75.0
Segment Travel Time, minutes	1.01	Follower Density (FD), followers/mi/ln	9.9
Follower Density Mid-Point, followers/mi/ln	5.8	Vehicle LOS	C

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	12583
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.1
Speed Slope Coefficient (m)	3.98322	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.30487	PF Power Coefficient (p)	0.72097
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	16.8
%Improvement to Percent Followers	8.6	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	359	1200	6.0	57.9
2	Tangent	359	-	-	57.9
3	Horizontal Curve	327	1200	6.0	57.9
4	Tangent	329	-	-	57.9
5	Horizontal Curve	1222	1663	5.8	57.9
6	Tangent	791	-	-	57.9
7	Horizontal Curve	130	1200	6.0	57.9
8	Tangent	805	-	-	57.9
9	Horizontal Curve	796	5600	2.8	57.9
10	Tangent	340	-	-	57.9
11	Horizontal Curve	294	1200	6.0	57.9
12	Tangent	405	-	-	57.9
13	Horizontal Curve	487	1200	6.0	57.9
14	Tangent	1998	-	-	57.9
15	Horizontal Curve	734	1200	6.0	57.9
16	Tangent	481	-	-	57.9
17	Horizontal Curve	1024	1200	6.0	57.9
18	Tangent	408	-	-	57.9
19	Horizontal Curve	703	1200	6.0	57.9
20	Tangent	591	-	-	57.9

Vehicle Results

Average Speed, mi/h	57.9	Percent Followers, %	78.3
Segment Travel Time, minutes	2.47	Follower Density (FD), followers/mi/ln	15.4
Vehicle LOS	E		

Segment 7

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	6740
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	1217	Opposing Demand Flow Rate, veh/h	-

Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.81

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.0
Speed Slope Coefficient (m)	6.07813	Speed Power Coefficient (p)	1.04933
PF Slope Coefficient (m)	-1.08419	PF Power Coefficient (p)	0.88102
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	16.0
%Improvement to Percent Followers	38.5	%Improvement to Speed	4.6

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	595	-	-	55.2
2	Horizontal Curve	95	1200	6.0	55.2
3	Tangent	1307	-	-	55.2
4	Horizontal Curve	366	2900	4.6	55.2
5	Tangent	903	-	-	55.2
6	Horizontal Curve	188	10302	2.0	55.2
7	Tangent	1521	-	-	55.2
8	Horizontal Curve	518	1200	6.0	55.2
9	Tangent	571	-	-	55.2
10	Horizontal Curve	676	1200	6.0	55.2

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	651	566
Percentage of Heavy Vehicles (HV%), %	3.32	14.02
Initial Average Speed (Sint), mi/h	59.3	58.8
Average Speed at Midpoint (SPLmid), mi/h	61.1	56.9
Percent Followers at Midpoint (PFPLmid), %	54.7	47.8

Vehicle Results

Average Speed, mi/h	55.2	Percent Followers, %	72.4
Segment Travel Time, minutes	1.39	Follower Density (FD), followers/mi/ln	9.4
Follower Density Mid-Point, followers/mi/ln	5.3	Vehicle LOS	C

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	20203
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	1217	Opposing Demand Flow Rate, veh/h	-

Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.72

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	61.2
Speed Slope Coefficient (m)	5.49602	Speed Power Coefficient (p)	0.51587
PF Slope Coefficient (m)	-1.45333	PF Power Coefficient (p)	0.68664
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	17.8
%Improvement to Percent Followers	6.3	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	311	1200	6.0	55.4
2	Tangent	2878	-	-	55.4
3	Horizontal Curve	432	1200	6.0	55.4
4	Tangent	778	-	-	55.4
5	Horizontal Curve	1038	2750	4.6	55.4
6	Tangent	769	-	-	55.4
7	Horizontal Curve	441	2000	6.0	55.4
8	Tangent	1074	-	-	55.4
9	Horizontal Curve	519	1700	6.0	55.4
10	Tangent	548	-	-	55.4
11	Horizontal Curve	531	2500	5.0	55.4
12	Tangent	882	-	-	55.4
13	Horizontal Curve	509	2260	5.2	55.4
14	Tangent	625	-	-	55.4
15	Horizontal Curve	220	2000	5.4	55.4
16	Tangent	1622	-	-	55.4
17	Horizontal Curve	1230	1700	5.8	55.4
18	Tangent	1009	-	-	55.4
19	Horizontal Curve	1448	1528	6.0	55.4
20	Tangent	1046	-	-	55.4
21	Horizontal Curve	372	4000	3.6	55.4
22	Tangent	1431	-	-	55.4
23	Horizontal Curve	231	1300	6.0	55.4
24	Tangent	259	-	-	55.4

Vehicle Results

Average Speed, mi/h	55.4	Percent Followers, %	81.0
Segment Travel Time, minutes	4.15	Follower Density (FD), followers/mi/ln	16.7
Vehicle LOS	E		

Segment 9

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	4721
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	6.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	1175	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.78

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	60.4
Speed Slope Coefficient (m)	6.04683	Speed Power Coefficient (p)	0.99429
PF Slope Coefficient (m)	-1.11187	PF Power Coefficient (p)	0.83786
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	15.7
%Improvement to Percent Followers	40.1	%Improvement to Speed	4.4

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	667	-	-	53.9
2	Horizontal Curve	1088	3149	4.2	53.9
3	Tangent	1862	-	-	53.9
4	Horizontal Curve	1104	2850	4.6	53.9

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	632	543
Percentage of Heavy Vehicles (HV%), %	3.32	14.09
Initial Average Speed (Sint), mi/h	57.9	56.9
Average Speed at Midpoint (SPLmid), mi/h	59.8	55.1
Percent Followers at Midpoint (PFPLmid), %	56.2	47.6

Vehicle Results

Average Speed, mi/h	53.9	Percent Followers, %	72.0
Segment Travel Time, minutes	1.00	Follower Density (FD), followers/mi/ln	9.0
Follower Density Mid-Point, followers/mi/ln	5.3	Vehicle LOS	C

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	7426
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	1175	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.69

Intermediate Results

Segment Vertical Class	4	Free-Flow Speed, mi/h	59.0
Speed Slope Coefficient (m)	9.92980	Speed Power Coefficient (p)	0.50097
PF Slope Coefficient (m)	-1.76939	PF Power Coefficient (p)	0.76914
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	20.9
%Improvement to Percent Followers	12.7	%Improvement to Speed	1.1

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	129	2850	4.6	48.7
2	Tangent	532	-	-	48.7
3	Horizontal Curve	1749	1940	5.6	48.7
4	Tangent	1092	-	-	48.7
5	Horizontal Curve	3049	5990	2.6	48.7
6	Tangent	875	-	-	48.7

Vehicle Results

Average Speed, mi/h	49.2	Percent Followers, %	86.5
Segment Travel Time, minutes	1.71	Follower Density (FD), followers/mi/ln	18.0
Vehicle LOS	E		

Segment 11

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	10195
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	3.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	1175	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.78

Intermediate Results

Segment Vertical Class	4	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	8.13595	Speed Power Coefficient (p)	1.30609
PF Slope Coefficient (m)	-0.92037	PF Power Coefficient (p)	0.96867
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	15.2
%Improvement to Percent Followers	37.7	%Improvement to Speed	5.3

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	3101	-	-	51.1
2	Horizontal Curve	673	4610	3.2	51.1
3	Tangent	2405	-	-	51.1
4	Horizontal Curve	451	1200	6.0	51.1
5	Tangent	1667	-	-	51.1
6	Horizontal Curve	276	1200	6.0	51.1
7	Tangent	431	-	-	51.1
8	Horizontal Curve	422	4590	3.4	51.1
9	Tangent	768	-	-	51.1

Passing Lane Results

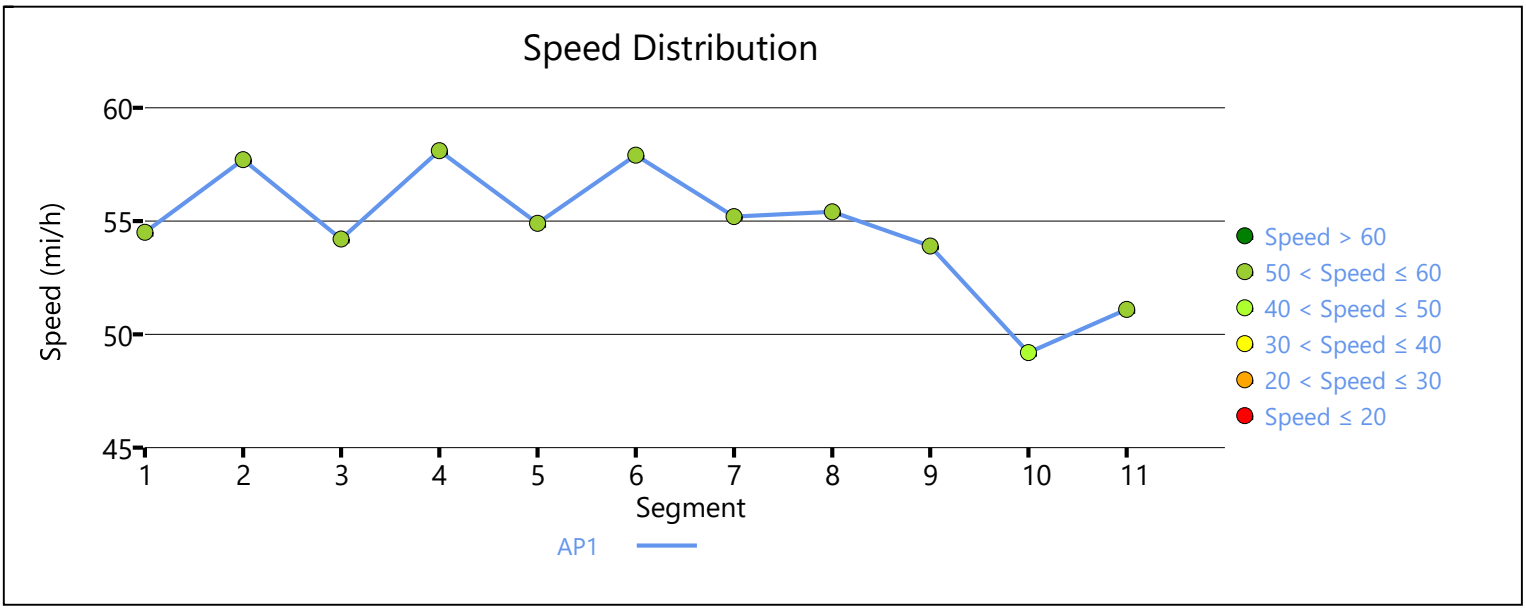
	Faster Lane	Slower Lane
Flow Rate, veh/h	632	543
Percentage of Heavy Vehicles (HV%), %	3.32	14.09
Initial Average Speed (Sint), mi/h	58.3	55.3
Average Speed at Midpoint (SPLmid), mi/h	60.2	53.4
Percent Followers at Midpoint (PFPLmid), %	48.0	40.4

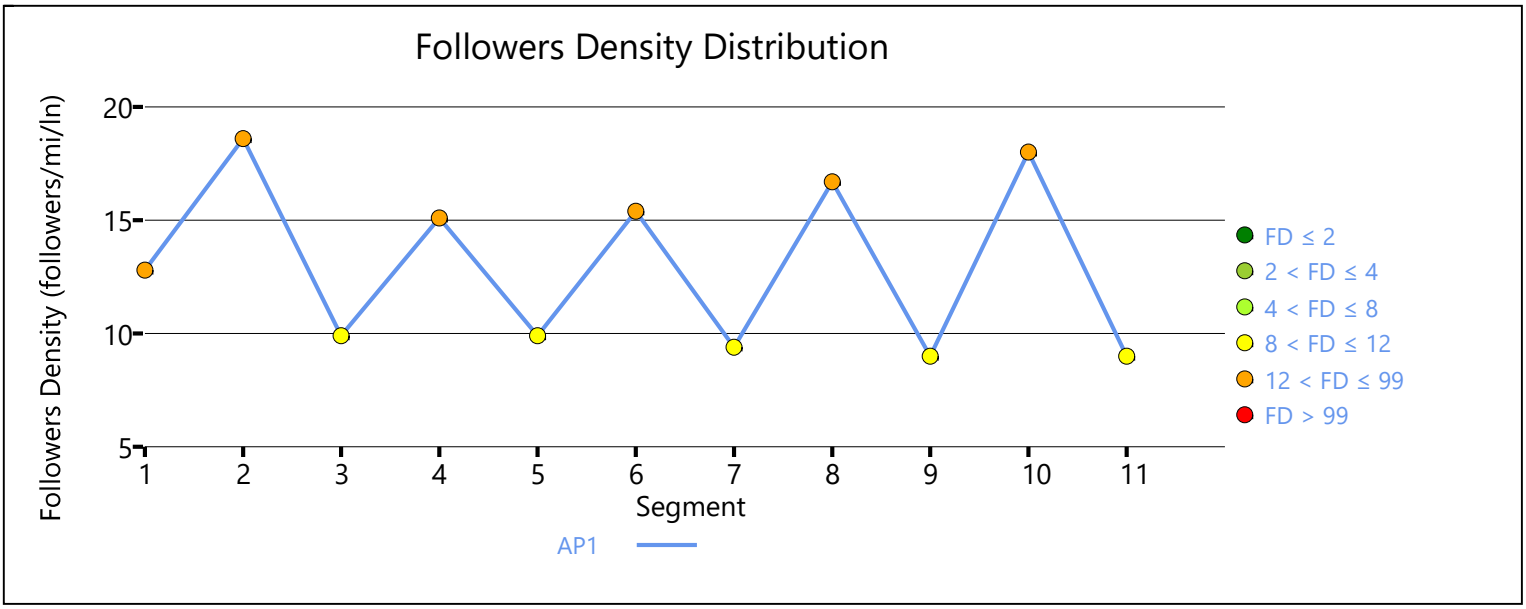
Vehicle Results

Average Speed, mi/h	51.1	Percent Followers, %	65.9
Segment Travel Time, minutes	2.27	Follower Density (FD), followers/mi/ln	9.0
Follower Density Mid-Point, followers/mi/ln	4.6	Vehicle LOS	C

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	5815	10.79	12.4	E





HCS Two-Lane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	11/24/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AK DOT&PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Concept 2 Median - Northbound	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	1550
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1016	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.60

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.91339	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.31721	PF Power Coefficient (p)	0.76037
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	12.8
%Improvement to Percent Followers	41.9	%Improvement to Speed	6.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	768	-	-	58.7
2	Horizontal Curve	422	4590	3.4	58.7
3	Tangent	360	-	-	58.7

Vehicle Results

Average Speed, mi/h	58.7	Percent Followers, %	73.6
Segment Travel Time, minutes	0.30	Follower Density (FD), followers/mi/ln	12.8
Follower Density Mid-Point, followers/mi/ln	2.6	Vehicle LOS	E

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	10110
Lane Width, ft	12	Shoulder Width, ft	6

Speed Limit, mi/h	55	Access Point Density, pts/mi	0.5

Demand and Capacity

Directional Demand Flow Rate, veh/h	1016	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.60

Intermediate Results

Segment Vertical Class	4	Free-Flow Speed, mi/h	59.8
Speed Slope Coefficient (m)	10.97134	Speed Power Coefficient (p)	0.43863
PF Slope Coefficient (m)	-1.89555	PF Power Coefficient (p)	0.76427
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	17.6
%Improvement to Percent Followers	19.9	%Improvement to Speed	3.9

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	136	-	-	49.2
2	Horizontal Curve	276	1200	6.0	49.2
3	Tangent	1606	-	-	49.2
4	Horizontal Curve	451	1200	6.0	49.2
5	Tangent	2500	-	-	49.2
6	Horizontal Curve	687	4610	3.2	49.2
7	Tangent	3868	-	-	49.2
8	Horizontal Curve	586	5990	2.6	49.2

Vehicle Results

Average Speed, mi/h	49.2	Percent Followers, %	85.3
Segment Travel Time, minutes	2.34	Follower Density (FD), followers/mi/ln	17.6
Vehicle LOS	E		

Segment 3

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	1440
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	7.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	1016	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.60

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.6
Speed Slope Coefficient (m)	3.81407	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33398	PF Power Coefficient (p)	0.75596

In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	13.2
%Improvement to Percent Followers	10.3	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1440	5990	2.6	56.9

Vehicle Results

Average Speed, mi/h	56.9	Percent Followers, %	74.1
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	13.2
Follower Density Mid-Point, followers/mi/ln	0.0	Vehicle LOS	E

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	10146
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1016	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.60

Intermediate Results

Segment Vertical Class	4	Free-Flow Speed, mi/h	59.6
Speed Slope Coefficient (m)	10.91305	Speed Power Coefficient (p)	0.43712
PF Slope Coefficient (m)	-1.89784	PF Power Coefficient (p)	0.76395
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	17.7
%Improvement to Percent Followers	7.4	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	1023	5990	2.6	49.1
2	Tangent	1093	-	-	49.1
3	Horizontal Curve	1749	1940	5.6	49.1
4	Tangent	533	-	-	49.1
5	Horizontal Curve	1233	2850	4.6	49.1
6	Tangent	1860	-	-	49.1
7	Horizontal Curve	1088	3149	4.2	49.1
8	Tangent	1567	-	-	49.1

Vehicle Results

Average Speed, mi/h	49.1	Percent Followers, %	85.4
Segment Travel Time, minutes	2.35	Follower Density (FD), followers/mi/ln	17.7

Vehicle LOS	E		

Segment 5

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	13775
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	1039	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.69

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	61.7
Speed Slope Coefficient (m)	6.94786	Speed Power Coefficient (p)	1.53762
PF Slope Coefficient (m)	-0.95281	PF Power Coefficient (p)	0.92553
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	11.8
%Improvement to Percent Followers	38.8	%Improvement to Speed	5.7

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	449	-	-	55.4
2	Horizontal Curve	363	4000	3.6	55.4
3	Tangent	1063	-	-	55.4
4	Horizontal Curve	1448	1528	6.0	55.4
5	Tangent	1008	-	-	55.4
6	Horizontal Curve	1230	1700	5.8	55.4
7	Tangent	1623	-	-	55.4
8	Horizontal Curve	220	2000	5.4	55.4
9	Tangent	625	-	-	55.4
10	Horizontal Curve	509	2260	5.2	55.4
11	Tangent	883	-	-	55.4
12	Horizontal Curve	531	2500	5.0	55.4
13	Tangent	548	-	-	55.4
14	Horizontal Curve	519	1200	6.0	55.4
15	Tangent	1072	-	-	55.4
16	Horizontal Curve	441	1200	6.0	55.4
17	Tangent	796	-	-	55.4
18	Horizontal Curve	447	2750	4.6	55.4

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	568	471

Percentage of Heavy Vehicles (HV%), %	3.32	14.32
Initial Average Speed (Sint), mi/h	60.3	59.3
Average Speed at Midpoint (SPLmid), mi/h	62.1	57.5
Percent Followers at Midpoint (PFPLmid), %	45.8	36.6

Vehicle Results

Average Speed, mi/h	55.4	Percent Followers, %	62.7
Segment Travel Time, minutes	2.83	Follower Density (FD), followers/mi/ln	6.8
Follower Density Mid-Point, followers/mi/ln	3.6	Vehicle LOS	B

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	12536
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.8

Demand and Capacity

Directional Demand Flow Rate, veh/h	1039	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.61

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.2
Speed Slope Coefficient (m)	3.98862	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.30341	PF Power Coefficient (p)	0.72168
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	13.2
%Improvement to Percent Followers	11.4	%Improvement to Speed	1.3

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	592	2750	4.6	58.3
2	Tangent	713	-	-	58.3
3	Horizontal Curve	432	1200	6.0	58.2
4	Tangent	2941	-	-	58.3
5	Horizontal Curve	987	1200	6.0	58.2
6	Tangent	578	-	-	58.3
7	Horizontal Curve	518	1200	6.0	58.2
8	Tangent	1496	-	-	58.3
9	Horizontal Curve	188	10302	2.0	58.3
10	Tangent	943	-	-	58.3
11	Horizontal Curve	366	2900	4.6	58.3
12	Tangent	1394	-	-	58.3
13	Horizontal Curve	95	1200	6.0	58.2

14	Tangent	1059	-	-	58.3
15	Horizontal Curve	234	1200	6.0	58.2

Vehicle Results

Average Speed, mi/h	59.1	Percent Followers, %	73.8
Segment Travel Time, minutes	2.41	Follower Density (FD), followers/mi/ln	11.5
Vehicle LOS	D		

Segment 7

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	6607
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.72

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.2
Speed Slope Coefficient (m)	6.08905	Speed Power Coefficient (p)	1.03987
PF Slope Coefficient (m)	-1.08727	PF Power Coefficient (p)	0.87961
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.3
%Improvement to Percent Followers	40.4	%Improvement to Speed	4.7

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	181	1200	6.0	56.2
2	Tangent	415	-	-	56.2
3	Horizontal Curve	1024	1200	6.0	56.2
4	Tangent	475	-	-	56.2
5	Horizontal Curve	734	1200	6.0	56.2
6	Tangent	1998	-	-	56.2
7	Horizontal Curve	487	1200	6.0	56.2
8	Tangent	405	-	-	56.2
9	Horizontal Curve	294	1200	6.0	56.2
10	Tangent	339	-	-	56.2
11	Horizontal Curve	255	5600	2.8	56.2

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	589	494
Percentage of Heavy Vehicles (HV%), %	3.32	14.24

Initial Average Speed (Sint), mi/h	59.8	59.4
Average Speed at Midpoint (SPLmid), mi/h	61.6	57.6
Percent Followers at Midpoint (PFPLmid), %	51.7	43.9

Vehicle Results

Average Speed, mi/h	56.2	Percent Followers, %	68.8
Segment Travel Time, minutes	1.34	Follower Density (FD), followers/mi/ln	7.5
Follower Density Mid-Point, followers/mi/ln	4.4	Vehicle LOS	C

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	11188
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	4.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.4
Speed Slope Coefficient (m)	3.93283	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29810	PF Power Coefficient (p)	0.73179
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	14.1
%Improvement to Percent Followers	10.7	%Improvement to Speed	0.2

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	540	5600	2.8	57.5
2	Tangent	851	-	-	57.5
3	Horizontal Curve	130	1200	6.0	57.5
4	Tangent	749	-	-	57.5
5	Horizontal Curve	1222	1663	5.8	57.5
6	Tangent	331	-	-	57.5
7	Horizontal Curve	327	1200	6.0	57.5
8	Tangent	372	-	-	57.5
9	Horizontal Curve	381	1200	6.0	57.5
10	Tangent	1386	-	-	57.5
11	Horizontal Curve	400	2250	5.2	57.5
12	Tangent	350	-	-	57.5
13	Horizontal Curve	521	1200	6.0	57.5
14	Tangent	440	-	-	57.5

15	Horizontal Curve	437	1800	5.8	57.5
16	Tangent	702	-	-	57.5
17	Horizontal Curve	321	2150	5.4	57.5
18	Tangent	1728	-	-	57.5

Vehicle Results

Average Speed, mi/h	57.6	Percent Followers, %	74.7
Segment Travel Time, minutes	2.21	Follower Density (FD), followers/mi/ln	12.6
Vehicle LOS	E		

Segment 9

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	8543
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.72

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.3
Speed Slope Coefficient (m)	6.19225	Speed Power Coefficient (p)	1.16196
PF Slope Coefficient (m)	-1.04390	PF Power Coefficient (p)	0.90208
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.0
%Improvement to Percent Followers	39.6	%Improvement to Speed	5.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	60	-	-	56.2
2	Horizontal Curve	531	1200	6.0	56.2
3	Tangent	792	-	-	56.2
4	Horizontal Curve	496	1890	5.6	56.2
5	Tangent	1217	-	-	56.2
6	Horizontal Curve	660	5784	2.8	56.2
7	Tangent	265	-	-	56.2
8	Horizontal Curve	417	1200	6.0	56.2
9	Tangent	698	-	-	56.2
10	Horizontal Curve	823	1250	6.0	56.2
11	Tangent	1053	-	-	56.2
12	Horizontal Curve	86	1200	6.0	56.2
13	Tangent	276	-	-	56.2
14	Horizontal Curve	94	1200	6.0	56.2

15	Tangent	352	-	-	56.2
16	Horizontal Curve	504	1200	6.0	56.2
17	Tangent	219	-	-	56.2

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	589	494
Percentage of Heavy Vehicles (HV%), %	3.32	14.24
Initial Average Speed (Sint), mi/h	60.0	59.7
Average Speed at Midpoint (SPLmid), mi/h	61.8	57.9
Percent Followers at Midpoint (PFPLmid), %	49.8	42.0

Vehicle Results

Average Speed, mi/h	56.2	Percent Followers, %	67.4
Segment Travel Time, minutes	1.73	Follower Density (FD), followers/mi/ln	7.5
Follower Density Mid-Point, followers/mi/ln	4.2	Vehicle LOS	C

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	10586
Lane Width, ft	12	Shoulder Width, ft	5
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1083	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.64

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.0
Speed Slope Coefficient (m)	3.91143	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29597	PF Power Coefficient (p)	0.73606
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	14.2
%Improvement to Percent Followers	11.1	%Improvement to Speed	0.4

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	429	-	-	57.2
2	Horizontal Curve	589	1200	6.0	57.2
3	Tangent	1079	-	-	57.2
4	Horizontal Curve	478	1200	6.0	57.2
5	Tangent	871	-	-	57.2
6	Horizontal Curve	631	1200	6.0	57.2
7	Tangent	535	-	-	57.2

8	Horizontal Curve	500	1200	6.0	57.2
9	Tangent	612	-	-	57.2
10	Horizontal Curve	39	1200	6.0	57.2
11	Tangent	1549	-	-	57.2
12	Horizontal Curve	212	1200	6.0	57.2
13	Tangent	642	-	-	57.2
14	Horizontal Curve	51	1200	6.0	57.2
15	Tangent	2369	-	-	57.2

Vehicle Results

Average Speed, mi/h	57.4	Percent Followers, %	74.7
Segment Travel Time, minutes	2.10	Follower Density (FD), followers/mi/ln	12.5
Vehicle LOS	E		

Segment 11

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	6429
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.5

Demand and Capacity

Directional Demand Flow Rate, veh/h	1288	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.86

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.8
Speed Slope Coefficient (m)	6.04219	Speed Power Coefficient (p)	1.03086
PF Slope Coefficient (m)	-1.09367	PF Power Coefficient (p)	0.87592
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.6
%Improvement to Percent Followers	37.8	%Improvement to Speed	4.4

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	892	-	-	54.6
2	Horizontal Curve	1262	3700	3.8	54.6
3	Tangent	3394	-	-	54.6
4	Horizontal Curve	881	5740	2.8	54.6

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	683	605
Percentage of Heavy Vehicles (HV%), %	3.32	13.92
Initial Average Speed (Sint), mi/h	58.8	58.3

Average Speed at Midpoint (SPLmid), mi/h	60.7	56.4
Percent Followers at Midpoint (PFPLmid), %	56.6	50.2

Vehicle Results

Average Speed, mi/h	54.6	Percent Followers, %	74.5
Segment Travel Time, minutes	1.34	Follower Density (FD), followers/mi/ln	10.5
Follower Density Mid-Point, followers/mi/ln	5.9	Vehicle LOS	C

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	4792
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	1288	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.76

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.1
Speed Slope Coefficient (m)	3.92376	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28200	PF Power Coefficient (p)	0.76751
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	17.5
%Improvement to Percent Followers	12.7	%Improvement to Speed	0.2

Subsegment Data

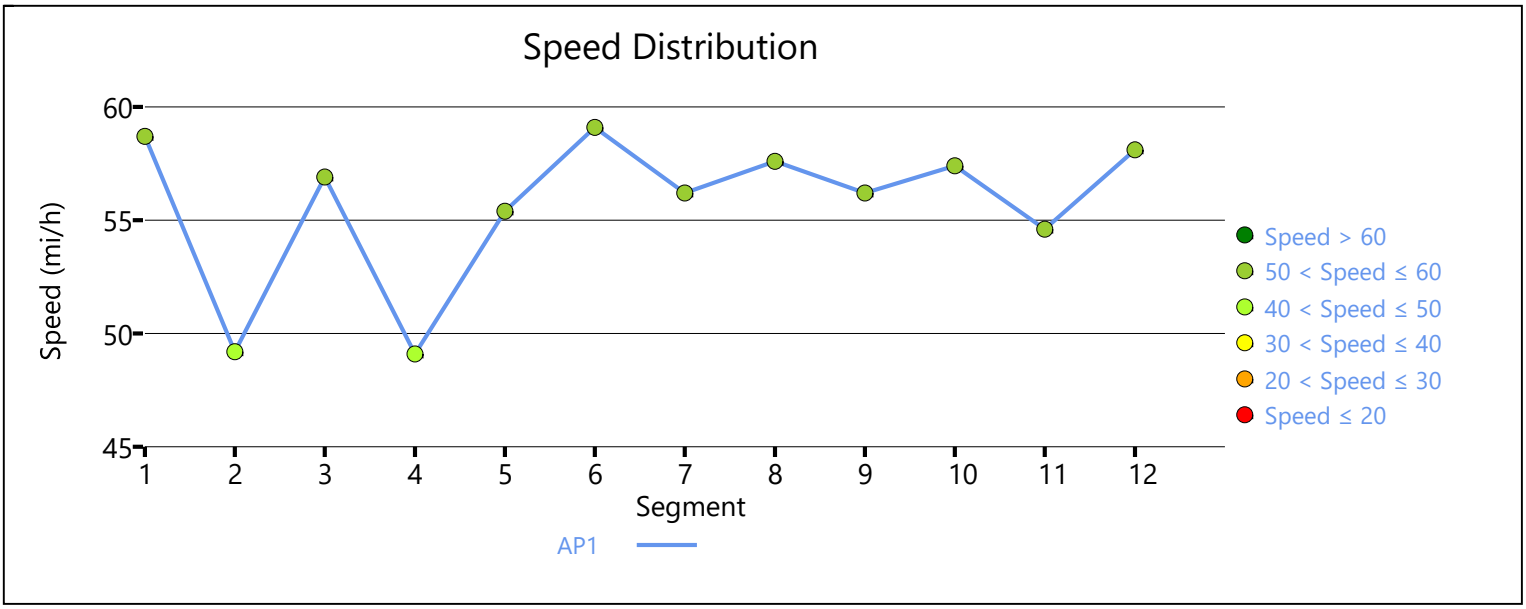
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	2522	5740	2.8	57.9
2	Tangent	2270	-	-	57.9

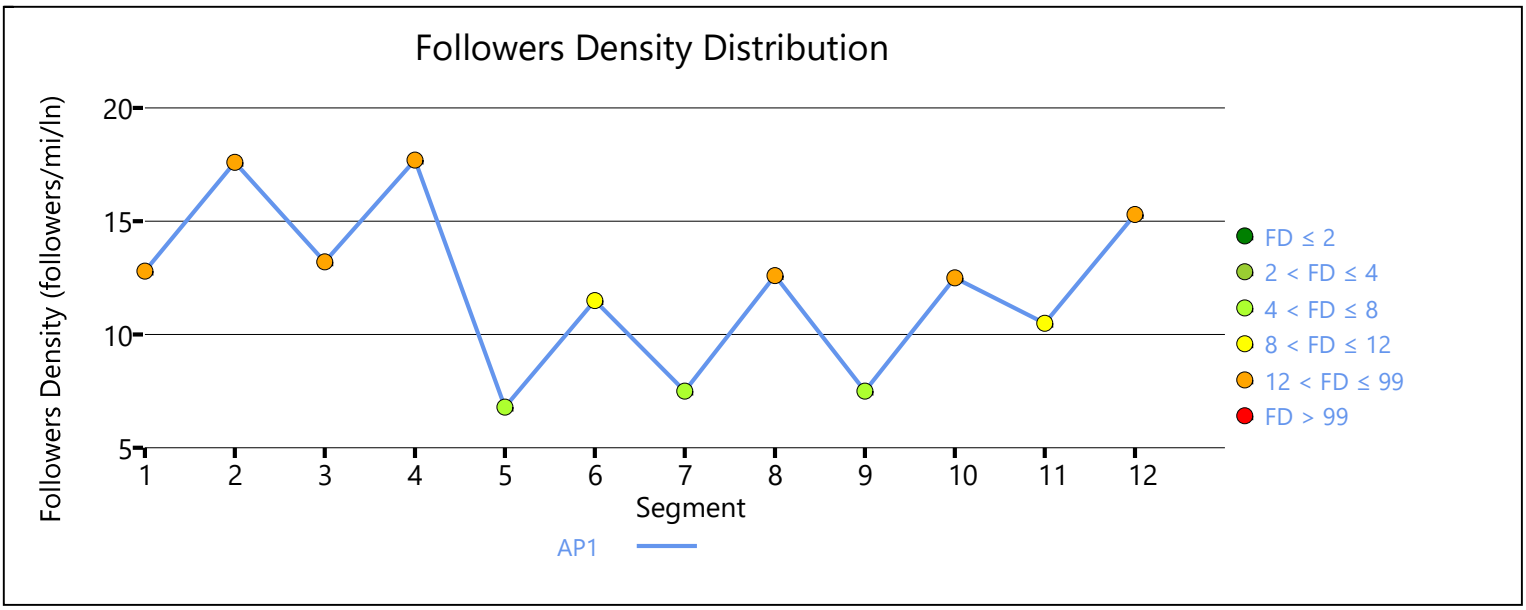
Vehicle Results

Average Speed, mi/h	58.1	Percent Followers, %	78.9
Segment Travel Time, minutes	0.94	Follower Density (FD), followers/mi/ln	15.3
Vehicle LOS	E		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	4990	9.12	10.6	D





HCS Two-Lane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	9/11/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AK DOT&PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Concept 2 Median - Southbound	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	2813
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	1434	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.96

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.9
Speed Slope Coefficient (m)	5.87271	Speed Power Coefficient (p)	0.80145
PF Slope Coefficient (m)	-1.27862	PF Power Coefficient (p)	0.79635
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	21.5
%Improvement to Percent Followers	38.6	%Improvement to Speed	3.3

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2270	-	-	54.6
2	Horizontal Curve	543	5740	2.8	54.6

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	747	687
Percentage of Heavy Vehicles (HV%), %	3.32	13.72
Initial Average Speed (Sint), mi/h	58.4	57.6
Average Speed at Midpoint (SPLmid), mi/h	60.3	55.6
Percent Followers at Midpoint (PFPLmid), %	66.3	60.8

Vehicle Results

Average Speed, mi/h	54.6	Percent Followers, %	81.8
Segment Travel Time, minutes	0.59	Follower Density (FD), followers/mi/ln	12.8

Follower Density Mid-Point, followers/ mi/ln	7.9	Vehicle LOS	C

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	9868
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1434	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.84

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.98130	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27872	PF Power Coefficient (p)	0.74534
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	20.1
%Improvement to Percent Followers	8.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	2860	5740	2.8	57.9
2	Tangent	3394	-	-	57.9
3	Horizontal Curve	1262	3700	3.8	57.9
4	Tangent	2352	-	-	57.9

Vehicle Results

Average Speed, mi/h	57.9	Percent Followers, %	81.2
Segment Travel Time, minutes	1.94	Follower Density (FD), followers/mi/ln	18.5
Vehicle LOS	E		

Segment 3

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	7711
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.83

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	61.7
Speed Slope Coefficient (m)	6.10130	Speed Power Coefficient (p)	1.11225
PF Slope Coefficient (m)	-1.06157	PF Power Coefficient (p)	0.89244
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	16.5
%Improvement to Percent Followers	37.7	%Improvement to Speed	4.7

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	909	-	-	54.7
2	Horizontal Curve	51	1200	6.0	54.7
3	Tangent	642	-	-	54.7
4	Horizontal Curve	212	1200	6.0	54.7
5	Tangent	1549	-	-	54.7
6	Horizontal Curve	39	1200	6.0	54.7
7	Tangent	612	-	-	54.7
8	Horizontal Curve	500	1200	6.0	54.7
9	Tangent	535	-	-	54.7
10	Horizontal Curve	631	1200	6.0	54.7
11	Tangent	871	-	-	54.7
12	Horizontal Curve	478	1200	6.0	54.7
13	Tangent	682	-	-	54.7

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	663	582
Percentage of Heavy Vehicles (HV%), %	3.32	13.98
Initial Average Speed (Sint), mi/h	59.0	58.5
Average Speed at Midpoint (SPLmid), mi/h	60.9	56.7
Percent Followers at Midpoint (PFPLmid), %	54.3	47.7

Vehicle Results

Average Speed, mi/h	54.7	Percent Followers, %	72.5
Segment Travel Time, minutes	1.60	Follower Density (FD), followers/mi/ln	9.8
Follower Density Mid-Point, followers/mi/ln	5.4	Vehicle LOS	C

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	11418
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-

Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	3.99195	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29065	PF Power Coefficient (p)	0.73248
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	16.7
%Improvement to Percent Followers	9.7	%Improvement to Speed	0.1

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	397	-	-	58.2
2	Horizontal Curve	589	1200	6.0	57.9
3	Tangent	648	-	-	58.2
4	Horizontal Curve	504	1200	6.0	57.9
5	Tangent	352	-	-	58.2
6	Horizontal Curve	94	1200	6.0	57.9
7	Tangent	276	-	-	58.2
8	Horizontal Curve	86	1200	6.0	57.9
9	Tangent	1053	-	-	58.2
10	Horizontal Curve	823	1250	6.0	57.9
11	Tangent	698	-	-	58.2
12	Horizontal Curve	417	1200	6.0	57.9
13	Tangent	265	-	-	58.2
14	Horizontal Curve	660	5784	2.8	58.2
15	Tangent	1217	-	-	58.2
16	Horizontal Curve	496	1890	5.6	58.2
17	Tangent	792	-	-	58.2
18	Horizontal Curve	531	1200	6.0	57.9
19	Tangent	1520	-	-	58.2

Vehicle Results

Average Speed, mi/h	58.2	Percent Followers, %	78.0
Segment Travel Time, minutes	2.23	Follower Density (FD), followers/mi/ln	15.1
Vehicle LOS	E		

Segment 5

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	4875
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.83

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.1
Speed Slope Coefficient (m)	5.99569	Speed Power Coefficient (p)	0.93071
PF Slope Coefficient (m)	-1.14890	PF Power Coefficient (p)	0.84902
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	16.9
%Improvement to Percent Followers	39.2	%Improvement to Speed	4.2

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	268	-	-	55.3
2	Horizontal Curve	321	2150	5.4	55.3
3	Tangent	702	-	-	55.3
4	Horizontal Curve	437	1800	5.8	55.3
5	Tangent	440	-	-	55.3
6	Horizontal Curve	521	1200	6.0	55.3
7	Tangent	350	-	-	55.3
8	Horizontal Curve	400	2250	5.2	55.3
9	Tangent	1386	-	-	55.3
10	Horizontal Curve	50	1200	6.0	55.3

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	663	582
Percentage of Heavy Vehicles (HV%), %	3.32	13.98
Initial Average Speed (Sint), mi/h	59.1	58.6
Average Speed at Midpoint (SPLmid), mi/h	61.0	56.7
Percent Followers at Midpoint (PFPLmid), %	57.9	51.2

Vehicle Results

Average Speed, mi/h	55.3	Percent Followers, %	74.9
Segment Travel Time, minutes	1.00	Follower Density (FD), followers/mi/ln	9.8
Follower Density Mid-Point, followers/mi/ln	5.8	Vehicle LOS	C

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	12504
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	1245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.73

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.1
Speed Slope Coefficient (m)	3.98272	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.30403	PF Power Coefficient (p)	0.72173
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	16.8
%Improvement to Percent Followers	8.6	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	330	1200	6.0	57.9
2	Tangent	372	-	-	57.9
3	Horizontal Curve	327	1200	6.0	57.9
4	Tangent	331	-	-	57.9
5	Horizontal Curve	1222	1663	5.8	57.9
6	Tangent	749	-	-	57.9
7	Horizontal Curve	130	1200	6.0	57.9
8	Tangent	851	-	-	57.9
9	Horizontal Curve	796	5600	2.8	57.9
10	Tangent	339	-	-	57.9
11	Horizontal Curve	294	1200	6.0	57.9
12	Tangent	405	-	-	57.9
13	Horizontal Curve	487	1200	6.0	57.9
14	Tangent	1998	-	-	57.9
15	Horizontal Curve	734	1200	6.0	57.9
16	Tangent	475	-	-	57.9
17	Horizontal Curve	1024	1200	6.0	57.9
18	Tangent	415	-	-	57.9
19	Horizontal Curve	723	1200	6.0	57.9
20	Tangent	502	-	-	57.9

Vehicle Results

Average Speed, mi/h	57.9	Percent Followers, %	78.3
Segment Travel Time, minutes	2.45	Follower Density (FD), followers/mi/ln	15.4
Vehicle LOS	E		

Segment 7

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	6730
Lane Width, ft	12	Shoulder Width, ft	6

Speed Limit, mi/h	55	Access Point Density, pts/mi	1.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	1217	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.81

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.0
Speed Slope Coefficient (m)	6.07762	Speed Power Coefficient (p)	1.04869
PF Slope Coefficient (m)	-1.08446	PF Power Coefficient (p)	0.88088
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	16.0
%Improvement to Percent Followers	38.5	%Improvement to Speed	4.6

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	449	-	-	55.2
2	Horizontal Curve	95	1200	6.0	55.2
3	Tangent	1394	-	-	55.2
4	Horizontal Curve	366	2900	4.6	55.2
5	Tangent	943	-	-	55.2
6	Horizontal Curve	188	10302	2.0	55.2
7	Tangent	1496	-	-	55.2
8	Horizontal Curve	518	1200	6.0	55.2
9	Tangent	578	-	-	55.2
10	Horizontal Curve	703	1200	6.0	55.2

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	651	566
Percentage of Heavy Vehicles (HV%), %	3.32	14.02
Initial Average Speed (Sint), mi/h	59.3	58.8
Average Speed at Midpoint (SPLmid), mi/h	61.1	56.9
Percent Followers at Midpoint (PFPLmid), %	54.7	47.8

Vehicle Results

Average Speed, mi/h	55.2	Percent Followers, %	72.5
Segment Travel Time, minutes	1.39	Follower Density (FD), followers/mi/ln	9.4
Follower Density Mid-Point, followers/mi/ln	5.3	Vehicle LOS	C

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	20195
Lane Width, ft	12	Shoulder Width, ft	6

Speed Limit, mi/h	55	Access Point Density, pts/mi	0.3

Demand and Capacity

Directional Demand Flow Rate, veh/h	1217	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.72

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	61.6
Speed Slope Coefficient (m)	5.66691	Speed Power Coefficient (p)	0.51809
PF Slope Coefficient (m)	-1.44983	PF Power Coefficient (p)	0.68749
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	17.7
%Improvement to Percent Followers	6.3	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	283	1200	6.0	55.6
2	Tangent	2941	-	-	55.6
3	Horizontal Curve	432	1200	6.0	55.6
4	Tangent	713	-	-	55.6
5	Horizontal Curve	1038	2750	4.6	55.6
6	Tangent	796	-	-	55.6
7	Horizontal Curve	441	1200	6.0	55.6
8	Tangent	1072	-	-	55.6
9	Horizontal Curve	519	1200	6.0	55.6
10	Tangent	548	-	-	55.6
11	Horizontal Curve	531	2500	5.0	55.6
12	Tangent	883	-	-	55.6
13	Horizontal Curve	509	2260	5.2	55.6
14	Tangent	625	-	-	55.6
15	Horizontal Curve	220	2000	5.4	55.6
16	Tangent	1623	-	-	55.6
17	Horizontal Curve	1230	1700	5.8	55.6
18	Tangent	1008	-	-	55.6
19	Horizontal Curve	1448	1528	6.0	55.6
20	Tangent	1063	-	-	55.6
21	Horizontal Curve	363	4000	3.6	55.6
22	Tangent	1909	-	-	55.6

Vehicle Results

Average Speed, mi/h	55.6	Percent Followers, %	81.0
Segment Travel Time, minutes	4.13	Follower Density (FD), followers/mi/ln	16.6
Vehicle LOS	E		

Segment 9

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	4725
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.1

Demand and Capacity

Directional Demand Flow Rate, veh/h	1175	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.78

Intermediate Results

Segment Vertical Class	2	Free-Flow Speed, mi/h	61.8
Speed Slope Coefficient (m)	6.19458	Speed Power Coefficient (p)	0.99453
PF Slope Coefficient (m)	-1.10175	PF Power Coefficient (p)	0.84319
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	15.3
%Improvement to Percent Followers	40.2	%Improvement to Speed	4.3

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	667	-	-	55.2
2	Horizontal Curve	1088	3149	4.2	55.2
3	Tangent	1860	-	-	55.2
4	Horizontal Curve	1110	2850	4.6	55.2

Passing Lane Results

	Faster Lane	Slower Lane
Flow Rate, veh/h	632	543
Percentage of Heavy Vehicles (HV%), %	3.32	14.09
Initial Average Speed (Sint), mi/h	59.3	58.3
Average Speed at Midpoint (SPLmid), mi/h	61.1	56.4
Percent Followers at Midpoint (PFPLmid), %	55.8	47.1

Vehicle Results

Average Speed, mi/h	55.2	Percent Followers, %	71.7
Segment Travel Time, minutes	0.97	Follower Density (FD), followers/mi/ln	8.8
Follower Density Mid-Point, followers/mi/ln	5.2	Vehicle LOS	C

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	7421
Lane Width, ft	12	Shoulder Width, ft	6

Speed Limit, mi/h	55	Access Point Density, pts/mi	0.7

Demand and Capacity

Directional Demand Flow Rate, veh/h	1175	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.69

Intermediate Results

Segment Vertical Class	4	Free-Flow Speed, mi/h	59.7
Speed Slope Coefficient (m)	10.29907	Speed Power Coefficient (p)	0.50496
PF Slope Coefficient (m)	-1.76670	PF Power Coefficient (p)	0.77013
In Passing Lane Effective Length?	Yes	Total Segment Density, veh/mi/ln	20.7
%Improvement to Percent Followers	12.7	%Improvement to Speed	1.1

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Horizontal Curve	123	2850	4.6	49.1
2	Tangent	533	-	-	49.1
3	Horizontal Curve	1749	1940	5.6	49.1
4	Tangent	1093	-	-	49.1
5	Horizontal Curve	3049	5990	2.6	49.1
6	Tangent	874	-	-	49.1

Vehicle Results

Average Speed, mi/h	49.6	Percent Followers, %	86.5
Segment Travel Time, minutes	1.70	Follower Density (FD), followers/mi/ln	17.9
Vehicle LOS	E		

Segment 11

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	10200
Lane Width, ft	12	Shoulder Width, ft	6
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.6

Demand and Capacity

Directional Demand Flow Rate, veh/h	1175	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	1.00	Total Trucks, %	8.30
Segment Capacity, veh/h	1500	Demand/Capacity (D/C)	0.78

Intermediate Results

Segment Vertical Class	4	Free-Flow Speed, mi/h	60.2
Speed Slope Coefficient (m)	8.22732	Speed Power Coefficient (p)	1.30437
PF Slope Coefficient (m)	-0.92060	PF Power Coefficient (p)	0.97041
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	15.1
%Improvement to Percent Followers	37.7	%Improvement to Speed	5.3

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2993	-	-	51.2
2	Horizontal Curve	687	4610	3.2	51.2
3	Tangent	2500	-	-	51.2
4	Horizontal Curve	451	1200	6.0	51.2
5	Tangent	1606	-	-	51.2
6	Horizontal Curve	276	1200	6.0	51.2
7	Tangent	497	-	-	51.2
8	Horizontal Curve	422	4590	3.4	51.2
9	Tangent	768	-	-	51.2

Passing Lane Results

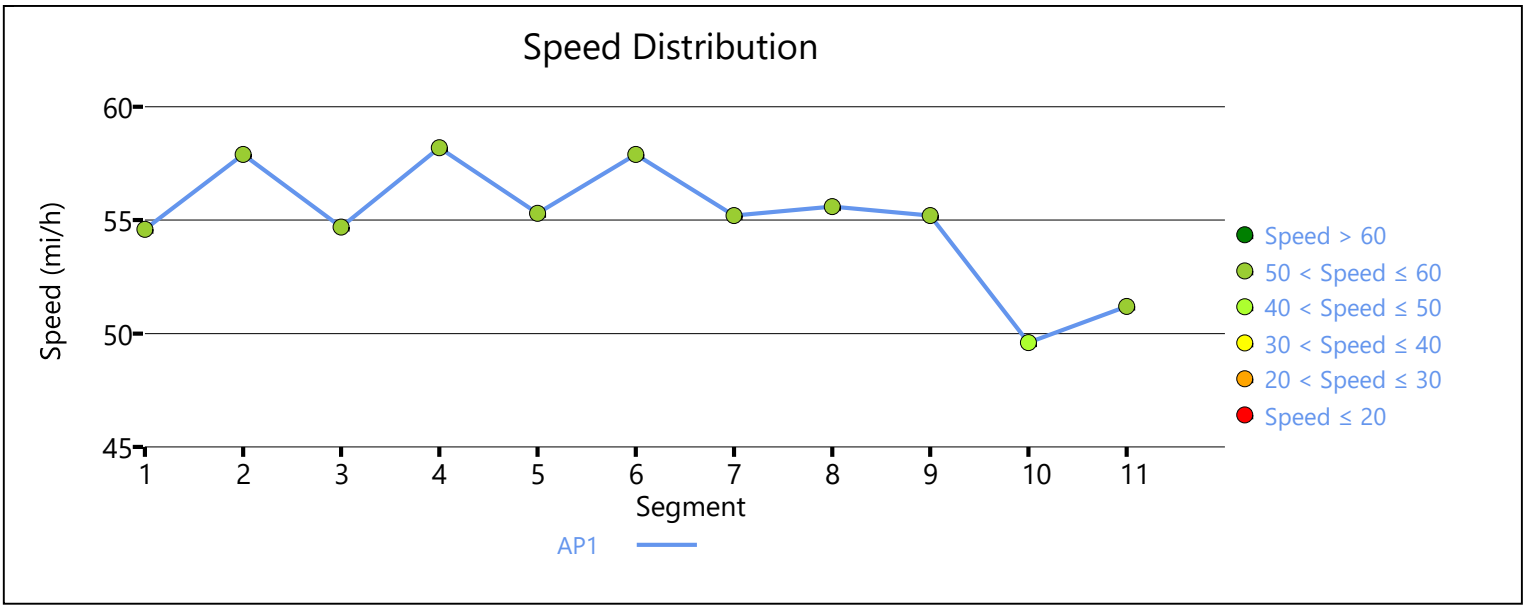
	Faster Lane	Slower Lane
Flow Rate, veh/h	632	543
Percentage of Heavy Vehicles (HV%), %	3.32	14.09
Initial Average Speed (Sint), mi/h	58.5	55.5
Average Speed at Midpoint (SPLmid), mi/h	60.4	53.6
Percent Followers at Midpoint (PFPLmid), %	48.0	40.4

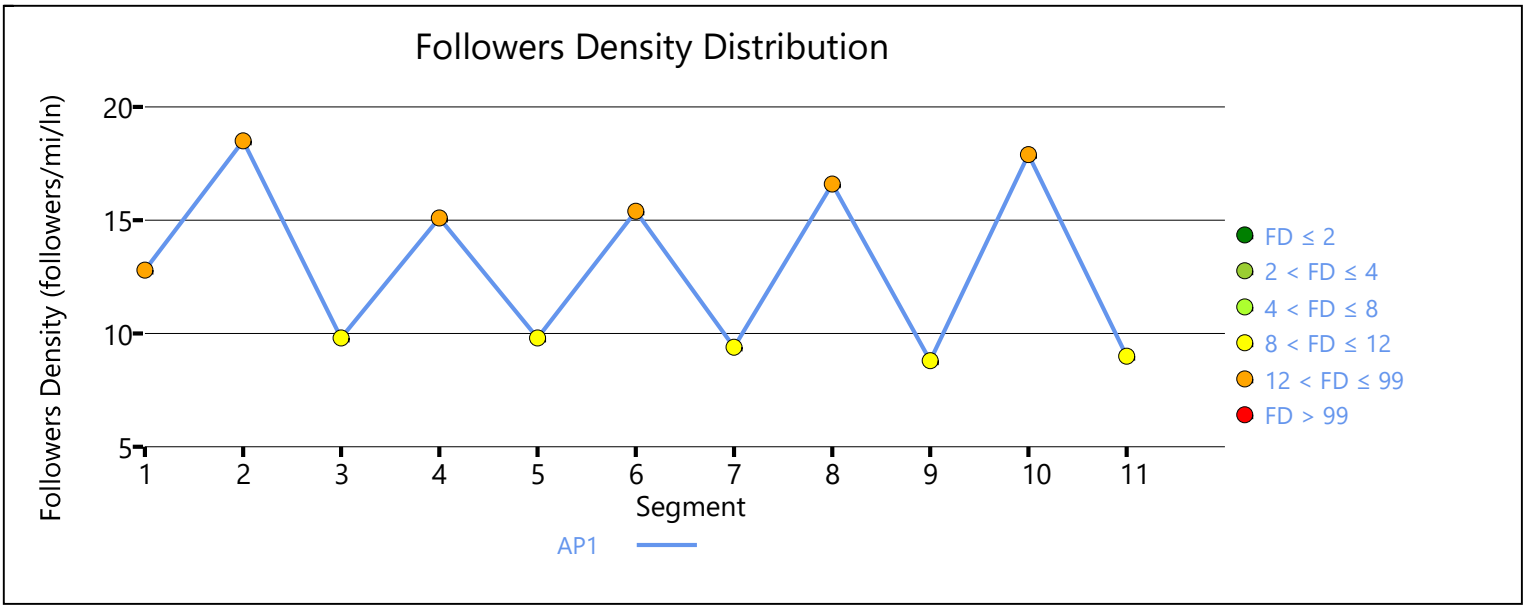
Vehicle Results

Average Speed, mi/h	51.2	Percent Followers, %	65.9
Segment Travel Time, minutes	2.26	Follower Density (FD), followers/mi/ln	9.0
Follower Density Mid-Point, followers/mi/ln	4.6	Vehicle LOS	C

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/mi/ln	LOS
1	5808	10.83	12.3	E





HCS Multilane Highway Report

Project Information

Analyst	Katie Brown, EIT, Beau Durland, EIT	Date	11/27/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AK DOT&PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Concept 7 100+00 to 113 +60	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	N bound		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	Undivided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	58.4	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	1016	Heavy Vehicle Adjustment Factor (f_{HV})	0.858
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	592
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2168
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2036
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.29

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	10.7
Median Type Adjustment (f_M)	1.6	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	S bound		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	Undivided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	58.4	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	1175	Heavy Vehicle Adjustment Factor (f_{HV})	0.858
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	684
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2168
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2036
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.34

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	12.3
Median Type Adjustment (f_M)	1.6	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.0		

HCS Multilane Highway Report

Project Information

Analyst	Katie Brown, EIT Beau Durland, EIT	Date	11/27/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AK DOT&PF	Time Analyzed	Summer Weekday Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Concept 7 - 113+60 to 332+37	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	N bound		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.4
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.4	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	1016	Heavy Vehicle Adjustment Factor (f_{HV})	0.858
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	592
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2187
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2054
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.29

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.4
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	10.5
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.6		

Direction 2 Geometric Data			
Direction 2	S bound		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.6
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.6	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors			
Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity			
Volume (V) veh/h	1175	Heavy Vehicle Adjustment Factor (f_{HV})	0.858
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	684
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2192
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2058
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	12.1
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.4		

HCS Multilane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	11/27/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AK DOT& PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Concept 7 - 332+37 to 598+23	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	N bound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.2
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.7	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	1039	Heavy Vehicle Adjustment Factor (f_{HV})	0.923
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	563
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2194
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2060
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.27

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.7
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	9.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Geometric Data

Direction 2	S bound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.6
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.9	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	1217	Heavy Vehicle Adjustment Factor (f_{HV})	0.923
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	660
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2198
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2064
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	11.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.2		

HCS Multilane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	11/27/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AK DOT&PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Concept 7 - 598+23 to 969+35	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	N bound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.1
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.7	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	1083	Heavy Vehicle Adjustment Factor (f_{HV})	0.923
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	586
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2194
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2060
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.28

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.7
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	10.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Geometric Data

Direction 2	S bound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.1
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.7	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	1245	Heavy Vehicle Adjustment Factor (f_{HV})	0.923
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	674
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2194
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2060
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.7
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	11.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.3		

HCS Multilane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	11/27/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AD DOT&PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Conept 7 - 969+35 to 1087+90	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	N bound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.8
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.6	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	1288	Heavy Vehicle Adjustment Factor (f_{HV})	0.923
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	698
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2192
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2058
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.34

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	12.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.5		

Direction 2 Geometric Data

Direction 2	S bound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.7
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.3	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	1434	Heavy Vehicle Adjustment Factor (f_{HV})	0.923
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	777
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2187
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2054
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.38

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.4
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	13.8
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.7		

HCS Multilane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	11/18/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AK DOT&PF	Time Analyzed	Summer Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Concept 7T- 100+00 to 113+60 (N)	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	N bound		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	Undivided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	58.4	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	1016	Heavy Vehicle Adjustment Factor (f_{HV})	0.858
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	592
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2168
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2036
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.29

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	10.7
Median Type Adjustment (f_M)	1.6	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Geometric Data

Direction 2	S bound		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	Undivided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	58.4	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	1175	Heavy Vehicle Adjustment Factor (f_{HV})	0.858
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	684
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2168
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2036
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.34

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	12.3
Median Type Adjustment (f_M)	1.6	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.0		

HCS Multilane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	11/18/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AK DOT&PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Concept 7T - 113+60 to 332+75	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	N bound		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.2
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	4
Free-Flow Speed (FFS), mi/h	59.3	Total Lateral Clearance (TLC), ft	10

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	1016	Heavy Vehicle Adjustment Factor (f_{HV})	0.858
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	592
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2185
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2052
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.29

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.3
Total Lateral Clearance Adj. (f_{LLC})	0.4	Density (D), pc/mi/ln	10.5
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Geometric Data

Direction 2	S bound		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.4
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	4
Free-Flow Speed (FFS), mi/h	59.3	Total Lateral Clearance (TLC), ft	10

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	1175	Heavy Vehicle Adjustment Factor (f_{HV})	0.858
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	684
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2185
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2052
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.3
Total Lateral Clearance Adj. (f_{LLC})	0.4	Density (D), pc/mi/ln	12.1
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.4		

HCS Multilane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	11/18/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AK DOT&PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Concept 7 - 332+75 to 602+37 (N)	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	N bound		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.8
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.8	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	1039	Heavy Vehicle Adjustment Factor (f_{HV})	0.858
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	606
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2196
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2062
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.29

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	10.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.2		

Direction 2 Geometric Data

Direction 2	S bound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.8
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.8	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	1217	Heavy Vehicle Adjustment Factor (f_{HV})	0.923
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	660
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2196
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2062
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.32

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	11.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.2		

HCS Multilane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	11/18/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AK DOT& PF	Time Analyzed	Summer Weekend Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Concept 7T - 602+37 to 97+118 (N)	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	N bound		
Number of Lanes (N), ln	2	Terrain Type	Rolling
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.8	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	1083	Heavy Vehicle Adjustment Factor (f_{HV})	0.858
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	631
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2196
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2062
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.31

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	11.1
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Geometric Data

Direction 2	S bound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.8	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	1245	Heavy Vehicle Adjustment Factor (f_{HV})	0.923
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	674
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2196
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2062
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	11.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.3		

HCS Multilane Highway Report

Project Information

Analyst	Katie Brown, EIT	Date	11/24/24
Agency	HDR	Analysis Year	2052
Jurisdiction	AD DOT&PF	Time Analyzed	Summer Peak Flow
Project Description	Seward Hwy 98.5 to 118 - Conept 7T - 971+18 to 1090+10 (N)	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	N bound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.8
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.6	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	1288	Heavy Vehicle Adjustment Factor (f_{HV})	0.923
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	698
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2192
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2058
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.34

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	12.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.5		

Direction 2 Geometric Data

Direction 2	S bound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.9
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	59.8	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 2 Demand and Capacity

Volume (V) veh/h	1434	Heavy Vehicle Adjustment Factor (f_{HV})	0.923
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	777
Total Trucks, %	8.30	Capacity (c), pc/h/ln	2196
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2062
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.38

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	13.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	0.2		

DESIGN DESIGNATION

State Route Number: 130000 Route Name: Seward Highway

Project Limits: MP 98.5-118, Bird Flats to Rabbit Creek

State Project Number: Z566310000 Federal Aid Number: 0A31034

Project Description: New Construction / Reconstruction

Design Functional Classification: Urban Arterial □ Rural Arterial □ Interstate ☑
Major Collector □ Minor Collector □ Local □ Other □

New Construction – Reconstruction (4R) ☑ Rehabilitation (3R) □ Other: □ _____

Project Design Life (years): 5 □ 10 □ 20 ☒ 25 □ Other: _

	Existing Year 2024	Construction Year 2032	Mid–Life Year 2042	Future Year 2052
Jun-Aug ADT*:	13,740	14,818	16,165	17,512
DHV:	2,061	2,223	2,425	2,627
Peak Hour Factor:	0.88	0.88	0.88	0.88
Direction Distribution:	46/54	46/54	46/54	46/54
Percent Recreational Vehicles:	NA	NA	NA	NA
Percent Commercial Trucks:	8.3	8.3	8.3	8.3
Compound Growth Rate:	1.0 %	1.0 %	1.0 %	1.0 %
Pedestrians (Number/Day):	NA	NA	NA	NA
Bicyclists (Number/Day):	NA	NA	NA	NA

*a Seasonally adjusted ADT was used, additional information is provided on subsequent pages

Design Vehicles for Turning: WB-120, Double Trailer Combination with Conventional Tractor (119.33')

Design Vehicle Loading: HS15 □ HS20 □ HS25 □ HL93 ☑ Other: □ _____

Equivalent Axle Loads (EALs): _____

Reviewed: _____ Date _____
Traffic Data Collection Manger

Reviewed: _____ Date _____
Area Planner

Approved: _____ Date _____
Regional Preconstruction Engineer