



December 10, 2021

Subject: SH 119 Boulder to Longmont Traffic Analysis

Dear State Highway 119 Project Team:

The enclosed materials document the traffic analysis performed in support of the State Highway (SH) 119 Boulder to Longmont Project. This project was initiated to assist decision-making about the future configuration of the SH 119 corridor. This planning process included a safety assessment and comprehensive travel demand modeling exercise using the CDOT Statewide Model, with an independent review of the socioeconomic forecasts for the study corridor influence area, and microscopic simulation of the study alternatives using VISSIM to produce summary statistics.

This evaluation follows the SH 119 Multi-Modal Planning and Environmental Linkages (PEL) Study, dated September 24, 2019, prepared for RTD, which was conducted to identify multi-modal infrastructure along the corridor. The final recommendations from this plan identified Bus Rapid Transit (BRT) along the corridor, a separated bikeway corridor, Coffman Street dedicated BRT lanes, Boulder BAT lanes. This plan moved forward the concept of managed lanes along SH 119 to serve the proposed BRT service and to provide HOV3+ tolled lanes along the corridor.

To move this vision forward, this study completed detailed analysis for several alternatives to understand how the operations along the corridor could improve person throughput along the corridor if mainline and intersection improvements are completed along SH 119 between Foothills Pkwy and Hover Street. **The decision-making process for which alternative should move forward was subsequently completed through separate conversations and documentation by HPTE and CDOT Region 4 Staff with input from the Stakeholders along the corridor.**

This technical analysis process is documented in a series of reports which detail the different study components. Contained within each of the documents are the assumptions used to conduct the analysis. Given the importance of these assumptions in the modeling processes and their impact on the final results, several key assumptions are summarized below for emphasis.

Study includes:

- All signalized intersections along SH 119 between, and including, Foothills Parkway and Hover Street.
- New planned RTD BRT along SH 119 - with stations within the median where applicable (2045 Baseline includes existing bus configuration, all others include BRT).

- PEL transit ridership forecasts have been included to generate person metrics calculations.
- Operations have been optimized to focus on progression of through traffic along SH 119 to maximize person throughput along the corridor.
- The 2045 Baseline model (and all future modeling) includes three fiscally committed improvements:
  - SH 119/SH 52 Split Signalized Intersections
  - Northbound SH 119/Airport Road Intersection Signalization
  - Southbound SH 119/Hover Street Tunnel (Grade-Separation)

The study did not include the following elements:

- Unsignalized intersections were not included in the VISSIM modeling, while few exist, those that do likely cause some segment turbulence as vehicles join the highway.
- Off-system side street signals impact along corridor was not included; meaning that vehicles destined for the study corridor arrived unmeted resulting in somewhat of an overestimation of diminishing side street performance.
- No side-street facility improvements have been assumed in the model study area as none are currently identified in the fiscally-constrained regional plan (beyond those defined above for in the 2045 Baseline Model) resulting in increased volumes along SH 119 (with widening) but no improvement to system access points along the intersection street system.

Greater detail about the assumptions and the results of the technical evaluation can be found in each technical report. Each of these deliverables presents the technical analysis completed along with the results.

- Attachment 1: **Socioeconomic Projections for State Highway 119**

This report details an independent evaluation of the socioeconomic inputs for the CDOT Statewide Travel Demand Model. The process undertaken for this evaluation included the impacts of COVID-19 in the forecasting process and a thorough review of the long-term population and employment projections within the influence area surrounding the study corridor. The resulting socioeconomic data was input into the CDOT Statewide Travel Demand Model along with the corridor improvements for each alternative to develop traffic forecasts for the microsimulation process.

- **Attachment 2: SH 119 Traffic Analysis Technical Report**

This memorandum defines the microsimulation process undertaken to evaluate the alternatives. This includes the model assumptions, details of the existing model calibration, development of the 2045 base year model, and evaluation of the study alternatives.

The modeling effort was split into two main processes: first, an evaluation of the SH 52/SH 119 intersection to determine the fiscally committed project improvements, and second, the consideration of each of the six mainline SH 119 improvement concepts.

1. 2045 Baseline – Fiscally Committed Improvements
2. 2045 Transit Slip Lanes
3. 2045 Three General-Purpose Lanes
4. 2045 Tolled Express Lanes (TEL) and At-Grade Crossings (Add Lane)
5. 2045 TEL and At-Grade Crossings (Lane Conversion)
6. 2045 TEL and Grade-Separated Crossings (Add Lane)

The results of this evaluation process were documented and presented to the stakeholders at a series of meetings throughout the project, culminating in the results detailed in this report and the accompanying attachments.

- **Attachment 3: SH 119 Life-Cycle Cost Analysis Technical Memo**

This memorandum considers a 25-year horizon life cycle-cost analysis to understand the costs and benefits associated with each of the proposed SH 119 alternatives. This process included costs associated with the capital construction of each alternative, maintenance and operations costs over the planning horizon, and user-delay costs associated with commuters and trucks traveling the corridor. The total costs have been divided into the total system users served by each of the alternatives to provide a representative comparison of the benefits.

## **Final Report**

# Socioeconomic Projections for State Highway 119

*The Economics of Land Use*



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# 1. Executive Summary

## Organization of Content

This report is organized with the following chapters.

- [Executive Summary](#): a brief overview of EPS’s three scenarios of independent forecasts and a comparison of these forecasts to third-party documentation.
- [Trends](#): a historical analysis of economic and demographic variables used in the development of the short- and long-term independent forecasts and the selection of dependent and independent variables in the short-term econometric model.
- [Major Development Plans](#): an analysis of conceptual, planned, or proposed land use projects (i.e., special generators) within each of the seven (7) counties that may not have been integrated into CDOT’s calibration of baseline TAZ data.
- [Independent Forecasts](#): provides details of EPS’s methodology, assumptions, and model specifications for the short- and long-term model components. It also details the assumptions and parameters used to define the three (3) scenario profiles.

The content of the report is structured to answer questions related to the development of EPS’s independent socioeconomic forecasts:

- Which data sources and trends were used to establish underlying factors and assumptions used in the forecasting models?
- What methodologies were used to develop the independent forecasts?
- How were different scenarios defined?
- What assumptions were used in defining the scenarios and why were they chosen?
- How do the resulting forecasts differ from previous or contemporary third-party forecasts?

## Summary of Projections

### Employment

**Independent Forecasts.** **Table 1** illustrate EPS’s three scenarios of employment between 2020 and 2045.

- **Low:** this scenario reflects average annual growth of approximately 14,200 jobs. The compounded annual average rate of growth is 0.7 percent.
- **Mid:** this scenario reflects average annual growth of approximately 26,600 jobs. The compounded annual average rate of growth is 1.2 percent.
- **High:** this scenario reflects average annual growth of approximately 37,300 jobs. The compounded annual average rate of growth is 1.6 percent.

**Table 1 Summary of Employment Projections**

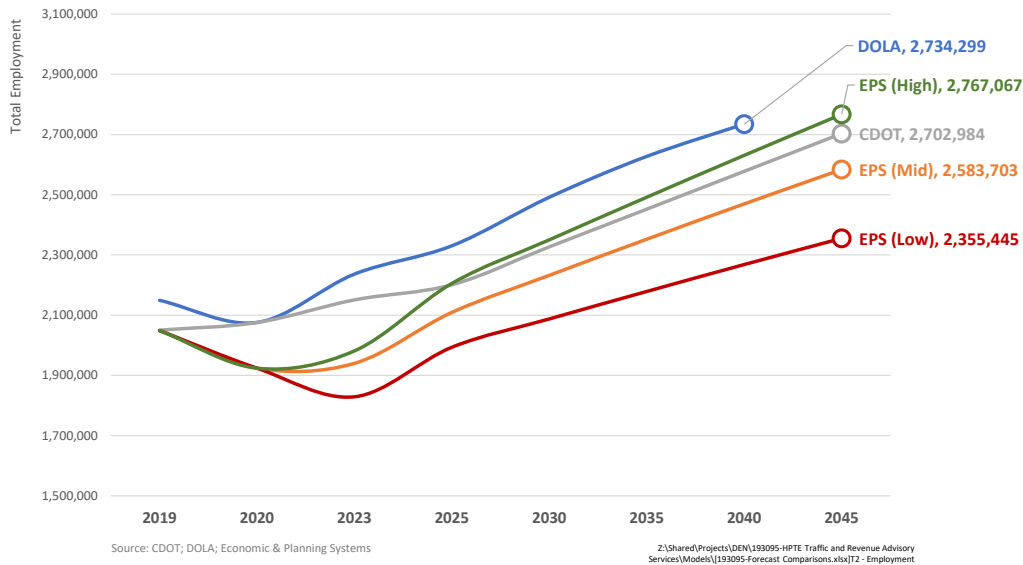
Scenarios	2020	2023	2025	2030	2035	2040	2045	2020-2045		
								Total	Ann. #	Ann. %
Low Scenario	1,982,684	1,837,827	1,995,452	2,085,180	2,171,638	2,255,293	2,336,386	353,702	14,148	0.66%
Mid Scenario	1,982,714	1,998,253	2,171,894	2,296,151	2,416,474	2,533,417	2,647,241	664,527	26,581	1.16%
High Scenario	1,982,717	2,072,663	2,329,367	2,481,000	2,628,700	2,773,044	2,914,261	931,545	37,262	1.55%

Source: Economic & Planning Systems

**Comparisons.** **Figure 1** illustrates EPS’s three employment forecast scenarios in the context of CDOT’s socioeconomic projections, as well as the Department of Local Affairs (DOLA) projections. The following points of comparison are made for year 2040, because DOLA’s projections of employment do not incorporate 2045.

- **Low:** EPS’s adjusted 2040 employment forecast is 12 percent below CDOT’s forecast and 17 percent below DOLA’s forecast.
- **Mid:** EPS’s adjusted 2040 employment forecast is 4 percent below CDOT’s forecast and 10 percent below DOLA’s forecast.
- **High:** EPS’s adjusted 2040 employment forecast is 2 percent above CDOT’s forecast and 4 percent below DOLA’s forecast.

**Figure 1 Comparison of Employment Forecasts**



## Population

**Independent Forecasts.** Table 2 illustrate EPS’s three scenarios of population between 2020 and 2045.

- **Low:** this scenario reflects average annual growth of approximately 39,500 residents. The compounded annual average rate of growth is 0.9 percent.
- **Mid:** this scenario reflects average annual growth of approximately 48,800 residents. The compounded annual average rate of growth is 1.0 percent.
- **High:** this scenario reflects average annual growth of approximately 57,300 residents. The compounded annual average rate of growth is 1.2 percent.

**Table 2 Summary of Population Projections**

Scenarios	2020	2023	2025	2030	2035	2040	2045	2020-2045		
								Total	Ann. #	Ann. %
Low Scenario	4,146,936	4,263,944	4,341,246	4,534,925	4,730,679	4,929,869	5,133,744	986,808	39,472	0.86%
Mid Scenario	4,146,333	4,291,191	4,387,058	4,627,153	4,869,322	5,114,927	5,365,218	1,218,885	48,755	1.04%
High Scenario	4,146,213	4,316,673	4,429,609	4,712,374	4,997,213	5,285,488	5,578,449	1,432,236	57,289	1.19%

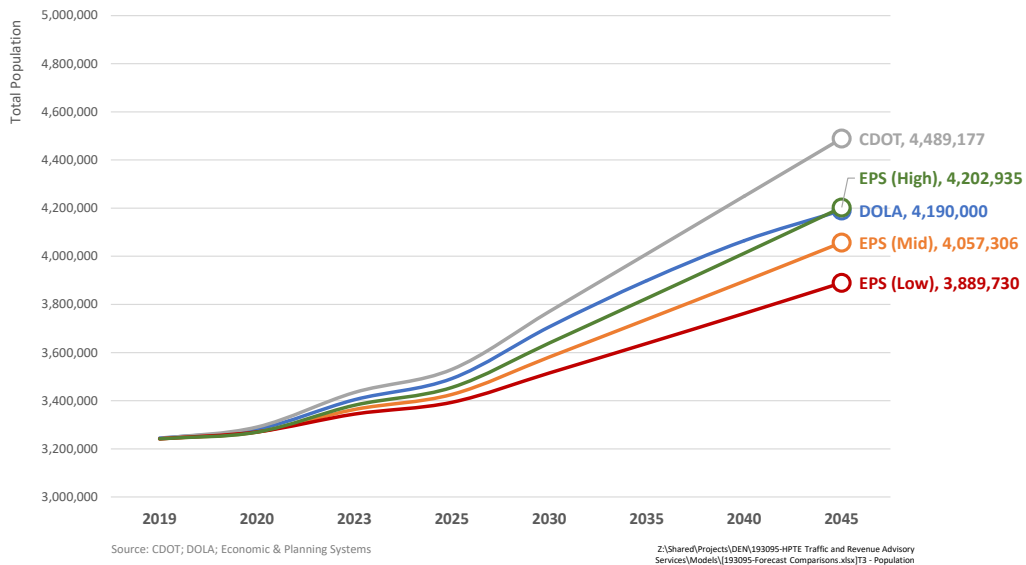
Source: Economic & Planning Systems



**Comparisons.** Figure 2 illustrates EPS’s three population forecast scenarios in the context of CDOT’s socioeconomic projections, as well as the Department of Local Affairs (DOLA) projections.

- **Low:** EPS’s adjusted 2045 population forecast is 13 percent below CDOT’s forecast and 7 percent below DOLA’s forecast.
- **Mid:** EPS’s adjusted 2045 population forecast is 10 percent below CDOT’s forecast and 3 percent below DOLA’s forecast.
- **High:** EPS’s adjusted 2045 population forecast is 6 percent below CDOT’s forecast and less than 1 percent above DOLA’s forecast.

**Figure 2 Comparison of Population Forecasts**



## Methodology Overview

### Forecast Model Structure

The independent forecast is structured to accommodate inputs about the current economic situation, possible recovery scenarios from the COVID-19 pandemic and subsequent recession, as well as longer-term structural economic patterns. As such, EPS's model is structured with dual components:

- **Short-Term Forecast (through 2025):** This model component forecasts current conditions through the end of 2025 on a monthly basis, creating a linkage between the base year (2018) and the initial year of the long-term forecast component. This forecast is built on two series of ordinary least squares (OLS) regressions: 1) sales taxes by county, and 2) employment by county by industry supersector. This two-stage regression model replicates the clear relationship that personal consumer spending has on the overall economy and thus employment levels. Moreover, the short-term model allows for a quantification of the relationship between the COVID-19 pandemic and impacts to the employment market.
- **Long-Term Forecast (2025-2045):** This model component forecasts employment, population, and households with an employment-based population forecast methodology. It aggregates the short-term model employment outputs at an annual level and applies additional macroeconomic and demographic assumptions to arrive at longer-term forecasts of employment, population, and households. The layers of macroeconomic assumptions incorporate regional industry-level location quotients and national level industry-level employment projections. Demographic assumptions include shifts related to in- and out-commuting patterns, unemployment, self-employed persons, group quarters, non-working populations, as well as shifts in average household size.

### Scenarios

After initial review of historical data and consideration for the incorporation of COVID-19 data into the modeling parameters, EPS identified three (3) scenarios that contain separate but intertwined assumptions and profiles regarding the current downturn, recovery, and longer-term economic and demographic outlook.

**Short-Term Forecast.** In the short-term model, scenario narratives are driven largely by three eventualities related to the remainder of the COVID-19 pandemic. In this narrative, assumptions regarding public health outcomes drive outcomes in consumer confidence, consumer spending, and employment levels. Assumptions for each of these variables are described in greater detail in the following sections.

- Low. A vaccine is not widely available until late 2021, and recovery patterns in consumer confidence, consumer spending, and employment are slightly slower because of the length of the disruption caused by more lasting personal income impacts.
- Mid. A vaccine becomes available in early 2021, but immunization and the eradication of cases persist longer into 2021, such that recovery patterns in consumer confidence, consumer spending, and employment levels occur within the year.
- High. A vaccine becomes available in early 2021, and immunization and the eradication of cases occur relatively quickly, allowing quick recovery of consumer confidence, consumer spending, and employment levels, reflecting little deterioration of underlying consumer demand.

**Table 3 Short-Term Model Scenarios**

	Low	Mid	High
<b>Public Health</b>			
Peaks in confirmed COVID-19 cases	Peaks occur at 7-month intervals through 4th quarter 2021	Peaks occur at 7-month intervals through 2nd quarter 2021	Peaks occur at 7-month intervals through 2nd quarter 2021
Availability of COVID-19 vaccine	4th quarter 2021	1st quarter 2021	1st quarter 2021
Sufficient immunization reached to accommodate "business as usual"	1st quarter 2022	4th quarter 2021	3rd quarter 2021
<b>Spending and Prices</b>			
Consumer confidence (low point)	Middle of 3rd quarter 2021	End of 2nd quarter 2021	1st quarter 2021
Consumer prices	Rises at historic rates	Rises at historic rates	Rises at historic rates
<b>Employment</b>			
Low point	Middle of 2nd quarter 2021	Middle of 3rd quarter 2021	Middle of 4th quarter 2021
Recovery of 2019 levels	Approx. 1st quarter 2025	Approx. 2nd quarter 2024	Approx. 3rd quarter 2023

Source: Economic & Planning Systems

**Long-Term Forecast.** In the long-term model, scenario narratives are driven by 1) annual employment levels for 2025 from the short-term model; and 2) the performance of each regional industry relative to the anticipated national structural growth by industry, as defined by the Bureau of Labor Statistics (BLS). Details of these assumptions are provided in the following sections.

- **Low.** This scenario is characterized by slower than anticipated long-term growth rates following the recovery from the pandemic and over the subsequent 20 years. Underlying demographic patterns reflect conditions in which unemployment persists longer and commuting patterns reflect relatively lower local labor force participation rates over time.
- **Mid.** This scenario is characterized by anticipated long-term growth rates by industry, which materialize following the recovery from the COVID-19 pandemic and subsequent 20 years. Underlying demographic patterns reflect conditions in which unemployment persists longer and commuting patterns reflect slightly higher local labor force participation rates over time.
- **High.** This scenario is characterized by higher-than-anticipated rates of industry-level employment growth rates following the pandemic and subsequent 20 years. Underlying demographic patterns reflect conditions in which unemployment does not persist and commuting patterns reflect high labor force participation rates.

**Table 4 Long-Term Model Scenarios**

	Low	Mid	High
<b>Employment</b>			
Long-term growth relative to national structural growth	Lower than anticipated regional-to-national industry-level outcomes	Anticipated regional-to-national industry-level outcomes	Higher than anticipated regional-to-national industry-level outcomes
Unemployment	Relatively high rates persist through 2023	Relatively high rates persist through 2023	Relatively high rates persist through 2021
<b>Demographics</b>			
In-commuting	Moderate increase of in-commuting patterns	Moderate increase of in-commuting patterns	Relatively high increase of in-commuting patterns
Out-commuting	Relatively low increase of out-commuting	Moderate increase of out-commuting	Relatively high increase of out-commuting
Self-employed	Moderate increase of self-employed persons	Moderate increase of self-employed persons	Moderate increase of self-employed persons
Non-working population (<16 years)	Lower than historic rate of cohort growth	Lower than historic rate of cohort growth	Lower than historic rate of cohort growth
Non-working population (over 65)	Slightly higher than historic rate of cohort growth	Slightly higher than historic rate of cohort growth	Slightly higher than historic rate of cohort growth

Source: Economic & Planning Systems

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## 2. Trends

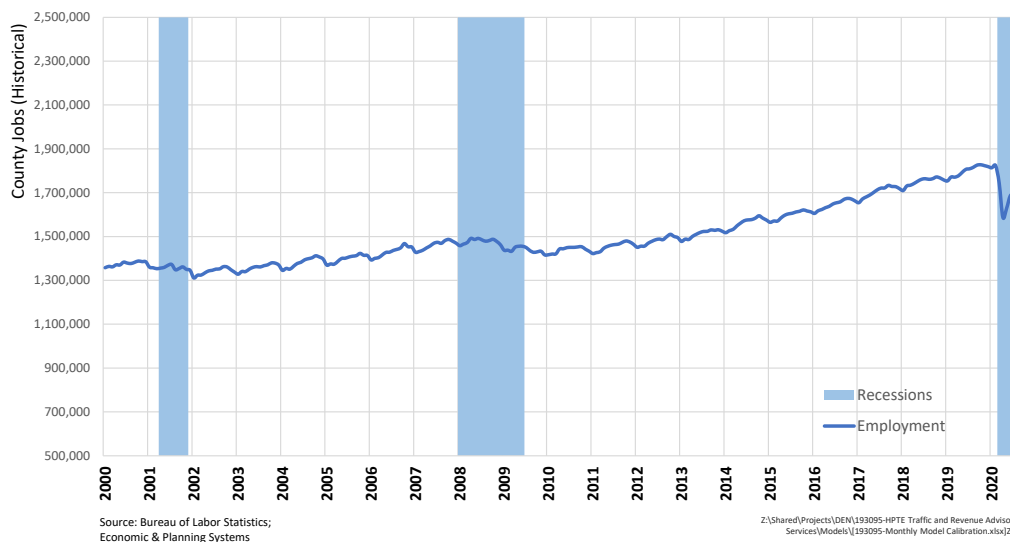
This chapter presents an analysis of historical trends in economic and demographic variables used in the calibration of dependent and independent variables within the short-term econometric model, as well as the long-term employment-based population forecasting model.

### Employment and Commuting

This section details historical trends in Wage & Salary employment as well as commuting patterns. Wage & Salary employment data are sourced from the Bureau of Labor Statistics (BLS) and Colorado Department of Labor and Employment (CDLE), and commuting data are sourced from the U.S. Census Longitudinal Employer Household Dynamics (LEHD). The methodology for the short-term independent forecast incorporates employment as one of the primary dependent variables (explained in greater detail beginning with **Table 17**). **Figure 3** shows trends in employment for the seven (7) counties that comprise the SH119 analysis area. Individual county employment trends are reported in **Figure 29** through **Figure 35** beginning on page 68. Using historic information, including economic cycles preceding this timeframe, the following are rates of recovery during subsequent (recovery) time periods:

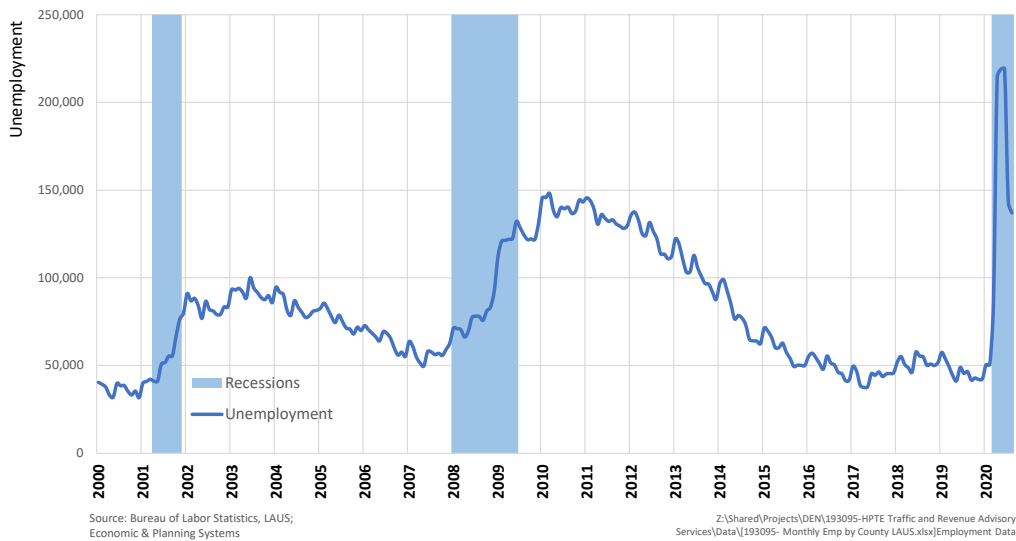
- 2001-2008: jobs rose at 1.2 percent per year, increasing 17,300 jobs per year
- 2009-2020: jobs rose at 2.3 percent per year, increasing 36,100 jobs per year

**Figure 3 Historic 7-County Area Employment**



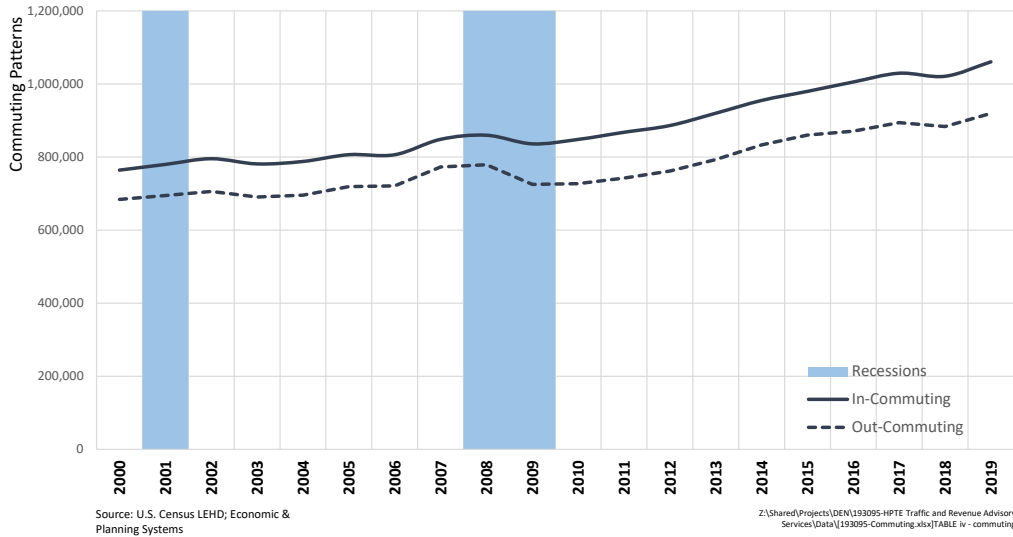
**Unemployment.** Figure 4 shows monthly unemployment levels for the seven (7) county analysis area. The scale of unemployment during the Great Recession (2007 through 2009) peaked at 50 percent higher than the 2001 recession. By contrast, the scale of unemployment reached at the onset of the COVID-19 pandemic was 50 percent higher than the Great Recession, although monthly data through late 2020 indicates the unemployment levels may not remain so high as long. Individual county unemployment levels are reported in Figure 36 through Figure 42 beginning on page 71.

**Figure 4 7-County Area Unemployment**



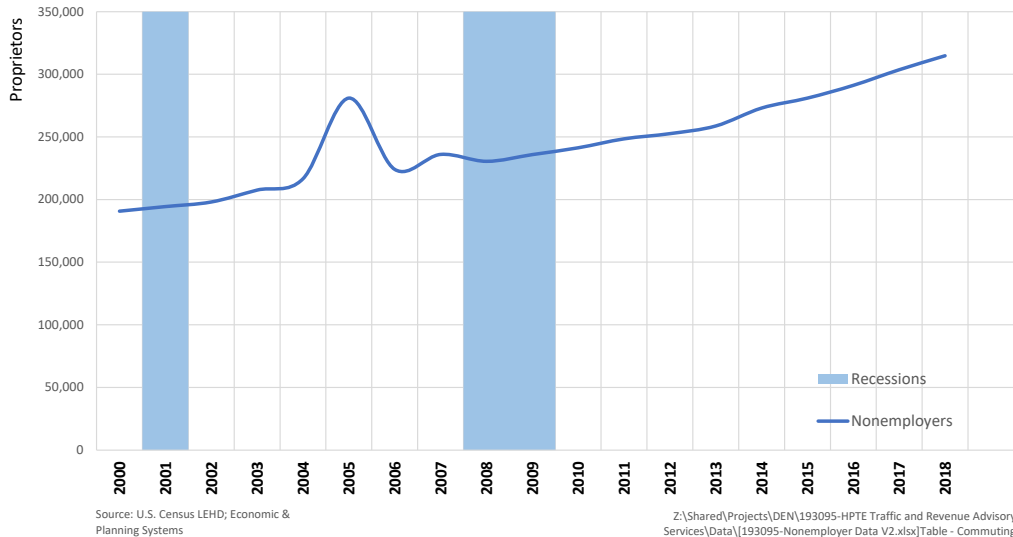
**Commuting Patterns.** Shown in **Figure 5** are aggregated in- and out-commuting patterns for the seven (7) county analysis area (individual county information is reported in **Figure 43** through **Figure 49** beginning on page 75). These data reflect the magnitude of cross-commuting that occurs within the region, and that these patterns have been relatively unaffected by the recessions.

**Figure 5 7-County Commuting Patterns**



**Proprietors.** Historical trends in self-employed persons (also characterized as sole proprietors) are shown in **Figure 6**. Individual county proprietor trends are reported in **Figure 50** through **Figure 56** beginning on page 78. Overall, the number of proprietors has increased at approximately 6,900 per year. In other terms, growth has averaged approximately 2.8 percent per year since 2000.

**Figure 6 7-County Proprietor Employment**





## Demographics

The following historical context to the demographic variables is sourced from the U.S. Census American Community Survey (ACS) and Colorado State Demographer.

**Group Quarters.** A small component of the overall population is contained in Group Quarters, defined as populations in correctional institutions, nursing homes, or other institutions. **Table 5** illustrates the magnitude of group quarters in each of the seven (7) counties in the SH119 analysis area.

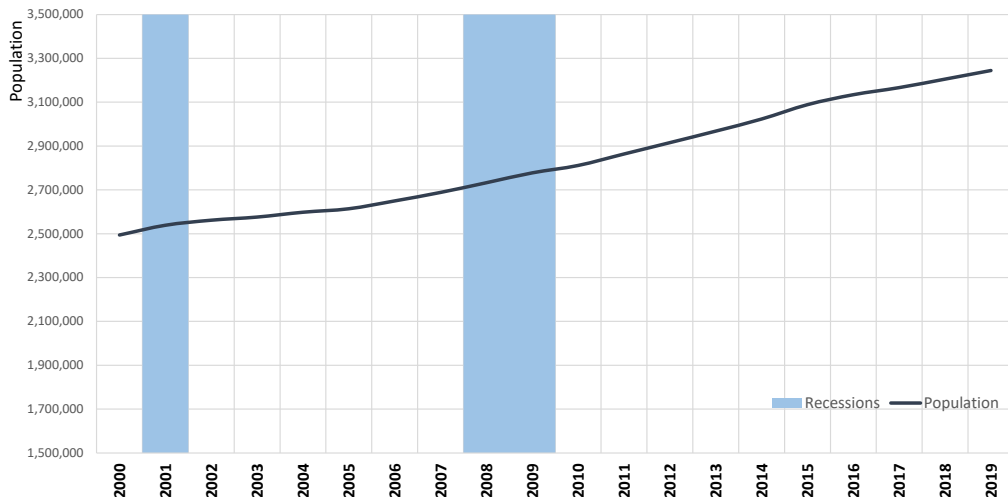
**Table 5 Historic Group Quarters Population**

	2000	2005	2010	2015	2019	2000-2019		
						Total	Ann. #	Ann. %
Adams	3,414	3,721	4,027	4,035	4,071	657	35	0.93%
Arapahoe	4,847	4,884	4,920	5,241	5,895	1,048	55	1.04%
Boulder	8,513	8,731	8,949	10,616	11,722	3,209	169	1.70%
Broomfield	0	0	282	291	311	311	16	n/a
Denver	12,719	14,350	15,981	15,317	14,603	1,884	99	0.73%
Jefferson	7,730	7,579	7,427	8,272	9,004	1,274	67	0.81%
Larimer	7,120	7,825	8,530	9,194	9,448	2,328	123	1.50%

Source: U.S. Census; Economic & Planning Systems

**Population.** Since 2000, the population in the seven (7) county analysis area has grown at an average rate of 1.4 percent per year, illustrated in **Figure 7**. Between 2000 and 2019, the population grew from approximately 2.5 million to more than 3.2 million. On an annual basis, that equates to average growth of 39,500 persons per year. Individual county population trends are shown in **Figure 57** through **Figure 63** beginning on page 82.

**Figure 7 7-County Population Trends**

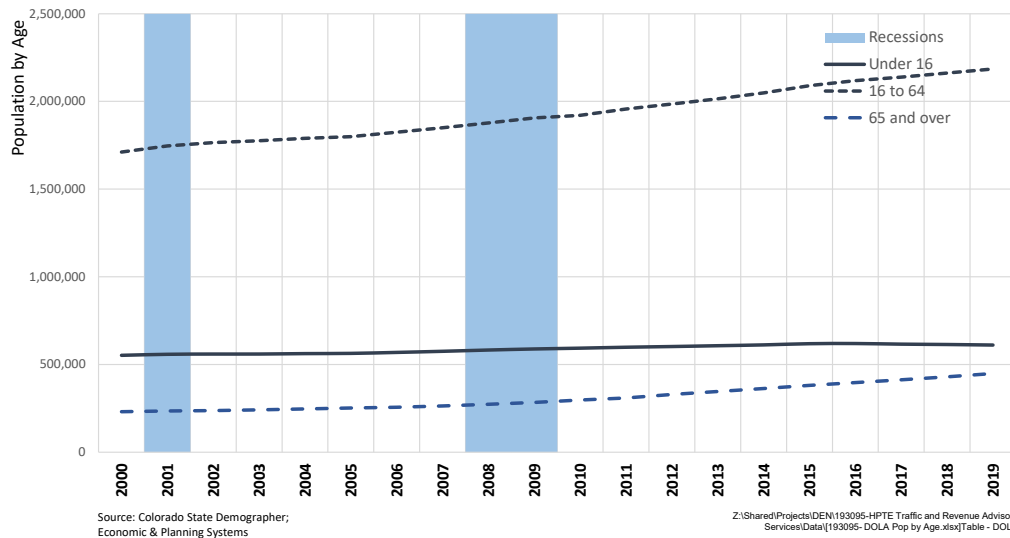


Source: Colorado State Demography Office; Economic & Planning Systems

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**Population by Age.** Looking beneath the surface of overall population shifts, **Figure 8** illustrates how differently population groups by age have grown over time. In this SH119 analysis area, the population of persons under 16 years of age has increased by 3,100 per year, whereas the population of persons aged 16 to 64 years has increased by approximately 25,000 per year and the population of those 65 years and older has increased by 11,500 per year. Individual county graphs are shown in **Figure 64** through **Figure 70** beginning on page 85.

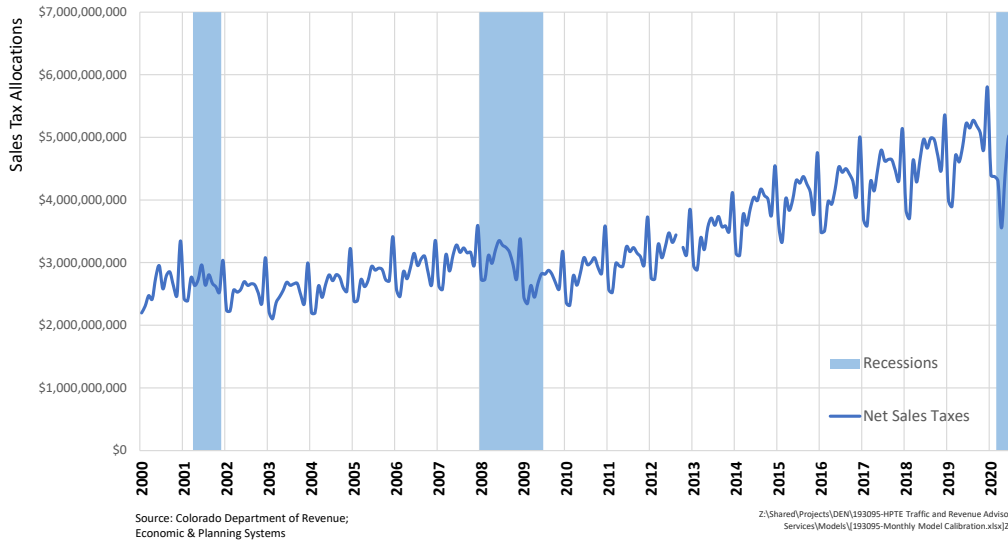
**Figure 8 7-County Population by Age**



## Consumer Spending

A second dependent variable in the short-term forecast is consumer spending, represented by sales tax allocations. Historical data were collected from the Colorado Department of Revenue (DOR). Shown in **Figure 9** are aggregate sales tax allocations for all seven (7) counties of the SH119 analysis area. Individual county trends are reported in **Figure 71** through **Figure 77** beginning on page 89.

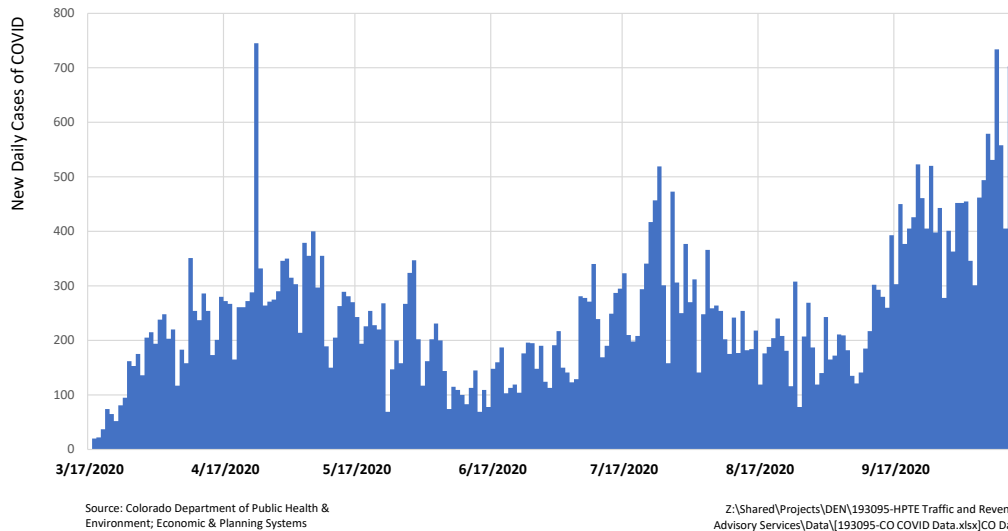
**Figure 9 7-County Sales Tax Revenues**



## Public Health

Data on new COVID-19 cases are sourced from the Colorado Department of Public Health and Environment (CDPHE). **Figure 10** illustrates the sum of daily confirmed cases for the seven (7) county SH119 analysis area. Individual county trends are shown in **Figure 78** through **Figure 84** beginning on page 92. Data were integrated into the short-term forecasting model as described in the following Independent Forecast chapter.

**Figure 10 New Daily Cases of COVID-19 in 7-County Area**

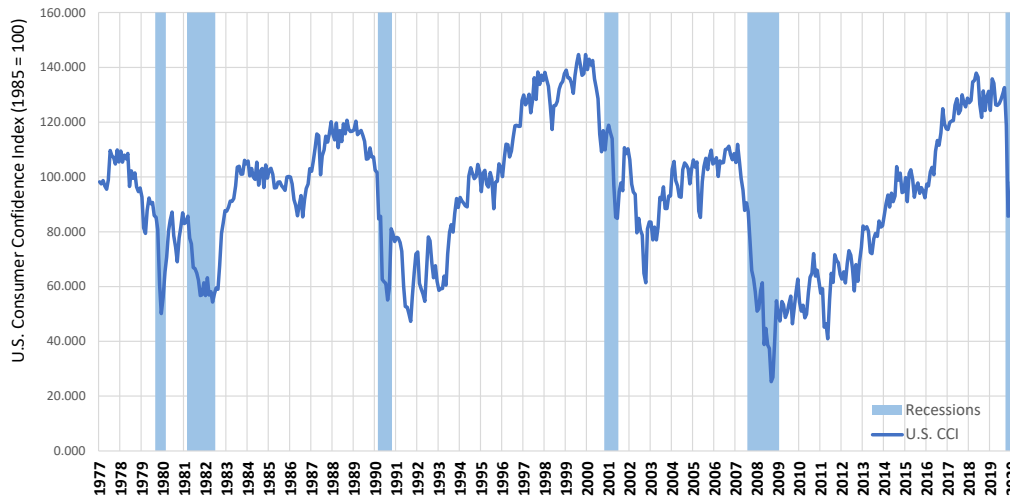


## Consumer Confidence

In the absence of monthly or even quarterly data, the Conference Board’s Consumer Confidence Index (CCI) is used as proxy for consumer spending and/or consumer sentiment regarding personal expenditure. Historic monthly data were obtained as shown back to 1977. The index is calibrated to 1985 as equaling 100. Recessions, as designated by the National Bureau of Economic Research, are highlighted as well. The trend reveals steep declines in the CCI during recessions with relatively similar rates of recovery between. Specifically, the rates of recovery were noted for the following economic cycles:

- 1982-1990: during the recession, the index declined at a rate of 2.4 points per month; during recovery, it increased by 0.5 points per month.
- 1991-2001: during the recession, the index declined at a rate of 3.9 points per month; during recovery, it increased by 0.5 points per month.
- 2001-2007: during the recession, the index declined at a rate of 2.5 points per month; during recovery, it increased by 0.1 points per month.
- 2009-2020: during the recession, the index declined at a rate of 2.3 points per month; during recovery, it increased by 0.7 points per month.

**Figure 11 Consumer Confidence Index**



Source: The Conference Board; Federal Reserve of Dallas; Economic & Planning Systems

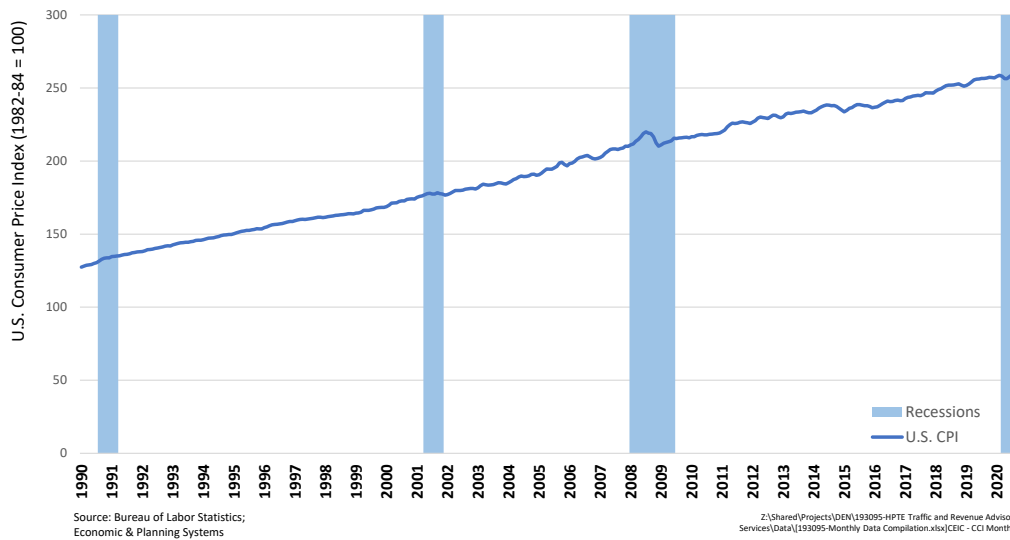
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## Consumer Prices

The Consumer Price Index (CPI) from the Bureau of Labor Statistics was integrated as a standard component of model specifications for consumer spending. Historic data, which are shown below, back to 1990 reveal trends during a few of the previous economic cycles as well. Apart from slight increases in the rate of CPI escalation (noted visually in the chart below), data show the following patterns during the past three economic cycles:

- 1991-2001: index rose at 2.7 percent per year, increasing 4.1 points per year
- 2001-2007: index rose at 2.7 percent per year, increasing 5.2 point per year
- 2009-2020: index rose at 1.7 percent per year, increasing 4.1 points per year

**Figure 12 Consumer Price Index**



### 3. Major Development Plans

EPS researched and evaluated the growth potentials of 80 projects whose site plan boundaries are illustrated in **Figure 13**. Planners and city staff from each jurisdiction were interviewed to identify all projects in the area that are under construction, permitted, platted, planned, or conceptual. For each project, EPS made determinations based on market research and discussions with city staff as to the scale, timing, and likelihood of completion.

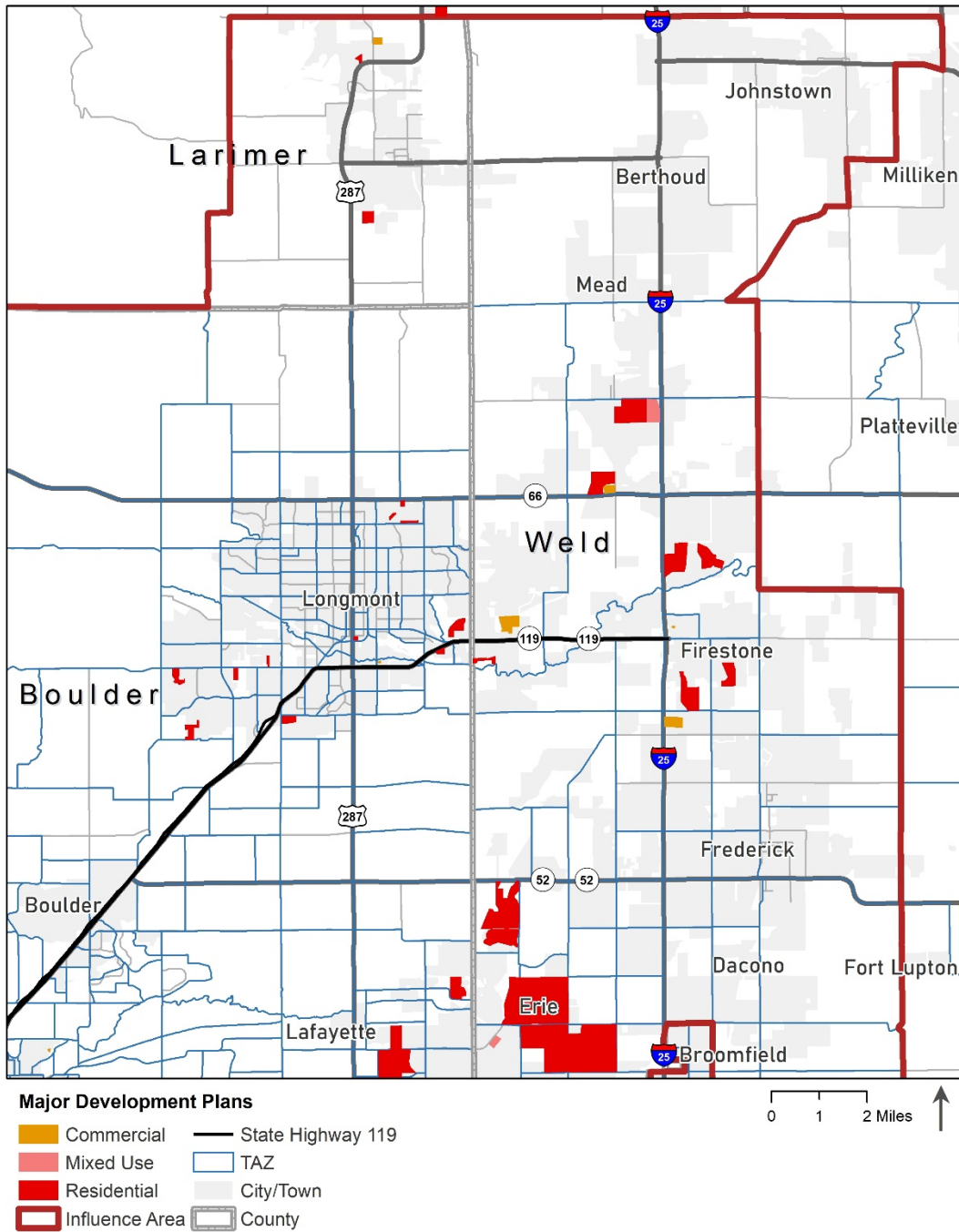
#### Application of Data

It is generally understood that an analysis of projections at a subarea or TAZ level produces results with a generally high degree of specificity and uncertainty. Users are often cautioned against placing great reliance on TAZ level totals, as forecasting growth in such small geographic areas is difficult. As such, EPS's approach to making adjustments at the TAZ level is to do so only when market information and research provides a clear basis for such adjustments. In general, however, EPS adjusted TAZ-level data when the difference between what was likely to materialize in terms of land use developments and what was reported at the TAZ level were significantly different from each other (e.g., more than a 10 percent difference in magnitude). The following factors concerning market information and research were used to make these decisions with a clear basis.

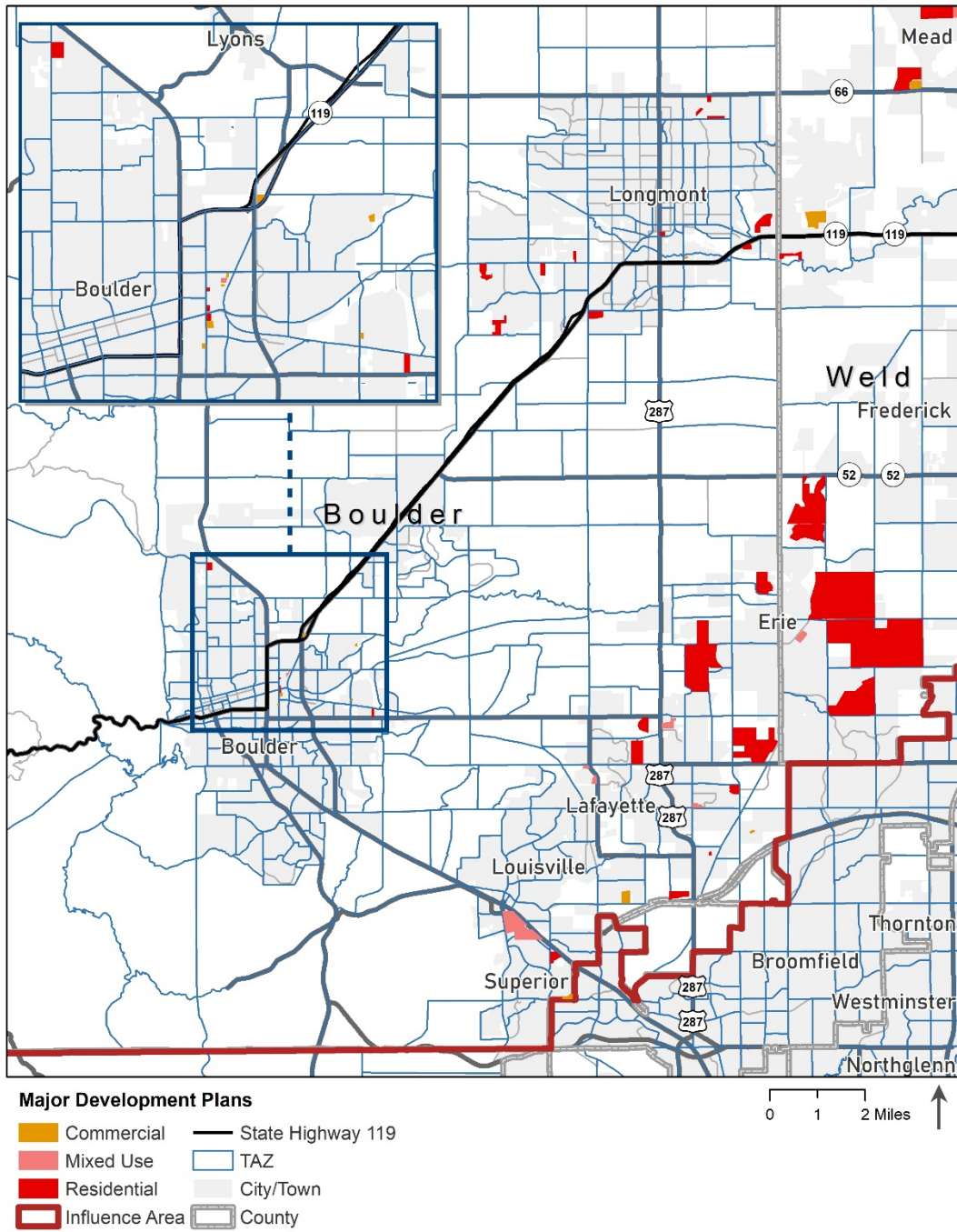
- Development Plans
- Entitlement Process and Municipal Growth Policies
- Physical Area Attributes
- Existing Market Studies
- Development Pressure
- Proximity to Transportation Facilities
- Proximity to Employment Clusters
- Capital Improvements
- Ownership Patterns

As a result, when upward adjustments to TAZ-level data are made, which is generally the case for population and household data, population and household counts in TAZs in the respective municipality are reduced proportionally to ensure that control totals remain fixed. On the other hand, when downward adjustments to TAZ-level data are made, which is frequently the case for employment data in the Influence Area, employment counts in TAZs in the respective municipality are reduced proportionally to ensure that control totals remain fixed.

**Figure 13 Major Development Plans North**



**Figure 14 Major Development Plans South**





## Land Use Development Research

The following are descriptions of each major development project evaluated and the conclusions drawn from our research and interviews regarding the scale, timing, and probability of development during the 2023 to 2045 timeframe.

### **Berthoud**

- Harvest Ridge South – A proposed residential development with plans for 66 single family detached units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Heron Lakes – A proposed residential development with plans for 105 single family detached units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.

### **Boulder**

- 30 Pearl – A residential development currently under construction and will include 120 units. No adjustments were made. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- 30<sup>th</sup> & Pearl – A proposed residential development with 177 units planned. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- 3200 Bluff – A commercial development currently under construction that will include 52,000 square feet of office space. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- 5505 Central Ave – A proposed commercial development that will include approximately 56,000 square feet of office space. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- 5606 Airport – A proposed commercial development with plans of approximately 112,000 square feet of office space. EPS adjusted the TAZ-level employment projection up to reflect this project.
- Boulder Armory – A residential development that is currently under construction with 201 units. EPS adjusted the TAZ-level household projection up to reflect the completion of this project.
- Cambria Hotel – A proposed commercial development for a hotel with approximately 60 hotel rooms and 68,000 square feet. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.

- Holiday Inn Express – A proposed commercial development with plans for 109,000 square feet and an estimated 120 hotel rooms. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- REVE Boulder – A commercial development that is currently under construction and will include 148,500 square feet of office space. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- REVE Boulder MF – A residential development that is currently under construction that will consist of 244 units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- S'Park – Railyards – A commercial development that is currently under construction and will include approximately 70,000 square feet of office space. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- S'Park-Timber – A proposed mixed use development that plans to include 150 residential units and 20,000 square feet of retail space. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Waterview – A proposed residential development that plans to include 340 units. EPS adjusted the TAZ-level household projection up to reflect the inclusion of this project.

## **Erie**

- Bridgewater PUD Amend. 5 – A residential development that is currently under construction. The project will include a total of 775 units at buildout. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Erie Commons – A mixed use development that is currently under construction and will include 160 units and 100,000 square feet of retail space. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Erie Highlands – A proposed residential development that will include 114 units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Flatiron Meadows – A residential development near the intersection of Erie Parkway and 119<sup>th</sup> Street. The project has 70 percent of the 875 units complete. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Morgan Hill – A proposed residential development that will include 338 units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.

- Nine Mile – A mixed use development currently under construction at the southeast corner of Arapahoe Road and Highway 287. Lowe’s will be the anchor tenant of the 128,000 square feet of retail. Additionally, the development will include 290 residential units. EPS adjusted the TAZ-level household projection up to reflect the completion of this project.
- Parkdale – A proposed residential development that is planning 800 housing units. EPS adjusted the TAZ-level household projection up to reflect the completion of this project.
- Red Trail Ranch (Pratt) – A residential development at the intersection of County Road 4 and County Road 5. The 590-unit project has yet to start construction. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Spring Hill – A proposed residential development that is planning 632 units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Sunset – A proposed residential development that is planning 257 units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Swink – A residential development located near the intersection of County Road 5 and Erie Parkway. The project is currently under construction and will include a total of 251 units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Westerly (Dearmin) – A proposed residential development located near the intersection of County Road 5 and Erie Parkway. The project plans for a total of 946 units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Wildrose – An approved residential development that will include 118 units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.

## **Firestone**

- Brookfield Residential – A proposed residential development with 1,000 single family detached units planned. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Cottonwood Hollow – A proposed residential development with 179 single family detached units planned. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Holiday Inn Express Hotel – A hotel development that is currently under construction. The hotel is estimated to include 40,000 square feet and 75 hotel rooms. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.

- Neighbor's Point – A residential development currently under construction to include 80 single family detached units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.

### **Frederick**

- Distribution Frederick – A proposed commercial development that will include approximately 120,000 square feet of industrial space. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.

### **Johnstown**

- Endeavor Dr – A commercial development that is currently under construction and will include 75,000 square feet of office space. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- SE Frontage – A proposed commercial development with plans for 67,000 square feet of office space. EPS adjusted the TAZ-level employment projection up to reflect the development of this project.

### **Lafayette**

- 40 North – A residential development located along Baseline Road west of Highway 287. The project was recently approved for 420 residential units. EPS adjusted DRCOG's household projection up to reflect the development of this project.
- City Center: A mixed use development currently under construction located at the northeast corner of City Center Circle and South Public Road. The development plans include a 200-unit apartment building and 16,000 square feet of retail space. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Indian Peaks Filing 17 – A proposed mixed use development that will include 64 residential units and 56,000 square feet of retail space. EPS adjusted the TAZ-level household projection up to reflect the completion of this project.
- Silo Subdivision – A proposed residential development that will include 453 units. EPS adjusted the TAZ-level household projection slightly up to reflect the completion of this project.
- Sundar Apartments – A proposed residential apartment complex at the northwest corner of Northwest Parkway and Highway 287. The project proposes a total of 684 residential units. EPS adjusted the TAZ-level household projection to reflect the completion of this project.

- Traditions at SoLa – A residential development that is currently under construction and will include 133 units. EPS adjusted the TAZ-level household projection up to reflect the completion of this project.
- Vista Business Park – A light industrial/flex project currently under construction along Horizon Avenue. The project will include 50,000 square feet of space within 8 commercial units. Additionally, a 30,000 square foot facility for the sport of curling is proposed on the adjacent site. EPS adjusted the TAZ-level employment projection up slightly to reflect the completion of this development.
- Willoughby Center – A residential project recently approved located at the southwest corner of Emma Street and 120<sup>th</sup> Street. The project will include about 400 affordable residential units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.

## Longmont

- Balfour at Creekside – A residential development that is currently under construction and will include 100 units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Brickstone Apartments – A residential development that is currently under construction and will include 280 multifamily units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Creekside Silo Apartments – A residential development currently under construction with 208 total units planned. The site is located at 1855 Lefthand Creek Lane and approximately half of the planned units have delivered. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Northstar – 64 single family homes proposed on a 39-acre parcel located at the northeast corner of 79<sup>th</sup> Street and Plateau Road. The project is still under review with City Planning. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Nova Dry Creek – A proposed 264-unit multifamily rental community with five four-story buildings planned located at 9183 Nelson Road. The project is still under review with City Planning. EPS adjusted the TAZ-level household data by forecast year to reflect the growth and development patterns identified through research. These adjustments resulted in 254 more households by 2045 than the original CDOT numbers.
- Pleasant Valley 5<sup>th</sup> Filing – A residential development currently under construction consisting of 54 single family detached units located at 2090 Larimer Court. Approximately 50 percent of the project has delivered. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.

- Prairie Village – A 126-unit apartment complex within six, three-story buildings that is currently under construction. The project is located northwest of Alpine Road and southeast of Canadian Crossing. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Smuckers Plant – A 229,000 square foot addition to the existing Smuckers manufacturing facility at 2900 Peak Avenue. This phase is currently under construction and includes a new bakery and sandwich-making and packaging facility that is expected to be completed within the next five years. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- South Main Station – A recently completed residential development with 253 units. EPS adjusted the TAZ-level household projection up to reflect the completion of this development.
- Springs at Longmont Expansion – A proposed 212-unit multifamily community, “Springs at Longmont” proposed on the 25.7-acre parcel south of the existing Springs at Sandstone Ranch. The project is currently under its final review with City Planning. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- The Highlands – A proposed 53-acre development, northwest of County Line Road and Highway 119 of the Ludlow Master Development. A total of 375 units are planned, with 42 single family units, 67 townhomes, and a 266-unit multifamily apartment complex. The project is currently under review with City Planning. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- The Parks at Stonebridge – A residential development consisting of 92 planned townhomes at 8756 Nelson Road. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Village Cooperative – A residential development under construction at the southeast corner of Alpine and Highway 66. A total of 52 residential units are planned and approximately 50 percent of the project has already delivered. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- West Grange – A residential development under construction along Nelson Road and 75<sup>th</sup> Street. A total of 234 residential units are planned, with 132 multifamily units and the remainder dedicated to single family developments. Approximately 50 percent of the project is complete. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.

## Louisville

- Louisville Corporate Campus: A commercial development currently under construction near the intersection of Dillon Road and 104<sup>th</sup> Avenue. The project will include approximately 400,000 square feet of flex and light industrial development. The project is about 35 percent complete. EPS adjusted the TAZ-level employment projection up to reflect the project's completion.

## Loveland

- 3324 W Eisenhower – A commercial development that is currently under construction and will include 100,000 square feet of industrial space. EPS adjusted the TAZ-level employment projection up to reflect the completion of this project.
- 4710 S Sunshine – A proposed commercial development with plans for approximately 134,000 square feet of retail space. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- 4875 Byrd – A proposed commercial development with plans for approximately 86,000 square feet of office space. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- 5950 Stallion – A proposed residential development that will include 100 units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Anderson 1<sup>st</sup> – A residential development currently under review for 120 units. EPS adjusted the TAZ-level household projection up to reflect the development of this project.
- Aspen Knolls – A proposed residential development for 507 units. EPS adjusted the TAZ-level household projection up to reflect the development of this project.
- Axis 25 – A proposed commercial development that will include approximately 196,000 square feet of industrial space. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Building 6 – A commercial development that is currently under construction and will include 123,000 square feet of industrial space. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- High Plains Neighborhood Center – A proposed commercial development with plans for approximately 104,000 square feet of retail space. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.

- Hilton Garden Inn – A proposed hotel that will include 80,000 square feet and approximately 100 hotel rooms. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Hunters Run – A residential development under review for 450 units. EPS adjusted the TAZ-level household projection up to reflect the development of this project.
- Millennium – A residential development under review for 168 units. EPS adjusted the TAZ-level household projection up to reflect the development of this project.
- Vantage – A residential development under review for 288 units. EPS adjusted the TAZ-level household projection slightly down to reflect the development of this project.
- Water's Edge – A proposed residential development that will include 138 units. EPS adjusted the TAZ-level household projection slightly down to reflect the development of this project.

## **Mead**

- Mead Place Subdivision and Mead Place Commercial – A proposed mixed-use development, located at the corner of Highway 66 and County Road 7, consisting of 170,000 square feet of planned commercial space and 548 residential units. Of the 548 units, 306 will be single family homes, and the remainder are designated multifamily units. The Town of Mead has approved both project components. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- St. Acacius Subdivision – A proposed single family residential development (also known as Lakeside Canyon) located at the southwest corner of the intersection of County Road 28 and County Road 9.5. Approximately 222 residential lots are planned, and the site has been approved by the Town. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Westridge – A proposed residential development located at the corner of Welker Avenue and I-25. A total of 100 units are planned across 282 acres and the project has been approved by the Town of Mead. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Westridge Commercial – A proposed mixed-use commercial development planned south of the corner of County Road 34 and I-25. The site has been approved and approximately 50,000 square feet of office and retail space are planned at the site. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.



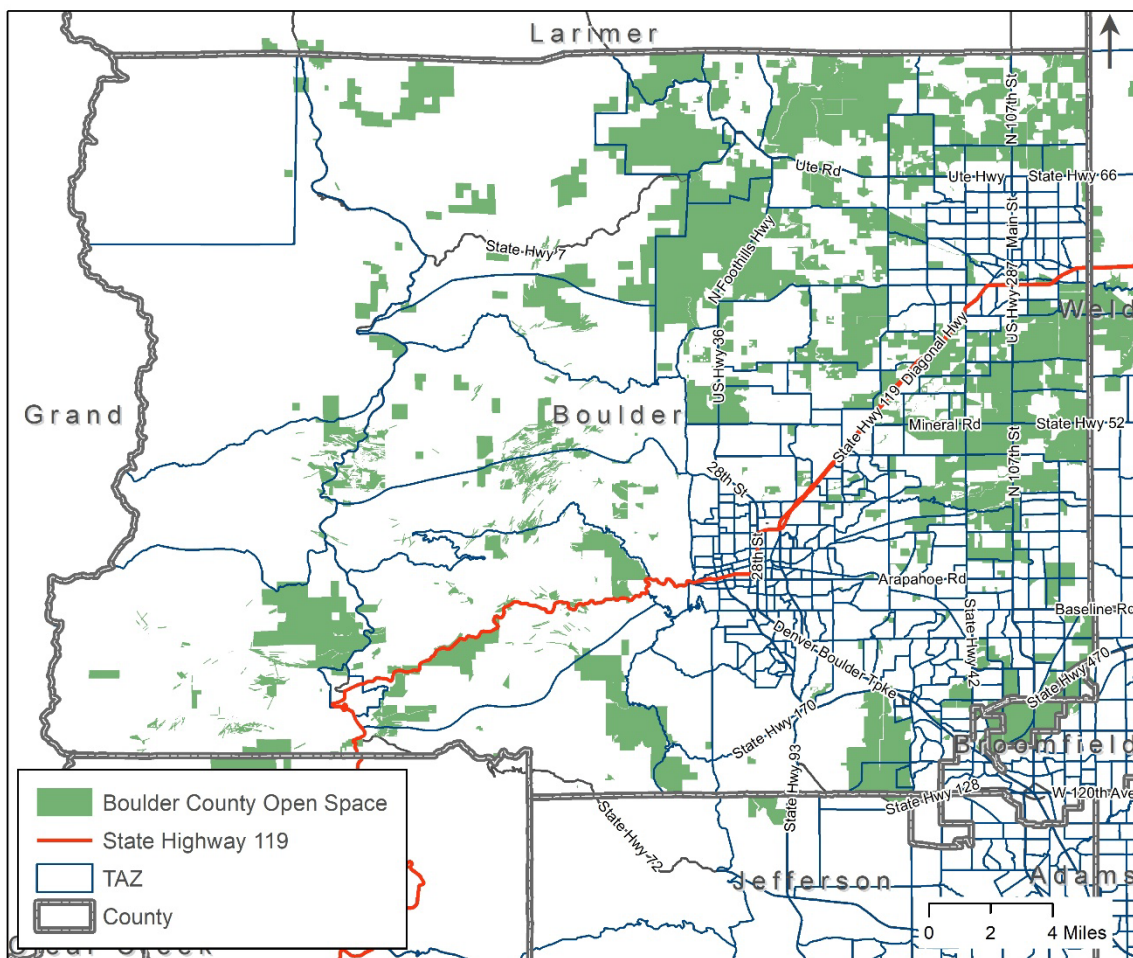
## **Superior**

- Rock Creek Commercial – A proposed commercial development that will include approximately 220,000 square feet of office, retail, and a 135-room hotel. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Rock Creek Zaharias Apartments: A proposed residential apartment complex located along 88<sup>th</sup> street near US-36. The development will have 258 multifamily units. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.
- Superior Town Center: A mixed use development under construction along US-36. The development will include 1,400 residential units and 450,000 square feet of retail space, both of which are about halfway complete. EPS confirmed that the CDOT data adequately reflected the anticipated growth and development patterns based on research.

## Open Space Adjustment

Boulder County’s open space and TAZ boundaries are illustrated in **Figure 15**. The county owns or oversees over 100,000 acres with a mission to conserve natural, cultural, and agricultural resources. In modeling growth potential at a TAZ level, EPS used this information to limit residential and non-residential growth where open space limitations exist. No adjustments were made for 31 TAZs in Boulder County that have a significant amount of designated open space.

**Figure 15 Boulder County Open Space**



**Table 6 Household Adjustments by TAZ, 2019-2045**

	TAZ	Households (CDOT)			Households (EPS Adj.)			Diff.
		2019	2045	Total Δ	2019	2045	Total Δ	
Eldora Ski Lodge.....	10	175	180	5	175	180	5	0
Wildose.....	43	690	1,248	558	690	1,248	558	0
Flatiron Meadows.....	69	378	953	575	378	953	575	0
Holiday Inn Express.....	76	0	0	0	0	0	0	0
5606 Airport.....	80	422	607	185	422	607	185	0
Flatiron Meadows.....	89	379	945	566	379	945	566	0
Flatiron Meadows.....	91	38	248	210	38	248	210	0
Flatiron Meadows.....	92	673	1,243	570	673	1,243	570	0
5505 Central Ave.....	100	0	0	0	0	0	0	0
Waterview.....	101	0	1	1	0	340	340	339
Pleasant Valley 5th Filing; Prairie Village; Village Cooperative.....	110	611	1,153	542	611	1,153	542	0
The Highlands.....	131	704	727	23	704	727	23	0
Brickstone Apartments.....	133	75	133	58	75	133	58	0
Hilton Garden Inn Longmont.....	135	0	0	0	0	0	0	0
South Main Station.....	137	88	111	23	88	341	253	230
Balfour at Creekside; Creekside Silo Apartments.....	145	731	754	23	731	754	23	0
Nova Dry Creek.....	180	90	118	28	90	354	264	236
The Parks at Stonebridge.....	194	538	558	20	538	558	20	0
West Grange.....	195	2,237	2,971	734	2,237	2,971	734	0
Northstar.....	196	988	1,675	687	988	1,675	687	0
Northstar.....	199	64	636	572	64	636	572	0
Silo Subdivision.....	210	151	584	433	151	604	453	20
40 North.....	211	744	846	102	744	1,019	275	173
40 North.....	212	207	223	16	207	397	190	174
Nine Mile.....	213	467	567	100	467	757	290	190
Parkdale.....	216	116	650	534	116	916	800	266
City Center; Willoughby Corner.....	220	2,115	2,452	337	2,115	2,452	337	0
Indian Peaks Filing 17.....	226	134	140	6	134	198	64	58
Vista Business Park.....	249	0	0	0	0	0	0	0
Traditions at SoLa.....	252	36	240	204	36	169	133	-71
Sundar Apartments.....	255	594	1,317	723	594	1,215	621	-102
Sundar Apartments.....	256	4	4	0	4	67	63	63
Louisville Corporate Campus.....	258	33	74	41	33	74	41	0
Superior Town Center.....	267	145	1,261	1,116	145	1,261	1,116	0
Superior Town Center.....	275	0	0	0	0	0	0	0
Superior Town Center.....	278	526	1,183	657	526	1,183	657	0
Rock Creek Commercial; Rock Creek Zaharias Apartments.....	281	1,963	2,308	345	1,963	2,308	345	0
Boulder Armory.....	335	760	1,237	477	760	1,237	477	0
Boulder Armory.....	336	1,009	1,127	118	1,009	1,209	200	82
30 Pearl; 3200 Bluff; REVE Boulder MF; S'Park Railyards; S'Park Timber.....	363	101	257	156	101	257	156	0
Cambria Hotel.....	383	37	303	266	37	303	266	0
30th & Pearl; REVE Boulder.....	384	16	134	118	16	134	118	0
Mead Place Commercial; Mead Place Subdivision; Westridge; Westridge Com.....	2723	167	426	259	167	426	259	0
Smuckers Plant; Springs at Longmont Expansion.....	2725	643	1,739	1,096	643	1,739	1,096	0

Holiday Inn Express Hotel.....	2728	74	749	675	74	749	675	0
Springs at Longmont Expansion.....	2729	252	1,329	1,077	252	1,329	1,077	0
Cottonwood Hollow.....	2735	433	1,028	595	433	1,028	595	0
Cottonwood Hollow; Distribution Frederick.....	2737	380	1,354	974	380	1,354	974	0
Morgan Hill; Spring Hill.....	2741	146	624	478	146	624	478	0
Bridgewater PUD Amend. 5.....	2742	754	926	172	754	926	172	0
Bridgewater PUD Amend. 5; Erie Highlands.....	2744	137	973	836	137	973	836	0
Bridgewater PUD Amend. 5; Swink.....	2747	100	423	323	100	423	323	0
Erie Commons; Erie Highlands.....	2754	1,398	1,552	154	1,398	1,552	154	0
Erie Highlands; Sunset.....	2756	190	1,411	1,221	190	1,411	1,221	0
Red Trail Ranch (Pratt).....	2757	202	1,332	1,130	202	1,332	1,130	0
Erie Highlands; Swink; Westerly (Dearmin).....	2759	57	470	413	57	470	413	0
Swink.....	2760	83	245	162	83	245	162	0
Red Trail Ranch (Pratt); Swink.....	2761	288	1,609	1,321	288	1,609	1,321	0
Westridge.....	2786	787	1,685	898	787	1,685	898	0
Brookfield Residential; St. Acacius Subdivision.....	2790	117	884	767	117	884	767	0
Neighbor's Point.....	2793	558	1,201	643	558	1,201	643	0
Aspen Knolls; Vantage; Waters Edge.....	2862	489	513	24	489	513	24	0
Waters Edge.....	2863	85	88	3	85	86	1	-2
Aspen Knolls.....	2864	932	1,081	149	932	1,081	149	0
Aspen Knolls.....	2865	74	168	94	74	572	498	404
Anderson 1st.....	2870	47	64	17	47	94	47	30
Anderson 1st.....	2871	37	40	3	37	110	73	70
Heron Lakes.....	2927	93	581	488	93	581	488	0
Harvest Ridge South.....	2947	2	21	19	2	21	19	0
Harvest Ridge South.....	2951	3	3	0	3	3	0	0
4710 S Sunshine.....	2958	441	1,451	1,010	441	1,451	1,010	0
Hunters Run.....	3049	210	218	8	210	216	6	-2
Hunters Run.....	3050	215	296	81	215	568	353	272
Hunters Run.....	3051	389	348	-41	389	402	13	54
Hunters Run.....	3054	12	82	70	12	38	26	-44
3324 W Eisenhower.....	3056	27	72	45	27	72	45	0
Hunters Run.....	3073	16	117	101	16	64	48	-53
Hunters Run.....	3074	100	96	-4	100	104	4	8
5950 Stallion.....	3149	117	828	711	117	828	711	0
4875 Byrd; Axis 25.....	3151	9	65	56	9	65	56	0
Hilton Garden Inn Loveland.....	3159	118	826	708	118	826	708	0
Endeavor Dr.....	3163	51	358	307	51	358	307	0
SE Frontage.....	3169	7	20	13	7	20	13	0
Building 6.....	3210	106	753	647	106	753	647	0
Millenium.....	3224	509	594	85	509	677	168	83
Vantage.....	3248	631	654	23	631	631	0	-23
High Plains Neighborhood Center.....	3288	673	1,043	370	673	1,043	370	0
4875 Byrd.....	3324	5	41	36	5	41	36	0
Argo Mill Gondola.....	2628	400	554	154	400	554	154	0
Argo Mill Gondola.....	2635	348	494	146	348	494	146	0
Roam.....	5593	340	414	74	340	1,416	1,076	1,002
Ski & Snowboard Club Vail Replacement-Golden Peak.....	5992	354	436	82	354	436	82	0
Edwards RiverPark.....	6023	197	257	60	197	791	594	534
East Peak 8 Hotel (Breckenridge Ski Resort).....	6078	338	436	98	338	436	98	0
South Gondola Public Parking Structure (Breckenridge Ski Resort).....	6082	339	437	98	339	437	98	0
Millenium.....	3224	509	594	85	509	677	168	83
Vantage.....	3248	<u>631</u>	<u>654</u>	<u>23</u>	<u>631</u>	<u>631</u>	<u>0</u>	<u>-23</u>
<b>Total</b>		<b>33,659</b>	<b>63,825</b>	<b>30,166</b>	<b>33,659</b>	<b>67,877</b>	<b>34,218</b>	<b>4,052</b>

Source: CDOT; Economic & Planning Systems

**Table 7 Employment Adjustments by TAZ, 2019-2045**

	TAZ	Employment (CDOT)			Employment (EPS Adj.)			Diff.
		2019	2045	Total Δ	2019	2045	Total Δ	
Eldora Ski Lodge.....	10	697	664	-33	697	764	67	100
Wildrose.....	43	233	285	52	233	285	52	0
Flatiron Meadows.....	69	78	74	-4	78	74	-4	0
Holiday Inn Express.....	76	73	272	199	73	272	199	0
5606 Airport.....	80	2,429	2,554	125	2,429	2,801	372	247
Flatiron Meadows.....	89	56	55	-1	56	55	-1	0
Flatiron Meadows.....	91	13	12	-1	13	12	-1	0
Flatiron Meadows.....	92	151	139	-12	151	139	-12	0
5505 Central Ave.....	100	6,032	7,784	1,752	6,032	7,784	1,752	0
Waterview.....	101	2,168	2,886	718	2,168	2,886	718	0
Pleasant Valley 5th Filing; Prairie Village; Village Cooperative.....	110	96	89	-7	96	89	-7	0
The Highlands.....	131	97	87	-10	97	87	-10	0
Brickstone Apartments.....	133	117	150	33	117	150	33	0
Hilton Garden Inn Longmont.....	135	2	2	0	2	2	0	0
South Main Station.....	137	1,508	1,568	60	1,508	1,568	60	0
Balfour at Creekside; Creekside Silo Apartments.....	145	861	807	-54	861	807	-54	0
Nova Dry Creek.....	180	677	663	-14	677	663	-14	0
The Parks at Stonebridge.....	194	485	464	-21	485	464	-21	0
West Grange.....	195	606	823	217	606	823	217	0
Northstar.....	196	138	124	-14	138	124	-14	0
Northstar.....	199	120	289	169	120	289	169	0
Silo Subdivision.....	210	1,011	1,391	380	1,011	1,391	380	0
40 North.....	211	268	245	-23	268	245	-23	0
40 North.....	212	778	1,213	435	778	1,213	435	0
Nine Mile.....	213	700	762	62	700	984	284	222
Parkdale.....	216	87	133	46	87	133	46	0
City Center; Willoughby Corner.....	220	745	761	16	745	761	16	0
Indian Peaks Filing 17.....	226	274	377	103	274	398	124	21
Vista Business Park.....	249	532	580	48	532	582	50	2
Traditions at SoLa.....	252	3,955	4,585	630	3,955	4,585	630	0
Sundar Apartments.....	255	281	292	11	281	292	11	0
Sundar Apartments.....	256	34	32	-2	34	32	-2	0
Louisville Corporate Campus.....	258	1,666	1,630	-36	1,666	2,116	450	486
Superior Town Center.....	267	440	456	16	440	1,291	851	835
Superior Town Center.....	275	1,343	1,474	131	1,343	1,474	131	0
Superior Town Center.....	278	136	123	-13	136	284	148	161
Rock Creek Commercial; Rock Creek Zaharias Apartments.....	281	134	193	59	134	193	59	0
Boulder Armory.....	335	762	874	112	762	874	112	0
Boulder Armory.....	336	922	981	59	922	981	59	0
30 Pearl; 3200 Bluff; REVE Boulder MF; S'Park Railyards; S'Park Timber.....	363	1,070	1,488	418	1,070	1,488	418	0
Cambria Hotel.....	383	2,273	2,852	579	2,273	2,852	579	0
30th & Pearl; REVE Boulder.....	384	872	1,378	506	872	1,378	506	0
Mead Place Commercial; Mead Place Subdivision; Westridge; Westridge Com.....	2723	139	348	209	139	348	209	0
Smuckers Plant; Springs at Longmont Expansion.....	2725	1,175	1,358	183	1,175	1,358	183	0

Holiday Inn Express Hotel.....	2728	305	473	168	305	473	168	0
Springs at Longmont Expansion.....	2729	38	142	104	38	142	104	0
Cottonwood Hollow.....	2735	1,365	1,509	144	1,365	1,509	144	0
Cottonwood Hollow; Distribution Frederick.....	2737	1,178	1,935	757	1,178	1,935	757	0
Morgan Hill; Spring Hill.....	2741	35	121	86	35	121	86	0
Bridgewater PUD Amend. 5.....	2742	607	691	84	607	691	84	0
Bridgewater PUD Amend. 5; Erie Highlands.....	2744	1	0	-1	1	0	-1	0
Bridgewater PUD Amend. 5; Swink.....	2747	25	129	104	25	129	104	0
Erie Commons; Erie Highlands.....	2754	581	726	145	581	726	145	0
Erie Highlands; Sunset.....	2756	9	50	41	9	50	41	0
Red Trail Ranch (Pratt).....	2757	14	111	97	14	111	97	0
Erie Highlands; Swink; Westerly (Dearmin).....	2759	4	36	32	4	36	32	0
Swink.....	2760	62	162	100	62	162	100	0
Red Trail Ranch (Pratt); Swink.....	2761	46	15	-31	46	15	-31	0
Westridge.....	2786	385	436	51	385	436	51	0
Brookfield Residential; St. Acacius Subdivision.....	2790	343	355	12	343	355	12	0
Neighbor's Point.....	2793	126	153	27	126	153	27	0
Aspen Knolls; Vantage; Waters Edge.....	2862	111	313	202	111	313	202	0
Waters Edge.....	2863	154	58	-96	154	58	-96	0
Aspen Knolls.....	2864	292	339	47	292	339	47	0
Aspen Knolls.....	2865	14	89	75	14	89	75	0
Anderson 1st.....	2870	142	542	400	142	542	400	0
Anderson 1st.....	2871	55	361	306	55	361	306	0
Heron Lakes.....	2927	17	123	106	17	123	106	0
Harvest Ridge South.....	2947	157	979	822	157	979	822	0
Harvest Ridge South.....	2951	7	52	45	7	52	45	0
4710 S Sunshine.....	2958	114	484	370	114	484	370	0
Hunters Run.....	3049	68	250	182	68	250	182	0
Hunters Run.....	3050	66	492	426	66	492	426	0
Hunters Run.....	3051	64	261	197	64	261	197	0
Hunters Run.....	3054	28	202	174	28	202	174	0
3324 W Eisenhower.....	3056	48	91	43	48	148	100	57
Hunters Run.....	3073	40	297	257	40	297	257	0
Hunters Run.....	3074	118	193	75	118	193	75	0
5950 Stallion.....	3149	963	1,428	465	963	1,428	465	0
4875 Byrd; Axis 25.....	3151	1,146	1,391	245	1,146	1,391	245	0
Hilton Garden Inn Loveland.....	3159	1,125	2,608	1,483	1,125	2,608	1,483	0
Endeavor Dr.....	3163	490	1,478	988	490	1,478	988	0
SE Frontage.....	3169	13	96	83	13	237	224	141
Building 6.....	3210	367	2,880	2,513	367	2,880	2,513	0
Millenium.....	3224	83	437	354	83	437	354	0
Vantage.....	3248	607	989	382	607	989	382	0
High Plains Neighborhood Center.....	3288	653	3,424	2,771	653	3,424	2,771	0
4875 Byrd.....	3324	807	1,263	456	807	1,263	456	0
Argo Mill Gondola.....	2628	486	850	364	486	850	364	0
Argo Mill Gondola.....	2635	685	776	91	685	776	91	0
Roam.....	5593	1,099	1,299	200	1,099	1,339	240	40
Ski & Snowboard Club Vail Replacement-Golden Peak.....	5992	7,427	9,638	2,211	7,427	9,638	2,211	0
Edwards RiverPark.....	6023	449	622	173	449	622	173	0
East Peak 8 Hotel (Breckenridge Ski Resort).....	6078	3,350	4,118	768	3,350	4,118	768	0
South Gondola Public Parking Structure (Breckenridge Ski Resort).....	6082	<u>1,519</u>	<u>1,929</u>	<u>410</u>	<u>1,519</u>	<u>1,929</u>	<u>410</u>	<u>0</u>
<b>Total</b>		<b>64,122</b>	<b>90,713</b>	<b>26,591</b>	<b>64,122</b>	<b>93,026</b>	<b>28,904</b>	<b>2,313</b>

Source: CDOT; Economic & Planning Systems

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## 4. Independent Forecast

This chapter details the methodology, assumptions, and results of EPS's independent forecasts. The entirety of EPS's underlying assumptions and outputs are detailed in this chapter, but some of the more granular aspects are presented in the Appendix.

### Methodology Overview

This section outlines the component structures and scenarios used to define the independent forecast.

#### Forecast Model Structure

The forecast model is structured for inputs and assumptions regarding both the current economic situation, possible recovery scenarios, and outcomes, as well as longer-term structural economic patterns. This dual modeling approach accommodates and merges granular specificity, i.e., monthly metrics and rates, in the short-term with macroeconomic and demographic shifts occurring over the long-term, i.e., annual metrics and rates.

- Short-Term Forecast (through 2025): This model component forecasts current conditions through the end of 2025 on a monthly basis, creating a linkage between the base year (2018) and the initial year of the long-term forecast component. This forecast is built on two series of ordinary least squares (OLS) regressions: 1) sales taxes by county, and 2) employment by county by industry supersector. The reasoning for this two-stage regression model is to replicate the clear relationship that personal consumer spending has on the overall economy and thus employment levels. Moreover, the short-term model responds to an interest in quantifying the relationship between the COVID-19 pandemic and subsequent recession. The model parameters are also calibrated to meet specific criteria in which outputs are statistically significant.
- Long-Term Forecast (2025-2045): This model component forecasts employment, population, and households with an employment-based population forecast methodology. It aggregates the short-term model employment outputs at an annual level and applies additional macroeconomic and demographic assumptions to arrive at longer-term forecasts of employment, population, and households. The layers of macroeconomic assumptions incorporate regional industry-level location quotients and national level industry-level employment projections. Demographic assumptions include shifts related to in- and out-commuting patterns, unemployment, self-employed persons, group quarters, non-working populations, as well as shifts in average household size.



## Scenarios

Overall, the short- and long-term model components integrate a series of high-level narrative assumptions that define EPS's three (3) scenarios.

**Short-Term Forecast.** In the short-term model, scenario narratives are driven largely by three eventualities related to the remainder of the COVID-19 pandemic. In this narrative, assumptions regarding public health outcomes drive outcomes in consumer confidence, consumer spending, and employment levels. Assumptions for each of these variables are described in greater detail in the following sections.

- **Low.** A vaccine is not widely available until late 2021, and recovery patterns in consumer confidence, consumer spending, and employment are slightly slower because of the length of the disruption caused by more lasting personal income impacts.
- **Mid.** A vaccine becomes available in early 2021, but immunization and the eradication of cases persist longer into 2021, such that recovery patterns in consumer confidence, consumer spending, and employment levels occur within the year.
- **High.** A vaccine becomes available in early 2021, and immunization and the eradication of cases occur relatively quickly, allowing quick recovery of consumer confidence, consumer spending, and employment levels, reflecting little deterioration of underlying consumer demand.

**Table 8 Short-Term Model Scenarios**

	Low	Mid	High
<b>Public Health</b>			
Peaks in confirmed COVID-19 cases	Peaks occur at 7-month intervals through 4th quarter 2021	Peaks occur at 7-month intervals through 2nd quarter 2021	Peaks occur at 7-month intervals through 2nd quarter 2021
Availability of COVID-19 vaccine	4th quarter 2021	1st quarter 2021	1st quarter 2021
Sufficient immunization reached to accommodate "business as usual"	1st quarter 2022	4th quarter 2021	3rd quarter 2021
<b>Spending and Prices</b>			
Consumer confidence (low point)	Middle of 3rd quarter 2021	End of 2nd quarter 2021	1st quarter 2021
Consumer prices	Rises at historic rates	Rises at historic rates	Rises at historic rates
<b>Employment</b>			
Low point	Middle of 2nd quarter 2021	Middle of 3rd quarter 2021	Middle of 4th quarter 2021
Recovery of 2019 levels	Approx. 1st quarter 2025	Approx. 2nd quarter 2024	Approx. 3rd quarter 2023

Source: Economic & Planning Systems

**Long-Term Forecast.** In the long-term model, scenario narratives are driven by 1) annual employment levels for 2025 from the short-term model; and 2) the performance of each regional industry relative to the anticipated national structural growth by industry, as defined by the Bureau of Labor Statistics (BLS). Details of these assumptions are provided in the following sections.

- **Low.** This scenario is characterized by slower than anticipated long-term growth rates following the recovery from the pandemic and over the subsequent 20 years. Underlying demographic patterns reflect conditions in which unemployment persists longer and commuting patterns reflect relatively lower local labor force participation rates over time.
- **Mid.** This scenario is characterized by anticipated long-term growth rates by industry, which materialize following the recovery from the COVID-19 pandemic and subsequent 20 years. Underlying demographic patterns reflect conditions in which unemployment persists longer and commuting patterns reflect slightly higher local lower labor force participation rates over time.
- **High.** This scenario is characterized by higher-than-anticipated rates of industry-level employment growth rates following the pandemic and subsequent 20 years. Underlying demographic patterns reflect conditions in which unemployment does not persist and commuting patterns reflect high labor force participation rates.

**Table 9 Long-Term Model Scenarios**

	Low	Mid	High
<b>Employment</b>			
Long-term growth relative to national structural growth	Lower than anticipated regional-to-national industry-level outcomes	Anticipated regional-to-national industry-level outcomes	Higher than anticipated regional-to-national industry-level outcomes
Unemployment	Relatively high rates persist through 2023	Relatively high rates persist through 2023	Relatively high rates persist through 2021
<b>Demographics</b>			
In-commuting	Moderate increase of in-commuting patterns	Moderate increase of in-commuting patterns	Relatively high increase of in-commuting patterns
Out-commuting	Relatively low increase of out-commuting	Moderate increase of out-commuting	Relatively high increase of out-commuting
Self-employed	Moderate increase of self-employed persons	Moderate increase of self-employed persons	Moderate increase of self-employed persons
Non-working population (<16 years)	Lower than historic rate of cohort growth	Lower than historic rate of cohort growth	Lower than historic rate of cohort growth
Non-working population (over 65)	Slightly higher than historic rate of cohort growth	Slightly higher than historic rate of cohort growth	Slightly higher than historic rate of cohort growth

Source: Economic & Planning Systems

## Short-Term Model

This section provides detailed descriptions of the model parameters and assumptions used in the short-term model component.

### Model Parameters

The short-term model includes two regression models that sequentially project the following dependent variables: 1) sales tax allocations by county; and 2) employment by county. The predictive relationships between each independent variable and the dependent variable are discussed.

**Parameter Estimates.** Numerous iterations of the sales tax allocation model were made before arriving on an optimal structure, as shown below. The model parameters were established to: a) maximize the adjusted R-squared; and b) identify the most statistically significant coefficients, i.e., minimize the p-values at the 99 percent or at least 95 percent confidence levels. In brief, the independent variables selected were as follows:

- COVID-19 cases: monthly cases were modeled as a forward-lagged variable, replicating the impact that knowledge of increasing cases has on consumer spending – i.e., it was theorized (and confirmed through iterations of modeling) that coefficients for this variable in the month in which cases are at their maximum were neither statistically significant nor predictive of the adverse impact of spending in the current or following months. The (very small) coefficient is negative, as theorized, and it is significant at the 99 percent confidence level.
- CPI: inflation serves two purposes: 1) as a counter-proxy to the Consumer Confidence Index, which fluctuates much more considerably; and 2) as a proxy for the general escalation of personal income. The coefficient is positive, as theorized, and it is significant at the 99 percent confidence level.
- Month: consumer spending is seasonal; the inclusion of this variable controls for seasonality. The coefficients are a mix of positive and negative, as theorized, and they are all significant at the 99 percent confidence level.
- Consumer Confidence Index: as noted in the presentation of historical data, consumer confidence rises during improving economic conditions, and falls with declines in the market. The overlay of recession periods confirms that it is useful as a proxy for market (i.e., consumer) spending behavior. The (very small) coefficient is significant at the 95 percent confidence level but is negative. EPS believes that the pattern of international spending is having a counter-intuitive impact here.

**Table 10 Adams County Sales Tax Model Parameter Estimates**

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	7.3903079	0.170531	43.34	<.0001
CCI	0.0012621	0.00036	3.51	0.0007
CPI	0.0054622	0.000839	6.51	<.0001
Month 1	-0.062887	0.013769	-4.57	<.0001
Month 2	-0.071754	0.013784	-5.21	<.0001
Month 3	-0.001326	0.013693	-0.1	0.923
Month 4	-0.023024	0.013739	-1.68	0.0966
Month 5	0.0037111	0.013771	0.27	0.7881
Month 6	0.0284023	0.013765	2.06	0.0414
Month 7	0.0123432	0.013765	0.9	0.3718
Month 8	0.0139218	0.014299	0.97	0.3323
Month 9	0.063275	0.014299	4.43	<.0001
Month 10	0.0003736	0.014299	0.03	0.9792
Month 11	-0.016633	0.014322	-1.16	0.248
Month 12	0.053596154	0	0	0

Source: Economic & Planning Systems

**Table 11 Arapahoe County Sales Tax Model Parameter Estimates**

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	7.5372496	0.141264	53.36	<.0001
CCI	0.0005352	0.000298	1.8	0.0753
CPI	0.0043017	0.000695	6.19	<.0001
Month 1	-0.059475	0.011406	-5.21	<.0001
Month 2	-0.082764	0.011418	-7.25	<.0001
Month 3	-0.018537	0.011343	-1.63	0.105
Month 4	-0.03733	0.011381	-3.28	0.0014
Month 5	-0.000771	0.011408	-0.07	0.9462
Month 6	0.0246293	0.011402	2.16	0.0329
Month 7	0.0107891	0.011402	0.95	0.3461
Month 8	0.0313887	0.011845	2.65	0.0092
Month 9	0.0575298	0.011845	4.86	<.0001
Month 10	0.0089541	0.011845	0.76	0.4513
Month 11	-0.014585	0.011864	-1.23	0.2215
Month 12	0.080171069	0	0	0

Source: Economic & Planning Systems

**Table 12 Boulder County Sales Tax Model Parameter Estimates**

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	7.5372496	0.141264	53.36	<.0001
CCI	0.0005352	0.000298	1.8	0.0753
CPI	0.0043017	0.000695	6.19	<.0001
Month 1	-0.059475	0.011406	-5.21	<.0001
Month 2	-0.082764	0.011418	-7.25	<.0001
Month 3	-0.018537	0.011343	-1.63	0.105
Month 4	-0.03733	0.011381	-3.28	0.0014
Month 5	-0.000771	0.011408	-0.07	0.9462
Month 6	0.0246293	0.011402	2.16	0.0329
Month 7	0.0107891	0.011402	0.95	0.3461
Month 8	0.0313887	0.011845	2.65	0.0092
Month 9	0.0575298	0.011845	4.86	<.0001
Month 10	0.0089541	0.011845	0.76	0.4513
Month 11	-0.014585	0.011864	-1.23	0.2215
Month 12	0.080171069	0	0	0

Source: Economic & Planning Systems

**Table 13 Broomfield County Sales Tax Model Parameter Estimates**

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	6.774784	0.137906	49.13	<.0001
CCI	-0.000121	0.000291	-0.41	0.6791
CPI	0.0051252	0.000679	7.55	<.0001
Month 1	-0.063914	0.011135	-5.74	<.0001
Month 2	-0.078223	0.011147	-7.02	<.0001
Month 3	-0.000217	0.011074	-0.02	0.9844
Month 4	-0.041731	0.011111	-3.76	0.0003
Month 5	0.0042537	0.011137	0.38	0.7032
Month 6	0.0133898	0.011131	1.2	0.2315
Month 7	-0.000675	0.011131	-0.06	0.9517
Month 8	0.0136828	0.011563	1.18	0.2392
Month 9	0.0143358	0.011564	1.24	0.2176
Month 10	-0.016387	0.011563	-1.42	0.1592
Month 11	0.0057406	0.011582	0.5	0.6211
Month 12	0.14974514	0	0	0

Source: Economic & Planning Systems

**Table 14 Denver County Sales Tax Model Parameter Estimates**

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	8.7015635	0.133004	65.42	<.0001
CCI	0.0021621	0.000281	7.7	<.0001
CPI	0.0007685	0.000655	1.17	0.2428
Month 1	-0.050761	0.010739	-4.73	<.0001
Month 2	-0.071965	0.010751	-6.69	<.0001
Month 3	-0.005684	0.01068	-0.53	0.5956
Month 4	-0.029594	0.010716	-2.76	0.0067
Month 5	-0.010311	0.010741	-0.96	0.3391
Month 6	0.0274563	0.010736	2.56	0.0119
Month 7	0.0182347	0.010736	1.7	0.0922
Month 8	0.0260288	0.011152	2.33	0.0214
Month 9	0.0562557	0.011153	5.04	<.0001
Month 10	0.0143854	0.011152	1.29	0.1997
Month 11	-0.022758	0.011171	-2.04	0.044
Month 12	0.048712015	0	0	0

Source: Economic & Planning Systems

**Table 15 Jefferson County Sales Tax Model Parameter Estimates**

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	7.7572222	0.132364	58.61	<.0001
CCI	0.0005649	0.000279	2.02	0.0455
CPI	0.0042294	0.000651	6.49	<.0001
Month 1	-0.068251	0.010687	-6.39	<.0001
Month 2	-0.072479	0.010699	-6.77	<.0001
Month 3	-0.002745	0.010629	-0.26	0.7967
Month 4	-0.029302	0.010664	-2.75	0.007
Month 5	0.0047891	0.010689	0.45	0.655
Month 6	0.0296484	0.010684	2.78	0.0065
Month 7	0.0143723	0.010684	1.35	0.1812
Month 8	0.0119954	0.011099	1.08	0.2821
Month 9	0.0411725	0.011099	3.71	0.0003
Month 10	-0.010253	0.011099	-0.92	0.3576
Month 11	-0.013093	0.011117	-1.18	0.2414
Month 12	0.094145645	0	0	0

Source: Economic & Planning Systems

**Table 16 Larimer County Sales Tax Model Parameter Estimates**

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	7.2137963	0.114155	63.19	<.0001
CCI	0.0008577	0.000241	3.56	0.0005
CPI	0.005589	0.000562	9.95	<.0001
Month 1	-0.076402	0.009217	-8.29	<.0001
Month 2	-0.095524	0.009227	-10.35	<.0001
Month 3	-0.018955	0.009166	-2.07	0.0409
Month 4	-0.043782	0.009197	-4.76	<.0001
Month 5	0.003773	0.009219	0.41	0.6831
Month 6	0.0416883	0.009214	4.52	<.0001
Month 7	0.0378002	0.009214	4.1	<.0001
Month 8	0.04445	0.009572	4.64	<.0001
Month 9	0.0556787	0.009572	5.82	<.0001
Month 10	-0.001874	0.009572	-0.2	0.8452
Month 11	-0.02112	0.009587	-2.2	0.0296
Month 12	0.074266714	0	0	0

Source: Economic &amp; Planning Systems

Numerous iterations of the employment model were also made before arriving on an optimal structure, as shown below. As with the model described above, the model parameters were established to achieve desired statistical results. The independent variables selected were as follows:

- **Consumer Confidence Index:** in this model, the CCI is used also to calibrate the model for behavioral spending inclinations, as well as to counteract the more subtle (resulting) shifts in sales tax allocations because of actual spending. The (very small) coefficient is positive, as theorized, and it is significant at the 99 percent confidence level.
- **Sales Tax Allocations:** a one-month lag of sales tax allocations is used in the model to replicate the delayed impact that fluctuations in spending have on business hiring and layoff decisions. The coefficient is very small, but positive, and is significant at the 95 percent confidence level. (Note: The variable is modeling in quadratic form for the purpose of improving the model's specifications and significance.)
- **COVID-19 Cases:** monthly cases were modeled again as a forward-lagged variable, replicating the impact that knowledge of increasing cases has on consumer spending. The (very small) coefficient is significant at the 99 percent confidence level but is positive. EPS believes that the observation that spending patterns have maintained and recovered despite COVID cases may be impacting the variable.

**Table 17 Adams County Jobs Model Parameter Estimates**

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	5.2515898	0.003103	1692.3	<.0001
CCI	0.0011558	0.00004246	27.22	<.0001
SalesTax	2.046E-11	6.41E-12	3.19	0.0018
COVID	6.9093E-06	0.00000307	2.25	0.0262

Source: Economic & Planning Systems

**Table 18 Arapahoe County Jobs Model Parameter Estimates**

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	5.3946533	0.003451	1563.1	<.0001
CCI	0.0010343	0.00003354	30.84	<.0001
SalesTax	3.614E-11	1.05E-11	3.46	0.0008
COVID	3.9343E-06	0.000002354	1.67	0.0973

Source: Economic & Planning Systems

**Table 19 Boulder County Jobs Model Parameter Estimates**

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	5.1416021	0.003539	1452.9	<.0001
CCI	0.0009128	0.00003441	26.53	<.0001
SalesTax	2.683E-11	1.07E-11	2.5	0.0137
COVID	0.000029987	0.000009322	3.22	0.0017

Source: Economic & Planning Systems

**Table 20 Broomfield County Jobs Model Parameter Estimates**

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	4.3664202	0.005177	843.38	<.0001
CCI	0.0016159	0.00004482	36.05	<.0001
SalesTax	1.258E-10	6.21E-11	2.03	0.0449
COVID	0.0002046	0.00005979	3.42	0.0008

Source: Economic & Planning Systems

**Table 21 Denver County Jobs Model Parameter Estimates**

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	5.419009	0.004301	1259.9	<.0001
CCI	0.001218	0.000047	25.93	<.0001
SalesTax	1.859E-11	5.35E-12	3.47	0.0007
COVID	7.3949E-06	0.000001962	3.77	0.0003

Source: Economic & Planning Systems

**Table 22 Jefferson County Jobs Model Parameter Estimates**

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	5.3842995	0.003526	1527.2	<.0001
CCI	0.0008369	0.00003389	24.69	<.0001
SalesTax	2.104E-11	6.93E-12	3.03	0.003
COVID	2.4801E-06	0.000004257	0.58	0.5612

Source: Economic & Planning Systems

**Table 23 Larimer County Jobs Model Parameter Estimates**

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	5.1095506	0.004253	1201.3	<.0001
CCI	0.0011232	0.00005649	19.88	<.0001
SalesTax	7.165E-11	1.53E-11	4.7	<.0001
COVID	0.000044537	0.00001529	2.91	0.0043

Source: Economic & Planning Systems

## Model Assumptions

This section provides context and rationale for what assumptions were used in the short-term forecasting model, including two critical factors: public health and consumer confidence.

***Projection of Public Health Conditions.*** The motivation for integrating public health metric in the model specifications is the impact that the number of cases, and subsequent business closures and layoffs, had on the economy and jobs market.<sup>1</sup>

Identifying reasonable forecast assumptions for the public health outlook required assembling various pieces of historical and project expert guidance and perspectives. In addition to the research and analysis of historical confirmed COVID-19 cases, EPS researched Institute of Health Metrics and Evaluation's (IHME) 4-month projection scenarios of COVID-19 cases, public health expert opinions regarding the timing and availability of a vaccine, and perspectives on timing for its distribution.<sup>2</sup>

Shown in **Figure 16** are IHME's forecasts of COVID-19 cases in the entire state of Colorado. It should be noted that these data reflect IHME's calculation of "estimated" not confirmed cases, as well as scenarios to reflect different eventualities of public adoption of mask-wearing mandates.

- Historic cases: data show that cases peaked in April 2020.
- Mean Forecast: IHME estimates that cases will peak at the end of November 2020, approximately 7 months following the previous peak.
- Universal Mask Forecast: IHME estimates that cases under this scenario will peak at the beginning of January 2021.

The conclusions from this analysis were the peak-to-peak periodicity of cases, which are approximately 7 to 8 months. This assumption is built into the econometric modeling.

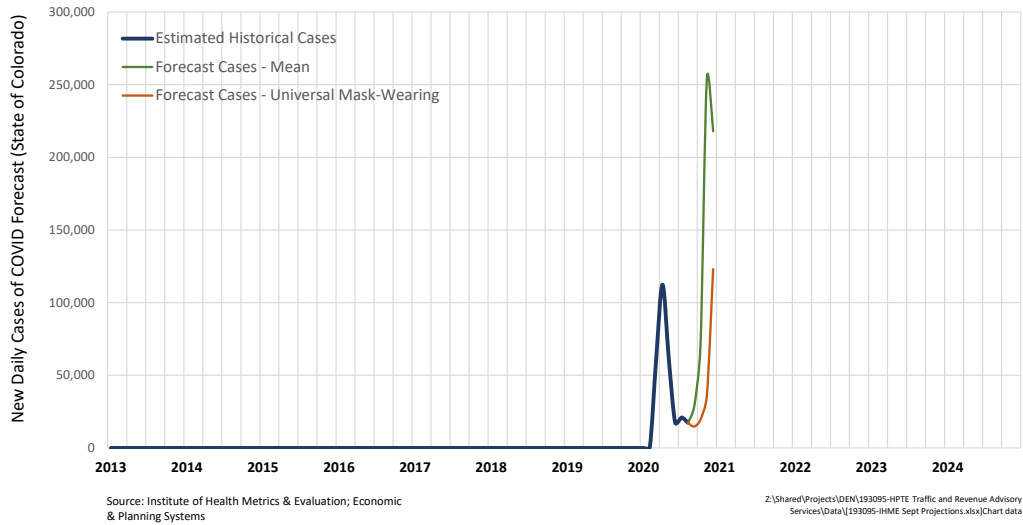
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<sup>1</sup> Initial thinking on independent variables for the model specifications included dummy variables for beginning and end dates for lockdowns, specified industry business closures, etc. After a few months of observing trends in employment and spending, however, it was determined that those variables no longer carried predictive power for either consumer spending patterns or employment levels.

<sup>2</sup> EPS had not anticipated incorporating such a variable in its scoped work plan for producing independent socioeconomic forecasts; however, given the importance of integrating this element into the econometric modeling, EPS collected information on high-level public-facing documentation from public health experts on COVID-19 and its outlook. As such, this was neither a comprehensive review of the literature, nor a summary of a panel of all public health expert perspectives.



**Figure 16 IHME 4-Month Forecast of COVID-19 Cases in Colorado**



**Modeled Public Health Assumptions.** Reflecting the information discussed above, EPS identified the following as reasonable assumptions for projecting COVID-19 cases for integration with the short-term independent forecast.

- **Vaccine Availability and Delivery:** expert opinions regarding these critical elements were relied upon. The “best case” assumptions were modeled with the convergence of current opinion (as of September 2020) from statements by 1) Dr. Fauci, Director of the National Institute of Allergy and Infectious Diseases; 2) Moncef Slaoui, Operation Warp Speed Chief Advisor; and 3) Stephane Bancel, Chief Executive Officer of Moderna. Respectively, these experts have made public statement that the vaccine will be available and delivered for large-scale immunization in the 3<sup>rd</sup> quarter 2021, 2<sup>nd</sup> quarter 2021, and 1<sup>st</sup> quarter 2021.
- **Immunization Timing:** expert opinion was also used to further calibrate the forecast assumption of the diminution of cases following the availability and delivery of an effective vaccine. That is, it is theorized that the delivery of a vaccine in the 2<sup>nd</sup> quarter of 2021, for example, would not imply that cases will immediately disappear; rather that any spike in cases would diminish over the next few months. Dr. Francis Collins, Director of the National Institute of Health (NIH) has stated publicly that distribution of a vaccine will take approximately three (3) months for 300 million doses.

- Third-Party Forecast of COVID-19 Cases and Periodicity Assumption: the Institute of Health Metrics and Evaluation (IHME) began producing state-level forecasts of new COVID-19 cases, deaths, rates of hospitalization, and hospital bed capacity in late March 2020. According to its website, the IHME uses a hybrid modeling approach, incorporating elements of statistical and disease transmission models. The IHME regularly updates its model to respond to new data and new information. The current 4-month forecast (September 4, 2020 version) was utilized for understanding the implied periodicity of new case peaks and magnitudes. These forecasts are described in greater detail below.

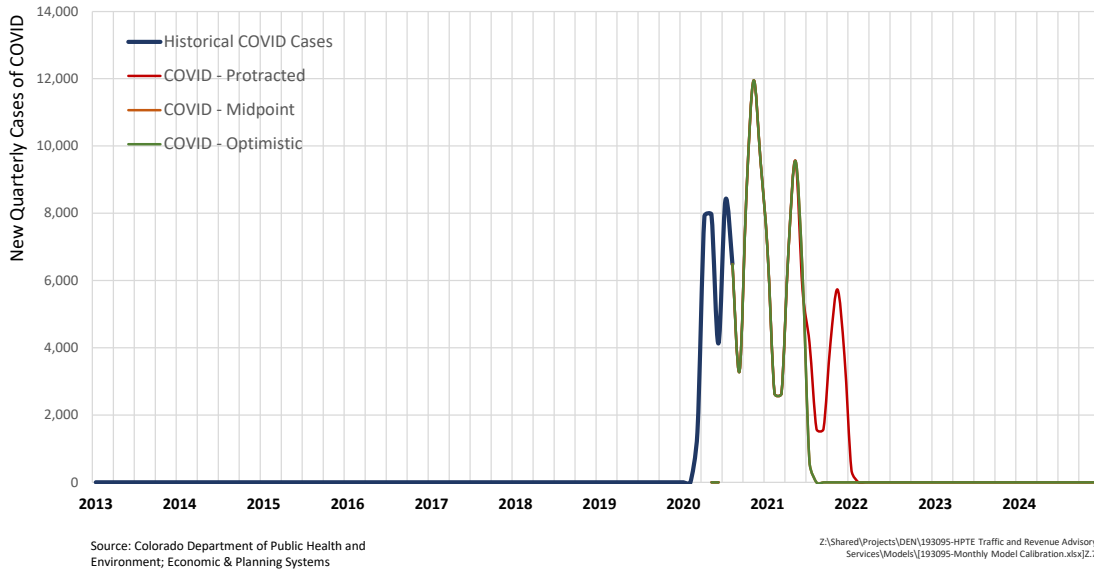
***Projection of COVID-19 Cases.*** EPS has applied the general contours and timing of the periodicity and magnitude of the second wave (as estimated by IHME) using both the U.S. and Colorado-specific data.

- Periodicity: EPS assumes that the peak-to-peak cases occur every 7 months, and, critically, that they occur every 7 months until a vaccine has been delivered. This is important. EPS's observation of previous iterations of forecasts is that models are consistently forecasting subsequent waves of cases following a decline. There is no evidence to suggest that cases will disappear following the next forecast peak in cases.
- Magnitude: EPS assumes that the magnitude of cases in the next (i.e., October to December time frame) wave of cases is larger than the first, as projected by both IHME scenarios. Subsequent waves, however, are assumed to be milder.

The calibration of this projection is shown in **Figure 17**. Individual county forecasts are illustrated in **Figure 85** through **Figure 91** beginning on page 96. By scenario, these projections reflect the following additional assumptions:

- Low: this scenario assumes a delay in the availability, delivery, and immunization of a COVID-19 vaccine, implying that there are projected to be two (2) additional peaks of cases, not including the peak in November 2020.
- Mid: this scenario assumes a delay in the availability, delivery, and immunization of a COVID-19 vaccine, implying that there are projected to be one (1) additional peak of cases, not including the peak in November 2020, followed by a protracted decline in the number of cases through the second half of 2021.
- High: this scenario assumes one (1) additional peak of cases, not including the peak in November 2020, followed by a more optimistic decline in the number of cases, diminishing effectively by July 2021.

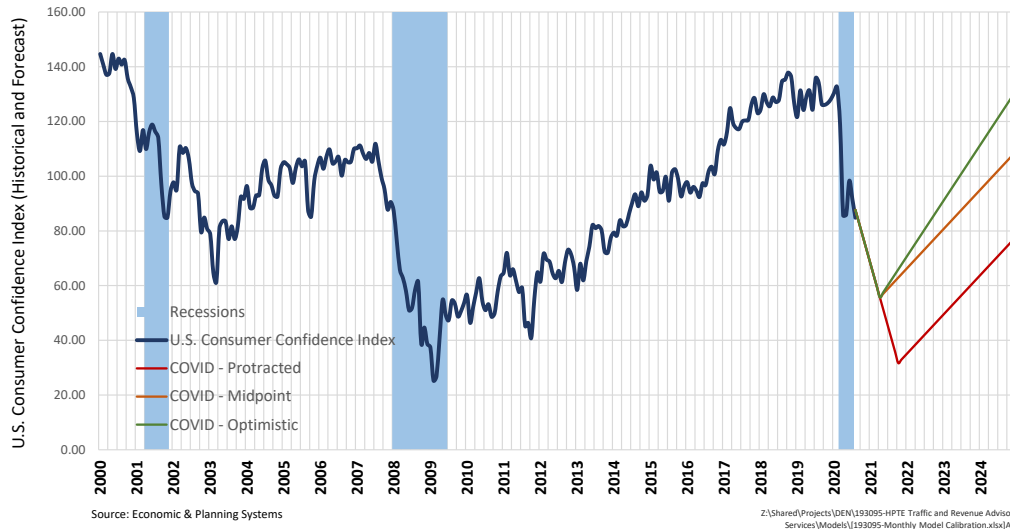
**Figure 17 Applied Forecast of New COVID-19 Cases in 7-County Area**



**Consumer Confidence.** Using the preceding scenarios of COVID-19 cases, EPS assumes that consumer confidence will respond to the public health conditions, specifically to the distribution of a vaccine. **Figure 18** illustrates this projection as applied to the entire region and individual counties.

- **Pre-Vaccine Delivery:** each scenario assumes that the CCI drops by three (3) points per month until it is broadly announced that a vaccine will be delivered (assumed to be three months from elimination of cases).
- **Recovery:** for the Mid and High scenarios, EPS assumes that consumer confidence rebounds at a recovery pace of two (2) points per month, whereas the Low scenario recovers at slightly less than two (2) points per month.

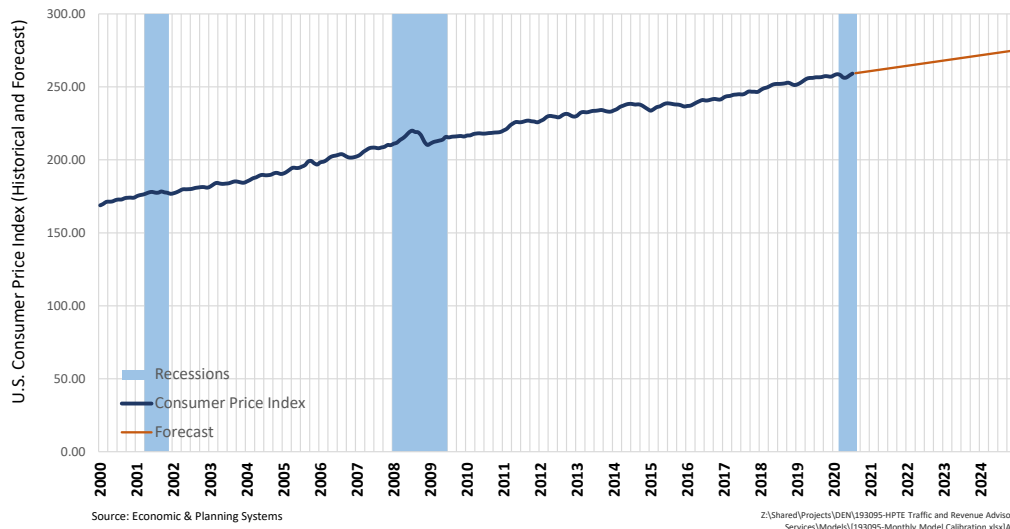
**Figure 18 Forecast Assumptions of Consumer Confidence Index**



**Consumer Prices**

EPS assumes that inflation, illustrated in **Figure 19**, which has increased steadily and without much fluctuation for the last few decades, will continue to increase at a constant rate of 4.2 points per year.

**Figure 19 Forecast Assumption of Consumer Price Index**



**Other Critical Supporting Factors**

Third-party sources that provide economic outlooks and forecasts in the near and long term for COVID-19 impacts and recovery in the U.S. were reviewed by EPS. These sources were used to determine and support the short- and long-term forecast assumptions and scenarios in EPS’s independent forecasts.

**Moody's Analytics.** Moody's Analytics provided a presentation in March 2020, "COVID-19: Gauging the Pandemic" as well as an updated presentation in June 2020, "Handicapping the Paths for the Pandemic Economy." Both presentations provided a baseline scenario and multiple additional scenarios to forecast the economic recovery in the United States each with an estimated probability rate. Real GDP was the tracking factor to predict when the economy would recover. Each scenario included epidemiological assumptions of the total number of infections, when peak infections would occur, fatality rate, and when infections would abate. The June presentation included the forecasted shape of recovery of Real GDP from the start of recession with various scenarios all in the shape of a swoosh recovery with varying slopes.

**McKinsey & Company.** In March 2020, McKinsey published an article, "Safeguarding our lives and our livelihoods: The imperative of our time," that analyzed the uncertainty of the pandemic, impacts of lockdown on consumption and economic activity, and forecasted possible scenarios of recovery. McKinsey created a matrix to predict different scenarios of the shape of GDP recovery with public-health response on the y-axis and economic policies on the x-axis resulting in nine scenarios. In April and May, McKinsey surveyed over 2,000 global executives of what scenario within the matrix they believed was most likely to occur. The results of the survey were published in McKinsey's May article, "Crushing coronavirus uncertainty: The big 'unlock' for our economies" and updated with new survey results in a June article. Each scenario and shape of GDP recovery was determined by when the virus spread will be contained (or failure of containment), the depth of GDP decline, pace of GDP recovery, and unemployment rate. The most likely scenario, according to the global executives surveyed, was a u-shaped GDP recovery with virus recurrence, slow long-term growth, and muted world recovery. This is one of the more optimistic scenarios in which public health and economic policy interventions are partially effective, and the return to precrisis levels of GDP, income, and corporate earnings will take time. The scenarios with the highest probabilities of occurring by the global executives were used to influence EPS's independent forecast scenarios.

**Deloitte.** Deloitte publishes quarterly US economic forecasts with insights from Deloitte economists on trends and events shaping the economy. The second quarter 2020 US Economic Forecast and the August update were especially valuable in determining forecast assumptions and building scenarios to reflect the impacts of COVID-19. Deloitte provided a detailed forecast of three scenarios (baseline, optimistic, and pessimistic) for 2020 through 2025. Each scenario includes forecasts for GDP and components, consumer price index, labor markets, income and wealth, housing, foreign trade, federal funds, and federal budget balance. The baseline scenario with a 70 percent probability by Deloitte has a u-shaped recovery. In this scenario, a second decline in GDP occurs in the fourth quarter of 2020 followed by slow growth in the first and second quarter of 2021. Deloitte forecasts GDP growth to return to the pre-COVID level by the end of 2023, with the economy reaching full employment by the first quarter of 2025.

## Long-Term Model

This section provides detailed descriptions of the model parameters and assumptions used in the long-term model component.

### Parameters

**National Economic Growth.** The Bureau of Labor Statistics publishes projections every two years of the U.S. labor force, industry employment, and occupational employment. The most recently published projections, available from its website and in the journal *Monthly Labor Review*, cover the 10-year period 2019 through 2029. These projections are made with a few key assumptions about the characteristics of the economy, such as:

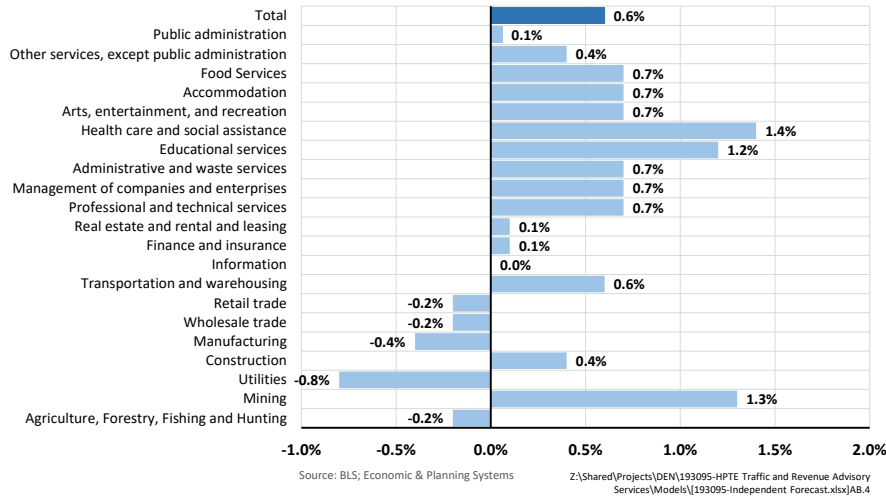
- Labor market equilibrium where labor supply meets labor demand
- Projections focus on long-term structural change as opposed to market cycles, e.g., recessions<sup>3</sup>

The percentages shown in **Figure 20** are the BLS's projection of industry growth rates for 2019 through 2029. Overall, the BLS forecasts U.S. employment to grow an average of 0.6 percent annually over the next 10 years. Industries projected to expand at above-average rates include Accommodations and Food Service; Arts, Entertainment, and Recreation; Health Care and Social Assistance; Educational Services; Administrative Services; Management; Professional and Technical Services; and Construction. Some industries are projected to lose jobs, including Retail Trade; Wholesale Trade; Manufacturing; and Utilities. Other industries are projected to neither expand nor contract, including Public Administration; Information; and Agriculture.

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<sup>3</sup> The 2019–29 projections do not include impacts of the COVID-19 pandemic and response efforts. The BLS Employment Projections are developed using models based on historical data, which in this set of projections cover the period through 2019; all input data therefore precede the pandemic. In addition, the 2019–29 projections were finalized in the spring of 2020 when there was still significant uncertainty about the duration and impacts of the pandemic. The BLS Employment Projections are long-term projections intended to capture structural change in the economy, not cyclical fluctuations. As such, they are not intended to capture the impacts of the recession that began in February 2020. However, besides the immediate recessionary impacts, the pandemic may cause new structural changes to the economy. BLS releases new employment projections annually, and subsequent projections will incorporate new information on economic structural changes as it becomes available. To provide more information about potential impacts before the release of the 2020–30 projections, BLS is developing alternate scenarios for the 2019–29 projection period that encompass possible impacts from the pandemic. Comparison of these alternate scenarios with the baseline projections released here will demonstrate how changes in consumer behavior caused by the pandemic may alter the projections for detailed occupations and industries. An analysis of these scenarios will be released in a *Monthly Labor Review* article later in 2020.

**Figure 20 Bureau of Labor Statistics 10-Year Employment Projection**



**National-to-Regional Economic Relationships.** Using the BLS national forecasts as a benchmark for underlying trajectories of employment by industry, the long-term methodology is calibrated by analyzing and projecting the national to regional economic relationships, i.e., location quotients, against the national forecasts over 10 years, and extrapolating continuing trends through the final projection year, as described below:

- **Development of historical relationships:** Using historical national and regional data by industry by year since 2000, shifts in the quantitative relationships between regional and national employment distributions were identified and applied over time to the regional forecasts by industry.
- **Application to the national forecast:** Applying these regional-to-national relationships to the national employment forecast results in overall regional employment captures. This set of calculations establishes a baseline set of underlying growth trends and rates through 2029, which are further calibrated (up or down) to align with the short-term modeling outputs.
- **Horizon year (2045) growth constraints:** Historical analysis also shows that as an employment base grows, the year-over-year (or periodic) percent rates of growth by industry bear logarithmic, not linear relationships to one another. As such, long-term growth rates are calibrated to a logarithmic relationship between a given year and its previous rate of growth. Although this type of a growth pattern yields similar annual growth magnitudes year over year, EPS is estimating that external economic factors, such as increases in productivity, will increasingly cause employment growth to taper in actual numbers, not just in growth rates.

**Demographic Relationship Factors.** As illustrated in the series of **Table 31** through **Table 37** below, this provides a platform to apply a methodology commonly used by demographers to examine the relationships between wage and salary employment, un-/under-employment, group quarters, population by age, households, and housing inventory. It also provides points at which population and household counts may be vetted against observed data points for the purpose of calibrating appropriate shifts over time.

Each step is described in the tables and charts that follow (**Figure 92** through **Figure 126** beginning on page 109). Although EPS does not apply the findings of the housing inventory section of the following methodology, it is shown for the sake of completeness. Each component and their sources are as follows:

- Wage & salary employment: employment by industry is sourced from the Bureau of Labor Statistics<sup>4</sup>, as well as from the Colorado Department of Labor & Employment<sup>5</sup>.
- Commuting patterns: commuting patterns have been sourced from the U.S. Census Longitudinal Employer-Household Dynamics data series.<sup>6</sup>
- Unemployment: unemployment data are sourced from the BLS Local Area Unemployment Statistics U-3 “total unemployed” series<sup>7</sup>, which nets those employed or “actively seeking employment”.
- Proprietors: data are sourced from the U.S. Census Nonemployer Statistics data series.<sup>8</sup>
- Group quarters and “underemployed persons”, age 16 to 65: this nets the total population of non-institutionalized persons aged 16 to 65, adding institutionalized persons 16 to 65 and those ages 16 to 65 that would be considered in the U-4, U-5, and U-6 measures of labor utilization.<sup>9</sup>
- Persons aged under 16 and over 65: this adds the total population under 16 and over 65, including group quarters, resulting in total population.

The following few steps trace population to households and housing inventory:

- Group quarters: this addition results in population in households.
- Average household size: using the weighted average household size from U.S. Census data for the geography, total households are derived.
- Vacancy rate: using occupancy and vacancy status data from the U.S. Census, total inventory of housing is determined.

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<sup>4</sup> <https://www.bls.gov/cew/datatoc.htm>

<sup>5</sup> <https://www.colmigateway.com/vosnet/lmi/default.aspx>

<sup>6</sup> <https://onthemap.ces.census.gov/>

<sup>7</sup> <https://www.bls.gov/lau/>

<sup>8</sup> <https://www.census.gov/econ/nonemployer/>

<sup>9</sup> <https://www.bls.gov/lau/stalt.htm>



**Table 24 Long-Term Forecasting Calibration Factors for 7-County Area**

	Factors / Assumptions			Totals			
	2000	2019	2040	2000	2019	2045	
<b>Jobs to Population</b>							
<b>Step 1</b>							
Wage & Salary Jobs	Row A			1,407,588	1,725,648	2,154,545	
<b>Step 2</b>							
Less: In-Commuting [2]	Row B	54%	61%	65%	763,914	1,060,668	1,404,486
<b>Subtotal (W &amp; S Jobs Residing in Geo.)</b>	Row C			<b>643,674</b>	<b>664,979</b>	<b>750,059</b>	
<b>Step 3</b>							
Plus: Out-Commuting [2]	Row D	49%	53%	47%	<u>683,592</u>	<u>919,227</u>	<u>1,023,381</u>
<b>Subtotal (W &amp; S Jobs Held by Residents)</b>	Row E			<b>1,327,266</b>	<b>1,584,207</b>	<b>1,773,441</b>	
<b>Step 4</b>							
Plus: Proprietors [3]	Row F	13%	17%	19%	<u>190,664</u>	<u>321,665</u>	<u>429,353</u>
<b>Subtotal (Non-Institutionalized Job Holders)</b>	Row G			<b>1,517,930</b>	<b>1,905,871</b>	<b>2,202,794</b>	
<b>Step 5</b>							
Plus: Unemployment	Row H	2%	2%	4%	<u>36,769</u>	<u>48,432</u>	<u>95,070</u>
<b>Subtotal (Laborforce)</b>	Row I			<b>1,554,699</b>	<b>1,954,303</b>	<b>2,297,863</b>	
<b>Step 6</b>							
Plus: Group Quarters Age 16-65 / Underemployed Persons 16-65	Row J	9%	11%	12%	<u>156,421</u>	<u>230,869</u>	<u>292,178</u>
<b>Subtotal (All Persons, Age 16-65)</b>	Row K			<b>1,711,120</b>	<b>2,185,172</b>	<b>2,494,972</b>	
<b>Step 7</b>							
Plus: Persons <16 and >65	Row L	31%	33%	36%	<u>782,678</u>	<u>1,059,575</u>	<u>1,466,932</u>
<b>Subtotal (Total Population)</b>	Row M			<b>2,493,798</b>	<b>3,244,747</b>	<b>4,056,973</b>	
as %	Row N			100%	100%	n/a	
<i>Row O should be equal to this number from the U.S. Census.</i>	Row O			2,493,798	3,244,747	n/a	
<b>Population to Housing</b>							
<b>Step 8</b>							
Less: Total Group Quarters	Row P	1.8%	1.7%	1.7%	<u>44,343</u>	<u>55,250</u>	<u>292,178</u>
<b>Total Population in Households</b>	Row Q			<b>2,449,455</b>	<b>3,189,497</b>	<b>3,764,795</b>	
<b>Step 9</b>							
Total Households	Row R	2.49	2.47		984,357	1,292,391	n/a
<i>Row T should be equal to this number from the U.S. Census.</i>	Row S				984,056	1,292,059	n/a

[1] Factors are extrapolated from trends for in- and out-commuting available between 2002 and 2018.

[2] Adds known proprietors using U.S. Census Nonemployer Statistics

Source: BLS; BEA; CDLE; US Census; Economic & Planning Systems

## Forecast Assumptions

### Downturn and Recovery Rates

The rates reported in the following two table are the outputs, not inputs or assumptions, of the short- and long-term econometric modeling. The rates are displayed as annual averages for EPS's Low, Mid, and High scenarios in context with historic rates (reflecting quarterly data from 2000 through 1<sup>st</sup> quarter 2020).

**Short-Term Modeling.** The rates shown in **Table 25** reflect the short-term model employment outputs for the period 2020 through 2025 (individual county rates are shown in **Table 38** on page 107). Underlying these outputs are the inputs and assumptions outlined and described in the previous methodology section (e.g., COVID-19 cases, vaccine availability, consumer confidence, and spending).

The results as shown reflect the various degrees to which each supersector industry recovers from the pandemic and recession. Specifically, the rates reflect inputs of downturn and recovery rates by industry by county, based in an analysis of recession and recovery patterns since 2000. Most notable in the outputs is the relatively quick recover of retail jobs in the Mid and High scenarios.

**Table 25 Annual 7-County Downturn and Recovery Rates, 2020-2025**

Employment Sector	Historic	Annual Employment Change, 2020-2025		
		High	Mid	Low
Production	50	474	93	-378
Service	932	2,661	1,453	287
Education	200	406	231	61
Entertainment	53	107	69	31
Restaurant	194	496	308	126
Retail	71	414	198	-9

Source: Economic & Planning Systems

**Long-Term Modeling.** The rates shown in **Table 26** (individual county rates are shown in **Table 39** on page 108) reflect the long-term model employment outputs for the period 2020 through 2045. Underlying these outputs are the inputs and assumptions outlined and described in the previous methodology section (e.g., national-to-regional 2-digit NAICS sector industry performance and shifts in underlying commuting and demographic patterns, described in greater detail in the following section).

In general, the results of the long-term modeling reflect somewhat lower annual industry-level growth. In most industry supersectors, the rates of growth in EPS's Mid scenario are more like the historic averages (though this is not intentional).

**Table 26 Annual 7-County Long-Term Employment Rates, 2020-2045**

Employment Sector	Historic	Annual Employment Change, 2020-2045		
		High	Mid	Low
Production	50	213	102	-41
Service	932	1,465	1,087	600
Education	200	308	237	166
Entertainment	53	46	33	21
Restaurant	194	187	121	55
Retail	71	142	81	15

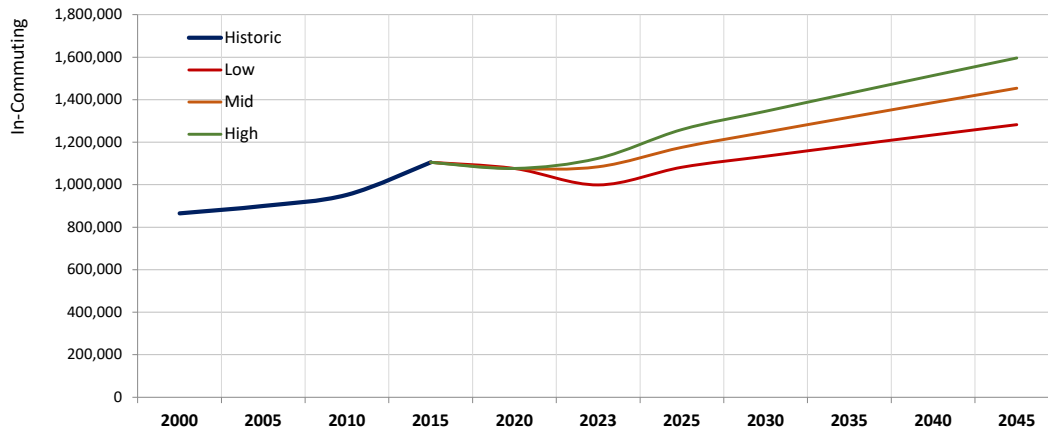
Source: Economic & Planning Systems

### Demographic Patterns

This section details the underlying commuting and demographic shifts, which are used to construct the population and household forecasts. As noted before, the long-term model component is rooted in an employment-based population forecast methodology.

**In-Commuting.** In-commuting patterns are shown in **Figure 21**, and individual county projections are reported in **Figure 92** through **Figure 98** beginning on page 109. In general, in-commuting patterns increase when employment opportunities are greater (for example, under the higher growth scenarios).

**Figure 21 7-County Projection of In-Commuting**

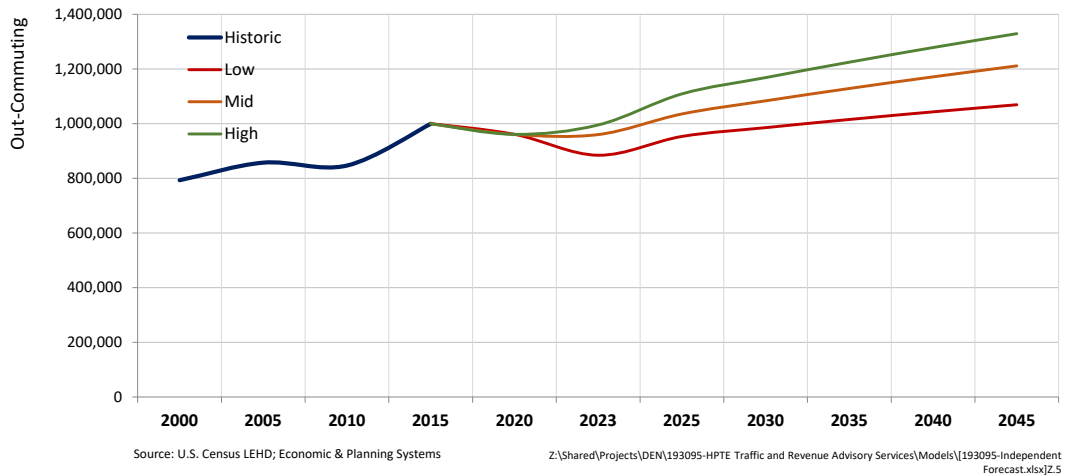


Source: U.S. Census LEHD; Economic & Planning Systems

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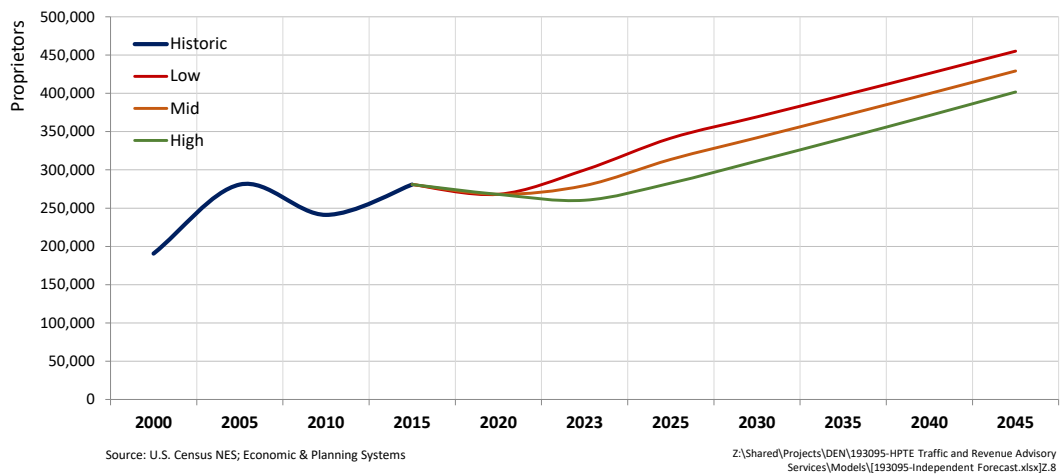
**Out-Commuting.** Out-commuting patterns are shown in **Figure 22**, and individual county out-commuting projections are illustrated in **Figure 99** through **Figure 105** beginning on page 112. As noted above, out-commuting patterns increase when employment options are greater.

**Figure 22 7-County Projection of Out-Commuting**



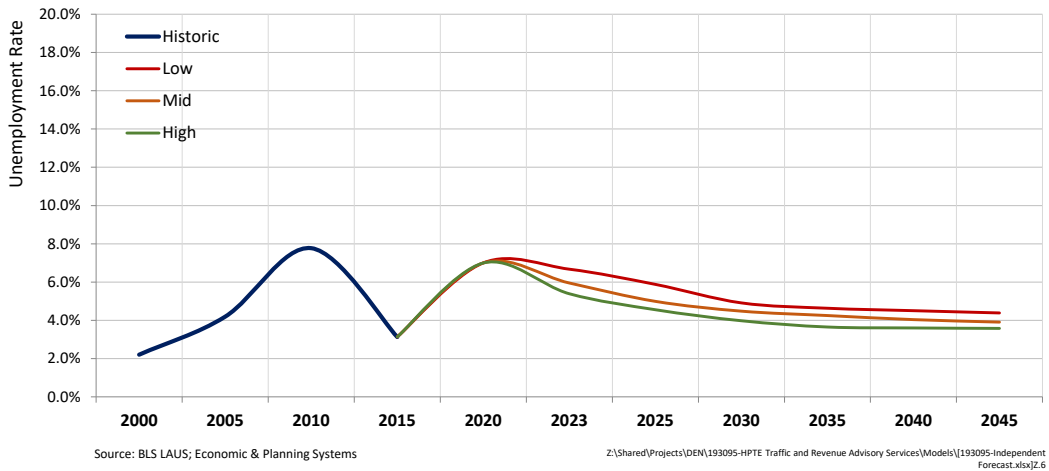
**Self-Employed.** The forecast of proprietors is shown in **Figure 23**, and individual county projections are shown in **Figure 106** through **Figure 112** beginning on page 116. In general, this projection illustrates the modeling assumption that the number of proprietorships increases when fewer wage and salary jobs are available.

**Figure 23 7-County Projection of Self-Employment**



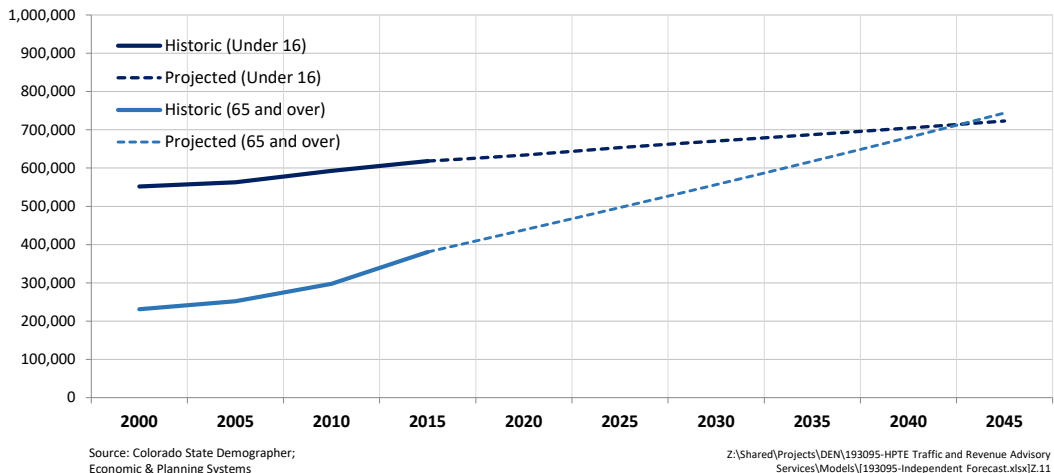
**Unemployment.** The projected unemployment rates is shown in **Figure 24**, and individual county projections are illustrated in **Figure 113** through **Figure 119** beginning on page 119. In general, these trends reflect more persistent, longer-term structural unemployment in the lower growth scenarios (specifically the Low scenario). Even under this assumption, the Low scenario converges on each county’s respective long-term historic unemployment rates.

**Figure 24 7-County Projection of Unemployment**



**Non-Working Population.** As illustrated in **Figure 25**, in addition to group quarters populations for both counties, non-working populations include those persons under 16 years of age and those over 65 years of age. These projections have been calibrated to blend long-term historic averages with DOLA’s projections of county projections by age. Individual county projections are shown in **Figure 120** through **Figure 126** beginning on page 123.

**Figure 25 7-County Projection of Non-Working Population**



**Other.** It should be noted that this blend of short- and long-term modeling methodology was developed in the context of the COVID-19 pandemic, in which it became necessary to identify critical current variables that have had an observable and significant impact on employment levels. Other variables were discussed through early phases of this study but were not ultimately incorporated into the econometric model.

- Paycheck Protection Program (PPP): The PPP was a loan program originating from the Coronavirus Aid, Relief, and Economic Security (CARES) Act in March 2020. Administered by the Small Business Administration (SBA), the program allocated more than \$500 billion to more than 5 million businesses for the purpose of helping business maintain then-current employment levels through what was foreseen as a temporary disruption of demand. Consideration was made for including this in the econometric model parameters, but ultimately dismissed because data were not available to quantify the extent to which businesses in either county had benefitted from the PPP.
- Federal Unemployment Benefits: The Families First Coronavirus Response Act (FFCRA) was authorized in March 2020, which provided additional flexibility for state unemployment insurance agencies and additional administrative funding to respond to the COVID-19 pandemic. In conjunction with the CARES Act, it expanded states' ability to provide unemployment insurance for many workers impacted by the pandemic, including for workers who are not ordinarily eligible for unemployment benefits.<sup>10</sup> Consideration was given for incorporating this as a set of dichotomous (dummy) variables but ultimately dismissed because some research demonstrated only fleeting impact on personal consumer expenditure and demand.<sup>11</sup>

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<sup>10</sup> <https://www.dol.gov/coronavirus/unemployment-insurance>

<sup>11</sup> [https://opportunityinsights.org/wp-content/uploads/2020/05/tracker\\_paper.pdf](https://opportunityinsights.org/wp-content/uploads/2020/05/tracker_paper.pdf)

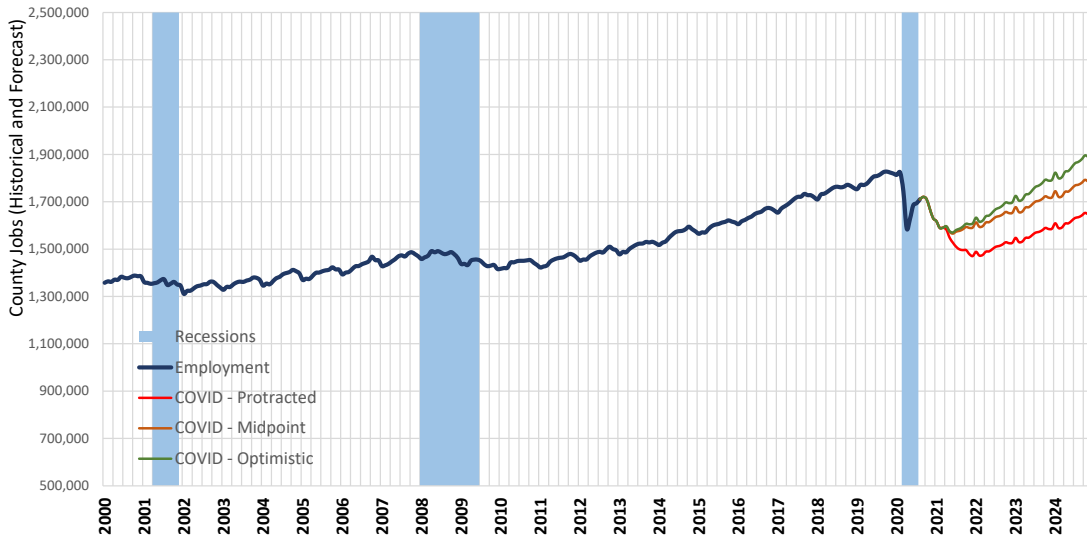
## Independent Forecasts

This section contains detailed outputs of the short- and long-term employment and population projections. The projections of combined employment and population are also compared to third-party providers for context.

### Short-Term Employment

The outcome of applying the preceding assumptions to both levels of the forecast model specifications is illustrated below in **Figure 26**, and individual county short-term job forecasts are shown in **Figure 127** through **Figure 133** beginning on page 126.

**Figure 26 7-County Short-Term Jobs Forecast**



Source: Economic & Planning Systems

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Summarized and aggregated to the annual level, **Table 27** illustrates how the forecasts differ among each other, and by comparison to the peak-to-trough and recovery of jobs following the Great Recession. Individual county short-term job forecasts are shown also in **Table 40** through **Table 46** beginning on page 130. By comparison, each of the forecast scenarios shows a swifter decline in jobs, characteristic of observed impacts of the pandemic to observed employment data.

- **Low:** this scenario results in a similarly protracted recovery of jobs by comparison to the Great Recession, where employment levels remain below pre-pandemic levels by 2025 (compared to 3 percent below pre-peak levels following the Great Recession’s initial downturn).
- **Mid:** this scenario reflects a baseline scenario in which pre-pandemic employment levels are reached and surpassed by 0.1 percent in 2024.
- **High:** this scenario reflects the underlying assumptions regarding vaccine availability, immunization, and the quick return of consumer confidence, where pre-pandemic employment levels are reached and surpassed by 5.3 percent in 2024.

**Table 27 7-County Short-Term Jobs Forecast**

	2019	2020	2021	2022	2023	2024	2025
<b>Jobs</b>							
COVID - Optimistic	1,758,868	1,691,026	1,593,832	1,660,270	1,752,920	1,851,618	1,956,889
COVID - Midpoint	1,758,868	1,691,026	1,586,888	1,628,386	1,692,653	1,759,966	1,830,524
COVID - Protracted	1,758,868	1,691,026	1,533,890	1,503,436	1,562,232	1,623,758	1,688,187
<b>as % of 2019</b>							
COVID - Optimistic	0.0%	-3.9%	-9.4%	-5.6%	-0.3%	5.3%	11.3%
COVID - Midpoint	0.0%	-3.9%	-9.8%	-7.4%	-3.8%	0.1%	4.1%
COVID - Protracted	0.0%	-3.9%	-12.8%	-14.5%	-11.2%	-7.7%	-4.0%
<b>Peak-to-Trough and Recovery of Jobs (as % of Peak)</b>							
Great Recession	0.0%	-1.0%	-5.0%	-7.0%	-6.0%	-4.0%	-3.0%

Source: Economic & Planning Systems

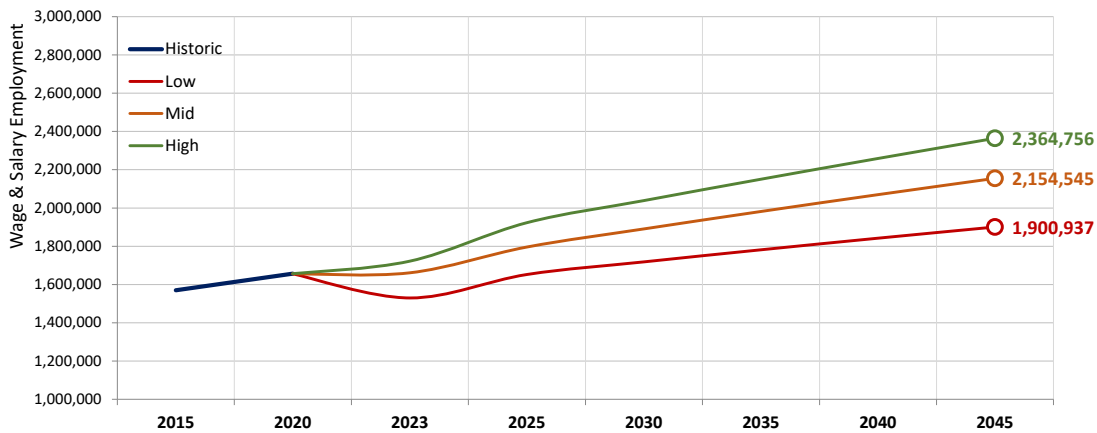


### Long-Term Employment

It should be noted that the following employment projection represents only Wage & Salary employment and does not include self-employed persons. Individual county long-term forecasts are provided in **Figure 134** through **Figure 140** beginning on page 132.

- **Low:** Employment is projected to grow by approximately 9,800 jobs per year between 2020 and 2045. The compounded annual average growth rate is approximately 0.6 percent per year over this period.
- **Mid:** Employment is projected to grow by approximately 20,000 jobs per year between 2020 and 2045. The compounded annual average growth rate is approximately 1.1 percent per year over this period.
- **High:** Employment is projected to grow by approximately 28,300 jobs per year between 2020 and 2045. The compounded annual average growth rate is approximately 1.4 percent per year over this period.

**Figure 27 7-County Long-Term Jobs Forecast**



Source: Economic & Planning Systems

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**Forecasts by Industry.** **Table 28** provides a summary of Wage & Salary employment forecasts by scenario by supersector (see **Table 47** on page 138 for a crosswalk between NAICS codes and industry supersector).

**Table 28 Summary of Long-Term Employment Forecasts by Industry**

	2020	2023	2025	2030	2035	2040	2045	2020-2045		
								Total	Ann. #	Ann. %
<b>Low Scenario</b>										
Production	304,655	262,989	279,884	283,374	286,582	289,555	292,323	-12,332	-493	-0.17%
Service	894,712	837,201	906,311	951,280	994,159	1,035,243	1,074,705	179,993	7,200	0.74%
Education	128,884	121,127	131,609	143,554	155,390	167,140	178,802	49,918	1,997	1.32%
Entertainment	27,541	26,495	29,173	30,403	31,566	32,671	33,725	6,184	247	0.81%
Restaurant	134,756	128,823	141,299	144,044	146,585	148,955	151,175	16,419	657	0.46%
<u>Retail</u>	<u>165,724</u>	<u>153,397</u>	<u>164,370</u>	<u>166,000</u>	<u>167,503</u>	<u>168,901</u>	<u>170,206</u>	<u>4,482</u>	<u>179</u>	<u>0.11%</u>
<b>Total</b>	<b>1,656,272</b>	<b>1,530,031</b>	<b>1,652,645</b>	<b>1,718,654</b>	<b>1,781,786</b>	<b>1,842,466</b>	<b>1,900,937</b>	<b>244,665</b>	<b>9,787</b>	<b>0.55%</b>
<b>Mid Scenario</b>										
Production	304,655	291,248	310,208	317,183	323,617	329,598	335,185	30,529	1,221	0.38%
Service	894,712	905,331	980,933	1,044,230	1,105,137	1,163,964	1,220,872	326,161	13,046	1.25%
Education	128,884	130,978	142,434	156,836	171,235	185,647	200,060	71,177	2,847	1.77%
Entertainment	27,541	28,642	31,571	33,162	34,676	36,125	37,513	9,972	399	1.24%
Restaurant	134,756	139,272	152,915	157,891	162,531	166,886	170,990	36,234	1,449	0.96%
<u>Retail</u>	<u>165,724</u>	<u>165,659</u>	<u>177,694</u>	<u>181,111</u>	<u>184,262</u>	<u>187,190</u>	<u>189,925</u>	<u>24,201</u>	<u>968</u>	<u>0.55%</u>
<b>Total</b>	<b>1,656,272</b>	<b>1,661,129</b>	<b>1,795,755</b>	<b>1,890,413</b>	<b>1,981,459</b>	<b>2,069,411</b>	<b>2,154,545</b>	<b>498,273</b>	<b>19,931</b>	<b>1.06%</b>
<b>High Scenario</b>										
Production	304,655	301,859	332,204	342,290	351,664	360,436	368,678	64,023	2,561	0.77%
Service	894,712	938,413	1,050,588	1,124,807	1,196,644	1,266,408	1,334,236	439,524	17,581	1.61%
Education	128,884	135,751	152,518	169,498	186,598	203,823	221,150	92,266	3,691	2.18%
Entertainment	27,541	29,682	33,806	35,828	37,770	39,641	41,449	13,908	556	1.65%
Restaurant	134,756	144,343	163,748	171,088	178,013	184,581	190,829	56,073	2,243	1.40%
<u>Retail</u>	<u>165,724</u>	<u>171,623</u>	<u>190,127</u>	<u>195,197</u>	<u>199,899</u>	<u>204,292</u>	<u>208,414</u>	<u>42,690</u>	<u>1,708</u>	<u>0.92%</u>
<b>Total</b>	<b>1,656,272</b>	<b>1,721,671</b>	<b>1,922,991</b>	<b>2,038,708</b>	<b>2,150,588</b>	<b>2,259,181</b>	<b>2,364,756</b>	<b>708,484</b>	<b>28,339</b>	<b>1.43%</b>

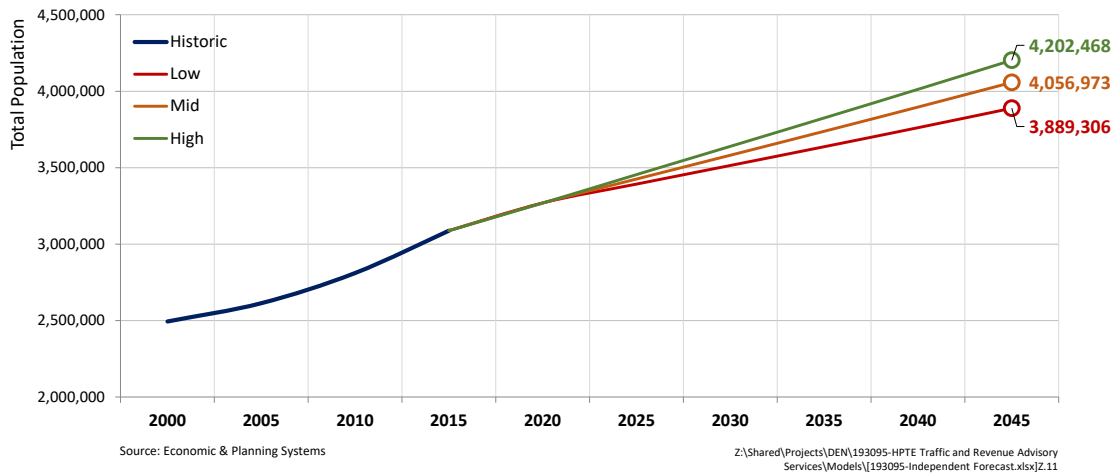
Source: Economic & Planning Systems

### Long-Term Population

**Figure 141** illustrates the independent forecast modeling output for total population, and individual county long-term population forecasts are provided in **Figure 141** through **Figure 147** beginning on page 135.

- **Low:** Population is projected to grow by approximately 24,800 persons per year between 2020 and 2045. The compounded annual average growth rate is approximately 0.7 percent per year over this period.
- **Mid:** Population is projected to grow by approximately 31,500 persons per year between 2020 and 2045. The compounded annual average growth rate is approximately 0.9 percent per year over this period.
- **High:** Population is projected to grow by approximately 37,300 persons per year between 2020 and 2045. The compounded annual average growth rate is approximately 1.0 percent per year over this period.

**Figure 28 7-County Projection of Population**



## Forecast Comparisons

**Table 29** and **Table 30** illustrate EPS's mid scenarios against both CDOT and DOLA projections of employment, population, and households.

**Employment.** These employment comparisons represent wage and salary employment as well as proprietors.

- **Low:** this scenario reflects average annual growth of approximately 17,300 jobs. The compounded annual average rate of growth is 0.8 percent. This scenario results in 2045 employment approximately 13 percent less than CDOT's and 2040 employment approximately 17 percent lower than DOLA's.
- **Mid:** this scenario reflects average annual growth of approximately 26,400 jobs. The compounded annual average rate of growth is 1.2 percent. This scenario results in 2045 employment approximately 4 percent less than CDOT's and 2040 employment approximately 10 percent lower than DOLA's.
- **High:** this scenario reflects average annual growth of approximately 33,700 jobs. The compounded annual average rate of growth is 1.5 percent. This scenario results in 2045 employment approximately 2 percent higher than CDOT's and 2040 employment approximately 4 percent lower than DOLA's.

### **Population.**

- **Low:** this scenario reflects average annual growth of approximately 24,800 persons. The compounded annual average rate of growth is 0.7 percent. This scenario results in a 2045 population approximately 13 percent lower than CDOT's and 7 percent lower than DOLA's.
- **Mid:** this scenario reflects average annual growth of approximately 31,500 persons. The compounded annual average rate of growth is 0.9 percent. This scenario results in a 2045 population approximately 10 percent lower than CDOT's and 3 percent lower than DOLA's.
- **High:** this scenario reflects average annual growth of approximately 37,300 persons. The compounded annual average rate of growth is 1.0 percent. This scenario results in a 2045 population approximately 6 percent lower than CDOT's and less than 1 percent higher than DOLA's.

**Table 29 Comparison of EPS Adjusted Mid Forecast and CDOT Forecast, 2019-2045**

	Adjusted		CDOT		Adjusted vs. CDOT	
	2019	2045	2019	2045	2019	2045
<b>Total Employment (W&amp;S + Proprietors)</b>						
Adams County	263,458	396,730	258,707	400,254	1.84%	-0.88%
Arapahoe County	398,726	512,785	413,909	570,411	-3.67%	-10.10%
Boulder County	229,985	255,830	229,873	260,572	0.05%	-1.82%
Broomfield County	47,080	79,502	49,002	87,950	-3.92%	-9.61%
Denver County	606,241	720,422	589,911	726,547	2.77%	-0.84%
Jefferson County	302,941	345,740	303,623	357,755	-0.22%	-3.36%
Larimer County	<u>200,502</u>	<u>272,694</u>	<u>205,032</u>	<u>299,495</u>	<u>-2.21%</u>	<u>-8.95%</u>
<b>Total</b>	<b>2,048,933</b>	<b>2,583,703</b>	<b>2,050,057</b>	<b>2,702,984</b>	<b>-0.05%</b>	<b>-4.41%</b>
Statewide	3,259,991	4,244,638	3,334,344	4,463,682	-2.23%	-4.91%
<b>Population</b>						
Adams County	517,888	783,495	541,756	871,045	-4.41%	-10.05%
Arapahoe County	656,814	827,744	667,979	919,425	-1.67%	-9.97%
Boulder County	327,167	388,414	333,671	432,265	-1.95%	-10.14%
Broomfield County	70,761	95,788	67,250	97,497	5.22%	-1.75%
Denver County	729,246	840,072	684,938	864,834	6.47%	-2.86%
Jefferson County	583,075	629,972	588,507	720,753	-0.92%	-12.60%
Larimer County	<u>356,941</u>	<u>491,821</u>	<u>358,888</u>	<u>583,358</u>	<u>-0.54%</u>	<u>-15.69%</u>
<b>Total</b>	<b>3,241,892</b>	<b>4,057,306</b>	<b>3,242,989</b>	<b>4,489,177</b>	<b>-0.03%</b>	<b>-9.62%</b>
Statewide	5,770,110	7,671,082	5,763,976	7,658,682	0.11%	0.16%
<b>Households</b>						
Adams County	176,424	277,858	199,015	323,009	-11.35%	-13.98%
Arapahoe County	255,182	329,925	274,418	381,249	-7.01%	-13.46%
Boulder County	131,639	161,841	147,195	192,901	-10.57%	-16.10%
Broomfield County	27,149	37,988	27,115	40,023	0.13%	-5.08%
Denver County	320,939	376,789	330,214	417,022	-2.81%	-9.65%
Jefferson County	237,779	262,632	252,664	313,107	-5.89%	-16.12%
Larimer County	<u>142,891</u>	<u>201,259</u>	<u>155,203</u>	<u>250,328</u>	<u>-7.93%</u>	<u>-19.60%</u>
<b>Total</b>	<b>1,292,003</b>	<b>1,648,292</b>	<b>1,385,824</b>	<b>1,917,639</b>	<b>-6.77%</b>	<b>-14.05%</b>
Statewide	2,333,635	3,135,675	2,254,405	3,162,836	3.51%	-0.86%

Source: Economic & Planning Systems

**Table 30 Comparison of EPS Adjusted Mid Forecast and DOLA Forecast, 2019-2045**

	Adjusted		DOLA		Adjusted vs. CDOT	
	2019	2045	2019	2045	2019	2045
<b>Total Employment (W&amp;S + Proprietors)</b>						
Adams County	263,458	396,730	277,528	n/a	-5.07%	n/a
Arapahoe County	398,726	512,785	416,901	n/a	-4.36%	n/a
Boulder County	229,985	255,830	245,156	n/a	-6.19%	n/a
Broomfield County	47,080	79,502	48,736	n/a	-3.40%	n/a
Denver County	606,241	720,422	630,953	n/a	-3.92%	n/a
Jefferson County	302,941	345,740	315,947	n/a	-4.12%	n/a
Larimer County	<u>200,502</u>	<u>272,694</u>	<u>213,782</u>	<u>n/a</u>	<u>-6.21%</u>	<u>n/a</u>
<b>Total</b>	<b>2,048,933</b>	<b>2,583,703</b>	<b>2,149,003</b>	<b>n/a</b>	<b>-4.66%</b>	<b>n/a</b>
Statewide	3,259,991	4,244,638	3,334,344	n/a	-2.23%	n/a
<b>Population</b>						
Adams County	517,888	783,495	519,877	800,563	-0.38%	-2.13%
Arapahoe County	656,814	827,744	658,058	828,409	-0.19%	-0.08%
Boulder County	327,167	388,414	328,508	408,588	-0.41%	-4.94%
Broomfield County	70,761	95,788	71,138	98,171	-0.53%	-2.43%
Denver County	729,246	840,072	728,943	890,447	0.04%	-5.66%
Jefferson County	583,075	629,972	583,106	657,218	-0.01%	-4.15%
Larimer County	<u>356,941</u>	<u>491,821</u>	<u>355,117</u>	<u>506,604</u>	<u>0.51%</u>	<u>-2.92%</u>
<b>Total</b>	<b>3,241,892</b>	<b>4,057,306</b>	<b>3,244,747</b>	<b>4,190,000</b>	<b>-0.09%</b>	<b>-3.17%</b>
Statewide	5,770,110	7,671,082	5,763,976	7,658,682	0.11%	0.16%
<b>Households</b>						
Adams County	176,424	277,858	182,107	300,094	-3.12%	-7.41%
Arapahoe County	255,182	329,925	256,992	340,465	-0.70%	-3.10%
Boulder County	131,639	161,841	132,763	168,447	-0.85%	-3.92%
Broomfield County	27,149	37,988	27,731	40,576	-2.10%	-6.38%
Denver County	320,939	376,789	323,485	422,447	-0.79%	-10.81%
Jefferson County	237,779	262,632	239,062	276,968	-0.54%	-5.18%
Larimer County	<u>142,891</u>	<u>201,259</u>	<u>140,945</u>	<u>204,732</u>	<u>1.38%</u>	<u>-1.70%</u>
<b>Total</b>	<b>1,292,003</b>	<b>1,648,292</b>	<b>1,303,085</b>	<b>1,753,729</b>	<b>-0.85%</b>	<b>-6.01%</b>
Statewide	2,333,635	3,135,675	2,254,405	3,162,836	3.51%	-0.86%

Source: Economic &amp; Planning Systems

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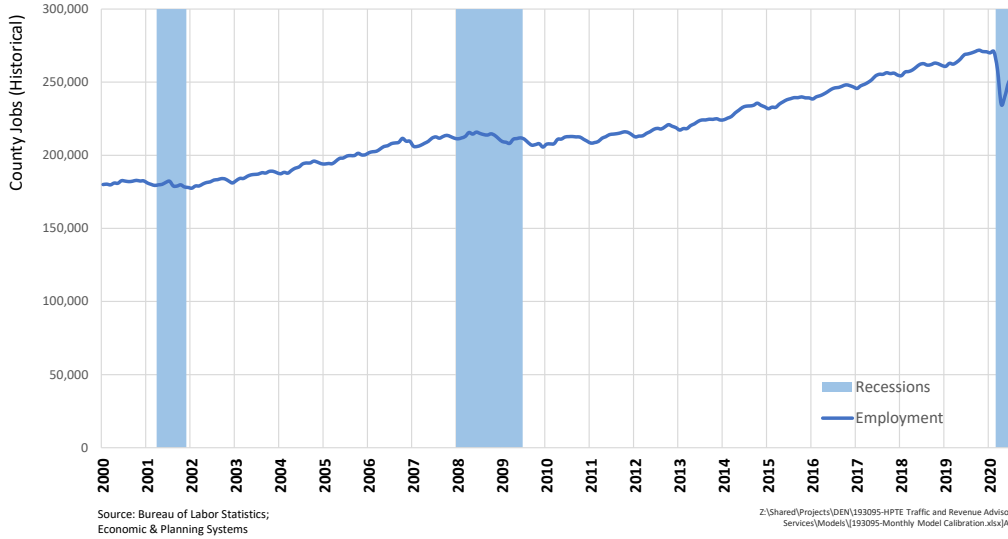


## Appendix

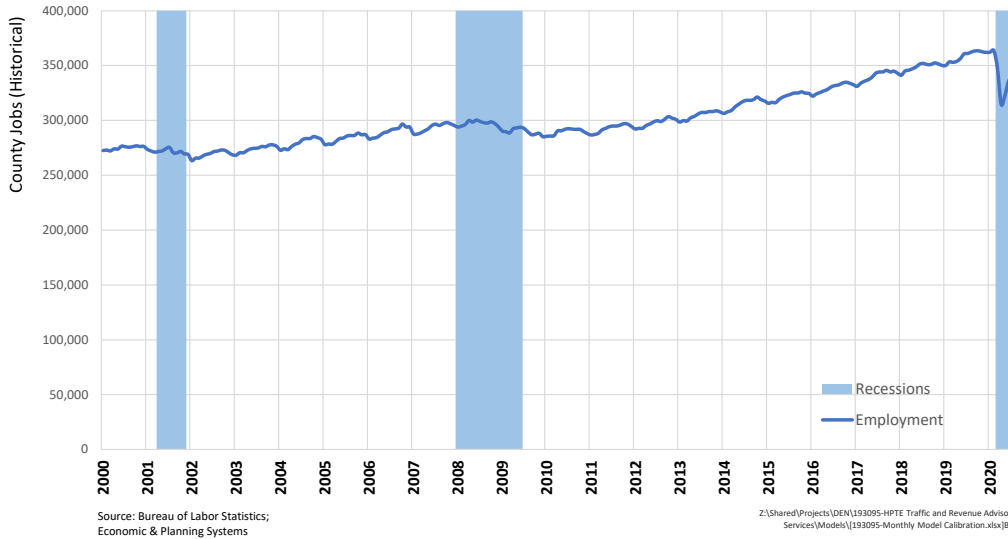


## Detailed Employment Trends by County

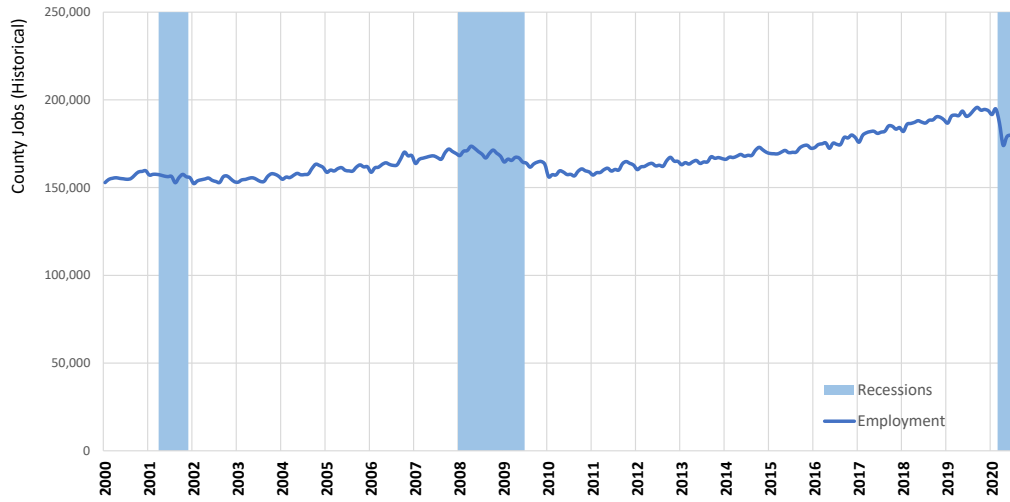
**Figure 29 Historic Adams County Jobs**



**Figure 30 Historic Arapahoe County Jobs**



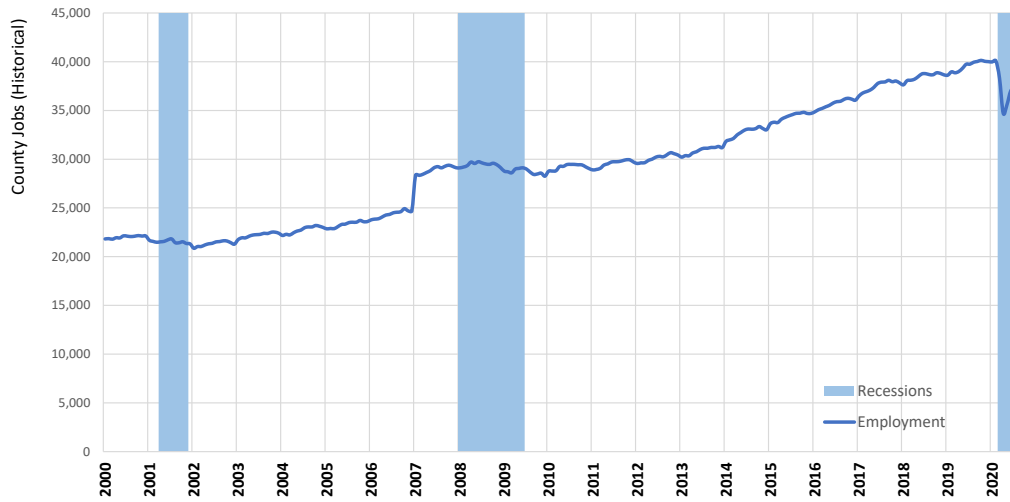
**Figure 31 Historic Boulder County Jobs**



Source: Bureau of Labor Statistics; Economic & Planning Systems

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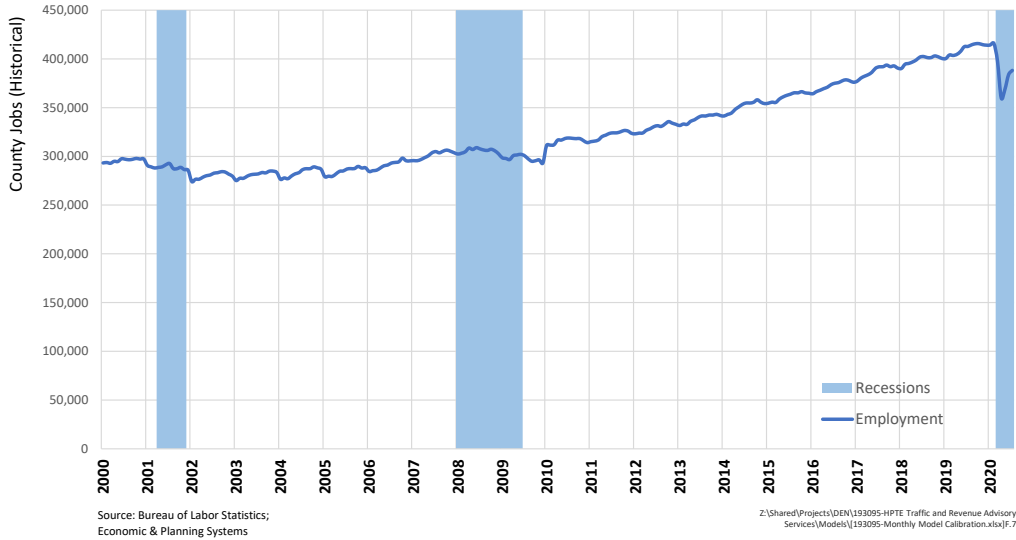
**Figure 32 Historic Broomfield County Jobs**



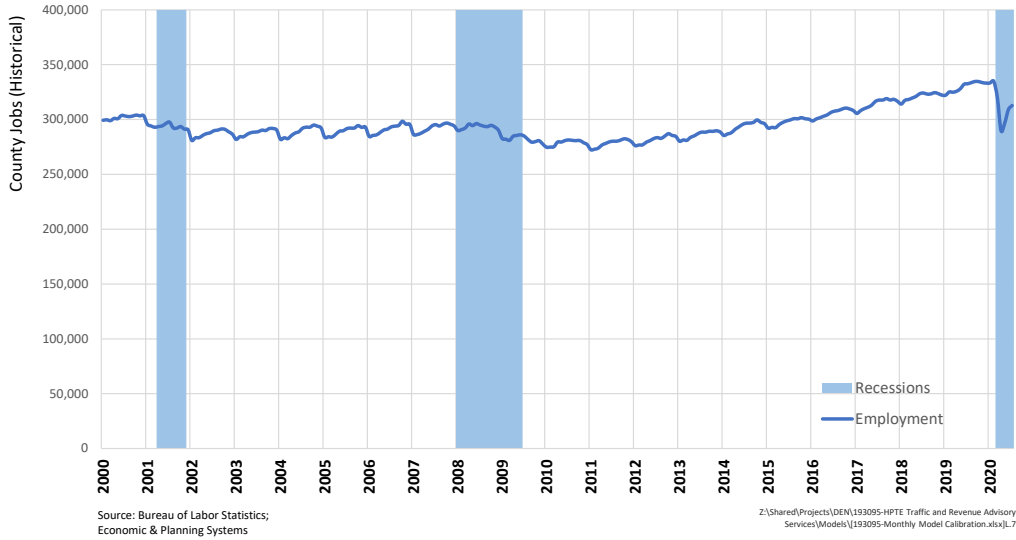
Source: Bureau of Labor Statistics; Economic & Planning Systems

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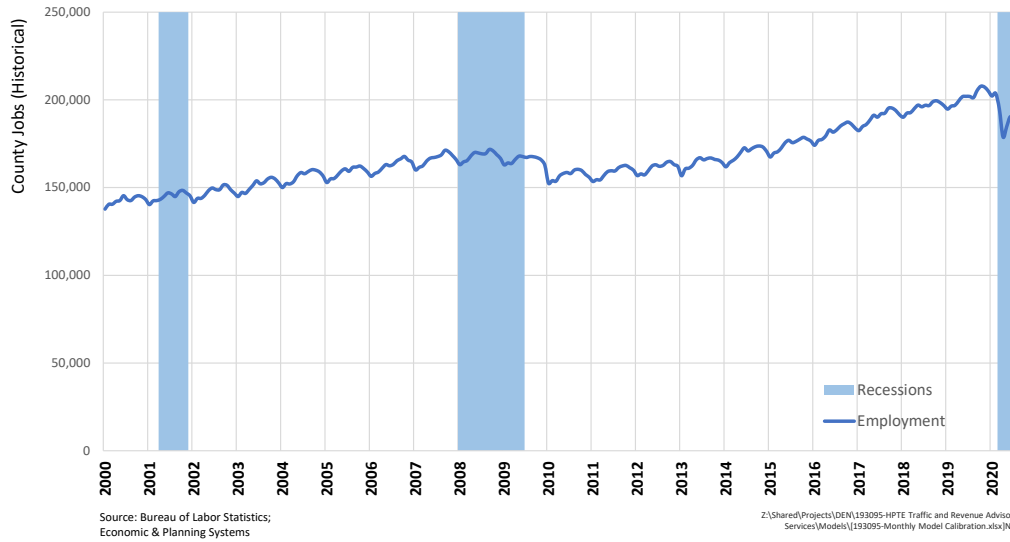
**Figure 33 Historic Denver County Jobs**



**Figure 34 Historic Jefferson County Jobs**

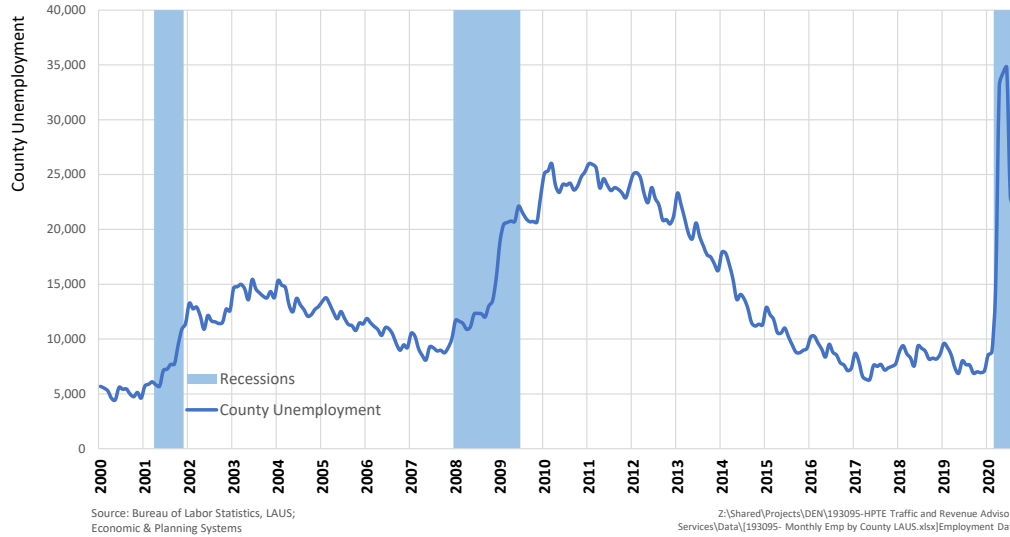


**Figure 35 Historic Larimer County Jobs**

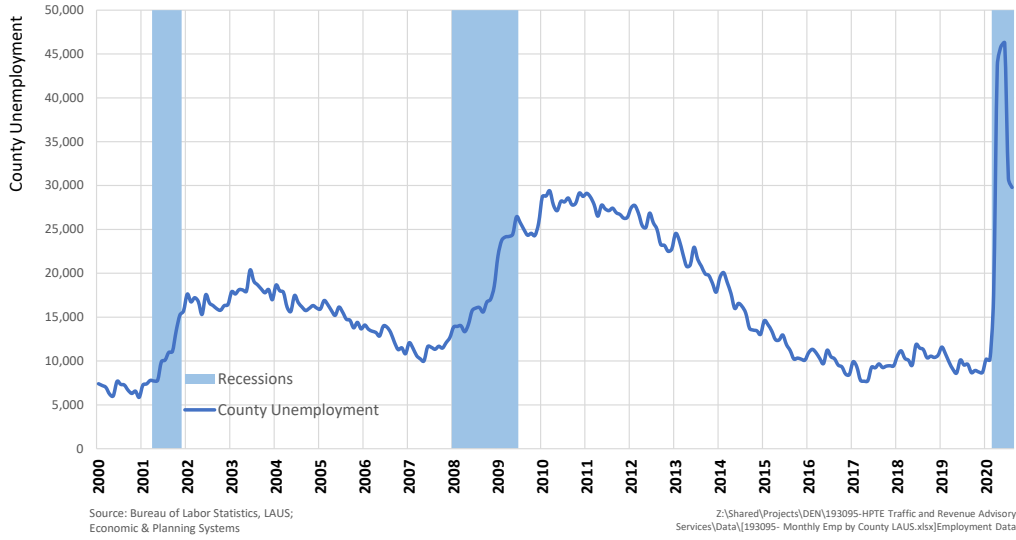


## Unemployment

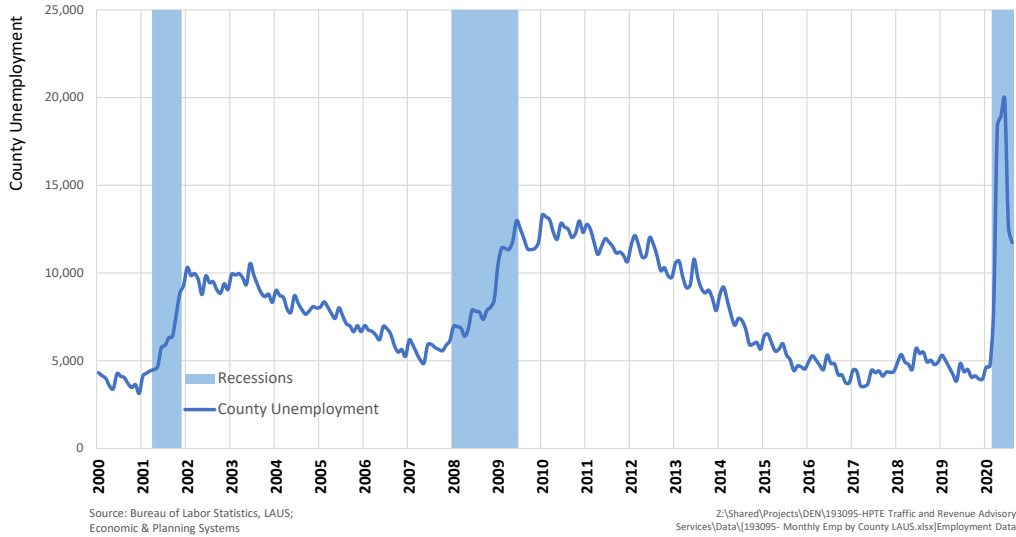
**Figure 36 Adams County Unemployment Trends**



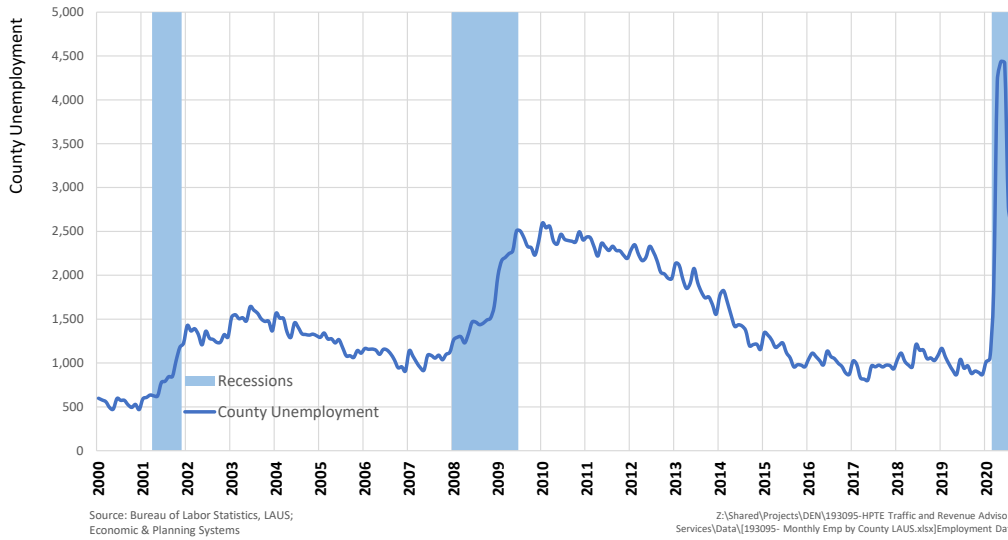
**Figure 37 Arapahoe County Unemployment Trends**



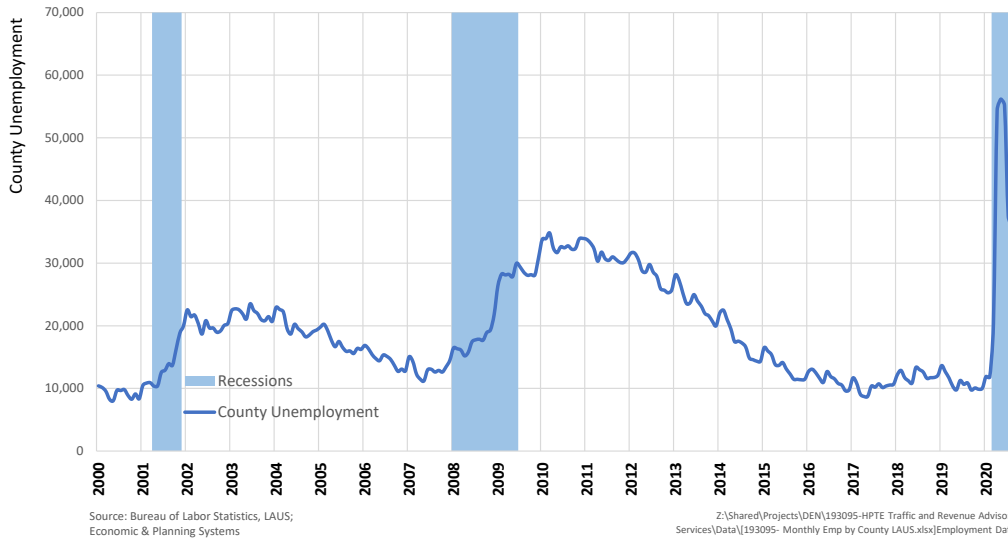
**Figure 38 Boulder County Unemployment Trends**



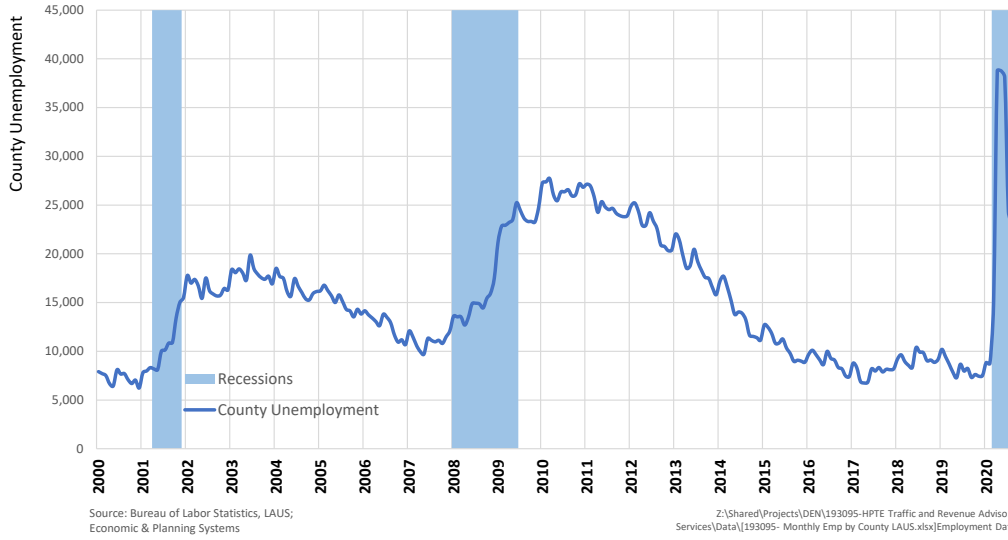
**Figure 39 Broomfield County Unemployment Trends**



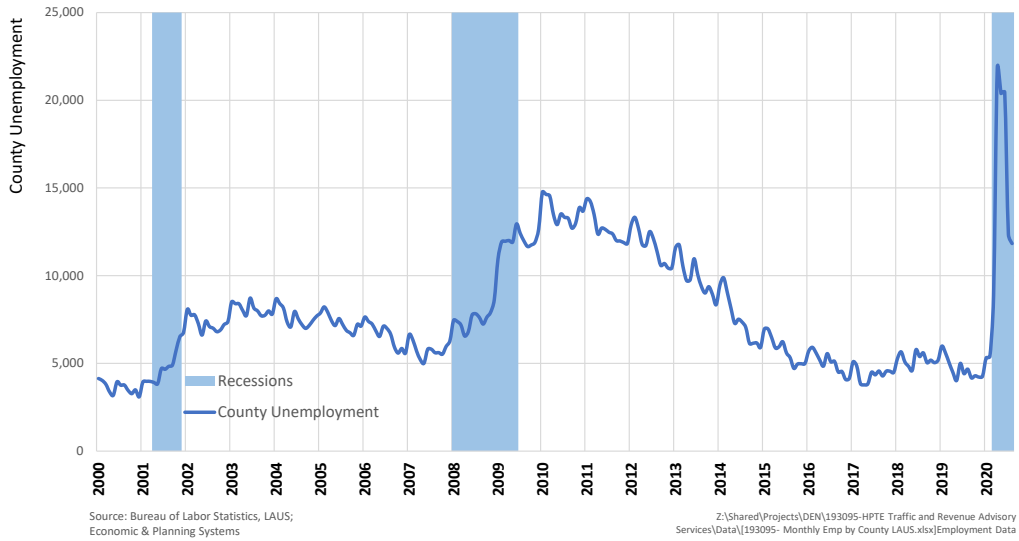
**Figure 40 Denver County Unemployment Trends**



**Figure 41 Jefferson County Unemployment Trends**

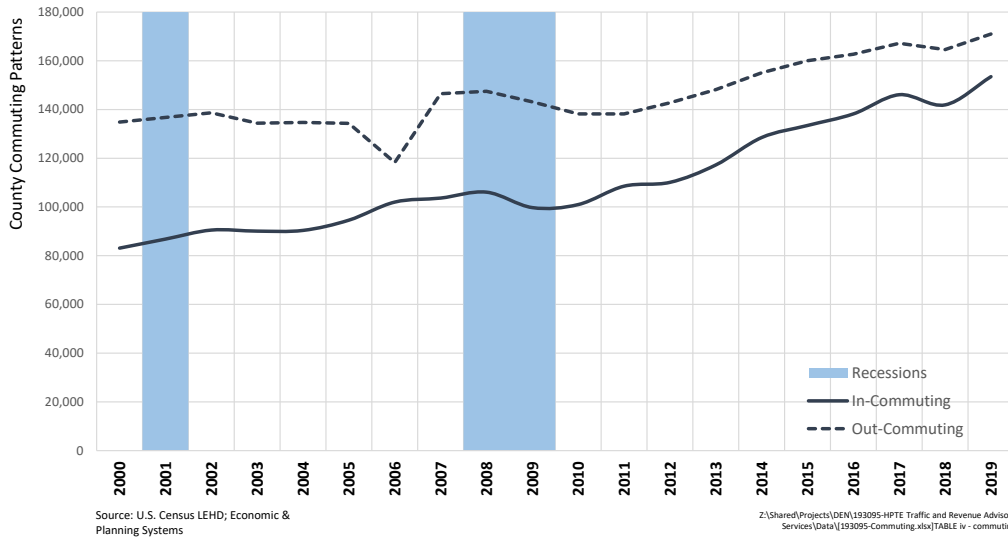


**Figure 42 Larimer County Unemployment Trends**

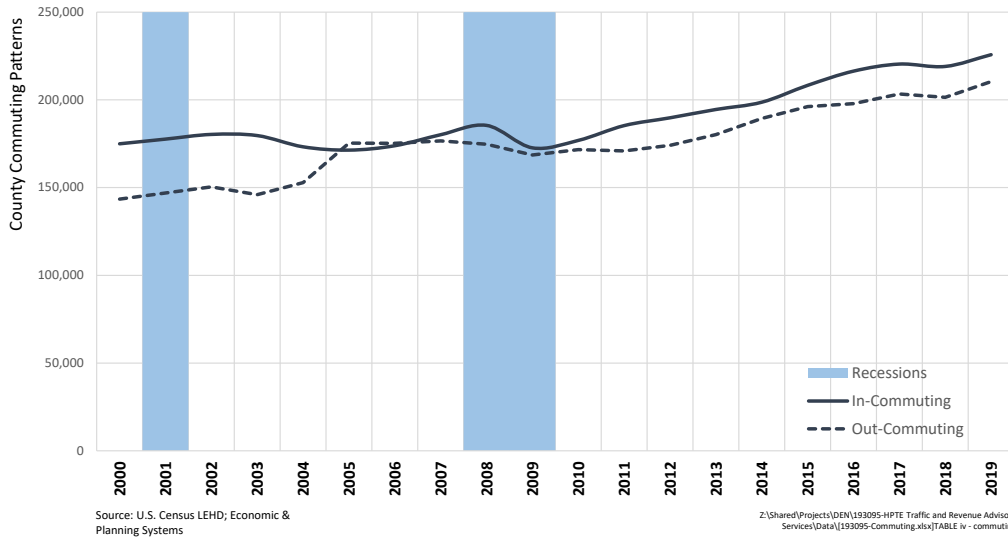


## Commuting Patterns

**Figure 43 Adams County Commuting Patterns**

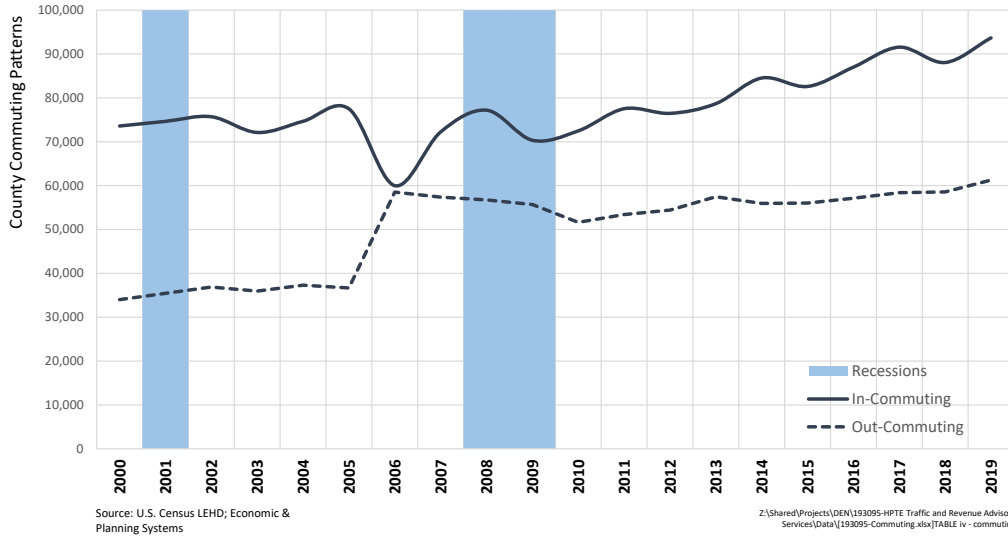


**Figure 44 Arapahoe County Commuting Patterns**

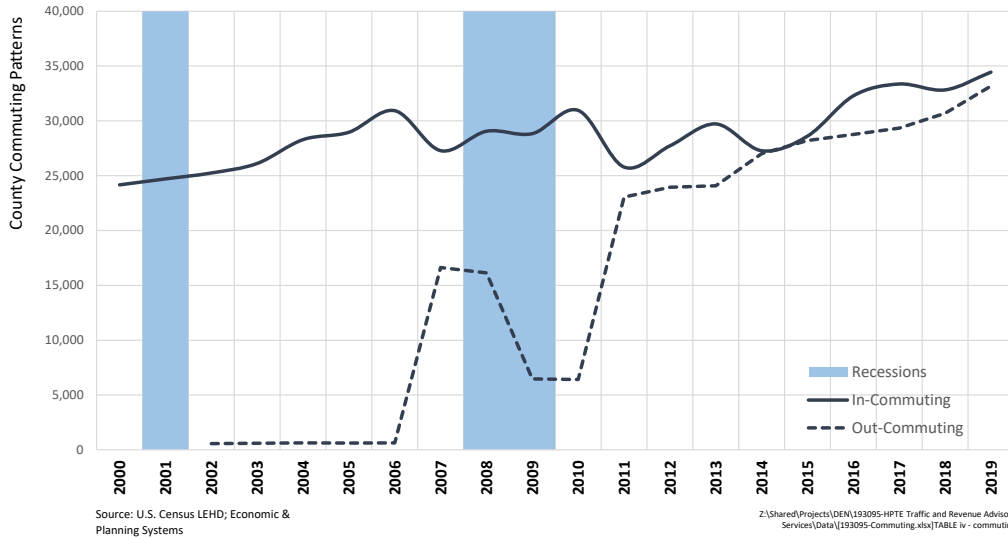




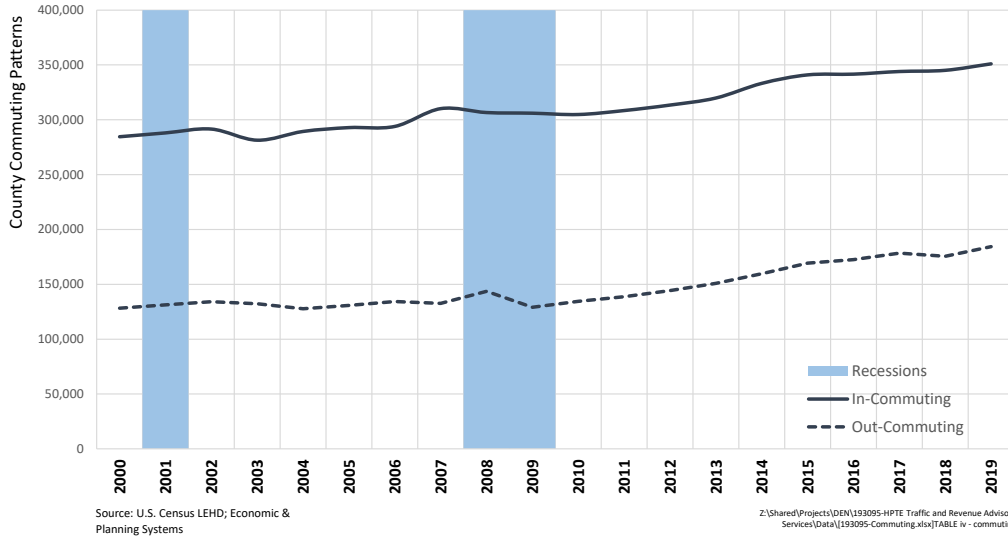
**Figure 45 Boulder County Commuting Patterns**



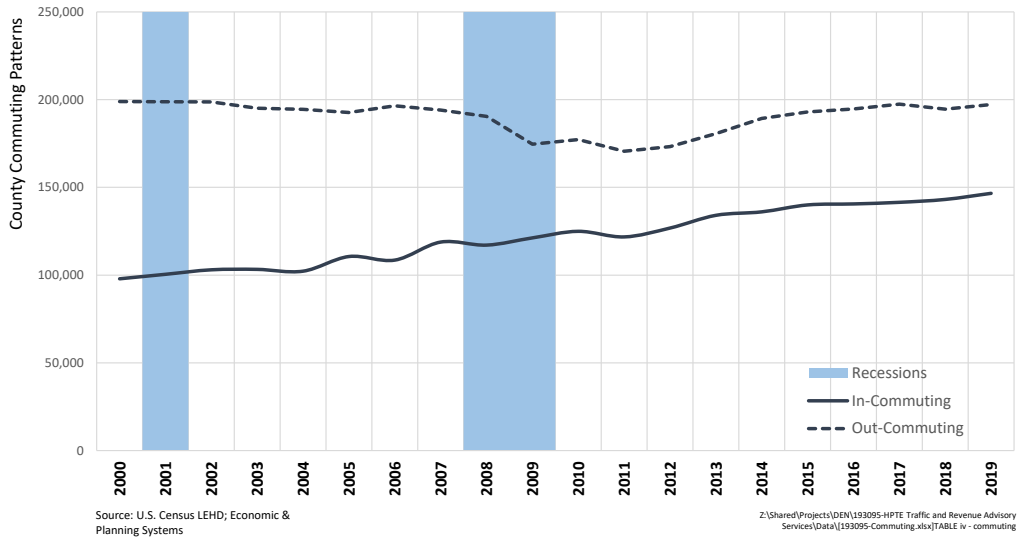
**Figure 46 Broomfield County Commuting Patterns**



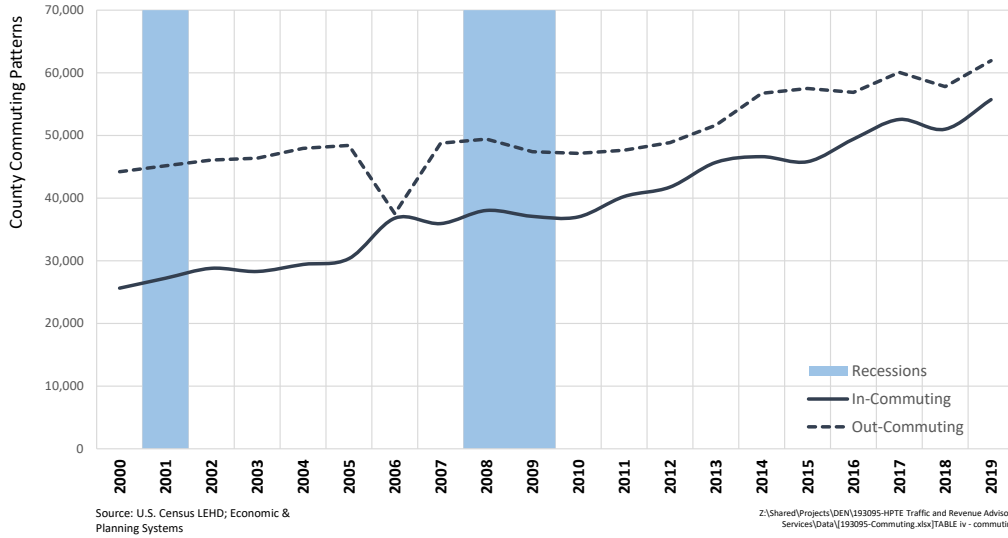
**Figure 47 Denver County Commuting Patterns**



**Figure 48 Jefferson County Commuting Patterns**

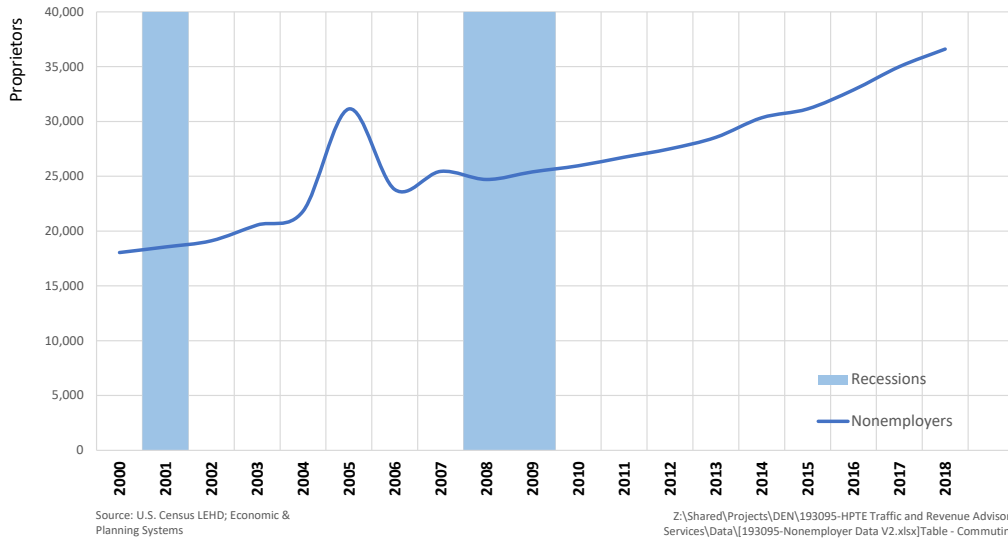


**Figure 49 Larimer County Commuting Patterns**

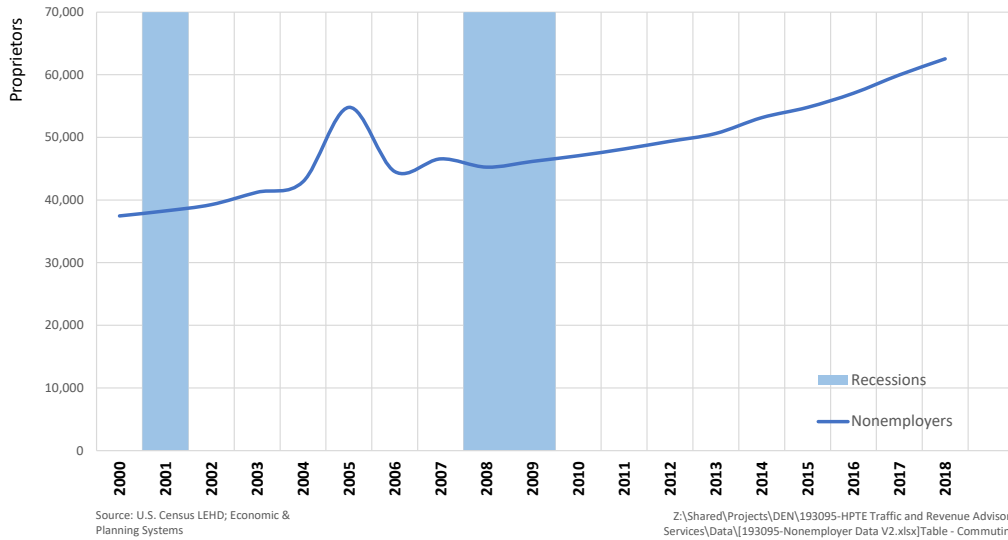


## Proprietors

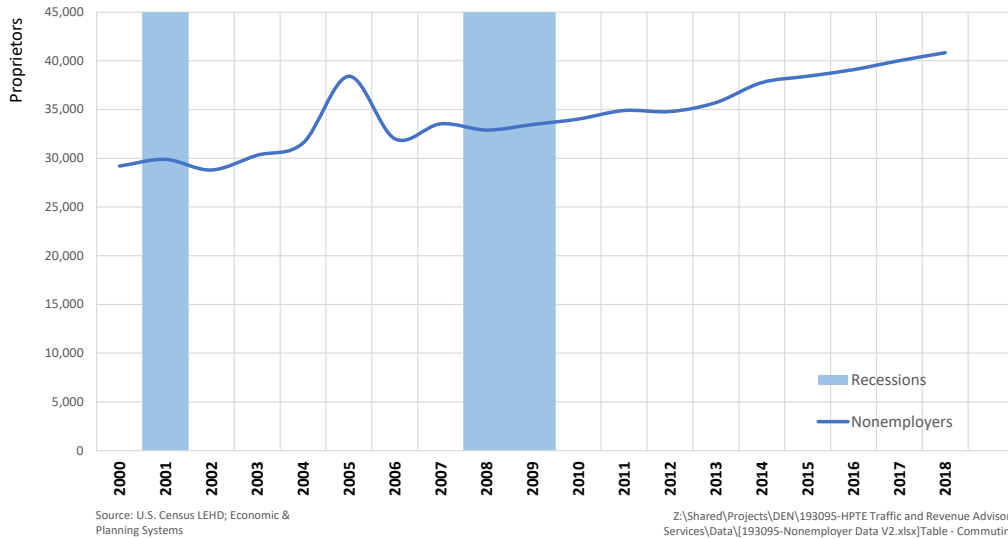
**Figure 50 Adams County Proprietor Employment**



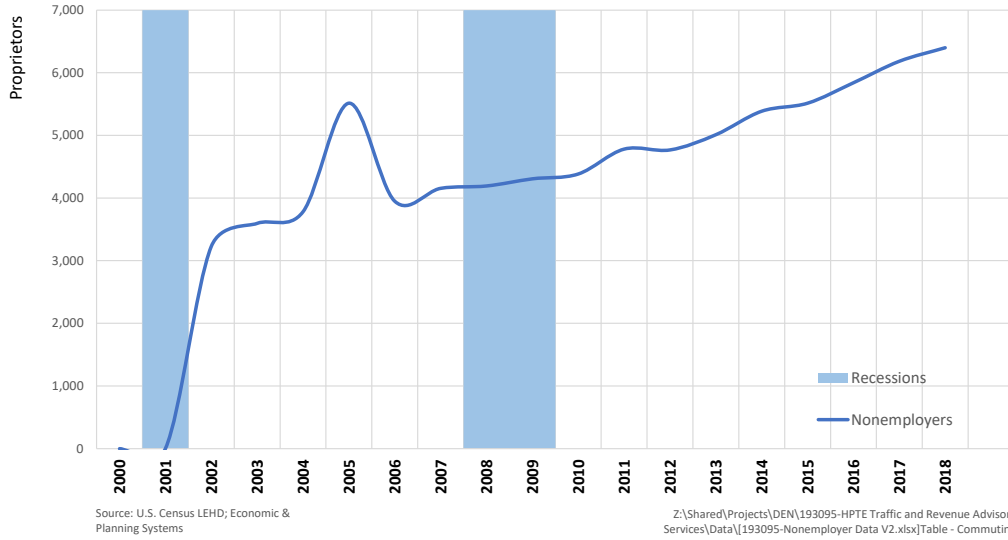
**Figure 51 Arapahoe County Proprietor Employment**



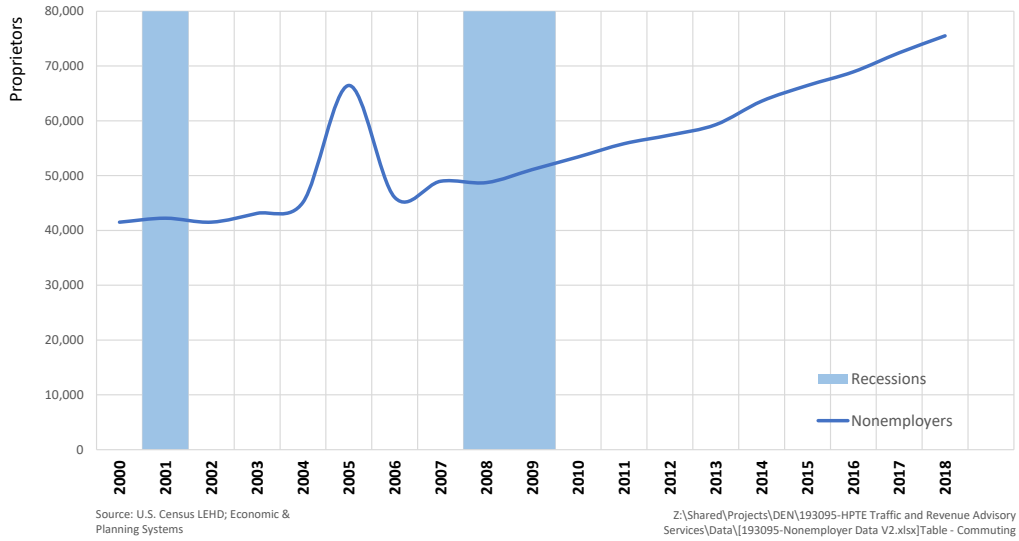
**Figure 52 Boulder County Proprietor Employment**



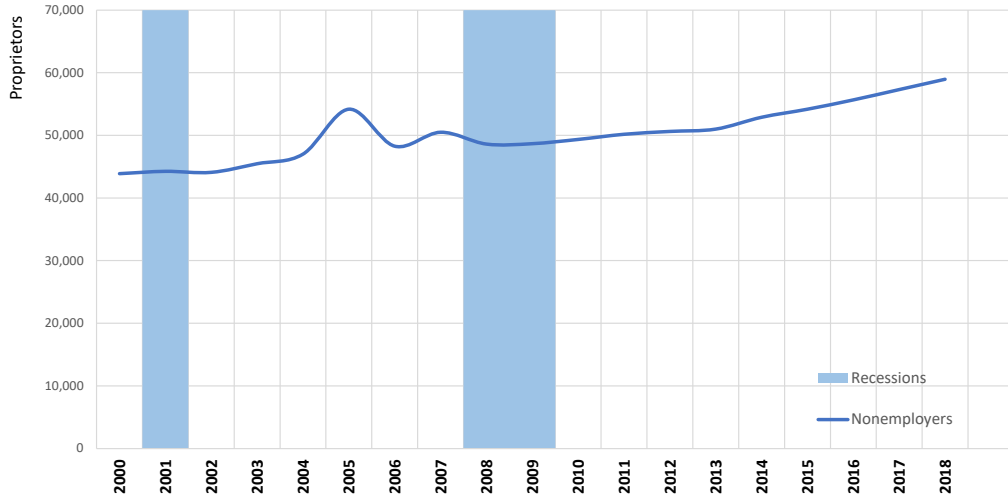
**Figure 53 Broomfield County Proprietor Employment**



**Figure 54 Denver County Proprietor Employment**



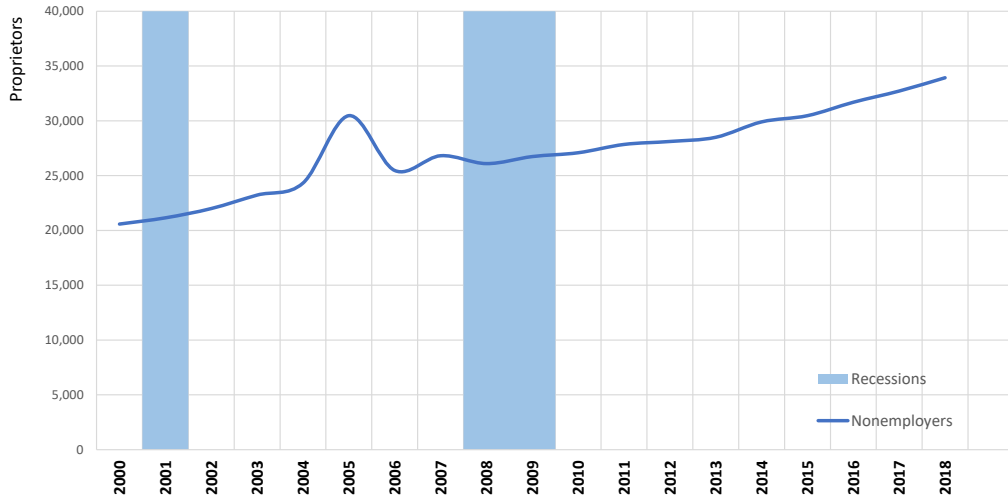
**Figure 55 Jefferson County Proprietor Employment**



Source: U.S. Census LEHD; Economic & Planning Systems

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**Figure 56 Larimer County Proprietor Employment**

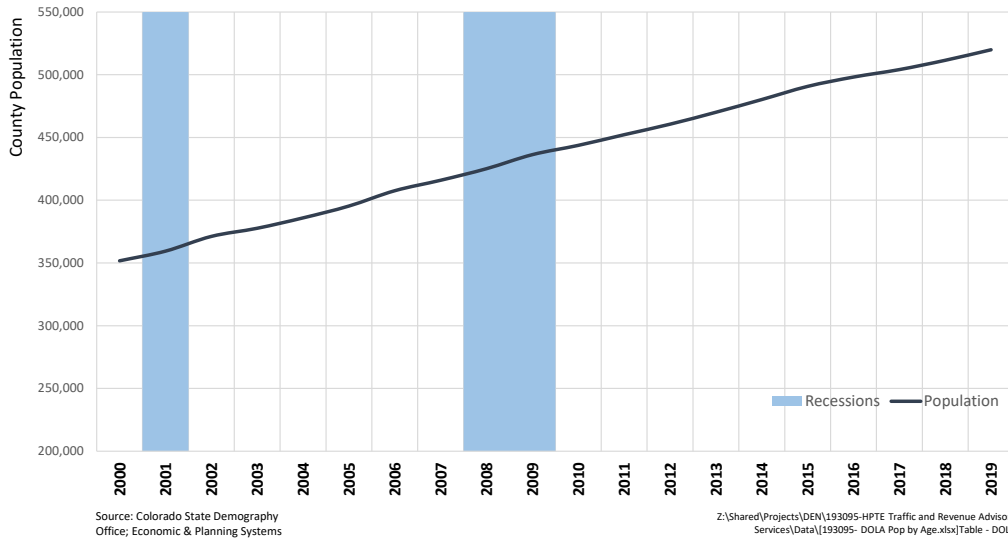


Source: U.S. Census LEHD; Economic & Planning Systems

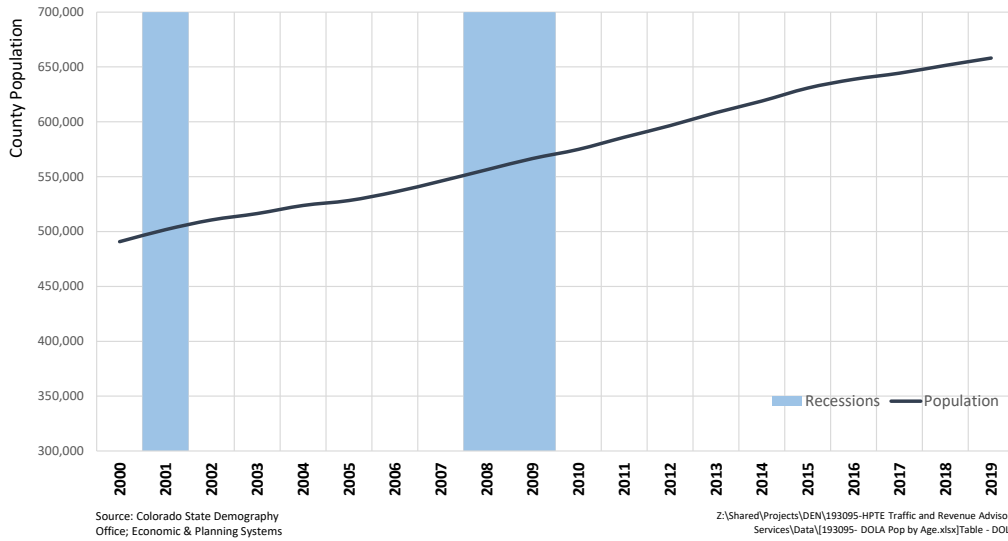
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## Population

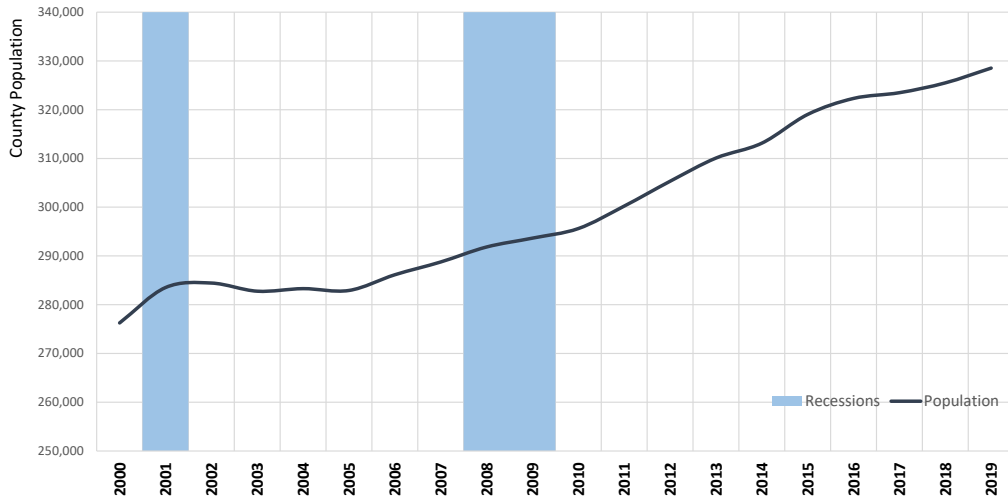
**Figure 57 Adams County Population Trends**



**Figure 58 Arapahoe County Population Trends**



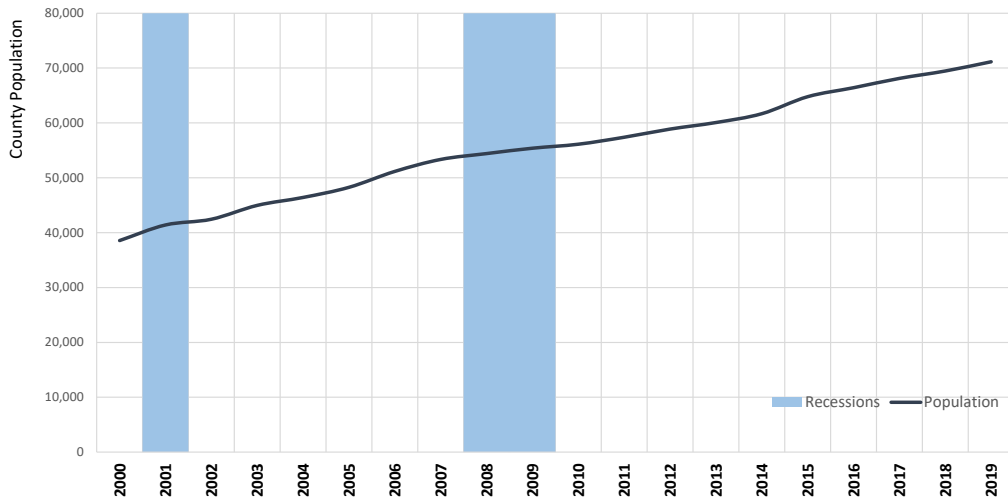
**Figure 59 Boulder County Population Trends**



Source: Colorado State Demography Office; Economic & Planning Systems

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**Figure 60 Broomfield County Population Trends**

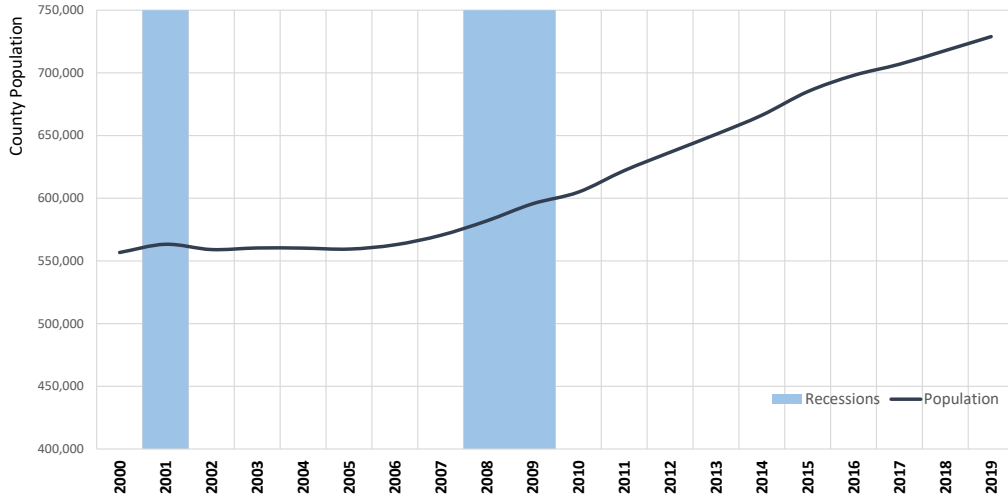


Source: Colorado State Demography Office; Economic & Planning Systems

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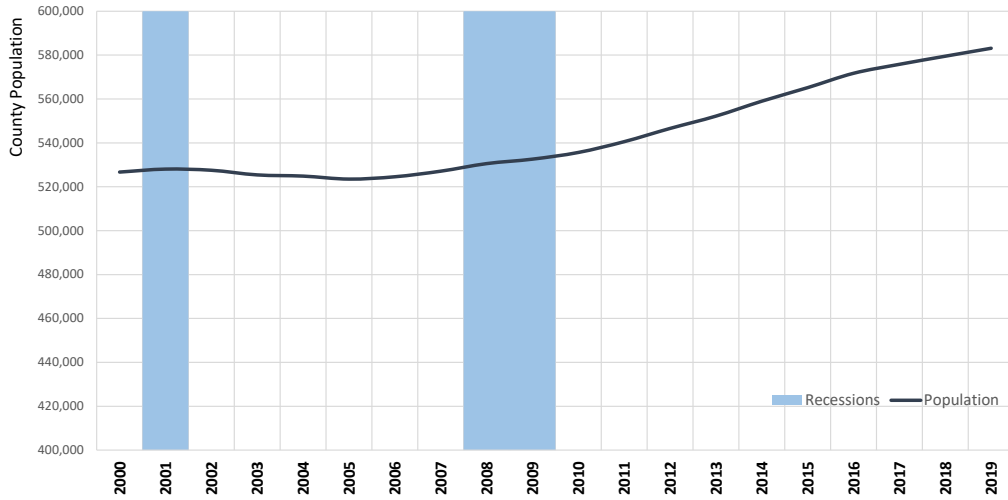
**Figure 61 Denver County Population Trends**



Source: Colorado State Demography Office; Economic & Planning Systems

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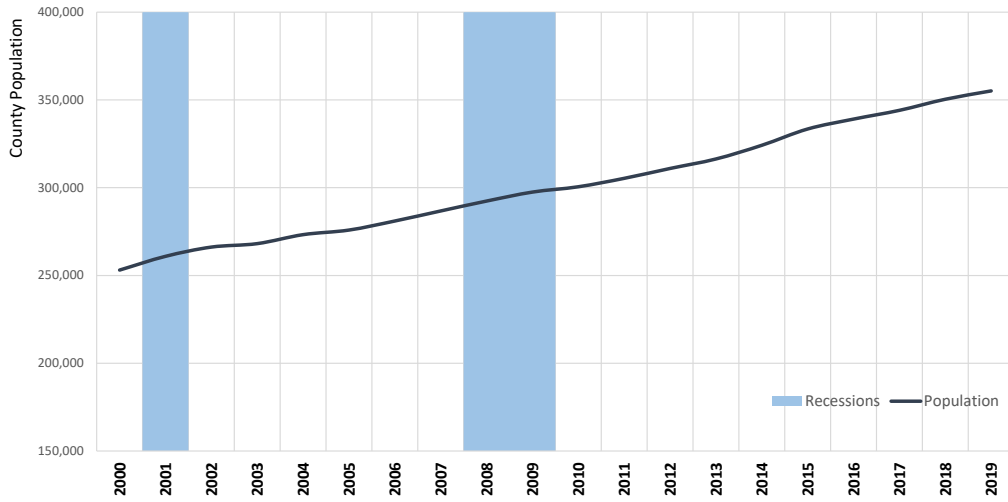
**Figure 62 Jefferson County Population Trends**



Source: Colorado State Demography Office; Economic & Planning Systems

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**Figure 63 Larimer County Population Trends**

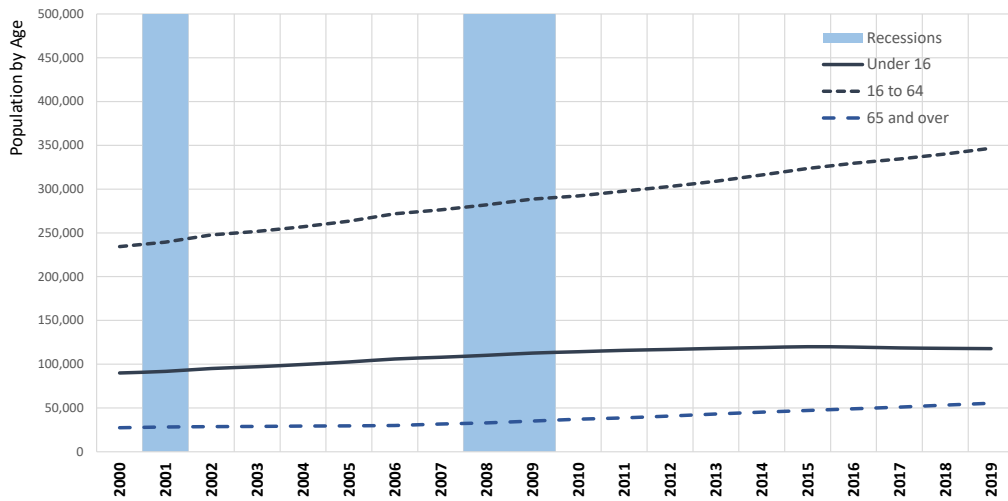


Source: Colorado State Demography Office; Economic & Planning Systems

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## Population by Age

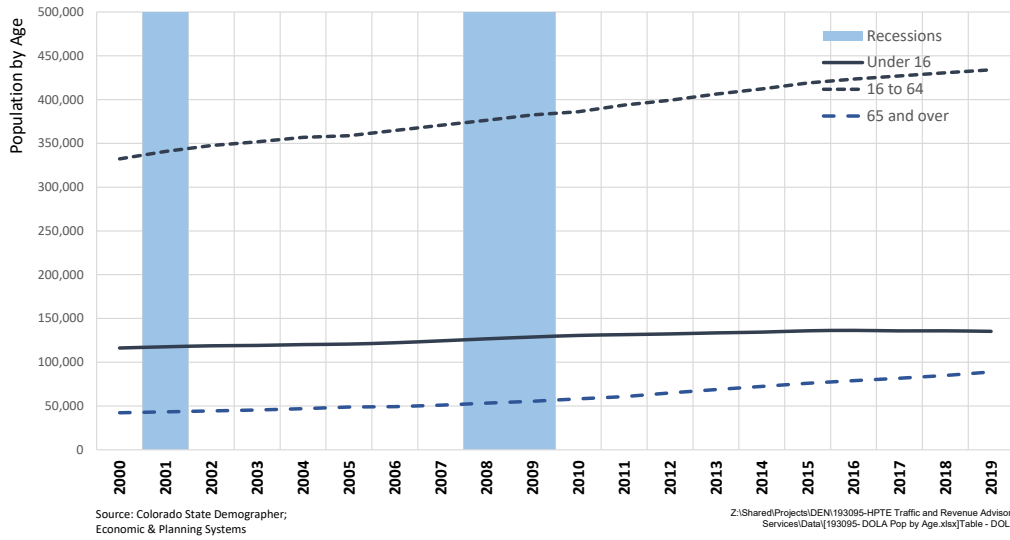
**Figure 64 Adams County Historic Population by Age**



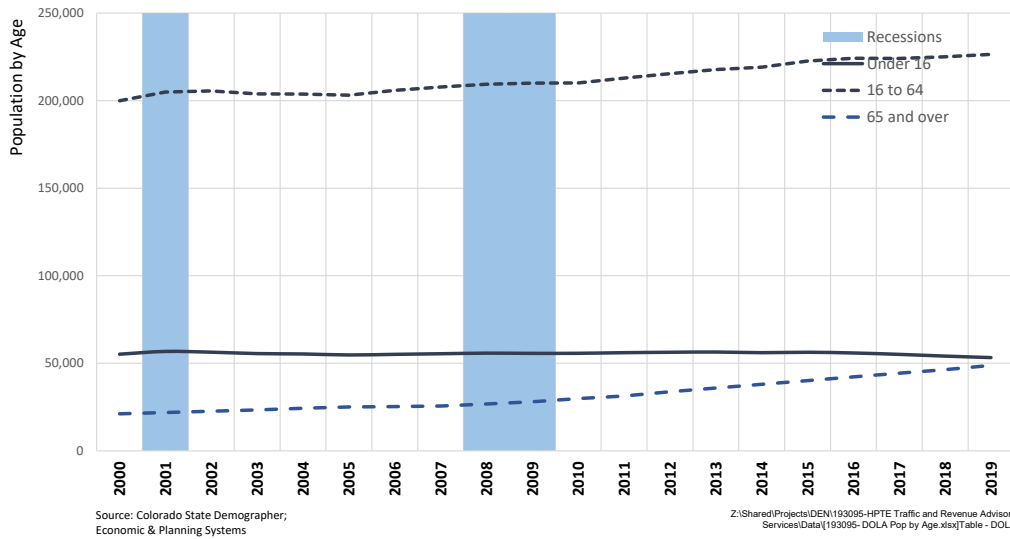
Source: Colorado State Demographer; Economic & Planning Systems

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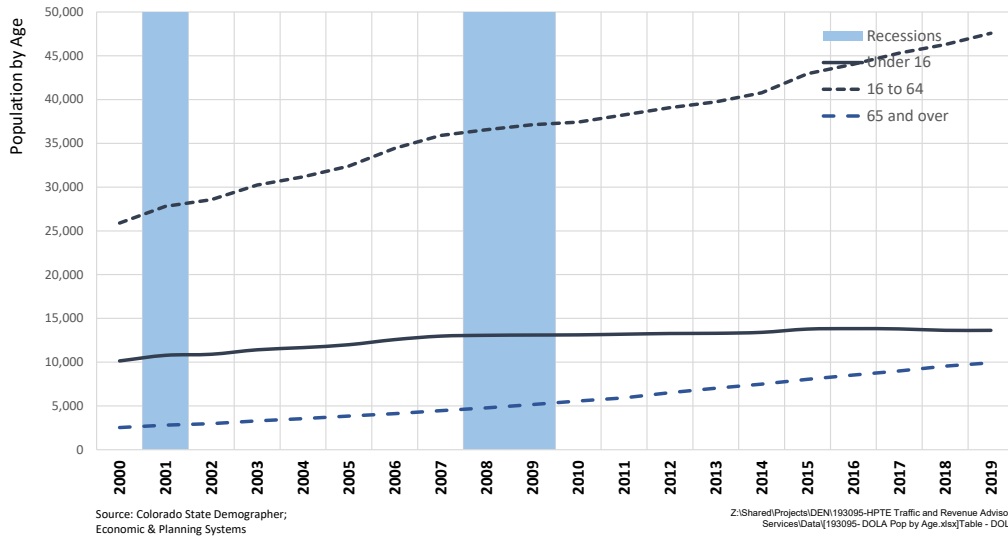
**Figure 65 Arapahoe County Historic Population by Age**



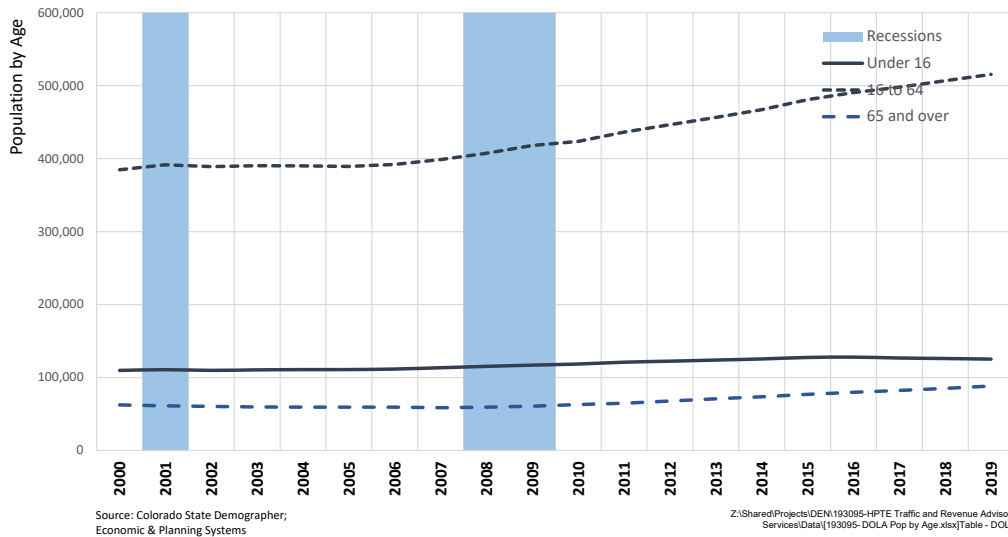
**Figure 66 Boulder County Historic Population by Age**



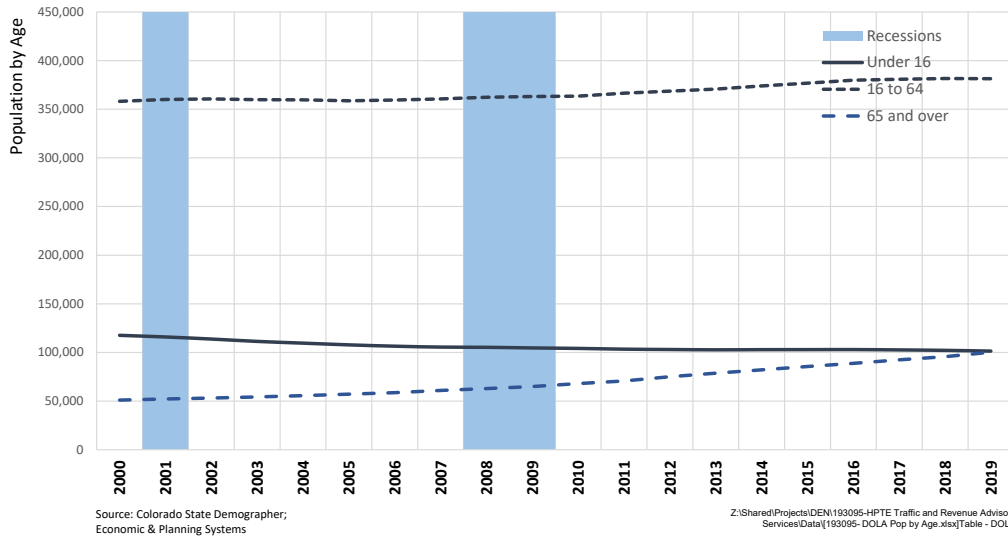
**Figure 67 Broomfield County Historic Population by Age**



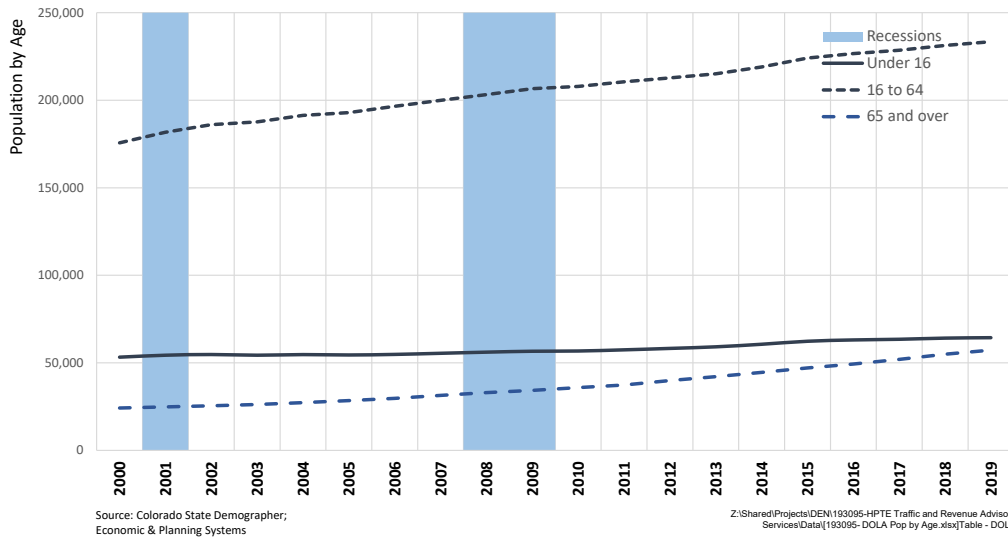
**Figure 68 Denver County Historic Population by Age**



**Figure 69 Jefferson County Historic Population by Age**

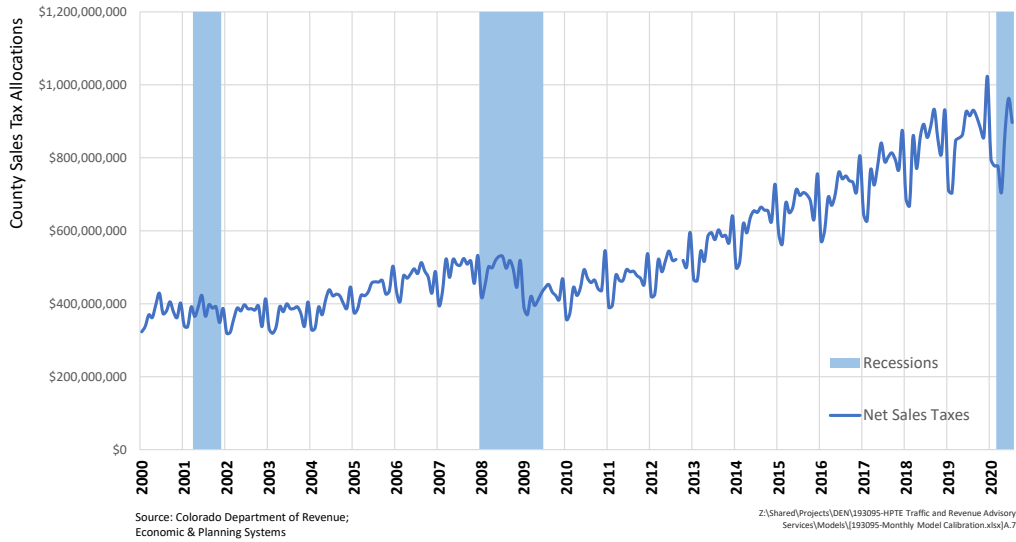


**Figure 70 Larimer County Historic Population by Age**

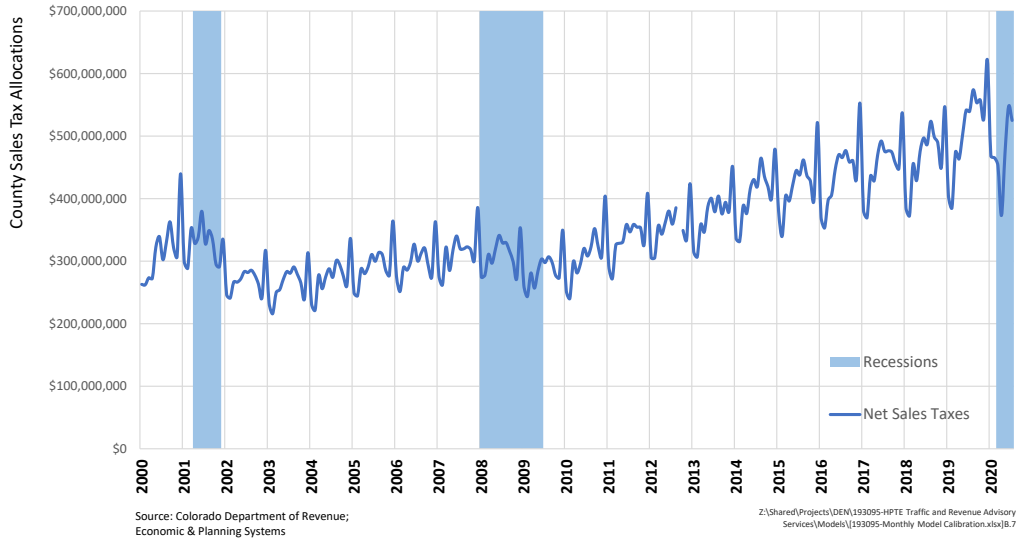


## Sales Tax Allocations

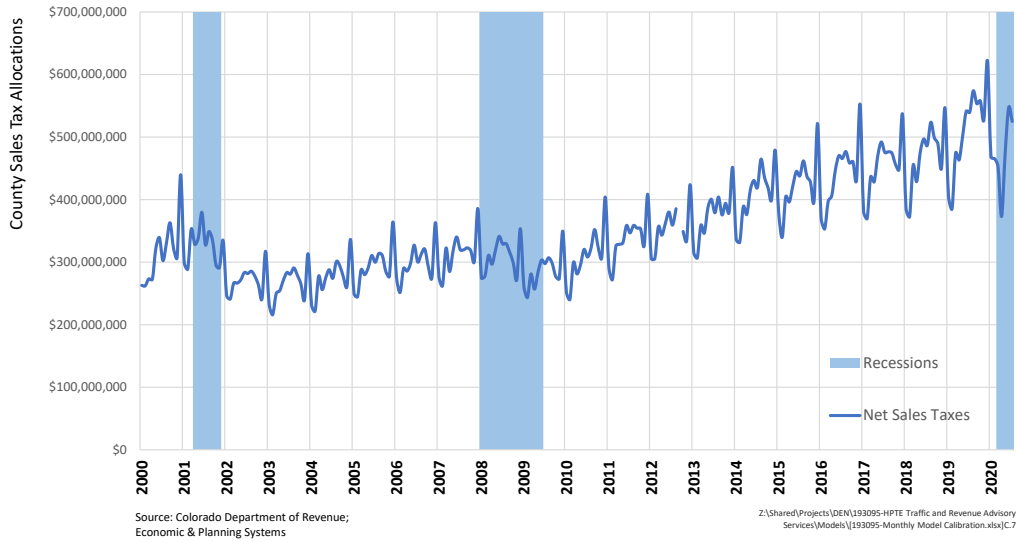
**Figure 71 Adams County Sales Tax Allocations**



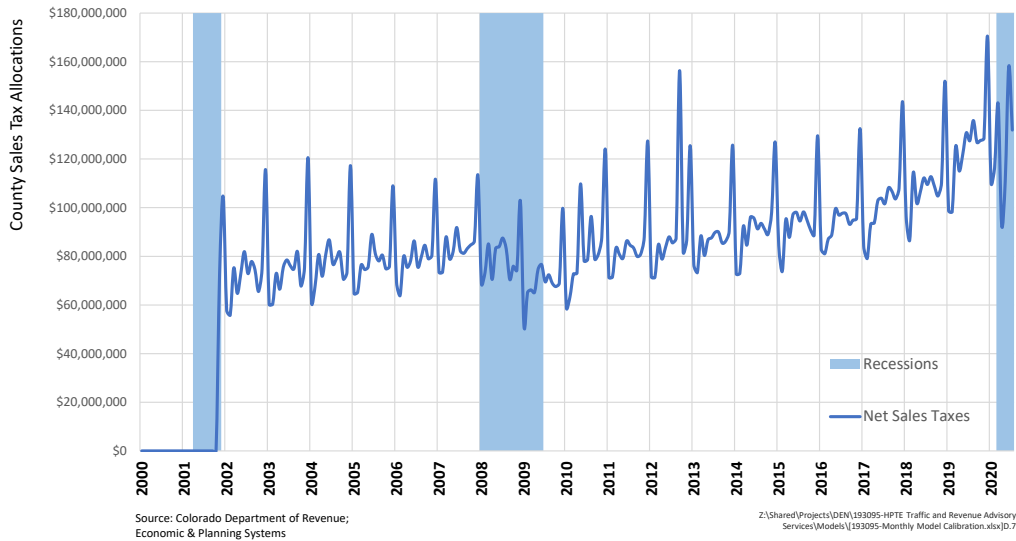
**Figure 72 Arapahoe County Sales Tax Allocations**



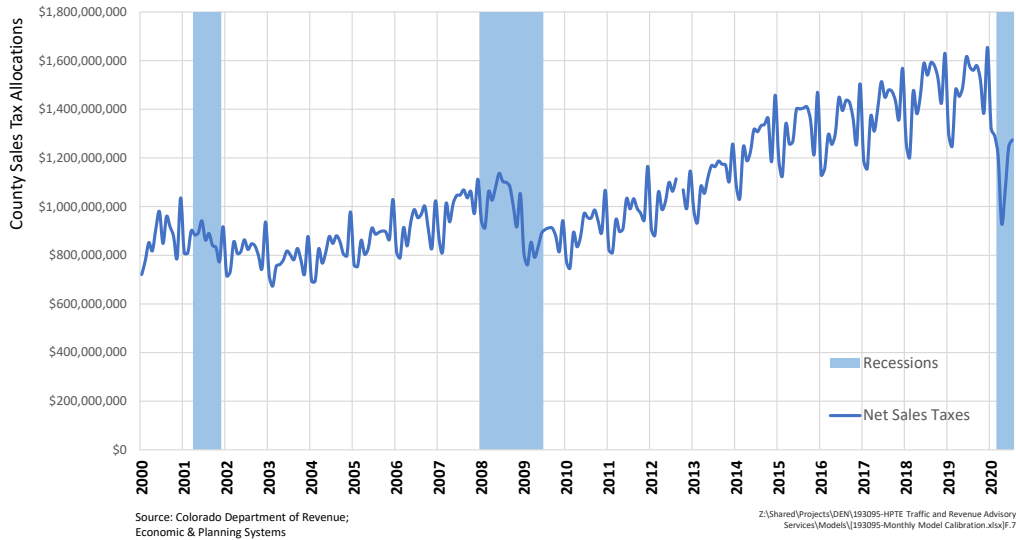
**Figure 73 Boulder County Sales Tax Allocations**



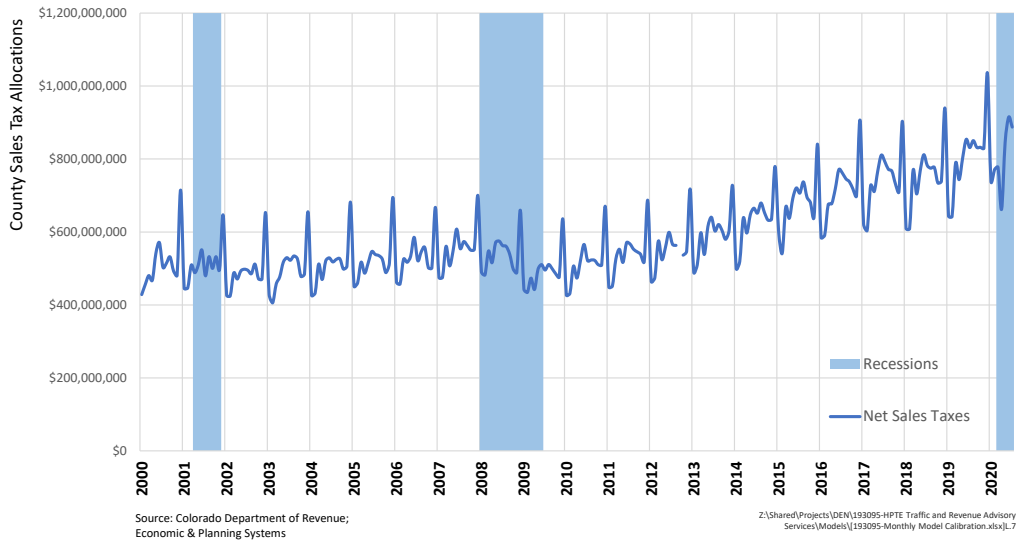
**Figure 74 Broomfield County Sales Tax Allocations**



**Figure 75 Denver County Sales Tax Allocations**

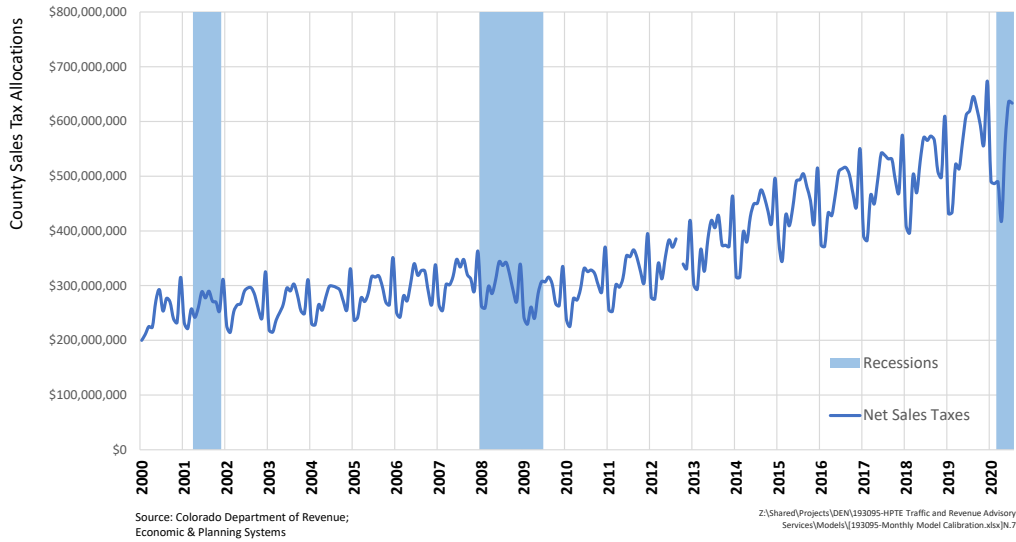


**Figure 76 Jefferson County Sales Tax Allocations**



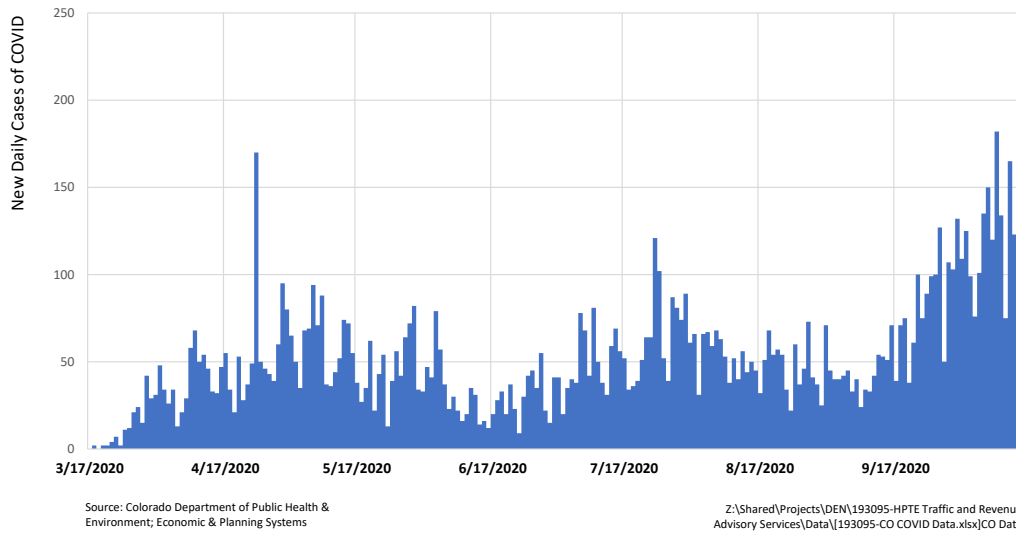


**Figure 77 Larimer County Sales Tax Allocations**

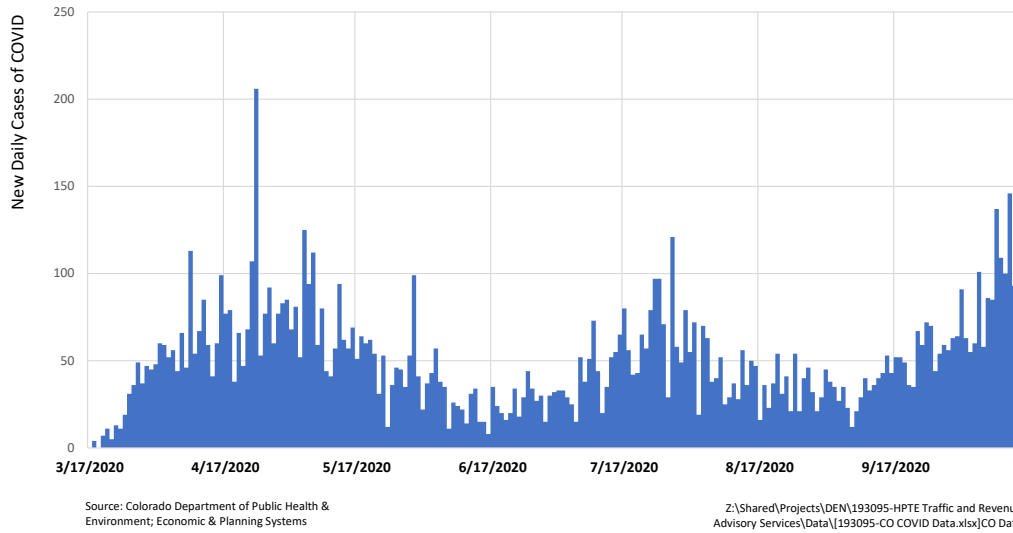


## New Daily COVID-19 Cases

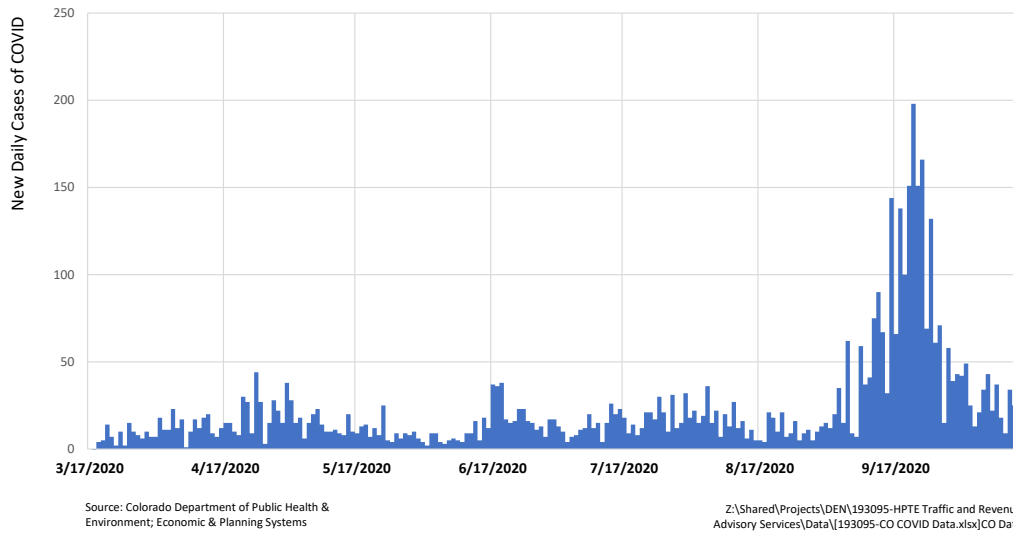
**Figure 78 New Daily Cases of COVID-19 in Adams County**



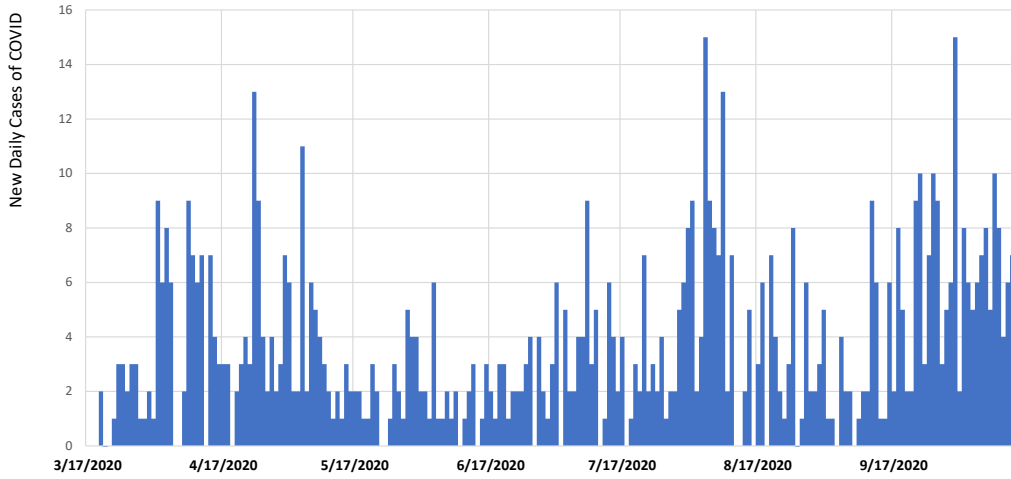
**Figure 79 New Daily Cases of COVID-19 in Arapahoe County**



**Figure 80 New Daily Cases of COVID-19 in Boulder County**



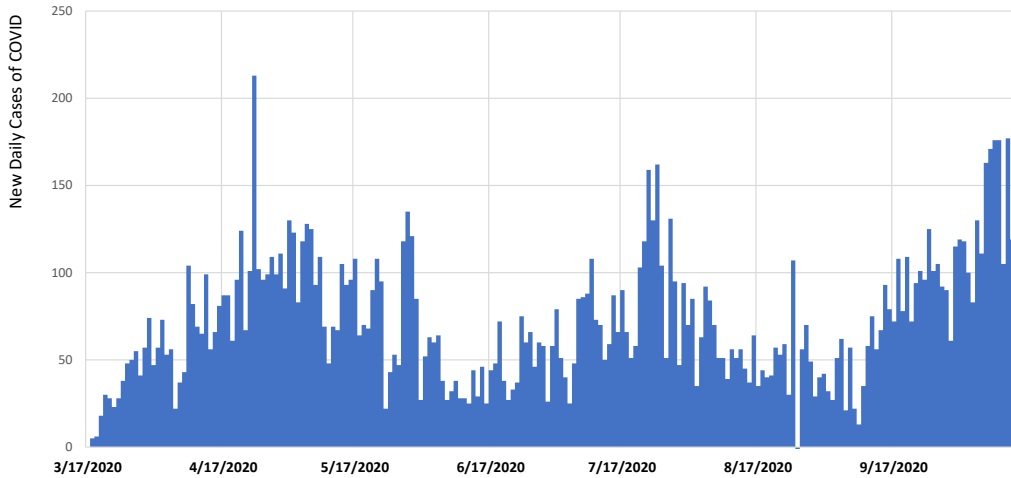
**Figure 81 New Daily Cases of COVID-19 in Broomfield County**



Source: Colorado Department of Public Health & Environment; Economic & Planning Systems

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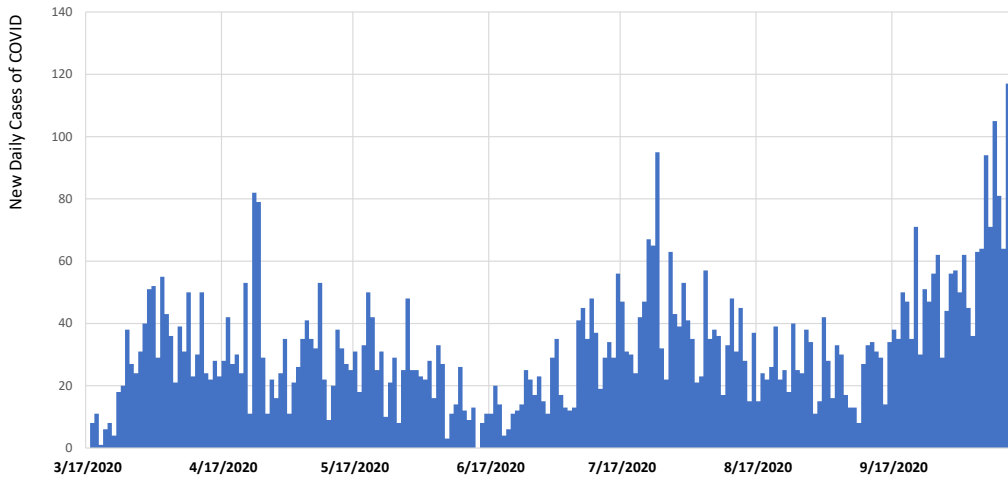
**Figure 82 New Daily Cases of COVID-19 in Denver County**



Source: Colorado Department of Public Health & Environment; Economic & Planning Systems

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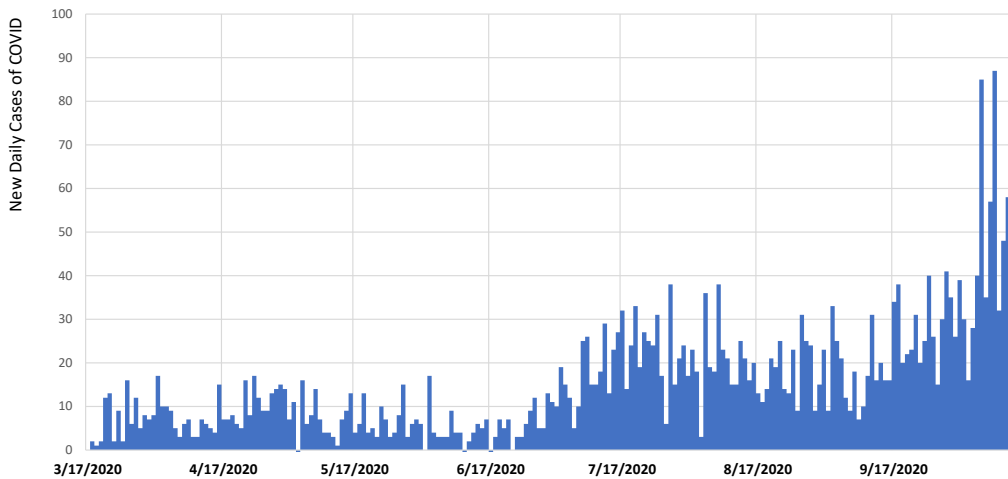
**Figure 83 New Daily Cases of COVID-19 in Jefferson County**



Source: Colorado Department of Public Health & Environment; Economic & Planning Systems

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**Figure 84 New Daily Cases of COVID-19 in Larimer County**

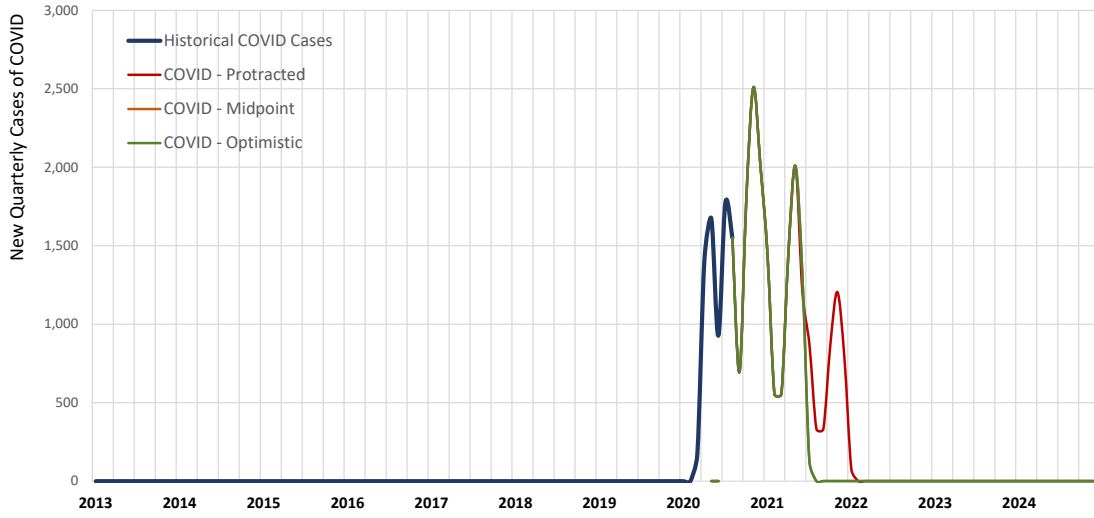


Source: Colorado Department of Public Health & Environment; Economic & Planning Systems

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## Projected Quarterly COVID-19 Cases

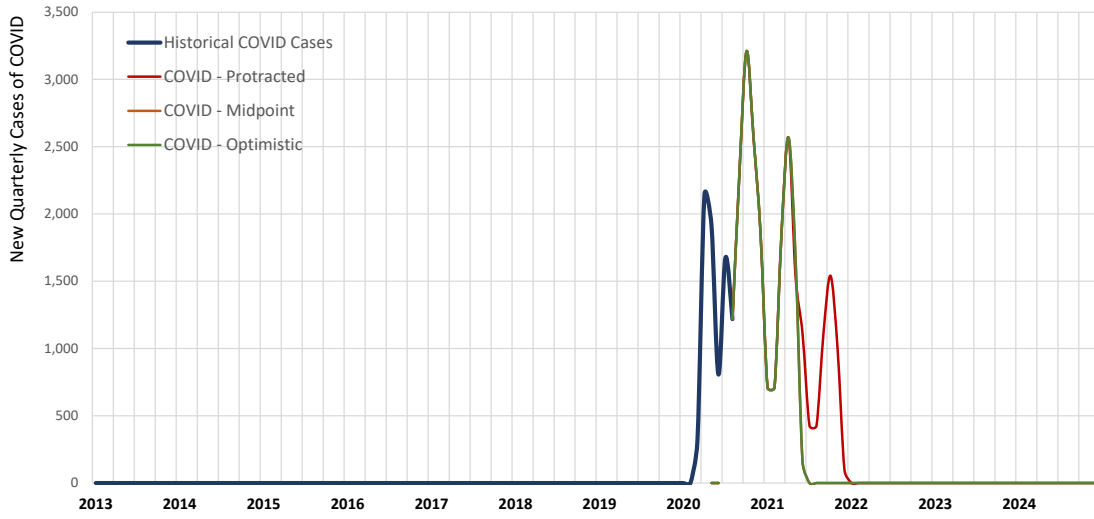
**Figure 85 Applied Forecast of New COVID Cases in Adams County**



Source: Colorado Department of Public Health and Environment; Economic & Planning Systems

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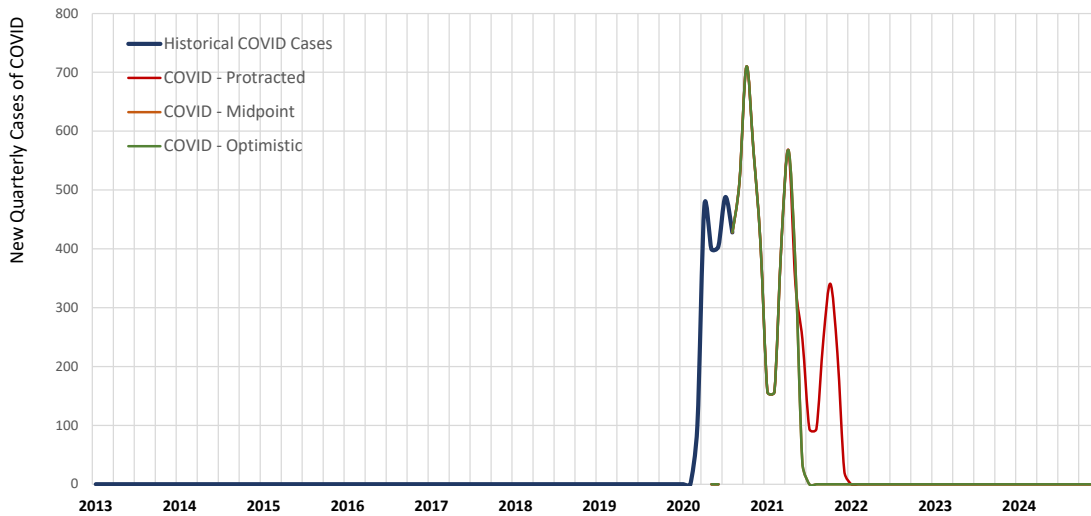
**Figure 86 Applied Forecast of New COVID Cases in Arapahoe County**



Source: Colorado Department of Public Health and Environment; Economic & Planning Systems

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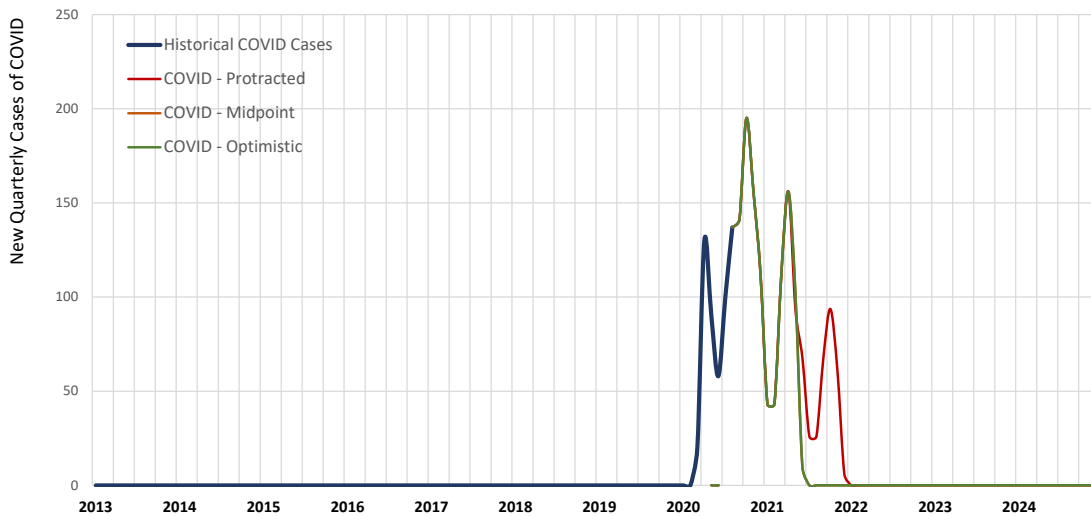
**Figure 87 Applied Forecast of New COVID Cases in Boulder County**



Source: Colorado Department of Public Health and Environment; Economic & Planning Systems

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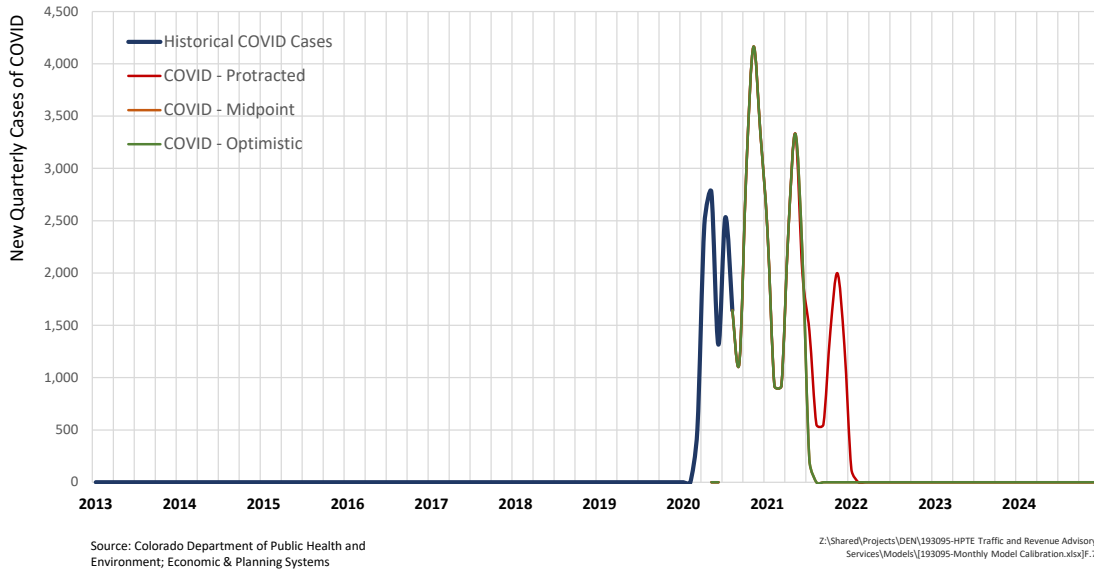
**Figure 88 Applied Forecast of New COVID Cases in Broomfield County**



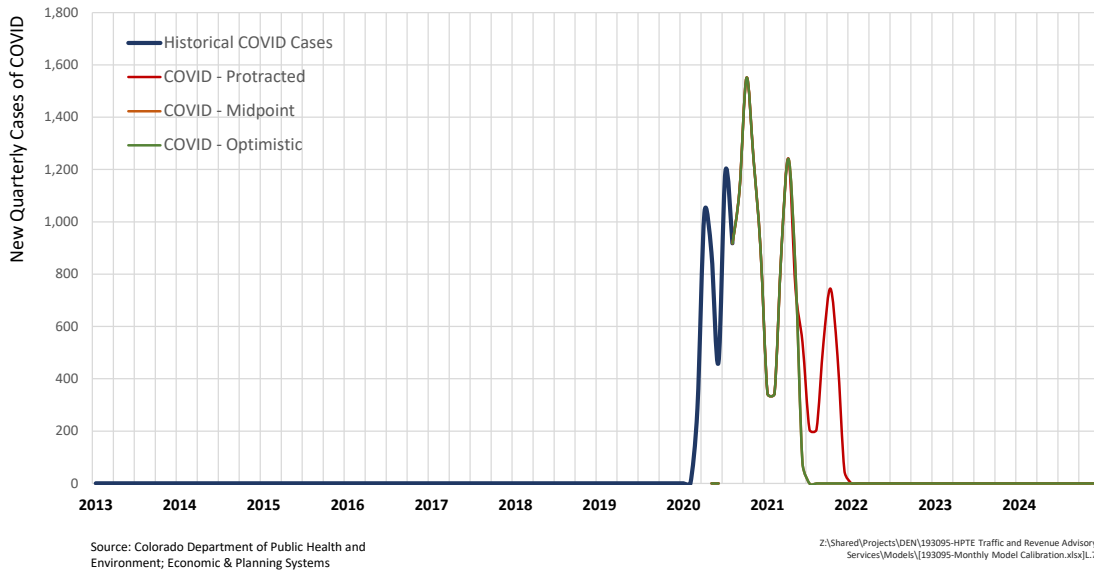
Source: Colorado Department of Public Health and Environment; Economic & Planning Systems

Z:\Shared\Projects\DEN\193095-HPTE Traffic and Revenue Advisory Services\Models\193095-Monthly Model Calibration.xlsx\D.7

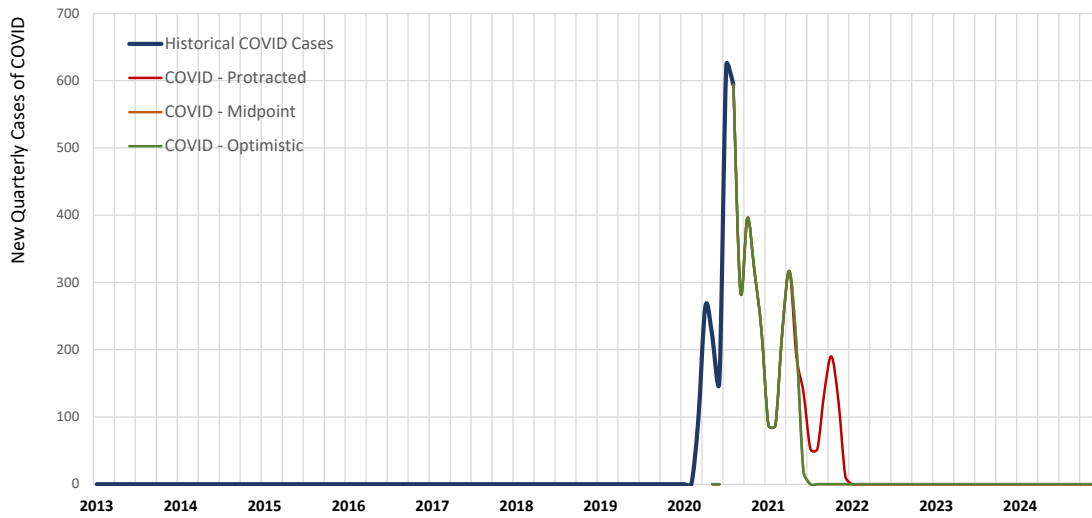
**Figure 89 Applied Forecast of New COVID Cases in Denver County**



**Figure 90 Applied Forecast of New COVID Cases in Jefferson County**



**Figure 91 Applied Forecast of New COVID Cases in Larimer County**



Source: Colorado Department of Public Health and Environment; Economic & Planning Systems

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## Long-Term Forecasting Calibration Factors

**Table 31 Long-Term Forecasting Adams County Demographic Calibration Factors**

	Factors / Assumptions			Totals			
	2000	2019	2040	2000	2019	2045	
<b>Jobs to Population</b>							
<b>Step 1</b>							
Wage & Salary Jobs	Row A			144,818	225,771	334,916	
<b>Step 2</b>							
Less: In-Commuting [2]	Row B	57%	68%	73%	<u>83,119</u>	<u>153,446</u>	<u>242,916</u>
<b>Subtotal (W &amp; S Jobs Residing in Geo.)</b>	Row C			<b>61,698</b>	<b>72,325</b>	<b>92,000</b>	
<b>Step 3</b>							
Plus: Out-Commuting [2]	Row D	93%	76%	80%	<u>134,843</u>	<u>170,934</u>	<u>267,899</u>
<b>Subtotal (W &amp; S Jobs Held by Residents)</b>	Row E			<b>196,541</b>	<b>243,259</b>	<b>359,898</b>	
<b>Step 4</b>							
Plus: Proprietors [3]	Row F	8%	13%	15%	<u>18,046</u>	<u>37,624</u>	<u>61,840</u>
<b>Subtotal (Non-Institutionalized Job Holders)</b>	Row G			<b>214,587</b>	<b>280,883</b>	<b>421,739</b>	
<b>Step 5</b>							
Plus: Unemployment	Row H	2%	3%	6%	<u>5,192</u>	<u>8,065</u>	<u>25,806</u>
<b>Subtotal (Laborforce)</b>	Row I			<b>219,779</b>	<b>288,948</b>	<b>447,545</b>	
<b>Step 6</b>							
Plus: Group Quarters Age 16-65 / Underemployed Persons 16-65	Row J	6%	17%	12%	<u>14,570</u>	<u>57,781</u>	<u>58,156</u>
<b>Subtotal (All Persons, Age 16-65)</b>	Row K			<b>234,349</b>	<b>346,729</b>	<b>479,894</b>	
<b>Step 7</b>							
Plus: Persons <16 and >65	Row L	33%	33%	35%	<u>117,385</u>	<u>173,148</u>	<u>277,788</u>
<b>Subtotal (Total Population)</b>	Row M			<b>351,734</b>	<b>519,877</b>	<b>783,488</b>	
as %	Row N			100%	100%	n/a	
Row O should be equal to this number from the U.S. Census.	Row O			351,734	519,877	n/a	
<b>Population to Housing</b>							
<b>Step 8</b>							
Less: Total Group Quarters	Row P	1.0%	0.8%	0.8%	<u>3,414</u>	<u>4,075</u>	<u>58,156</u>
<b>Total Population in Households</b>	Row Q			<b>348,320</b>	<b>515,802</b>	<b>725,332</b>	
<b>Step 9</b>							
Total Households	Row R	2.81	2.91		123,957	177,252	n/a
Row T should be equal to this number from the U.S. Census.	Row S				124,088	176,427	n/a

[1] Factors are extrapolated from trends for in- and out-commuting available between 2002 and 2018.

[2] Adds known proprietors using U.S. Census Nonemployer Statistics

Source: BLS; BEA; CDLE; US Census; Economic & Planning Systems

**Table 32 Long-Term Forecasting Arapahoe County Demographic Calibration Factors**

	Factors / Assumptions			Totals			
	2000	2019	2040	2000	2019	2045	
<b>Jobs to Population</b>							
<b>Step 1</b>							
Wage & Salary Jobs	Row A			284,228	334,638	412,917	
<b>Step 2</b>							
Less: In-Commuting [2]	Row B	62%	67%	69%	<u>174,944</u>	<u>225,742</u>	<u>285,310</u>
<b>Subtotal (W &amp; S Jobs Residing in Geo.)</b>	Row C			<b>109,284</b>	<b>108,896</b>	<b>127,606</b>	
<b>Step 3</b>							
Plus: Out-Commuting [2]	Row D	50%	63%	63%	<u>143,383</u>	<u>210,398</u>	<u>260,585</u>
<b>Subtotal (W &amp; S Jobs Held by Residents)</b>	Row E			<b>252,667</b>	<b>319,294</b>	<b>388,192</b>	
<b>Step 4</b>							
Plus: Proprietors [3]	Row F	13%	17%	20%	<u>37,450</u>	<u>63,937</u>	<u>99,876</u>
<b>Subtotal (Non-Institutionalized Job Holders)</b>	Row G			<b>290,117</b>	<b>383,231</b>	<b>488,068</b>	
<b>Step 5</b>							
Plus: Unemployment	Row H	2%	3%	3%	<u>6,888</u>	<u>9,930</u>	<u>15,095</u>
<b>Subtotal (Laborforce)</b>	Row I			<b>297,005</b>	<b>393,161</b>	<b>503,162</b>	
<b>Step 6</b>							
Plus: Group Quarters Age 16-65 / Underemployed Persons 16-65	Row J	11%	9%	8%	<u>35,246</u>	<u>40,767</u>	<u>40,797</u>
<b>Subtotal (All Persons, Age 16-65)</b>	Row K			<b>332,251</b>	<b>433,928</b>	<b>528,865</b>	
<b>Step 7</b>							
Plus: Persons <16 and >65	Row L	32%	34%	34%	<u>158,471</u>	<u>224,130</u>	<u>283,792</u>
<b>Subtotal (Total Population)</b>	Row M			<b>490,722</b>	<b>658,058</b>	<b>827,751</b>	
as %	Row N			100%	100%	n/a	
Row O should be equal to this number from the U.S. Census.	Row O			490,722	658,058	n/a	
<b>Population to Housing</b>							
<b>Step 8</b>							
Less: Total Group Quarters	Row P	1.0%	0.8%	0.8%	<u>4,847</u>	<u>5,466</u>	<u>40,797</u>
<b>Total Population in Households</b>	Row Q			<b>485,875</b>	<b>652,592</b>	<b>786,954</b>	
<b>Step 9</b>							
Total Households	Row R	2.53	2.56		192,045	254,919	n/a
Row T should be equal to this number from the U.S. Census.	Row S				192,016	255,165	n/a

[1] Factors are extrapolated from trends for in- and out-commuting available between 2002 and 2018.

[2] Adds known proprietors using U.S. Census Nonemployer Statistics

Source: BLS; BEA; CDLE; US Census; Economic & Planning Systems

**Table 33 Long-Term Forecasting Boulder County Demographic Calibration Factors**

	Factors / Assumptions			Totals			
	2000	2019	2040	2000	2019	2045	
<b>Jobs to Population</b>							
<b>Step 1</b>							
Wage & Salary Jobs	Row A			179,718	188,487	208,489	
<b>Step 2</b>							
Less: In-Commuting [2]	Row B	41%	50%	56%	<u>73,580</u>	<u>93,674</u>	<u>117,119</u>
<b>Subtotal (W &amp; S Jobs Residing in Geo.)</b>	Row C				<b>106,138</b>	<b>94,812</b>	<b>91,370</b>
<b>Step 3</b>							
Plus: Out-Commuting [2]	Row D	19%	32%	27%	<u>34,021</u>	<u>61,247</u>	<u>55,251</u>
<b>Subtotal (W &amp; S Jobs Held by Residents)</b>	Row E				<b>140,159</b>	<b>156,059</b>	<b>146,621</b>
<b>Step 4</b>							
Plus: Proprietors [3]	Row F	17%	21%	25%	<u>29,193</u>	<u>41,475</u>	<u>47,661</u>
<b>Subtotal (Non-Institutionalized Job Holders)</b>	Row G				<b>169,352</b>	<b>197,535</b>	<b>194,282</b>
<b>Step 5</b>							
Plus: Unemployment	Row H	2%	2%	4%	<u>3,865</u>	<u>4,640</u>	<u>8,095</u>
<b>Subtotal (Laborforce)</b>	Row I				<b>173,217</b>	<b>202,175</b>	<b>202,378</b>
<b>Step 6</b>							
Plus: Group Quarters Age 16-65 / Underemployed Persons 16-65	Row J	13%	11%	14%	<u>26,776</u>	<u>24,322</u>	<u>31,315</u>
<b>Subtotal (All Persons, Age 16-65)</b>	Row K				<b>199,993</b>	<b>226,497</b>	<b>225,597</b>
<b>Step 7</b>							
Plus: Persons <16 and >65	Row L	28%	31%	40%	<u>76,261</u>	<u>102,011</u>	<u>154,346</u>
<b>Subtotal (Total Population)</b>	Row M				<b>276,254</b>	<b>328,508</b>	<b>388,039</b>
as %	Row N				100%	100%	n/a
Row O should be equal to this number from the U.S. Census.	Row O				276,254	328,508	n/a
<b>Population to Housing</b>							
<b>Step 8</b>							
Less: Total Group Quarters	Row P	3.1%	3.6%	3.6%	<u>8,513</u>	<u>11,788</u>	<u>31,315</u>
<b>Total Population in Households</b>	Row Q				<b>267,741</b>	<b>316,720</b>	<b>356,724</b>
<b>Step 9</b>							
Total Households	Row R	2.44	2.40		109,730	131,967	n/a
Row T should be equal to this number from the U.S. Census.	Row S				109,578	131,665	n/a

[1] Factors are extrapolated from trends for in- and out-commuting available between 2002 and 2018.

[2] Adds known proprietors using U.S. Census Nonemployer Statistics

Source: BLS; BEA; CDLE; US Census; Economic & Planning Systems

**Table 34 Long-Term Forecasting Broomfield County Demographic Calibration Factors**

	Factors / Assumptions			Totals			
	2000	2019	2040	2000	2019	2045	
<b>Jobs to Population</b>							
<b>Step 1</b>							
Wage & Salary Jobs	Row A			0	39,095	69,534	
<b>Step 2</b>							
Less: In-Commuting [2]	Row B	n/a	88%	80%	<u>24,168</u>	<u>34,435</u>	<u>55,936</u>
<b>Subtotal (W &amp; S Jobs Residing in Geo.)</b>	Row C			<b>-24,168</b>	<b>4,661</b>	<b>13,598</b>	
<b>Step 3</b>							
Plus: Out-Commuting [2]	Row D	n/a	85%	44%	<u>0</u>	<u>33,173</u>	<u>30,473</u>
<b>Subtotal (W &amp; S Jobs Held by Residents)</b>	Row E			<b>-24,168</b>	<b>37,834</b>	<b>44,070</b>	
<b>Step 4</b>							
Plus: Proprietors [3]	Row F	0%	15%	18%	<u>0</u>	<u>6,753</u>	<u>9,971</u>
<b>Subtotal (Non-Institutionalized Job Holders)</b>	Row G			<b>-24,168</b>	<b>44,587</b>	<b>54,041</b>	
<b>Step 5</b>							
Plus: Unemployment	Row H	-2%	2%	3%	<u>545</u>	<u>992</u>	<u>1,671</u>
<b>Subtotal (Laborforce)</b>	Row I			<b>-23,623</b>	<b>45,579</b>	<b>55,712</b>	
<b>Step 6</b>							
Plus: Group Quarters Age 16-65 / Underemployed Persons 16-65	Row J	191%	4%	8%	<u>49,505</u>	<u>2,001</u>	<u>4,452</u>
<b>Subtotal (All Persons, Age 16-65)</b>	Row K			<b>25,882</b>	<b>47,580</b>	<b>58,493</b>	
<b>Step 7</b>							
Plus: Persons <16 and >65	Row L	33%	33%	37%	<u>12,663</u>	<u>23,558</u>	<u>35,630</u>
<b>Subtotal (Total Population)</b>	Row M			<b>38,545</b>	<b>71,138</b>	<b>95,795</b>	
as %	Row N			100%	100%	n/a	
Row O should be equal to this number from the U.S. Census.	Row O			38,545	71,138	n/a	
<b>Population to Housing</b>							
<b>Step 8</b>							
Less: Total Group Quarters	Row P	0.0%	0.4%	0.4%	<u>0</u>	<u>314</u>	<u>4,452</u>
<b>Total Population in Households</b>	Row Q			<b>38,545</b>	<b>70,825</b>	<b>91,343</b>	
<b>Step 9</b>							
Total Households	Row R	2.76	2.60		13,966	27,240	n/a
Row T should be equal to this number from the U.S. Census.	Row S				13,949	27,142	n/a

[1] Factors are extrapolated from trends for in- and out-commuting available between 2002 and 2018.

[2] Adds known proprietors using U.S. Census Nonemployer Statistics

Source: BLS; BEA; CDLE; US Census; Economic & Planning Systems

**Table 35 Long-Term Forecasting Denver County Demographic Calibration Factors**

	Factors / Assumptions			Totals			
	2000	2019	2040	2000	2019	2045	
<b>Jobs to Population</b>							
<b>Step 1</b>							
Wage & Salary Jobs	Row A			469,144	528,848	631,836	
<b>Step 2</b>							
Less: In-Commuting [2]	Row B	61%	66%	71%	<u>284,556</u>	<u>351,084</u>	<u>446,426</u>
<b>Subtotal (W &amp; S Jobs Residing in Geo.)</b>	Row C				<b>184,588</b>	<b>177,764</b>	<b>185,410</b>
<b>Step 3</b>							
Plus: Out-Commuting [2]	Row D	27%	35%	24%	<u>128,262</u>	<u>184,313</u>	<u>149,647</u>
<b>Subtotal (W &amp; S Jobs Held by Residents)</b>	Row E				<b>312,850</b>	<b>362,077</b>	<b>335,057</b>
<b>Step 4</b>							
Plus: Proprietors [3]	Row F	12%	18%	21%	<u>41,513</u>	<u>77,389</u>	<u>88,617</u>
<b>Subtotal (Non-Institutionalized Job Holders)</b>	Row G				<b>354,363</b>	<b>439,466</b>	<b>423,674</b>
<b>Step 5</b>							
Plus: Unemployment	Row H	3%	3%	3%	<u>9,294</u>	<u>11,348</u>	<u>14,458</u>
<b>Subtotal (Laborforce)</b>	Row I				<b>363,657</b>	<b>450,814</b>	<b>438,132</b>
<b>Step 6</b>							
Plus: Group Quarters Age 16-65 / Underemployed Persons 16-65	Row J	5%	13%	23%	<u>21,084</u>	<u>64,704</u>	<u>127,200</u>
<b>Subtotal (All Persons, Age 16-65)</b>	Row K				<b>384,741</b>	<b>515,518</b>	<b>550,873</b>
<b>Step 7</b>							
Plus: Persons <16 and >65	Row L	31%	29%	33%	<u>171,999</u>	<u>213,425</u>	<u>274,757</u>
<b>Subtotal (Total Population)</b>	Row M				<b>556,740</b>	<b>728,943</b>	<b>840,088</b>
as %	Row N				100%	100%	n/a
Row O should be equal to this number from the U.S. Census.	Row O				556,740	728,943	n/a
<b>Population to Housing</b>							
<b>Step 8</b>							
Less: Total Group Quarters	Row P	2.3%	2.1%	2.1%	<u>12,719</u>	<u>15,041</u>	<u>127,200</u>
<b>Total Population in Households</b>	Row Q				<b>544,021</b>	<b>713,902</b>	<b>712,889</b>
<b>Step 9</b>							
Total Households	Row R	2.26	2.22		240,717	321,577	n/a
Row T should be equal to this number from the U.S. Census.	Row S				240,360	320,955	n/a

[1] Factors are extrapolated from trends for in- and out-commuting available between 2002 and 2018.

[2] Adds known proprietors using U.S. Census Nonemployer Statistics

Source: BLS; BEA; CDLE; US Census; Economic & Planning Systems

**Table 36 Long-Term Forecasting Jefferson County Demographic Calibration Factors**

	Factors / Assumptions			Totals			
	2000	2019	2040	2000	2019	2045	
<b>Jobs to Population</b>							
<b>Step 1</b>							
Wage & Salary Jobs	Row A			210,526	243,081	279,058	
<b>Step 2</b>							
Less: In-Commuting [2]	Row B	47%	60%	61%	<u>97,918</u>	<u>146,567</u>	<u>170,179</u>
<b>Subtotal (W &amp; S Jobs Residing in Geo.)</b>	Row C			<b>112,608</b>	<b>96,514</b>	<b>108,879</b>	
<b>Step 3</b>							
Plus: Out-Commuting [2]	Row D	94%	81%	63%	<u>198,867</u>	<u>197,231</u>	<u>175,224</u>
<b>Subtotal (W &amp; S Jobs Held by Residents)</b>	Row E			<b>311,475</b>	<b>293,744</b>	<b>284,103</b>	
<b>Step 4</b>							
Plus: Proprietors [3]	Row F	12%	17%	19%	<u>43,885</u>	<u>59,808</u>	<u>66,642</u>
<b>Subtotal (Non-Institutionalized Job Holders)</b>	Row G			<b>355,360</b>	<b>353,552</b>	<b>350,745</b>	
<b>Step 5</b>							
Plus: Unemployment	Row H	2%	2%	5%	<u>7,324</u>	<u>8,598</u>	<u>17,633</u>
<b>Subtotal (Laborforce)</b>	Row I			<b>362,684</b>	<b>362,150</b>	<b>368,378</b>	
<b>Step 6</b>							
Plus: Group Quarters Age 16-65 / Underemployed Persons 16-65	Row J	-1%	5%	1%	<u>-4,479</u>	<u>19,299</u>	<u>4,852</u>
<b>Subtotal (All Persons, Age 16-65)</b>	Row K			<b>358,205</b>	<b>381,449</b>	<b>355,597</b>	
<b>Step 7</b>							
Plus: Persons <16 and >65	Row L	32%	35%	41%	<u>168,511</u>	<u>201,657</u>	<u>256,749</u>
<b>Subtotal (Total Population)</b>	Row M			<b>526,716</b>	<b>583,106</b>	<b>629,980</b>	
as %	Row N			100%	100%	n/a	
Row O should be equal to this number from the U.S. Census.	Row O			526,716	583,106	n/a	
<b>Population to Housing</b>							
<b>Step 8</b>							
Less: Total Group Quarters	Row P	1.5%	1.5%	1.5%	<u>7,730</u>	<u>8,837</u>	<u>4,852</u>
<b>Total Population in Households</b>	Row Q			<b>518,986</b>	<b>574,269</b>	<b>625,128</b>	
<b>Step 9</b>							
Total Households	Row R	2.52	2.42		205,947	237,301	n/a
Row T should be equal to this number from the U.S. Census.	Row S				206,160	237,772	n/a

[1] Factors are extrapolated from trends for in- and out-commuting available between 2002 and 2018.

[2] Adds known proprietors using U.S. Census Nonemployer Statistics

Source: BLS; BEA; CDLE; US Census; Economic & Planning Systems

**Table 37 Long-Term Forecasting Larimer County Demographic Calibration Factors**

	Factors / Assumptions				Totals		
	2000	2019	2040	2000	2019	2045	
<b>Jobs to Population</b>							
<b>Step 1</b>							
Wage & Salary Jobs	Row A			119,154	165,729	217,796	
<b>Step 2</b>							
Less: In-Commuting [2]	Row B	22%	34%	40%	<u>25,628</u>	<u>55,721</u>	<u>86,600</u>
<b>Subtotal (W &amp; S Jobs Residing in Geo.)</b>	Row C				<b>93,526</b>	<b>110,008</b>	<b>131,197</b>
<b>Step 3</b>							
Plus: Out-Commuting [2]	Row D	37%	37%	39%	<u>44,216</u>	<u>61,931</u>	<u>84,302</u>
<b>Subtotal (W &amp; S Jobs Held by Residents)</b>	Row E				<b>137,742</b>	<b>171,939</b>	<b>215,499</b>
<b>Step 4</b>							
Plus: Proprietors [3]	Row F	13%	17%	20%	<u>20,577</u>	<u>34,677</u>	<u>54,747</u>
<b>Subtotal (Non-Institutionalized Job Holders)</b>	Row G				<b>158,319</b>	<b>206,616</b>	<b>270,245</b>
<b>Step 5</b>							
Plus: Unemployment	Row H	2%	2%	4%	<u>3,661</u>	<u>4,859</u>	<u>12,311</u>
<b>Subtotal (Laborforce)</b>	Row I				<b>161,980</b>	<b>211,475</b>	<b>282,556</b>
<b>Step 6</b>							
Plus: Group Quarters Age 16-65 / Underemployed Persons 16-65	Row J	8%	9%	9%	<u>13,719</u>	<u>21,996</u>	<u>25,407</u>
<b>Subtotal (All Persons, Age 16-65)</b>	Row K				<b>175,699</b>	<b>233,471</b>	<b>295,652</b>
<b>Step 7</b>							
Plus: Persons <16 and >65	Row L	31%	34%	37%	<u>77,388</u>	<u>121,646</u>	<u>183,870</u>
<b>Subtotal (Total Population)</b>	Row M				<b>253,087</b>	<b>355,117</b>	<b>491,833</b>
as %	Row N				100%	100%	n/a
Row O should be equal to this number from the U.S. Census.	Row O				253,087	355,117	n/a
<b>Population to Housing</b>							
<b>Step 8</b>							
Less: Total Group Quarters	Row P	2.8%	2.7%	2.7%	<u>7,120</u>	<u>9,729</u>	<u>25,407</u>
<b>Total Population in Households</b>	Row Q				<b>245,967</b>	<b>345,388</b>	<b>466,426</b>
<b>Step 9</b>							
Total Households	Row R	2.51	2.43		97,995	142,135	n/a
Row T should be equal to this number from the U.S. Census.	Row S				97,905	142,933	n/a

[1] Factors are extrapolated from trends for in- and out-commuting available between 2002 and 2018.

[2] Adds known proprietors using U.S. Census Nonemployer Statistics

Source: BLS; BEA; CDLE; US Census; Economic & Planning Systems

## Downturn and Recovery Rates

**Table 38 Annual County-Level Downturn and Recovery Rates, 2020-2025**

	Historic	Annual Employment Change, 2020-2025		
		High	Mid	Low
<b>Adams County</b>				
Production	45	132	53	-38
Service	187	409	263	120
Education	63	113	76	41
Entertainment	5	10	7	4
Restaurant	26	57	35	13
Retail	21	70	38	7
<b>Arapahoe County</b>				
Production	-4	39	-11	-85
Service	171	539	304	81
Education	26	58	30	2
Entertainment	7	12	7	2
Restaurant	27	76	47	19
Retail	7	65	25	-12
<b>Boulder County</b>				
Production	-39	-15	-43	-81
Service	72	205	108	16
Education	28	56	36	17
Entertainment	5	11	8	4
Restaurant	13	33	18	3
Retail	-3	4	-12	-27
<b>Broomfield County</b>				
Production	35	66	46	25
Service	95	187	133	82
Education	4	9	7	4
Entertainment	1	3	2	2
Restaurant	12	28	20	14
Retail	20	51	38	26
<b>Denver County</b>				
Production	-7	98	-18	-157
Service	161	661	215	-217
Education	47	92	36	-18
Entertainment	22	45	28	11
Restaurant	72	171	101	33
Retail	11	90	32	-23
<b>Jefferson County</b>				
Production	5	98	52	-7
Service	121	385	260	140
Education	11	34	22	11
Entertainment	7	13	9	4
Restaurant	18	75	53	31
Retail	-5	72	43	16
<b>Larimer County</b>				
Production	15	57	13	-35
Service	124	275	169	66
Education	20	43	23	3
Entertainment	6	12	8	4
Restaurant	25	56	34	12
Retail	20	62	33	5

Source: Economic & Planning Systems



## Long-Term Employment Rates

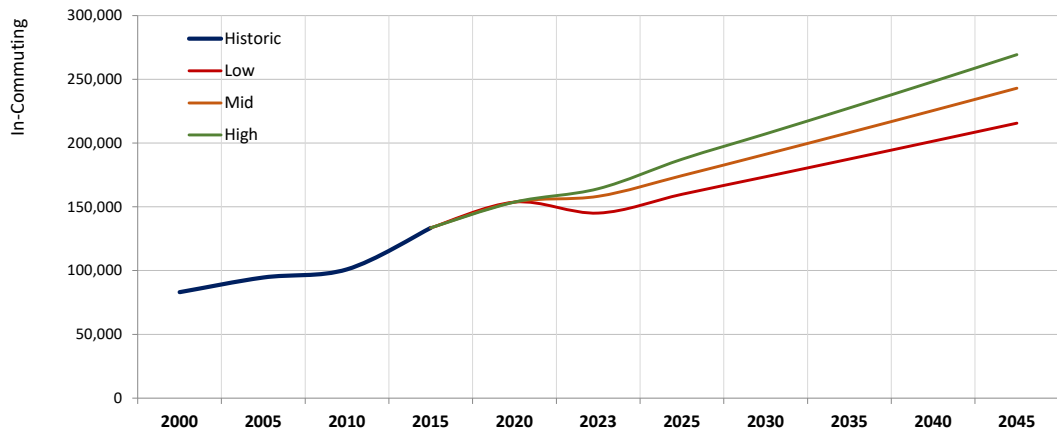
**Table 39 Annual County-Level Long-Term Employment Rates, 2020-2045**

	Historic	Annual Employment Change, 2020-2045		
		High	Mid	Low
<b>Adams County</b>				
Production	45	51	27	0
Service	187	290	230	170
Education	63	107	89	69
Entertainment	5	6	5	3
Restaurant	26	27	18	11
Retail	21	26	16	6
<b>Arapahoe County</b>				
Production	-4	27	11	-17
Service	171	334	234	127
Education	26	41	29	18
Entertainment	7	8	6	4
Restaurant	27	40	24	11
Retail	7	24	12	-2
<b>Boulder County</b>				
Production	-39	2	-5	-17
Service	72	101	67	33
Education	28	42	33	25
Entertainment	5	6	5	3
Restaurant	13	8	3	-2
Retail	-3	4	-1	-6
<b>Broomfield County</b>				
Production	35	26	19	12
Service	95	74	56	41
Education	4	4	3	2
Entertainment	1	1	1	1
Restaurant	12	10	7	5
Retail	20	18	14	10
<b>Denver County</b>				
Production	-7	56	22	-19
Service	161	355	271	71
Education	47	68	48	28
Entertainment	22	17	12	7
Restaurant	72	53	32	9
Retail	11	24	10	-6
<b>Jefferson County</b>				
Production	5	26	14	-1
Service	121	134	92	57
Education	11	16	12	8
Entertainment	7	3	2	1
Restaurant	18	27	19	11
Retail	-5	22	15	7
<b>Larimer County</b>				
Production	15	25	14	0
Service	124	177	136	101
Education	20	29	22	16
Entertainment	6	5	3	2
Restaurant	25	23	16	9
Retail	20	25	16	7

Source: Economic & Planning Systems

## Projection of In-Commuting

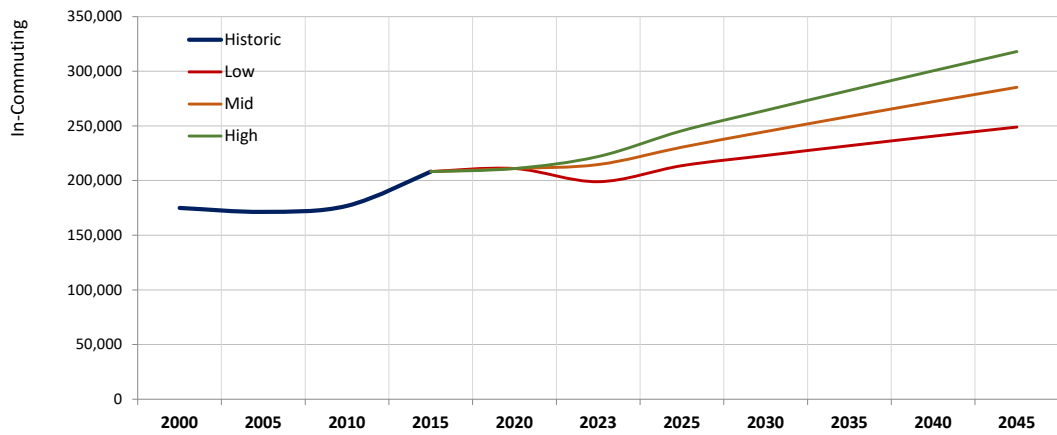
**Figure 92 Adams County Projection of In-Commuting**



Source: U.S. Census LEHD; Economic & Planning Systems

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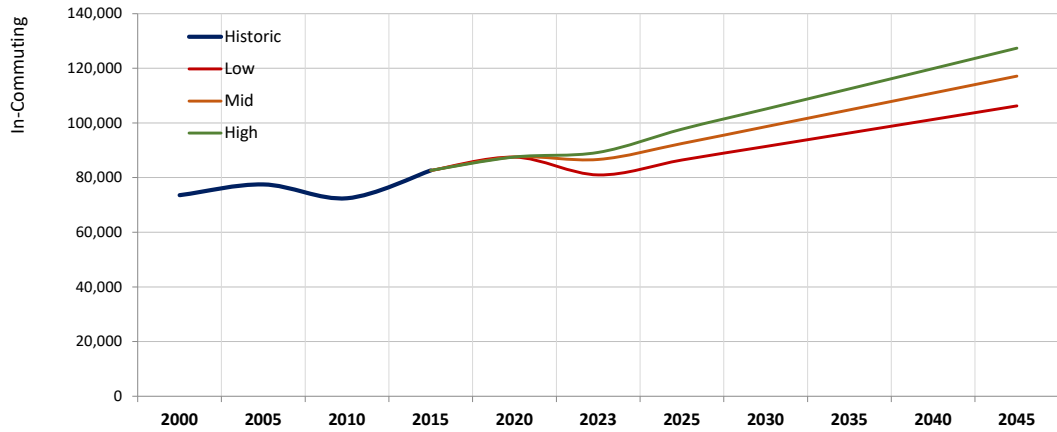
**Figure 93 Arapahoe County Projection of In-Commuting**



Source: U.S. Census LEHD; Economic & Planning Systems

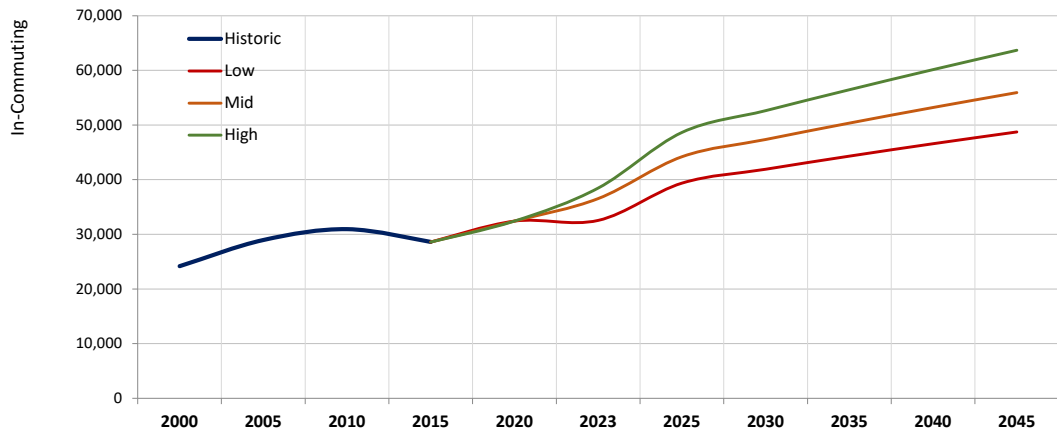
Z:\Shared\Projects\DEN\193095-HPTE Traffic and Revenue Advisory Services\Models\[193095-independent Forecast.xlsx]D.5

**Figure 94 Boulder County Projection of In-Commuting**



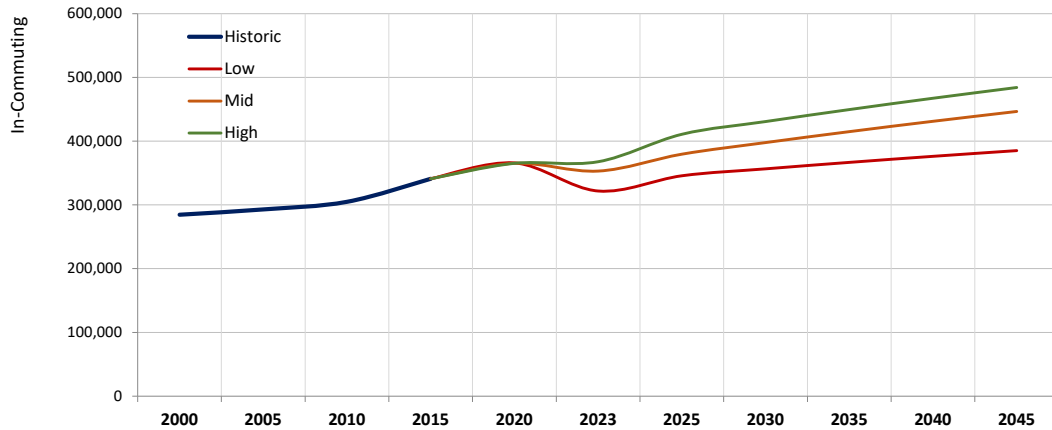
Source: U.S. Census LEHD; Economic & Planning Systems  
 Z:\Shared\Projects\DEN\193095-HPTe Traffic and Revenue Advisory Services\Models\193095-Independent Forecast.xlsx\F.5

**Figure 95 Broomfield County Projection of In-Commuting**



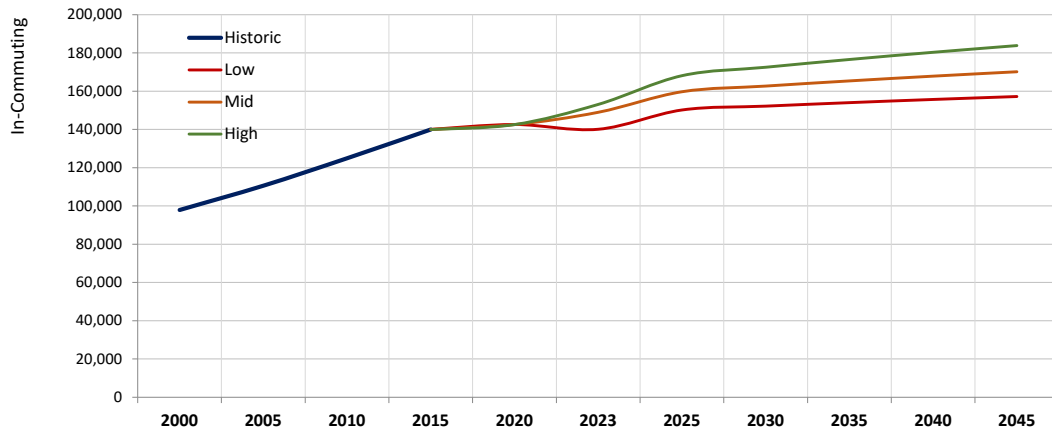
Source: U.S. Census LEHD; Economic & Planning Systems  
 Z:\Shared\Projects\DEN\193095-HPTe Traffic and Revenue Advisory Services\Models\193095-Independent Forecast.xlsx\F.5

**Figure 96 Denver County Projection of In-Commuting**



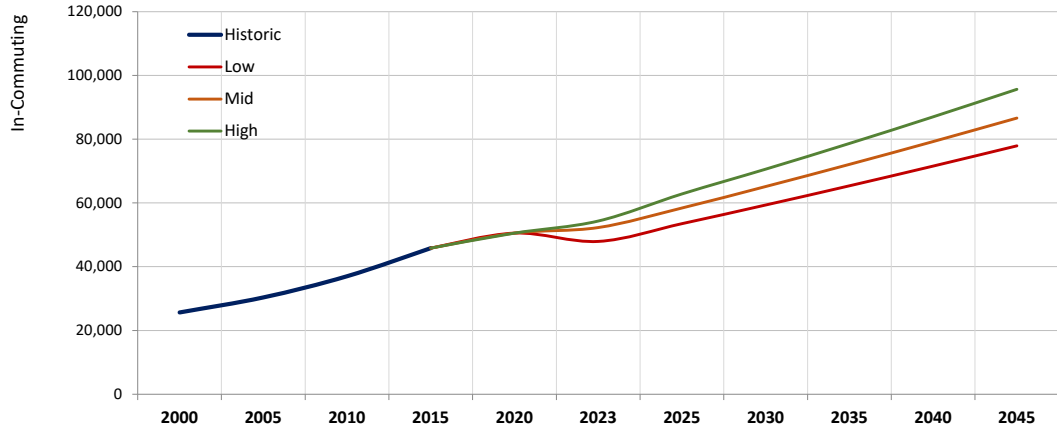
Source: U.S. Census LEHD; Economic & Planning Systems  
 Z:\Shared\Projects\DEN\193095-HPTe Traffic and Revenue Advisory Services\Models\193095-Independent Forecast.xlsx\JL5

**Figure 97 Jefferson County Projection of In-Commuting**



Source: U.S. Census LEHD; Economic & Planning Systems  
 Z:\Shared\Projects\DEN\193095-HPTe Traffic and Revenue Advisory Services\Models\193095-Independent Forecast.xlsx\JL5

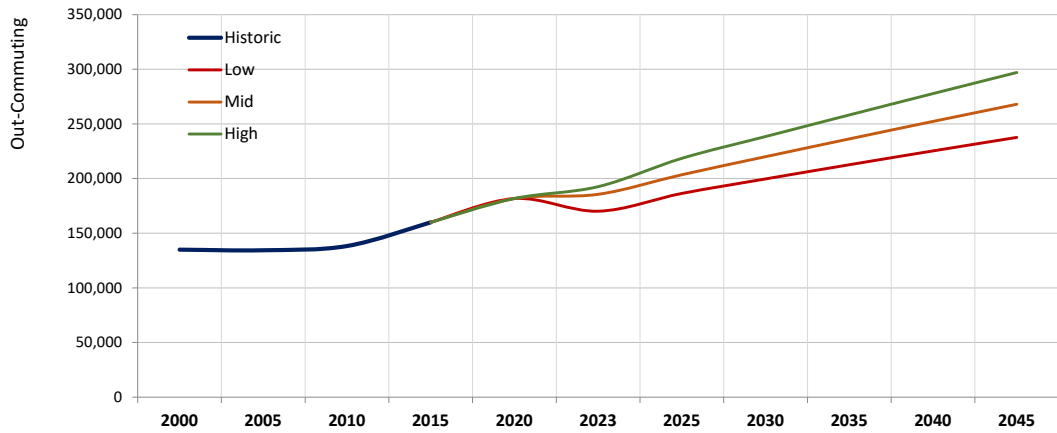
**Figure 98 Larimer County Projection of In-Commuting**



Source: U.S. Census LEHD; Economic & Planning Systems  
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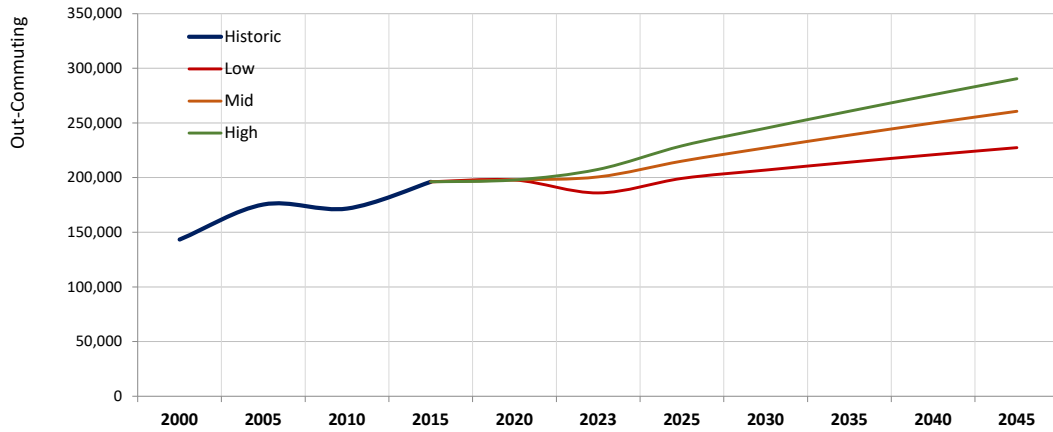
**Projection of Out-Commuting**

**Figure 99 Adams County Projection of Out-Commuting**



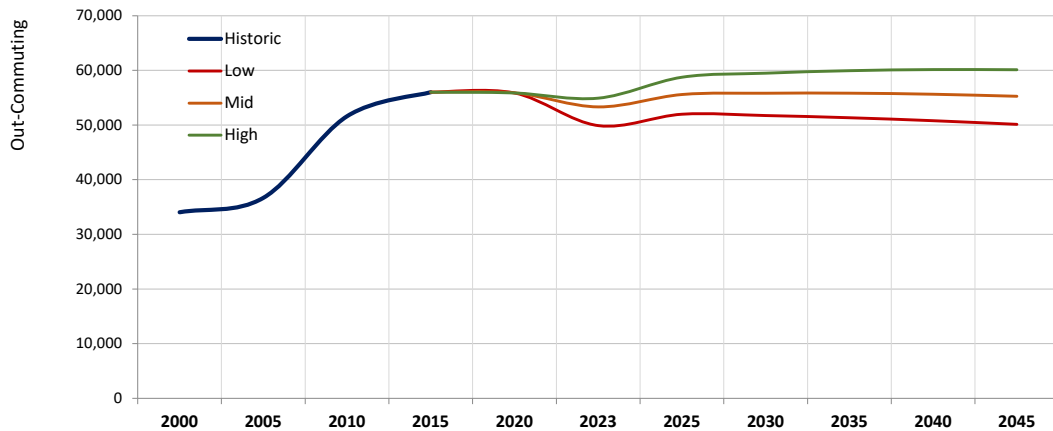
Source: U.S. Census LEHD; Economic & Planning Systems  
 Z:\Shared\Projects\DEN\193095-HPTE Traffic and Revenue Advisory Services\Models\193095-Independent Forecast.xlsx|C.5

**Figure 100 Arapahoe County Projection of Out-Commuting**



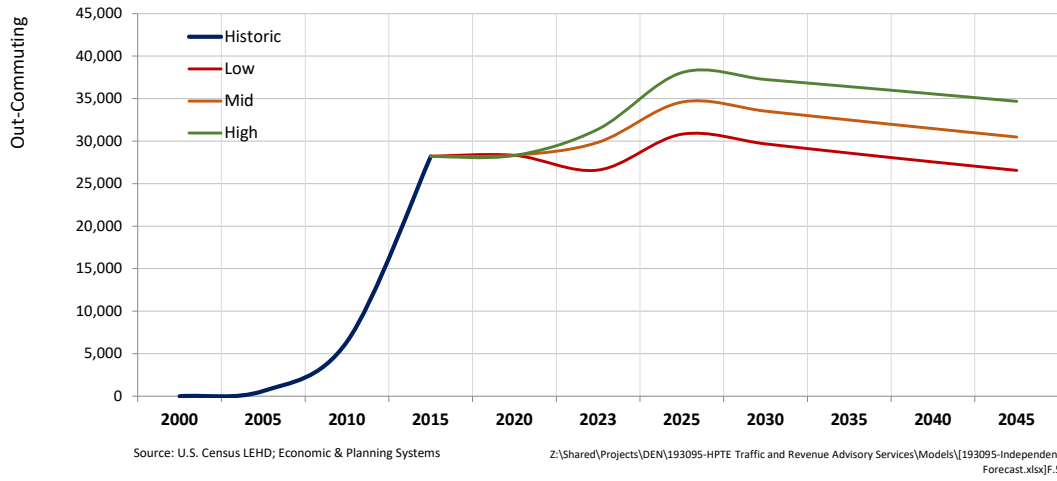
Source: U.S. Census LEHD; Economic & Planning Systems  
 Z:\Shared\Projects\DEN\193095-HPTe Traffic and Revenue Advisory Services\Models\193095-Independent Forecast.xlsx\J.5

**Figure 101 Boulder County Projection of Out-Commuting**

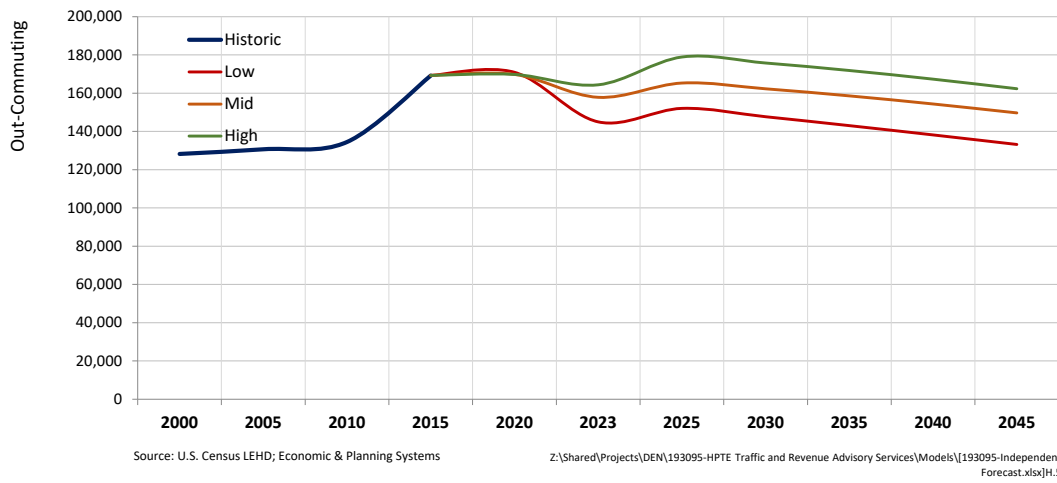


Source: U.S. Census LEHD; Economic & Planning Systems  
 Z:\Shared\Projects\DEN\193095-HPTe Traffic and Revenue Advisory Services\Models\193095-Independent Forecast.xlsx\J.5

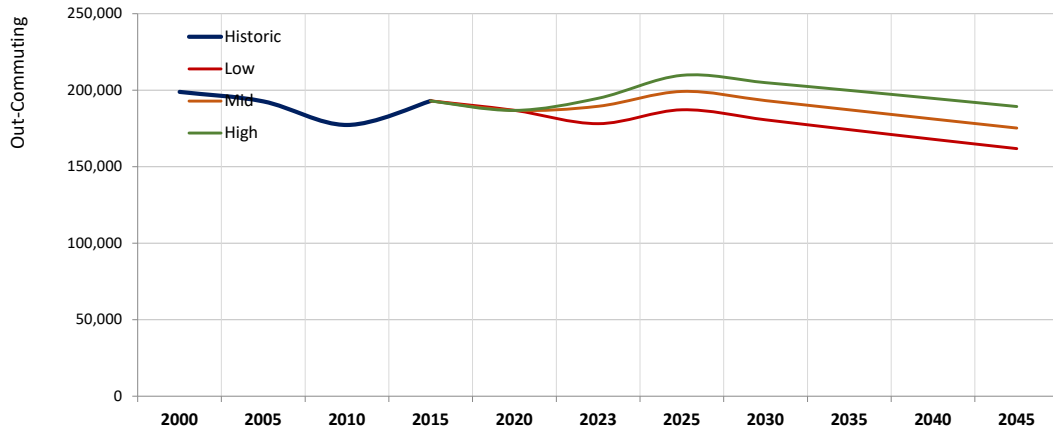
**Figure 102 Broomfield County Projection of Out-Commuting**



**Figure 103 Denver County Projection of Out-Commuting**

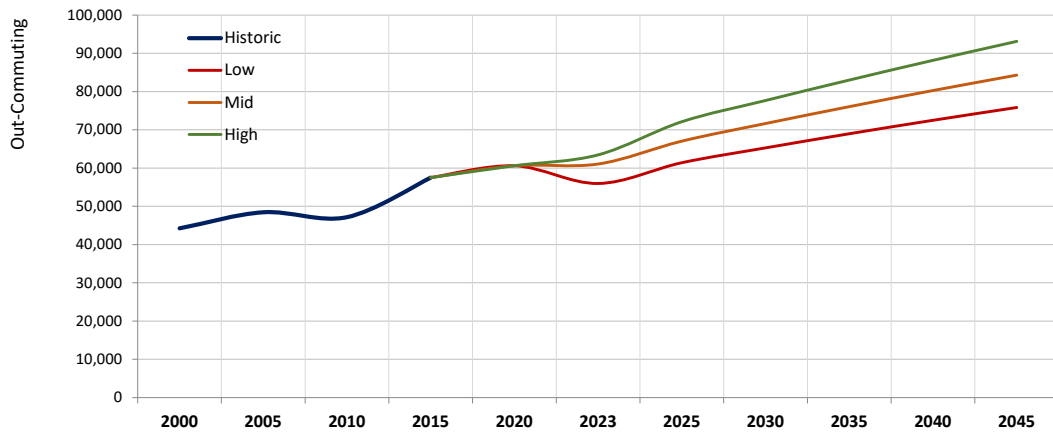


**Figure 104 Jefferson County Projection of Out-Commuting**



Source: U.S. Census LEHD; Economic & Planning Systems  
 Z:\Shared\Projects\DEN\193095-HPTE Traffic and Revenue Advisory Services\Models\193095-Independent Forecast.xlsx\J.5

**Figure 105 Larimer County Projection of Out-Commuting**

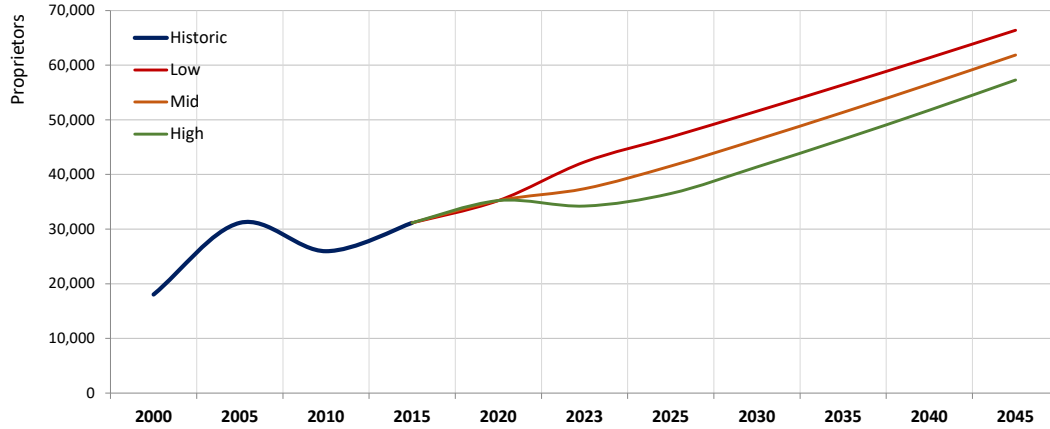


Source: U.S. Census LEHD; Economic & Planning Systems  
 Z:\Shared\Projects\DEN\193095-HPTE Traffic and Revenue Advisory Services\Models\193095-Independent Forecast.xlsx\J.5



## Projection of Proprietors

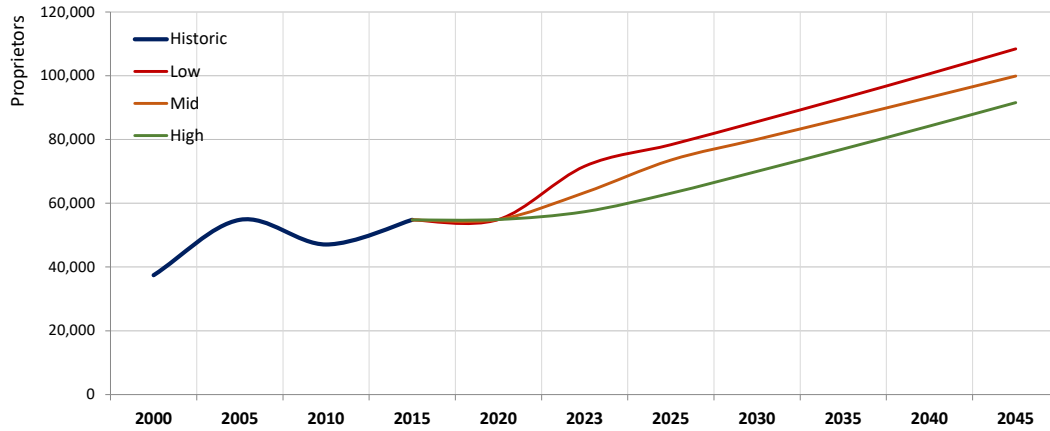
**Figure 106 Adams County Projection of Self-Employment**



Source: U.S. Census NES; Economic & Planning Systems

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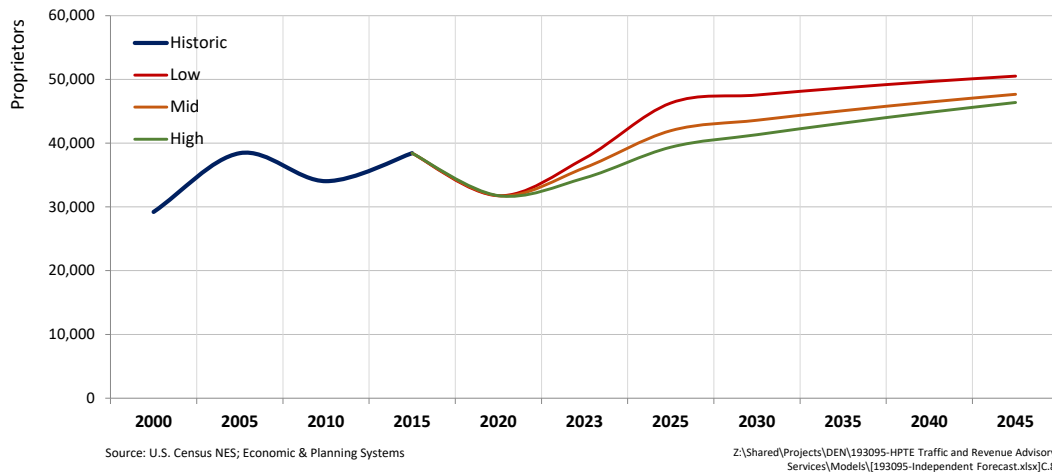
**Figure 107 Arapahoe County Projection of Self-Employment**



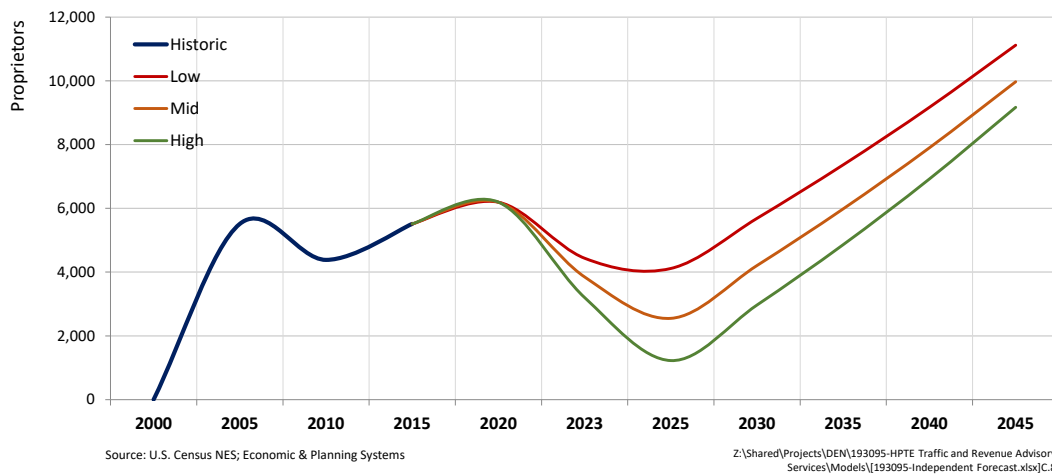
Source: U.S. Census NES; Economic & Planning Systems

Z:\Shared\Projects\DEN\193095-HPTE Traffic and Revenue Advisory Services\Models\193095-Independent Forecast.xlsx\C.8

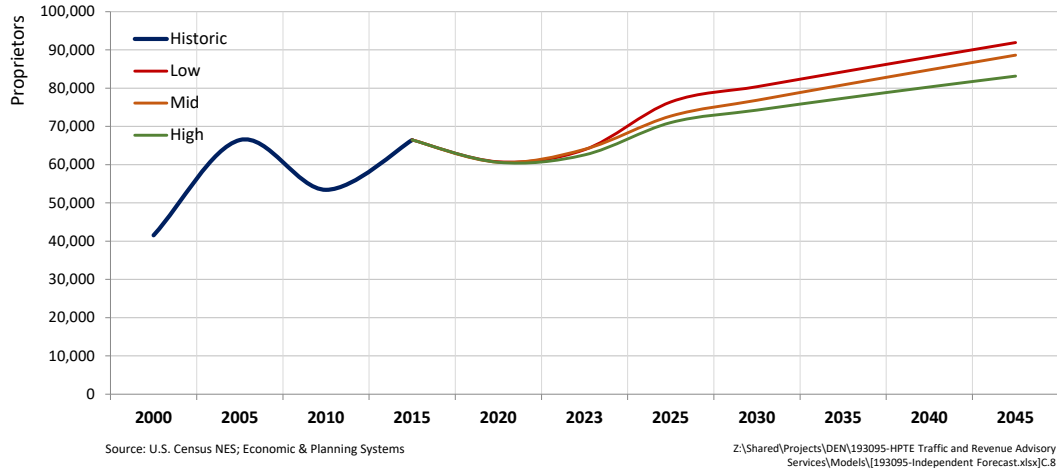
**Figure 108 Boulder County Projection of Self-Employment**



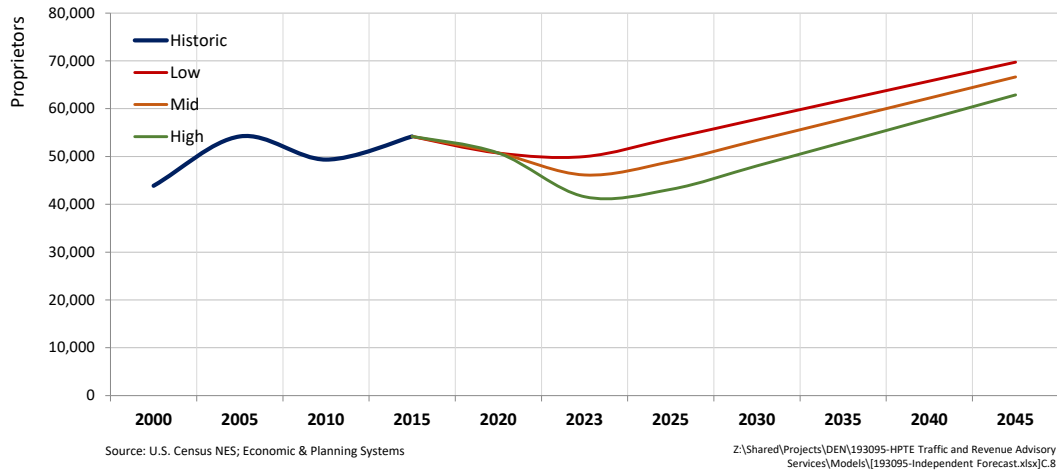
**Figure 109 Broomfield County Projection of Self-Employment**



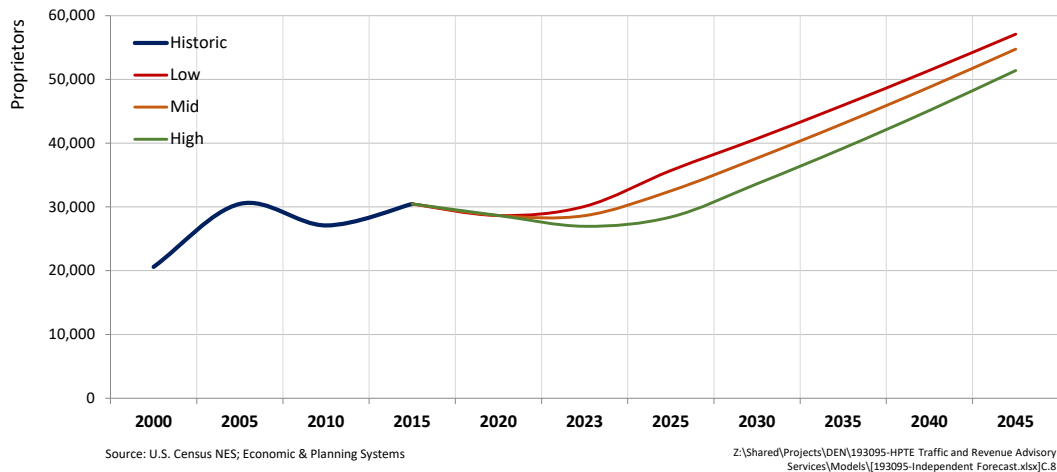
**Figure 110 Denver County Projection of Self-Employment**



**Figure 111 Jefferson County Projection of Self-Employment**

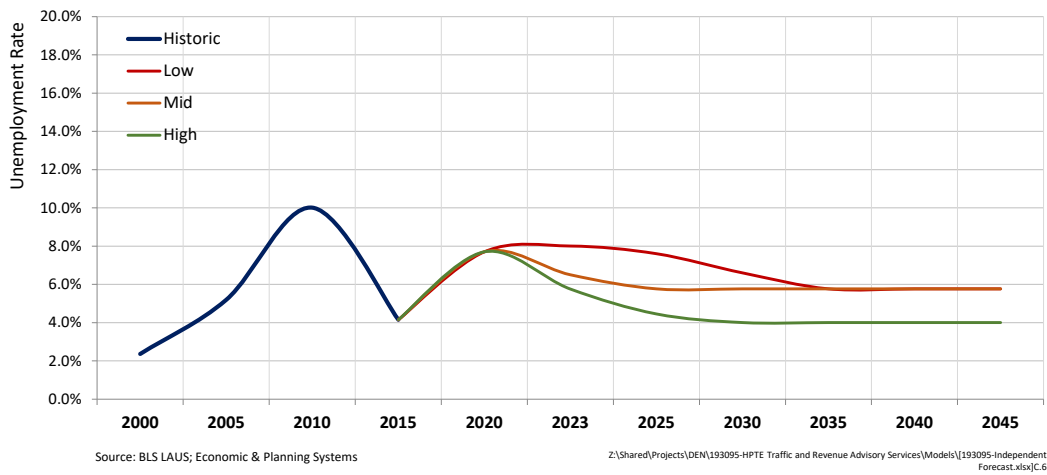


**Figure 112 Larimer County Projection of Self-Employment**

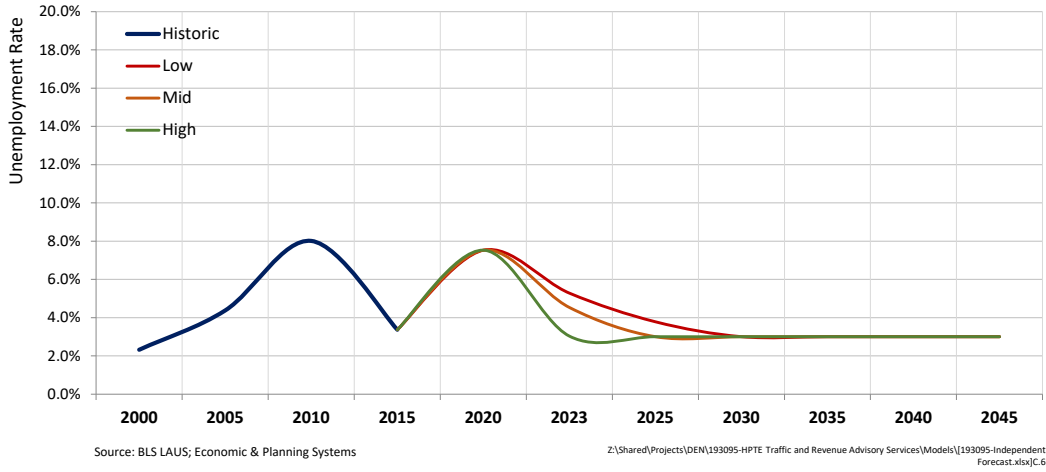


## Projection of Unemployment

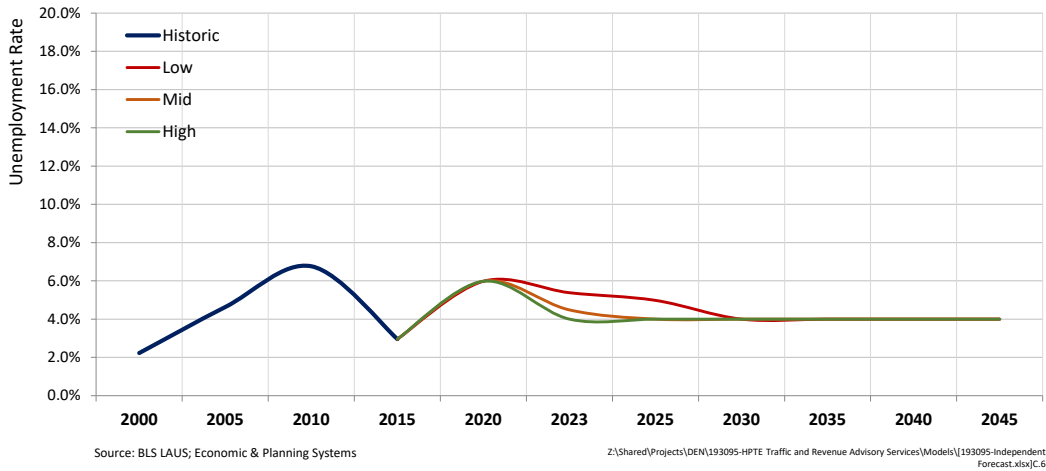
**Figure 113 Adams County Projection of Unemployment**



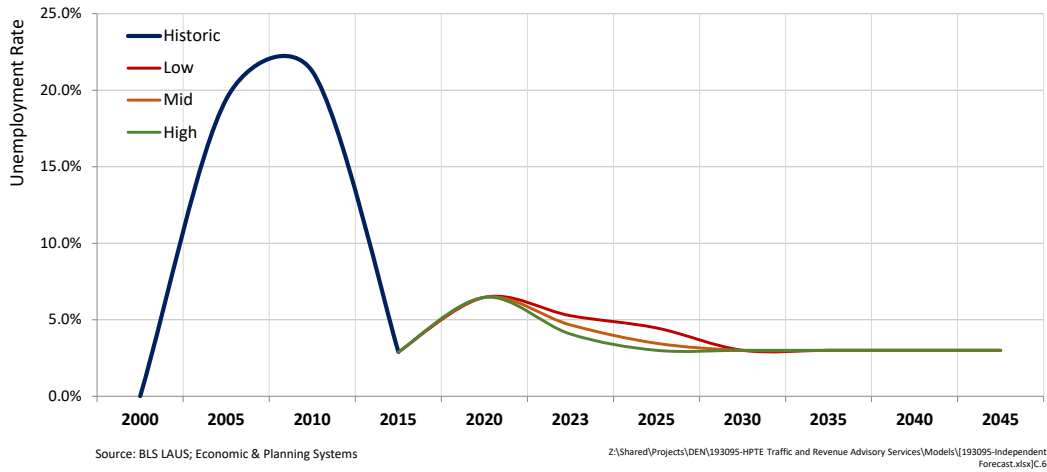
**Figure 114 Arapahoe County Projection of Unemployment**



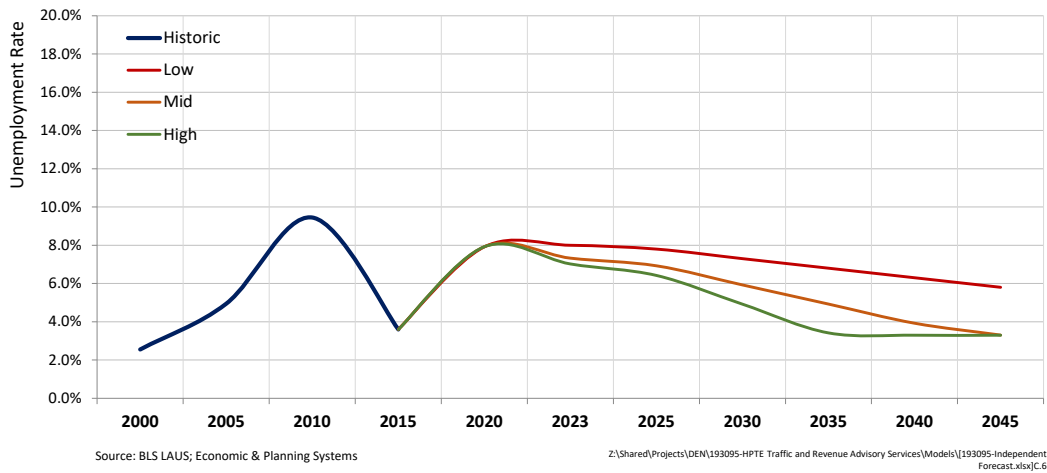
**Figure 115 Boulder County Projection of Unemployment**



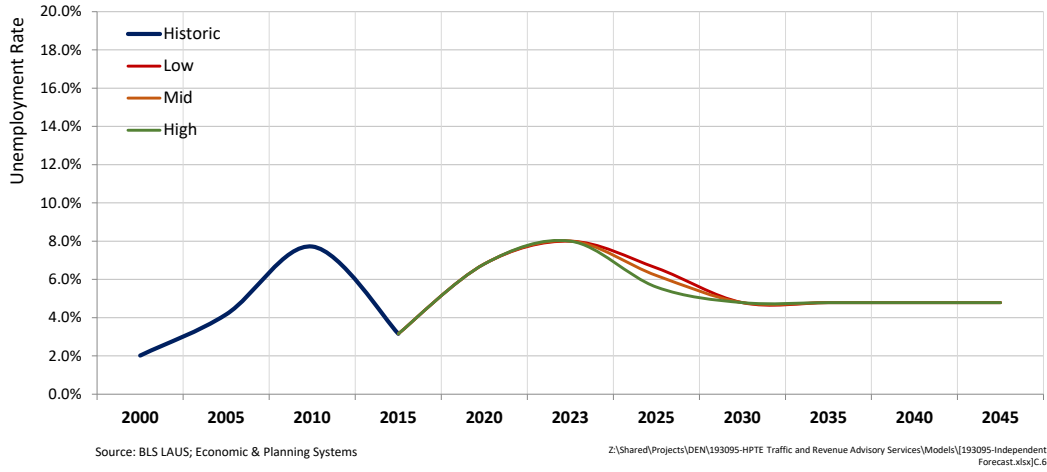
**Figure 116 Broomfield County Projection of Unemployment**



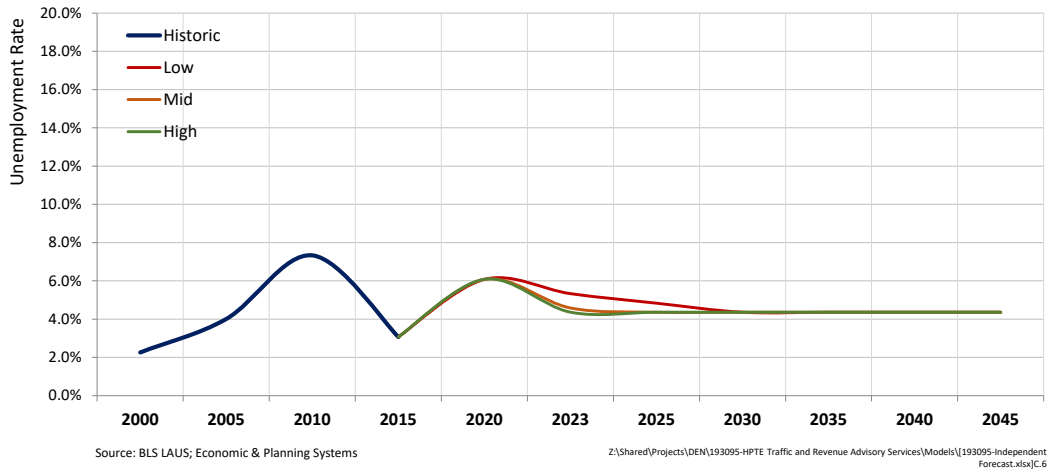
**Figure 117 Denver County Projection of Unemployment**



**Figure 118 Jefferson County Projection of Unemployment**

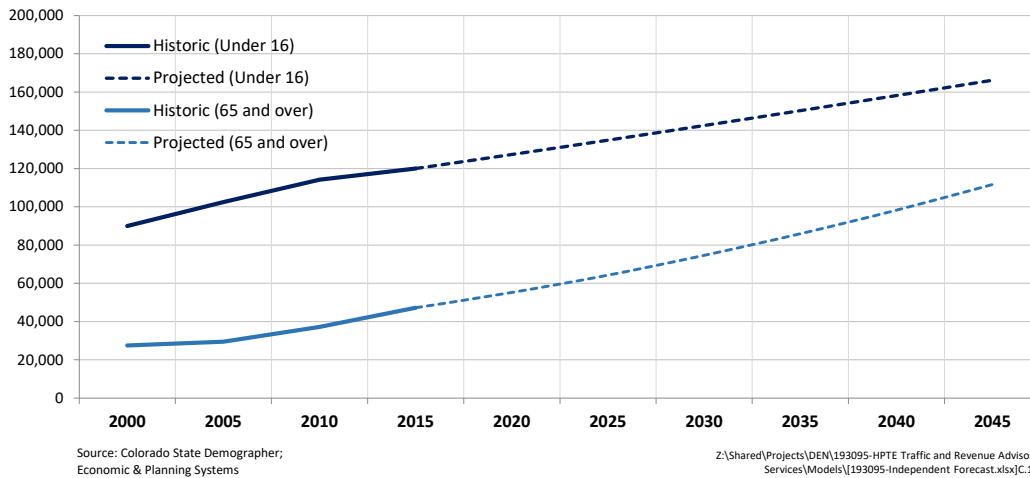


**Figure 119 Larimer County Projection of Unemployment**

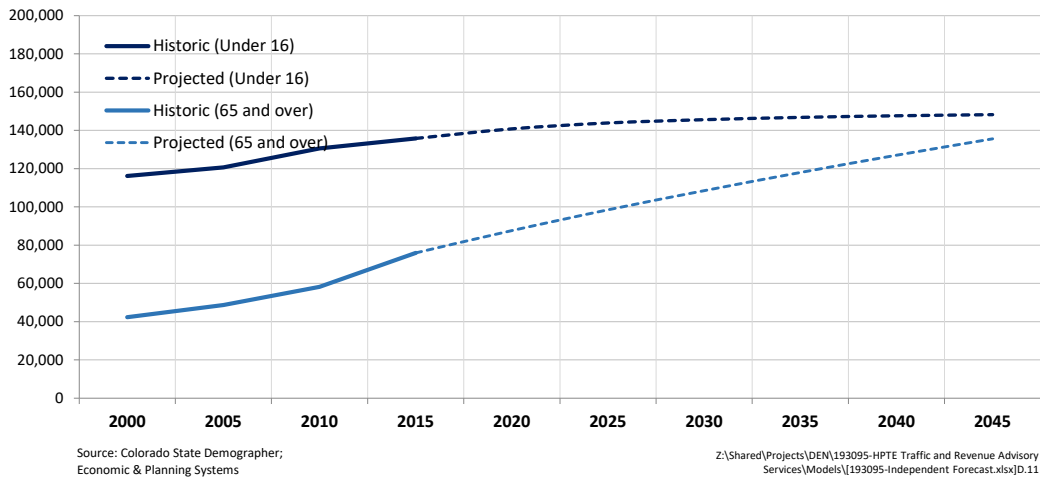


## Projection of Non-Working Populations

**Figure 120 Adams County Projection of Non-Working Population**

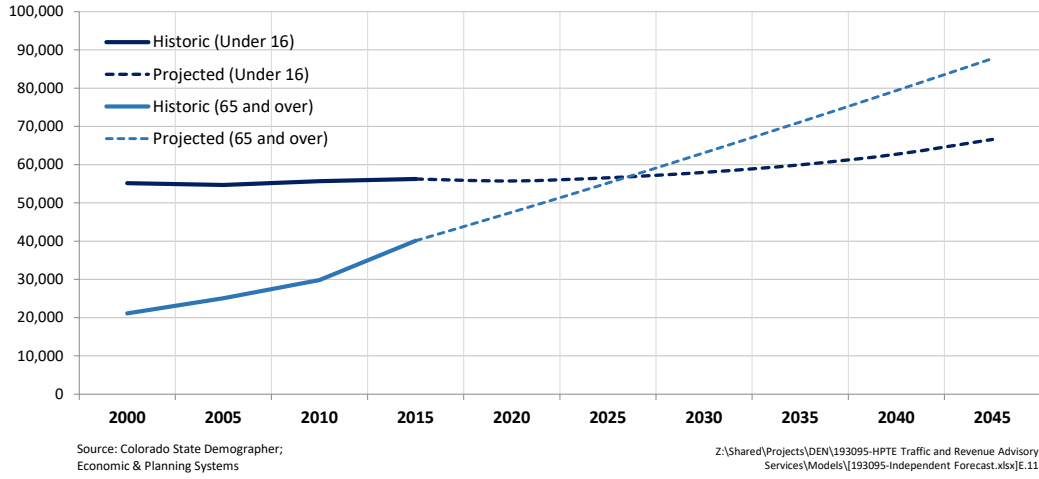


**Figure 121 Arapahoe County Projection of Non-Working Population**

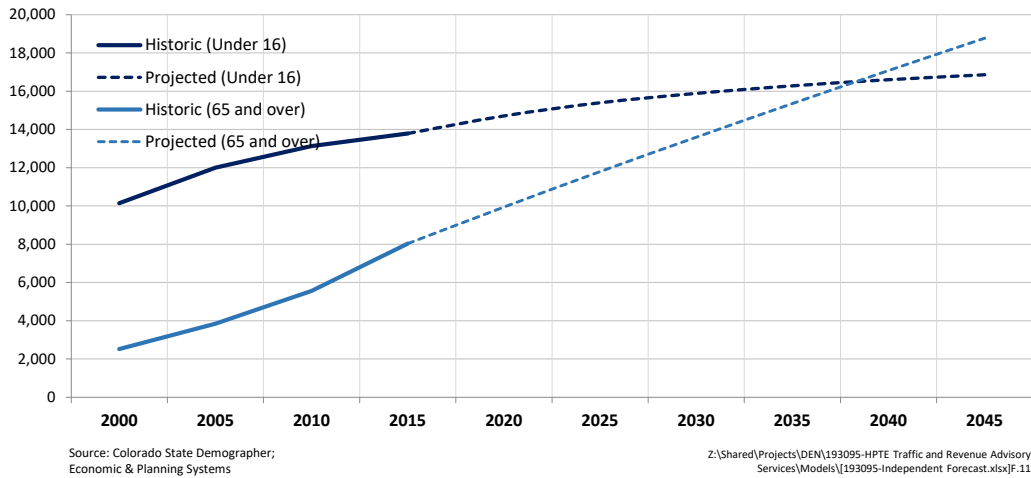




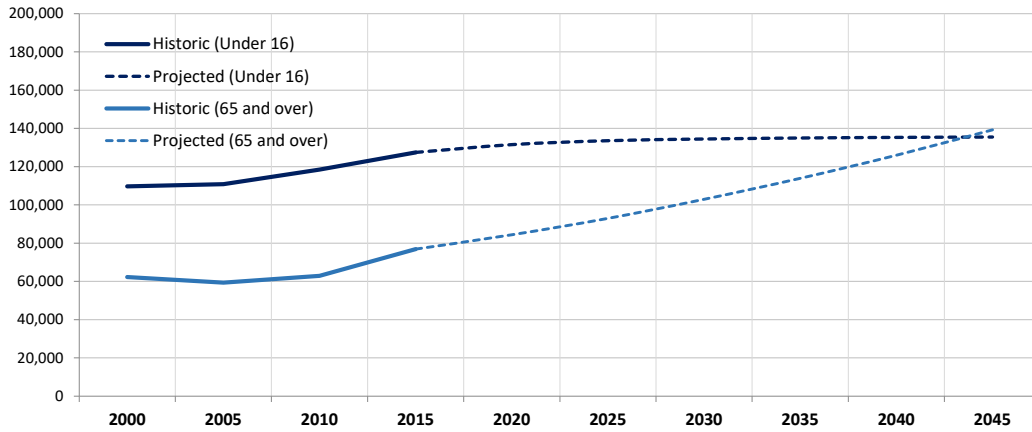
**Figure 122 Boulder County Projection of Non-Working Population**



**Figure 123 Broomfield County Projection of Non-Working Population**



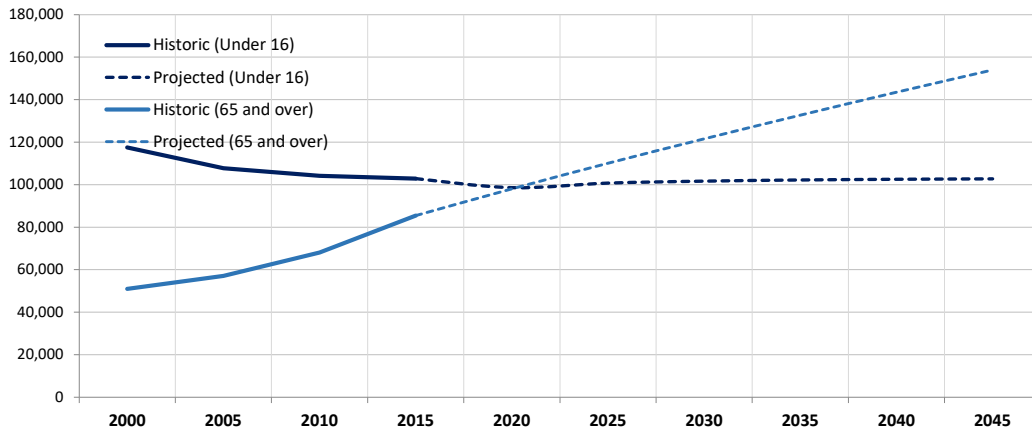
**Figure 124 Denver County Projection of Non-Working Population**



Source: Colorado State Demographer;  
Economic & Planning Systems

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Services\Models\193095-Independent Forecast.xlsx\H.11

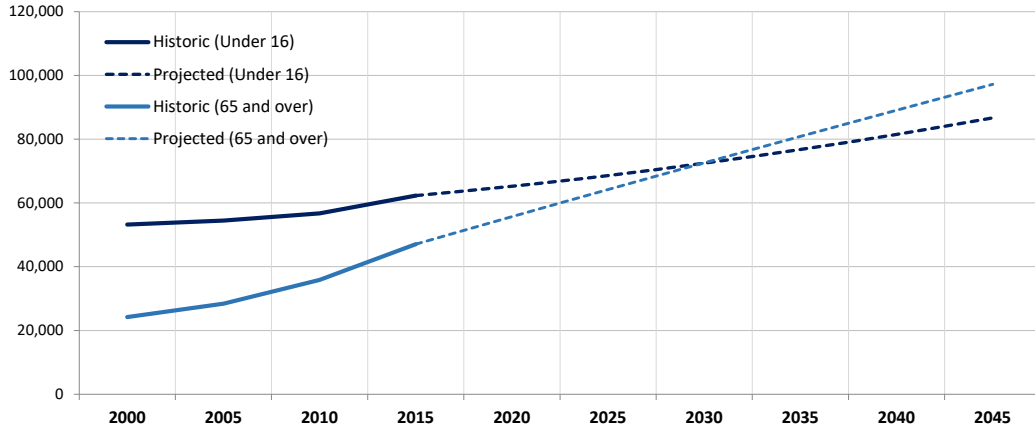
**Figure 125 Jefferson County Projection of Non-Working Population**



Source: Colorado State Demographer;  
Economic & Planning Systems

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Services\Models\193095-Independent Forecast.xlsx\N.11

**Figure 126 Larimer County Projection of Non-Working Population**

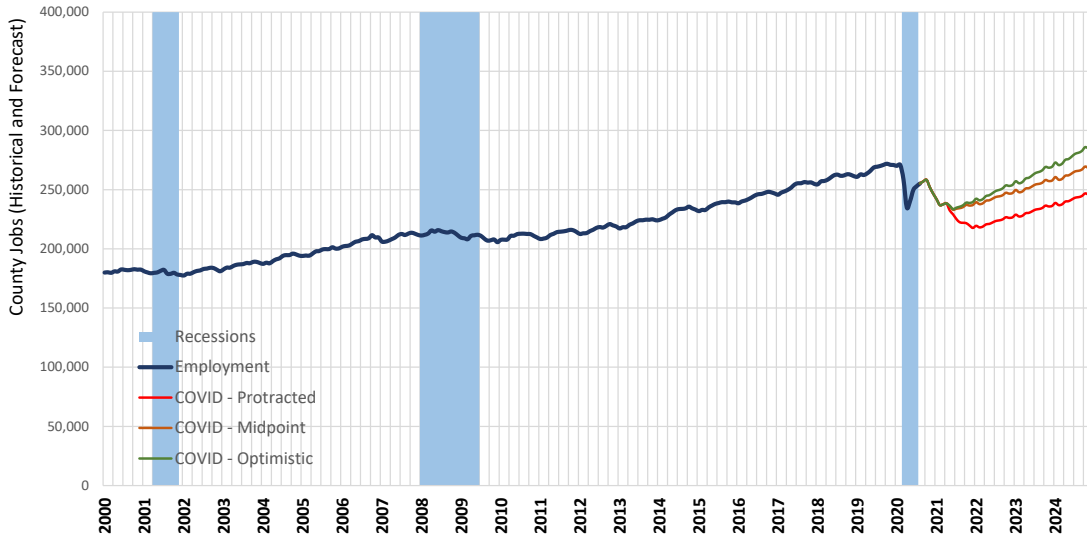


Source: Colorado State Demographer; Economic & Planning Systems

Z:\Shared\Projects\DEN\193095-HPTE Traffic and Revenue Advisory Services\Models\193095-Independent Forecast.xlsx\P.11

## Short-Term Jobs Forecast

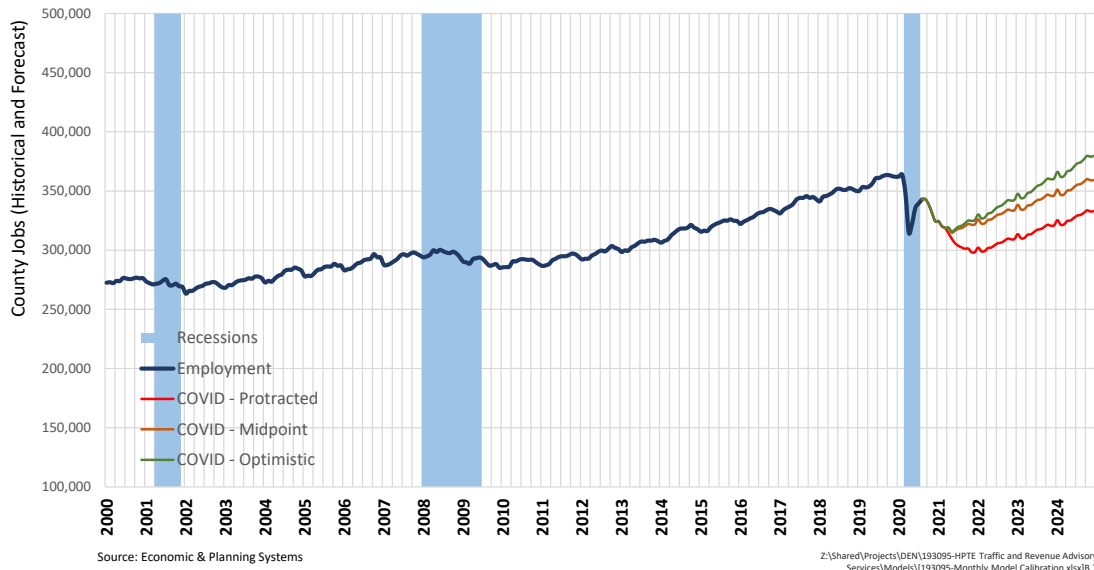
**Figure 127 Adams County Short-Term Jobs Forecast**



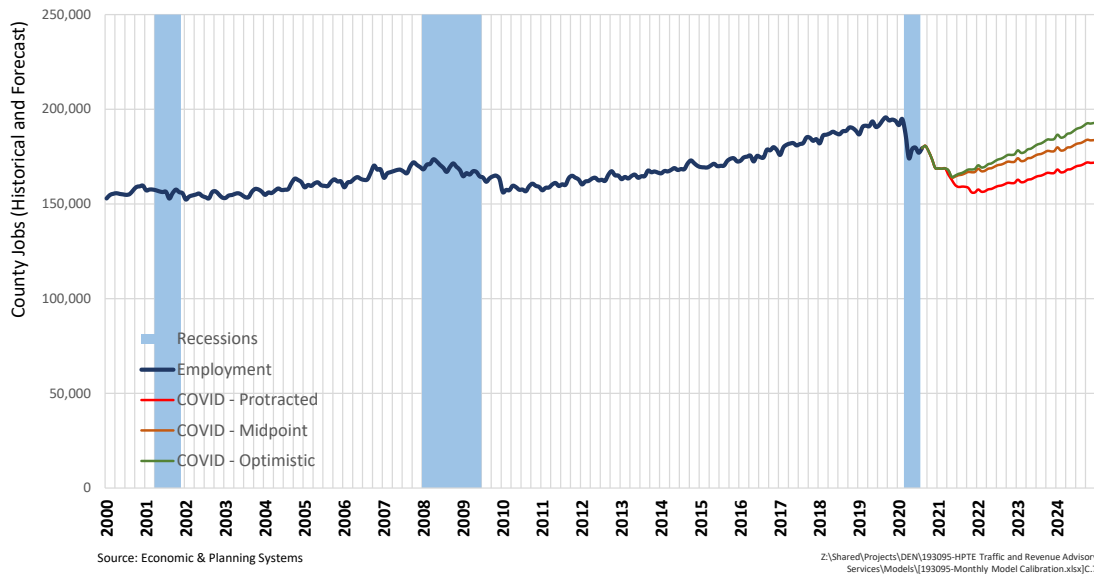
Source: Economic & Planning Systems

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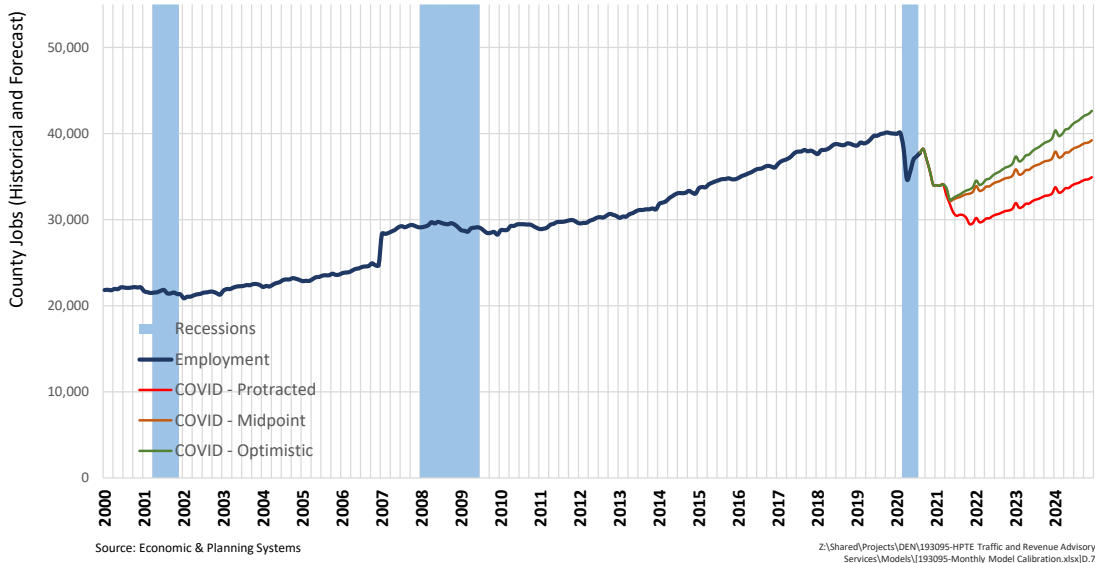
**Figure 128 Arapahoe County Short-Term Jobs Forecast**



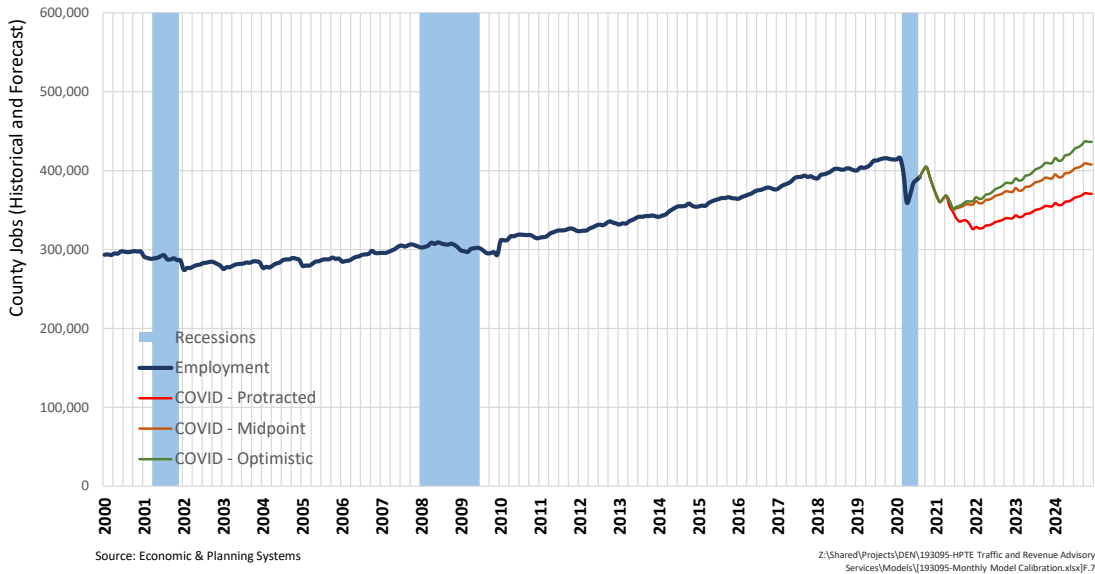
**Figure 129 Boulder County Short-Term Jobs Forecast**



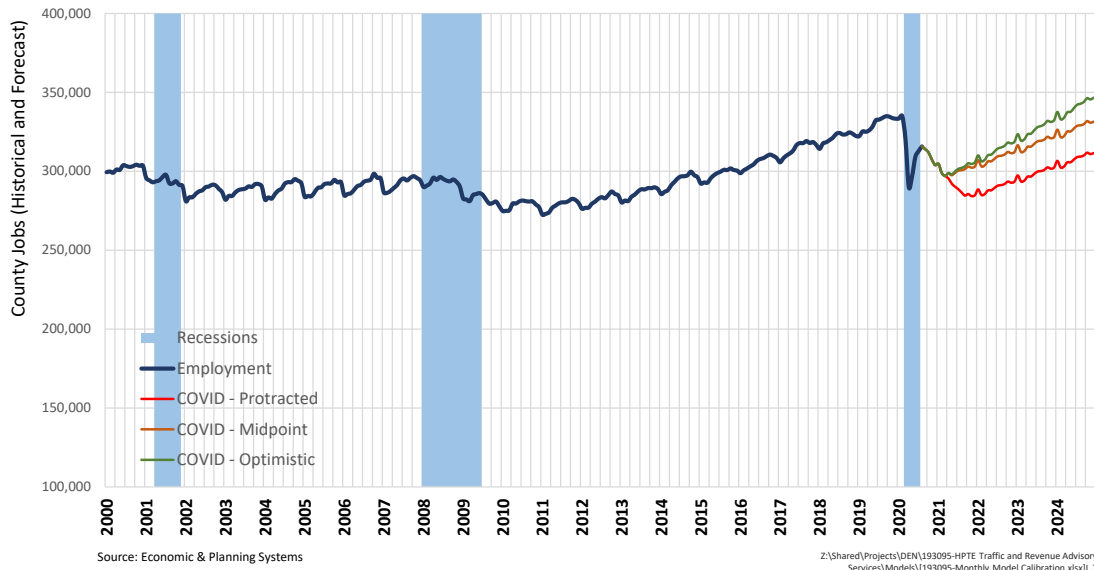
**Figure 130 Broomfield County Short-Term Jobs Forecast**



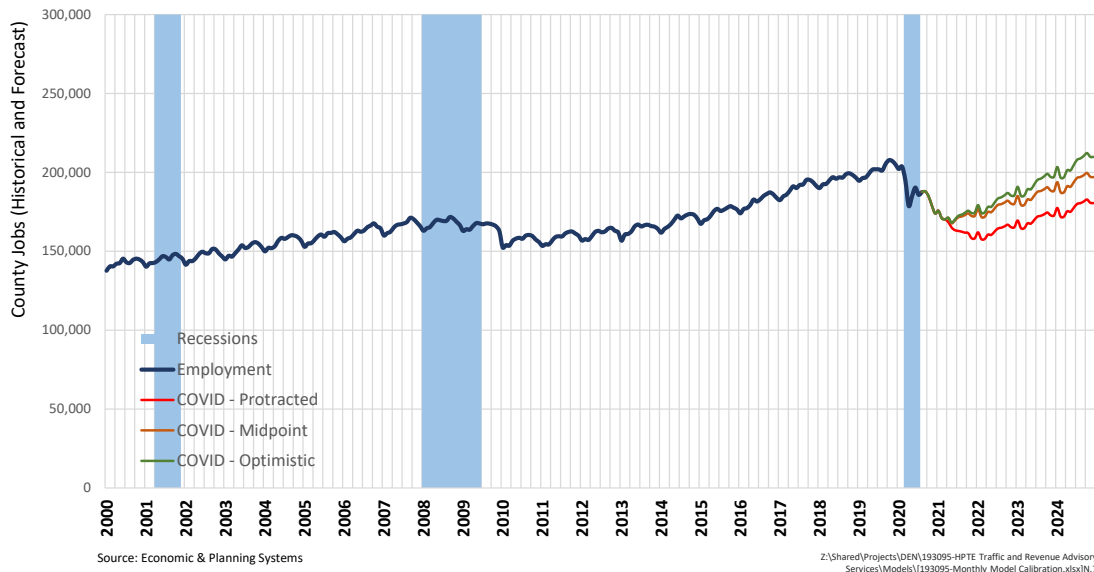
**Figure 131 Denver County Short-Term Jobs Forecast**



**Figure 132 Jefferson County Short-Term Jobs Forecast**



**Figure 133 Larimer County Short-Term Jobs Forecast**



## Short-Term Jobs Forecast Details

**Table 40 Adams County Short-Term Jobs Forecast**

	2019	2020	2021	2022	2023	2024	2025
<b>Jobs</b>							
COVID - Optimistic	261,529	252,084	237,463	247,767	262,788	278,861	296,082
COVID - Midpoint	261,529	252,084	236,486	242,816	253,237	264,194	275,726
COVID - Protracted	261,529	252,084	228,775	222,683	232,165	242,126	252,599
<b>as % of 2019</b>							
COVID - Optimistic	0.0%	-3.6%	-9.2%	-5.3%	0.5%	6.6%	13.2%
COVID - Midpoint	0.0%	-3.6%	-9.6%	-7.2%	-3.2%	1.0%	5.4%
COVID - Protracted	0.0%	-3.6%	-12.5%	-14.9%	-11.2%	-7.4%	-3.4%
<b>Peak-to-Trough and Recovery of Jobs (as % of Peak)</b>							
Great Recession	0.0%	-1.0%	-5.0%	-7.0%	-6.0%	-4.0%	-3.0%

Source: Economic & Planning Systems

**Table 41 Arapahoe County Short-Term Jobs Forecast**

	2019	2020	2021	2022	2023	2024	2025
<b>Jobs</b>							
COVID - Optimistic	351,278	336,404	321,152	335,093	352,759	371,422	391,146
COVID - Midpoint	351,278	336,404	319,691	328,814	341,112	353,916	367,253
COVID - Protracted	351,278	336,404	308,218	304,759	316,128	327,963	340,288
<b>as % of 2019</b>							
COVID - Optimistic	0.0%	-4.2%	-8.6%	-4.6%	0.4%	5.7%	11.3%
COVID - Midpoint	0.0%	-4.2%	-9.0%	-6.4%	-2.9%	0.8%	4.5%
COVID - Protracted	0.0%	-4.2%	-12.3%	-13.2%	-10.0%	-6.6%	-3.1%
<b>Peak-to-Trough and Recovery of Jobs (as % of Peak)</b>							
Great Recession	0.0%	-1.0%	-5.0%	-7.0%	-6.0%	-4.0%	-3.0%

Source: Economic & Planning Systems

**Table 42 Boulder County Short-Term Jobs Forecast**

	2019	2020	2021	2022	2023	2024	2025
<b>Jobs</b>							
COVID - Optimistic	187,196	179,928	167,244	172,840	180,786	189,123	197,871
COVID - Midpoint	187,196	179,928	166,578	169,989	175,528	181,265	187,210
COVID - Protracted	187,196	179,928	161,845	159,003	164,173	169,527	175,073
<b>as % of 2019</b>							
COVID - Optimistic	0.0%	-3.9%	-10.7%	-7.7%	-3.4%	1.0%	5.7%
COVID - Midpoint	0.0%	-3.9%	-11.0%	-9.2%	-6.2%	-3.2%	0.0%
COVID - Protracted	0.0%	-3.9%	-13.5%	-15.1%	-12.3%	-9.4%	-6.5%
<b>Peak-to-Trough and Recovery of Jobs (as % of Peak)</b>							
Great Recession	0.0%	-1.0%	-5.0%	-7.0%	-6.0%	-4.0%	-3.0%

Source: Economic & Planning Systems

**Table 43 Broomfield County Short-Term Jobs Forecast**

	2019	2020	2021	2022	2023	2024	2025
<b>Jobs</b>							
COVID - Optimistic	38,849	36,922	33,341	35,244	38,079	41,145	44,459
COVID - Midpoint	38,849	36,922	33,111	34,241	36,181	38,234	40,405
COVID - Protracted	38,849	36,922	31,541	30,499	32,227	34,056	35,991
<b>as % of 2019</b>							
COVID - Optimistic	0.0%	-5.0%	-14.2%	-9.3%	-2.0%	5.9%	14.4%
COVID - Midpoint	0.0%	-5.0%	-14.8%	-11.9%	-6.9%	-1.6%	4.0%
COVID - Protracted	0.0%	-5.0%	-18.8%	-21.5%	-17.0%	-12.3%	-7.4%
<b>Peak-to-Trough and Recovery of Jobs (as % of Peak)</b>							
Great Recession	0.0%	-1.0%	-5.0%	-7.0%	-6.0%	-4.0%	-3.0%

Source: Economic & Planning Systems

**Table 44 Denver County Short-Term Jobs Forecast**

	2019	2020	2021	2022	2023	2024	2025
<b>Jobs</b>							
COVID - Optimistic	400,822	387,830	360,375	374,842	399,242	425,513	453,849
COVID - Midpoint	400,822	387,830	358,771	366,635	383,284	400,820	419,307
COVID - Protracted	400,822	387,830	347,459	333,530	348,474	364,190	380,729
<b>as % of 2019</b>							
COVID - Optimistic	0.0%	-3.2%	-10.1%	-6.5%	-0.4%	6.2%	13.2%
COVID - Midpoint	0.0%	-3.2%	-10.5%	-8.5%	-4.4%	0.0%	4.6%
COVID - Protracted	0.0%	-3.2%	-13.3%	-16.8%	-13.1%	-9.1%	-5.0%
<b>Peak-to-Trough and Recovery of Jobs (as % of Peak)</b>							
Great Recession	0.0%	-1.0%	-5.0%	-7.0%	-6.0%	-4.0%	-3.0%

Source: Economic & Planning Systems

**Table 45 Jefferson County Short-Term Jobs Forecast**

	2019	2020	2021	2022	2023	2024	2025
<b>Jobs</b>							
COVID - Optimistic	322,474	310,688	301,634	313,104	326,516	340,559	355,269
COVID - Midpoint	322,474	310,688	300,517	308,331	317,726	327,449	337,513
COVID - Protracted	322,474	310,688	291,098	289,866	298,672	307,782	317,210
<b>as % of 2019</b>							
COVID - Optimistic	0.0%	-3.7%	-6.5%	-2.9%	1.3%	5.6%	10.2%
COVID - Midpoint	0.0%	-3.7%	-6.8%	-4.4%	-1.5%	1.5%	4.7%
COVID - Protracted	0.0%	-3.7%	-9.7%	-10.1%	-7.4%	-4.6%	-1.6%
<b>Peak-to-Trough and Recovery of Jobs (as % of Peak)</b>							
Great Recession	0.0%	-1.0%	-5.0%	-7.0%	-6.0%	-4.0%	-3.0%

Source: Economic & Planning Systems



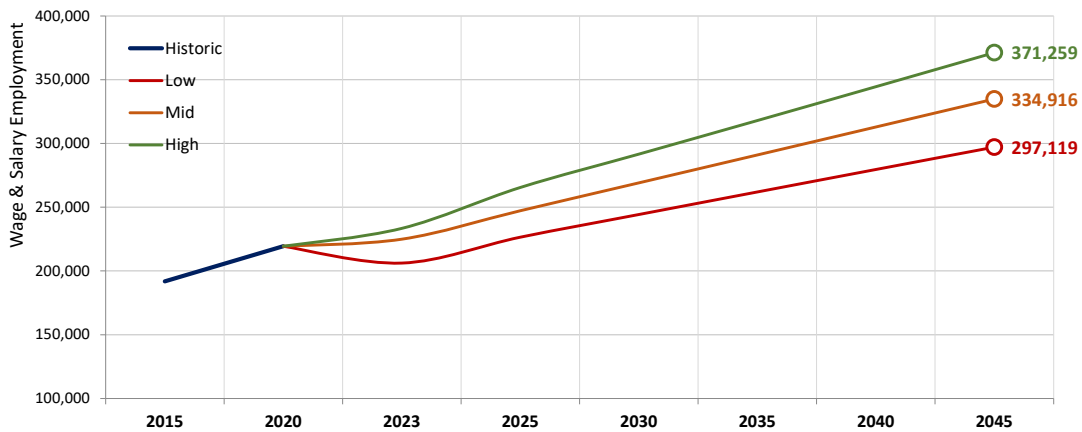
**Table 46 Larimer County Short-Term Jobs Forecast**

	2019	2020	2021	2022	2023	2024	2025
<b>Jobs</b>							
COVID - Optimistic	196,721	187,315	172,520	181,286	192,820	205,253	218,682
COVID - Midpoint	196,721	187,315	171,633	177,421	185,547	194,159	203,300
COVID - Protracted	196,721	187,315	164,869	162,720	170,096	177,904	186,182
<b>as % of 2019</b>							
COVID - Optimistic	0.0%	-4.8%	-12.3%	-7.8%	-2.0%	4.3%	11.2%
COVID - Midpoint	0.0%	-4.8%	-12.8%	-9.8%	-5.7%	-1.3%	3.3%
COVID - Protracted	0.0%	-4.8%	-16.2%	-17.3%	-13.5%	-9.6%	-5.4%
<b>Peak-to-Trough and Recovery of Jobs (as % of Peak)</b>							
Great Recession	0.0%	-1.0%	-5.0%	-7.0%	-6.0%	-4.0%	-3.0%

Source: Economic & Planning Systems

### Long-Term Jobs Forecast

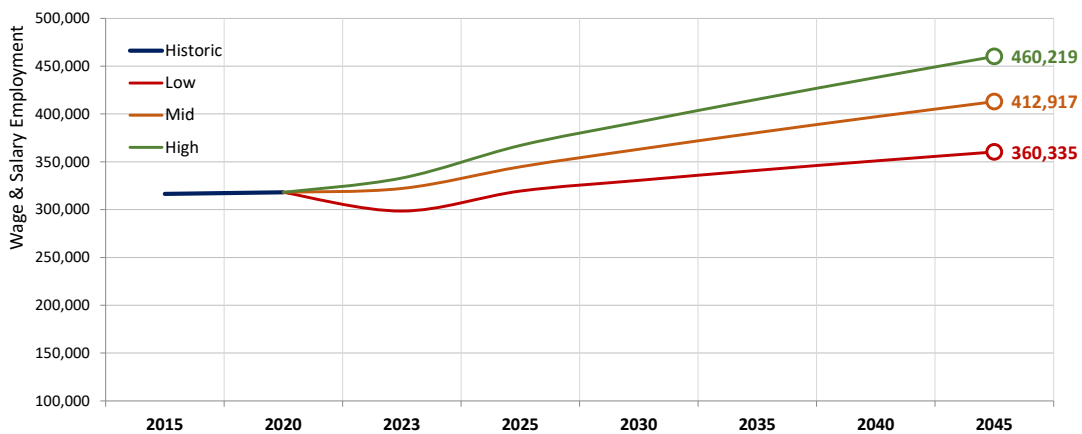
**Figure 134 Adams County Long-Term Jobs Forecast**



Source: Economic & Planning Systems

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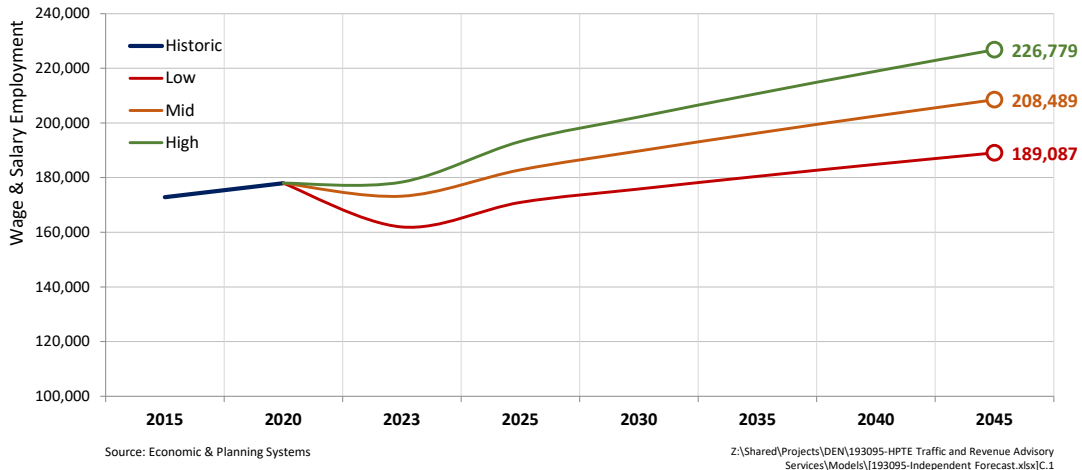
**Figure 135 Arapahoe County Long-Term Jobs Forecast**



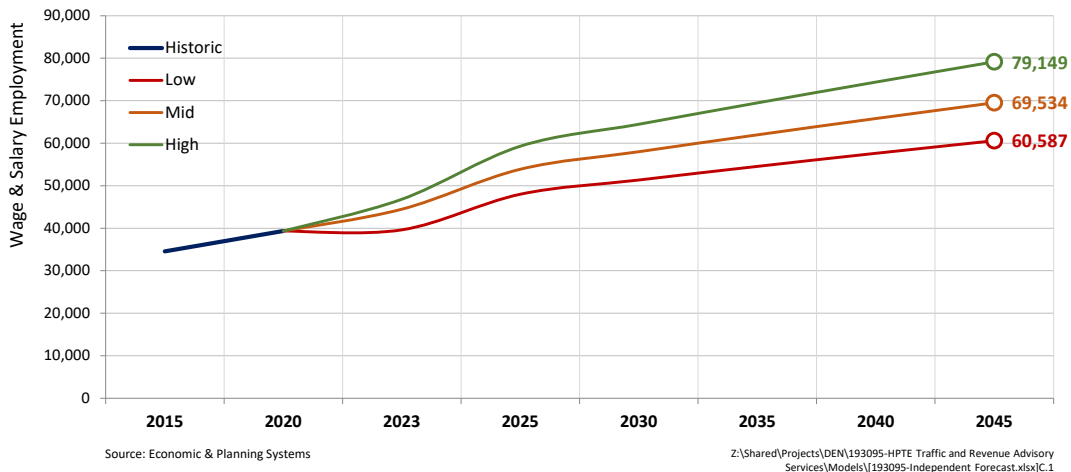
Source: Economic & Planning Systems

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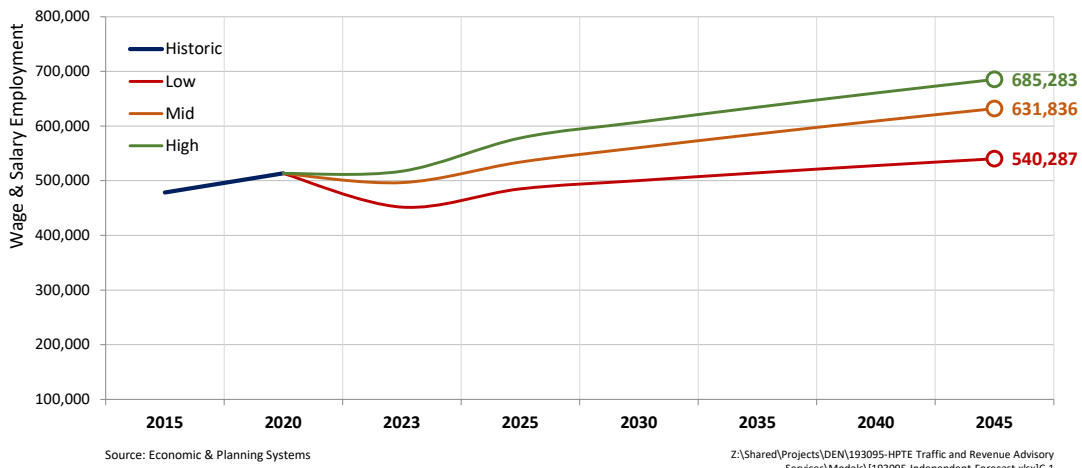
**Figure 136 Boulder County Long-Term Jobs Forecast**



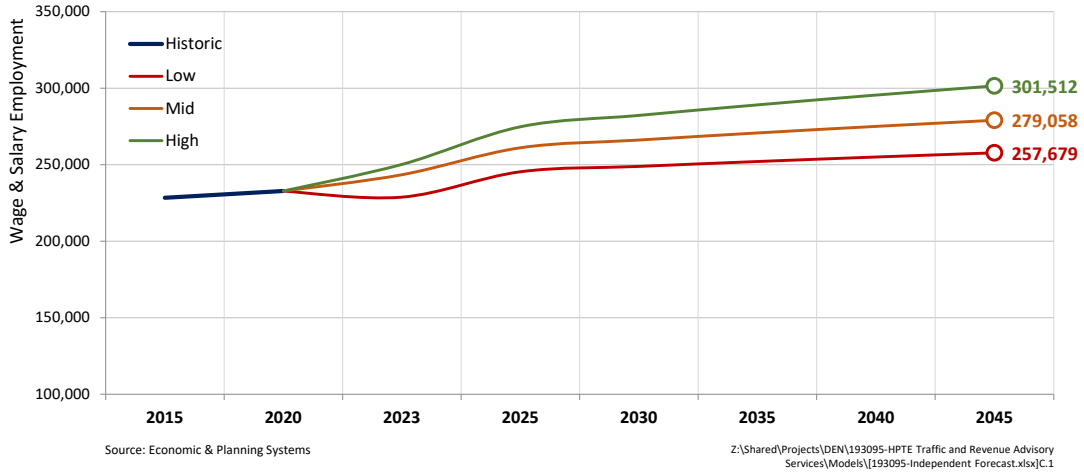
**Figure 137 Broomfield County Long-Term Jobs Forecast**



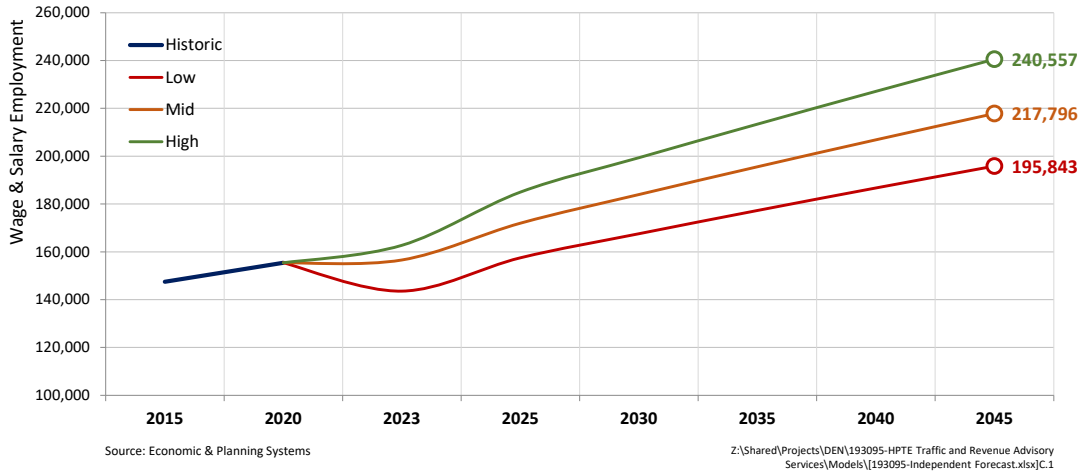
**Figure 138 Denver County Long-Term Jobs Forecast**



**Figure 139 Jefferson County Long-Term Jobs Forecast**

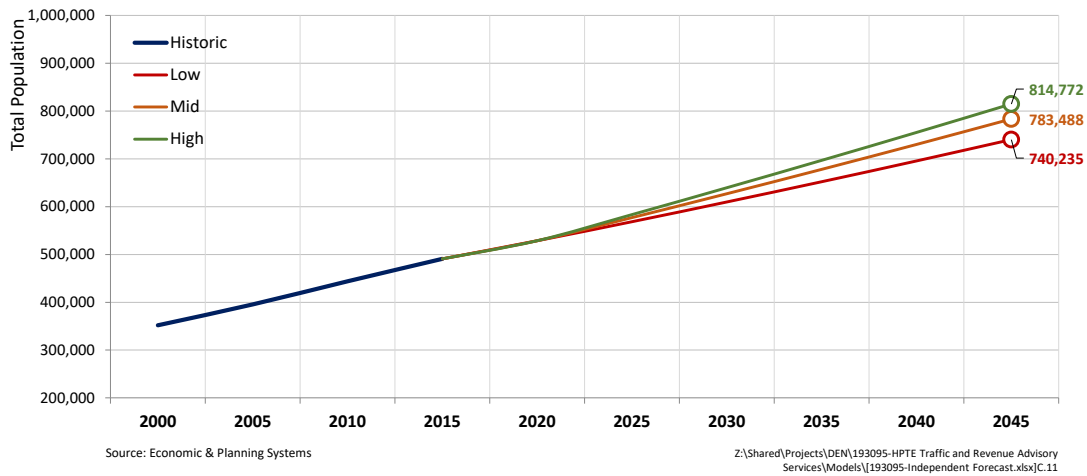


**Figure 140 Larimer County Long-Term Jobs Forecast**

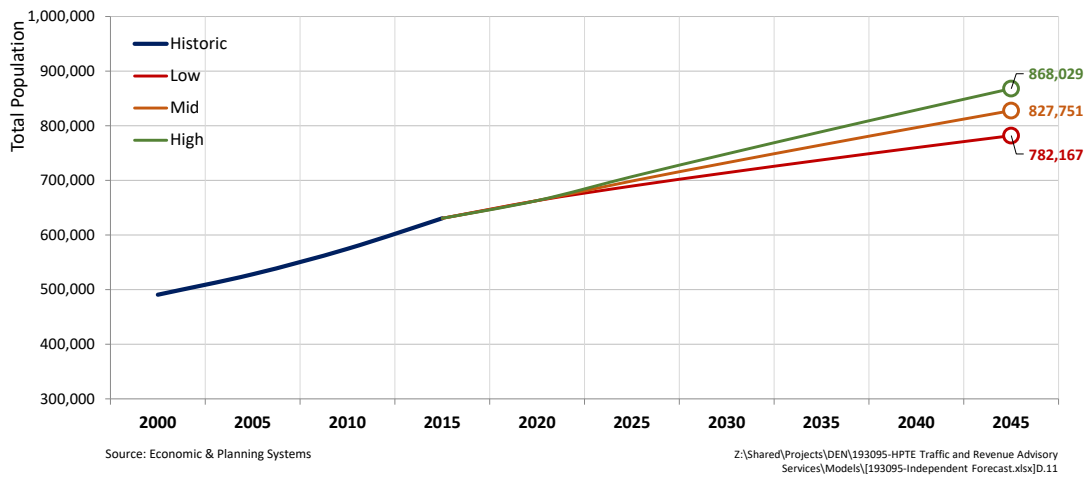


## Total Population

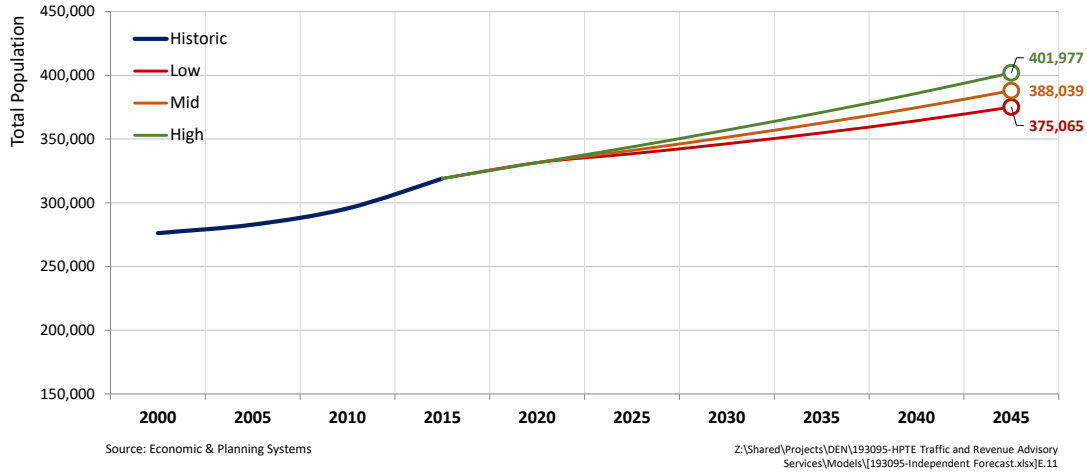
**Figure 141 Adams County Projection of Population**



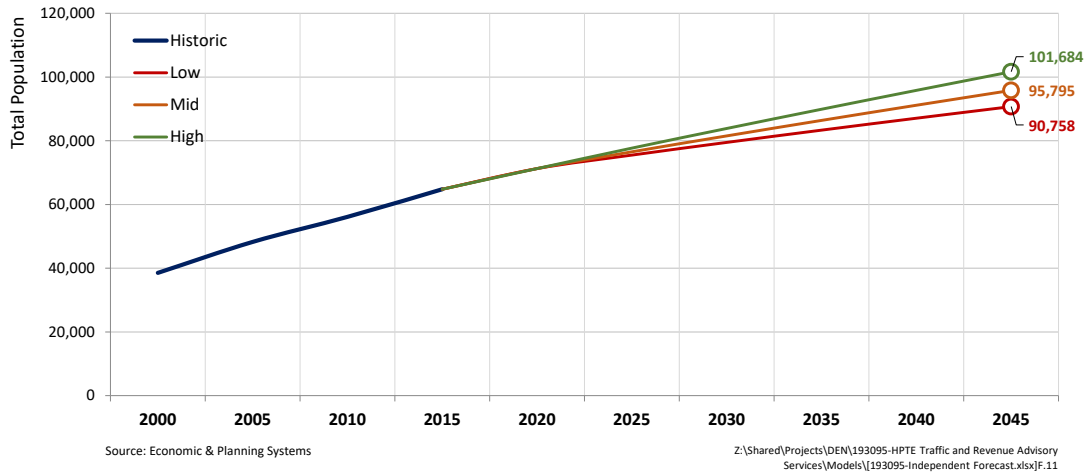
**Figure 142 Arapahoe County Projection of Population**



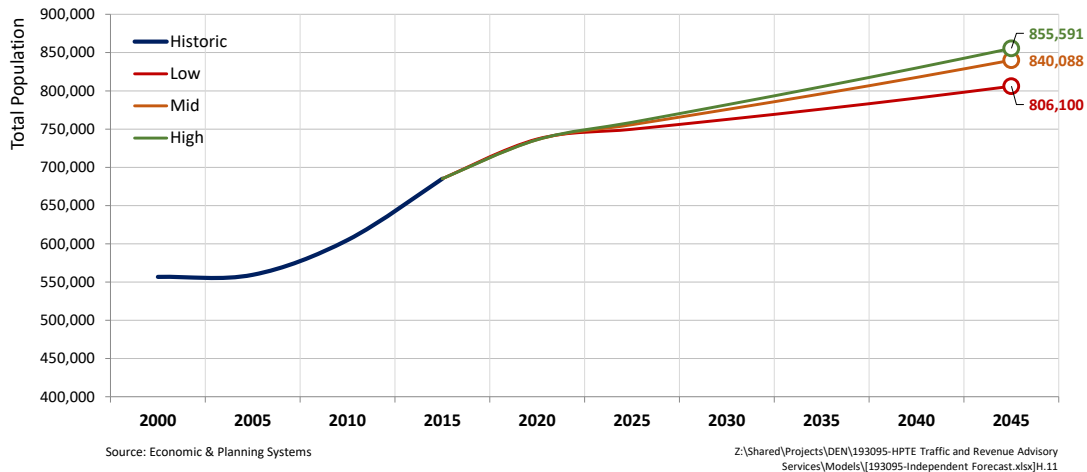
**Figure 143 Boulder County Projection of Population**



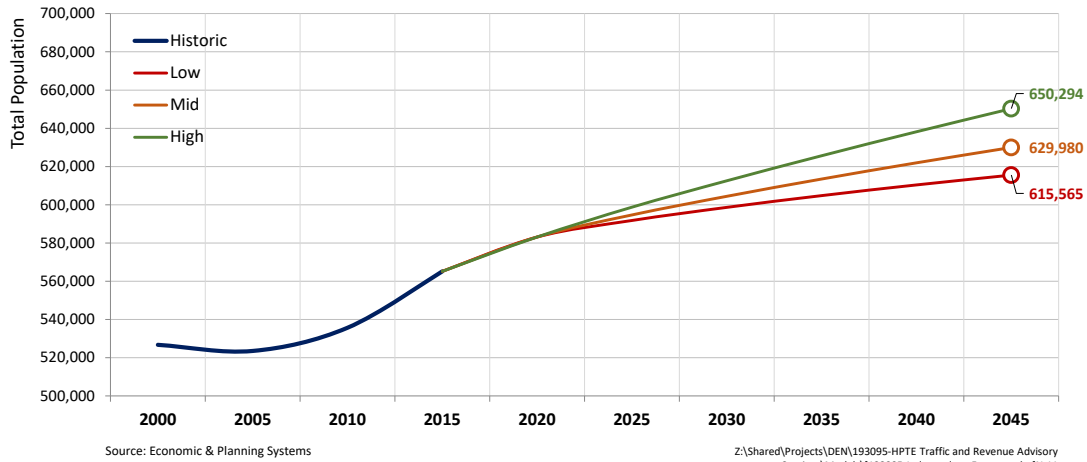
**Figure 144 Broomfield County Projection of Population**



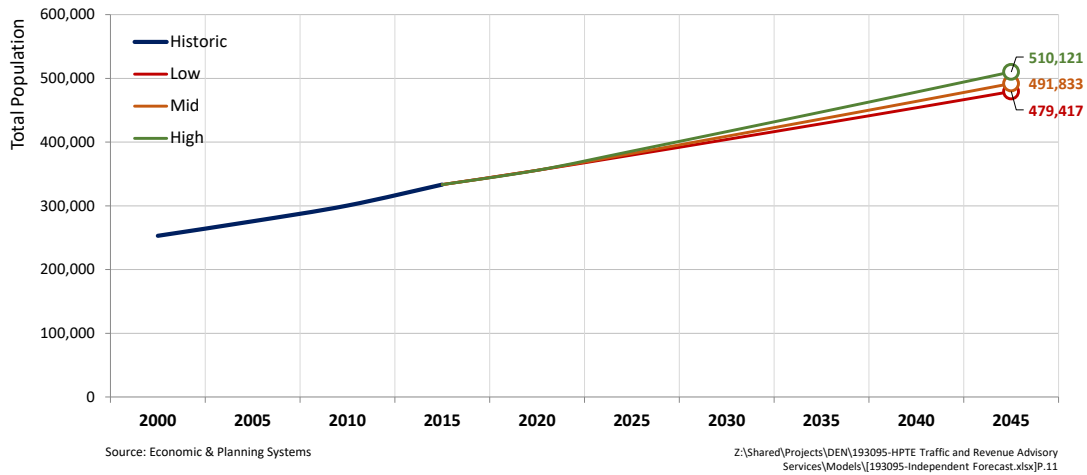
**Figure 145 Denver County Projection of Population**



**Figure 146 Jefferson County Projection of Population**



**Figure 147 Larimer County Projection of Population**



## Employment Sector Assumptions

In the historical trends analysis, and for the purpose of projecting growth by employment sector, the following (**Table 47**) supersector definitions were used.

**Table 47 Industry Supersector Definitions**

	NAICS Code
<b><u>Production Sector</u></b>	
Agriculture, Forestry, Fishing and Hunting	11
Mining	21
Utilities	22
Construction	23
Manufacturing	31-33
Wholesale Trade	42
<b><u>Service Sector</u></b>	
Transportation and Warehousing	48-49
Information	51
Finance and Insurance	52
Real Estate and Rental and Leasing	53
Professional, Scientific, and Technical Companies	54
Management of Companies and Enterprises	55
Administrative and Support and Waste Management	56
Health Care and Social Assistance	62
Other Services (except Public Administration)	81
Public Administration	92
<b>Education Sector</b>	61
<b>Entertainment Sector</b>	71
<b>Restaurant Sector</b>	722
<b><u>Retail Sector</u></b>	
Retail Trade	44-45
Accommodation	721

Source: Economic & Planning Systems

# SH 119 Traffic Analysis Technical Report

**Prepared for:**

**SH 119 Project Team**

**Prepared by:**

**apexdesign**

a  CONSOR company

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Apex Design Reference No. P190359, TO01

**December 10, 2021**



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## 1. Executive Summary

The purpose of this report is to document the micro-simulation traffic analysis performed in support of the State Highway (SH) 119 (Boulder to Longmont) Project. Once Existing Conditions and No Build models were developed, the first decision point was to determine what intersection configuration to move forward with at the SH 119 and SH 52 intersection since this intersection is known to be the main bottleneck along the corridor today. It was determined to move forward with a split intersection maintaining two lanes along SH 119 through the SH 52 intersection. Following that decision, additional baseline corridor improvements were analyzed and it was determined to include the Hover Road grade separated intersection that Longmont is working toward implementing and the addition of both a signal and dual northbound left-turn lanes at the northbound Airport Road intersection as baseline improvements along the corridor. The Baseline corridor improvements were found to show significant improvements over the future No Build scenario. Five corridor alternatives were then analyzed, which all included the baseline improvements. The five alternatives analyzed included Transit Slip Lanes, 3 General Purpose Lanes, Tolloed Express Lanes At-Grade (Add Lane), Tolloed Express Lanes At-Grade (Lane Conversion), and Tolloed Express Lanes (Grade Separation). Each of the five alternatives showed improvements for transit operations along the corridor. Only the 3 General Purpose Lanes and Tolloed Express Lanes At-Grade (Lane Conversion) alternatives showed notable negative impacts to general traffic. As expected, the alternatives with added lane capacity resulted in increased throughput of vehicles and people; these included the 3 General Purpose Lanes, Tolloed Express Lanes At-Grade (Add Lane), and Tolloed Express Lanes (Grade Separation) alternatives. Further review of the travel time in these scenarios showed that the speeds along SH 119 were lower than the baseline model as a result of induced demand from the new through travel lanes and a newly created bottleneck in the southern end of the corridor. This result indicates an over-inducement of new demand along SH 119 in the travel demand model that cannot be handled by the traffic signals and through laneage in the VISSIM model. It should be noted that induced demand along SH 119 is not necessarily new trips, but rather diverted trips from elsewhere (most notably US 36, 55<sup>th</sup> Street, 63<sup>rd</sup> Street, and US 287). The general finding is that these alternatives perform worse than the similar add lane scenarios which preserve the added capacity at signals in the southern end of the corridor. The following describes the detailed analysis performed and summarizes the detailed results from this technical analysis.

## 2. Analysis Overview

### **Software Packages**

The traffic analysis was mostly performed using VISSIM micro-simulation software. VISSIM was chosen for the analysis because it allows for accurate general traffic, transit, and tolloed express lane operations within an entire network. This is also useful for analysis of closely spaced intersections where queues impact adjacent intersections, such as those in the existing condition along SH 119, as well as tolloed express lane operations. Synchro traffic analysis

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software was used to supplement the analysis and for adjusting the traffic signal timings in the future conditions.

## ***Analysis Area***

The area analyzed consisted of SH 119 from west of the Foothills Parkway intersection to east of the Hover Road intersection. The intersections analyzed included the following, as shown in Figure 1.

- SH 119 / Foothills Parkway
- SH 119 / 47th Street
- SH 119 / Jay Road
- SH 119 / 63rd Street
- SH 119 / SH 52 (Mineral Road)
- SH 119 / Niwot Road
- SH 119 / Airport Road
- SH 119 / Hover Road

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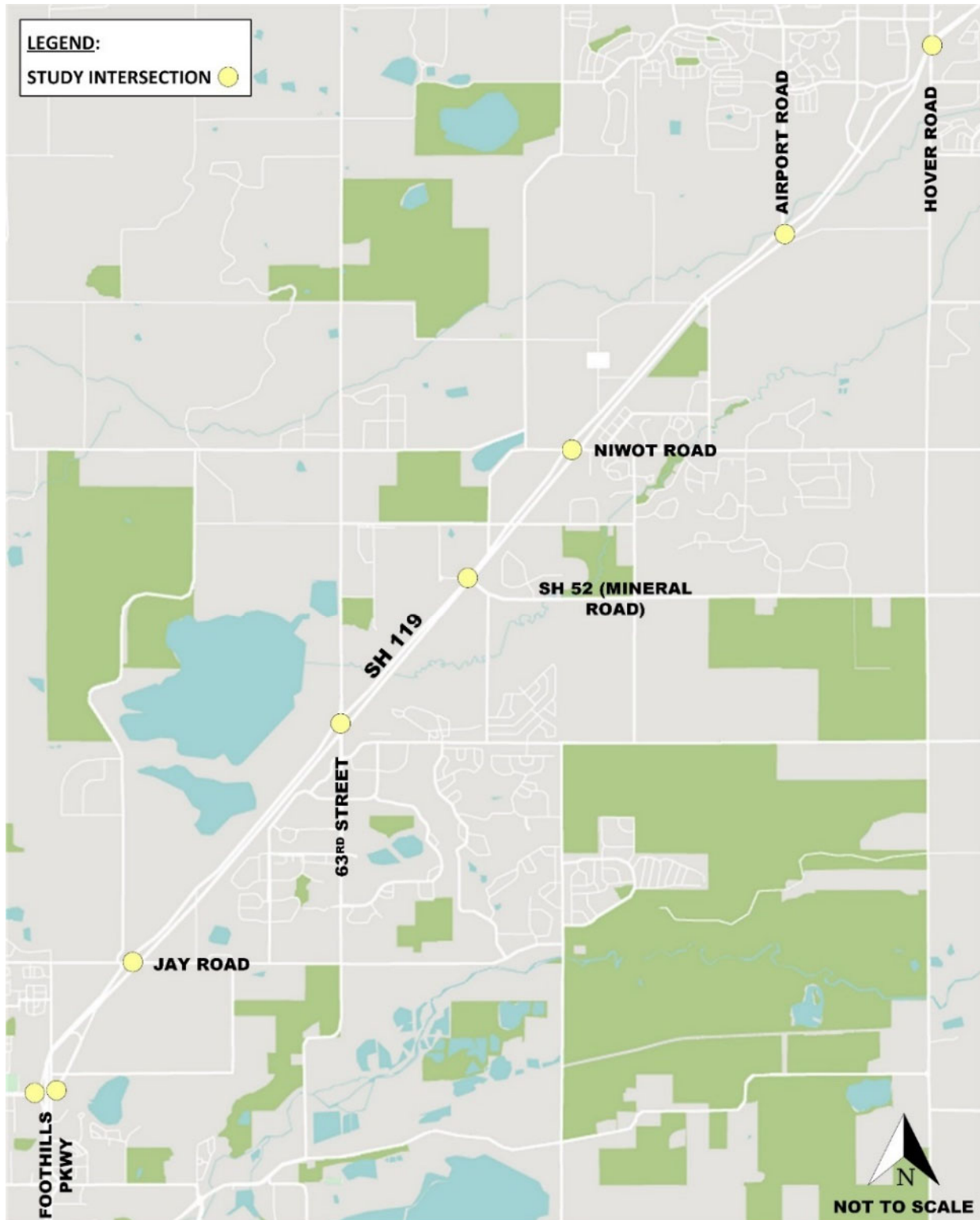


Figure 1: SH 119 VISSIM Study Area Map

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## 3. VISSIM Existing Conditions Models

The first two key steps in the VISSIM modeling methodology involved coding and then calibrating the Existing Conditions Models. For this study, the Existing Conditions Models reflect the current lane geometry within the study area. The VISSIM Existing Conditions Models were calibrated to 2019 peak hour conditions based on available data and include both AM (6 AM – 1 PM) and PM (1 PM – 8 PM) peak period models. One hour seeding periods were used for each model to allow traffic to populate the model before data was extracted. Table 1 outlines data that was used to code and calibrate the Existing Conditions Models:

**Table 1: Existing Conditions Data Summary**

Data Category	Data Source
<b>Mainline Traffic Counts</b>	<ul style="list-style-type: none"> <li>• All Traffic Data collected 24 hour mainline traffic counts on December 3 &amp; 4, 2019 at the following locations:               <ul style="list-style-type: none"> <li>○ North of Jay Road</li> <li>○ South of Hover Road</li> <li>○ North of SH 52 (Mineral Road)</li> <li>○ North of Niwot Road</li> </ul> </li> </ul>
<b>Mainline Speed Data</b>	<ul style="list-style-type: none"> <li>• All Traffic Data collected 24 hour highway speed data on December 3 &amp; 4, 2019 at the same locations as the mainline traffic counts.</li> </ul>
<b>Mainline Travel Times</b>	<ul style="list-style-type: none"> <li>• IDAX collected 24-hour travel time data for two weeks in 2018 from April 15 – 29.</li> <li>• INRIX data was pulled from December 3 &amp; 4, 2019.</li> <li>• Apex performed field work in early December 2019 including travel time runs using a stopwatch while driving the corridor, but not doing statistically valid travel time runs to validate the IDAX and INRIX data.</li> </ul>
<b>Intersection Turning Movement Counts</b>	<ul style="list-style-type: none"> <li>• All Traffic Data collected AM and PM peak period turning movement counts on December 3 &amp; 4, 2019 at all of the study intersections.</li> </ul>
<b>Queue Length Observations</b>	<ul style="list-style-type: none"> <li>• Apex performed field work in the first two weeks of December 2019 to document observed queue lengths at all of the study intersections during the AM and PM peak periods.</li> </ul>
<b>Transit Routes</b>	<ul style="list-style-type: none"> <li>• Existing transit routes and stops, including Route J and Route BOLT, were coded into the models based on RTD’s pre-COVID posted schedule. RTD’s available TriTapt data from January thru May 2017 was used to calibrate existing transit travel times.</li> </ul>
<b>Signal Timing</b>	<ul style="list-style-type: none"> <li>• Existing signal timing was provided by the appropriate agencies.</li> </ul>
<b>Origin/Destination Data</b>	<ul style="list-style-type: none"> <li>• Origin/Destination data was obtained from Streetlight which included aggregated data between February 2019 through January 2020.</li> </ul>
<b>Freight Trains Adjacent to SH 119</b>	<ul style="list-style-type: none"> <li>• Data based on FRA U.S. DOT Crossing Inventory Form.</li> </ul>

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## **Origin & Destination Matrix**

Trip origin-destination matrices for VISSIM modeling were developed to replicate 2019 turning movement count data collected in December 2019 for each of the study hours during the AM and PM peak periods. This process was informed by regional travel pattern characteristics collected from the Streetlight data purchase which included aggregated data from February 2019 through January 2020. The Streetlight data was queried to understand the regional trip flows using the SH 119 corridor and specifically targeted long distance commuter trip making originating in southern Larimer and Weld Counties and destined for the Boulder County area.

## **VISSIM Existing Model MOEs**

Once the initial coding of the base models was complete, measures of effectiveness (MOEs) were extracted from the peak hour and compared to the available existing field data to determine if acceptable levels were achieved.

The following MOEs have been reported for each VISSIM model:

- Intersection operations: Vehicular delay, level of service, maximum queue lengths, and average queue lengths.
- Vehicular travel times: Average travel times for vehicles traveling through the corridor from Jay Road to Airport Road in both directions.
- Transit travel times: Average travel times for the BOLT Route for Jay Road to Airport Road in both directions.
- Speed: Vehicular speeds at four locations on the corridor (north of Jay Road, north of SH 52 (Mineral Road), north of Niwot Road, and south of Hover Road) in both directions.

To account for variability in the model and obtain more statistically accurate results, a total of 15 model runs were performed for each simulation model and averaged. Guidance provided in CDOT's Traffic Analysis and Forecasting Guidelines July 2018 (Guidelines) was used to determine acceptable thresholds for model calibration. When large discrepancies were found, the model parameters were adjusted through an iterative process to obtain acceptable results. This calibration step was critical to ensure that the VISSIM models reflect field conditions in the study area and provide accurate results of the proposed changes.

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## **Calibration Results**

The model calibration process focused on four key calibration metrics in the peak hour to determine when the simulation accurately reflected field operations. The process included the following metrics, which are discussed in more detail in this section.

- Traffic Volume Served
- Vehicle and Transit Travel Times
- Travel Speeds
- Maximum Queue Lengths

### Traffic Volume Served

Based on the CDOT Guidelines, the simulated model was calibrated relative to traffic volume served. The model was adjusted until 85% of the simulated traffic volume served was within the model calibration targets for turning movement counts. The following are the model calibration targets, as outlined by CDOT:

- For < 700 vph, within  $\pm 100$  vph of observed traffic volumes
- For 700 to 2,700 vph, within  $\pm 15\%$  of observed traffic volumes
- For >2,700 vph, within  $\pm 400$  vph of observed traffic volumes

Table 2 shows the number of data points that were reviewed for intersection volumes and the percent of the data points that met the calibration targets. Appendix A provides additional detail regarding specific simulated values for the intersection turning movement counts compared to the target values.

**Table 2: Intersection Volume Calibration**

Peak Period	Total Movements	# Target Met	% Target Met
AM	99	99	100%
PM	99	99	100%

### Vehicle and Transit Travel Times

The simulated model was also calibrated relative to travel time. The model was adjusted until 85% of the simulated travel times were within the model calibration targets. The following are the model calibration targets, as outlined by the CDOT Guidelines:

- Within  $\pm 1$  minute of observed travel times for routes less than 7 minutes
- Within 15% of observed travel times for routes more than 7 minutes

Table 3 and Table 4 show the number of travel time routes that were reviewed within the model and the percent of those routes that met the calibration targets for vehicular traffic and transit, respectively. Appendix B provide additional detail regarding specific simulated values compared to the target values.

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**Table 3: Vehicle Travel Time Calibration**

Peak Period	Total Routes	# Target Met	% Target Met
AM	2	2	100%
PM	2	2	100%

**Table 4: Transit Travel Time Calibration**

Peak Period	Total Routes	# Target Met	% Target Met
AM	2	2	100%
PM	2	1	50% <sup>1</sup>

1. The northbound transit travel times in the PM do not meet the calibration target based on RTD TriTapt Data from the January 2017 Run Board for the Bolt route. However, comparing 2017 vehicular travel times to 2017 transit travel times, it is reasonable that northbound transit travel times would be approximately 3 minutes longer than vehicular traffic travel times, which is in line with the 2019 model results.

## Travel Speeds

Simulation travel speeds were also taken into account during the calibration process. The model was adjusted until 85% of the simulated speeds were within the model calibration target. The following is the model calibration target, as outlined by the CDOT Guidelines:

- Within  $\pm 10$  miles per hour (mph) of average observed speeds

Table 5 shows the number of speeds reviewed within the model and the percent of those locations that met the calibration targets. Appendix C provides additional detail regarding specific simulated speed values compared to the target values.

**Table 5: Travel Speeds Calibration**

Peak Period	Total Locations	# Target Met	% Target Met
AM	8	7	88%
PM	8	7	88%

## Maximum Queue Lengths

Lastly, simulated maximum queue lengths were reviewed and compared to recorded maximum queues observed during a visual audit of the corridor in December 2019. The model was adjusted until each of the mainline movements were within the model calibration target, or an explanation could be provided as to why these targets were not being hit. The peak hour and the hour following were both used when calibrating maximum queue lengths since some locations experience maximum queues that carry over into the next hour.



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The following is the model calibration target for arterials, as outlined by the CDOT Guidelines. The only options available for queue length calibration are arterial and freeway, and because the corridor is signalized the arterial requirements were used. Observed maximum queue length (ft) within:

- On arterials:  $\pm 20\%$

Appendix D provides additional detail regarding specific simulated values compared to the target values. Because not all mainline movements were able to be calibrated within target values, notes have been provided within Appendix D for reference during alternatives analysis. Specific instances where queue lengths do not fall within the allowable tolerances frequently occurred at locations where an additional third lane is currently installed approaching a traffic signal, and is dropped soon after the intersection. In these instances, the lane utilization in this third lane is much lower than the other two through lanes, causing observed longer queues approaching the intersection than occurred in the VISSIM model. This is a limitation of VISSIM software which does not allow for unique approach lane utilization at intersections and is common to the existing calibrated model and subsequent alternatives evaluations, which forecast better performance than would likely be observed in the field.

### Parameter Adjustments for Calibration

In order to meet the calibration targets, Table 6 shows the parameters that were adjusted as part of the model calibration process.

**Table 6: Calibration Parameters Adjusted (Arterial Car Following Model)**

Parameter	Default Value	Range Used
<b>Average Standstill Distance (ft)</b>	6.56	3.28 - 10 <sup>1</sup>
<b>Additive Part of Safety Distance</b>	2	2 – 2.2
<b>Multiplicative Part of Safety Distance</b>	3	2.8 - 3.3

1. Field observations support that average standstill distance at some locations on the corridor are longer than the typical range used in modeling.

Additional Parameters that were adjusted included the following:

- Cooperative Lane Change was activated to correct merging and diverging behaviors.
- Speed Distributions to more accurately match the speeds of vehicles during free flow conditions.
- Connector Lane Change Distances to reduce last minute lane changes within congested areas.

## 4. VISSIM 2045 No Build Models

Once the calibration for the VISSIM Existing Conditions Models was confirmed with HPTE and CDOT Region 4, the base VISSIM models were updated to simulate 2045 conditions. This process used 2045 volumes provided by CDM Smith. The No Build Models assumed a condition where no geometric changes were made to the SH 119 corridor.

### ***Travel Demand Modeling***

After discussions with the HPTE project team and CDOT Modeling Staff, it was determined that the travel demand modeling for the study would be completed using the CDOT statewide model. The study corridor is located within the Denver Regional Council of Governments (DRCOG) model area at the northern boundary, and it is known through regional Streetlight origin-destination data purchased for the project that the majority of travelers along the corridor start and end within the DRCOG model area or the North Front Range Metropolitan Planning Area (NFR MPO). In order to ensure regional trip making is accounted for from the NFR MPO, the group determined that the CDOT statewide travel demand model is the appropriate tool for this study.

The CDOT model is calibrated to 2015 and includes a forecast year of 2045. In order to establish travel demand model runs consistent with the project goals, CDM Smith worked with CDOT to update the road network and socioeconomic data within the SH 119 influence area to develop a 2019 base year model which was then calibrated to traffic data collected for the study. This process included a review of the original statewide model socioeconomic data by EPS and the development of a 2019 dataset for use during the base year modeling effort.

Next, the 2045 No Build travel demand model was established which included an independent review and revision to the socioeconomic data and review of the roadway system to ensure consistency with DRCOG Regional Transportation Plan. This model served as the base for the 2045 No Build condition and also provided the traffic forecasts used for the 2045 SH 119 & SH 52 (Mineral Road) Models. This step also included an independent review of the 2045 model socioeconomic data by EPS and changes were incorporated into the modeling process.

Post-processing of all 2045 model volumes, using 2019 traffic counts and existing year model output, was performed per National Cooperative Highway Research Program (NCHRP) Report 765 methodologies. The resulting hourly period volume forecasts for 2045 were used to determine average growth for the corridor. This annual growth rate was then applied to the existing peak period VISSIM volume inputs to determine the future 2045 peak period traffic.

### ***Signal Timing***

Signal timing along the corridor was optimized with the future volumes in Synchro, and then imported into VISSIM.

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## **Vehicle Occupancy**

General traffic vehicle occupancy assumptions matched the SH 119 PEL assumption of 1.25 persons/vehicle on average.

## **Transit**

Transit routing and headways were not changed between the Existing Conditions and 2045 No Build Models. Dwell times for transit were consistent with the SH 119 PEL assumption of 40 seconds. For person metrics, transit ridership from the SH 119 PEL was used. The following table summarizes 2040 No Build transit ridership from the RTD COMPASS travel demand model analysis previously completed as part of the SH 119 PEL. It also presents the values that were grown an additional five years using vehicular growth rates developed, as previously described, to estimate transit ridership in 2045.

**Table 7: SH 119 2040 and 2045 No Build Transit Ridership**

<b>Description</b>	<b>AM Ridership (persons/hour)</b>	<b>PM Ridership (persons/hour)</b>
<b>Northbound Average (2040)</b>	7	66
<b>Southbound Average (2040)</b>	66	7
<b>Northbound Average (2045)</b>	8	68
<b>Southbound Average (2045)</b>	68	8

## **VISSIM 2045 No Build MOEs**

Once the coding updates were complete, MOEs were extracted to summarize the anticipated operations of the corridor in 2045 with no operational improvements. To account for variability in the model and obtain more statistically accurate results, a total of 15 model runs were performed for each simulation model and averaged.

The following MOEs were developed for each VISSIM model:

- Intersection operations: General traffic and transit delay; general traffic and transit level of service; maximum queue lengths by turning movement; and average queue lengths by turning movement. These detailed results are provided in Appendix E and a summary of level of service by movement per hour is provided in Appendix F.
- Vehicular travel times: Average travel times for general traffic traveling through the corridor from Jay Road to Airport Road in both directions. These results are summarized in Table 8.
- Transit travel times: Average travel times for BOLT Route reported for Jay Road to Airport Road in both directions. These results are summarized in Table 8.
- Vehicular network metrics: To understand corridor-wide operational efficiency for vehicles, vehicles fully processed, vehicle miles traveled (VMT), vehicle hours traveled (VHT), average speed per vehicle, and unserved demand (number of vehicles that did not make it into the network due to congestion) were reported. These results are summarized in Table 9.

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- Person network metrics: To understand corridor-wide operational efficiency for people, people fully processed, person miles traveled (VMT), person hours traveled (VHT), and average speed per person were reported. These results are summarized in Table 10.

As shown, the 2045 No Build model shows significant congestion in the northbound direction during the PM peak period, and congestion in the southbound direction during the AM peak period. Transit travel times generally are significantly longer than general traffic due to a significant number of stops on the existing transit routes and routing that turns on and off the corridor rather than staying along SH 119.

**Table 8: SH 119 2045 No Build Travel Times**

Direction of Travel	Time Interval	Travel Time (min)	
		2045 No Build	
		General Traffic	Transit
Northbound	6:00 AM - 7:00 AM	7.5	19.2
	<b>7:00 AM - 8:00 AM</b>	<b>7.6</b>	<b>19.5</b>
	8:00 AM - 9:00 AM	7.8	19.6
	9:00 AM - 10:00 AM	7.8	19.6
	10:00 AM - 11:00 AM	7.7	20.0
	11:00 AM - 12:00 PM	7.9	20.3
	12:00 PM - 1:00 PM	8.0	19.7
	1:00 PM - 2:00 PM	9.0	14.6
	2:00 PM - 3:00 PM	8.7	14.7
	3:00 PM - 4:00 PM	8.9	15.0
	4:00 PM - 5:00 PM	12.3	18.4
	<b>5:00 PM - 6:00 PM</b>	<b>18.3</b>	<b>27.5</b>
	6:00 PM - 7:00 PM	23.7	33.9
	7:00 PM - 8:00 PM	16.2	23.4
Southbound	6:00 AM - 7:00 AM	8.7	16.0
	<b>7:00 AM - 8:00 AM</b>	<b>10.1</b>	<b>17.2</b>
	8:00 AM - 9:00 AM	11.6	19.0
	9:00 AM - 10:00 AM	12.1	20.0
	10:00 AM - 11:00 AM	12.4	15.2
	11:00 AM - 12:00 PM	8.9	13.8
	12:00 PM - 1:00 PM	8.9	13.9
	1:00 PM - 2:00 PM	8.7	13.8
	2:00 PM - 3:00 PM	8.9	13.7
	3:00 PM - 4:00 PM	8.7	14.6
	4:00 PM - 5:00 PM	8.3	14.2
	<b>5:00 PM - 6:00 PM</b>	<b>8.3</b>	<b>13.9</b>
	6:00 PM - 7:00 PM	8.2	13.9
	7:00 PM - 8:00 PM	8.0	13.5

**Table 9: SH 119 2045 No Build Vehicular Network Metrics**

Metric	2045 No Build	
	AM	PM
Vehicles Fully Processed	68,470	77,053
Vehicle Miles Traveled (VMT)	287,844	321,637
Vehicle Hours Traveled (VHT)	8,211	10,942
Average Speed per Vehicle	36	31
Unserviced Demand*	926	3,519

\*Delay is not able to be calculated for unserved demand as these are vehicles that do not make it into the network. Because of this, unserved demand is provided as its own metric.

**Table 10: SH 119 2045 No Build Person Network Metrics**

Metric	2045 No Build	
	AM	PM
People Fully Processed	85,742	96,463
Person Miles Traveled	361,564	403,743
Person Hours Traveled	10,273	13,689
Average Speed per Person	35	29

## 5. 2045 SH 119 & SH 52 (Mineral Road) Analysis

Once the 2045 No Build models were developed and reviewed by CDOT/HPTE, an analysis was done to optimize the operations of the existing intersections along SH 119 from Jay Road to Airport Road. The volumes and transit assumptions developed for the 2045 No Build subtask were used for this analysis.

Initially, the focus of this analysis was on the configuration at SH 119 and SH 52 (Mineral Road). Table 11 shows an initial list of alternative intersection designs based on the 2045 No Build analysis results. High level geometric exhibits for the alternatives that are not easily envisioned are provided in Appendix G.

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**Table 11: SH 119 and SH 52 (Mineral Road) Potential Alternative Intersection Designs**

Alternative Intersection Designs	Notes
Tight Diamond Interchange	
Split Intersection	This would function similar to the other intersections along the corridor. Three possibilities were considered which included two through lanes along SH 119, three through lanes along SH 119, and a southbound left-side acceleration lane.
Continuous Flow Intersection	This would be specific to improving the westbound SH 52 (Mineral Road) left turn movement to SH 119.
Widen SH 119 to three lanes at the intersection	
Grade separate westbound SH 52 (Mineral Road) left turn to SH 119	
Provide dual left turns from SH 52 (Mineral Road)	Impacts to the railroad tracks would need to be considered.
Realign the IBM (west) leg of the intersection to no longer need split phasing	The eastbound and westbound approaches would be realigned so that vehicle paths do not cross and both directions can proceed on the same green light.
Single Point Urban Interchange (SPUI)	
Diverging Diamond Interchange	
Reroute left turns from westbound SH 52 (Mineral Road) to SH 119 via right turn	The westbound SH 52 (Mineral Road) left turn to SH 119 would utilize a right turn onto northbound SH 119 and then a center median U-turn to join southbound SH 119.
Reroute left turns from westbound SH 52 (Mineral Road) to SH 119 via through movement	The westbound SH 52 (Mineral Road) left turn to SH 119 would utilize a through movement at the SH 119 intersection and use a right-hand exit loop ramp to join southbound SH 119.
Echelon Intersection	Separate intersection into two grade separated intersections to reduce conflicts and increase green time for each movement.

An initial Tier 1 high level analysis was performed on each of these alternatives taking into account traffic operations, safety, tolled express lane (TEL) conflicts, bus rapid transit (BRT) considerations, bike path considerations, pedestrian considerations, cost, railroad conflicts, and visual impact. A summary of this high-level analysis is presented in Table 12. During this analysis stage, the following definitions were assumed for each consideration:

- Traffic Operations: The assumed level of benefit that each alternative would provide relative to the rest of the field; some benefit (+) to greater benefit (++)

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- Safety: The reduction or increase in overall safety provided by the alternative relative to the rest of the field; increase in potential safety concerns (-) to minimal impacts to safety (0) to greatest potential improvement relative to safety (++)
- TEL Conflicts: The potential for each alternative to interact smoothly with the potential future center running TEL relative to the rest of the field; highest potential for negative interactions with the TEL (-) to highest potential for positive interactions with the TEL (++)
- BRT Considerations: The potential for each alternative to interact smoothly with the potential future BRT within TEL lanes relative to the rest of the field; highest potential for negative interactions with the BRT (-) to highest potential for positive interactions with the BRT (++)
- Bike Path Considerations: The potential for each alternative to interact smoothly with the future bike path relative to the rest of the field; highest potential for negative interactions with the bike path (-) to highest potential for positive interactions with the bike path (++)
- Pedestrian Considerations: The potential for each alternative to safely accommodate pedestrian movements relative to the rest of the field; highest potential for negative interactions with pedestrians (-) to highest potential for positive interactions with pedestrians (++)
- Cost: The alternative cost relative to the rest of the field; highest cost (-) to lowest cost (0)
- Railroad Conflicts: The potential for each alternative to avoid conflict with the railroad relative to the rest of the field; complicated interactions with the railroad (-) to no change in interaction with the railroad (0) to eliminated interaction with the railroad (++)
- Visual Impact: The potential for each alternative to adversely impact view sheds through the corridor; minimal visual impact (0) to greatest visual impact (-)

For the alternatives deemed viable to move forward (shown in green and yellow in Table 12), a high-level Synchro analysis was performed to develop a better understanding of traffic operational impacts during Tier 2 analysis. The results of the Synchro analysis are provided within Appendix H. A summary of the overall analysis at this stage, including consideration of traffic operations, safety, TEL conflicts, BRT considerations, bike path considerations, pedestrian considerations, cost, railroad conflicts, and visual impacts is presented in Table 13. During this analysis stage, the following definitions were assumed for each consideration:

- Traffic Operations: The level of traffic operations for the intersection compared to the rest of the field; intersection operations of LOS A/B (++) to LOS F (-)
- Safety: Addressing concerns related to existing crash patterns at the intersection; greatest ability to address concerns (++) to no significant change (0) to increasing risk of existing crashes (-). A reduction in scoring was also given for each alternative that has complex geometry that may be confusing to drivers.
- All other metrics were defined in the same way as during the Tier 1 analysis.

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Table 12: SH 119 & SH 52 Tier 1 Analysis Results

ID	Alternative	Traffic Operations	Safety	TEL Conflicts	BRT Considerations	Bike Path Considerations	Pedestrian Considerations	Cost	Railroad Conflicts	Visual Impact
A	Widen SH 119 to 3 Lanes through SH 52 Intersection	++	0	0	0	-	-	0	0	0
B	Split Intersection With Widening SH 119 to 3 Lanes through SH 52 (Mineral Rd) Intersection	++	0	-	++	++	+	0	-	0
C	SH 52 (Mineral Rd) Left Turn via Right Turn (U-turn)	+	-	--	--	0	-	0	0	0
D	SH 52 (Mineral Rd) Left Turn via Thru Movement (loop ramp)	+	0	0	0	--	+	0	0	-
E	SH 52 (Mineral Rd) Left Turn via SB Left-Side Acceleration Lane with Split Intersection	+	0	--	+	+	0	0	-	0
F	SH 52 (Mineral Rd) Left Turn via Grade Separation (direct connect)	++	+	++	0	0	+	-	+	-
G	Echelon Intersection	+	++	+	++	++	++	--	+	--
H	Split Intersection	+	0	-	++	++	+	0	-	0
I	Tight Diamond Interchange	++	++	++	-	++	+	--	++	--
J	NB SH 119 Grade Separation	+	+	+	+	++	+	--	0	--
K	Continuous Flow Intersection	+	-	--	--	0	-	0	-	0
L	Realign IBM Access to Remove Split Phasing	+	+	0	0	0	0	0	-	0
M	Single Point Urban Interchange (SPUI)	++	++	++	-	++	-	--	++	--
N	Diverging Diamond Interchange (DDI)	+	+	++	--	++	--	--	++	--



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Table 13: SH 119 & SH 52 Tier 2 Analysis Results

ID	Alternative	Traffic Operations	Safety	TEL Conflicts	BRT Considerations	Bike Path Considerations	Pedestrian Considerations	Cost	Railroad Conflicts	Visual Impact
1	Widen SH 119 to 3 Lanes through SH 52 Intersection	+	+	+	0	-	-	0	0	0
2	Split Intersection With Widening SH 119 to 3 Lanes through SH 52 Intersection	+	0	+	++	+	+	0	0	0
3	SH 52 (Mineral Rd) Left Turn via Right Turn (U-turn)	-	--	--	--	0	-	0	0	0
4	SH 52 (Mineral Rd) Left Turn via Thru Movement (loop ramp)	--	-	+	0	--	+	0	0	-
5	SH 52 (Mineral Rd) Left Turn via SB Left-Side Acceleration Lane with Split Intersection	+	0	-	0	0	0	0	0	0
6	SH 52 (Mineral Rd) Left Turn via Grade Separation (direct connect)	--	0	++	0	-	+	-	+	-
7	Echelon Intersection	++	0	++	++	++	++	--	++	--
8	Split Intersection	--	-	+	++	+	+	0	0	0
9	Tight Diamond Interchange	++	++	++	-	++	++	--	++	--

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Based on this level of analysis, three alternatives were identified to move forward into a more detailed VISSIM analysis: widening SH 119 to three lanes through SH 52, splitting the intersection but maintaining two lanes along SH 119 through SH 52, and splitting the intersection and widening SH 119 to three lanes through SH 52.

For the more detailed VISSIM analysis, geometric updates were made to the 2045 No Build models for each of the scenarios and signal timing was optimized initially using Synchro and then further refined making manual adjustments within VISSIM. MOEs were extracted to summarize the anticipated operations of the SH 119 & SH 52 intersection and adjacent intersections in 2045 with the identified improvements. To account for variability in the model and obtain more statistically accurate results, a total of 15 model runs were performed for each simulation model and averaged.

The following MOEs were developed for each VISSIM model:

- Intersection operations: General traffic and transit delay; general traffic and transit level of service; maximum queue lengths by turning movement; and average queue lengths by turning movement. These detailed results are provided in Appendix I. A summary of total peak hour delay for the intersection is provided in Table 14; for the split intersection alternatives, this table sums the full delay vehicles experience at the two intersections for each movement.

As shown, all three alternatives analyzed in VISSIM significantly improve overall traffic operations at the SH 119 & SH 52 intersection. The split intersection with three through traffic lanes along SH 119 results in the most significant traffic operations improvements, but when additional factors such as safety, BRT considerations, bike path considerations, pedestrian considerations, and costs were taken into account, it was determined to move forward with splitting the intersection but maintaining two lanes along SH 119 through SH 52.

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**Table 14: SH 119 & SH 52 VISSIM Analysis Results**

Intersection / Movement	Weekday AM Peak-Hour (7:00 AM - 8:00 AM)		Weekday PM Peak-Hour (5:00 PM - 6:00 PM)		
	Delay (sec.)	Level of Service	Delay (sec.)	Level of Service	
<b>Three Lanes on SH 119 through SH 52</b>	Northbound Left-Turn (SH 119)	78	E	64	E
	Northbound Through (SH 119)	16	B	20	C
	Northbound Right-Turn (SH 119)	6	A	9	A
	Southbound Left-Turn (SH 119)	347	F	75	E
	Southbound Through (SH 119)	21	C	20	B
	Southbound Right-Turn (SH 119)	11	B	5	A
	Eastbound Left-Turn (SH 52/Mineral)	79	E	47	D
	Eastbound Through (SH 52/Mineral)	76	E	70	E
	Eastbound Right-Turn (SH 52/Mineral)	9	A	4	A
	Westbound Left-Turn (SH 52/Mineral)	61	E	268	F
	Westbound Through (SH 52/Mineral)	65	E	251	F
	Westbound Right-Turn (SH 52/Mineral)	9	A	186	F
	<b>Intersection Total</b>	<b>39.2</b>	<b>D</b>	<b>49.5</b>	<b>D</b>
<b>Split Intersection with Two Lanes on SH 119 through SH 52</b>	Northbound Left-Turn (SH 119)	60	E	80	E
	Northbound Through (SH 119)	12	B	27	C
	Northbound Right-Turn (SH 119)	7	A	23	C
	Southbound Left-Turn (SH 119)	76	E	63	E
	Southbound Through (SH 119)	38	D	10	A
	Southbound Right-Turn (SH 119)	27	C	8	A
	Eastbound Left-Turn (SH 52/Mineral)	96	F	125	F
	Eastbound Through (SH 52/Mineral)	101	F	118	F
	Eastbound Right-Turn (SH 52/Mineral)	1	A	1	A
	Westbound Left-Turn (SH 52/Mineral)	132	F	107	F
	Westbound Through (SH 52/Mineral)	83	F	105	F
	Westbound Right-Turn (SH 52/Mineral)	7	A	9	A
	<b>Intersection Total</b>	<b>44.1</b>	<b>D</b>	<b>28.8</b>	<b>C</b>
<b>Split Intersection with Three Lanes on SH 119 through SH 52</b>	Northbound Left-Turn (SH 119)	59	E	75	E
	Northbound Through (SH 119)	10	A	13	B
	Northbound Right-Turn (SH 119)	6	A	11	B
	Southbound Left-Turn (SH 119)	66	E	60	E
	Southbound Through (SH 119)	22	C	7	A
	Southbound Right-Turn (SH 119)	9	A	5	A
	Eastbound Left-Turn (SH 52/Mineral)	95	F	125	F
	Eastbound Through (SH 52/Mineral)	103	F	118	F
	Eastbound Right-Turn (SH 52/Mineral)	8	A	2	A
	Westbound Left-Turn (SH 52/Mineral)	132	F	107	F
	Westbound Through (SH 52/Mineral)	84	F	105	F
	Westbound Right-Turn (SH 52/Mineral)	6	A	15	B
	<b>Intersection Total</b>	<b>34.4</b>	<b>C</b>	<b>20.7</b>	<b>C</b>

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## 6. 2045 SH 119 Baseline VISSIM Analysis

Once the SH 119 & SH 52 intersection configuration was determined, the analysis continued with optimization of overall operations at the remaining intersections along the corridor (Jay Road, 63rd Street, Niwot Road, Airport Road, and Hover Road). At the Hover Road intersection, the Baseline VISSIM analysis assumed the currently proposed grade separated intersection that Longmont has developed. In order to improve both operations and safety at the Airport Road intersection, the northbound movement was signalized and an additional northbound left-turn lane was added. Consideration was also given to side-street turn lane additions along Niwot, SH 52, 63rd Street, and Jay Road, but these potential improvements were not included in the final Baseline VISSIM analysis due to right-of-way constraints and limited potential for improvement. Signal timings were optimized with the proposed geometric improvements utilizing Synchro and then fine tuning the signal timing in VISSIM.

Once the coding updates were complete, MOEs were extracted to summarize the anticipated operations of the corridor 2045 Baseline corridor. To account for variability in the model and obtain more statistically accurate results, a total of 15 model runs were performed for each simulation model and averaged.

The following MOEs were developed for each VISSIM model:

- Intersection operations: General traffic and transit delay; general traffic and transit level of service; maximum queue lengths by turning movement; and average queue lengths by turning movement. These detailed results are provided in Appendix J and a summary of level of service by movement per hour is provided in Appendix K.
- Vehicular travel times: Average travel times for general traffic traveling through the corridor from Jay Road to Airport Road in both directions. These results are summarized in Table 15.
- Transit travel times: Average travel times for BOLT Route reported for Jay Road to Airport Road in both directions. These results are summarized in Table 15.
- Vehicular network metrics: To understand corridor-wide operational efficiency for vehicles, vehicles fully processed, vehicle miles traveled (VMT), vehicle hours traveled (VHT), average speed per vehicle, and unserved demand (number of vehicles that did not make it into the network due to congestion) were reported. These results are summarized in Table 16.
- Person network metrics: To understand corridor-wide operational efficiency for people, people fully processed, person miles traveled (VMT), person hours traveled (VHT), and average speed per person were reported. These results are summarized in Table 17.

As shown, the 2045 Baseline models show significant improvements in travel times and network metrics. Transit travel times are still significantly longer than general traffic due to the existing transit routes.

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**Table 15: SH 119 2045 Baseline Travel Times**

Direction of Travel	Time Interval	Travel Time (min)	
		2045 Baseline	
		General Traffic	Transit
Northbound	6:00 AM - 7:00 AM	8.0	19.1
	<b>7:00 AM - 8:00 AM</b>	<b>9.1</b>	<b>19.1</b>
	8:00 AM - 9:00 AM	9.3	19.2
	9:00 AM - 10:00 AM	9.0	19.2
	10:00 AM - 11:00 AM	8.6	19.3
	11:00 AM - 12:00 PM	8.8	19.6
	12:00 PM - 1:00 PM	9.2	20.2
	1:00 PM - 2:00 PM	7.5	18.4
	2:00 PM - 3:00 PM	7.7	19.2
	3:00 PM - 4:00 PM	7.9	19.7
	4:00 PM - 5:00 PM	8.2	20.1
	<b>5:00 PM - 6:00 PM</b>	<b>8.2</b>	<b>19.8</b>
	6:00 PM - 7:00 PM	7.9	19.0
	7:00 PM - 8:00 PM	7.6	17.9
Southbound	6:00 AM - 7:00 AM	9.1	15.2
	<b>7:00 AM - 8:00 AM</b>	<b>9.9</b>	<b>16.1</b>
	8:00 AM - 9:00 AM	10.3	16.5
	9:00 AM - 10:00 AM	10.3	17.7
	10:00 AM - 11:00 AM	9.2	13.4
	11:00 AM - 12:00 PM	8.9	14.3
	12:00 PM - 1:00 PM	9.0	14.0
	1:00 PM - 2:00 PM	8.5	14.4
	2:00 PM - 3:00 PM	8.8	14.8
	3:00 PM - 4:00 PM	8.5	14.8
	4:00 PM - 5:00 PM	8.3	14.7
	<b>5:00 PM - 6:00 PM</b>	<b>8.3</b>	<b>14.4</b>
	6:00 PM - 7:00 PM	8.2	14.4
	7:00 PM - 8:00 PM	7.9	13.3

**Table 16: SH 119 2045 Baseline Vehicular Network Metrics**

Metric	2045 Baseline	
	AM	PM
Vehicles Fully Processed	68,402	76,714
Vehicle Miles Traveled (VMT)	287,773	319,959
Vehicle Hours Traveled (VHT)	7,622	9,483
Average Speed per Vehicle	38	34
Unserved Demand*	364	4,555

\*Delay is not able to be calculated for unserved demand as these are vehicles that do not make it into the network. Because of this, unserved demand is provided as its own metric.

**Table 17: SH 119 2045 Baseline Person Network Metrics**

Metric	2045 Baseline	
	AM	PM
People Fully Processed	85,657	96,047
Person Miles Traveled	361,466	401,422
Person Hours Traveled	9,536	11,860
Average Speed per Person	38	34

## 7. VISSIM 2045 Corridor Alternatives Analysis – General Updates

### *Travel Demand Modeling for Alternatives*

Once the project moved into the SH 119 alternatives evaluation, the travel demand modeling efforts to support this process focused on separate model runs for each scenario where mainline throughput capacity changes occurred. The alternatives which required separate model runs due to capacity increases are listed below in Table 18 and described in greater detail in the following sections of this report.

**Table 18: Travel Demand Modeling Runs**

Alternative	Travel Demand Model Run
VISSIM 2045 with Transit Slip Lanes	No
VISSIM 2045 with 3 General Purpose Lanes	Yes
VISSIM 2045 with Tolloed Express Lanes and At-Grade Crossings (Add Lane)	Yes
VISSIM 2045 with Tolloed Express Lanes and At-Grade Crossings (Lane Conversion)	Yes
VISSIM 2045 with Tolloed Express Lanes and Tolloed Express Lane Grade Separated Crossings (Add Lane)	Yes

Post-processing of all 2045 model volumes, using 2019 traffic counts and existing year model output, was performed per NCHRP Report 765 methodologies. The resulting peak period

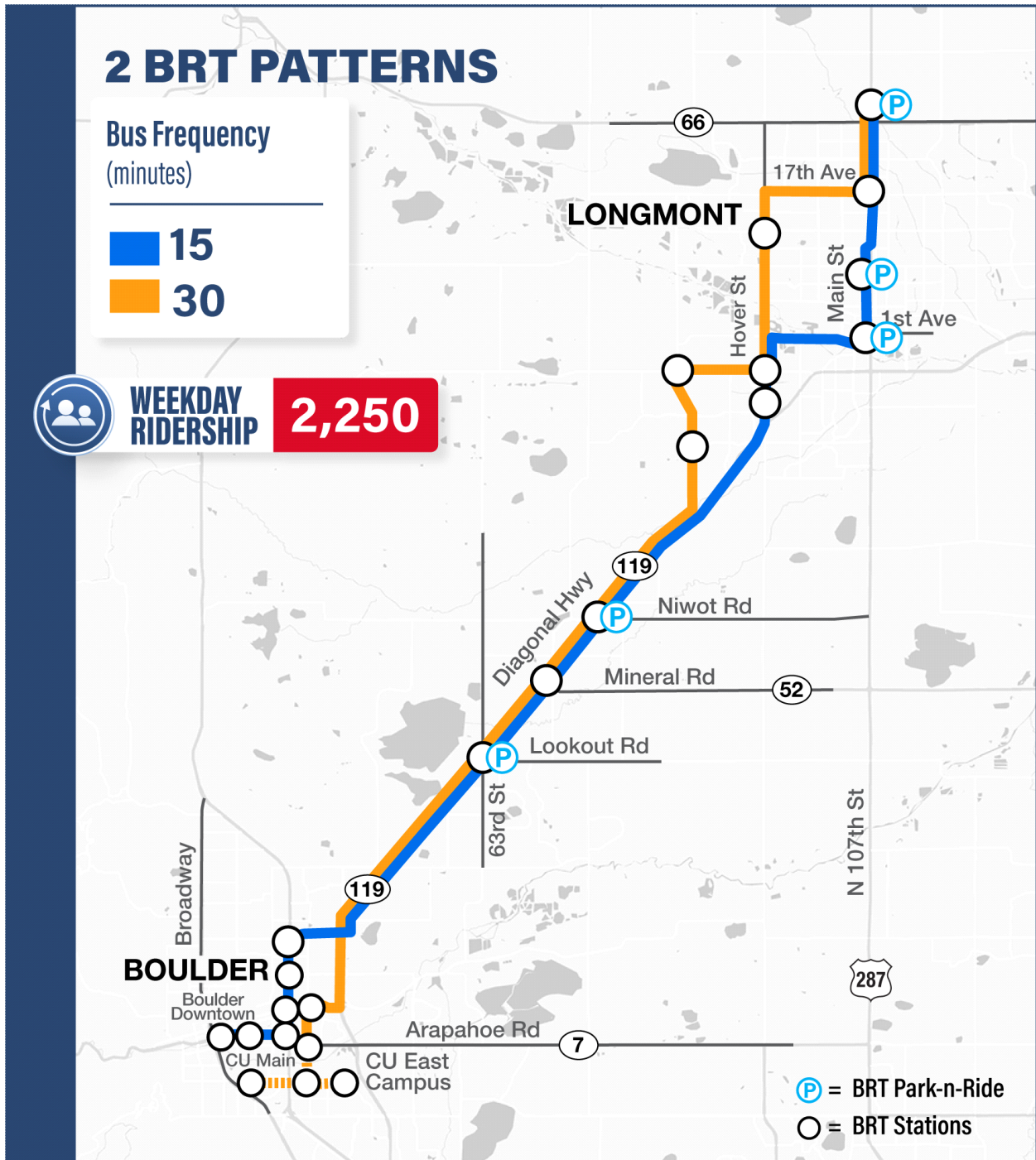
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volume forecasts from 2045 were used to determine average growth for the corridor. This average growth was then applied to the existing peak hour VISSIM model inputs to calculate the future 2045 peak period demand.

## ***Transit Assumptions for Alternatives***

The following figure summarizes the transit operational assumptions from the SH 119 PEL that were used for the 2045 alternatives analysis. Dwell times for transit were consistent with the SH 119 PEL alternatives assumption of 30 seconds; this assumes transit stop enhancements will be implemented to allow for more efficient boarding/alighting than the No Build condition, which assumed a dwell time of 40 seconds. Transit signal priority was coded for all signalized intersections in each alternative.



(<https://www.rtd-denver.com/projects/state-highway-119-brt-study>)

Figure 2: SH 119 PEL Transit Assumptions



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For person metrics, transit ridership from the SH 119 PEL for 2040 was used as a starting point and then grown an additional five years using vehicular growth rates developed as previously described to estimate transit ridership in 2045. Table 19 and Table 20 summarize the 2040 Alternatives' transit ridership from the RTD COMPASS travel demand model analysis as part of the SH 119 PEL as well as values that were grown to 2045. The ridership for transit bypass lanes was used for the transit slip lane and three general purpose lanes alternatives analysis. The ridership for managed lanes was used for all of the tolled express lane alternatives analysis.

**Table 19: SH 119 2040 and 2045 Bypass Lane Transit Ridership**

Description	AM Ridership (persons/hour)	PM Ridership (persons/hour)
Northbound Average (2040)	10	114
Southbound Average (2040)	115	19
Northbound Average (2045)	11	117
Southbound Average (2045)	118	20

**Table 20: SH 119 2040 and 2045 Managed Lane Transit Ridership**

Description	AM Ridership (persons/hour)	PM Ridership (persons/hour)
Northbound Average (2040)	11	116
Southbound Average (2040)	117	20
Northbound Average (2045)	12	118
Southbound Average (2045)	119	21

## **TEL Assumptions for Alternatives**

This section outlines the general TEL assumptions utilized in the three TEL alternatives.

### Tolling

The SH 119 Express Lanes were assumed to be tolled at all times. Single Occupancy Vehicles (SOV) and High Occupancy Vehicles (HOV) 2 would be tolled, while HOV 3+ and public transit would be allowed to use the lane toll-free. Switchable transponders could be utilized for drivers to self-declare their occupancy status as HOV 3+ users. The facility would be operated as a cashless payment system for which all tolls would be collected electronically. For the purposes of VISSIM modeling, the target minimum level of service for the SH 119 Express Lanes was LOS C, with toll pricing set to influence the number of vehicles utilizing the express lanes. Adjustments were made to also ensure queues cleared with each traffic signal cycle. It should be noted that signal timing for the through movements on SH 119 would be the same for general traffic lanes and express lanes.

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## Existing & Forecasted Volumes

The existing and forecasted peak hour volumes for No Build conditions can be found in Appendix L. Overall, growth between the existing and 2045 No Build daily forecasts averaged about 20%. The existing general travel trends remained consistent in the future. Based on the forecasted volumes and turning movement counts, the following secondary roads contribute the most volume:

- 63rd St
- SH 52 (Mineral Road)
- Airport Rd
- Hover Rd

## Ingress/Egress

The ingress/egress assumptions were originally developed during the SH 119 PEL study and focused on providing access into the lanes considering factors such as trip origins and destinations, travel demand of the area, geometric constraints, safety considerations, and overall length of the express lanes. The overall vision of incorporating TEL onto SH 119 is to provide a reliable travel time option for those traveling between Longmont and Boulder. In order to decrease idle times and minimize weaving/merging movements on the corridor, intermediate express lane access zones were included to balance high-value mobility within the express lanes and equitable access to the lane from major intersections. These TEL ingress/egress zones would allow access for vehicles traveling along SH 119 and for vehicles that are turning right either onto or off of SH 119. The methodology of limiting these intermediate access zones is consistent with HPTE practice throughout the state of Colorado where in freeway TEL installations not every interchange has a corresponding ingress/egress. Safety and operations of the TEL are always HPTE's primary goal on a corridor. The ingress/egress assumptions used for SH 119 balance access to users of the SH 119 corridor with safety concerns regarding weaving into and out of TEL at ingress/egress zones and ensuring quality operations within the TEL. Additional discussion of access to or from the TEL lanes for vehicles turning left onto or off of SH 119 is provided in the sections that follow.

The ingress/egress zones that were modeled were generally consistent with what was found in the SH 119 PEL and are shown in Appendix M. This layout provided access to the express lane immediately upon entering SH 119 for travelers coming from each of the intersections identified as contributing the most volume, except for 63<sup>rd</sup> St. Travelers utilizing 63<sup>rd</sup> St to travel northbound on SH 119 only needed to pass through one signalized intersection before being allowed access to the express lanes after SH 52 (Mineral Road), and travelers utilizing 63<sup>rd</sup> St to travel southbound on SH 119 only had one signalized intersection to pass through before the express lanes ended.

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In the northbound direction, the following ingress/egress points were modeled (with notes regarding the only change from the PEL assumptions):

- An initial **ingress** point located south of Jay Rd to accommodate express lane users from Foothills Parkway
- An **ingress** point located north of Jay Rd to accommodate express lane users from the Diagonal Highway on-ramp
- An **egress** point located between 63<sup>rd</sup> St and SH 52 (Mineral Road)
- An **ingress** point located north of SH 52 (Mineral Road)
- An **egress** point located south of Airport Rd
- An **egress** point located at the end of the express lane south of Hover Rd continuing into the inside lane (during the PEL analysis, the express lane ended south of Airport Rd due to operational issues with the unsignalized intersection at Airport Rd; signalization of this intersection during the Corridor Optimization task would improve these issues allowing for extension of the express lane to south of Hover Rd)

In the southbound direction, the following ingress/egress points were modeled:

- An initial **ingress** point located south of Hover Rd
- An **ingress** point located south of Airport Rd
- An **egress** point located north of SH 52 (Mineral Road)
- An **ingress** point located south of SH 52 (Mineral Road)
- An **egress** point located north of Jay Rd
- An **egress** point located at the end of the express lane section south of Jay Rd continuing into the inside lane

## Left Turns from Intersecting Roadways Entering TEL

For VISSIM modeling purposes, it was determined that for the at-grade TEL alternatives, left turns onto SH 119 from intersecting roadways would be allowed to enter the TEL. The inside lane for each left turn movement onto SH 119 was coded with vehicles choosing both the general purpose lanes and the TEL. If one of the TEL at-grade options moves forward as the preferred alternative for the corridor, the final signing and striping for these intersections would need to be vetted further. Preliminary options for signing and striping developed by Muller Engineering are provided for reference in Appendix N.

## Left Turns from SH 119 onto Intersecting Roadways

For vehicles traveling along SH 119 and turning left onto intersecting roadways, they would need to enter and cross the TEL upstream of the intersection. Where there was an upstream TEL ingress, these ingress locations would be signed to also allow for entrance of those desiring to turn left at the next signalized intersection. Where there is not an upstream TEL ingress, a left turn only ingress point would be located upstream of the intersection. Additionally, vehicles in the TEL were allowed to turn left at every at-grade signalized intersection. Appendix O includes a graphic view of which turn movements onto and off of SH 119 were able to

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immediately access the TEL before or after their turn for each TEL alternative. As shown, in the at-grade TEL scenarios, there are very limited turning movements that are restricted from accessing the TEL within the adjacent block to their turn. Allowing this significant amount of access into and out of the TEL does require significant toll equipment between each signalized intersection.

## Toll Segmenting

Based on the locations for ingress and egress discussed above, the express lane facility was anticipated to be comprised of two Toll Zones, separated at SH 52 (Mineral Road) in each direction. The two Toll Zones would be sufficient to create a “closed” toll system where all users of the express lanes would be required to pay a toll and would also provide for straightforward application of any tolling algorithm and installation of toll rate signs.

However, as noted above, the left turning traffic to and from the SH 119 corridor would be able to enter and exit the express lanes at all intersections. This would require additional tolling equipment/gantries to track and charge the users entering and exiting the express lanes as they turn left onto or off of SH 119 at the signalized intersections. This would also require toll rate signs on the cross-street approaches to SH 119 to inform the users of the upcoming express lane toll rates. The tolls charged along the express lanes could still be based on the two toll zones concept thus requiring the shorter trips along the express lanes to pay a higher toll rate per mile.

## Separation Treatment

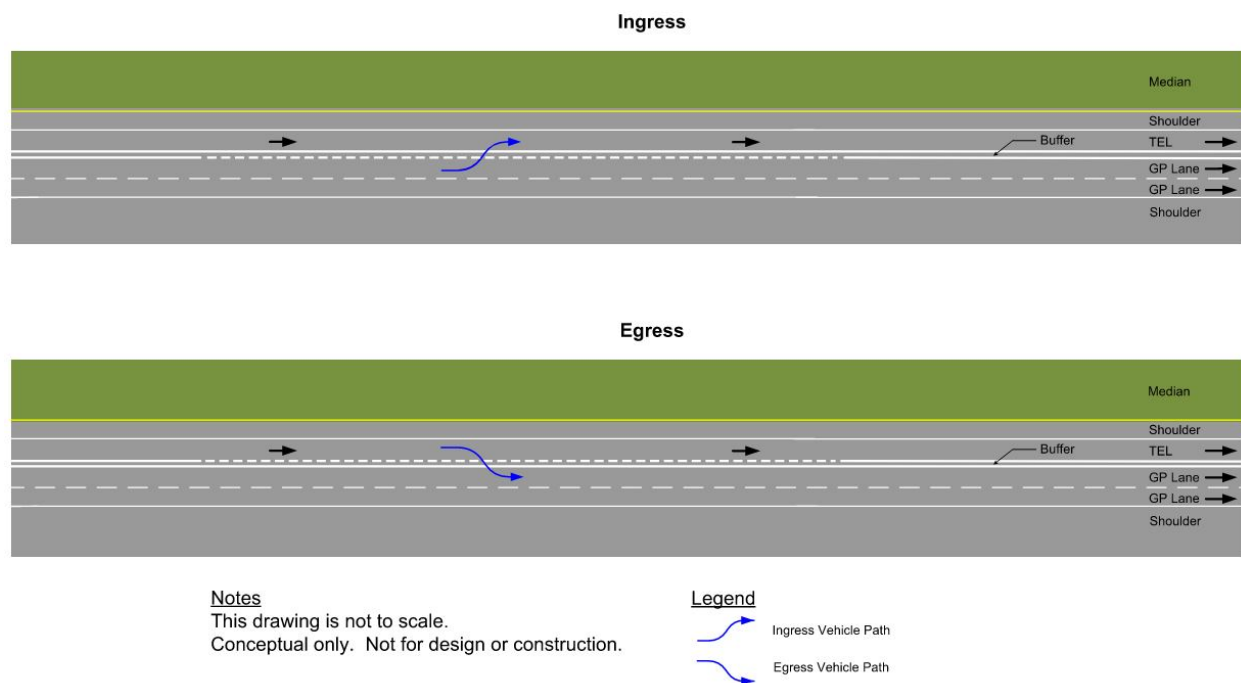
Between access zones, the express lanes were assumed to be separated from general purpose (GP) lanes by a 4-foot wide striped buffer consisting of two 8-inch solid white lines. Using striping instead of barrier eliminates a visual hindrance and increases the likelihood that drivers in the express lanes remain aware of drivers that may need to weave from the GP lanes. It also allows for ease of emergency access. Flexible pylons are also an option to deter illegal crossing maneuvers, but add additional maintenance concerns and therefore are not recommended.

## Access Zones

Access zones were planned to be limited to only ingress or egress to reduce weaving and merging, with final striping for these zones to be determined during final design. Each zone was originally recommended to be no longer than 1,000 feet due to concerns that aggressive motorists may use overly long access zones as passing lanes for the GP lanes; however, during the operational analysis it was determined that some zones needed to be extended to 2,000 feet to allow vehicles enough time to merge. A minimum separation distance of at least 720 feet per GP lane was assumed between the access zone and an upstream intersection to allow distance for merging/weaving across GP lanes before the access zone. Through the VISSIM modeling process, ingress/egress zone locations were adjusted in order to maintain these outside of queued areas as much as possible to minimize concerns related to traffic merging across significant speed differentials and allow for optimal traffic operations. Due to right-of-way

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constraints along the corridor, and because it is anticipated that access zones would be located outside of areas with queued traffic, additional merge lanes at the access zones were not recommended. Figure 3 depicts a typical access zone with possible striping treatments shown; this type of striping is not currently approved by the MUTCD, however CDOT is conducting a research study on this type of striping. Use of ingress-only and egress-only striping will not be allowed until the research study is completed and a formal interpretation is received from FHWA that allows the striping.



**Figure 3: Typical Access Zone**

## Roadway Signage

The signage for the SH 119 Express Lanes was assumed to be a combination of static and dynamic signs to allow more flexible operations of the express lanes. Overhead guide and regulatory signs would be installed in advance of and within the ingress/egress zones per CDOT and MUTCD guidelines. Overhead signs would be installed on cantilever structures in the median barrier or on sign bridges that span a single direction of traffic. Proposed signage upstream from an express lane access point includes static signs at 1 mile, 1/2 mile, and the express lane entrance, as well as a variable toll message sign (VTMS). The VTMS would provide express lane pricing through fiber optic blank-out inserts within a static panel. Post-mounted regulatory signs would be installed in the median barrier at regular intervals to direct drivers to not cross the express lane buffer.

## 8. VISSIM 2045 Transit Slip Lanes Analysis

Building upon the VISSIM 2045 Baseline analysis, the AM and PM peak period VISSIM models were updated to incorporate the travel demand modeling adjustments previously discussed, the transit assumptions previously discussed, and geometric updates for transit slip lanes (queue jumps) at each of the intersections from Jay Road to Airport Road. Appendix P shows a high-level line diagram of each of the corridor alternative geometric updates.

Once the coding updates were complete, MOEs were extracted to summarize the anticipated operations of the 2045 Transit Slip Lanes. To account for variability in the model and obtain more statistically accurate results, a total of 15 model runs were performed for each simulation model and averaged.

The following MOEs were developed for each VISSIM model:

- Intersection operations: General traffic and transit delay; general traffic and transit level of service; maximum queue lengths by turning movement; and average queue lengths by turning movement. These detailed results are provided in Appendix Q and a summary of level of service by movement per hour is provided in Appendix R.
- Vehicular travel times: Average travel times for general traffic traveling through the corridor from Jay Road to Airport Road in both directions. These results are summarized in Table 21.
- Transit travel times: Average travel times for BOLT Route reported for Jay Road to Airport Road in both directions. These results are summarized in Table 21.
- Vehicular network metrics: To understand corridor-wide operational efficiency for vehicles, vehicles fully processed, vehicle miles traveled (VMT), vehicle hours traveled (VHT), average speed per vehicle, and unserved demand (number of vehicles that did not make it into the network due to congestion) were reported. These results are summarized in Table 22.
- Person network metrics: To understand corridor-wide operational efficiency for people, people fully processed, person miles traveled (VMT), person hours traveled (VHT), and average speed per person were reported. These results are summarized in Table 23.

As shown, the 2045 Transit Slip Lanes models have similar travel times for general traffic, but significantly improved travel times for transit due to the BRT assumptions. Due to relatively low transit ridership, this does not result in a significant change in network metrics from the 2045 No Build models.

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**Table 21: SH 119 2045 Transit Slip Lanes Travel Times**

Direction of Travel	Time Interval	Travel Time (min)	
		2045 Transit Slip Lanes	
		General Traffic	Transit
Northbound	6:00 AM - 7:00 AM	7.6	9.8
	<b>7:00 AM - 8:00 AM</b>	<b>8.8</b>	<b>10.1</b>
	8:00 AM - 9:00 AM	9.1	10.2
	9:00 AM - 10:00 AM	9.0	10.1
	10:00 AM - 11:00 AM	9.0	10.0
	11:00 AM - 12:00 PM	8.5	10.0
	12:00 PM - 1:00 PM	8.6	10.0
	1:00 PM - 2:00 PM	7.5	10.0
	2:00 PM - 3:00 PM	7.7	10.2
	3:00 PM - 4:00 PM	7.9	10.4
	4:00 PM - 5:00 PM	8.1	10.7
	<b>5:00 PM - 6:00 PM</b>	<b>8.2</b>	<b>10.7</b>
	6:00 PM - 7:00 PM	7.9	10.4
	7:00 PM - 8:00 PM	7.5	10.1
Southbound	6:00 AM - 7:00 AM	9.0	10.5
	<b>7:00 AM - 8:00 AM</b>	<b>9.5</b>	<b>10.8</b>
	8:00 AM - 9:00 AM	9.7	11.0
	9:00 AM - 10:00 AM	9.7	10.6
	10:00 AM - 11:00 AM	9.1	10.2
	11:00 AM - 12:00 PM	8.8	10.7
	12:00 PM - 1:00 PM	8.9	10.6
	1:00 PM - 2:00 PM	8.4	10.8
	2:00 PM - 3:00 PM	8.5	10.9
	3:00 PM - 4:00 PM	8.2	10.7
	4:00 PM - 5:00 PM	8.2	10.6
	<b>5:00 PM - 6:00 PM</b>	<b>8.2</b>	<b>10.5</b>
	6:00 PM - 7:00 PM	8.1	10.7
	7:00 PM - 8:00 PM	7.9	10.4

**Table 22: SH 119 2045 Transit Slip Lanes Vehicular Network Metrics**

Metric	2045 Transit Slip Lanes	
	AM	PM
Vehicles Fully Processed	68,477	76,863
Vehicle Miles Traveled (VMT)	288,246	320,656
Vehicle Hours Traveled (VHT)	7,703	9,304
Average Speed per Vehicle	37	34
Unserved Demand*	572	4,148

*\*Delay is not able to be calculated for unserved demand as these are vehicles that do not make it into the network. Because of this, unserved demand is provided as its own metric.*

**Table 23: SH 119 2045 Transit Slip Lanes Person Network Metrics**

Metric	2045 Transit Slip Lanes	
	AM	PM
People Fully Processed	85,946	96,079
Person Miles Traveled (VMT)	363,719	404,507
Person Hours Traveled (VHT)	9,632	11,634
Average Speed per Person	38	35

## 9. VISSIM 2045 3 General Purpose Lanes Analysis

Building upon the VISSIM 2045 Baseline analysis, the AM and PM peak period VISSIM models were updated to incorporate the travel demand modeling adjustments previously discussed, the transit assumptions previously discussed, and geometric updates for three general purpose lanes throughout the corridor from Jay Road to Hover Road in each direction. Appendix P shows a high-level line diagram of each of the corridor alternative geometric updates.

Once the coding updates were complete, MOEs were extracted to summarize the anticipated operations of the 2045 3 General Purpose Lanes. To account for variability in the model and obtain more statistically accurate results, a total of 15 model runs were performed for each simulation model and averaged.

The following MOEs were developed for each VISSIM model:

- Intersection operations: General traffic and transit delay; general traffic and transit level of service; maximum queue lengths by turning movement; and average queue lengths by turning movement. These detailed results are provided in Appendix S and a summary of level of service by movement per hour is provided in Appendix T.
- Vehicular travel times: Average travel times for general traffic traveling through the corridor from Jay Road to Airport Road in both directions. These results are summarized in Table 24.
- Transit travel times: Average travel times for BOLT Route reported for Jay Road to Airport Road in both directions. These results are summarized in Table 24.



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- Vehicular network metrics: To understand corridor-wide operational efficiency for vehicles, vehicles fully processed, vehicle miles traveled (VMT), vehicle hours traveled (VHT), average speed per vehicle, and unserved demand were reported. These results are summarized in Table 25.
- Person network metrics: To understand corridor-wide operational efficiency for people, people fully processed, person miles traveled (VMT), person hours traveled (VHT), and average speed per person were reported. These results are summarized in Table 26.

As shown, the 2045 3 General Purpose Lanes models show significant delay in the southbound direction in the AM peak period. Due to the overall capacity increase along the corridor in this alternative, the travel demand modeling showed significant increases in traffic volumes. However, the southern portion of the corridor already has three general purpose lanes through the intersections of Jay Road and 63<sup>rd</sup> Street and as such no widening was considered here. As a result, the VISSIM analysis showed improved operations on the northern portion of the corridor, but degraded operations on the southern end. It is anticipated that, in reality, operations on the southern end of the corridor under this alternative would be more similar to No Build conditions as a result of fewer vehicles using the SH 119 corridor causing less delay and slightly improved operations. Limitations of how the travel demand modeling being utilized addresses capacity on a corridor result in this assumed over representation of traffic.

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**Table 24: SH 119 2045 3 General Purpose Lanes Travel Times**

Direction of Travel	Time Interval	Travel Time (min)	
		2045 3 General Purpose Lanes	
		General Traffic	Transit
Northbound	6:00 AM - 7:00 AM	8.5	10.1
	<b>7:00 AM - 8:00 AM</b>	<b>8.5</b>	<b>10.2</b>
	8:00 AM - 9:00 AM	8.6	10.4
	9:00 AM - 10:00 AM	8.8	10.5
	10:00 AM - 11:00 AM	8.7	10.4
	11:00 AM - 12:00 PM	9.5	10.9
	12:00 PM - 1:00 PM	10.9	12.2
	1:00 PM - 2:00 PM	7.3	10.0
	2:00 PM - 3:00 PM	7.4	10.0
	3:00 PM - 4:00 PM	7.6	10.4
	4:00 PM - 5:00 PM	7.7	10.3
	<b>5:00 PM - 6:00 PM</b>	<b>7.7</b>	<b>10.3</b>
	6:00 PM - 7:00 PM	7.6	10.2
	7:00 PM - 8:00 PM	7.5	10.1
Southbound	6:00 AM - 7:00 AM	9.3	10.8
	<b>7:00 AM - 8:00 AM</b>	<b>11.2</b>	<b>12.7</b>
	8:00 AM - 9:00 AM	14.9	17.0
	9:00 AM - 10:00 AM	15.1	17.1
	10:00 AM - 11:00 AM	10.3	11.8
	11:00 AM - 12:00 PM	8.9	10.6
	12:00 PM - 1:00 PM	9.0	10.6
	1:00 PM - 2:00 PM	8.2	10.6
	2:00 PM - 3:00 PM	8.3	10.7
	3:00 PM - 4:00 PM	8.1	10.6
	4:00 PM - 5:00 PM	8.0	10.5
	<b>5:00 PM - 6:00 PM</b>	<b>8.0</b>	<b>10.6</b>
	6:00 PM - 7:00 PM	8.0	10.5
	7:00 PM - 8:00 PM	7.9	10.5

**Table 25: SH 119 2045 3 General Purpose Lanes Vehicular Network Metrics**

Metric	2045 3 General Purpose Lanes	
	AM	PM
Vehicles Fully Processed	69,713	80,349
Vehicle Miles Traveled (VMT)	303,541	346,748
Vehicle Hours Traveled (VHT)	10,110	11,301
Average Speed per Vehicle	30	31
Unserviced Demand*	2,916	5,251

*\*Delay is not able to be calculated for unserved demand as these are vehicles that do not make it into the network. Because of this, unserved demand is provided as its own metric.*

**Table 26: SH 119 2045 3 General Purpose Lanes Person Network Metrics**

Metric	2045 3 General Purpose Lanes	
	AM	PM
People Fully Processed	87,491	100,814
Person Miles Traveled	382,829	437,114
Person Hours Traveled	12,643	14,132
Average Speed per Person	30	31

## 10. Tolled Express Lanes and At-Grade Crossings (Add Lane)

Building upon the VISSIM 2045 Baseline analysis, the AM and PM peak period VISSIM models were updated to incorporate the travel demand modeling adjustments previously discussed, the transit assumptions previously discussed, and geometric updates for an added lane to incorporate tolled express lanes with at-grade crossings at each of the intersections from Jay Road to Airport Road. One tolled express lane was added in each direction; existing general purpose lanes were not converted to tolled express lanes. Appendix P shows a high-level line diagram of each of the corridor alternative geometric updates.

Once the coding updates were complete, MOEs were extracted to summarize the anticipated operations of the corridor 2045 TEL At-Grade (Add Lane). To account for variability in the model and obtain more statistically accurate results, a total of 15 model runs were performed for each simulation model and averaged.

The following MOEs were developed for each VISSIM model:

- Intersection operations: General traffic and transit delay; general traffic and transit level of service; maximum queue lengths by turning movement; and average queue lengths by turning movement. These detailed results are provided in Appendix U and a summary of level of service by movement per hour is provided in Appendix V.

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- Vehicular travel times: Average travel times for general traffic and TEL traffic traveling through the corridor from Jay Road to Airport Road in both directions. These results are summarized in Table 27.
- Transit travel times: Average travel times for BOLT Route reported for Jay Road to Airport Road in both directions. These results are summarized in Table 27.
- Vehicular network metrics: To understand corridor-wide operational efficiency for vehicles, vehicles fully processed, vehicle miles traveled (VMT), vehicle hours traveled (VHT), average speed per vehicle, and unserved demand were reported. These results are summarized in Table 28.
- Person network metrics: To understand corridor-wide operational efficiency for people, people fully processed, person miles traveled (VMT), person hours traveled (VHT), and average speed per person were reported. These results are summarized in Table 29.

As shown, the 2045 TEL At-Grade (Add Lane) models generally have similar travel times for general traffic and transit as the Transit Slip Lanes models. This alternative also allows single occupant vehicles to pay a toll for a reduced travel time, especially in the northbound direction. The additional capacity in this alternative also results in more vehicles and people fully processed through the model, with average speeds per vehicle and per person only slightly below the Transit Slip Lanes models as a result of added congestion with more vehicles trying to access the improved corridor.

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**Table 27: SH 119 2045 TEL At-Grade (Add Lane) Travel Times**

Direction of Travel	Time Interval	Travel Time (min)		
		2045 TEL (Add Lane)		
		General Traffic	Transit	TEL
Northbound	6:00 AM - 7:00 AM	7.8	9.9	8.0
	<b>7:00 AM - 8:00 AM</b>	<b>8.4</b>	<b>10.2</b>	<b>7.8</b>
	8:00 AM - 9:00 AM	8.9	9.9	7.9
	9:00 AM - 10:00 AM	8.9	10.0	7.9
	10:00 AM - 11:00 AM	8.6	9.9	8.0
	11:00 AM - 12:00 PM	8.4	9.8	7.8
	12:00 PM - 1:00 PM	9.0	9.8	7.8
	1:00 PM - 2:00 PM	7.5	9.8	7.5
	2:00 PM - 3:00 PM	7.9	9.9	7.4
	3:00 PM - 4:00 PM	7.9	9.9	7.8
	4:00 PM - 5:00 PM	8.8	10.1	7.9
	<b>5:00 PM - 6:00 PM</b>	<b>9.5</b>	<b>10.4</b>	<b>8.0</b>
	6:00 PM - 7:00 PM	8.4	10.1	7.9
7:00 PM - 8:00 PM	7.5	9.9	7.8	
Southbound	6:00 AM - 7:00 AM	8.6	10.4	8.4
	<b>7:00 AM - 8:00 AM</b>	<b>9.0</b>	<b>10.6</b>	<b>8.8</b>
	8:00 AM - 9:00 AM	9.0	10.6	8.7
	9:00 AM - 10:00 AM	8.7	10.5	8.6
	10:00 AM - 11:00 AM	8.5	10.4	8.4
	11:00 AM - 12:00 PM	8.5	10.3	8.3
	12:00 PM - 1:00 PM	8.5	10.3	8.3
	1:00 PM - 2:00 PM	10.7	11.4	9.1
	2:00 PM - 3:00 PM	10.0	11.4	9.1
	3:00 PM - 4:00 PM	9.7	11.4	9.4
	4:00 PM - 5:00 PM	9.5	11.4	9.3
	<b>5:00 PM - 6:00 PM</b>	<b>9.4</b>	<b>11.2</b>	<b>9.3</b>
	6:00 PM - 7:00 PM	9.3	11.4	9.3
7:00 PM - 8:00 PM	8.9	11.5	9.5	

**Table 28: SH 119 2045 TEL At-Grade (Add Lane) Vehicular Network Metrics**

Metric	2045 TEL (Add Lane)	
	AM	PM
Vehicles Fully Processed	69,109	77,755
Vehicle Miles Traveled (VMT)	302,552	336,137
Vehicle Hours Traveled (VHT)	8,472	10,127
Average Speed per Vehicle	36	33
Unserviced Demand*	1,441	5,906

\*Delay is not able to be calculated for unserved demand as these are vehicles that do not make it into the network. Because of this, unserved demand is provided as its own metric.

**Table 29: SH 119 2045 TEL At-Grade (Add Lane) Person Network Metrics**

Metric	2045 TEL (Add Lane)	
	AM	PM
People Fully Processed	86,743	97,579
Person Miles Traveled	381,668	423,924
Person Hours Traveled	10,593	12,662
Average Speed per Person	36	33

## 11. Tolled Express Lanes and At-Grade Crossings (Lane Conversion)

Building upon the VISSIM 2045 Baseline analysis, the AM and PM peak period VISSIM models were updated to incorporate the travel demand modeling adjustments previously discussed, the transit assumptions previously discussed, and geometric updates to incorporate tolled express lanes via lane conversion with at-grade crossings at each of the intersections from Jay Road to Airport Road. One tolled express lane was included in each direction. Where there are three existing general purpose lanes along the corridor, the third lane was converted to a tolled express lane; where only two general purpose lanes are present in the existing conditions, a third lane was added for the tolled express lanes. This resulted in two general purpose lanes and one tolled express lane in each direction throughout the corridor. Appendix P shows a high-level line diagram of each of the corridor alternative geometric updates.

Once the coding updates were complete, MOEs were extracted to summarize the anticipated operations of the corridor 2045 TEL At-Grade (Lane Conversion). To account for variability in the model and obtain more statistically accurate results, a total of 15 model runs were performed for each simulation model and averaged.

The following MOEs were developed for each VISSIM model:

- Intersection operations: General traffic and transit delay; general traffic and transit level of service; maximum queue lengths by turning movement; and average queue lengths by turning movement. These detailed results are provided in Appendix W and a summary of level of service by movement per hour is provided in Appendix X.

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- Vehicular travel times: Average travel times for general traffic and TEL traffic traveling through the corridor from Jay Road to Airport Road in both directions. These results are summarized in Table 30.
- Transit travel times: Average travel times for BOLT Route reported for Jay Road to Airport Road in both directions. These results are summarized in Table 30.
- Vehicular network metrics: To understand corridor-wide operational efficiency for vehicles, vehicles fully processed, vehicle miles traveled (VMT), vehicle hours traveled (VHT), average speed per vehicle, and unserved demand were reported. These results are summarized in Table 31.
- Person network metrics: To understand corridor-wide operational efficiency for people, people fully processed, person miles traveled (VMT), person hours traveled (VHT), and average speed per person were reported. These results are summarized in Table 32.

As shown, the 2045 TEL At-Grade (Lane Conversion) models show increased delay in the southbound direction in the AM peak period. This is a result of the conversion of one general traffic lane on the south end of the corridor to a tolled express lane, reducing capacity for general traffic. Transit travel times remain generally consistent with the Transit Slip Lanes and TEL At-Grade (Add Lane) models. This alternative does allow single occupant vehicles to pay a toll for a reduced travel time, but the TEL travel times are longer in this alternative than the TEL At-Grade (Add Lane) models. Vehicles and people fully process through the models are comparable in this alternative to Baseline and Transit Slip Lanes. There is a reduction in average speeds per vehicle and per person in this alternative due to the reduced capacity for general traffic along SH 119. It is anticipated that, in reality, operations on the southern end of the corridor under this alternative would be more similar to No Build conditions as a result of fewer vehicles using the SH 119 corridor causing less delay and slightly improved operations.

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**Table 30: SH 119 2045 TEL At-Grade (Lane Conversion) Travel Times**

Direction of Travel	Time Interval	Travel Time (min)		
		2045 TEL (Lane Conversion)		
		General Traffic	Transit	TEL
Northbound	6:00 AM - 7:00 AM	8.0	9.8	8.0
	<b>7:00 AM - 8:00 AM</b>	<b>8.9</b>	<b>10.0</b>	<b>8.4</b>
	8:00 AM - 9:00 AM	9.6	10.1	8.5
	9:00 AM - 10:00 AM	10.1	10.0	8.5
	10:00 AM - 11:00 AM	10.1	10.1	8.5
	11:00 AM - 12:00 PM	10.4	10.0	8.5
	12:00 PM - 1:00 PM	10.0	9.9	8.3
	1:00 PM - 2:00 PM	7.4	9.9	7.5
	2:00 PM - 3:00 PM	7.7	9.9	7.4
	3:00 PM - 4:00 PM	7.7	10.1	7.8
	4:00 PM - 5:00 PM	8.0	10.2	7.8
	<b>5:00 PM - 6:00 PM</b>	<b>7.8</b>	<b>10.5</b>	<b>7.9</b>
	6:00 PM - 7:00 PM	7.7	10.2	7.8
	7:00 PM - 8:00 PM	7.6	9.9	7.8
Southbound	6:00 AM - 7:00 AM	9.3	10.5	8.9
	<b>7:00 AM - 8:00 AM</b>	<b>10.7</b>	<b>10.8</b>	<b>9.3</b>
	8:00 AM - 9:00 AM	12.4	10.9	9.3
	9:00 AM - 10:00 AM	13.5	10.9	9.2
	10:00 AM - 11:00 AM	11.9	10.7	8.9
	11:00 AM - 12:00 PM	9.5	10.6	8.6
	12:00 PM - 1:00 PM	9.3	10.6	8.6
	1:00 PM - 2:00 PM	9.5	10.7	8.4
	2:00 PM - 3:00 PM	9.2	10.7	8.3
	3:00 PM - 4:00 PM	8.6	10.7	8.2
	4:00 PM - 5:00 PM	8.4	10.7	8.3
	<b>5:00 PM - 6:00 PM</b>	<b>8.4</b>	<b>10.8</b>	<b>8.3</b>
	6:00 PM - 7:00 PM	8.3	10.8	8.3
	7:00 PM - 8:00 PM	8.0	10.7	8.9



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**Table 31: SH 119 2045 TEL At-Grade (Lane Conversion) Vehicular Network Metrics**

Metric	2045 TEL (Lane Conversion)	
	AM	PM
Vehicles Fully Processed	68,328	76,698
Vehicle Miles Traveled (VMT)	299,915	332,436
Vehicle Hours Traveled (VHT)	9,606	11,983
Average Speed per Vehicle	31	28
Unserved Demand*	1,221	12,325

*\*Delay is not able to be calculated for unserved demand as these are vehicles that do not make it into the network. Because of this, unserved demand is provided as its own metric.*

**Table 32: SH 119 2045 TEL At-Grade (Lane Conversion) Person Network Metrics**

Metric	2045 TEL (Lane Conversion)	
	AM	PM
People Fully Processed	85,767	96,253
Person Miles Traveled	378,374	419,295
Person Hours Traveled	12,010	14,982
Average Speed per Person	32	28

## 12. Tolloed Express Lanes (Grade Separation)

Building upon the VISSIM 2045 Baseline analysis, the AM and PM peak period VISSIM models were updated to incorporate the travel demand modeling adjustments previously discussed, the transit assumptions previously discussed, and geometric updates for an added lane to incorporate tolled express lanes with grade separated crossings at each of the intersections from Jay Road to Airport Road. One tolled express lane was added in each direction (similar to the Add Lane scenario described above); existing general purpose lanes were not converted to tolled express lanes. Grade separated crossings were coded to separate only the managed lanes (one in each direction) from the signal control through the use of an elevated or tunnel connection circumventing the at-grade intersection. As a result of the grade separation, left-turns from side streets were not coded to be able to immediately enter the TEL, resulting in more restricted access in this scenario compared to the at-grade TEL scenarios. Appendix P shows a high level line diagram of each of the corridor alternative geometric updates.

Once the coding updates were complete, MOEs were extracted to summarize the anticipated operations of the corridor 2045 TEL (Grade Separation). To account for variability in the model and obtain more statistically accurate results, a total of 15 model runs were performed for each simulation model and averaged.

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The following MOEs were developed for each VISSIM model:

- Intersection operations: General traffic and transit delay; general traffic and transit level of service; maximum queue lengths by turning movement; and average queue lengths by turning movement. These detailed results are provided in Appendix Y and a summary of level of service by movement per hour is provided in Appendix Z.
- Vehicular travel times: Average travel times for general traffic and TEL traffic traveling through the corridor from Jay Road to Airport Road in both directions. These results are summarized in Table 33.
- Transit travel times: Average travel times for BOLT Route reported for Jay Road to Airport Road in both directions. These results are summarized in Table 33.
- Vehicular network metrics: To understand corridor-wide operational efficiency for vehicles, vehicles fully processed, vehicle miles traveled (VMT), vehicle hours traveled (VHT), average speed per vehicle, and unserved demand were reported. These results are summarized in Table 34.
- Person network metrics: To understand corridor-wide operational efficiency for people, people fully processed, person miles traveled (VMT), person hours traveled (VHT), and average speed per person were reported. These results are summarized in Table 35.

As shown, the 2045 TEL (Grade Separation) models generally have similar travel times for general traffic and transit as the Transit Slip Lanes and TEL At-Grade (Add Lane) models. This alternative also allows a much higher volume of single occupant vehicles to pay a toll for a reduced travel time, while still maintaining acceptable operations within the tolled express lane. The additional capacity in this alternative results in the most vehicles and people fully processed through the model of all the alternatives, with average speeds per vehicle and per person comparable to the Transit Slip Lanes models.

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**Table 33: SH 119 2045 TEL (Grade Separation) Travel Times**

Direction of Travel	Time Interval	Travel Time (min)		
		2045 TEL (Grade Separation)		
		General Traffic	Transit	TEL
Northbound	6:00 AM - 7:00 AM	7.8	9.7	8.2
	<b>7:00 AM - 8:00 AM</b>	<b>8.2</b>	<b>9.7</b>	<b>7.9</b>
	8:00 AM - 9:00 AM	8.8	9.7	8.4
	9:00 AM - 10:00 AM	8.7	9.7	8.5
	10:00 AM - 11:00 AM	8.4	9.7	8.5
	11:00 AM - 12:00 PM	8.2	9.7	7.9
	12:00 PM - 1:00 PM	8.6	9.7	7.8
	1:00 PM - 2:00 PM	7.5	9.7	7.9
	2:00 PM - 3:00 PM	7.9	9.7	7.9
	3:00 PM - 4:00 PM	8.0	9.9	7.7
	4:00 PM - 5:00 PM	8.2	10.1	7.7
	<b>5:00 PM - 6:00 PM</b>	<b>8.2</b>	<b>10.2</b>	<b>7.8</b>
	6:00 PM - 7:00 PM	7.9	10.0	7.6
	7:00 PM - 8:00 PM	7.5	9.7	7.8
Southbound	6:00 AM - 7:00 AM	8.5	10.1	7.8
	<b>7:00 AM - 8:00 AM</b>	<b>8.9</b>	<b>10.3</b>	<b>8.0</b>
	8:00 AM - 9:00 AM	8.9	10.4	8.0
	9:00 AM - 10:00 AM	8.6	10.2	7.9
	10:00 AM - 11:00 AM	8.5	10.0	7.9
	11:00 AM - 12:00 PM	8.5	10.0	7.7
	12:00 PM - 1:00 PM	8.5	9.9	7.7
	1:00 PM - 2:00 PM	9.4	9.9	7.7
	2:00 PM - 3:00 PM	9.4	9.9	7.7
	3:00 PM - 4:00 PM	9.3	10.0	7.7
	4:00 PM - 5:00 PM	9.1	10.0	7.7
	<b>5:00 PM - 6:00 PM</b>	<b>9.1</b>	<b>10.0</b>	<b>7.7</b>
	6:00 PM - 7:00 PM	9.1	10.0	7.8
	7:00 PM - 8:00 PM	8.8	9.9	8.2

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**Table 34: SH 119 2045 TEL (Grade Separation) Vehicular Network Metrics**

Metric	2045 TEL (Grade Separation)	
	AM	PM
Vehicles Fully Processed	70,139	79,761
Vehicle Miles Traveled (VMT)	312,477	352,027
Vehicle Hours Traveled (VHT)	8,346	10,490
Average Speed per Vehicle	37	34
Unserved Demand*	716	3,192

\*Delay is not able to be calculated for unserved demand as these are vehicles that do not make it into the network. Because of this, unserved demand is provided as its own metric.

**Table 35: SH 119 2045 TEL (Grade Separation) Person Network Metrics**

Metric	2045 TEL (Grade Separation)	
	AM	PM
People Fully Processed	88,031	100,086
Person Miles Traveled	394,075	443,785
Person Hours Traveled	10,435	13,116
Average Speed per Person	38	34

## 13. Safety Analysis

An existing safety assessment report was developed for the SH 119 corridor and is incorporated as Appendix AA. As part of the alternatives analysis, each of the corridor alternatives was evaluated against the existing conditions for the following safety criteria:

- Quantitative change in number of vehicular conflict points including weave and merge areas as well as conflict points at the intersections along the corridor,
- Quantitative change in bicycle exposure (measured by the change in conflict points for bicyclists along the corridor),
- Quantitative change in pedestrian exposure (measured by the change in conflict points for pedestrians along the corridor), and
- Ability to address the crash factors identified during the existing conditions safety analysis.

Each alternative's rating for the safety criteria was converted to a five-point scale with (++) being the best performance and (- -) being the worst performance. The ratings for vehicular conflict points reflect a quantitative change in the number of conflict points from existing conditions. The ratings for bicycle exposure reflect a quantitative change in the number of conflict points for bicyclists along the corridor. The ratings for pedestrian exposure reflect a quantitative change in the number of conflict points for pedestrians along the corridor.

Overall scoring for each category and each alternative are shown in Table 36. For specific crash improvements, adjustments made for the 2045 Baseline corridor runs targeted reductions in

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specific crash types; these improvements were carried into all alternatives. Grade separation results in even more improvement. For pedestrian exposure, increased laneage results in increased pedestrian exposure in a number of the alternatives analyzed. For bike exposure, all build alternatives assumed the currently proposed bike path will be installed reducing conflict points at significant crossings by constructing grade separations. For intersection and segment conflict points, it should be noted that the raw number of conflict points were used for analysis and the results show do not account for reduced vehicle volumes such as would be expected in transit slip lanes. With additional capacity added in most alternatives, vehicular conflict points are increased. There is less of an increase seen with the TEL alternatives due to unsignalized thru and left-turn movements across the TEL assumed to be restricted. Grade separation of the TEL provides even more reduction in conflict points.

**Table 36: SH 119 Safety Alternatives Analysis**

Alternative	No Build	Baseline	Transit Slip Lanes	3 General Purpose Lanes	TEL At-Grade (Add Lane)	TEL At-Grade (Lane Conversion)	TEL Grade Separated Crossings
<b>Specific Crash Improvement</b>	(0)	(+) SH 52, Airport Road, and Hover Road intersection improvements	(+) SH 52, Airport Road, and Hover Road intersection improvements	(+) SH 52, Airport Road, and Hover Road intersection improvements	(+) SH 52, Airport Road, and Hover Road intersection improvements	(+) SH 52, Airport Road, and Hover Road intersection improvements	(++) Grade separation reduces likelihood of rear-end crashes
<b>Pedestrian Exposure</b>	(0) 87	(-) 92	(-) 96	(-) 96	(-) 100	(-) 96	(+) 87
<b>Bike Exposure</b>	(-)	(++) Significant improvement with proposed bike path having grade separations at major crossings	(++) Significant improvement with proposed bike path having grade separations at major crossings	(++) Significant improvement with proposed bike path having grade separations at major crossings	(++) Significant improvement with proposed bike path having grade separations at major crossings	(++) Significant improvement with proposed bike path having grade separations at major crossings	(++) Significant improvement with proposed bike path having grade separations at major crossings
<b>Intersection &amp; Segment Conflict Points</b>	(0) 450	(-) 494	(--) 549	(--) 524	(-) 515	(-) 498	(+) 437
<b>Overall</b>	(0)	(+)	(0)	(0)	(+)	(+)	(++)

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## 14. Conclusion

Through this traffic analysis process, it was determined to move forward with a split intersection maintaining two lanes along SH 119 through the SH 52 intersection. This option improves intersection operations significantly from the existing single intersection with two lanes along SH 119. Similarly, the Baseline corridor improvements modeled (including the Hover Road grade separated intersection that Longmont is working toward implementing and the addition of both a signal and dual northbound left-turn lanes at the northbound Airport Road intersection) result in significant corridor operational improvements from the No Build condition.

Table 37 shows all of the vehicle and transit travel time results for No Build, Baseline, and each of the five alternatives for comparative purposes, as well as daily total person delay in hours. All of the corridor alternatives analyzed showed improvement for transit operations along the corridor as a result of the BRT assumptions incorporated into each of these models. Only the 3 General Purpose Lanes and Tolloed Express Lanes At-Grade (Lane Conversion) showed notable negative impacts to general traffic. Further review of the travel time in these scenarios showed that the speeds along SH 119 were lower than the baseline model as a result of induced demand from the new through travel lanes and a newly created bottleneck in the southern end of the corridor. This result indicates an over-inducement of new demand along SH 119 in the travel demand model that cannot be handled by the traffic signals and through laneage in the VISSIM model. It should be noted that induced demand along SH 119 is not necessarily new trips, but rather diverted trips from elsewhere (most notably US 36, 55<sup>th</sup> Street, 63<sup>rd</sup> Street, and US 287). The general finding is that these alternatives perform worse than the similar add lane scenarios which preserve the added capacity at signals in the southern end of the corridor.

While the total transit delay in the peak hour is shown at the bottom of Table 37, the delay shown for the 2045 No Build and 2045 Baseline conditions includes non-linear routing of transit along the corridor and a higher number of stops. Table 38 shows the sum of intersection delay for transit in each direction in the 2045 Baseline and 2045 Transit Slip Lanes alternatives. This provides insight into how much of the transit delay reduction from 2045 Baseline to 2045 Transit Slip Lanes is actually a result of the transit slip lane additions.

Table 39 shows all of the vehicle peak period network metrics and Table 40 shows person metrics for these same models. As anticipated, the alternatives with added lane capacity resulted in increased throughput of vehicles and people; these included 3 General Purpose Lanes, Tolloed Express Lanes At-Grade (Add Lane), and Tolloed Express Lanes (Grade Separation).

**Table 37: Vehicle & Transit Travel Time Comparison**

Direction of Travel	Time Interval	Travel Time (min)																
		2045 No Build		2045 Baseline		2045 Transit Slip Lanes		2045 3 General Purpose Lanes		2045 TEL (Add Lane)			2045 TEL (Lane Conversion)			2045 TEL (Grade Separation)		
		General Traffic	Transit	General Traffic	Transit	General Traffic	Transit	General Traffic	Transit	General Traffic	Transit	TEL	General Traffic	Transit	TEL	General Traffic	Transit	TEL
Northbound	6:00 AM - 7:00 AM	7.5	19.2	8.0	19.1	7.6	9.8	8.5	10.1	7.8	9.9	8.0	8.0	9.8	8.0	7.8	9.7	8.2
	7:00 AM - 8:00 AM	7.6	19.5	9.1	19.1	8.8	10.1	8.5	10.2	8.4	10.2	7.8	8.9	10.0	8.4	8.2	9.7	7.9
	8:00 AM - 9:00 AM	7.8	19.6	9.3	19.2	9.1	10.2	8.6	10.4	8.9	9.9	7.9	9.6	10.1	8.5	8.8	9.7	8.4
	9:00 AM - 10:00 AM	7.8	19.6	9.0	19.2	9.0	10.1	8.8	10.5	8.9	10.0	7.9	10.1	10.0	8.5	8.7	9.7	8.5
	10:00 AM - 11:00 AM	7.7	20.0	8.6	19.3	9.0	10.0	8.7	10.4	8.6	9.9	8.0	10.1	10.1	8.5	8.4	9.7	8.5
	11:00 AM - 12:00 PM	7.9	20.3	8.8	19.6	8.5	10.0	9.5	10.9	8.4	9.8	7.8	10.4	10.0	8.5	8.2	9.7	7.9
	12:00 PM - 1:00 PM	8.0	19.7	9.2	20.2	8.6	10.0	10.9	12.2	9.0	9.8	7.8	10.0	9.9	8.3	8.6	9.7	7.8
	1:00 PM - 2:00 PM	9.0	14.6	7.5	18.4	7.5	10.0	7.3	10.0	7.5	9.8	7.5	7.4	9.9	7.5	7.5	9.7	7.9
	2:00 PM - 3:00 PM	8.7	14.7	7.7	19.2	7.7	10.2	7.4	10.0	7.9	9.9	7.4	7.7	9.9	7.4	7.9	9.7	7.9
	3:00 PM - 4:00 PM	8.9	15.0	7.9	19.7	7.9	10.4	7.6	10.4	7.9	9.9	7.8	7.7	10.1	7.8	8.0	9.9	7.7
	4:00 PM - 5:00 PM	12.3	18.4	8.2	20.1	8.1	10.7	7.7	10.3	8.8	10.1	7.9	8.0	10.2	7.8	8.2	10.1	7.7
	5:00 PM - 6:00 PM	18.3	27.5	8.2	19.8	8.2	10.7	7.7	10.3	9.5	10.4	8.0	7.8	10.5	7.9	8.2	10.2	7.8
	6:00 PM - 7:00 PM	23.7	33.9	7.9	19.0	7.9	10.4	7.6	10.2	8.4	10.1	7.9	7.7	10.2	7.8	7.9	10.0	7.6
7:00 PM - 8:00 PM	16.2	23.4	7.6	17.9	7.5	10.1	7.5	10.1	7.5	9.9	7.8	7.6	9.9	7.8	7.5	9.7	7.8	
Southbound	6:00 AM - 7:00 AM	8.7	16.0	9.1	15.2	9.0	10.5	9.3	10.8	8.6	10.4	8.4	9.3	10.5	8.9	8.5	10.1	7.8
	7:00 AM - 8:00 AM	10.1	17.2	9.9	16.1	9.5	10.8	11.2	12.7	9.0	10.6	8.8	10.7	10.8	9.3	8.9	10.3	8.0
	8:00 AM - 9:00 AM	11.6	19.0	10.3	16.5	9.7	11.0	14.9	17.0	9.0	10.6	8.7	12.4	10.9	9.3	8.9	10.4	8.0
	9:00 AM - 10:00 AM	12.1	20.0	10.3	17.7	9.7	10.6	15.1	17.1	8.7	10.5	8.6	13.5	10.9	9.2	8.6	10.2	7.9
	10:00 AM - 11:00 AM	12.4	15.2	9.2	13.4	9.1	10.2	10.3	11.8	8.5	10.4	8.4	11.9	10.7	8.9	8.5	10.0	7.9
	11:00 AM - 12:00 PM	8.9	13.8	8.9	14.3	8.8	10.7	8.9	10.6	8.5	10.3	8.3	9.5	10.6	8.6	8.5	10.0	7.7
	12:00 PM - 1:00 PM	8.9	13.9	9.0	14.0	8.9	10.6	9.0	10.6	8.5	10.3	8.3	9.3	10.6	8.6	8.5	9.9	7.7
	1:00 PM - 2:00 PM	8.7	13.8	8.5	14.4	8.4	10.8	8.2	10.6	10.7	11.4	9.1	9.5	10.7	8.4	9.4	9.9	7.7
	2:00 PM - 3:00 PM	8.9	13.7	8.8	14.8	8.5	10.9	8.3	10.7	10.0	11.4	9.1	9.2	10.7	8.3	9.4	9.9	7.7
	3:00 PM - 4:00 PM	8.7	14.6	8.5	14.8	8.2	10.7	8.1	10.6	9.7	11.4	9.4	8.6	10.7	8.2	9.3	10.0	7.7
	4:00 PM - 5:00 PM	8.3	14.2	8.3	14.7	8.2	10.6	8.0	10.5	9.5	11.4	9.3	8.4	10.7	8.3	9.1	10.0	7.7
	5:00 PM - 6:00 PM	8.3	13.9	8.3	14.4	8.2	10.5	8.0	10.6	9.4	11.2	9.3	8.4	10.8	8.3	9.1	10.0	7.7
	6:00 PM - 7:00 PM	8.2	13.9	8.2	14.4	8.1	10.7	8.0	10.5	9.3	11.4	9.3	8.3	10.8	8.3	9.1	10.0	7.8
7:00 PM - 8:00 PM	8.0	13.5	7.9	13.3	7.9	10.4	7.9	10.5	8.9	11.5	9.5	8.0	10.7	8.9	8.8	9.9	8.2	
<b>Total Transit Delay in Peak Hour*</b>		<b>26.6</b>		<b>12.9</b>		<b>3.7</b>		<b>9.8</b>		<b>4.2</b>			<b>3.6</b>			<b>3.1</b>		

\*Significantly higher transit travel times in the 2045 No Build and 2045 Baseline conditions can be attributed to non-linear routing of transit as well as longer dwell times assumed for transit stops. General BRT assumptions of linear routing along SH 119 and improved dwell times show significant travel time savings. Free flow travel time is assumed to be 7.3 minutes along the corridor.

**Table 38: Transit Intersection Delay\***

Direction	2045 Baseline		2045 Transit Slip Lanes		Difference	
	AM	PM	AM	PM	AM	PM
Northbound	291 sec	256 sec	75 sec	97 sec	216 sec (3.6 min)	159 sec (2.65 min)
Southbound	246 sec	250 sec	152 sec	143 sec	94 sec (1.6 min)	107 sec (1.8 min)

\*Delay is calculated by adding together northbound and southbound transit delay at each intersection from Jay Road to Airport Road, removing the change in delay that results from route and stop adjustments. For the 2045 Baseline condition delay northbound at SH 52 (Mineral Road) is taken from the northbound left turn movement since no buses make a northbound through movement in this scenario.

Table 39: Vehicle Peak Period Network Metrics Comparison

Metric	2045 No Build		2045 Baseline		2045 Transit Slip Lanes		2045 3 General Purpose Lanes		2045 TEL (Add Lane)		2045 TEL (Lane Conversion)		2045 TEL (Grade Separation)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Vehicles Fully Processed	68,470	77,053	68,402	76,714	68,477	76,863	69,713	80,349	69,109	77,755	68,328	76,698	70,139	79,761
Vehicle Miles Traveled (VMT)	287,844	321,637	287,773	319,959	288,246	320,656	303,541	346,748	302,552	336,137	299,915	332,436	312,477	352,027
Vehicle Hours Traveled (VHT)	8,211	10,942	7,622	9,483	7,703	9,304	10,110	11,301	8,472	10,127	9,606	11,983	8,346	10,490
Average Speed per Vehicle	36	31	38	34	37	34	30	31	36	33	31	28	37	34
Unserviced Demand*	926	3,519	364	4,555	572	4,148	2,916	5,251	1,441	5,906	1,221	12,325	716	3,192

\*Delay is not able to be calculated for unserved demand as these are vehicles that do not make it into the network. Because of this, unserved demand is provided as its own metric.

Table 40: Person Peak Period Network Metrics Comparison

Metric	2045 No Build		2045 Baseline		2045 Transit Slip Lanes		2045 3 General Purpose Lanes		2045 TEL (Add Lane)		2045 TEL (Lane Conversion)		2045 TEL (Grade Separation)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
People Fully Processed	85,742	96,463	85,657	96,047	85,946	96,079	87,491	100,814	86,743	97,579	85,767	96,253	88,031	100,086
Person Miles Traveled	361,564	403,743	361,466	401,422	363,719	404,507	382,829	437,114	381,668	423,924	378,374	419,295	394,075	443,785
Person Hours Traveled	10,273	13,689	9,536	11,860	9,632	11,634	12,643	14,132	10,593	12,662	12,010	14,982	10,435	13,116
Average Speed per Person	35	29	38	34	38	35	30	31	36	33	32	28	38	34
Total Person Delay (hours)*	7,896		5,997		6,068		8,726		6,927		8,781		6,390	

\*This value only accounts for intersection delay; does not include additional delay experienced on transit related to routing and/or transit stops. See Table 37 for difference in overall transit delay during the peak hours based on BRT assumptions and alternative improvement



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Y. TEL (Grade Separation) Peak Hour Intersection Results

Z. TEL (Grade Separation) Intersection Level of Service by Hour

AA. Safety Assessment Report

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## Appendix A

### Intersection Turning Movements Calibration Summary

**SH 119 Traffic Analysis**  
**Existing Conditions - Intersection Turning Movements Calibration Summary<sup>(1)</sup>**

Intersection / Movement	Weekday AM Peak-Hour (7:00 AM - 8:00 AM)					Weekday PM Peak-Hour (5:00 PM - 6:00 PM)				
	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Volume Target (+ OR - VPH)	Volume Target Met	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Volume Target (+ OR - VPH)	Volume Target Met
<b>SH 119 / Hover Street</b>										
Northbound Left-Turn (Hover Street)	175	206	18%	100	YES	127	128	1%	100	YES
Northbound Through (Hover Street)	480	486	1%	100	YES	765	764	0%	115	YES
Northbound Right-Turn (Hover Street)	52	52	0%	100	YES	100	97	-3%	100	YES
Southbound Left-Turn (Hover Street)	110	113	3%	100	YES	200	206	3%	100	YES
Southbound Through (Hover Street)	710	711	0%	107	YES	933	934	0%	140	YES
Southbound Right-Turn (Hover Street)	500	598	20%	100	YES	200	187	-6%	100	YES
Eastbound Left-Turn (SH 119)	188	170	-10%	100	YES	701	677	-3%	105	YES
Eastbound Through (SH 119)	375	333	-11%	100	YES	894	883	-1%	134	YES
Eastbound Right-Turn (SH 119)	125	113	-10%	100	YES	275	280	2%	100	YES
Westbound Left-Turn (SH 119)	61	57	-7%	100	YES	114	111	-3%	100	YES
Westbound Through (SH 119)	1,119	1,094	-2%	168	YES	550	542	-1%	100	YES
Westbound Right-Turn (SH 119)	119	115	-3%	100	YES	222	221	0%	100	YES
<b>Intersection Total</b>	<b>4,014</b>	<b>4,048</b>	<b>1%</b>		<b>100%</b>	<b>5,081</b>	<b>5,030</b>	<b>-1%</b>		<b>100%</b>
<b>SB SH 119 / Airport Road</b>										
Southbound Left-Turn (SH 119)	0	0	-	100	YES	5	5	0%	100	YES
Southbound Through (SH 119)	1,777	1,863	5%	267	YES	834	814	-2%	125	YES
Southbound Right-Turn (SH 119)	17	17	0%	100	YES	38	38	0%	100	YES
Eastbound Through (Airport Road)	41	39	-5%	100	YES	32	33	3%	100	YES
Eastbound Right-Turn (Airport Road)	751	748	0%	113	YES	317	326	3%	100	YES
Westbound Left-Turn (Airport Road)	9	8	-11%	100	YES	5	6	20%	100	YES
Westbound Through (Airport Road)	259	241	-7%	100	YES	732	685	-6%	110	YES
<b>Intersection Total</b>	<b>2,854</b>	<b>2,916</b>	<b>2%</b>		<b>100%</b>	<b>1,963</b>	<b>1,907</b>	<b>-3%</b>		<b>100%</b>
<b>NB SH 119 / Airport Road</b>										
Northbound Left-Turn (SH 119)	234	220	-6%	100	YES	717	676	-6%	108	YES
Northbound Through (SH 119)	668	614	-8%	100	YES	1,851	1,831	-1%	278	YES
Northbound Right-Turn (SH 119)	2	3	50%	100	YES	4	3	-25%	100	YES
Eastbound Left-Turn (Airport Road)	16	14	-13%	100	YES	16	16	0%	100	YES
Eastbound Through (Airport Road)	25	25	0%	100	YES	21	23	10%	100	YES
Westbound Through (Airport Road)	34	32	-6%	100	YES	20	20	0%	100	YES
Westbound Right-Turn (Airport Road)	4	4	0%	100	YES	3	3	0%	100	YES
<b>Intersection Total</b>	<b>983</b>	<b>912</b>	<b>-7%</b>		<b>100%</b>	<b>2,632</b>	<b>2,572</b>	<b>-2%</b>		<b>100%</b>
<b>SB SH 119 / Niwot Road</b>										
Southbound Left-Turn (SH 119)	82	77	-6%	100	YES	75	74	-1%	100	YES
Southbound Through (SH 119)	2,255	2,294	2%	338	YES	1,054	1,045	-1%	158	YES
Southbound Right-Turn (SH 119)	200	159	-21%	100	YES	27	30	11%	100	YES
Eastbound Through (Niwot Road)	116	115	-1%	100	YES	175	176	1%	100	YES
Eastbound Right-Turn (Niwot Road)	43	44	2%	100	YES	99	101	2%	100	YES
Westbound Left-Turn (Niwot Road)	119	115	-3%	100	YES	97	96	-1%	100	YES
Westbound Through (Niwot Road)	141	138	-2%	100	YES	92	88	-4%	100	YES
<b>Intersection Total</b>	<b>2,956</b>	<b>2,942</b>	<b>0%</b>		<b>100%</b>	<b>1,619</b>	<b>1,610</b>	<b>-1%</b>		<b>100%</b>
<b>NB SH 119 / Niwot Road</b>										
Northbound Left-Turn (SH 119)	52	48	-8%	100	YES	43	41	-5%	100	YES
Northbound Through (SH 119)	809	765	-5%	121	YES	2,398	2,381	-1%	360	YES
Northbound Right-Turn (SH 119)	50	44	-12%	100	YES	93	95	2%	100	YES
Eastbound Left-Turn (Niwot Road)	45	44	-2%	100	YES	111	111	0%	100	YES
Eastbound Through (Niwot Road)	153	146	-5%	100	YES	139	139	0%	100	YES
Westbound Through (Niwot Road)	208	205	-1%	100	YES	146	142	-3%	100	YES
Westbound Right-Turn (Niwot Road)	50	46	-8%	100	YES	63	64	2%	100	YES
<b>Intersection Total</b>	<b>1,367</b>	<b>1,298</b>	<b>-5%</b>		<b>100%</b>	<b>2,993</b>	<b>2,973</b>	<b>-1%</b>		<b>100%</b>
<b>SH 119 / Mineral Road</b>										
Northbound Left-Turn (SH 119)	35	37	6%	100	YES	7	9	29%	100	YES
Northbound Through (SH 119)	830	787	-5%	125	YES	2,207	2,186	-1%	331	YES
Northbound Right-Turn (SH 119)	192	188	-2%	100	YES	247	255	3%	100	YES
Southbound Left-Turn (SH 119)	129	125	-3%	100	YES	115	114	-1%	100	YES
Southbound Through (SH 119)	2,279	2,149	-6%	342	YES	1,126	1,118	-1%	169	YES
Southbound Right-Turn (SH 119)	9	10	11%	100	YES	9	8	-11%	100	YES
Eastbound Left-Turn (Mineral Road)	5	8	60%	100	YES	15	16	7%	100	YES
Eastbound Through (Mineral Road)	54	52	-4%	100	YES	70	73	4%	100	YES
Eastbound Right-Turn (Mineral Road)	23	25	9%	100	YES	24	24	0%	100	YES
Westbound Left-Turn (Mineral Road)	370	362	-2%	100	YES	196	192	-2%	100	YES
Westbound Through (Mineral Road)	69	65	-6%	100	YES	28	27	-4%	100	YES
Westbound Right-Turn (Mineral Road)	76	74	-3%	100	YES	312	317	2%	100	YES
<b>Intersection Total</b>	<b>4,071</b>	<b>3,882</b>	<b>-5%</b>		<b>100%</b>	<b>4,356</b>	<b>4,339</b>	<b>0%</b>		<b>100%</b>

**SH 119 Traffic Analysis**  
**Existing Conditions - Intersection Turning Movements Calibration Summary<sup>(1)</sup>**

Intersection / Movement	Weekday AM Peak-Hour (7:00 AM - 8:00 AM)					Weekday PM Peak-Hour (5:00 PM - 6:00 PM)				
	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Volume Target (+ OR - VPH)	Volume Target Met	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Volume Target (+ OR - VPH)	Volume Target Met
<b>SB SH 119 / 63rd Street</b>										
Southbound Left-Turn (SH 119)	475	435	-8%	100	YES	155	151	-3%	100	YES
Southbound Through (SH 119)	2,187	2,077	-5%	328	YES	1,175	1,170	0%	176	YES
Southbound Right-Turn (SH 119)	10	13	30%	100	YES	16	13	-19%	100	YES
Eastbound Through (63rd Street)	362	361	0%	100	YES	73	71	-3%	100	YES
Eastbound Right-Turn (63rd Street)	277	280	1%	100	YES	90	95	6%	100	YES
Westbound Left-Turn (63rd Street)	248	232	-6%	100	YES	320	319	0%	100	YES
Westbound Through (63rd Street)	99	100	1%	100	YES	832	809	-3%	125	YES
<b>Intersection Total</b>	<b>3,658</b>	<b>3,498</b>	<b>-4%</b>		<b>100%</b>	<b>2,661</b>	<b>2,628</b>	<b>-1%</b>		<b>100%</b>
<b>NB SH 119 / 63rd Street</b>										
Northbound Left-Turn (SH 119)	41	44	7%	100	YES	442	442	0%	100	YES
Northbound Through (SH 119)	847	822	-3%	127	YES	2,092	2,097	0%	314	YES
Northbound Right-Turn (SH 119)	290	281	-3%	100	YES	393	396	1%	100	YES
Eastbound Left-Turn (63rd Street)	6	5	-17%	100	YES	2	2	0%	100	YES
Eastbound Through (63rd Street)	831	784	-6%	125	YES	226	220	-3%	100	YES
Westbound Through (63rd Street)	306	294	-4%	100	YES	710	689	-3%	107	YES
Westbound Right-Turn (63rd Street)	204	203	0%	100	YES	367	359	-2%	100	YES
<b>Intersection Total</b>	<b>2,525</b>	<b>2,433</b>	<b>-4%</b>		<b>100%</b>	<b>4,232</b>	<b>4,205</b>	<b>-1%</b>		<b>100%</b>
<b>SB SH 119 / Jay Road</b>										
Southbound Left-Turn (SH 119)	1	1	0%	100	YES	8	8	0%	100	YES
Southbound Through (SH 119)	2,561	2,386	-7%	384	YES	1,382	1,385	0%	207	YES
Southbound Right-Turn (SH 119)	150	132	-12%	100	YES	195	194	-1%	100	YES
Eastbound Through (Jay Road)	244	236	-3%	100	YES	279	278	0%	100	YES
Eastbound Right-Turn (Jay Road)	99	99	0%	100	YES	57	54	-5%	100	YES
Westbound Left-Turn (Jay Road)	423	412	-3%	100	YES	360	351	-3%	100	YES
Westbound Through (Jay Road)	184	181	-2%	100	YES	261	271	4%	100	YES
<b>Intersection Total</b>	<b>3,662</b>	<b>3,447</b>	<b>-6%</b>		<b>100%</b>	<b>2,542</b>	<b>2,541</b>	<b>0%</b>		<b>100%</b>
<b>NB SH 119 / Jay Road</b>										
Northbound Left-Turn (SH 119)	38	38	0%	100	YES	127	129	2%	100	YES
Northbound Through (SH 119)	1,049	1,035	-1%	157	YES	2,797	2,809	0%	400	YES
Northbound Right-Turn (SH 119)	294	287	-2%	100	YES	504	512	2%	100	YES
Eastbound Left-Turn (Jay Road)	126	123	-2%	100	YES	125	127	2%	100	YES
Eastbound Through (Jay Road)	119	111	-7%	100	YES	162	161	-1%	100	YES
Westbound Through (Jay Road)	569	566	-1%	100	YES	494	497	1%	100	YES
Westbound Right-Turn (Jay Road)	3	3	0%	100	YES	5	6	20%	100	YES
<b>Intersection Total</b>	<b>2,198</b>	<b>2,163</b>	<b>-2%</b>		<b>100%</b>	<b>4,214</b>	<b>4,241</b>	<b>1%</b>		<b>100%</b>
<b>Diagonal Hwy / 47th Street</b>										
Northbound Left-Turn (47th Street)	66	64	-3%	100	YES	200	196	-2%	100	YES
Northbound Through (47th Street)	50	51	2%	100	YES	196	197	1%	100	YES
Northbound Right-Turn (47th Street)	45	42	-7%	100	YES	108	111	3%	100	YES
Southbound Left-Turn (47th Street)	10	9	-10%	100	YES	5	4	-20%	100	YES
Southbound Through (47th Street)	106	103	-3%	100	YES	48	49	2%	100	YES
Southbound Right-Turn (47th Street)	153	150	-2%	100	YES	84	82	-2%	100	YES
Eastbound Left-Turn (Diagonal Hwy)	32	32	0%	100	YES	122	120	-2%	100	YES
Eastbound Through (Diagonal Hwy)	492	490	0%	100	YES	1,155	1,161	1%	173	YES
Eastbound Right-Turn (Diagonal Hwy)	136	124	-9%	100	YES	102	100	-2%	100	YES
Westbound Left-Turn (Diagonal Hwy)	13	13	0%	100	YES	10	10	0%	100	YES
Westbound Through (Diagonal Hwy)	108	110	2%	100	YES	139	134	-4%	100	YES
Westbound Right-Turn (Diagonal Hwy)	9	10	11%	100	YES	29	31	7%	100	YES
<b>Intersection Total</b>	<b>1,220</b>	<b>1,198</b>	<b>-2%</b>		<b>100%</b>	<b>2,198</b>	<b>2,195</b>	<b>0%</b>		<b>100%</b>
<b>Diagonal Hwy / SB Foothills Pkwy Ramps</b>										
Southbound Left-Turn (Foothills Pkwy)	46	38	-17%	100	YES	15	6	-60%	100	YES
Southbound Through (Foothills Pkwy)	3	0	-100%	100	YES	4	0	-100%	100	YES
Southbound Right-Turn (Foothills Pkwy)	889	790	-11%	133	YES	686	681	-1%	100	YES
Eastbound Through (Diagonal Hwy)	614	609	-1%	100	YES	1,364	1,375	1%	205	YES
Eastbound Right-Turn (Diagonal Hwy)	292	298	2%	100	YES	266	266	0%	100	YES
Westbound Left-Turn (Diagonal Hwy)	127	123	-3%	100	YES	68	68	0%	100	YES
Westbound Through (Diagonal Hwy)	200	199	-1%	100	YES	355	345	-3%	100	YES
<b>Intersection Total</b>	<b>2,171</b>	<b>2,057</b>	<b>-5%</b>		<b>100%</b>	<b>2,758</b>	<b>2,741</b>	<b>-1%</b>		<b>100%</b>

Notes:

- (1) Data based on the average of 15 VISSIM micro-simulation models.
- (2) Percent error between balanced turning movements counts and actual throughput volume in the model.

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## **Appendix B**

### **Vehicle and Transit Travel Time Calibration Summary**

**SH 119 Traffic Analysis**  
**Existing Conditions - Vehicular Travel Time Calibration Summary<sup>(1)</sup>**  
**(Jay Road to Airport Road)**

	Existing Travel Time (sec.) <sup>(2)</sup>	Model Travel Time (sec.)	Difference	% Error <sup>(3)</sup>	Travel Time Target Met
<b><u>Weekday AM</u></b>					
Northbound					
7:00 AM - 8:00 AM	430	469	39	9%	YES
Southbound					
7:00 AM - 8:00 AM	650	639	11	2%	YES
<b><u>Weekday PM</u></b>					
Northbound					
5:00 PM - 6:00 PM	747	691	56	7%	YES
Southbound					
5:00 PM - 6:00 PM	475	514	39	8%	YES

Notes:

- (1) Data based on the average of 15 VISSIM micro-simulation models.
- (2) Existing travel times based on INRIX data from December 2019.
- (3) Percent error between existing travel time and travel time in the model.

**SH 119 Traffic Analysis**  
**Existing Conditions - Transit Travel Time Calibration Summary<sup>(1)</sup>**  
**(Jay Road to Airport Road)**

	Existing Travel Time (sec.) <sup>(2)</sup>	Model Travel Time (sec.)	Difference	% Error <sup>(3)</sup>	Travel Time Target Met
<b><u>Weekday AM</u></b>					
Northbound					
7:00 AM - 8:00 AM	804	846	42	5%	YES
Southbound					
7:00 AM - 8:00 AM	792	806	14	2%	YES
<b><u>Weekday PM</u></b>					
Northbound					
5:00 PM - 6:00 PM	630	815	185	29%	NO
Southbound					
5:00 PM - 6:00 PM	756	690	66	9%	YES

Notes:

- (1) Data based on the average of 15 VISSIM micro-simulation models.
- (2) Existing travel times based on RTD TriTapt Data for January 2017 Run Board for the Bolt route.
- (3) Percent error between existing travel time and travel time in the model.

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## Appendix C

### Travel Speeds Calibration Summary



**SH 119 Traffic Analysis**  
**Existing Conditions - General Traffic Speed Calibration Summary<sup>(1)</sup>**

	<u>North of Jay Road</u>				<u>North of SH 52</u>				<u>North of Niwot</u>				<u>South of Hover Road</u>			
	Existing Speed (MPH) <sup>(2)</sup>	Model Speed (MPH)	Difference	Speed Target Met	Existing Speed (MPH) <sup>(2)</sup>	Model Speed (MPH)	Difference	Speed Target Met	Existing Speed (MPH) <sup>(2)</sup>	Model Speed (MPH)	Difference	Speed Target Met	Existing Speed (MPH) <sup>(2)</sup>	Model Speed (MPH)	Difference	Speed Target Met
<b><u>Weekday AM</u></b>																
Northbound																
7:00 AM - 8:00 AM	57	52	5	YES	40	46	6	YES	50	58	8	YES	55	47	8	YES
Southbound																
7:00 AM - 8:00 AM	46	46	0	YES	19	37	18	NO	44	42	2	YES	42	45	3	YES
<b><u>Weekday PM</u></b>																
Northbound																
5:00 PM - 6:00 PM	49	42	7	YES	40	42	2	YES	44	42	2	YES	54	42	12	NO
Southbound																
5:00 PM - 6:00 PM	50	50	0	YES	43	50	7	YES	55	50	5	YES	50	50	0	YES

Notes:  
(1) Data based on the average of 15 VISSIM micro-simulation models.  
(2) Existing speeds collected by All Traffic Data in December 2019.

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## Appendix D

### Maximum Queue Lengths Calibration Summary

**SH 119 Traffic Study**  
**Existing Conditions - Maximum Queue Lengths Calibration Summary<sup>(1)</sup>**  
**Weekday AM Peak (7:00 AM - 9:00 AM)**

Intersection	Through Movement	Maximum Queues						Notes
		Measured Maximum Queue (ft.)	Model Maximum Queue 7AM (ft.)	Model Maximum Queue 8AM (ft.)	Maximum Queue Difference	Maximum Queue Error <sup>(2)</sup>	Maximum Queue Target Met	
SH 119 / Hover Street	Eastbound (SH 119)	225	222	174	3	1%	YES	
SH 119 / Hover Street	Westbound (SH 119)	500	544	456	44	9%	YES	
SB SH 119 / Airport Road	Southbound (SH 119) <sup>(3)</sup>	250	610	560	360	144%	NO	Approximately 600 of the vehicles arriving at this intersection in the peak hour are random arrival due to the upstream Clover Basin Dr/Hover St intersection not being included in the VISSIM model, which allows all southbound Hover St right turns to proceed without metering. As such, vehicles are not platooned when arriving at this movement, producing longer queues along SH 119 than observed during field observations.
SB SH 119 / Niwot Road	Southbound (SH 119)	4,602	3,162	4,737	135	3%	YES	
NB SH 119 / Niwot Road	Northbound (SH 119)	0	43	47	47	N/A	NO	The maximum model queue for this movement is less than 3 vehicles and the average queue is 2 feet, suggesting very nominal queuing at this location. The field observations did not record any queue for this movement, which is consistent with the average queuing in the model, indicating that field observations were not in place during the peak period maximum queue condition.
SH 119 / Mineral Road	Northbound (SH 119)	375	432	452	77	21%	YES	
SH 119 / Mineral Road	Southbound (SH 119)	5,580	5,409	5,688	108	2%	YES	
SB SH 119 / 63rd Street	Southbound (SH 119)	575	526	374	49	9%	YES	
NB SH 119 / 63rd Street	Northbound (SH 119) <sup>(3)</sup>	375	89	115	260	69%	NO	Adjustments to the model within allowable parameters cannot achieve the queues observed during field work. It is thought that vehicles are likely not fully utilizing the third lane through the intersection, which ends soon after the intersection. This type of lane use preference is not able to be modeled in VISSIM with allowable calibration adjustments, causing shorter model queues.
SB SH 119 / Jay Road	Southbound (SH 119) <sup>(3)</sup>	375	601	805	430	115%	NO	While the observed maximum queue length is significantly shorter than the modeled maximum queue length, the average queue difference is within approximately 4 vehicles. The field work performed at this location was done in the first 30 minutes of the peak hour, and as such the actual maximum queue was likely not observed.
NB SH 119 / Jay Road	Northbound (SH 119) <sup>(3)</sup>	350	134	157	193	55%	NO	Approximately 800 of the vehicles arriving at this intersection in the peak hour are random arrival due to the upstream Foothills Pkwy/Valmont Rd intersection not being included in the VISSIM model, which allows all traffic coming from Foothills Pkwy to proceed without metering. As such, vehicles are not platooned when arriving at this movement, producing shorter queues along SH 119 than observed during field observations.
Diagonal Hwy / 47th Street	Eastbound (Diagonal Hwy)	50	110	150	100	201%	NO	The average queues at this location, both observed and modeled, are 10 feet or less, suggesting nominal queuing at this location. While the maximum queue difference is greater than 20%, it is less than 4 vehicles.
Diagonal Hwy / 47th Street	Westbound (Diagonal Hwy)	100	65	110	10	10%	YES	
Diagonal Hwy / SB Foothills Pkwy Ramps	Eastbound (Diagonal Hwy)	50	80	110	60	119%	NO	The average queues at this location, both observed and modeled, are less than 10 feet, suggesting nominal queuing at this location. While the maximum queue difference is greater than 20%, it is less than 2 vehicles.
Diagonal Hwy / SB Foothills Pkwy Ramps	Westbound (Diagonal Hwy)	25	48	57	32	129%	NO	The average queues at this location, both observed and modeled, are less than 10 feet, suggesting nominal queuing at this location. While the maximum queue difference is greater than 20%, it is only approximately 2 vehicles.

Notes:  
(1) Data based on the average of 15 VISSIM micro-simulation models.  
(2) Percent error between projected queues and actual throughput queues in the model.  
(3) Due to concerns regarding calibration, consideration will be given to post processing of this location during alternatives analysis.

**SH 119 Traffic Study**  
**Existing Conditions - Maximum Queue Lengths Calibration Summary<sup>(1)</sup>**  
**Weekday PM Peak (5:00 PM - 7:00 PM)**

Intersection	Movement	Maximum Queues					Maximum Queue Error <sup>(2)</sup>	Maximum Queue Target Met	Notes
		Measured Maximum Queue (ft.)	Model Maximum Queue 5PM (ft.)	Model Maximum Queue 6PM (ft.)	Maximum Queue Difference	Maximum Queue Error <sup>(2)</sup>			
SH 119 / Hover Street	Eastbound (SH 119)	450	360	217	90	20%	YES		
SH 119 / Hover Street	Westbound (SH 119)	425	363	233	62	15%	YES		
SB SH 119 / Airport Road	Southbound (SH 119) <sup>(3)</sup>	175	293	229	118	67%	NO	Approximately 125 of the vehicles arriving at this intersection in the peak hour are random arrival due to the upstream Clover Basin Dr/Hover St intersection not being included in the VISSIM model, which allows all southbound Hover St right turns to proceed without metering. As such, vehicles are not platooned when arriving at this movement, producing longer queues along SH 119 than observed during field observations.	
SB SH 119 / Niwot Road	Southbound (SH 119)	350	367	272	17	5%	YES		
NB SH 119 / Niwot Road	Northbound (SH 119)	300	302	228	2	1%	YES		
SH 119 / Mineral Road	Northbound (SH 119)	6,090	5,027	4,436	1,063	17%	YES		
SH 119 / Mineral Road	Southbound (SH 119)	300	339	239	39	13%	YES		
SB SH 119 / 63rd Street	Southbound (SH 119)	375	304	267	71	19%	YES		
NB SH 119 / 63rd Street	Northbound (SH 119) <sup>(3)</sup>	350	247	205	103	30%	NO	Adjustments to the model within allowable parameters cannot achieve the queues observed during field work. It is thought that vehicles are likely not fully utilizing the third lane through the intersection, which ends soon after the intersection. This type of lane use preference is not able to be modeled in VISSIM with allowable calibration adjustments, causing shorter model queues.	
SB SH 119 / Jay Road	Southbound (SH 119)	350	333	254	17	5%	YES		
NB SH 119 / Jay Road	Northbound (SH 119) <sup>(3)</sup>	0	348	193	348	N/A	NO	The average queues at this location, both observed and modeled, are 25 feet or less, suggesting nominal queuing. Additionally, approximately 2,000 of the vehicles arriving at this intersection in the peak hour are random arrival due to the upstream Foothills Pkwy/Valmont Rd intersection not being included in the VISSIM model, which allows all traffic coming from Foothills Pkwy to proceed without metering. As such, vehicles are not platooned when arriving at this movement, producing longer queues along SH 119 than observed during field observations.	
Diagonal Hwy / 47th Street	Eastbound (Diagonal Hwy)	225	315	192	90	40%	NO	The average queues at this location, both observed and modeled, are 100 feet or less, suggesting there are not significant queues. While the maximum queue difference is greater than 20%, it is only approximately 3 vehicles.	
Diagonal Hwy / 47th Street	Westbound (Diagonal Hwy)	25	100	72	75	301%	NO	The average queues at this location, both observed and modeled, are less than 10 feet, suggesting nominal queuing at this location. While the maximum queue difference is greater than 20%, it is only approximately 3 vehicles.	
Diagonal Hwy / SB Foothills Pkwy Ramps	Eastbound (Diagonal Hwy) <sup>(3)</sup>	300	144	77	156	52%	NO	All of the vehicles arriving at this intersection in the peak hour are random arrival due to the upstream Diagonal Hwy/30th St intersection not being included in the VISSIM model, which allows all traffic to proceed without metering. As such, vehicles are not platooned when arriving at this movement, producing shorter queues than observed during field observations.	
Diagonal Hwy / SB Foothills Pkwy Ramps	Westbound (Diagonal Hwy)	75	96	28	21	28%	NO	The average queues at this location, both observed and modeled, are 20 feet or less, suggesting nominal queuing at this location. While the maximum queue difference is greater than 20%, it is less than 2 vehicles.	

Notes:

- (1) Data based on the average of 15 VISSIM micro-simulation models.
- (2) Percent error between projected queues and actual throughput queues in the model.
- (3) Due to concerns regarding calibration, consideration will be given to post processing of this location during alternatives analysis.

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## Appendix E

### 2045 No Build Peak Hour Intersection Results

**SH 119 Traffic Analysis**  
2045 No Build - Peak Hour Intersection Results<sup>(1)</sup>

Intersection / Movement	Weekday AM Peak-Hour (7:00 AM - 8:00 AM)								Weekday PM Peak-Hour (5:00 PM - 6:00 PM)							
	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Delay (sec.)	Level of Service	Volume-to-Capacity Ratio <sup>(3)</sup>	Model Maxium Queue (ft.)	Model Avg Queue (ft.)	Model Error % <sup>(2)</sup>	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Delay (sec.)	Level of Service	Volume-to-Capacity Ratio <sup>(3)</sup>	Model Maxium Queue (ft.)	Model Avg Queue (ft.)	Model Error % <sup>(2)</sup>
<b>SH 119 / Hover Street</b>																
Northbound Left-Turn (Hover Street)	224	214	-4%	74	E	0.83	417	99	181	193	7%	155	F	0.86	724	214
Northbound Through (Hover Street)	667	673	1%	46	D	0.68	465	112	816	806	-1%	44	D	0.85	665	142
Northbound Right-Turn (Hover Street)	67	67	0%	25	C	0.15	105	9	118	121	3%	17	B	0.28	136	7
Southbound Left-Turn (Hover Street)	107	109	2%	46	D	0.46	236	11	202	178	-12%	181	F	0.82	656	556
Southbound Through (Hover Street)	709	711	0%	59	E	0.88	557	159	1,152	993	-14%	199	F	1.12	977	877
Southbound Right-Turn (Hover Street)	503	497	-1%	2	A	0.33	0	0	251	217	-14%	138	F	0.16	257	170
Eastbound Left-Turn (SH 119)	241	198	-18%	79	E	0.75	213	61	690	581	-16%	49	D	0.97	352	83
Eastbound Through (SH 119)	438	371	-15%	24	C	0.61	216	16	1,031	849	-18%	90	F	1.14	905	82
Eastbound Right-Turn (SH 119)	134	134	0%	3	A	N/A	56	1	377	348	-8%	24	C	N/A	354	19
Westbound Left-Turn (SH 119)	60	59	-2%	71	E	0.17	124	21	131	128	-2%	48	D	1.13	235	39
Westbound Through (SH 119)	1,115	1,102	-1%	45	D	0.91	617	161	615	614	0%	56	E	0.84	481	135
Westbound Right-Turn (SH 119)	123	121	-2%	2	A	0.19	0	0	188	184	-2%	1	A	0.40	0	0
<b>General Traffic Intersection Total</b>	<b>4,388</b>	<b>4,256</b>	<b>-3%</b>	<b>41.1</b>	<b>D</b>	<b>0.91</b>			<b>5,752</b>	<b>5,212</b>	<b>-9%</b>	<b>92.3</b>	<b>F</b>	<b>1.10</b>		
Bus Eastbound Through (SH 119)	2	2	0%	38	D				4	3	-25%	155	F			
Bus Westbound Through (SH 119)	4	4	0%	65	E				3	3	0%	74	E			
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>55.9</b>	<b>E</b>				<b>7</b>	<b>6</b>	<b>-14%</b>	<b>114.8</b>	<b>F</b>			
<b>SB SH 119 / Airport Road</b>																
Southbound Left-Turn (SH 119)	0	0	-	0	A	0.71	612	20	7	7	0%	13	B	0.01	358	18
Southbound Through (SH 119)	1,822	1,788	-2%	15	B	0.71	611	23	999	977	-2%	17	B	0.49	357	18
Southbound Right-Turn (SH 119)	20	17	-15%	3	A	0.02	3	0	41	42	2%	4	A	0.04	5	0
Eastbound Through (Airport Road)	40	39	-3%	60	E	0.17	150	13	34	34	0%	47	D	0.07	104	8
Eastbound Right-Turn (Airport Road)	753	750	0%	2	A	0.51	0	0	336	346	3%	1	A	0.23	0	0
Westbound Left-Turn (Airport Road)	13	13	0%	80	E	0.64	336	58	7	8	14%	73	E	0.81	7,541	4,796
Westbound Through (Airport Road)	260	243	-7%	58	E	0.64	336	58	751	621	-17%	68	E	0.81	7,541	4,796
<b>Intersection Total</b>	<b>2,908</b>	<b>2,850</b>	<b>-2%</b>	<b>16.0</b>	<b>B</b>	<b>0.78</b>			<b>2,175</b>	<b>2,035</b>	<b>-6%</b>	<b>30.2</b>	<b>C</b>	<b>0.63</b>		
Bus Southbound Through (SH 119)	4	4	0%	39	D				3	3	0%	37	D			
Bus Eastbound Right-Turn (Airport Road)	1	1	0%	3	A				0	0	-	0	A			
Bus Westbound Through (Airport Road)	0	0	-	0	A				1	1	0%	56	E			
<b>Bus Intersection Total</b>	<b>5</b>	<b>5</b>	<b>0%</b>	<b>31.8</b>	<b>C</b>				<b>4</b>	<b>4</b>	<b>0%</b>	<b>41.8</b>	<b>D</b>			
<b>NB SH 119 / Airport Road</b>																
Northbound Left-Turn (SH 119)	230	216	-6%	6	A	0	0	0	733	605	-17%	353	F		7,183	2,169
Northbound Through (SH 119)	793	711	-10%	3	A	0	0	0	2,080	1,727	-17%	224	F		7,280	2,861
Northbound Right-Turn (SH 119)	2	2	0%	5	A	0	0	0	8	6	-25%	194	F		7,280	4,151
Eastbound Left-Turn (Airport Road)	15	13	-13%	15	C	0	113	3	14	14	0%	115	F		142	30
Eastbound Through (Airport Road)	25	25	0%	20	C	0	103	3	27	27	0%	136	F		131	25
Westbound Through (Airport Road)	43	41	-5%	7	A	0	78	1	25	23	-8%	226	F		155	39
Westbound Right-Turn (Airport Road)	5	4	-20%	7	A	0	12	0	4	4	0%	72	F		75	9
<b>Intersection Total</b>	<b>1,113</b>	<b>1,012</b>	<b>-9%</b>	<b>4.2</b>	<b>A</b>	<b>0.37</b>			<b>2,891</b>	<b>2,406</b>	<b>-17%</b>	<b>254.1</b>	<b>F</b>	<b>0.73</b>		
Bus Northbound Left-Turn (SH 119)	0	0	-	0	A				1	1	0%	358	F			
Bus Northbound Through (SH 119)	2	2	0%	25	D				4	4	0%	246	F			
<b>Bus Intersection Total</b>	<b>2</b>	<b>2</b>	<b>0%</b>	<b>25.4</b>	<b>D</b>				<b>5</b>	<b>5</b>	<b>0%</b>	<b>268.4</b>	<b>F</b>			
<b>SB SH 119 / Niwot Road</b>																
Southbound Left-Turn (SH 119)	86	80	-7%	21	C	0.08	100	3	160	160	0%	9	A	0.23	149	7
Southbound Through (SH 119)	2,268	2,229	-2%	27	C	1.00	2,071	199	1,158	1,148	-1%	11	B	0.85	363	17
Southbound Right-Turn (SH 119)	234	212	-9%	24	C	0.22	294	21	24	25	4%	5	A	0.04	122	5
Eastbound Through (Niwot Road)	120	117	-3%	88	F	1.01	310	70	424	194	-54%	723	F	0.95	1,668	1,587
Eastbound Right-Turn (Niwot Road)	40	40	0%	14	B	N/A	1	0	195	98	-50%	645	F	N/A	111	107
Westbound Left-Turn (Niwot Road)	262	192	-27%	123	F	0.98	449	103	133	129	-3%	116	F	0.70	159	58
Westbound Through (Niwot Road)	286	222	-22%	85	F	0.80	415	131	96	95	-1%	69	E	0.12	192	39
<b>Intersection Total</b>	<b>3,296</b>	<b>3,092</b>	<b>-6%</b>	<b>38.6</b>	<b>D</b>	<b>0.92</b>			<b>2,190</b>	<b>1,849</b>	<b>-16%</b>	<b>129.1</b>	<b>C</b>	<b>1.02</b>		
Bus Southbound Through (SH 119)	5	5	0%	52	D				3	3	0%	33	C			
<b>Bus Intersection Total</b>	<b>5</b>	<b>5</b>	<b>0%</b>	<b>52.3</b>	<b>D</b>				<b>3</b>	<b>3</b>	<b>0%</b>	<b>33.3</b>	<b>C</b>			
<b>NB SH 119 / Niwot Road</b>																
Northbound Left-Turn (SH 119)	63	61	-3%	9	A	0.06	41	0	42	40	-5%	12	B	0.03	27	0
Northbound Through (SH 119)	872	821	-6%	4	A	0.43	269	3	2,558	2,346	-8%	19	B	1.06	1,480	234
Northbound Right-Turn (SH 119)	51	45	-12%	2	A	0.06	0	0	206	212	3%	13	B	0.19	121	3
Eastbound Left-Turn (Niwot Road)	44	43	-2%	12	B	0.25	91	1	190	93	-51%	26	C	1.06	187	10
Eastbound Through (Niwot Road)	162	153	-6%	30	C	0.28	258	26	394	262	-34%	39	D	1.08	441	69
Westbound Through (Niwot Road)	485	354	-27%	330	F	0.73	1,522	1,123	187	183	-2%	98	F	0.78	377	49
Westbound Right-Turn (Niwot Road)	109	77	-29%	282	F	N/A	1,522	1,123	73	75	3%	28	C	N/A	377	49
<b>Intersection Total</b>	<b>1,786</b>	<b>1,554</b>	<b>-13%</b>	<b>94.9</b>	<b>F</b>	<b>0.92</b>			<b>3,650</b>	<b>3,211</b>	<b>-12%</b>	<b>24.9</b>	<b>C</b>	<b>1.02</b>		
Bus Northbound Through (SH 119)	2	2	0%	18	B				5	5	0%	37	D			
<b>Bus Intersection Total</b>	<b>2</b>	<b>2</b>	<b>0%</b>	<b>18.3</b>	<b>B</b>				<b>5</b>	<b>5</b>	<b>0%</b>	<b>37.1</b>	<b>D</b>			
<b>SH 119 / Mineral Road</b>																
Northbound Left-Turn (SH 119)	25	28	12%	70	E	0.14	89	10	8	9	13%	378	F		57	5
Northbound Through (SH 119)	899	851	-5%	18	B	0.53	310	45	2,439	2,251	-8%	294	F	1.21	7,296	6,743
Northbound Right-Turn (SH 119)	205	206	0%	7	A	0.24	166	8	307	287	-7%	284	F	0.32	206	15
Southbound Left-Turn (SH 119)	127	148	17%	136	F	0.68	2,171	299	140	120	-14%	95	F	1.25	270	35
Southbound Through (SH 119)	2,434	2,213	-9%	99	F	1.20	4,193	1,158	1,335	1,243	-7%	16	B	0.58	483	26
Southbound Right-Turn (SH 119)	0	11	23%	71	F	0.01	2,107	258	11	9	-18%	7	F	0.01	13	0
Eastbound Left-Turn (Mineral Road)	5	8	60%	94	F	0.03	171	32	18	20	11%	149	F	0.13	599	306
Eastbound Through (Mineral Road)	61	61	0%	77	E	0.52	171	32	84	98	17%	540	F	0.67	599	306
Eastbound Right-Turn (Mineral Road)	24	25	4%	1	A	0.10	0	0	29	30	3%	12	B	0.14	0	0
Westbound Left-Turn (Mineral Road)	473	457	-3%	132	F	1.03	661	230	250	246	-2%	147	F	0.86	671	148
Westbound Through (Mineral Road)	95	90	-5%	138	F	1.01	661	230	37	38	3%	163	F	0.86	671	148
Westbound Right-Turn (Mineral Road)	82	80	-2%	53	D	0.22	661	230	349	362	4%	70	E	1.16	671	148
<b>Intersection Total</b>	<b>4,439</b>	<b>4,178</b>	<b>-6%</b>	<b>81.4</b>	<b>F</b>	<b>1.10</b>			<b>5,007</b>	<b>4,713</b>	<b>-6%</b>	<b>191.3</b>	<b>F</b>	<b>1.09</b>		
Bus Northbound Left-Turn (SH 119)	2	3	50%	74	E				1	2	100%	510	F			
Bus Northbound Through (SH 119)	0	0	-	0	A				4	4	0%	446	F			
Bus Southbound Through (SH 119)	4	4	0%	141	F				3	3	0%	36	D			
Bus Southbound Right-Turn (SH 119)	1	1	0%	68	E				0	0	-	0	A			
Bus Eastbound Left-Turn (Mineral Road)	2	3	50%	121	F				1	2	100%	85	F			
Bus Eastbound Through (Mineral Road)	1	1	0%	3	A				0	0	-	0	A			
<b>Bus Intersection Total</b>	<b>10</b>	<														

# technical report

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## Appendix F

### 2045 No Build Intersection Level of Service by Hour

2045 No Build - Intersection Level Of Service by Hour

Intersection / Movement		6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM
SH 119 / Hover Street	Northbound Left-Turn (Hover Street)	E	E	F	F	F	E	D	D	E	D	F	F	D	C
	Northbound Through (Hover Street)	D	D	F	F	F	D	D	D	D	D	D	D	D	D
	Northbound Right-Turn (Hover Street)	C	C	F	F	F	C	C	B	B	B	B	B	B	C
	Southbound Left-Turn (Hover Street)	D	D	E	C	D	F	F	E	E	D	F	F	F	E
	Southbound Through (Hover Street)	E	E	E	D	D	D	D	D	D	D	D	F	F	D
	Southbound Right-Turn (Hover Street)	A	A	A	A	A	A	A	A	A	A	A	F	F	F
	Eastbound Left-Turn (SH 119)	E	E	F	D	D	D	D	D	D	D	D	D	D	C
	Eastbound Through (SH 119)	B	C	C	C	C	C	C	C	D	E	F	F	D	C
	Eastbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	B	C	C	B	A
	Westbound Left-Turn (SH 119)	E	E	E	D	D	D	E	E	D	D	D	D	D	C
Westbound Through (SH 119)	D	D	D	D	D	D	D	D	D	D	E	E	D	D	
Westbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		<b>D</b>	<b>D</b>	<b>E</b>	<b>E</b>	<b>E</b>	<b>D</b>	<b>D</b>	<b>C</b>	<b>D</b>	<b>D</b>	<b>F</b>	<b>F</b>	<b>E</b>	<b>C</b>
SB SH 119 / Airport Road	Southbound Left-Turn (SH 119)	A	A	B	A	A	A	A	A	A	B	A	B	B	B
	Southbound Through (SH 119)	A	B	B	B	A	A	A	B	B	B	B	B	B	B
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Through (Airport Road)	E	E	E	C	C	C	C	D	E	D	D	D	D	D
	Eastbound Right-Turn (Airport Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (Airport Road)	E	E	E	C	C	C	C	E	E	E	E	E	E	E
	Westbound Through (Airport Road)	E	E	D	C	C	C	C	E	E	E	E	E	E	E
<b>Intersection Total</b>		<b>A</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>
NB SH 119 / Airport Road	Northbound Left-Turn (SH 119)	A	A	A	A	A	A	A	A	B	D	F	F	F	F
	Northbound Through (SH 119)	A	A	A	A	A	A	A	A	A	B	E	F	F	F
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	E	F	F	F
	Eastbound Left-Turn (Airport Road)	A	B	B	B	B	B	B	B	C	E	F	F	F	E
	Eastbound Through (Airport Road)	B	B	B	B	B	C	C	C	D	E	F	F	F	F
	Westbound Through (Airport Road)	A	A	A	A	A	A	B	B	C	E	F	F	F	F
	Westbound Right-Turn (Airport Road)	A	A	A	A	A	A	B	A	A	B	E	E	F	E
<b>Intersection Total</b>		<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>C</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>
SB SH 119 / Niwot Road	Southbound Left-Turn (SH 119)	A	C	C	D	B	A	A	A	A	A	B	A	A	A
	Southbound Through (SH 119)	B	C	C	D	C	B	B	B	B	B	B	B	A	A
	Southbound Right-Turn (SH 119)	A	C	C	C	B	A	A	A	A	A	A	A	A	A
	Eastbound Through (Niwot Road)	E	F	F	E	C	C	C	C	C	F	F	F	F	F
	Eastbound Right-Turn (Niwot Road)	A	B	B	A	A	A	A	A	A	F	F	F	F	F
	Westbound Left-Turn (Niwot Road)	F	F	F	E	D	D	D	D	D	F	F	F	F	F
	Westbound Through (Niwot Road)	E	F	E	D	C	C	C	C	C	E	E	E	E	D
<b>Intersection Total</b>		<b>B</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>E</b>	<b>D</b>
NB SH 119 / Niwot Road	Northbound Left-Turn (SH 119)	A	A	B	A	A	A	A	B	B	A	A	B	D	C
	Northbound Through (SH 119)	A	A	A	A	B	B	B	B	B	A	A	B	D	D
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	C	C	C
	Eastbound Left-Turn (Niwot Road)	B	B	B	B	B	B	B	B	B	C	C	C	C	C
	Eastbound Through (Niwot Road)	D	C	D	C	C	C	C	C	C	D	D	D	C	D
	Westbound Through (Niwot Road)	E	F	F	F	D	D	C	C	C	F	F	F	F	F
	Westbound Right-Turn (Niwot Road)	B	F	F	F	B	A	A	A	A	E	C	C	B	A
<b>Intersection Total</b>		<b>B</b>	<b>F</b>	<b>F</b>	<b>D</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>C</b>
SH 119 / Mineral Road	Northbound Left-Turn (SH 119)	F	E	E	E	E	E	E	D	F	F	F	F	F	F
	Northbound Through (SH 119)	B	B	C	C	B	B	C	E	C	E	F	F	F	F
	Northbound Right-Turn (SH 119)	A	A	B	A	A	A	B	D	C	D	F	F	F	F
	Southbound Left-Turn (SH 119)	F	F	F	F	F	F	F	D	F	F	F	F	F	F
	Southbound Through (SH 119)	D	F	F	F	D	B	C	B	C	C	B	B	B	B
	Southbound Right-Turn (SH 119)	C	E	F	F	C	B	B	A	B	B	A	A	A	A
	Eastbound Left-Turn (Mineral Road)	E	F	E	F	F	F	F	D	E	F	F	F	E	F
	Eastbound Through (Mineral Road)	E	E	F	E	E	E	F	D	F	F	F	F	F	F
	Eastbound Right-Turn (Mineral Road)	A	A	A	A	A	A	A	A	A	A	D	B	A	A
	Westbound Left-Turn (Mineral Road)	E	F	F	F	F	E	E	C	F	F	F	F	E	E
Westbound Through (Mineral Road)	E	F	F	F	F	E	F	C	F	F	F	F	F	E	
Westbound Right-Turn (Mineral Road)	B	D	F	F	D	B	B	A	C	C	F	E	C	B	
<b>Intersection Total</b>		<b>D</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>D</b>	<b>C</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>E</b>
SB SH 119 / 63rd Street	Southbound Left-Turn (SH 119)	A	B	C	C	B	A	B	A	B	A	A	A	A	A
	Southbound Through (SH 119)	A	B	B	E	F	C	C	B	B	A	A	A	A	A
	Southbound Right-Turn (SH 119)	A	A	A	C	C	A	A	A	A	A	A	A	A	A
	Eastbound Through (63rd Street)	E	E	E	D	C	C	C	C	C	E	E	E	E	E
	Eastbound Right-Turn (63rd Street)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (63rd Street)	C	C	C	C	D	D	D	C	C	C	C	C	D	D
	Westbound Through (63rd Street)	D	C	B	C	B	B	B	B	B	D	D	D	D	D
<b>Intersection Total</b>		<b>B</b>	<b>C</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>C</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>	<b>B</b>
NB SH 119 / 63rd Street	Northbound Left-Turn (SH 119)	A	A	A	A	A	A	A	A	B	B	B	D	D	A
	Northbound Through (SH 119)	B	B	B	A	A	A	A	A	B	B	D	F	F	B
	Northbound Right-Turn (SH 119)	A	B	C	B	A	A	A	A	A	A	B	C	C	A
	Eastbound Left-Turn (63rd Street)	A	A	B	B	C	C	B	C	C	C	D	C	D	C
	Eastbound Through (63rd Street)	D	D	D	D	C	B	C	B	B	C	D	C	C	D
	Westbound Through (63rd Street)	D	D	D	D	C	D	D	C	D	F	F	F	F	F
	Westbound Right-Turn (63rd Street)	A	B	B	B	A	B	B	A	A	A	F	F	F	F
<b>Intersection Total</b>		<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>
SB SH 119 / Jay Road	Southbound Left-Turn (SH 119)	A	B	C	B	B	B	B	B	B	A	A	A	A	A
	Southbound Through (SH 119)	A	B	C	C	C	C	C	B	B	B	B	B	B	A
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Through (Jay Road)	E	F	F	F	F	D	D	D	E	F	F	E	E	E
	Eastbound Right-Turn (Jay Road)	A	D	F	F	E	A	A	A	B	D	C	B	A	A
	Westbound Left-Turn (Jay Road)	E	E	E	E	D	D	D	D	D	E	E	E	F	F
	Westbound Through (Jay Road)	D	D	D	D	C	C	C	C	C	D	D	D	E	E
<b>Intersection Total</b>		<b>B</b>	<b>D</b>	<b>E</b>	<b>E</b>	<b>D</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>
NB SH 119 / Jay Road	Northbound Left-Turn (SH 119)	A	D	E	D	A	A	A	A	B	B	C	C	C	A
	Northbound Through (SH 119)	A	D	D	C	B	B	B	B	B	C	C	C	C	B
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	B	A	A
	Eastbound Left-Turn (Jay Road)	E	E	E	D	B	A	A	A	A	E	E	D	C	B
	Eastbound Through (Jay Road)	C	A	A	A	A	A	A	A	A	A	A	B	A	B
	Westbound Through (Jay Road)	E	F	F	F	F	E	C	C	C	F	F	F	F	E
	Westbound Right-Turn (Jay Road)	A	E	F	F	F	C	A	A	B	F	F	F	F	B
<b>Intersection Total</b>		<b>C</b>	<b>D</b>	<b>F</b>	<b>F</b>	<b>E</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>D</b>	<b>D</b>	<b>E</b>	<b>D</b>	<b>B</b>
Diagonal Hwy / 47th Street	Northbound Left-Turn (47th Street)	E	E	E	E	E	E	E	E	E	E	F	F	E	E
	Northbound Through (47th Street)	E	E	E	E	E	E	E	E	E	E	F	F	E	E
	Northbound Right-Turn (47th Street)	C	D	D	D	D	D	D	D	D	D	F	F	E	D
	Southbound Left-Turn (47th Street)	A	E	E	E	E	E	E	E	E	E	E	E	F	E
	Southbound Through (47th Street)	E	E	E	E	E	E	E	E	E	D	D	D	E	E
	Southbound Right-Turn (47th Street)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Left-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	B	B	A	A
	Eastbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	B	A	A
	Eastbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (Diagonal Hwy)	A	A	B	A	A	A	B	B	B	B	C	C	B	A
Westbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Westbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>	<b>B</b>	<b>B</b>
Diagonal Hwy / SB Foothills Pkwy Ramps	Southbound Left-Turn (Foothills Pkwy)	D	E	E	E	E	E	E	E	E	E	E	E	F	F
	Southbound Through (Foothills Pkwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Southbound Right-Turn (Foothills Pkwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (Diagonal Hwy)	A	A	B	A	A	A	B	B	B	C	C	D	B	A
	Westbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
<b>Intersection Total</b>		<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>



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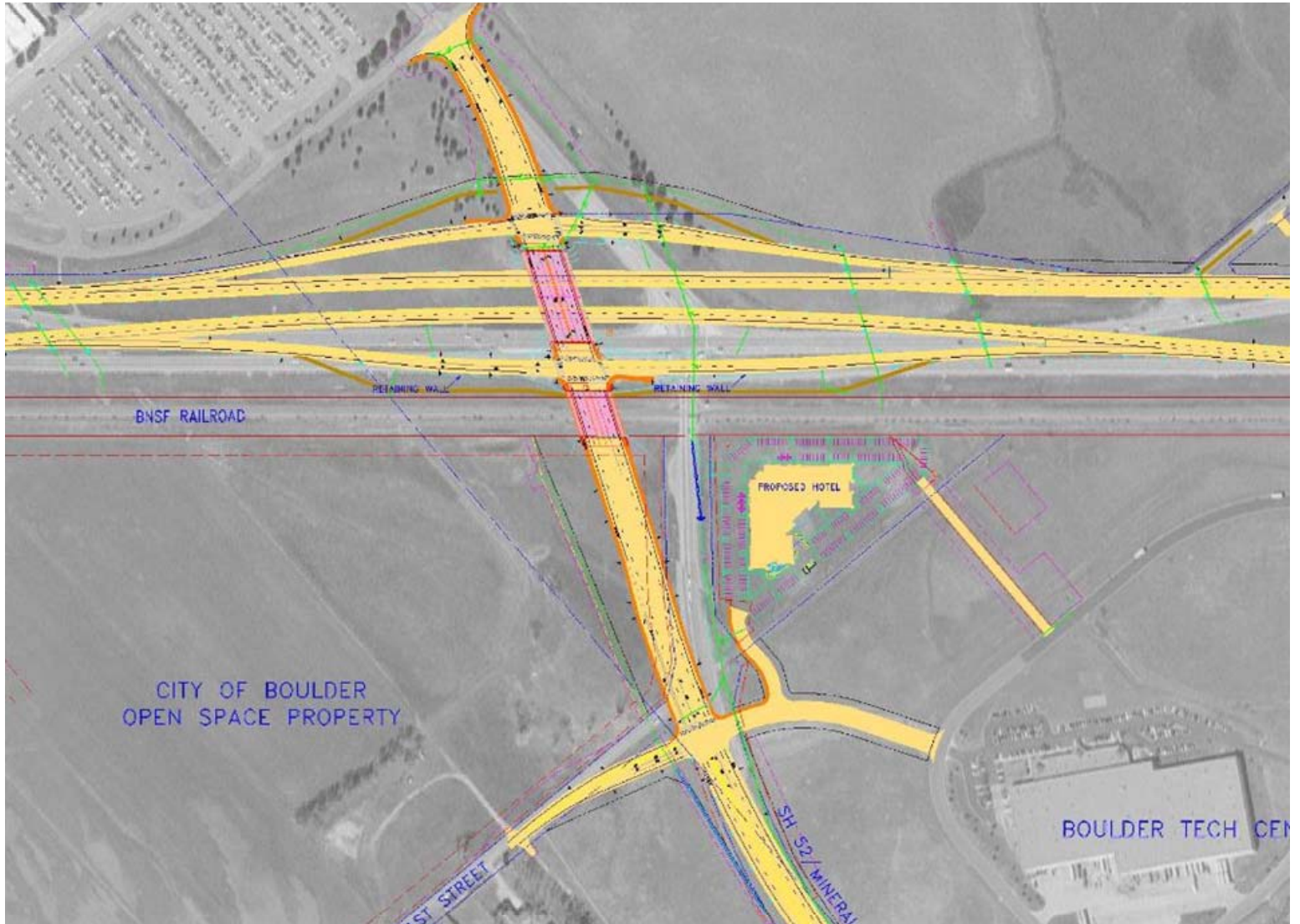
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## Appendix G

### SH 119 & SH 52 Geometric Exhibits



SH 119 & SH 52  
 2019 VOLUMES  
 AM (PM)



**SH 119 & SH 52  
Tight Diamond Interchange**



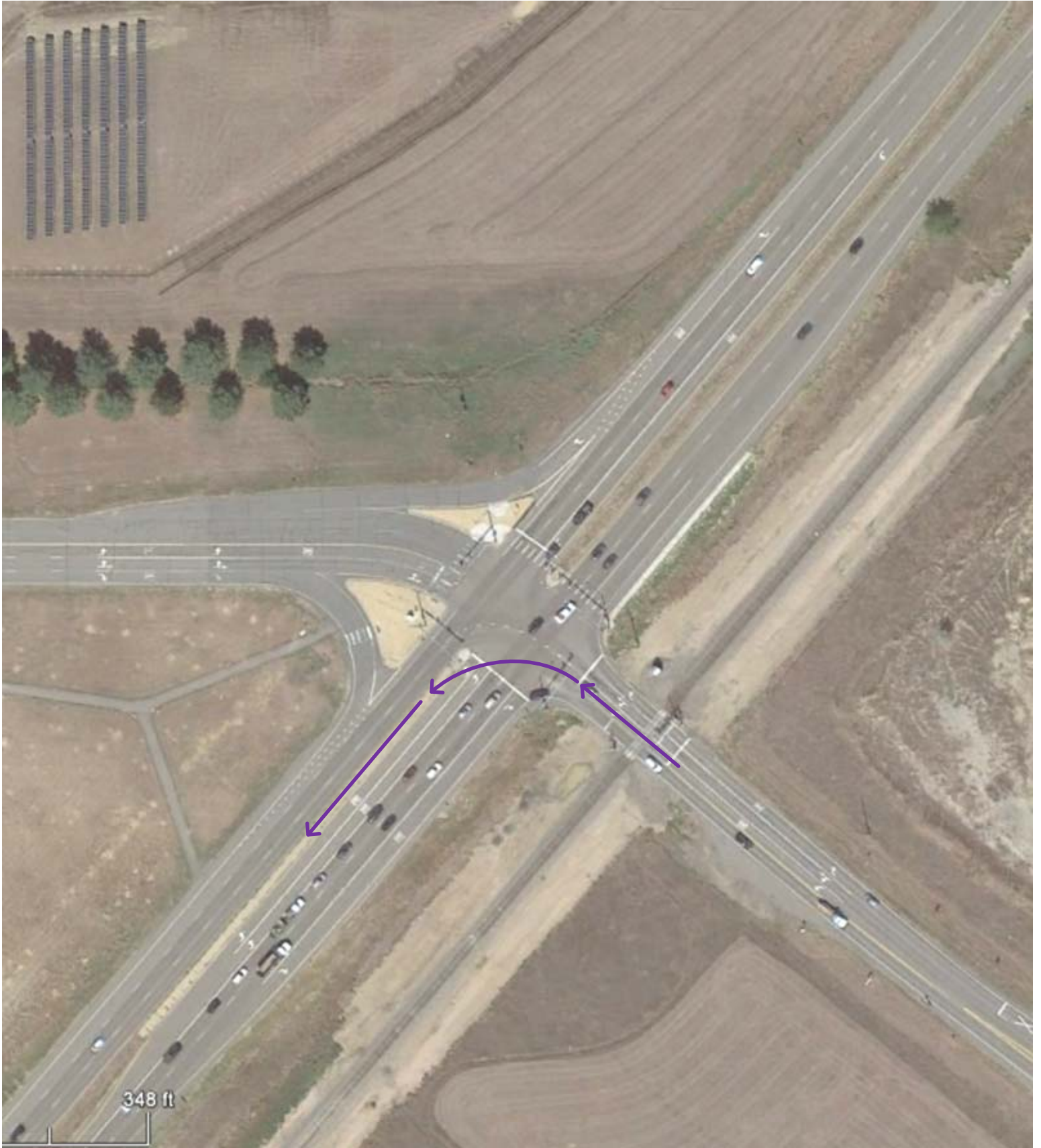
**SH 119 & SH 52  
Split Intersection**



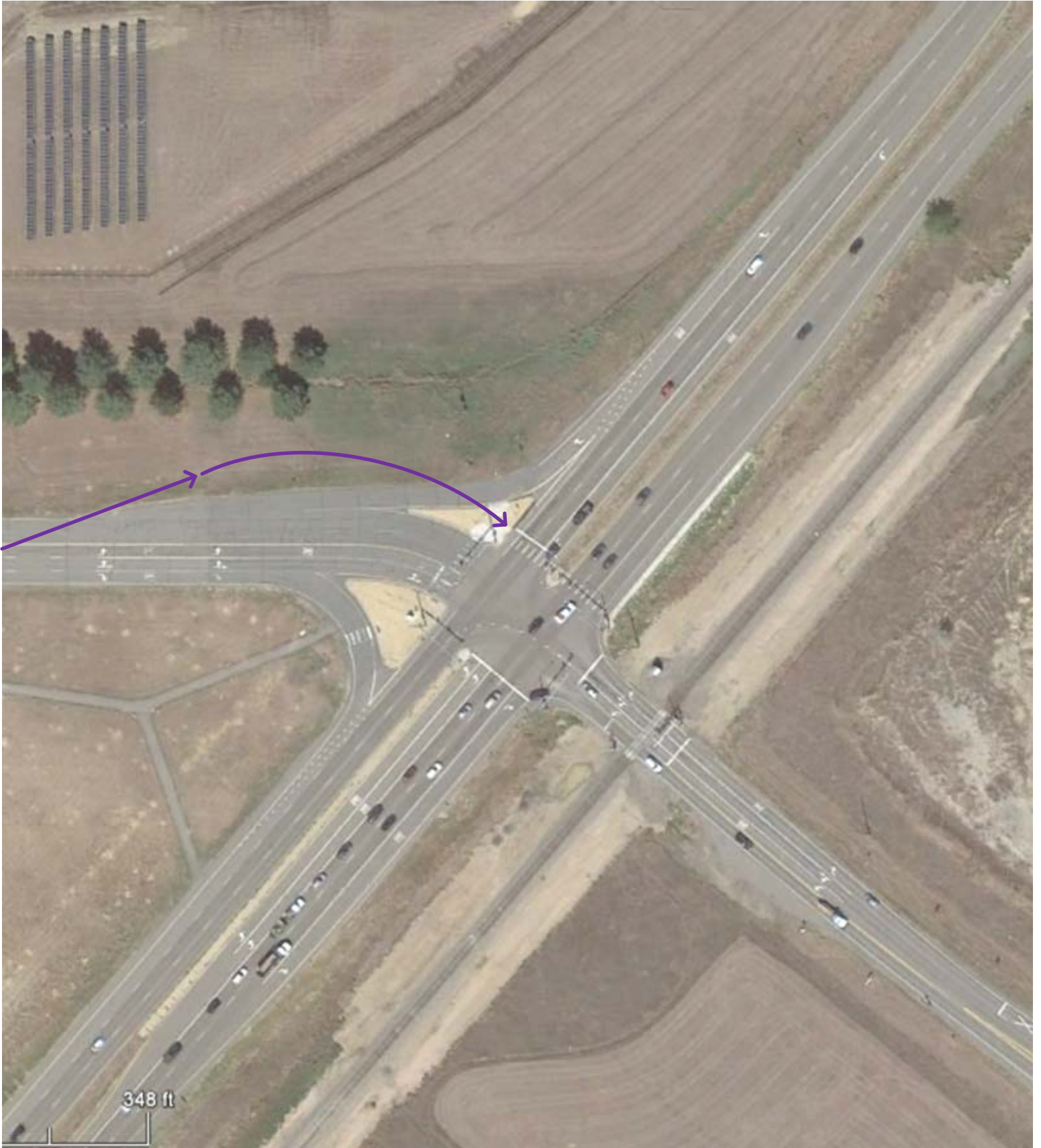
**SH 119 & SH 52  
Continuous Flow Intersection (CFI)**



**SH 119 & SH 52**  
**Widen SH 119 to 3 Lanes**

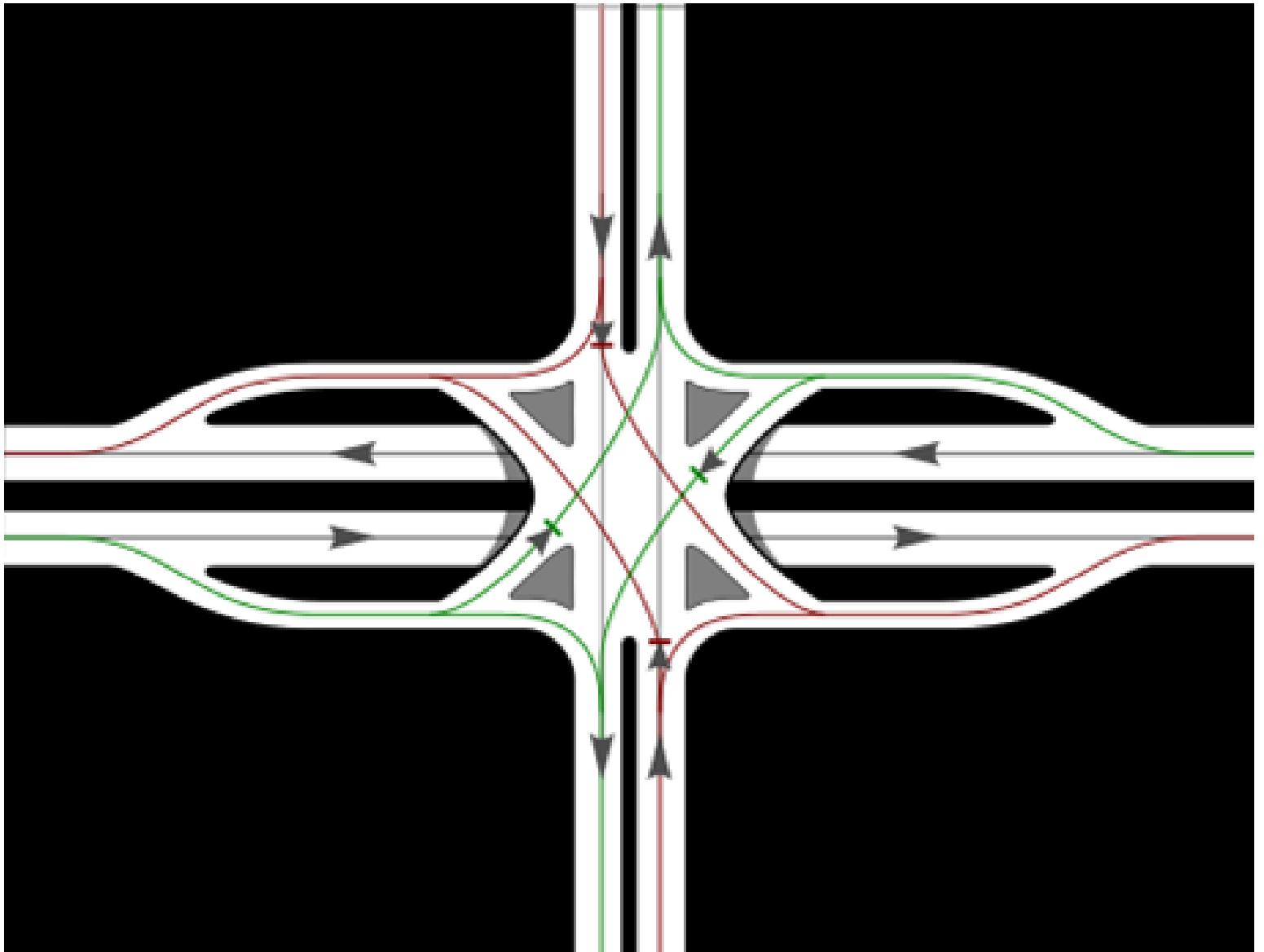


**SH 119 & SH 52  
Mineral Left Turn via Grade Separation**

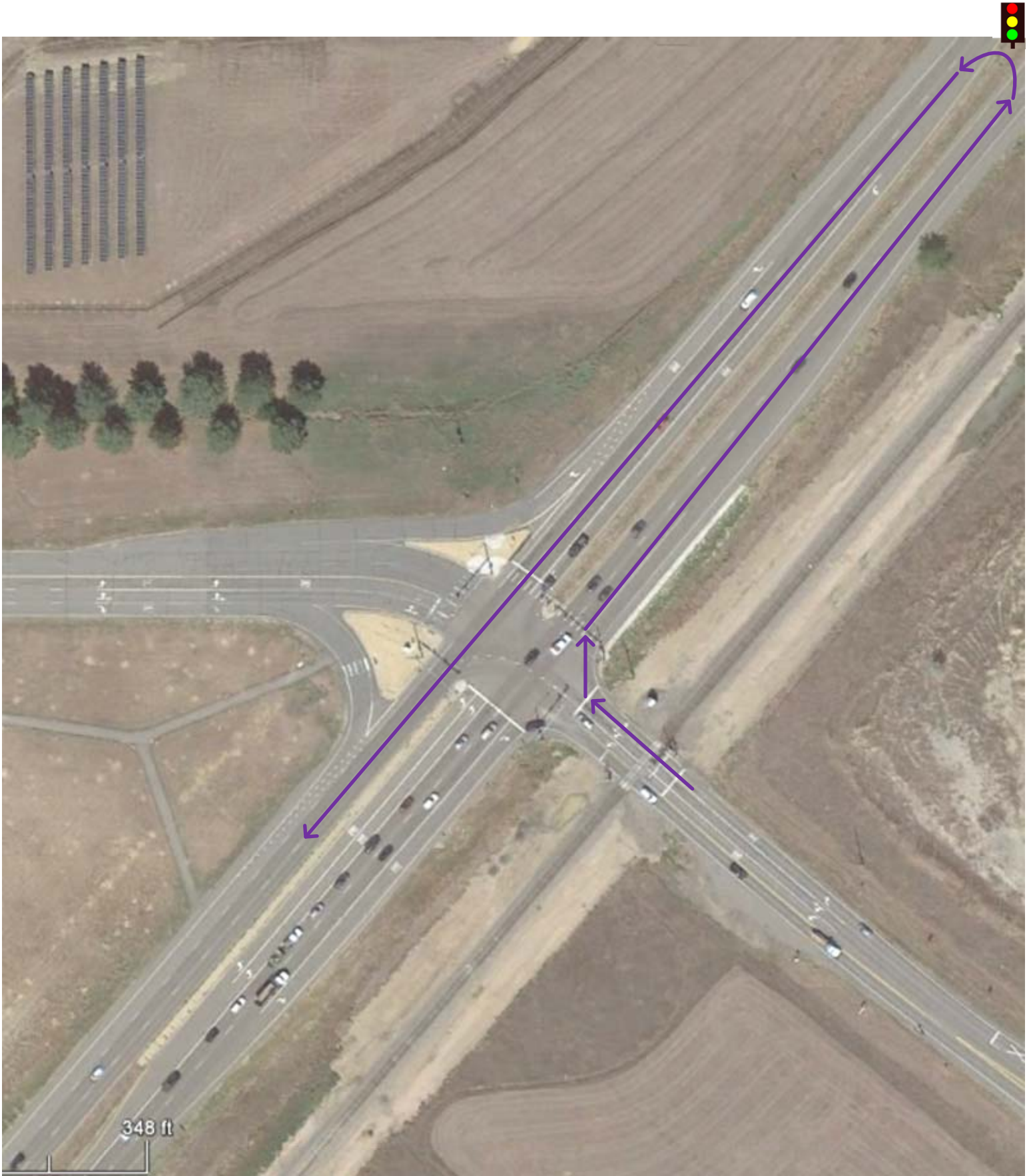


**SH 119 & SH 52  
Realign IBM Access to Remove Split Phasing**

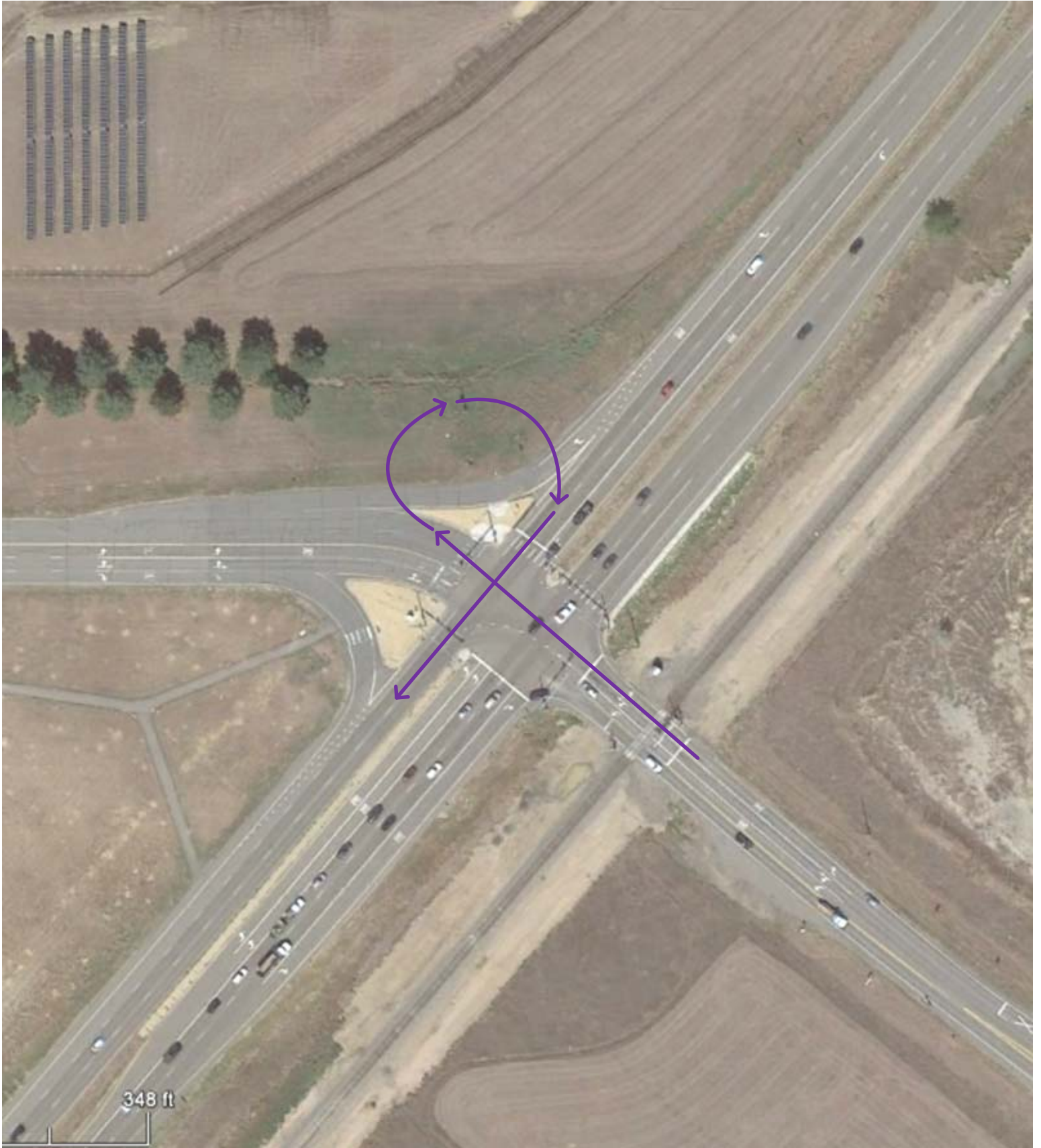




SH 119 & SH 52  
SPUI



**SH 119 & SH 52  
Mineral Left Turn via Right Turn**



**SH 119 & SH 52  
Mineral Left Turn via Thru Movement**

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## Appendix H

### SH 119 & SH 52 Synchro Analysis Detailed Summary

**SH 119 Traffic Study**  
**SH 119 & SH 52 Intersection Analysis**  
**Synchro Analysis Detailed Summary**  
**3/12/2021**

ID	Alternative	Approach	AM Peak Hour			PM Peak Hour			Notes
			Delay	LOS	95 <sup>th</sup> % Queue <sup>1</sup>	Delay	LOS	95 <sup>th</sup> % Queue <sup>1</sup>	
NB	No Build	Eastbound	59	E	121	68	E	#167	
		Westbound	102	F	#577	119	F	#481	
		Northbound	12	B	110	103	F	#1715	
		Southbound	111	F	m#1674	28	C	303	
		Intersection	84	F	-	82	F	-	
1	Widen SH 119 to 3 Lanes through SH 52 Intersection	Eastbound	59	E	121	62	E	#148	
		Westbound	79	E	#494	69	E	#377	
		Northbound	12	B	77	21	C	672	
		Southbound	21	C	m806	30	C	m498	
		Intersection	28	C	-	31	C	-	
2	Split Intersection With Widening SH 119 to 3 Lanes through SH 52 Intersection	Eastbound	44	D	52	62	E	88	
		Westbound	43	D	273	57	E	158	
		Northbound	2	A	13	7	A	154	
		Southbound	4	A	m254	3	A	124	
		Intersection	15	B	-	15	B	-	
3	Mineral/SH 52 Left Turn via Right Turn (U-turn)	Eastbound	58	E	121	63	E	#150	Intersection delay does not include U-turn delay.
		Westbound	40	D	234	98	F	#486	
		Northbound	5	A	101	37	D	#1508	
		Southbound	79	E	m#2002	14	B	#286	
		Intersection	57	E	-	38	D	-	
4	Mineral/SH 52 Left Turn via Thru Movement (loop ramp)	Eastbound	51	D	117	103	F	#190	Southbound heavy movement still conflicts with WB left-turn, just now a thru movement instead of left-turn.
		Westbound	171	F	#546	169	F	#370	
		Northbound	4	A	113	11	B	#196	
		Southbound	115	F	m#1980	57	E	m282	
		Intersection	95	F	-	47	D	-	
5	Mineral/SH 52 Left Turn via SB Left-Side Acceleration Lane with Split Intersection	Eastbound	61	E	62	51	D	81	
		Westbound	66	E	394	128	F	#595	
		Northbound	27	C	520	36	D	#1594	
		Southbound	2	A	m21	8	A	m184	
		Intersection	23	C	-	34	C	-	
6	Mineral/SH 52 Left Turn via Grade Separation (direct connect)	Eastbound	59	E	121	61	E	#148	Separation of WB left-turn only improves heavy conflicting movements in the AM. In the PM heavy northbound thru and WB right-turns still conflict.
		Westbound	55	E	#180	136	F	#460	
		Northbound	9	A	174	107	F	#1676	
		Southbound	21	C	m#1469	24	C	m#219	
		Intersection	20	B	-	82	F	-	
7	Echelon Intersection	Eastbound	49	D	107	54	D	142	
		Westbound	50	D	292	86	F	#248	
		Northbound	5	A	95	10	A	203	
		Southbound	10	B	m415	4	A	m74	
		Intersection	17	B	-	12	B	-	
8	Split Intersection	Eastbound	70	E	229	69	E	229	The results for this alternative were pulled for VISSIM analysis performed by Apex in 2019 and included a managed lane. Queue lengths shown are maximum queue results from VISSIM.
		Westbound	208	F	1532	106	F	1532	
		Northbound	13	B	569	28	C	569	
		Southbound	94	F	5868	33	C	5868	
		Intersection	81	F	-	43	D	-	
9	Tight Diamond Interchange	Eastbound	6	A	89	3	A	89	The results for this alternative were pulled for VISSIM analysis performed by Apex in 2019 and included a managed lane. Queue lengths shown are maximum queue results from VISSIM.
		Westbound	4	A	209	2	A	209	
		Northbound	9	A	141	4	A	141	
		Southbound	17	B	187	20	C	187	
		Intersection	2	A	-	2	A	-	

1. # indicates 95th% queue exceeds capacity, queue may be longer; "m" indicates volume for queue is metered by upstream signal. Queue lengths shown are longest queue on the given approach.

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## Appendix I

### SH 119 & SH 52 Alternatives VISSIM Peak Hour Intersection Results

**SH 119 Traffic Analysis**  
**2045 Three Lanes on SH 119 through SH 52 - Peak Hour Intersection Results<sup>(1)</sup>**

Intersection / Movement	Weekday AM Peak-Hour (7:00 AM - 8:00 AM)								Weekday PM Peak-Hour (5:00 PM - 6:00 PM)							
	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Volume-to-Capacity Ratio <sup>(3)</sup>	Model Maxium Queue (ft.)	Model Avg Queue (ft.)	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Volume-to-Capacity Ratio <sup>(3)</sup>	Model Maxium Queue (ft.)	Model Avg Queue (ft.)
<b>SB SH 119 / Niwot Road</b>																
Southbound Left-Turn (SH 119)	86	81	-6%	17	B	0.08	81	2	160	159	-1%	13	B	0.24	144	8
Southbound Through (SH 119)	2,268	2,230	-2%	20	B	1.00	2,073	145	1,158	1,138	-2%	11	B	0.86	378	19
Southbound Right-Turn (SH 119)	234	213	-9%	18	B	0.22	218	14	24	25	4%	6	A	0.04	119	5
Eastbound Through (Niwot Road)	120	118	-2%	91	F	1.01	312	73	424	214	-50%	648	F	0.95	1,674	1,583
Eastbound Right-Turn (Niwot Road)	40	40	0%	16	B	N/A	3	0	195	107	-45%	578	F	N/A	1	0
Westbound Left-Turn (Niwot Road)	262	192	-27%	128	F	0.98	364	104	133	130	-2%	71	E	0.70	138	35
Westbound Through (Niwot Road)	286	224	-22%	85	F	0.80	431	132	96	100	4%	51	D	0.12	194	29
<b>Intersection Total</b>	<b>3,296</b>	<b>3,098</b>	<b>-6%</b>	<b>33.6</b>	<b>C</b>	<b>0.92</b>			<b>2,190</b>	<b>1,873</b>	<b>-14%</b>	<b>122.6</b>	<b>F</b>	<b>1.02</b>		
Bus Southbound Through (SH 119)	5	5	0%	28	C				3	3	0%	34	C			
<b>Bus Intersection Total</b>	<b>5</b>	<b>5</b>	<b>0%</b>	<b>28.0</b>	<b>C</b>				<b>3</b>	<b>3</b>	<b>0%</b>	<b>33.9</b>	<b>C</b>			
<b>NB SH 119 / Niwot Road</b>																
Northbound Left-Turn (SH 119)	63	62	-2%	9	A	0.06	31	0	42	44	5%	43	D	0.03	57	1
Northbound Through (SH 119)	872	818	-6%	3	A	0.43	207	2	2,558	2,494	-3%	25	C	1.07	1,167	103
Northbound Right-Turn (SH 119)	51	45	-12%	2	A	0.06	0	0	206	223	8%	14	B	0.19	105	2
Eastbound Left-Turn (Niwot Road)	44	44	0%	12	B	0.25	87	1	190	99	-48%	56	E	1.04	221	30
Eastbound Through (Niwot Road)	162	155	-4%	35	D	0.28	270	31	394	266	-32%	65	E	1.08	430	126
Westbound Through (Niwot Road)	485	357	-26%	339	F	0.73	1,517	1,144	187	184	-2%	115	F	0.84	431	71
Westbound Right-Turn (Niwot Road)	109	77	-29%	289	F	N/A	1,517	1,144	73	74	1%	38	D	N/A	431	71
<b>Intersection Total</b>	<b>1,786</b>	<b>1,558</b>	<b>-13%</b>	<b>97.5</b>	<b>F</b>	<b>0.92</b>			<b>3,650</b>	<b>3,384</b>	<b>-7%</b>	<b>33.9</b>	<b>C</b>	<b>1.02</b>		
Bus Northbound Through (SH 119)	2	2	0%	19	B				5	6	20%	36	D			
<b>Bus Intersection Total</b>	<b>2</b>	<b>2</b>	<b>0%</b>	<b>18.6</b>	<b>B</b>				<b>5</b>	<b>6</b>	<b>20%</b>	<b>35.6</b>	<b>D</b>			
<b>SH 119 / Mineral Road</b>																
Northbound Left-Turn (SH 119)	25	28	12%	78	E	0.28	109	13	8	13	63%	64	E	0.08	76	6
Northbound Through (SH 119)	899	856	-5%	16	B	0.38	204	35	2,439	2,381	-2%	20	C	0.99	860	105
Northbound Right-Turn (SH 119)	205	204	0%	6	A	0.24	151	7	307	299	-3%	9	A	0.35	173	9
Southbound Left-Turn (SH 119)	127	179	41%	347	F	0.68	1,422	218	140	118	-16%	75	E	0.69	243	27
Southbound Through (SH 119)	2,434	2,322	-5%	21	C	0.87	1,311	182	1,335	1,256	-6%	20	B	0.43	385	26
Southbound Right-Turn (SH 119)	9	12	33%	11	B	0.01	99	6	11	9	-18%	5	A	0.01	3	0
Eastbound Left-Turn (Mineral Road)	5	7	40%	79	E	0.03	172	31	18	23	28%	47	D	0.12	203	38
Eastbound Through (Mineral Road)	61	61	0%	76	E	0.52	172	31	84	89	6%	70	E	0.62	203	38
Eastbound Right-Turn (Mineral Road)	24	25	4%	9	A	0.10	41	1	29	30	3%	4	A	0.11	41	0
Westbound Left-Turn (Mineral Road)	473	467	-1%	61	E	0.92	382	61	250	259	4%	268	F	0.73	876	380
Westbound Through (Mineral Road)	95	93	-2%	65	E	0.90	382	61	37	40	8%	251	F	0.73	876	380
Westbound Right-Turn (Mineral Road)	82	81	-1%	9	A	0.21	382	61	349	375	7%	186	F	0.85	876	380
<b>Intersection Total</b>	<b>4,439</b>	<b>4,335</b>	<b>-2%</b>	<b>39.2</b>	<b>D</b>	<b>0.90</b>			<b>5,007</b>	<b>4,892</b>	<b>-2%</b>	<b>49.5</b>	<b>D</b>	<b>0.88</b>		
Bus Northbound Left-Turn (SH 119)	2	3	50%	79	E				5	6	20%	78	E			
Bus Northbound Through (SH 119)	0	0	-	0	A				0	0	-	0	A			
Bus Southbound Through (SH 119)	4	4	0%	45	D				3	3	0%	32	C			
Bus Southbound Right-Turn (SH 119)	1	1	0%	31	C				0	0	-	0	A			
Bus Eastbound Left-Turn (Mineral Road)	2	2	0%	115	F				5	6	20%	20	C			
Bus Eastbound Right-Turn (Mineral Road)	1	1	0%	8	A				0	0	-	0	A			
<b>Bus Intersection Total</b>	<b>10</b>	<b>11</b>	<b>10%</b>	<b>62.3</b>	<b>E</b>				<b>13</b>	<b>15</b>	<b>15%</b>	<b>45.8</b>	<b>D</b>			
<b>SB SH 119 / 63rd Street</b>																
Southbound Left-Turn (SH 119)	654	613	-6%	17	B	0.70	596	54	180	178	-1%	10	A	0.21	110	8
Southbound Through (SH 119)	2,267	2,150	-5%	18	B	0.84	872	48	1,416	1,329	-6%	7	A	0.58	152	9
Southbound Right-Turn (SH 119)	10	14	40%	7	A	0.01	4	0	18	16	-11%	5	A	0.02	8	0
Eastbound Through (63rd Street)	451	451	0%	69	E	0.77	439	106	86	90	5%	64	E	0.33	118	25
Eastbound Right-Turn (63rd Street)	255	256	0%	4	A	0.84	15	0	110	111	1%	1	A	0.66	1	0
Westbound Left-Turn (63rd Street)	276	265	-4%	35	D	0.76	309	40	414	305	-26%	10	B	0.47	193	9
Westbound Through (63rd Street)	115	114	-1%	24	C	0.10	88	12	1,084	921	-15%	42	D	0.81	743	280
<b>Intersection Total</b>	<b>4,028</b>	<b>3,863</b>	<b>-4%</b>	<b>24.2</b>	<b>C</b>	<b>0.80</b>			<b>3,308</b>	<b>2,950</b>	<b>-11%</b>	<b>19.9</b>	<b>B</b>	<b>0.83</b>		
Bus Southbound Through (SH 119)	4	4	0%	39	D				3	2	-33%	48	D			
Bus Southbound Left-Turn (SH 119)	1	1	0%	18	B				0	0	-	0	A			
<b>Bus Intersection Total</b>	<b>5</b>	<b>5</b>	<b>0%</b>	<b>34.6</b>	<b>C</b>				<b>3</b>	<b>2</b>	<b>-33%</b>	<b>48.3</b>	<b>D</b>			
<b>NB SH 119 / 63rd Street</b>																
Northbound Left-Turn (SH 119)	45	42	-7%	6	A	0.05	51	1	570	550	-4%	16	B	0.55	335	34
Northbound Through (SH 119)	883	845	-4%	10	A	0.38	185	7	2,326	2,324	0%	18	B	0.78	634	39
Northbound Right-Turn (SH 119)	372	348	-6%	12	B	0.50	119	3	459	458	0%	11	B	0.44	204	2
Eastbound Left-Turn (63rd Street)	6	5	-17%	7	A	0.02	0	0	2	2	0%	25	C	0.02	6	0
Eastbound Through (63rd Street)	1,099	1,061	-3%	38	D	0.81	539	148	264	269	2%	26	C	0.30	167	24
Westbound Through (63rd Street)	346	337	-3%	38	D	0.22	221	23	928	673	-27%	576	F	0.79	2,168	2,023
Westbound Right-Turn (63rd Street)	240	236	-2%	13	B	0.32	221	23	426	324	-24%	430	F	0.79	2,168	2,023
<b>Intersection Total</b>	<b>2,991</b>	<b>2,874</b>	<b>-4%</b>	<b>24.1</b>	<b>C</b>	<b>0.80</b>			<b>4,975</b>	<b>4,600</b>	<b>-8%</b>	<b>128.3</b>	<b>F</b>	<b>0.83</b>		
Bus Northbound Through (SH 119)	2	2	0%	86	F				4	4	0%	46	D			
Bus Westbound Right-Turn (63rd Street)	0	0	-	0	A				1	2	100%	492	F			
Bus Eastbound Through (63rd Street)	1	1	0%	64	E				0	0	-	0	A			
<b>Bus Intersection Total</b>	<b>3</b>	<b>3</b>	<b>0%</b>	<b>78.3</b>	<b>E</b>				<b>5</b>	<b>6</b>	<b>20%</b>	<b>194.4</b>	<b>F</b>			

Notes:

- (1) Data based on the average of 15 VISSIM micro-simulation models.
- (2) Percent error between projected turning movements and actual throughput volume in the model.
- (3) Volume-to-Capacity Ratio was taken from Synchro files with optimized signal timing; this metric is not available from VISSIM.

**SH 119 Traffic Analysis**

**2045 Split Intersection with Two Lanes on SH 119 through SH 52 - Peak Hour Intersection Results<sup>(1)</sup>**

Intersection / Movement	Weekday AM Peak-Hour (7:00 AM - 8:00 AM)								Weekday PM Peak-Hour (5:00 PM - 6:00 PM)							
	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Volume-to-Capacity Ratio <sup>(3)</sup>	Model Maxium Queue (ft.)	Model Avg Queue (ft.)	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Volume-to-Capacity Ratio <sup>(3)</sup>	Model Maxium Queue (ft.)	Model Avg Queue (ft.)
<b>SB SH 119 / Niwot Road</b>																
Southbound Left-Turn (SH 119)	86	81	-6%	16	B	0.08	85	2	160	159	-1%	14	B	0.24	171	10
Southbound Through (SH 119)	2,268	2,231	-2%	18	B	1.04	1,999	148	1,158	1,137	-2%	13	B	0.86	485	24
Southbound Right-Turn (SH 119)	234	213	-9%	20	C	0.23	286	20	24	25	4%	6	A	0.04	120	5
Eastbound Through (Niwot Road)	120	119	-1%	65	E	0.95	237	49	424	208	-51%	669	F	0.95	1,665	1,582
Eastbound Right-Turn (Niwot Road)	40	41	2%	7	A	N/A	5	0	195	104	-47%	599	F	N/A	0	0
Westbound Left-Turn (Niwot Road)	262	226	-14%	108	F	1.02	414	102	133	131	-2%	34	C	0.70	135	16
Westbound Through (Niwot Road)	286	259	-9%	68	E	0.76	376	116	96	99	3%	27	C	0.12	174	14
<b>Intersection Total</b>	<b>3,296</b>	<b>3,170</b>	<b>-4%</b>	<b>30.5</b>	<b>C</b>	<b>0.92</b>			<b>2,190</b>	<b>1,863</b>	<b>-15%</b>	<b>121.2</b>	<b>F</b>	<b>1.00</b>		
Bus Southbound Through (SH 119)	5	5	0%	40	D				3	3	0%	27	C			
<b>Bus Intersection Total</b>	<b>5</b>	<b>5</b>	<b>0%</b>	<b>39.9</b>	<b>D</b>				<b>3</b>	<b>3</b>	<b>0%</b>	<b>26.7</b>	<b>C</b>			
<b>NB SH 119 / Niwot Road</b>																
Northbound Left-Turn (SH 119)	63	62	-2%	15	B	0.07	107	3	42	44	5%	21	C	0.04	54	1
Northbound Through (SH 119)	872	820	-6%	19	B	0.46	480	23	2,558	2,463	-4%	27	C	1.08	2,155	204
Northbound Right-Turn (SH 119)	51	45	-12%	4	A	0.06	42	0	206	217	5%	18	B	0.19	137	3
Eastbound Left-Turn (Niwot Road)	44	43	-2%	29	C	0.20	30	1	190	98	-48%	90	F	0.89	188	52
Eastbound Through (Niwot Road)	162	153	-6%	29	C	0.29	235	24	394	272	-31%	70	E	1.08	386	122
Westbound Through (Niwot Road)	485	431	-11%	181	F	0.64	1,417	706	187	186	-1%	97	F	0.60	371	35
Westbound Right-Turn (Niwot Road)	109	93	-15%	141	F	0.26	1,417	706	73	75	3%	20	C	0.41	371	35
<b>Intersection Total</b>	<b>1,786</b>	<b>1,647</b>	<b>-8%</b>	<b>69.1</b>	<b>E</b>	<b>0.92</b>			<b>3,650</b>	<b>3,355</b>	<b>-8%</b>	<b>35.0</b>	<b>D</b>	<b>1.00</b>		
Bus Northbound Through (SH 119)	2	2	0%	39	D				5	6	20%	40	D			
<b>Bus Intersection Total</b>	<b>2</b>	<b>2</b>	<b>0%</b>	<b>38.7</b>	<b>D</b>				<b>5</b>	<b>6</b>	<b>20%</b>	<b>40.2</b>	<b>D</b>			
<b>SB SH 119 / SH 52 (Mineral Road)</b>																
Southbound Left-Turn (SH 119)	127	145	14%	31	C	0.12	295	6	140	118	-16%	10	B	0.12	100	2
Southbound Through (SH 119)	2,434	2,333	-4%	38	D	1.11	1,782	224	1,335	1,241	-7%	10	A	0.56	330	9
Southbound Right-Turn (SH 119)	9	11	22%	27	C	0.01	101	0	11	9	-18%	8	A	0.01	14	0
Eastbound Through (Mineral Road)	66	69	5%	56	E	0.31	134	21	102	109	7%	65	E	0.45	157	35
Eastbound Right-Turn (Mineral Road)	24	25	4%	1	A	0.18	0	0	29	30	3%	1	A	0.22	0	0
Westbound Left-Turn (Mineral Road)	473	465	-2%	89	F	0.86	454	155	250	252	1%	57	E	0.68	229	51
Westbound Through (Mineral Road)	120	120	0%	41	D	0.27	196	28	45	52	16%	55	D	0.12	164	16
<b>Intersection Total</b>	<b>3,253</b>	<b>3,168</b>	<b>-3%</b>	<b>45.5</b>	<b>D</b>	<b>0.94</b>			<b>1,912</b>	<b>1,811</b>	<b>-5%</b>	<b>21.0</b>	<b>C</b>	<b>1.02</b>		
Bus Southbound Through (SH 119)	4	4	0%	75	E				3	3	0%	45	D			
Bus Southbound Right-Turn (SH 119)	1	1	0%	55	E				0	0	-	0	A			
Bus Eastbound Through (Mineral Road)	2	3	50%	31	C				5	6	20%	41	D			
Bus Eastbound Right-Turn (Mineral Road)	1	1	0%	3	A				0	0	-	0	A			
Bus Westbound Through (Mineral Road)	2	3	50%	35	C				5	6	20%	33	C			
<b>Bus Intersection Total</b>	<b>10</b>	<b>12</b>	<b>20%</b>	<b>46.3</b>	<b>D</b>				<b>13</b>	<b>15</b>	<b>15%</b>	<b>38.3</b>	<b>D</b>			
<b>NB SH 119 / SH 52 (Mineral Road)</b>																
Northbound Left-Turn (SH 119)	25	27	8%	19	B	0.02	53	1	8	14	75%	25	C	0.01	53	1
Northbound Through (SH 119)	899	853	-5%	12	B	0.41	400	23	2,439	2,344	-4%	27	C	1.14	1,798	241
Northbound Right-Turn (SH 119)	205	206	0%	7	A	0.19	136	4	307	298	-3%	23	C	0.30	207	13
Eastbound Left-Turn (Mineral Road)	5	8	60%	40	D	0.06	282	58	18	24	33%	60	E	0.40	323	68
Eastbound Through (Mineral Road)	188	208	11%	45	D	0.43	282	58	224	208	-7%	53	D	0.46	323	68
Westbound Through (Mineral Road)	568	559	-2%	43	D	0.74	231	20	287	290	1%	50	D	0.35	105	3
Westbound Right-Turn (Mineral Road)	82	81	-1%	7	A	0.20	231	20	349	345	-1%	9	A	0.89	105	3
<b>Intersection Total</b>	<b>1,972</b>	<b>1,942</b>	<b>-2%</b>	<b>23.7</b>	<b>C</b>	<b>0.94</b>			<b>3,632</b>	<b>3,523</b>	<b>-3%</b>	<b>28.5</b>	<b>C</b>	<b>1.02</b>		
Bus Northbound Left-Turn (SH 119)	2	3	50%	20	C				5	6	20%	34	C			
Bus Northbound Through (SH 119)	0	0	-	0	A				0	0	-	0	A			
Bus Eastbound Left-Turn (Mineral Road)	2	3	50%	50	D				5	6	20%	64	E			
<b>Bus Intersection Total</b>	<b>4</b>	<b>6</b>	<b>50%</b>	<b>35.4</b>	<b>D</b>				<b>10</b>	<b>12</b>	<b>20%</b>	<b>49.2</b>	<b>D</b>			
<b>SB SH 119 / 63rd Street</b>																
Southbound Left-Turn (SH 119)	654	618	-6%	24	C	0.72	708	87	180	180	0%	12	B	0.21	182	11
Southbound Through (SH 119)	2,267	2,165	-4%	35	D	0.86	1,162	135	1,416	1,343	-5%	14	B	0.58	320	17
Southbound Right-Turn (SH 119)	10	14	40%	9	A	0.01	3	0	18	17	-6%	9	A	0.02	25	0
Eastbound Through (63rd Street)	451	445	-1%	54	D	0.83	350	83	86	89	3%	64	E	0.33	107	24
Eastbound Right-Turn (63rd Street)	255	256	0%	2	A	0.86	25	0	110	111	1%	1	A	0.66	3	0
Westbound Left-Turn (63rd Street)	276	261	-5%	105	F	0.75	311	107	414	306	-26%	24	C	0.47	152	29
Westbound Through (63rd Street)	115	113	-2%	18	B	0.10	92	8	1,084	903	-17%	41	D	0.81	652	157
<b>Intersection Total</b>	<b>4,028</b>	<b>3,872</b>	<b>-4%</b>	<b>37.6</b>	<b>D</b>	<b>0.80</b>			<b>3,308</b>	<b>2,949</b>	<b>-11%</b>	<b>24.2</b>	<b>C</b>	<b>0.82</b>		
Bus Southbound Through (SH 119)	4	4	0%	49	D				3	3	0%	35	C			
Bus Southbound Left-Turn (SH 119)	1	1	0%	42	D				0	0	-	0	A			
<b>Bus Intersection Total</b>	<b>5</b>	<b>5</b>	<b>0%</b>	<b>47.9</b>	<b>D</b>				<b>3</b>	<b>3</b>	<b>0%</b>	<b>34.9</b>	<b>C</b>			
<b>NB SH 119 / 63rd Street</b>																
Northbound Left-Turn (SH 119)	45	43	-4%	10	A	0.06	54	2	570	552	-3%	17	B	0.55	350	35
Northbound Through (SH 119)	883	859	-3%	14	B	0.39	213	13	2,326	2,361	2%	19	B	0.78	513	35
Northbound Right-Turn (SH 119)	372	354	-5%	15	B	0.51	219	13	459	459	0%	11	B	0.44	184	3
Eastbound Left-Turn (63rd Street)	6	4	-33%	31	C	0.02	14	1	2	2	0%	28	C	0.02	3	0
Eastbound Through (63rd Street)	1,099	1,062	-3%	43	D	0.80	533	166	264	266	1%	40	D	0.30	168	37
Westbound Through (63rd Street)	346	335	-3%	32	C	0.19	154	8	928	671	-28%	573	F	0.79	2,158	2,025
Westbound Right-Turn (63rd Street)	240	236	-2%	3	A	0.28	154	8	426	321	-25%	327	F	0.79	2,158	2,025
<b>Intersection Total</b>	<b>2,991</b>	<b>2,893</b>	<b>-3%</b>	<b>25.7</b>	<b>C</b>	<b>0.80</b>			<b>4,975</b>	<b>4,632</b>	<b>-7%</b>	<b>120.4</b>	<b>F</b>	<b>0.82</b>		
Bus Northbound Through (SH 119)	2	3	50%	60	E				4	4	0%	61	E			
Bus Northbound Right-Turn (SH 119)	0	0	-	0	A				1	0	-100%	0	A			
Bus Eastbound Through (63rd Street)	1	1	0%	54	D				0	0	-	0	A			
<b>Bus Intersection Total</b>	<b>3</b>	<b>4</b>	<b>33%</b>	<b>58.4</b>	<b>E</b>				<b>5</b>	<b>4</b>	<b>-20%</b>	<b>61.1</b>	<b>E</b>			

Notes:

- (1) Data based on the average of 15 VISSIM micro-simulation models.
- (2) Percent error between projected turning movements and actual throughput volume in the model.
- (3) Volume-to-Capacity Ratio was taken from Synchro files with optimized signal timing; this metric is not available from VISSIM.



**SH 119 Traffic Analysis**

**2045 Split Intersection with Three Lanes on SH 119 through SH 52 - Peak Hour Intersection Results<sup>(1)</sup>**

Intersection / Movement	Weekday AM Peak-Hour (7:00 AM - 8:00 AM)								Weekday PM Peak-Hour (5:00 PM - 6:00 PM)							
	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Volume-to-Capacity Ratio <sup>(3)</sup>	Model Maxium Queue (ft.)	Model Avg Queue (ft.)	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Volume-to-Capacity Ratio <sup>(3)</sup>	Model Maxium Queue (ft.)	Model Avg Queue (ft.)
<b>SB SH 119 / Niwot Road</b>																
Southbound Left-Turn (SH 119)	86	81	-6%	14	B	0.08	87	2	160	159	-1%	13	B	0.24	166	9
Southbound Through (SH 119)	2,268	2,233	-2%	17	B	1.04	2,024	128	1,158	1,136	-2%	13	B	0.86	455	23
Southbound Right-Turn (SH 119)	234	213	-9%	19	B	0.23	289	21	24	25	4%	6	A	0.04	115	5
Eastbound Through (Niwot Road)	120	119	-1%	65	E	0.95	240	49	424	208	-51%	668	F	0.95	1,668	1,583
Eastbound Right-Turn (Niwot Road)	40	41	2%	7	A	N/A	1	0	195	104	-47%	599	F	N/A	3	0
Westbound Left-Turn (Niwot Road)	262	224	-15%	109	F	1.02	416	104	133	130	-2%	34	C	0.70	136	16
Westbound Through (Niwot Road)	286	257	-10%	67	E	0.76	373	115	96	99	3%	25	C	0.12	173	13
<b>Intersection Total</b>	<b>3,296</b>	<b>3,168</b>	<b>-4%</b>	<b>29.2</b>	<b>C</b>	<b>0.92</b>			<b>2,190</b>	<b>1,861</b>	<b>-15%</b>	<b>120.7</b>	<b>F</b>	<b>1.00</b>		
Bus Southbound Through (SH 119)	5	5	0%	39	D				3	3	0%	26	C			
<b>Bus Intersection Total</b>	<b>5</b>	<b>5</b>	<b>0%</b>	<b>39.3</b>	<b>D</b>				<b>3</b>	<b>3</b>	<b>0%</b>	<b>26.2</b>	<b>C</b>			
<b>NB SH 119 / Niwot Road</b>																
Northbound Left-Turn (SH 119)	63	62	-2%	16	B	0.07	113	4	42	44	5%	19	B	0.04	69	1
Northbound Through (SH 119)	872	821	-6%	20	B	0.46	482	25	2,558	2,472	-3%	24	C	1.08	1,685	158
Northbound Right-Turn (SH 119)	51	45	-12%	5	A	0.06	53	0	206	217	5%	16	B	0.19	166	4
Eastbound Left-Turn (Niwot Road)	44	43	-2%	28	C	0.20	29	1	190	97	-49%	90	F	0.89	185	52
Eastbound Through (Niwot Road)	162	153	-6%	28	C	0.29	230	23	394	272	-31%	71	E	1.08	384	124
Westbound Through (Niwot Road)	485	427	-12%	184	F	0.64	1,419	712	187	185	-1%	96	F	0.60	356	34
Westbound Right-Turn (Niwot Road)	109	93	-15%	145	F	0.26	1,419	712	73	75	3%	20	B	0.41	356	34
<b>Intersection Total</b>	<b>1,786</b>	<b>1,644</b>	<b>-8%</b>	<b>70.2</b>	<b>E</b>	<b>0.92</b>			<b>3,650</b>	<b>3,362</b>	<b>-8%</b>	<b>33.2</b>	<b>C</b>	<b>1.00</b>		
Bus Northbound Through (SH 119)	2	2	0%	46	D				5	6	20%	35	D			
<b>Bus Intersection Total</b>	<b>2</b>	<b>2</b>	<b>0%</b>	<b>45.6</b>	<b>D</b>				<b>5</b>	<b>6</b>	<b>20%</b>	<b>35.4</b>	<b>D</b>			
<b>SB SH 119 / SH 52 (Mineral Road)</b>																
Southbound Left-Turn (SH 119)	127	145	14%	19	B	0.12	268	6	140	119	-15%	7	A	0.12	95	1
Southbound Through (SH 119)	2,434	2,342	-4%	22	C	0.77	664	66	1,335	1,242	-7%	7	A	0.39	195	6
Southbound Right-Turn (SH 119)	9	11	22%	9	A	0.01	9	0	11	9	-18%	5	A	0.01	1	0
Eastbound Through (Mineral Road)	66	69	5%	56	E	0.31	134	20	102	109	7%	65	E	0.45	154	34
Eastbound Right-Turn (Mineral Road)	24	25	4%	8	A	0.18	56	1	29	30	3%	2	A	0.22	35	0
Westbound Left-Turn (Mineral Road)	473	465	-2%	89	F	0.86	463	155	250	252	1%	57	E	0.68	223	51
Westbound Through (Mineral Road)	120	120	0%	41	D	0.27	190	29	45	52	16%	55	E	0.12	153	17
<b>Intersection Total</b>	<b>3,253</b>	<b>3,177</b>	<b>-2%</b>	<b>32.9</b>	<b>C</b>	<b>0.74</b>			<b>1,912</b>	<b>1,813</b>	<b>-5%</b>	<b>19.0</b>	<b>B</b>	<b>0.82</b>		
Bus Southbound Through (SH 119)	4	4	0%	54	D				3	3	0%	38	D			
Bus Southbound Right-Turn (SH 119)	1	1	0%	29	C				0	0	-	0	A			
Bus Eastbound Through (Mineral Road)	2	3	50%	32	C				5	6	20%	38	D			
Bus Eastbound Right-Turn (Mineral Road)	1	1	0%	22	C				0	0	-	0	A			
Bus Westbound Through (Mineral Road)	2	3	50%	36	D				5	6	20%	38	D			
<b>Bus Intersection Total</b>	<b>10</b>	<b>12</b>	<b>20%</b>	<b>39.2</b>	<b>D</b>				<b>13</b>	<b>15</b>	<b>15%</b>	<b>37.8</b>	<b>D</b>			
<b>NB SH 119 / SH 52 (Mineral Road)</b>																
Northbound Left-Turn (SH 119)	25	27	8%	18	B	0.02	56	1	8	14	75%	20	B	0.01	54	1
Northbound Through (SH 119)	899	855	-5%	10	A	0.28	240	15	2,439	2,341	-4%	13	B	0.79	366	48
Northbound Right-Turn (SH 119)	205	206	0%	6	A	0.19	147	5	307	297	-3%	11	B	0.29	211	13
Eastbound Left-Turn (Mineral Road)	5	8	60%	39	D	0.06	283	60	18	24	33%	60	E	0.35	331	69
Eastbound Through (Mineral Road)	188	209	11%	47	D	0.43	283	60	224	209	-7%	53	D	0.46	330	69
Westbound Through (Mineral Road)	568	560	-1%	42	D	0.74	230	19	287	290	1%	50	D	0.35	113	4
Westbound Right-Turn (Mineral Road)	82	81	-1%	6	A	0.20	230	19	349	347	-1%	15	B	0.89	113	4
<b>Intersection Total</b>	<b>1,972</b>	<b>1,946</b>	<b>-1%</b>	<b>22.8</b>	<b>C</b>	<b>0.74</b>			<b>3,632</b>	<b>3,522</b>	<b>-3%</b>	<b>18.5</b>	<b>B</b>	<b>0.82</b>		
Bus Northbound Left-Turn (SH 119)	2	3	50%	21	C				5	6	20%	30	C			
Bus Northbound Through (SH 119)	0	0	-	0	A				0	0	-	0	A			
Bus Eastbound Left-Turn (Mineral Road)	2	3	50%	52	D				5	6	20%	65	E			
<b>Bus Intersection Total</b>	<b>4</b>	<b>6</b>	<b>50%</b>	<b>36.3</b>	<b>D</b>				<b>10</b>	<b>12</b>	<b>20%</b>	<b>47.6</b>	<b>D</b>			
<b>SB SH 119 / 63rd Street</b>																
Southbound Left-Turn (SH 119)	654	619	-5%	26	C	0.72	735	96	180	180	0%	12	B	0.21	201	12
Southbound Through (SH 119)	2,267	2,170	-4%	38	D	0.86	1,522	157	1,416	1,349	-5%	14	B	0.58	320	17
Southbound Right-Turn (SH 119)	10	14	40%	9	A	0.01	1	0	18	17	-6%	8	A	0.02	23	0
Eastbound Through (63rd Street)	451	446	-1%	55	D	0.83	357	83	86	89	3%	64	E	0.33	109	24
Eastbound Right-Turn (63rd Street)	255	256	0%	2	A	0.86	22	0	110	111	1%	1	A	0.66	4	0
Westbound Left-Turn (63rd Street)	276	260	-6%	106	F	0.75	319	109	414	310	-25%	23	C	0.47	149	27
Westbound Through (63rd Street)	115	113	-2%	18	B	0.10	90	8	1,084	911	-16%	41	D	0.81	652	152
<b>Intersection Total</b>	<b>4,028</b>	<b>3,878</b>	<b>-4%</b>	<b>39.5</b>	<b>D</b>	<b>0.80</b>			<b>3,308</b>	<b>2,967</b>	<b>-10%</b>	<b>24.1</b>	<b>C</b>	<b>0.82</b>		
Bus Southbound Through (SH 119)	4	4	0%	56	E				3	3	0%	36	D			
Bus Southbound Left-Turn (SH 119)	1	1	0%	39	D				0	0	-	0	A			
<b>Bus Intersection Total</b>	<b>5</b>	<b>5</b>	<b>0%</b>	<b>52.7</b>	<b>D</b>				<b>3</b>	<b>3</b>	<b>0%</b>	<b>35.9</b>	<b>D</b>			
<b>NB SH 119 / 63rd Street</b>																
Northbound Left-Turn (SH 119)	45	43	-4%	9	A	0.06	51	2	570	552	-3%	17	B	0.55	374	35
Northbound Through (SH 119)	883	859	-3%	14	B	0.39	261	13	2,326	2,360	1%	17	B	0.78	542	35
Northbound Right-Turn (SH 119)	372	354	-5%	15	B	0.51	227	13	459	459	0%	10	B	0.44	159	3
Eastbound Left-Turn (63rd Street)	6	4	-33%	26	C	0.02	15	0	2	2	0%	26	C	0.02	1	0
Eastbound Through (63rd Street)	1,099	1,060	-4%	43	D	0.80	542	171	264	266	1%	39	D	0.30	164	37
Westbound Through (63rd Street)	346	335	-3%	32	C	0.19	163	8	928	682	-27%	560	F	0.79	2,165	2,022
Westbound Right-Turn (63rd Street)	240	236	-2%	3	A	0.28	163	8	426	327	-23%	319	F	0.79	2,165	2,022
<b>Intersection Total</b>	<b>2,991</b>	<b>2,891</b>	<b>-3%</b>	<b>25.9</b>	<b>C</b>	<b>0.80</b>			<b>4,975</b>	<b>4,648</b>	<b>-7%</b>	<b>118.7</b>	<b>F</b>	<b>0.82</b>		
Bus Northbound Through (SH 119)	2	3	50%	58	E				4	4	0%	57	E			
Bus Northbound Right-Turn (SH 119)	0	0	-	0	A				1	0	-100%	0	A			
Bus Eastbound Through (63rd Street)	1	1	0%	58	E				0	0	-	0	A			
<b>Bus Intersection Total</b>	<b>3</b>	<b>4</b>	<b>33%</b>	<b>58.0</b>	<b>E</b>				<b>5</b>	<b>4</b>	<b>-20%</b>	<b>57.2</b>	<b>E</b>			

Notes:

- (1) Data based on the average of 15 VISSIM micro-simulation models.
- (2) Percent error between projected turning movements and actual throughput volume in the model.
- (3) Volume-to-Capacity Ratio was taken from Synchro files with optimized signal timing; this metric is not available from VISSIM.

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## Appendix J

### 2045 Baseline Peak Hour Intersection Results

**SH 119 Traffic Analysis**  
2045 Baseline - Peak Hour Intersection Results<sup>(1)</sup>

Intersection / Movement	Weekday AM Peak-Hour (7:00 AM - 8:00 AM)							Weekday PM Peak-Hour (5:00 PM - 6:00 PM)								
	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Volume-to-Capacity Ratio <sup>(3)</sup>	Model Queue (ft.)	Model Avg Queue (ft.)	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Volume-to-Capacity Ratio <sup>(3)</sup>	Model Queue (ft.)	Model Avg Queue (ft.)
<b>SH 119 / Hover Street</b>																
Northbound Left-Turn (Hover Street)	224	214	-4%	69	E	0.46	198	57	181	182	1%	76	E	0.60	176	55
Northbound Through (Hover Street)	667	673	1%	29	C	0.48	243	48	816	803	-2%	38	D	0.47	318	75
Northbound Right-Turn (Hover Street)	67	67	0%	10	B	0.16	88	3	118	120	2%	14	B	0.22	149	9
Southbound Left-Turn (Hover Street)	107	110	3%	70	E	0.30	133	34	202	204	1%	69	E	0.63	204	54
Southbound Through (Hover Street)	709	712	0%	34	C	0.57	312	61	1,152	1,159	1%	41	D	0.64	543	127
Southbound Right-Turn (Hover Street)	503	498	-1%	3	A	0.33	115	1	251	251	0%	8	B	0.16	42	0
Eastbound Left-Turn (SH 119)	241	208	-14%	50	D	0.21	210	17	690	638	-8%	28	C	0.52	222	23
Eastbound Through (SH 119)	438	377	-14%	57	E	0.50	260	28	1,031	938	-9%	47	D	0.76	441	54
Eastbound Right-Turn (SH 119)	134	131	-2%	5	A	N/A	107	2	377	366	-3%	8	A	N/A	247	5
Westbound Left-Turn (SH 119)	60	59	-2%	55	E	0.20	89	15	131	128	-2%	63	E	0.50	141	35
Westbound Through (SH 119)	1,115	1,104	-1%	0	A	N/A	0	0	615	612	0%	0	A	N/A	0	0
Westbound Right-Turn (SH 119)	123	121	-2%	3	A	0.44	70	1	188	183	-3%	4	A	0.47	108	2
<b>General Traffic-Intersection Total</b>	<b>4,388</b>	<b>4,274</b>	<b>-3%</b>	<b>24.5</b>	<b>C</b>	<b>0.51</b>			<b>5,752</b>	<b>5,584</b>	<b>-3%</b>	<b>32.7</b>	<b>C</b>	<b>0.70</b>		
Bus Eastbound Through (SH 119)	2	2	0%	101	A				4	4	0%	57	C			
Bus Westbound Through (SH 119)	4	4	0%	5	A				3	3	0%	5	A			
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>37.0</b>	<b>D</b>				<b>7</b>	<b>7</b>	<b>0%</b>	<b>34.9</b>	<b>C</b>			
<b>SB SH 119 / Airport Road</b>																
Southbound Left-Turn (SH 119)	0	0	-	0	A	0.73	398	17	7	7	0%	13	B	0.01	362	29
Southbound Through (SH 119)	1,822	1,795	-1%	8	A	0.73	398	17	999	1,002	0%	21	C	0.65	362	29
Southbound Right-Turn (SH 119)	20	17	-15%	1	A	0.02	14	0	41	40	-2%	13	C	0.06	92	0
Eastbound Through (Airport Road)	40	38	-5%	57	E	0.14	149	13	34	34	0%	37	D	0.18	93	7
Eastbound Right-Turn (Airport Road)	753	750	0%	2	A	0.51	0	0	336	346	3%	1	A	0.23	0	0
Westbound Left-Turn (Airport Road)	13	13	0%	8	A	0.54	232	59	7	8	14%	41	D	0.75	341	108
Westbound Through (Airport Road)	260	239	-8%	69	E	0.54	232	59	751	709	-6%	43	D	0.75	341	108
<b>Intersection Total</b>	<b>2,908</b>	<b>2,852</b>	<b>-2%</b>	<b>12.0</b>	<b>B</b>	<b>0.78</b>			<b>2,175</b>	<b>2,146</b>	<b>-1%</b>	<b>25.2</b>	<b>C</b>	<b>0.61</b>		
Bus Southbound Through (SH 119)	4	4	0%	28	A				0	0	0%	47	D			
Bus Eastbound Right-Turn (Airport Road)	1	1	0%	3	A				0	0	0%	0	N/A			
Bus Westbound Through (Airport Road)	0	0	-	0	N/A				1	2	100%	66	E			
<b>Bus Intersection Total</b>	<b>5</b>	<b>5</b>	<b>0%</b>	<b>23.1</b>	<b>C</b>				<b>4</b>	<b>5</b>	<b>25%</b>	<b>54.7</b>	<b>D</b>			
<b>NB SH 119 / Airport Road</b>																
Northbound Left-Turn (SH 119)	230	213	-7%	13	B	0.09	127	3	733	694	-5%	26	C	0.28	961	43
Northbound Through (SH 119)	793	720	-9%	24	C	0.22	282	20	2,080	1,909	-8%	29	C	0.77	1,474	130
Northbound Right-Turn (SH 119)	2	2	0%	6	A	0.00	8	0	8	7	-13%	6	A	0.01	842	25
Eastbound Left-Turn (Airport Road)	15	13	-13%	1	A	0.16	0	0	14	14	0%	36	D	0.25	106	9
Eastbound Through (Airport Road)	25	25	0%	5	A	0.16	14	0	27	28	4%	78	E	0.25	117	15
Westbound Left-Turn (Airport Road)	43	41	-5%	54	D	0.18	133	13	25	24	-4%	38	D	0.14	76	5
Westbound Right-Turn (Airport Road)	5	4	-20%	7	A	0.18	82	1	4	4	0%	2	A	0.14	19	0
<b>Intersection Total</b>	<b>1,113</b>	<b>1,018</b>	<b>-9%</b>	<b>14.6</b>	<b>B</b>	<b>0.47</b>			<b>2,891</b>	<b>2,690</b>	<b>-7%</b>	<b>28.4</b>	<b>C</b>	<b>0.75</b>		
Bus Northbound Left-Turn (SH 119)	0	0	-	0	N/A				4	4	0%	73	E			
Bus Northbound Through (SH 119)	2	2	0%	36	D				4	4	0%	73	E			
<b>Bus Intersection Total</b>	<b>2</b>	<b>2</b>	<b>0%</b>	<b>36.0</b>	<b>D</b>				<b>5</b>	<b>6</b>	<b>20%</b>	<b>59.0</b>	<b>E</b>			
<b>SB SH 119 / Niwot Road</b>																
Southbound Left-Turn (SH 119)	86	81	-6%	21	C	0.08	89	3	160	165	3%	45	D	0.17	236	29
Southbound Through (SH 119)	2,268	2,232	-2%	27	C	1.01	2,210	216	1,158	1,169	1%	21	C	0.63	340	39
Southbound Right-Turn (SH 119)	234	214	-9%	24	C	0.22	282	20	24	26	8%	11	B	0.03	146	9
Eastbound Through (Niwot Road)	120	117	-3%	74	E	0.95	286	57	424	240	-43%	597	F	1.38	1,673	1,560
Eastbound Right-Turn (Niwot Road)	40	40	0%	9	A	N/A	3	0	195	125	-36%	516	F	N/A	1	0
Westbound Left-Turn (Niwot Road)	262	247	-6%	102	F	0.98	555	144	133	128	-4%	37	D	1.08	104	24
Westbound Through (Niwot Road)	286	277	-3%	48	D	1.03	511	103	96	97	1%	15	B	0.21	107	8
<b>Intersection Total</b>	<b>3,296</b>	<b>3,208</b>	<b>-3%</b>	<b>35.6</b>	<b>D</b>	<b>0.92</b>			<b>2,190</b>	<b>1,950</b>	<b>-11%</b>	<b>126.3</b>	<b>F</b>	<b>0.99</b>		
Bus Southbound Through (SH 119)	5	5	0%	42	D				3	3	0%	79	E			
<b>Bus Intersection Total</b>	<b>5</b>	<b>5</b>	<b>0%</b>	<b>41.9</b>	<b>D</b>				<b>3</b>	<b>3</b>	<b>0%</b>	<b>78.6</b>	<b>E</b>			
<b>NB SH 119 / Niwot Road</b>																
Northbound Left-Turn (SH 119)	63	62	-2%	29	C	0.05	121	7	42	44	5%	3	A	0.04	14	0
Northbound Through (SH 119)	872	830	-5%	28	C	0.37	657	41	2,558	2,429	-5%	5	A	1.32	368	7
Northbound Right-Turn (SH 119)	51	45	-12%	6	A	0.05	49	0	206	209	1%	5	A	0.22	96	1
Eastbound Left-Turn (Niwot Road)	44	43	-2%	69	E	0.24	105	14	190	112	-41%	214	F	0.27	502	214
Eastbound Through (Niwot Road)	162	153	-6%	32	C	0.32	240	29	394	294	-25%	78	E	0.82	503	210
Westbound Through (Niwot Road)	485	463	-5%	61	E	0.87	835	145	187	183	-2%	68	E	0.20	275	11
Westbound Right-Turn (Niwot Road)	109	101	-7%	34	C	0.32	835	145	73	75	3%	7	A	0.16	275	11
<b>Intersection Total</b>	<b>1,786</b>	<b>1,697</b>	<b>-5%</b>	<b>38.4</b>	<b>D</b>	<b>0.92</b>			<b>3,650</b>	<b>3,346</b>	<b>-8%</b>	<b>22.0</b>	<b>C</b>	<b>0.99</b>		
Bus Northbound Through (SH 119)	2	2	0%	46	D				5	6	20%	39	D			
<b>Bus Intersection Total</b>	<b>2</b>	<b>2</b>	<b>0%</b>	<b>46.2</b>	<b>D</b>				<b>5</b>	<b>6</b>	<b>20%</b>	<b>38.9</b>	<b>D</b>			
<b>SB SH 119 / SH 52 (Mineral Road)</b>																
Southbound Left-Turn (SH 119)	127	143	13%	45	D	0.12	340	12	140	125	-11%	24	C	0.12	161	8
Southbound Through (SH 119)	2,434	2,357	-3%	50	D	1.11	2,122	355	1,335	1,287	-4%	7	A	0.56	110	3
Southbound Right-Turn (SH 119)	9	12	33%	34	C	0.01	244	5	11	10	-9%	10	B	0.01	4	0
Eastbound Through (Mineral Road)	66	69	5%	76	E	0.19	149	31	102	112	10%	89	F	0.29	204	52
Eastbound Right-Turn (Mineral Road)	24	25	4%	1	A	0.12	0	0	29	30	3%	1	A	0.13	0	0
Westbound Left-Turn (Mineral Road)	473	464	-2%	30	C	1.07	458	80	250	248	-1%	62	E	0.99	186	86
Westbound Through (Mineral Road)	120	120	0%	27	C	0.32	357	29	45	52	16%	19	B	0.16	104	12
<b>Intersection Total</b>	<b>3,253</b>	<b>3,190</b>	<b>-2%</b>	<b>46.0</b>	<b>D</b>	<b>1.15</b>			<b>1,912</b>	<b>1,864</b>	<b>-3%</b>	<b>20.9</b>	<b>C</b>	<b>1.33</b>		
Bus Southbound Through (SH 119)	4	4	0%	79	E				3	3	0%	35	D			
Bus Southbound Right-Turn (SH 119)	1	1	0%	54	D				0	0	-	0	N/A			
Bus Eastbound Through (Mineral Road)	2	3	50%	29	C				5	6	20%	52	D			
Bus Eastbound Right-Turn (Mineral Road)	1	1	0%	3	A				0	0	-	0	N/A			
Bus Westbound Through (Mineral Road)	2	3	50%	5	A				5	6	20%	50	D			
<b>Bus Intersection Total</b>	<b>10</b>	<b>12</b>	<b>20%</b>	<b>39.8</b>	<b>D</b>				<b>13</b>	<b>15</b>	<b>15%</b>	<b>48.1</b>	<b>D</b>			
<b>NB SH 119 / SH 52 (Mineral Road)</b>																
Northbound Left-Turn (SH 119)	25	27	8%	42	D	0.03	93	7	8	13	63%	14	B	0.01	34	0
Northbound Through (SH 119)	899	838	-7%	43	D	0.50	714	128	2,439	2,308	-5%	14	B	1.10	1,380	67
Northbound Right-Turn (SH 119)	205	203	-1%	17	B	0.23	233	16	307	292	-5%	14	B	0.29	105	2
Eastbound Left-Turn (Mineral Road)	5	8	60%	62	E	0.43	277	52	18	23	28%	29	C	0.22	224	78
Eastbound Through (Mineral Road)	188	204	9%	36	D	0.48	0	0	224	214	-4%	50	D	0.82	0	0

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## Appendix K

### 2045 Baseline Intersection Level of Service by Hour

2045 Baseline - Intersection Level of Service by Hour

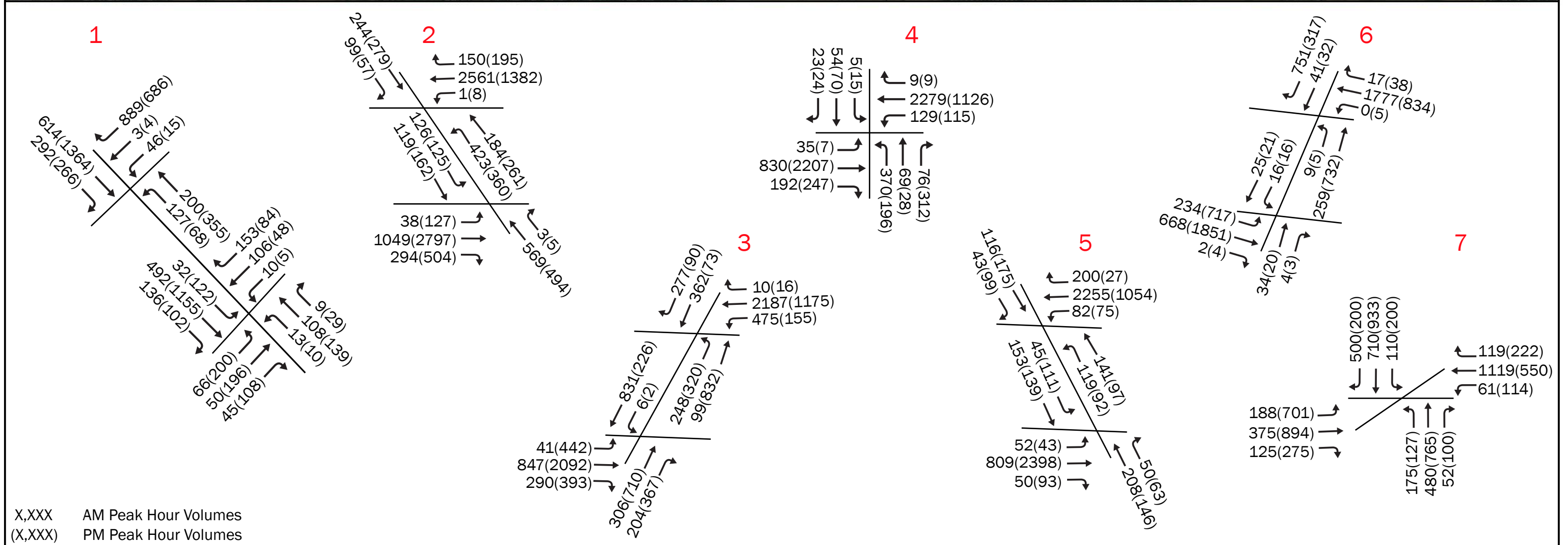
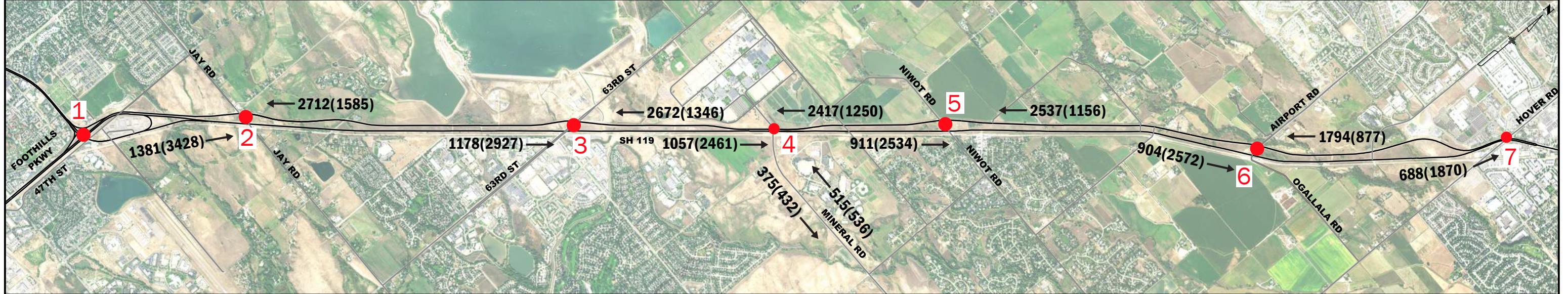
Intersection / Movement		6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM		
SH 119 / Hover Street	Northbound Left-Turn (Hover Street)	E	E	E	E	E	E	E	E	E	E	E	E	E	E		
	Northbound Through (Hover Street)	C	C	C	C	C	C	C	D	D	D	D	D	D	D		
	Northbound Right-Turn (Hover Street)	A	B	B	B	B	B	B	B	B	B	B	B	B	B	C	
	Southbound Left-Turn (Hover Street)	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
	Southbound Through (Hover Street)	C	C	D	C	C	C	C	C	D	D	D	D	D	D	C	
	Southbound Right-Turn (Hover Street)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Left-Turn (SH 119)	D	D	D	D	D	D	D	B	B	C	C	C	C	C	B	
	Eastbound Through (SH 119)	E	E	E	E	E	E	D	C	D	D	D	D	D	D	C	
	Eastbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Westbound Left-Turn (SH 119)	E	E	E	D	E	E	E	E	E	E	E	E	E	E	E	
	Westbound Through (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Westbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
<b>Intersection Total</b>		B	C	C	C	C	C	C	C	C	C	C	C	C	C		
SB SH 119 / Airport Road	Southbound Left-Turn (SH 119)	A	A	A	A	A	A	A	C	B	B	B	B	C	B		
	Southbound Through (SH 119)	A	A	A	A	A	A	A	C	C	C	C	C	C	B	B	
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	B	B	A	A	
	Eastbound Through (Airport Road)	D	E	D	D	E	D	E	D	D	D	D	D	D	D	D	
	Eastbound Right-Turn (Airport Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Westbound Left-Turn (Airport Road)	A	A	B	B	B	B	B	C	C	D	D	D	D	D	C	
	Westbound Through (Airport Road)	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	
<b>Intersection Total</b>		A	B	B	B	B	B	B	C	C	C	C	C	C	C	C	
NB SH 119 / Airport Road	Northbound Left-Turn (SH 119)	A	B	B	B	B	B	B	B	B	B	C	C	C	C	B	
	Northbound Through (SH 119)	B	B	B	B	B	B	B	B	C	C	C	C	C	C	C	
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Left-Turn (Airport Road)	A	A	A	A	A	A	A	B	C	C	D	D	D	B	B	
	Eastbound Through (Airport Road)	A	A	B	C	C	B	C	E	F	E	F	E	F	E	F	E
	Westbound Through (Airport Road)	D	D	E	E	E	D	E	D	C	D	D	D	D	D	D	
	Westbound Right-Turn (Airport Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		B	B	B	B	B	B	B	A	B	C	C	C	C	C	C	
SB SH 119 / Niwot Road	Southbound Left-Turn (SH 119)	B	C	C	B	A	A	B	C	C	C	D	D	E	D		
	Southbound Through (SH 119)	B	C	C	C	B	B	B	C	C	C	C	C	C	B	B	
	Southbound Right-Turn (SH 119)	A	C	C	C	A	A	A	A	B	A	A	B	A	A	A	
	Eastbound Through (Niwot Road)	E	E	E	E	E	F	E	D	D	F	F	F	F	F	F	
	Eastbound Right-Turn (Niwot Road)	A	A	B	A	A	C	B	A	A	F	F	F	F	F	F	
	Westbound Left-Turn (Niwot Road)	E	F	E	F	F	F	F	E	E	D	D	D	D	C	B	
	Westbound Through (Niwot Road)	C	D	D	D	D	D	D	C	B	C	B	B	B	B	C	
<b>Intersection Total</b>		C	D	C	C	C	C	C	C	C	E	F	F	F	F	F	
NB SH 119 / Niwot Road	Northbound Left-Turn (SH 119)	C	C	C	C	C	C	C	A	A	A	A	A	A	A	A	
	Northbound Through (SH 119)	C	C	C	C	C	C	C	A	A	A	A	A	A	A	A	
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	B	A	A	A	A	A	A	A	A	
	Eastbound Left-Turn (Niwot Road)	D	E	D	E	D	E	D	F	F	F	F	F	F	F	F	
	Eastbound Through (Niwot Road)	C	C	C	C	C	C	C	E	E	E	F	E	F	F	F	
	Westbound Through (Niwot Road)	D	E	D	D	D	D	D	F	F	F	E	E	E	E	E	
	Westbound Right-Turn (Niwot Road)	A	C	B	B	B	B	B	C	B	B	A	A	A	A	A	
<b>Intersection Total</b>		C	D	C	C	C	C	C	C	B	C	C	C	C	C	B	
SB SH 119 / Mineral Road	Southbound Left-Turn (SH 119)	D	D	D	D	C	C	C	F	F	F	D	C	B	B		
	Southbound Through (SH 119)	D	D	D	D	C	C	C	B	C	B	A	A	A	A	A	
	Southbound Right-Turn (SH 119)	C	C	C	D	B	B	B	B	B	B	A	B	A	A	A	
	Eastbound Through (Mineral Road)	E	E	F	F	E	E	E	E	E	F	F	F	F	E	E	
	Eastbound Right-Turn (Mineral Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Westbound Left-Turn (Mineral Road)	C	C	C	C	C	C	C	E	E	D	E	E	D	C	C	
	Westbound Through (Mineral Road)	C	C	C	C	C	C	C	C	B	C	C	B	B	B	B	
<b>Intersection Total</b>		D	D	D	D	C	C	C	D	E	D	C	C	B	B		
NB SH 119 / Mineral Road	Northbound Left-Turn (SH 119)	C	D	D	C	C	D	D	A	A	B	B	B	B	A	A	
	Northbound Through (SH 119)	C	D	D	C	D	D	D	A	A	B	B	B	B	B	A	
	Northbound Right-Turn (SH 119)	A	B	C	B	B	C	D	A	B	B	B	B	B	B	A	
	Eastbound Left-Turn (Mineral Road)	E	E	E	E	E	E	E	B	C	D	D	C	C	C	B	
	Eastbound Through (Mineral Road)	C	D	D	C	D	C	D	F	F	E	D	D	D	E	E	
	Westbound Through (Mineral Road)	C	D	D	C	C	C	C	D	D	D	D	D	D	D	D	
	Westbound Right-Turn (Mineral Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		C	D	D	C	C	D	D	C	C	B	B	B	B	B	B	
SB SH 119 / 63rd Street	Southbound Left-Turn (SH 119)	B	C	C	B	A	A	A	B	B	B	B	B	A	A		
	Southbound Through (SH 119)	C	D	D	C	C	C	C	B	B	B	B	B	B	B	A	
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	B	A	A	
	Eastbound Through (63rd Street)	E	F	E	E	E	E	E	E	E	E	E	E	E	E	E	
	Eastbound Right-Turn (63rd Street)	A	B	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Westbound Left-Turn (63rd Street)	E	E	E	F	F	F	F	F	E	E	C	C	E	E	E	
	Westbound Through (63rd Street)	D	D	D	E	E	E	E	D	D	D	D	D	D	D	E	
<b>Intersection Total</b>		C	D	D	D	D	D	D	C	C	C	C	C	C	C	C	
NB SH 119 / 63rd Street	Northbound Left-Turn (SH 119)	A	C	D	C	B	B	B	A	A	B	B	B	B	A	A	
	Northbound Through (SH 119)	A	D	D	D	B	B	B	A	B	B	B	B	B	B	A	
	Northbound Right-Turn (SH 119)	A	C	D	C	A	B	C	A	A	B	B	B	B	A	A	
	Eastbound Left-Turn (63rd Street)	D	C	C	D	C	C	C	C	C	D	D	C	C	D	C	
	Eastbound Through (63rd Street)	D	C	C	D	D	D	D	D	D	D	D	C	C	C	C	
	Westbound Through (63rd Street)	D	C	C	E	F	F	F	F	F	F	F	F	F	F	F	
	Westbound Right-Turn (63rd Street)	A	A	A	A	A	A	A	A	A	F	F	F	F	F	F	
<b>Intersection Total</b>		C	C	D	D	C	C	C	C	C	E	F	F	F	F	F	
SB SH 119 / Jay Road	Southbound Left-Turn (SH 119)	A	C	D	C	B	A	A	C	A	A	A	A	A	A	A	
	Southbound Through (SH 119)	A	B	D	D	C	B	A	A	B	B	A	A	A	A	A	
	Southbound Right-Turn (SH 119)	A	A	B	C	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Through (Jay Road)	E	F	F	F	F	E	E	F	F	F	F	F	F	F	F	
	Eastbound Right-Turn (Jay Road)	A	C	F	F	F	B	A	F	F	F	F	F	F	F	F	
	Westbound Left-Turn (Jay Road)	C	D	E	E	C	C	B	E	D	D	D	D	D	D	E	
	Westbound Through (Jay Road)	C	B	B	B	C	C	C	D	D	D	D	D	D	D	E	
<b>Intersection Total</b>		B	D	E	E	C	B	B	D	E	F	F	F	F	F	F	
NB SH 119 / Jay Road	Northbound Left-Turn (SH 119)	A	D	D	D	B	B	B	A	B	B	C	C	B	A	A	
	Northbound Through (SH 119)	A	D	E	E	C	C	C	B	B	C	C	D	C	C	B	
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	C	A	A	A	
	Eastbound Left-Turn (Jay Road)	E	D	D	D	D	D	D	F	F	F	F	F	F	F	F	
	Eastbound Through (Jay Road)	E	D	D	D	D	D	D	B	A	A	A	B	A	A	C	
	Westbound Through (Jay Road)	E	F	F	F	E	E	E	E	E	F	F	F	F	F	E	
	Westbound Right-Turn (Jay Road)	A	E	F	F	C	C	C	C	D	D	F	F	F	F	A	
<b>Intersection Total</b>		C	E	F	F	C	C	C	C	C	D	E	F	F	D	C	
Diagonal Hwy / 47th Street	Northbound Left-Turn (47th Street)	C	D	E	D	C	C	D	C	C	C	E	E	C	C		
	Northbound Through (47th Street)	C	C	C	C	C	C	C	C	C	C	E	D	C	C		
	Northbound Right-Turn (47th Street)	A	B	B	B	B	B	B	B	B	D	D	D	B	B		
	Southbound Left-Turn (47th Street)	A	D	D	D	C	D	D	C	C	C	D	D	D	B	B	
	Southbound Through (47th Street)	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
	Southbound Right-Turn (47th Street)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Left-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Westbound Left-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	B	B	B	B	C	B	B	B	
	Westbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Westbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
<b>Intersection Total</b>		A	B	B	B	A	A	A	A	A	A	B	B	A	A	A	
Diagonal Hwy / SB Foothills Pkwy Ramps	Southbound Left-Turn (Foothills Pkwy)	C	C	C	C	C	C	C	C	C	C	C	C	B	C		
	Southbound Through (Foothills Pkwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Southbound Right-Turn (Foothills Pkwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	B	A	A	
	Eastbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Westbound Left-Turn (Diagonal Hwy)	A	C	C	B	B	B	C	C	C	D	D	D	C	B	B	
	Westbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	

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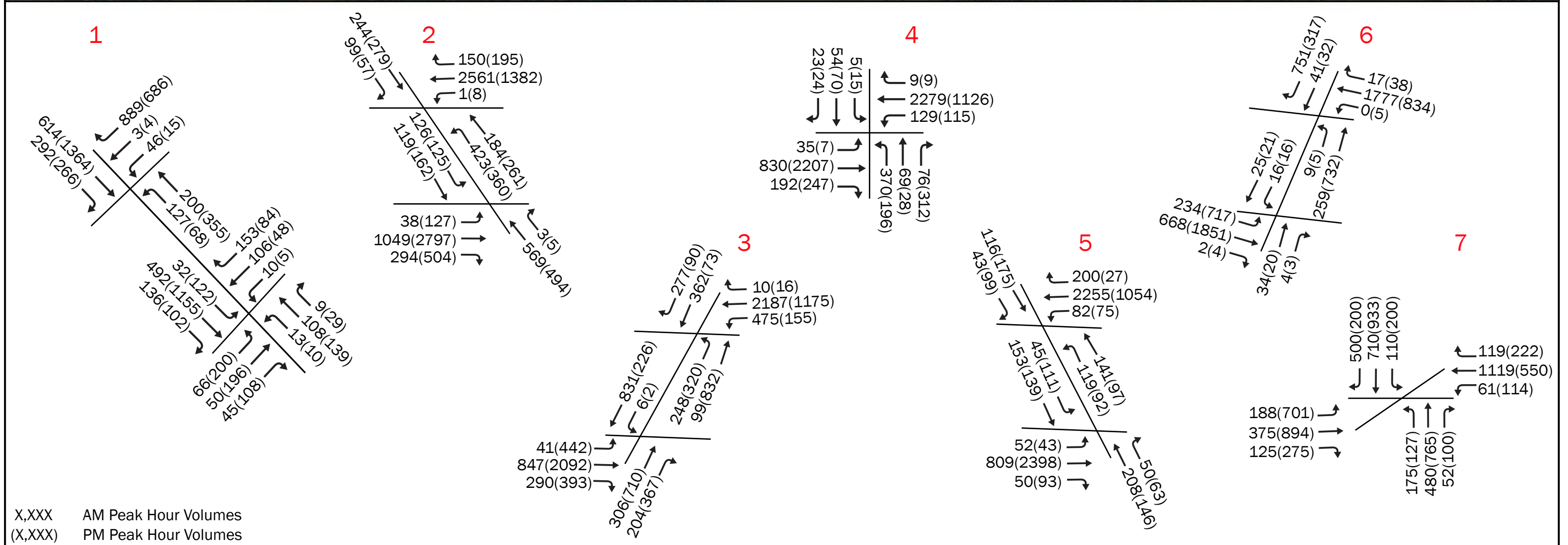
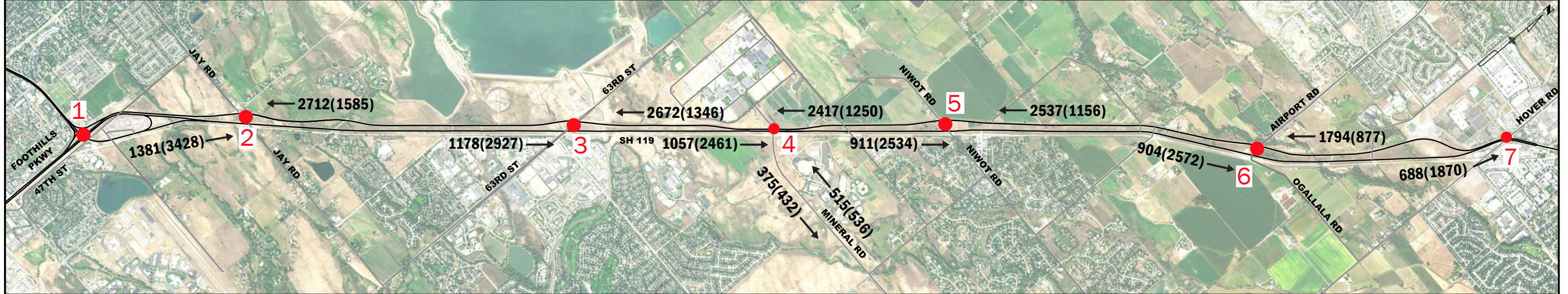
## Appendix L

### Existing & Forecasted No Build Peak Hour Volumes



X,XXX AM Peak Hour Volumes  
 (X,XXX) PM Peak Hour Volumes

2019 Peak Hour Volumes



X,XXX AM Peak Hour Volumes  
(X,XXX) PM Peak Hour Volumes

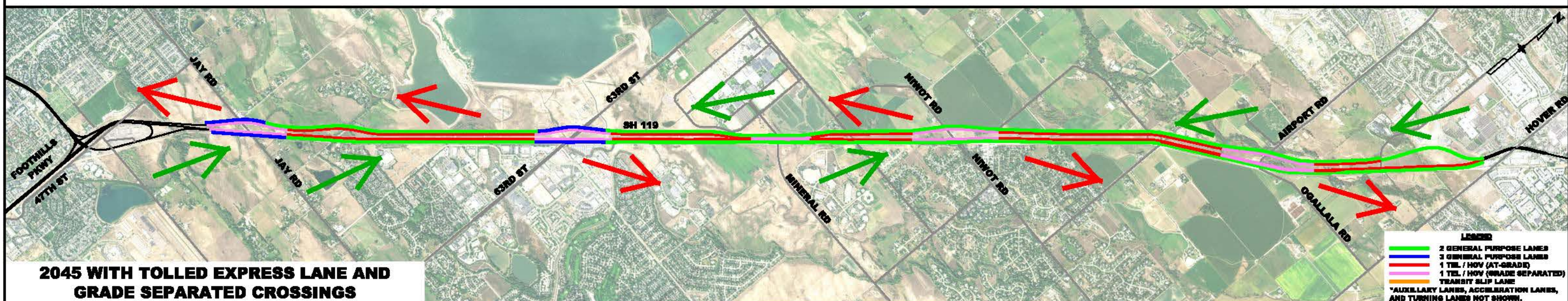
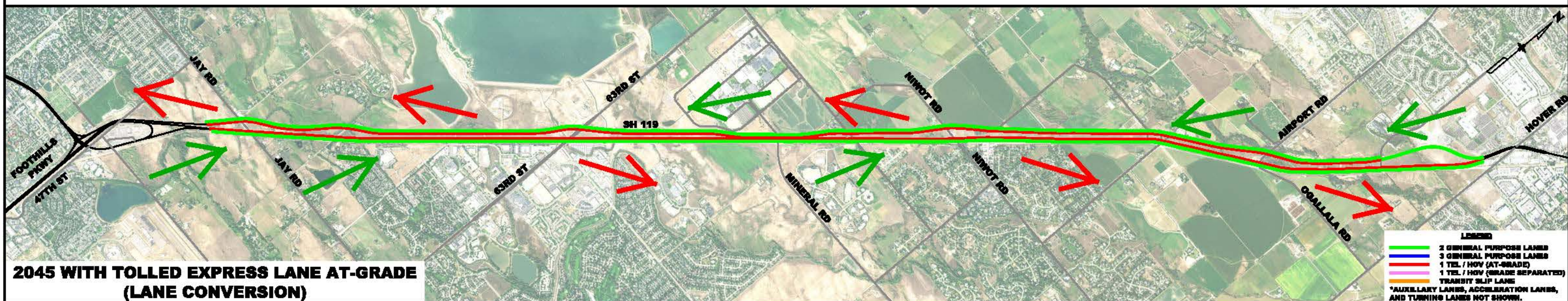
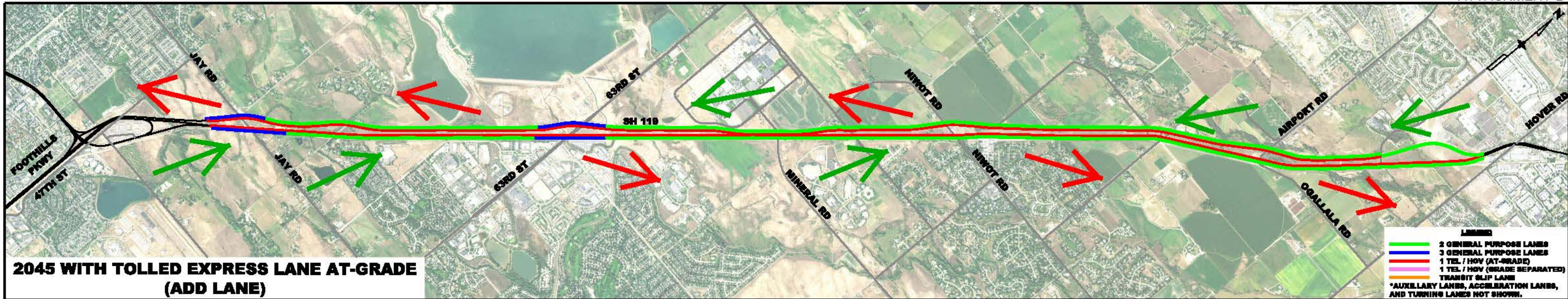


# technical report

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## Appendix M

### TEL Ingress/Egress Zones

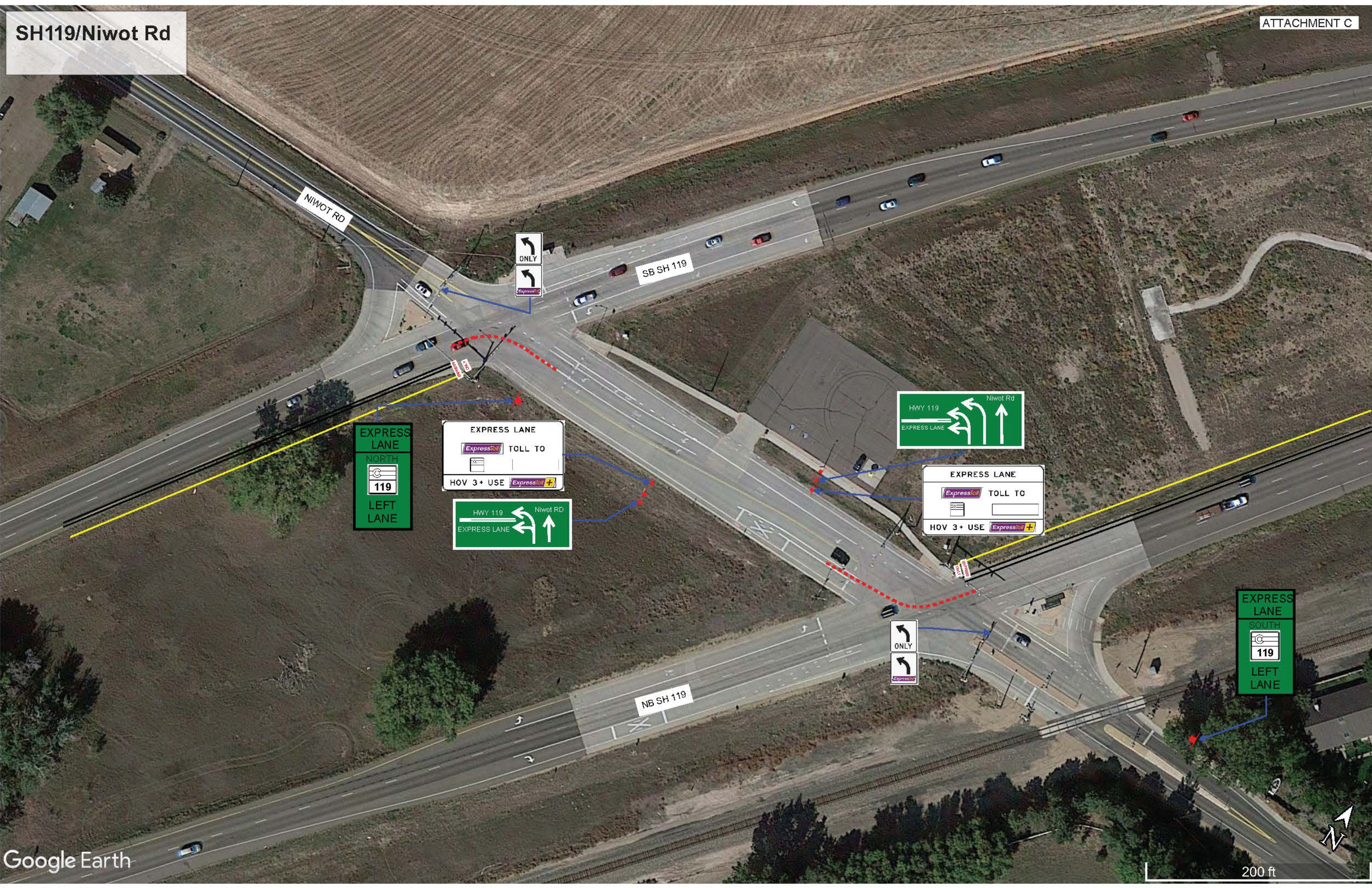


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## Appendix N

### Intersecting Left Turns Preliminary Signing & Striping



EXPRESS LANE  
NORTH  
119  
LEFT LANE

EXPRESS LANE  
ExpressToll TOLL TO  
HOV 3+ USE ExpressToll+

HWY 119 Niwot RD  
EXPRESS LANE

HWY 119 Niwot Rd  
EXPRESS LANE

EXPRESS LANE  
ExpressToll TOLL TO  
HOV 3+ USE ExpressToll+

EXPRESS LANE  
SOUTH  
119  
LEFT LANE

# SH 119/Niwot Rd

Advance TEL Signing

IS Rd 2 N

EXPRESS LANE  
119  
AHEAD

EXPRESS LANE  
NORTH  
119  
LEFT LANE

EXPRESS LANE  
SOUTH  
119  
LEFT LANE

EXPRESS LANE  
119  
AHEAD

SB SH 119

NB SH 119

NIWOT RD

Peppertree Dr

Franklin St

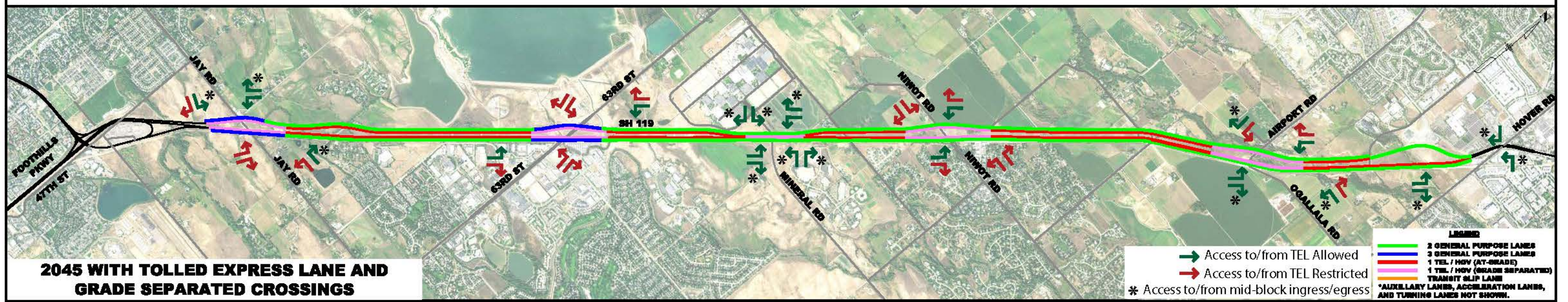
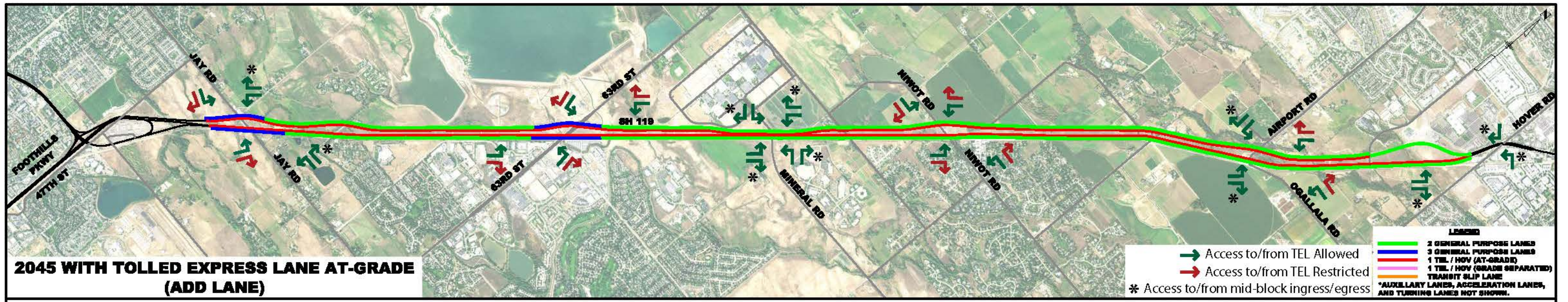


# technical report

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## Appendix O

### TEL Access To/From Turns



# technical report

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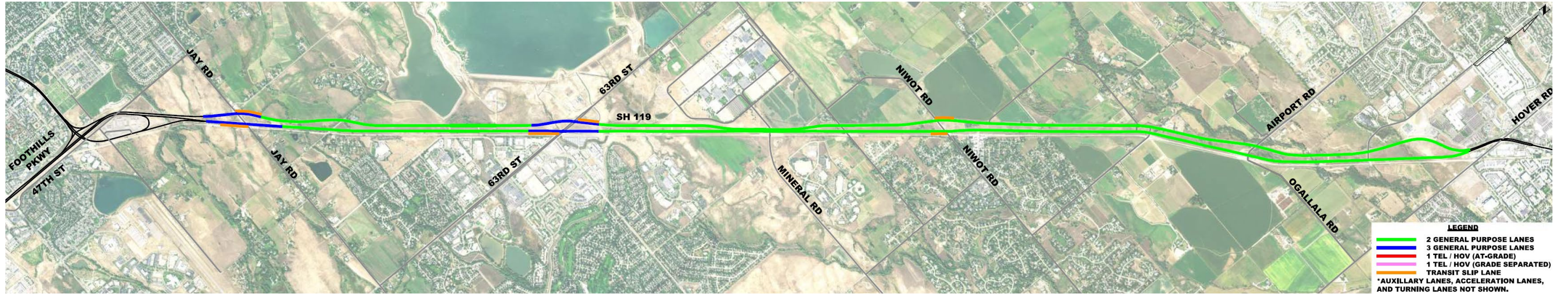
## Appendix P

### Corridor Alternative Graphics



SH 119  
CORRIDOR ALTERNATIVE GRAPHICS

EXISTING CONDITIONS

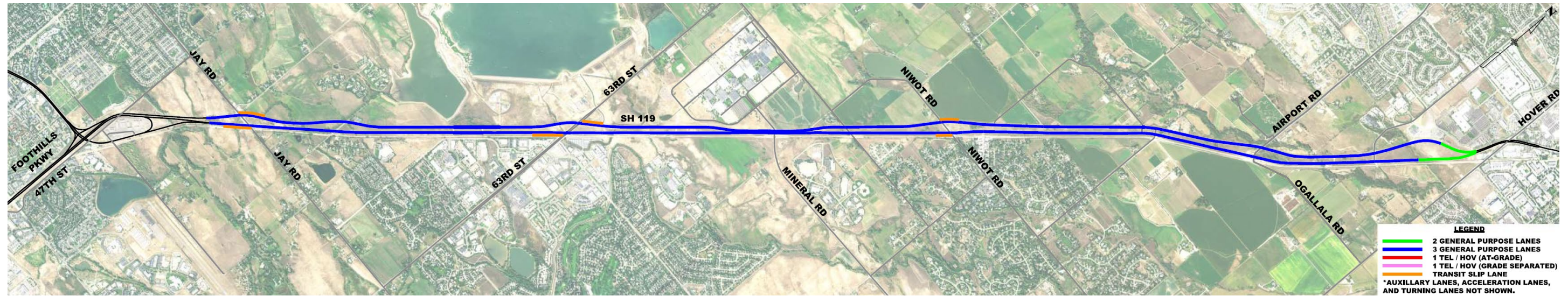


TRANSIT SLIP LANES



SH 119  
CORRIDOR ALTERNATIVE GRAPHICS

3 GENERAL PURPOSE LANES



TOLLED EXPRESS LANES AND AT-GRADE CROSSINGS (ADD LANE)



TOLLED EXPRESS LANES AND AT-GRADE CROSSINGS (LANE CONVERSION)



TOLLED EXPRESS LANES (GRADE SEPARATION)



# technical report

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## Appendix Q

### Transit Slip Lanes Peak Hour Intersection Results

**SH 119 Traffic Analysis**  
2045 Transit Slip Lanes - Peak Hour Intersection Results<sup>(1)</sup>

Intersection / Movement	Weekday AM Peak-Hour (7:00 AM - 8:00 AM)							Weekday PM Peak-Hour (5:00 PM - 6:00 PM)								
	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Volume-to-Capacity Ratio <sup>(3)</sup>	Model Maximum Queue (ft.)	Model Avg Queue (ft.)	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Volume-to-Capacity Ratio <sup>(3)</sup>	Model Maximum Queue (ft.)	Model Avg Queue (ft.)
<b>SH 119 / Hover Street</b>																
Northbound Left-Turn (Hover Street)	224	214	-4%	69	E	0.46	197	56	181	182	1%	75	E	0.60	171	54
Northbound Through (Hover Street)	667	673	1%	29	C	0.48	239	48	816	803	-2%	38	D	0.47	305	74
Northbound Right-Turn (Hover Street)	67	67	0%	10	B	0.16	83	3	118	120	2%	14	B	0.22	141	9
Southbound Left-Turn (Hover Street)	107	110	3%	79	E	0.30	127	34	202	205	1%	68	E	0.63	191	52
Southbound Through (Hover Street)	709	712	0%	34	C	0.57	318	60	1,152	1,159	1%	41	D	0.64	522	124
Southbound Right-Turn (Hover Street)	503	502	0%	3	A	0.33	106	1	251	256	2%	7	A	0.16	41	0
Eastbound Left-Turn (SH 119)	241	209	-13%	36	D	0.21	177	12	690	648	-6%	27	C	0.52	348	21
Eastbound Through (SH 119)	438	372	-15%	45	D	0.50	225	23	1,031	943	-9%	44	D	0.76	605	51
Eastbound Right-Turn (SH 119)	134	131	-2%	3	A	N/A	119	1	377	368	-2%	8	A	N/A	226	3
Westbound Left-Turn (SH 119)	60	59	-2%	55	D	0.20	83	15	131	128	-2%	62	E	0.50	139	35
Westbound Through (SH 119)	1,115	1,100	-1%	0	A	N/A	0	0	615	609	-1%	0	A	N/A	0	0
Westbound Right-Turn (SH 119)	123	121	-2%	3	A	0.44	74	1	188	183	-3%	4	A	0.47	93	2
<b>General Traffic Intersection Total</b>	<b>4,388</b>	<b>4,270</b>	<b>-3%</b>	<b>22.6</b>	<b>C</b>	<b>0.51</b>			<b>5,752</b>	<b>5,604</b>	<b>-3%</b>	<b>32.1</b>	<b>C</b>	<b>0.70</b>		
Bus Eastbound Left-Turn (SH 119)	4	4	0%	17	B				4	4	0%	36	D			
Bus Southbound Right-Turn (Hover Street)	4	4	0%	6	A				4	4	0%	6	A			
<b>Bus Intersection Total</b>	<b>8</b>	<b>8</b>	<b>0%</b>	<b>11.9</b>	<b>B</b>				<b>8</b>	<b>8</b>	<b>0%</b>	<b>20.8</b>	<b>C</b>			
<b>SB SH 119 / Airport Road</b>																
Southbound Left-Turn (SH 119)	0	0	-	0	A	0.73	0	0	7	7	0%	10	A	0.01	18	0
Southbound Through (SH 119)	1,822	1,791	-2%	8	A	0.73	370	15	999	999	0%	21	C	0.65	343	27
Southbound Right-Turn (SH 119)	20	17	-15%	2	A	0.02	0	0	41	40	-2%	12	B	0.06	101	2
Eastbound Through (Airport Road)	40	38	-5%	57	E	0.14	146	12	34	34	0%	36	D	0.18	90	7
Eastbound Right-Turn (Airport Road)	753	1,791	138%	8	A	0.51	370	15	336	999	197%	21	C	0.23	343	27
Westbound Left-Turn (Airport Road)	13	13	0%	11	B	0.54	244	48	7	8	14%	41	D	0.75	368	112
Westbound Through (Airport Road)	260	239	-8%	55	D	0.54	244	48	751	712	-5%	45	D	0.75	368	112
<b>Intersection Total</b>	<b>2,908</b>	<b>3,889</b>	<b>34%</b>	<b>10.9</b>	<b>B</b>	<b>0.78</b>			<b>2,175</b>	<b>2,799</b>	<b>29%</b>	<b>26.9</b>	<b>C</b>	<b>0.61</b>		
Bus Southbound Through (SH 119)	4	4	0%	0	A				4	4	0%	0	A			
Bus Eastbound Right-Turn (Airport Road)	2	2	0%	4	A				2	2	0%	1	A			
Bus Westbound Through (Airport Road)	2	2	0%	104	F				2	2	0%	45	D			
<b>Bus Intersection Total</b>	<b>8</b>	<b>8</b>	<b>0%</b>	<b>27.2</b>	<b>C</b>				<b>8</b>	<b>8</b>	<b>0%</b>	<b>11.7</b>	<b>B</b>			
<b>NB SH 119 / Airport Road</b>																
Northbound Left-Turn (SH 119)	230	215	-7%	12	B	0.09	135	8	733	695	-5%	15	B	0.28	241	15
Northbound Through (SH 119)	793	721	-9%	14	B	0.32	383	8	2,080	1,932	-7%	22	C	0.77	1,021	34
Northbound Right-Turn (SH 119)	2	2	0%	4	A	0.00	0	0	8	7	-13%	6	A	0.01	364	2
Eastbound Left-Turn (Airport Road)	15	13	-13%	4	A	0.16	16	1	14	14	0%	93	F	0.25	127	23
Eastbound Through (Airport Road)	25	25	0%	3	A	0.16	16	1	27	28	4%	79	E	0.25	127	23
Westbound Left-Turn (Airport Road)	43	41	-5%	55	E	0.18	131	14	25	24	-4%	37	D	0.14	71	5
Westbound Right-Turn (Airport Road)	5	4	-20%	6	A	0.18	66	1	4	4	0%	2	A	0.14	14	0
<b>Intersection Total</b>	<b>1,113</b>	<b>1,021</b>	<b>-8%</b>	<b>14.5</b>	<b>B</b>	<b>0.47</b>			<b>2,891</b>	<b>2,704</b>	<b>-6%</b>	<b>21.3</b>	<b>C</b>	<b>0.75</b>		
Bus Northbound Left-Turn (SH 119)	2	2	0%	5	A				2	2	0%	11	B			
Bus Northbound Through (SH 119)	4	4	0%	1	A				4	4	0%	4	A			
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>2.3</b>	<b>A</b>				<b>6</b>	<b>6</b>	<b>0%</b>	<b>6.5</b>	<b>A</b>			
<b>SB SH 119 / Niwot Road</b>																
Southbound Left-Turn (SH 119)	86	82	-5%	7	A	0.08	90	3	160	163	2%	17	B	0.17	136	13
Southbound Through (SH 119)	2,268	2,233	-2%	21	C	1.01	1,878	129	1,158	1,166	1%	19	B	0.63	328	33
Southbound Right-Turn (SH 119)	234	215	-8%	15	B	0.22	176	7	24	26	8%	4	A	0.03	82	1
Eastbound Through (Niwot Road)	120	116	-3%	84	F	0.95	318	67	42	253	402%	555	F	1.38	1,660	1,552
Eastbound Right-Turn (Niwot Road)	40	40	0%	14	A	N/A	0	0	195	128	-34%	491	F	N/A	0	0
Westbound Left-Turn (Niwot Road)	262	238	-9%	97	F	0.98	590	120	133	129	-3%	68	E	1.08	131	36
Westbound Through (Niwot Road)	286	270	-6%	42	D	1.03	476	77	96	99	3%	29	C	0.21	149	16
<b>Intersection Total</b>	<b>3,296</b>	<b>3,194</b>	<b>-3%</b>	<b>29.9</b>	<b>C</b>	<b>0.92</b>			<b>2,190</b>	<b>1,964</b>	<b>-10%</b>	<b>122.0</b>	<b>F</b>	<b>0.99</b>		
Bus Southbound Through (SH 119)	6	6	0%	34	C				6	6	0%	32	C			
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>34.4</b>	<b>C</b>				<b>6</b>	<b>6</b>	<b>0%</b>	<b>31.6</b>	<b>C</b>			
<b>NB SH 119 / Niwot Road</b>																
Northbound Left-Turn (SH 119)	63	60	-5%	11	B	0.05	76	3	42	44	5%	2	A	0.04	23	0
Northbound Through (SH 119)	872	807	-7%	12	B	0.37	420	15	2,558	2,441	-5%	6	A	1.32	483	8
Northbound Right-Turn (SH 119)	51	44	-14%	3	A	0.05	40	0	206	212	3%	5	A	0.22	54	1
Eastbound Left-Turn (Niwot Road)	44	43	-2%	33	C	0.24	88	5	190	117	-38%	114	F	0.27	414	89
Eastbound Through (Niwot Road)	162	153	-6%	18	B	0.92	160	15	394	300	-24%	65	E	0.82	428	156
Westbound Left-Turn (Niwot Road)	485	461	-5%	97	F	0.87	1,192	323	187	183	-2%	77	E	0.20	310	24
Westbound Right-Turn (Niwot Road)	109	100	-8%	70	E	0.32	1,192	323	73	75	3%	15	B	0.16	310	24
<b>Intersection Total</b>	<b>1,786</b>	<b>1,668</b>	<b>-7%</b>	<b>39.8</b>	<b>D</b>	<b>0.92</b>			<b>3,650</b>	<b>3,372</b>	<b>-8%</b>	<b>18.6</b>	<b>B</b>	<b>0.99</b>		
Bus Northbound Through (SH 119)	6	6	0%	22	C				6	6	0%	19	B			
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>21.7</b>	<b>C</b>				<b>6</b>	<b>6</b>	<b>0%</b>	<b>19.1</b>	<b>B</b>			
<b>SB SH 119 / SH 52 (Mineral Road)</b>																
Southbound Left-Turn (SH 119)	127	142	12%	28	C	0.12	285	11	140	126	-10%	8	A	0.12	103	2
Southbound Through (SH 119)	2,434	2,356	-3%	41	D	1.11	1,699	239	1,335	1,288	-4%	7	A	0.56	146	3
Southbound Right-Turn (SH 119)	9	11	22%	25	C	0.01	64	0	11	10	-9%	9	A	0.01	6	0
Eastbound Through (Mineral Road)	66	66	0%	84	F	0.19	152	32	102	106	4%	117	F	0.29	223	68
Eastbound Right-Turn (Mineral Road)	24	24	0%	1	A	0.12	0	0	29	30	3%	1	A	0.13	0	0
Westbound Left-Turn (Mineral Road)	473	464	-2%	37	D	1.07	456	118	250	248	-1%	119	F	0.99	384	137
Westbound Through (Mineral Road)	120	117	-3%	37	D	0.32	416	39	45	46	2%	74	E	0.16	132	31
<b>Intersection Total</b>	<b>3,253</b>	<b>3,180</b>	<b>-2%</b>	<b>40.3</b>	<b>D</b>	<b>1.15</b>			<b>1,912</b>	<b>1,854</b>	<b>-3%</b>	<b>29.9</b>	<b>C</b>	<b>1.33</b>		
Bus Southbound Through (SH 119)	6	6	0%	37	D				6	6	0%	32	C			
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>37.0</b>	<b>D</b>				<b>6</b>	<b>6</b>	<b>0%</b>	<b>32.1</b>	<b>C</b>			
<b>NB SH 119 / SH 52 (Mineral Road)</b>																
Northbound Left-Turn (SH 119)	25	24	-4%	39	D	0.03	90	5	8	7	-13%	14	B	0.01	10	0
Northbound Through (SH 119)	899	827	-8%	42	D	0.50	802	129	2,439	2,326	-5%	15	B	1.10	1,404	60
Northbound Right-Turn (SH 119)	205	200	-2%	19	B	0.23	233	14	307	294	-4%	15	B	0.29	125	3
Eastbound Left-Turn (Mineral Road)	5	5	0%	58	E	0.05	281	58	18	17	-6%	33	C	0.22	209	56
Eastbound Through (Mineral Road)	188	204	9%	43	D	0.48	0	0	224	215	-4%	34	C	0.82	0	0
Westbound Left-Turn (Mineral Road)	568	558	-2%	73	E	0.79	476	86	287	288	0%	62	E	0.55	122	7
Westbound Right-Turn (Mineral Road)	82	81	-1%	10	B	0.21	476	86	349	344	-1%	2	A	1.23	122	7
<b>Intersection Total</b>	<b>1,972</b>	<b>1,899</b>	<b>-4%</b>	<b>47.5</b>	<b>D</b>	<b>1.15</b>			<b>3,632</b>	<b>3,491</b>	<b>-4%</b>	<b>18.7</b>	<b>B</b>	<b>1.33</b>		

# technical report

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## Appendix R

### Transit Slip Lanes Intersection Level of Service by Hour

2045 Transit Slip Lanes - Intersection Level of Service by Hour

Intersection / Movement		6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM
SH 119 / Hover Street	Northbound Left-Turn (Hover Street)	E	E	E	E	E	E	E	E	E	E	E	E	E	E
	Northbound Through (Hover Street)	C	C	C	C	C	C	C	D	D	D	D	D	D	C
	Northbound Right-Turn (Hover Street)	A	B	B	B	B	B	B	B	B	B	B	B	B	B
	Southbound Left-Turn (Hover Street)	E	E	E	E	E	E	E	E	E	E	E	E	E	E
	Southbound Through (Hover Street)	C	C	D	C	C	C	C	D	D	D	D	D	D	C
	Southbound Right-Turn (Hover Street)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Left-Turn (SH 119)	C	D	D	D	D	D	D	B	B	C	C	C	C	B
	Eastbound Through (SH 119)	D	D	D	D	D	D	D	C	D	D	D	D	D	C
	Eastbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (SH 119)	E	D	E	D	E	E	E	E	E	E	E	E	E	E
	Westbound Through (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
<b>Intersection Total</b>		B	C	C	C	C	C	C	C	C	C	C	C	C	C
SB SH 119 / Airport Road	Southbound Left-Turn (SH 119)	A	A	A	A	A	A	A	B	B	B	A	A	C	B
	Southbound Through (SH 119)	A	A	A	A	A	A	A	B	C	C	C	C	B	B
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	B	B	A	A
	Eastbound Through (Airport Road)	D	E	E	D	E	D	E	D	D	D	D	D	D	D
	Eastbound Right-Turn (Airport Road)	A	A	A	A	A	A	A	B	C	C	C	C	C	B
	Westbound Left-Turn (Airport Road)	A	B	B	B	B	B	B	C	C	D	D	D	D	D
	Westbound Through (Airport Road)	D	D	E	E	E	E	E	D	D	D	D	D	D	D
<b>Intersection Total</b>		A	B	B	B	B	B	B	C	C	C	C	C	C	C
NB SH 119 / Airport Road	Northbound Left-Turn (SH 119)	A	B	B	B	B	B	B	B	B	B	B	B	B	B
	Northbound Through (SH 119)	A	B	B	B	B	B	B	B	B	B	C	C	C	C
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Left-Turn (Airport Road)	A	A	A	A	A	A	A	F	F	F	F	F	F	F
	Eastbound Through (Airport Road)	A	A	B	C	C	B	C	E	F	F	F	F	F	F
	Westbound Through (Airport Road)	D	E	E	E	E	D	D	D	C	D	D	D	D	D
	Westbound Right-Turn (Airport Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
<b>Intersection Total</b>		B	B	B	B	B	B	B	B	B	A	C	C	B	B
SB SH 119 / Niwot Road	Southbound Left-Turn (SH 119)	A	A	A	A	A	A	B	B	B	B	B	B	C	B
	Southbound Through (SH 119)	B	C	B	B	B	B	B	C	C	B	B	B	B	B
	Southbound Right-Turn (SH 119)	A	B	B	B	A	A	A	A	A	A	A	A	A	A
	Eastbound Through (Niwot Road)	E	F	F	E	E	F	F	D	D	F	F	F	F	F
	Eastbound Right-Turn (Niwot Road)	A	B	B	A	A	C	B	A	A	F	F	F	F	F
	Westbound Left-Turn (Niwot Road)	C	F	D	F	D	E	D	F	E	E	E	E	D	D
	Westbound Through (Niwot Road)	D	D	D	C	C	C	D	C	C	C	C	C	C	C
<b>Intersection Total</b>		B	C	C	C	B	C	B	C	C	E	F	F	F	F
NB SH 119 / Niwot Road	Northbound Left-Turn (SH 119)	B	B	B	B	B	B	B	A	A	A	A	A	A	A
	Northbound Through (SH 119)	B	B	B	B	B	B	B	A	A	A	A	A	A	A
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Left-Turn (Niwot Road)	A	C	A	B	B	C	B	E	E	E	F	F	F	F
	Eastbound Through (Niwot Road)	B	B	C	C	C	C	C	E	E	E	E	E	E	E
	Westbound Through (Niwot Road)	D	F	E	D	D	D	D	F	F	F	F	E	E	E
	Westbound Right-Turn (Niwot Road)	A	E	C	B	B	B	B	F	F	F	E	C	B	A
<b>Intersection Total</b>		B	D	C	C	B	B	B	C	C	C	C	B	B	B
SB SH 119 / Mineral Road	Southbound Left-Turn (SH 119)	D	C	D	C	C	C	C	C	C	B	B	A	A	A
	Southbound Through (SH 119)	D	D	D	D	C	C	C	A	B	A	A	A	A	A
	Southbound Right-Turn (SH 119)	C	C	C	C	B	A	B	A	B	A	A	A	A	A
	Eastbound Through (Mineral Road)	E	F	F	F	E	E	E	E	F	F	F	F	F	E
	Eastbound Right-Turn (Mineral Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (Mineral Road)	C	D	D	D	C	C	C	F	F	F	F	F	F	F
	Westbound Through (Mineral Road)	D	D	D	D	C	C	C	E	E	E	E	E	D	D
<b>Intersection Total</b>		B	D	D	D	C	C	C	C	C	C	C	C	C	B
NB SH 119 / Mineral Road	Northbound Left-Turn (SH 119)	B	D	D	D	D	D	C	B	B	A	B	B	B	A
	Northbound Through (SH 119)	B	D	D	D	D	D	E	A	A	B	B	B	B	A
	Northbound Right-Turn (SH 119)	A	B	C	C	C	C	D	A	B	B	B	B	B	A
	Eastbound Left-Turn (Mineral Road)	E	E	E	E	E	E	E	C	C	D	D	C	C	C
	Eastbound Through (Mineral Road)	C	D	D	D	D	D	D	D	D	C	C	C	D	E
	Westbound Through (Mineral Road)	D	E	F	D	C	C	C	E	E	E	E	E	E	D
	Westbound Right-Turn (Mineral Road)	A	B	C	A	A	A	A	A	A	A	A	A	A	A
<b>Intersection Total</b>		C	D	E	D	D	D	D	B	B	B	B	B	B	B
SB SH 119 / 63rd Street	Southbound Left-Turn (SH 119)	B	E	E	C	A	B	A	B	B	B	B	B	A	A
	Southbound Through (SH 119)	C	D	D	D	C	B	B	B	B	B	B	B	B	A
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Through (63rd Street)	E	F	F	F	E	D	D	E	E	E	E	E	E	E
	Eastbound Right-Turn (63rd Street)	A	F	E	B	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (63rd Street)	E	F	F	F	F	D	D	F	F	E	D	D	E	E
	Westbound Through (63rd Street)	D	D	D	E	E	C	C	E	D	D	D	D	E	E
<b>Intersection Total</b>		C	E	E	D	D	C	B	C	C	C	C	C	C	C
NB SH 119 / 63rd Street	Northbound Left-Turn (SH 119)	A	C	D	D	C	A	A	A	A	B	C	C	C	A
	Northbound Through (SH 119)	B	D	E	D	D	B	B	A	B	A	B	B	B	A
	Northbound Right-Turn (SH 119)	A	C	D	C	B	A	B	A	A	A	A	A	A	A
	Eastbound Left-Turn (63rd Street)	C	C	D	D	C	D	D	C	C	D	D	D	C	C
	Eastbound Through (63rd Street)	D	D	D	D	D	D	D	D	D	C	D	D	C	C
	Westbound Through (63rd Street)	D	D	D	F	F	E	E	F	F	F	F	F	F	F
	Westbound Right-Turn (63rd Street)	A	A	A	A	A	A	A	A	A	F	F	F	F	F
<b>Intersection Total</b>		C	D	D	E	E	C	C	C	C	E	F	F	F	F
SB SH 119 / Jay Road	Southbound Left-Turn (SH 119)	A	A	A	A	B	B	B	B	A	A	A	A	A	A
	Southbound Through (SH 119)	A	C	C	C	B	B	C	A	B	A	A	A	A	A
	Southbound Right-Turn (SH 119)	A	A	B	B	A	A	A	A	A	A	A	A	A	A
	Eastbound Through (Jay Road)	E	F	F	F	F	F	F	F	F	F	F	F	F	F
	Eastbound Right-Turn (Jay Road)	A	E	F	F	E	B	C	F	F	F	F	F	F	D
	Westbound Left-Turn (Jay Road)	C	E	E	E	D	C	B	E	E	E	F	F	F	E
	Westbound Through (Jay Road)	C	B	B	C	C	C	C	E	E	E	E	E	E	E
<b>Intersection Total</b>		B	D	D	E	C	C	C	D	E	E	F	F	E	C
NB SH 119 / Jay Road	Northbound Left-Turn (SH 119)	A	D	E	E	D	B	B	B	B	C	D	D	C	A
	Northbound Through (SH 119)	A	D	E	D	D	C	C	B	B	C	C	D	C	B
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	B	A	A
	Eastbound Left-Turn (Jay Road)	E	D	D	D	D	E	E	F	F	F	F	F	F	E
	Eastbound Through (Jay Road)	E	D	D	D	D	E	E	B	A	A	A	B	A	B
	Westbound Through (Jay Road)	E	F	F	F	F	E	E	F	F	F	F	F	F	F
	Westbound Right-Turn (Jay Road)	A	F	F	F	F	C	C	D	E	F	F	F	F	E
<b>Intersection Total</b>		C	E	F	F	F	E	C	C	C	D	E	F	E	C
Diagonal Hwy / 47th Street	Northbound Left-Turn (47th Street)	C	D	E	D	C	C	D	C	C	C	E	D	C	C
	Northbound Through (47th Street)	C	C	C	C	C	C	C	C	C	C	D	D	C	C
	Northbound Right-Turn (47th Street)	A	B	B	B	B	B	B	B	B	B	D	D	B	B
	Southbound Left-Turn (47th Street)	A	C	D	D	C	D	D	C	C	D	D	D	D	B
	Southbound Through (47th Street)	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	Southbound Right-Turn (47th Street)	C	D	E	D	C	C	D	C	C	C	E	D	C	C
	Eastbound Left-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	B	B	B	B	C	B	B
	Westbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
<b>Intersection Total</b>		A	B	B	B	A	A	A	A	A	B	B	B	A	A
Diagonal Hwy / SB Foothills Pkwy Ramps	Southbound Left-Turn (Foothills Pkwy)	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	Southbound Through (Foothills Pkwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Southbound Right-Turn (Foothills Pkwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (Diagonal Hwy)	A	C	C	B	B	B	C	C	C	D	D	D	C	B
	Westbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
<b>Intersection Total</b>		A	A	A	A	A	A	A	A	A	A	A	A	A	A

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## Appendix S

### 3 General Purpose Lanes Peak Hour Intersection Results



SH 119 Traffic Analysis

2045 3 General Purpose Lanes - Peak Hour Intersection Results<sup>(1)</sup>

Intersection / Movement	Weekday AM Peak-Hour (7:00 AM - 8:00 AM)								Weekday PM Peak-Hour (5:00 PM - 6:00 PM)							
	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Volume-to-Capacity Ratio <sup>(3)</sup>	Model Maxium Queue (ft.)	Model Avg Queue (ft.)	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Volume-to-Capacity Ratio <sup>(3)</sup>	Model Maxium Queue (ft.)	Model Avg Queue (ft.)
<b>SH 119 / Hover Street</b>																
Northbound Left-Turn (Hover Street)	258	249	-3%	57	E	0.51	200	51	148	151	2%	57	E	0.68	141	36
Northbound Through (Hover Street)	672	679	1%	26	C	0.48	212	43	748	743	-1%	35	C	0.62	270	63
Northbound Right-Turn (Hover Street)	73	71	-3%	11	B	0.17	91	4	96	93	-3%	15	B	0.25	106	7
Southbound Left-Turn (Hover Street)	110	111	1%	54	D	0.31	123	27	227	227	0%	55	D	0.74	201	49
Southbound Through (Hover Street)	710	709	0%	29	C	0.59	273	52	1,142	1,150	1%	35	D	0.83	442	103
Southbound Right-Turn (Hover Street)	578	578	0%	4	A	0.38	219	4	256	262	2%	5	A	0.17	67	0
Eastbound Left-Turn (SH 119)	245	203	-17%	26	C	0.21	144	9	965	809	-16%	47	D	0.91	865	56
Eastbound Through (SH 119)	480	393	-18%	40	D	0.54	217	20	1,193	1,051	-12%	55	D	0.79	886	92
Eastbound Right-Turn (SH 119)	126	126	0%	4	A	0.29	120	1	399	369	-8%	20	B	0.64	590	12
Westbound Left-Turn (SH 119)	59	55	-7%	49	D	0.19	88	13	144	139	-3%	53	D	0.34	141	33
Westbound Through (SH 119)	1,248	1,231	-1%	0	A	N/A	0	0	685	683	0%	0	A	N/A	0	0
Westbound Right-Turn (SH 119)	116	113	-3%	9	A	0.38	71	1	265	257	-3%	5	A	0.54	148	4
<b>General Traffic Intersection Total</b>	<b>4,675</b>	<b>4,518</b>	<b>-3%</b>	<b>19.1</b>	<b>B</b>	<b>0.52</b>			<b>6,268</b>	<b>5,934</b>	<b>-5%</b>	<b>34.0</b>	<b>E</b>	<b>0.75</b>		
Bus Eastbound Left-Turn (SH 119)	4	4	0%	45	D				4	3	-25%	57	E			
Bus Southbound Right-Turn (Hover Street)	4	4	0%	7	A				4	4	0%	9	A			
<b>Bus Intersection Total</b>	<b>8</b>	<b>8</b>	<b>0%</b>	<b>26.2</b>	<b>C</b>				<b>8</b>	<b>7</b>	<b>-13%</b>	<b>29.6</b>	<b>C</b>			
<b>SB SH 119 / Airport Road</b>																
Southbound Left-Turn (SH 119)	0	0	-	0	A	0.84	454	43	8	9	13%	18	B	0.01	239	33
Southbound Through (SH 119)	2,062	2,031	-2%	14	B	0.84	455	46	1,041	1,046	0%	17	B	0.38	240	36
Southbound Right-Turn (SH 119)	22	22	0%	3	A	0.03	18	0	40	41	2%	5	A	0.04	71	1
Eastbound Through (Airport Road)	46	46	0%	26	C	0.09	201	6	41	43	5%	35	D	0.07	114	8
Eastbound Right-Turn (Airport Road)	1,111	1,109	0%	4	A	0.75	0	0	356	365	3%	1	A	0.24	0	0
Westbound Left-Turn (Airport Road)	11	11	0%	7	A	0.28	169	19	5	5	0%	28	C	0.91	412	153
Westbound Through (Airport Road)	255	242	-5%	24	C	0.28	169	19	1,040	871	-16%	47	D	0.91	412	153
<b>Intersection Total</b>	<b>3,507</b>	<b>3,461</b>	<b>-1%</b>	<b>11.8</b>	<b>B</b>	<b>0.67</b>			<b>2,531</b>	<b>2,380</b>	<b>-6%</b>	<b>25.9</b>	<b>C</b>	<b>0.62</b>		
Bus Southbound Through (SH 119)	4	4	0%	5	A				4	4	0%	0	A			
Bus Eastbound Right-Turn (Airport Road)	2	2	0%	7	A				2	2	0%	1	A			
Bus Westbound Through (Airport Road)	2	2	0%	25	C				2	2	0%	45	D			
<b>Bus Intersection Total</b>	<b>8</b>	<b>8</b>	<b>0%</b>	<b>10.7</b>	<b>B</b>				<b>8</b>	<b>8</b>	<b>0%</b>	<b>11.6</b>	<b>B</b>			
<b>NB SH 119 / Airport Road</b>																
Northbound Left-Turn (SH 119)	221	211	-5%	14	B	0.13	131	4	1,022	855	-16%	22	C	0.55	722	21
Northbound Through (SH 119)	825	714	-13%	14	B	0.32	242	9	2,537	2,196	-13%	18	B	0.92	713	29
Northbound Right-Turn (SH 119)	2	2	0%	2	A	0.00	0	0	7	8	14%	4	A	0.01	483	4
Eastbound Left-Turn (Airport Road)	21	20	-5%	7	A	0.10	37	1	17	17	0%	66	E	0.09	129	18
Eastbound Through (Airport Road)	25	27	8%	6	A	0.10	37	1	32	35	9%	54	D	0.09	129	18
Westbound Through (Airport Road)	45	43	-4%	17	B	0.10	71	4	23	22	-4%	54	D	0.04	65	5
Westbound Right-Turn (Airport Road)	5	5	0%	1	A	0.10	20	0	3	3	0%	5	A	0.04	36	0
<b>Intersection Total</b>	<b>1,144</b>	<b>1,022</b>	<b>-11%</b>	<b>14.0</b>	<b>B</b>	<b>0.80</b>			<b>3,641</b>	<b>3,136</b>	<b>-14%</b>	<b>19.8</b>	<b>B</b>	<b>0.67</b>		
Bus Northbound Left-Turn (SH 119)	2	2	0%	10	A				2	2	0%	30	C			
Bus Northbound Through (SH 119)	4	4	0%	1	A				4	3	-25%	9	A			
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>4.1</b>	<b>A</b>				<b>6</b>	<b>5</b>	<b>-17%</b>	<b>17.1</b>	<b>B</b>			
<b>SB SH 119 / Niwot Road</b>																
Southbound Left-Turn (SH 119)	88	83	-6%	13	B	0.09	104	3	179	190	6%	28	C	0.18	213	29
Southbound Through (SH 119)	2,957	2,862	-3%	19	B	1.01	1,064	96	1,185	1,190	0%	27	C	0.42	283	38
Southbound Right-Turn (SH 119)	139	131	-6%	13	B	0.15	178	5	38	38	0%	5	A	0.04	113	2
Eastbound Through (Niwot Road)	111	111	0%	60	E	1.05	234	41	338	343	1%	214	F	1.18	1,478	758
Eastbound Right-Turn (Niwot Road)	48	48	0%	5	A	N/A	9	0	128	136	6%	166	F	N/A	3	0
Westbound Left-Turn (Niwot Road)	464	353	-24%	85	F	1.00	653	178	107	106	-1%	36	D	0.87	155	16
Westbound Through (Niwot Road)	221	183	-17%	35	C	0.60	267	38	140	126	-10%	14	B	0.39	135	9
<b>Intersection Total</b>	<b>4,028</b>	<b>3,771</b>	<b>-6%</b>	<b>26.9</b>	<b>C</b>	<b>0.92</b>			<b>2,115</b>	<b>2,129</b>	<b>1%</b>	<b>65.4</b>	<b>E</b>	<b>0.95</b>		
Bus Southbound Through (SH 119)	6	6	0%	34	C				6	6	0%	33	C			
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>33.6</b>	<b>C</b>				<b>6</b>	<b>6</b>	<b>0%</b>	<b>32.9</b>	<b>C</b>			
<b>NB SH 119 / Niwot Road</b>																
Northbound Left-Turn (SH 119)	32	36	13%	10	A	0.03	52	2	73	60	-18%	5	A	0.07	37	0
Northbound Through (SH 119)	836	783	-6%	12	B	0.27	249	11	3,346	2,831	-15%	9	A	1.14	717	22
Northbound Right-Turn (SH 119)	45	37	-18%	2	A	0.05	25	0	267	259	-3%	6	A	0.26	88	1
Eastbound Left-Turn (Niwot Road)	42	40	-5%	45	D	0.41	89	5	151	151	0%	33	C	0.45	429	23
Eastbound Through (Niwot Road)	157	150	-4%	21	C	0.96	208	17	366	381	4%	52	D	0.86	508	184
Westbound Through (Niwot Road)	653	497	-24%	212	F	0.88	1,519	1,108	174	171	-2%	57	E	0.24	311	13
Westbound Right-Turn (Niwot Road)	170	124	-27%	184	F	0.37	1,519	1,108	69	71	3%	9	A	0.19	311	13
<b>Intersection Total</b>	<b>1,935</b>	<b>1,667</b>	<b>-14%</b>	<b>85.7</b>	<b>F</b>	<b>0.92</b>			<b>4,446</b>	<b>3,924</b>	<b>-12%</b>	<b>16.1</b>	<b>B</b>	<b>0.95</b>		
Bus Northbound Through (SH 119)	6	6	0%	23	C				6	5	-17%	0	A			
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>22.5</b>	<b>C</b>				<b>6</b>	<b>5</b>	<b>-17%</b>	<b>0</b>	<b>A</b>			
<b>SB SH 119 / SH 52 (Mineral Road)</b>																
Southbound Left-Turn (SH 119)	142	162	14%	36	D	0.13	313	21	128	132	3%	23	C	0.11	156	15
Southbound Through (SH 119)	3,315	3,041	-8%	40	D	1.07	1,269	418	1,282	1,288	0%	5	A	0.39	100	7
Southbound Right-Turn (SH 119)	12	13	8%	15	B	0.01	0	0	10	9	-10%	4	A	0.01	0	0
Eastbound Through (Mineral Road)	58	60	3%	71	E	0.16	148	24	83	85	2%	64	E	0.21	155	27
Eastbound Right-Turn (Mineral Road)	24	23	-4%	1	A	0.11	0	0	25	27	8%	1	A	0.10	0	0
Westbound Left-Turn (Mineral Road)	472	463	-2%	34	C	1.10	465	107	212	214	1%	51	D	0.67	194	71
Westbound Through (Mineral Road)	114	113	-1%	25	C	0.30	364	28	43	40	-7%	12	B	0.13	82	5
<b>Intersection Total</b>	<b>4,137</b>	<b>3,875</b>	<b>-6%</b>	<b>38.8</b>	<b>D</b>	<b>1.03</b>			<b>1,783</b>	<b>1,795</b>	<b>1%</b>	<b>14.5</b>	<b>B</b>	<b>1.19</b>		
Bus Southbound Through (SH 119)	6	6	0%	31	C				6	6	0%	14	B			
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>30.8</b>	<b>C</b>				<b>6</b>	<b>6</b>	<b>0%</b>	<b>14.0</b>	<b>B</b>			
<b>NB SH 119 / SH 52 (Mineral Road)</b>																
Northbound Left-Turn (SH 119)	23	23	0%	50	D	0.03	70	6	10	8	-20%	11	B	0.01	12	0
Northbound Through (SH 119)	834	789	-5%	53	D	0.32	375	96	3,290	2,744	-17%	10	A	1.09	446	36
Northbound Right-Turn (SH 119)	180	180	0%	15	B	0.20	217	20	331	276	-17%	9	A	0.32	155	6
Eastbound Left-Turn (Mineral Road)	5	5	0%	49	D	0.10	299	47	17	17	0%	28	C	0.38	235	78
Eastbound Through (Mineral Road)	195	221	13%	32	C	0.50	0	0	194	199	3%	50	D	0.66	0	0
Westbound Through (Mineral Road)	563	549	-2%	45	D	0.78	339	38	245	245	0%	48	D	0.39	97	2
Westbound Right-Turn (Mineral Road)	74	75	1%	4	A	0.19	339	38	379	375	-1%	2	A	1.15	97	2
<b>Intersection Total</b>	<b>1,874</b>	<b>1,842</b>	<b>-2%</b>	<b>42.5</b>	<b>D</b>	<b>1.03</b>			<b>4,466</b>	<b>3,864</b>	<b>-13%</b>	<b>13.6</b>				

# technical report

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## Appendix T

### 3 General Purpose Lanes Intersection Level of Service by Hour

2045 3 General Purpose Lanes - Intersection Level of Service by Hour

Intersection / Movement		6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	
SH 119 / Hover Street	Northbound Left-Turn (Hover Street)	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
	Northbound Through (Hover Street)	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
	Northbound Right-Turn (Hover Street)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
	Southbound Left-Turn (Hover Street)	E	D	E	E	E	E	E	D	D	D	D	D	D	D	
	Southbound Through (Hover Street)	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
	Southbound Right-Turn (Hover Street)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Left-Turn (SH 119)	C	C	C	C	C	C	C	C	D	D	D	D	D	D	
	Eastbound Through (SH 119)	D	D	D	D	D	D	D	D	D	D	D	E	D	D	
	Eastbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	B	B	C	B	B	B	
	Westbound Left-Turn (SH 119)	D	D	D	D	D	D	D	D	E	E	D	D	E	E	
	Westbound Through (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Westbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		<b>B</b>	<b>B</b>	<b>C</b>	<b>B</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>D</b>	<b>C</b>	<b>C</b>	<b>C</b>	
SB SH 119 / Airport Road	Southbound Left-Turn (SH 119)	A	A	B	B	B	B	B	B	B	B	C	B	C	C	
	Southbound Through (SH 119)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Through (Airport Road)	B	C	C	C	B	B	B	C	C	C	C	D	C	C	
	Eastbound Right-Turn (Airport Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Westbound Left-Turn (Airport Road)	A	A	A	A	A	A	A	C	C	D	D	C	C	D	
	Westbound Through (Airport Road)	C	C	C	C	C	C	C	D	D	D	D	D	D	D	
<b>Intersection Total</b>		<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	
NB SH 119 / Airport Road	Northbound Left-Turn (SH 119)	B	B	B	B	B	B	B	B	B	B	B	C	B	B	
	Northbound Through (SH 119)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Left-Turn (Airport Road)	A	A	A	A	A	A	A	E	E	E	E	E	E	E	
	Eastbound Through (Airport Road)	A	A	B	B	B	B	B	D	D	D	E	D	D	D	
	Westbound Through (Airport Road)	B	B	C	B	B	B	C	D	D	D	D	D	D	D	
	Westbound Right-Turn (Airport Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	
SB SH 119 / Niwot Road	Southbound Left-Turn (SH 119)	A	B	B	B	A	A	A	C	C	C	C	C	C	C	
	Southbound Through (SH 119)	B	B	C	B	B	B	B	C	C	C	C	C	C	C	
	Southbound Right-Turn (SH 119)	A	B	B	B	A	A	A	A	A	A	A	A	A	A	
	Eastbound Through (Niwot Road)	D	E	E	E	E	F	E	C	C	C	F	F	F	C	
	Eastbound Right-Turn (Niwot Road)	A	A	A	A	A	C	B	A	C	D	F	F	F	C	A
	Westbound Left-Turn (Niwot Road)	D	F	F	E	C	D	D	E	D	D	D	D	D	D	C
	Westbound Through (Niwot Road)	C	C	D	C	C	C	C	C	B	B	B	B	B	B	B
<b>Intersection Total</b>		<b>B</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>B</b>	<b>C</b>	<b>B</b>	<b>C</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>E</b>	<b>C</b>	<b>C</b>	
NB SH 119 / Niwot Road	Northbound Left-Turn (SH 119)	B	A	B	B	A	B	C	A	A	A	A	A	A	A	
	Northbound Through (SH 119)	B	B	B	C	A	B	C	A	A	A	A	A	A	A	
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Left-Turn (Niwot Road)	B	D	E	D	C	C	D	C	C	D	D	C	C	C	
	Eastbound Through (Niwot Road)	B	C	C	C	C	B	C	E	E	E	E	D	E	E	
	Westbound Through (Niwot Road)	D	F	F	F	D	D	D	F	E	E	E	E	E	D	
	Westbound Right-Turn (Niwot Road)	A	F	F	E	B	B	B	C	C	B	B	A	A	A	
<b>Intersection Total</b>		<b>B</b>	<b>F</b>	<b>F</b>	<b>D</b>	<b>B</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>C</b>	<b>C</b>	<b>B</b>	
SB SH 119 / Mineral Road	Southbound Left-Turn (SH 119)	D	D	D	C	C	C	C	F	F	F	D	C	A	A	
	Southbound Through (SH 119)	C	D	D	D	C	C	C	A	B	A	A	A	A	A	
	Southbound Right-Turn (SH 119)	A	B	C	B	A	A	A	A	A	A	A	A	A	A	
	Eastbound Through (Mineral Road)	E	E	F	F	E	E	E	E	E	E	E	E	E	E	
	Eastbound Right-Turn (Mineral Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Westbound Left-Turn (Mineral Road)	C	C	F	D	C	C	C	E	E	D	D	D	D	C	
	Westbound Through (Mineral Road)	C	C	C	C	C	C	C	C	B	C	B	B	B	B	
<b>Intersection Total</b>		<b>C</b>	<b>D</b>	<b>E</b>	<b>D</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>E</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>A</b>	
NB SH 119 / Mineral Road	Northbound Left-Turn (SH 119)	E	D	E	D	D	D	D	A	B	B	B	B	B	B	
	Northbound Through (SH 119)	E	D	D	E	E	E	D	A	A	B	B	A	A	A	
	Northbound Right-Turn (SH 119)	B	B	C	C	C	C	C	A	A	B	B	A	B	A	
	Eastbound Left-Turn (Mineral Road)	D	D	D	D	D	D	D	B	C	E	D	C	C	D	
	Eastbound Through (Mineral Road)	C	C	C	C	C	C	C	F	E	E	D	D	D	D	
	Westbound Through (Mineral Road)	C	D	F	F	F	C	C	D	D	D	D	D	D	D	
	Westbound Right-Turn (Mineral Road)	A	A	F	F	D	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		<b>D</b>	<b>D</b>	<b>F</b>	<b>F</b>	<b>E</b>	<b>D</b>	<b>D</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>B</b>	
SB SH 119 / 63rd Street	Southbound Left-Turn (SH 119)	C	F	F	F	E	B	B	B	B	A	A	A	A	A	
	Southbound Through (SH 119)	D	F	F	F	F	D	D	A	B	A	A	A	A	A	
	Southbound Right-Turn (SH 119)	A	E	F	F	F	A	A	A	A	A	A	A	A	A	
	Eastbound Through (63rd Street)	E	F	F	F	E	E	E	E	E	E	E	E	E	E	
	Eastbound Right-Turn (63rd Street)	A	F	F	D	A	A	A	A	A	A	A	A	A	A	
	Westbound Left-Turn (63rd Street)	D	F	F	F	F	F	F	F	F	E	D	C	E	E	
	Westbound Through (63rd Street)	E	D	D	E	E	D	D	D	D	D	D	D	D	D	
<b>Intersection Total</b>		<b>D</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>D</b>	<b>D</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	<b>C</b>	
NB SH 119 / 63rd Street	Northbound Left-Turn (SH 119)	B	C	C	C	C	C	E	A	B	B	C	C	B	B	
	Northbound Through (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Northbound Right-Turn (SH 119)	A	B	C	B	A	C	F	A	B	B	B	B	B	B	
	Eastbound Left-Turn (63rd Street)	C	C	C	C	C	C	C	C	C	D	D	D	C	C	
	Eastbound Through (63rd Street)	B	F	F	F	F	F	F	F	F	F	F	F	F	F	
	Westbound Through (63rd Street)	A	C	F	F	F	F	F	B	B	F	F	F	F	F	
	Westbound Right-Turn (63rd Street)	A	C	F	F	F	F	F	B	B	F	F	F	F	F	
<b>Intersection Total</b>		<b>B</b>	<b>D</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>E</b>	<b>E</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>	
SB SH 119 / Jay Road	Southbound Left-Turn (SH 119)	A	C	C	C	C	C	B	B	B	B	A	A	B	C	
	Southbound Through (SH 119)	C	C	C	C	C	B	B	A	A	A	A	A	A	A	
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Through (Jay Road)	E	F	F	F	F	F	F	F	F	F	F	F	F	F	
	Eastbound Right-Turn (Jay Road)	A	F	F	F	F	F	F	C	D	F	F	F	F	F	
	Westbound Left-Turn (Jay Road)	C	E	E	E	E	C	C	F	F	F	F	F	F	F	
	Westbound Through (Jay Road)	C	B	B	C	C	C	C	E	E	E	E	E	E	E	
<b>Intersection Total</b>		<b>C</b>	<b>D</b>	<b>E</b>	<b>E</b>	<b>E</b>	<b>E</b>	<b>E</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>E</b>	
NB SH 119 / Jay Road	Northbound Left-Turn (SH 119)	D	D	D	E	D	D	E	C	C	D	E	E	F	E	
	Northbound Through (SH 119)	D	D	D	E	D	E	F	B	C	D	E	E	E	D	
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	D	A	A	C	D	D	D	C	
	Eastbound Left-Turn (Jay Road)	D	D	D	D	D	D	D	E	E	F	F	F	E	E	
	Eastbound Through (Jay Road)	D	D	D	D	D	D	D	B	A	B	B	B	B	C	
	Westbound Through (Jay Road)	C	F	F	F	F	D	D	F	F	F	F	F	F	F	
	Westbound Right-Turn (Jay Road)	A	F	F	F	F	A	B	F	F	F	F	F	F	F	
<b>Intersection Total</b>		<b>C</b>	<b>E</b>	<b>F</b>	<b>F</b>	<b>E</b>	<b>D</b>	<b>E</b>	<b>D</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>	
Diagonal Hwy / 47th Street	Northbound Left-Turn (47th Street)	B	C	E	C	C	C	C	C	C	E	F	F	F	E	
	Northbound Through (47th Street)	C	C	C	C	C	C	C	C	C	D	F	F	F	F	
	Northbound Right-Turn (47th Street)	A	A	B	B	B	B	B	B	D	F	F	F	F	E	
	Southbound Left-Turn (47th Street)	A	C	C	C	C	C	C	C	C	D	D	E	E	C	
	Southbound Through (47th Street)	C	C	C	C	B	C	C	C	C	C	C	C	C	C	
	Southbound Right-Turn (47th Street)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Left-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	B	B	A	
	Eastbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	E	E	A	A	
	Eastbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Westbound Left-Turn (Diagonal Hwy)	A	B	B	B	B	B	B	B	B	B	C	C	C	B	
	Westbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Westbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
<b>Intersection Total</b>		<b>A</b>	<b>A</b>	<b>B</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>B</b>	<b>D</b>	<b>E</b>	<b>E</b>	<b>B</b>	
Diagonal Hwy / SB Foothills Pkwy Ramps	Southbound Left-Turn (Foothills Pkwy)	B	C	C	C	B	C	C	C	C	C	C	C	B	B	
	Southbound Through (Foothills Pkwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Southbound Right-Turn (Foothills Pkwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	B	F	F	A	
	Eastbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	E	D	A	
	Westbound Left-Turn (Diagonal Hwy)	B	B	C	B	B	C	C	C	D	E	D	C	C	B	
	Westbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>E</b>	<b>E</b>	<b>A</b>	<b>A</b>	

# technical report

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## Appendix U

### TEL At-Grade (Add Lane) Peak Hour Intersection Results

SH 119 Traffic Analysis

2045 TEL A (Add Lane) - Peak Hour Intersection Results<sup>(1)</sup>

Intersection / Movement	Weekday AM Peak-Hour (7:00 AM - 8:00 AM)						Weekday PM Peak-Hour (5:00 PM - 6:00 PM)							
	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Model Maximum Queue (ft.)	Model Avg Queue (ft.)	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Model Maximum Queue (ft.)	Model Avg Queue (ft.)
<b>SH 119 / Hoyer Street</b>														
Northbound Left-Turn (Hoyer Street)	219	220	0%	69	E	203	58	175	176	1%	70	E	179	50
Northbound Through (Hoyer Street)	584	584	0%	28	C	224	41	726	728	0%	52	D	315	88
Northbound Right-Turn (Hoyer Street)	61	59	-3%	11	B	84	4	92	88	-4%	20	B	118	9
Southbound Left-Turn (Hoyer Street)	104	105	1%	69	E	128	32	202	201	0%	71	F	181	51
Southbound Through (Hoyer Street)	690	687	0%	34	C	307	58	1,105	1,111	1%	61	E	658	194
Southbound Right-Turn (Hoyer Street)	566	572	1%	4	A	182	2	260	265	2%	16	B	32	0
Eastbound Left-Turn (SH 119)	239	208	-13%	47	D	160	16	768	702	-9%	9	A	149	7
Eastbound Through (SH 119)	448	364	-19%	52	D	214	25	949	917	-3%	23	C	292	25
Eastbound Right-Turn (SH 119)	131	123	-6%	4	A	93	1	339	327	-4%	5	A	107	1
Westbound Left-Turn (SH 119)	57	53	-7%	56	E	88	14	126	126	0%	58	A	146	33
Westbound Through (SH 119)	1,217	1,203	-1%	0	A	0	0	632	625	-1%	0	A	0	0
Westbound Right-Turn (SH 119)	113	107	-5%	2	A	58	0	218	211	-3%	4	A	129	3
<b>General Traffic Intersection Total</b>	<b>4,429</b>	<b>4,285</b>	<b>-3%</b>	<b>22.7</b>	<b>C</b>			<b>5,592</b>	<b>5,477</b>	<b>-2%</b>	<b>31.8</b>	<b>C</b>		
Bus Eastbound Left-Turn (SH 119)	4	4	0%	34	C			4	3	-25%	27	C		
Bus Southbound Right-Turn (Hoyer Street)	4	4	0%	6	A			4	4	0%	10	B		
<b>Bus Intersection Total</b>	<b>8</b>	<b>8</b>	<b>0%</b>	<b>20.1</b>	<b>C</b>			<b>8</b>	<b>7</b>	<b>-13%</b>	<b>17.4</b>	<b>B</b>		
<b>SB SH 119 / Airport Road</b>														
Southbound Left-Turn (SH 119)	0	0	-	0	A	0	0	8	7	-13%	25	C	34	1
Southbound Through (SH 119)	1,801	1,790	-1%	8	A	382	15	951	955	0%	29	C	419	38
Southbound Right-Turn (SH 119)	18	17	-6%	2	B	10	0	55	56	2%	13	B	120	4
Eastbound Through (Airport Road)	44	42	-5%	11	E	48	2	32	36	3%	25	B	91	5
Eastbound Right-Turn (Airport Road)	1,053	1,051	0%	4	A	0	0	326	337	3%	1	A	0	0
Westbound Left-Turn (Airport Road)	11	35	218%	9	A	204	54	5	8	60%	6	A	404	139
Westbound Through (Airport Road)	251	210	-16%	70	E	204	54	1,178	1,129	-4%	32	C	403	139
<b>General Traffic Intersection Total</b>	<b>3,178</b>	<b>3,145</b>	<b>-1%</b>	<b>11.1</b>	<b>B</b>			<b>2,558</b>	<b>2,528</b>	<b>-1%</b>	<b>26.2</b>	<b>C</b>		
TEL - Southbound Through (SH 119)	183	183	0%	5	A	98	3	53	53	0%	16	B	63	4
<b>TEL - Intersection Total</b>	<b>183</b>	<b>183</b>	<b>0%</b>	<b>5.5</b>	<b>A</b>			<b>53</b>	<b>53</b>	<b>0%</b>	<b>16.2</b>	<b>B</b>		
Bus Southbound Through (SH 119)	4	4	0%	0	A			4	4	0%	0	A		
Bus Eastbound Right-Turn (Airport Road)	2	2	0%	4	A			2	2	0%	1	A		
Bus Westbound Through (Airport Road)	2	2	0%	101	F			2	2	0%	50	D		
<b>Bus Intersection Total</b>	<b>8</b>	<b>8</b>	<b>0%</b>	<b>26.3</b>	<b>C</b>			<b>8</b>	<b>8</b>	<b>0%</b>	<b>12.8</b>	<b>B</b>		
<b>NB SH 119 / Airport Road</b>														
Northbound Left-Turn (SH 119)	214	200	-7%	13	B	147	8	840	794	-5%	25	C	1,497	93
Northbound Through (SH 119)	768	676	-12%	17	B	342	14	1,814	1,705	-6%	21	C	804	28
Northbound Right-Turn (SH 119)	2	0	-100%	0	A	0	0	6	4	-33%	14	B	169	1
Eastbound Left-Turn (Airport Road)	19	17	-11%	11	D	48	2	13	12	-8%	46	D	90	12
Eastbound Through (Airport Road)	25	25	0%	4	A	48	2	30	29	-3%	40	D	90	12
Westbound Through (Airport Road)	43	44	2%	58	E	130	15	23	24	4%	61	E	80	7
Westbound Right-Turn (Airport Road)	5	1	-80%	6	A	65	1	2	1	-50%	1	A	19	0
<b>General Traffic Intersection Total</b>	<b>1,076</b>	<b>963</b>	<b>-11%</b>	<b>17.5</b>	<b>B</b>			<b>2,728</b>	<b>2,569</b>	<b>-6%</b>	<b>22.7</b>	<b>C</b>		
TEL - Northbound Left	5	5	0%	10	B	147	8	320	320	0%	25	C	1,497	93
TEL - Northbound Through	26	26	0%	11	B	59	1	227	227	0%	75	E	193	5
<b>TEL - Intersection Total</b>	<b>31</b>	<b>31</b>	<b>0%</b>	<b>10.9</b>	<b>B</b>			<b>547</b>	<b>547</b>	<b>0%</b>	<b>24.1</b>	<b>C</b>		
Bus Northbound Left-Turn (SH 119)	2	2	0%	8	A			2	2	0%	34	C		
Bus Northbound Through (SH 119)	4	4	0%	6	A			4	3	-25%	19	B		
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>7.0</b>	<b>A</b>			<b>6</b>	<b>5</b>	<b>-17%</b>	<b>25.0</b>	<b>C</b>		
<b>SB SH 119 / Niwot Road</b>														
Southbound Left-Turn (SH 119)	86	77	-10%	10	B	98	3	178	182	2%	27	C	185	27
Southbound Through (SH 119)	2,031	2,028	0%	20	B	1,346	92	1,056	1,064	1%	31	C	478	55
Southbound Right-Turn (SH 119)	156	141	-10%	11	B	113	3	35	36	3%	5	A	93	1
Eastbound Through (Niwot Road)	109	102	-6%	105	E	350	77	314	321	2%	212	F	1,435	700
Eastbound Right-Turn (Niwot Road)	50	52	4%	20	B	113	3	125	139	11%	170	F	195	19
Westbound Left-Turn (Niwot Road)	365	256	-30%	100	F	657	217	112	108	-4%	42	D	195	19
Westbound Through (Niwot Road)	214	189	-12%	41	D	320	50	126	121	-4%	21	C	185	14
<b>General Traffic Intersection Total</b>	<b>3,011</b>	<b>2,845</b>	<b>-6%</b>	<b>30.7</b>	<b>C</b>			<b>1,946</b>	<b>1,971</b>	<b>1%</b>	<b>69.5</b>	<b>E</b>		
TEL - Southbound Through	775	775	0%	14	B	726	64	66	66	0%	21	C	79	7
<b>TEL - Intersection Total</b>	<b>775</b>	<b>775</b>	<b>0%</b>	<b>14.1</b>	<b>B</b>			<b>66</b>	<b>66</b>	<b>0%</b>	<b>20.9</b>	<b>C</b>		
Bus Southbound Through (SH 119)	6	6	0%	35	D			6	6	0%	31	C		
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>35.3</b>	<b>D</b>			<b>6</b>	<b>6</b>	<b>0%</b>	<b>30.8</b>	<b>C</b>		
<b>NB SH 119 / Niwot Road</b>														
Northbound Left-Turn (SH 119)	38	42	11%	10	A	44	2	61	58	-5%	9	A	67	2
Northbound Through (SH 119)	816	752	-8%	12	B	220	15	2,465	2,310	-6%	69	E	4,286	918
Northbound Right-Turn (SH 119)	43	44	2%	3	A	38	0	248	258	4%	60	E	246	11
Eastbound Left-Turn (Niwot Road)	40	38	-5%	24	C	65	2	135	138	2%	32	C	304	20
Eastbound Through (Niwot Road)	155	140	-10%	13	B	125	10	357	365	2%	46	D	440	138
Westbound Through (Niwot Road)	541	477	-12%	180	F	1,452	794	177	172	-3%	58	E	274	11
Westbound Right-Turn (Niwot Road)	133	107	-20%	140	F	1,452	794	66	26	-63%	8	A	274	11
<b>General Traffic Intersection Total</b>	<b>1,766</b>	<b>1,600</b>	<b>-9%</b>	<b>70.5</b>	<b>E</b>			<b>3,509</b>	<b>3,368</b>	<b>-4%</b>	<b>61.8</b>	<b>E</b>		
TEL - Northbound Through	26	26	0%	4	A	26	0	541	541	0%	7	A	335	9
<b>TEL - Intersection Total</b>	<b>26</b>	<b>26</b>	<b>0%</b>	<b>3.7</b>	<b>A</b>			<b>541</b>	<b>541</b>	<b>0%</b>	<b>6.9</b>	<b>A</b>		
Bus Northbound Through (SH 119)	6	6	0%	11	B			6	6	0%	6	A		
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>11.1</b>	<b>B</b>			<b>6</b>	<b>6</b>	<b>0%</b>	<b>6.1</b>	<b>A</b>		
<b>SB SH 119 / SH 52 (Mineral Road)</b>														
Southbound Left-Turn (SH 119)	73	88	21%	28	C	202	17	109	111	2%	8	A	88	3
Southbound Through (SH 119)	2,322	2,215	-5%	37	D	1,548	196	1,173	1,175	0%	7	A	96	2
Southbound Right-Turn (SH 119)	10	6	-40%	21	C	9	0	12	9	-25%	10	A	5	0
Eastbound Through (Mineral Road)	56	44	-21%	10	B	114	16	92	100	9%	76	F	146	34
Eastbound Right-Turn (Mineral Road)	27	16	-41%	21	C	9	0	33	13	-61%	10	A	5	0
Westbound Left-Turn (Mineral Road)	475	353	-26%	44	D	461	134	186	157	-16%	119	F	240	103
Westbound Through (Mineral Road)	106	101	-5%	36	D	373	36	46	52	13%	54	D	124	27
<b>General Traffic Intersection Total</b>	<b>3,069</b>	<b>2,823</b>	<b>-8%</b>	<b>38.3</b>	<b>D</b>			<b>1,651</b>	<b>1,617</b>	<b>-2%</b>	<b>23.5</b>	<b>C</b>		
TEL - Southbound Left	57	57	0%	26	C	3	0	7	7	0%	5	A	0	0
TEL - Southbound Through	759	759	0%	31	B	3	0	519	519	0%	2	A	0	0
<b>TEL - Intersection Total</b>	<b>816</b>	<b>816</b>	<b>0%</b>	<b>30.2</b>	<b>C</b>			<b>65</b>	<b>65</b>	<b>0%</b>	<b>2.5</b>	<b>A</b>		
Bus Southbound Through (SH 119)	6	6	0%	13	B			6	6	0%	4	A		
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>13.4</b>	<b>B</b>			<b>6</b>	<b>6</b>	<b>0%</b>	<b>4.0</b>	<b>A</b>		
<b>NB SH 119 / SH 52 (Mineral Road)</b>														
Northbound Left-Turn (SH 119)	22	22	0%	11	B	46	1	5	5	0%	9	A	14	0
Northbound Through (SH 119)	823	763	-7%	17	B	432	29	2,425	2,196	-9%	11	B	869	24
Northbound Right-Turn (SH 119)	188	176	-6%	8	A	145	3	287	196	-32%	11	B	84	1
Eastbound Left-Turn (Mineral Road)	5	4	-20%	68	E	210	55	18	6	-67%	21	C	214	54
Eastbound Through (Mineral Road)	181	186	3%	45	D	192	48	190	172	-9%	43	D	196	46
Westbound Through (Mineral Road)	557	548	-2%	6	A	372	52	61	221	0%	60	F	98	2
Westbound Right-Turn (Mineral Road)	71													

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## Appendix V

### TEL At-Grade (Add Lane) Intersection Level of Service by Hour

2045 TEL A (Add Lane) - Intersection Level of Service by Hour

Intersection / Movement		6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM		
SH 119 / Hover Street	Northbound Left-Turn (Hover Street)	E	E	E	E	E	E	E	E	E	E	E	E	E	E		
	Northbound Through (Hover Street)	C	C	C	C	C	C	C	D	D	D	D	D	D	D		
	Northbound Right-Turn (Hover Street)	B	B	B	B	B	B	B	C	C	C	C	C	B	C	C	
	Southbound Left-Turn (Hover Street)	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
	Southbound Through (Hover Street)	C	C	D	C	C	C	C	C	D	D	D	E	E	D	D	
	Southbound Right-Turn (Hover Street)	A	A	A	A	A	A	A	A	A	A	A	B	B	A	A	
	Eastbound Left-Turn (SH 119)	D	D	D	D	D	D	D	A	A	A	A	A	A	A	A	
	Eastbound Through (SH 119)	D	D	D	D	D	D	D	B	B	B	B	B	C	B	A	
	Eastbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (SH 119)	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	
	Westbound Through (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Westbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		B	C	C	C	C	C	C	C	C	C	C	C	C	C	B	
SB SH 119 / Airport Road	Southbound Left-Turn (SH 119)	A	A	A	A	A	A	A	B	C	C	B	C	B	C		
	Southbound Through (SH 119)	A	A	A	A	A	A	A	C	C	C	C	C	C	C		
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	B	A	A	A	
	Eastbound Through (Airport Road)	D	E	E	E	D	E	E	C	C	C	C	C	C	C	C	
	Eastbound Right-Turn (Airport Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Westbound Left-Turn (Airport Road)	B	A	A	B	A	B	B	A	A	A	A	A	A	A	A	
	Westbound Through (Airport Road)	E	E	E	E	E	E	E	C	C	C	C	C	C	C	C	
<b>Intersection Total</b>		A	B	B	B	B	B	B	C	C	C	C	C	C	C	C	
NB SH 119 / Airport Road	Northbound Left-Turn (SH 119)	B	B	B	B	B	B	B	A	A	B	B	C	B	A		
	Northbound Through (SH 119)	B	B	B	B	B	B	B	B	B	B	B	C	B	B		
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	B	A	B		
	Eastbound Left-Turn (Airport Road)	A	B	B	B	B	A	A	C	C	C	D	D	D	C	D	
	Eastbound Through (Airport Road)	A	A	C	D	C	C	C	D	D	D	D	D	D	D	C	
	Westbound Through (Airport Road)	D	E	E	E	E	D	D	D	D	D	D	D	E	E	E	
	Westbound Right-Turn (Airport Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		B	B	B	B	B	B	B	B	B	B	B	C	B	B		
SB SH 119 / Niwot Road	Southbound Left-Turn (SH 119)	A	B	A	B	A	A	A	C	C	C	D	C	C	B		
	Southbound Through (SH 119)	B	B	B	B	B	B	B	F	E	D	C	C	C	C		
	Southbound Right-Turn (SH 119)	A	B	B	B	A	A	A	D	C	A	A	A	A	A		
	Eastbound Through (Niwot Road)	E	F	F	F	F	F	F	C	C	C	F	F	F	E	C	
	Eastbound Right-Turn (Niwot Road)	A	B	C	A	A	E	D	A	A	C	F	F	F	B	A	
	Westbound Left-Turn (Niwot Road)	C	F	F	D	D	D	D	E	D	D	D	D	D	D	D	
	Westbound Through (Niwot Road)	C	D	D	C	C	C	C	D	B	B	B	B	C	B	B	
<b>Intersection Total</b>		B	C	C	C	B	C	C	E	E	D	E	E	C	B		
NB SH 119 / Niwot Road	Northbound Left-Turn (SH 119)	A	A	B	B	B	C	C	A	A	A	A	A	A	A		
	Northbound Through (SH 119)	A	B	A	B	B	D	D	A	B	B	D	E	C	A		
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	B	A	A	A	D	E	B	A		
	Eastbound Left-Turn (Niwot Road)	B	C	B	B	A	A	A	C	C	C	C	C	C	B		
	Eastbound Through (Niwot Road)	B	B	B	B	C	B	B	D	D	D	D	D	D	E		
	Westbound Through (Niwot Road)	C	F	F	C	C	C	C	E	E	E	E	D	D	D		
	Westbound Right-Turn (Niwot Road)	A	F	F	A	A	A	A	C	C	C	B	B	A	A	A	
<b>Intersection Total</b>		B	E	D	B	B	C	D	B	B	B	D	E	C	A		
SB SH 119 / Mineral Road	Southbound Left-Turn (SH 119)	D	C	C	C	B	B	C	C	C	B	A	A	A	A		
	Southbound Through (SH 119)	C	D	C	C	C	C	C	A	A	A	A	A	A	A		
	Southbound Right-Turn (SH 119)	B	C	B	B	B	A	A	A	B	B	A	A	A	A		
	Eastbound Through (Mineral Road)	E	E	E	E	E	E	E	E	F	F	F	E	E	E		
	Eastbound Right-Turn (Mineral Road)	B	C	B	B	B	B	A	A	B	B	A	A	A	A		
	Westbound Left-Turn (Mineral Road)	C	D	D	D	C	C	C	F	F	F	F	F	F	F		
	Westbound Through (Mineral Road)	D	D	C	D	D	D	D	E	E	D	D	D	D	C		
<b>Intersection Total</b>		C	D	D	C	C	C	C	C	C	C	C	C	C	B		
NB SH 119 / Mineral Road	Northbound Left-Turn (SH 119)	C	B	A	A	A	A	A	B	C	A	A	A	A	A		
	Northbound Through (SH 119)	C	B	B	B	B	B	D	A	B	B	B	B	B	A		
	Northbound Right-Turn (SH 119)	B	A	A	A	A	B	D	A	B	B	B	B	B	A		
	Eastbound Left-Turn (Mineral Road)	E	E	E	E	E	E	E	C	C	C	C	C	C	B		
	Eastbound Through (Mineral Road)	D	D	D	D	D	D	D	D	D	D	D	D	D	E		
	Westbound Through (Mineral Road)	C	E	E	E	C	C	C	E	F	F	E	E	E	E		
	Westbound Right-Turn (Mineral Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
<b>Intersection Total</b>		C	C	C	C	B	B	D	B	C	B	B	B	B	B		
SB SH 119 / 63rd Street	Southbound Left-Turn (SH 119)	B	C	C	B	A	B	B	B	B	C	B	C	C	B		
	Southbound Through (SH 119)	A	B	A	A	A	B	B	C	C	C	C	D	C	C		
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
	Eastbound Through (63rd Street)	E	F	F	E	E	E	E	E	E	E	E	E	E	E		
	Eastbound Right-Turn (63rd Street)	A	E	C	A	A	A	A	A	A	A	A	A	A	A		
	Westbound Left-Turn (63rd Street)	F	F	F	F	F	F	F	F	F	F	F	F	F	F		
	Westbound Through (63rd Street)	D	D	D	D	E	C	C	D	D	D	D	D	D	D		
<b>Intersection Total</b>		B	D	C	C	C	C	B	D	D	D	D	D	D	D		
NB SH 119 / 63rd Street	Northbound Left-Turn (SH 119)	B	D	E	E	D	B	B	A	A	B	B	D	C	A		
	Northbound Through (SH 119)	B	D	F	F	E	C	C	A	B	B	B	B	B	A		
	Northbound Right-Turn (SH 119)	A	C	D	B	A	B	A	A	B	A	A	A	A	A		
	Eastbound Left-Turn (63rd Street)	C	C	C	C	C	E	D	D	D	D	D	D	D	D		
	Eastbound Through (63rd Street)	D	B	B	B	B	D	D	D	D	D	D	D	D	C		
	Westbound Left-Turn (63rd Street)	D	F	F	F	F	F	F	F	F	F	F	F	F	F		
	Westbound Right-Turn (63rd Street)	A	E	F	F	F	F	F	D	F	F	F	F	F	F		
<b>Intersection Total</b>		C	E	F	F	F	F	F	E	E	F	F	F	F	F		
SB SH 119 / Jay Road	Southbound Left-Turn (SH 119)	A	B	C	B	B	A	B	B	B	C	C	B	C	E		
	Southbound Through (SH 119)	A	B	C	C	B	B	B	C	C	C	C	C	D	C		
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
	Eastbound Through (Jay Road)	E	E	F	F	F	E	E	E	F	F	F	F	F	F		
	Eastbound Right-Turn (Jay Road)	A	B	E	F	B	A	B	C	F	F	F	F	F	F		
	Westbound Left-Turn (Jay Road)	B	C	E	D	C	C	C	F	E	E	E	F	E	F		
	Westbound Through (Jay Road)	C	B	B	C	C	C	C	E	D	D	D	D	D	E		
<b>Intersection Total</b>		B	C	D	D	C	B	C	D	D	F	F	F	F	E		
NB SH 119 / Jay Road	Northbound Left-Turn (SH 119)	A	C	E	D	C	B	C	B	B	C	C	C	C	B		
	Northbound Through (SH 119)	B	C	E	D	C	C	C	B	C	C	E	E	D	B		
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	C	D	B	A		
	Eastbound Left-Turn (Jay Road)	E	E	D	D	E	E	E	E	E	F	F	F	F	E		
	Eastbound Through (Jay Road)	E	E	D	D	E	E	E	E	A	B	C	C	B	B		
	Westbound Through (Jay Road)	E	E	F	F	F	E	E	E	E	F	F	F	F	F		
	Westbound Right-Turn (Jay Road)	A	D	F	F	D	D	D	C	B	F	F	F	F	F		
<b>Intersection Total</b>		C	D	F	E	D	C	D	C	C	D	F	F	F	D		
Diagonal Hwy / 47th Street	Northbound Left-Turn (47th Street)	C	C	D	C	C	C	C	B	B	C	C	C	C	B		
	Northbound Through (47th Street)	B	B	C	B	B	C	C	B	B	C	C	C	C	B		
	Northbound Right-Turn (47th Street)	A	A	B	B	A	B	B	B	B	C	C	C	C	A		
	Southbound Left-Turn (47th Street)	A	C	C	C	C	C	C	C	C	C	C	C	C	C		
	Southbound Through (47th Street)	B	C	C	B	B	B	B	B	B	B	B	B	B	B		
	Southbound Right-Turn (47th Street)	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
	Eastbound Left-Turn (Diagonal Hwy)	A	A	B	A	A	B	B	B	B	B	B	B	B	A		
	Eastbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	C	C	A		
	Eastbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
	Westbound Left-Turn (Diagonal Hwy)	B	B	B	B	B	B	B	C	C	C	C	C	C	C		
	Westbound Through (Diagonal Hwy)	A	A	A	A	A	B	A	B	B	B	B	B	B	B		
Westbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
<b>Intersection Total</b>		A	B	B	B	A	A	A	B	B	B	B	C	B	A		
Diagonal Hwy / SB Foothills Pkwy Ramps	Southbound Left-Turn (Foothills Pkwy)	C	C	C	C	C	C	C	C	C	B	B	C	C	C		
	Southbound Through (Foothills Pkwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
	Southbound Right-Turn (Foothills Pkwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
	Eastbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	C	C	A		
	Eastbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
	Westbound Left-Turn (Diagonal Hwy)	A	B	C	B	B	C	C	C	D	D	D	D	C	B		
	Westbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
<b>Intersection Total</b>		A	A	A	A	A	A	A	A	A	A	B	B	A	A		

# technical report

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## Appendix W

### TEL At-Grade (Lane Conversion) Peak Hour Intersection Results



SH 119 Traffic Analysis

2045 TEL B (Lane Conversion) - Peak Hour Intersection Results<sup>(1)</sup>

Intersection / Movement	Weekday AM Peak-Hour (7:00 AM - 8:00 AM)						Weekday PM Peak-Hour (5:00 PM - 6:00 PM)					
	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Model Maximum Queue (ft.)	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Model Maximum Queue (ft.)
<b>SH 119 / Hover Street</b>												
Northbound Left-Turn (Hover Street)	245	244	0%	70	E	222	64	176	177	1%	74	E
Northbound Through (Hover Street)	644	644	0%	29	C	224	45	741	737	-1%	42	D
Northbound Right-Turn (Hover Street)	72	71	-1%	11	B	94	4	101	98	-3%	16	B
Southbound Left-Turn (Hover Street)	107	107	0%	68	E	127	32	212	214	1%	69	E
Southbound Through (Hover Street)	694	687	-1%	34	C	311	59	1,103	1,110	1%	44	D
Southbound Right-Turn (Hover Street)	541	552	2%	4	A	179	3	263	267	2%	8	B
Eastbound Left-Turn (SH 119)	236	192	-19%	32	C	147	11	779	629	-19%	11	B
Eastbound Through (SH 119)	470	360	-23%	38	D	203	19	1,068	907	-15%	30	C
Eastbound Right-Turn (SH 119)	133	116	-13%	3	A	82	0	360	315	-13%	6	A
Westbound Left-Turn (SH 119)	58	53	-9%	58	E	78	14	126	124	-2%	60	A
Westbound Through (SH 119)	1,182	1,168	-1%	0	A	0	0	641	637	-1%	0	A
Westbound Right-Turn (SH 119)	110	106	-4%	3	A	59	0	211	205	-3%	4	A
<b>General Traffic Intersection Total</b>	<b>4,492</b>	<b>4,300</b>	<b>-4%</b>	<b>21.6</b>	<b>C</b>			<b>5,781</b>	<b>5,420</b>	<b>-6%</b>	<b>28.7</b>	<b>C</b>
Bus Eastbound Left-Turn (SH 119)	4	4	0%	26	C			4	3	-25%	30	C
Bus Southbound Right-Turn (Hover Street)	4	4	0%	6	A			4	4	0%	6	A
<b>Bus Intersection Total</b>	<b>8</b>	<b>8</b>	<b>0%</b>	<b>16.2</b>	<b>B</b>			<b>8</b>	<b>7</b>	<b>-13%</b>	<b>16.3</b>	<b>B</b>
<b>SB SH 119 / Airport Road</b>												
Southbound Left-Turn (SH 119)	0	0	-	0	A	0	0	8	7	-13%	13	B
Southbound Through (SH 119)	1,857	1,847	-1%	8	A	416	16	1,019	961	-6%	19	B
Southbound Right-Turn (SH 119)	21	20	-5%	2	A	11	0	53	55	4%	21	C
Eastbound Through (Airport Road)	43	41	-5%	4	A	191	15	41	34	0%	40	B
Eastbound Right-Turn (Airport Road)	932	930	0%	3	A	0	0	313	324	4%	1	A
Westbound Left-Turn (Airport Road)	11	39	255%	18	B	201	36	5	9	80%	28	C
Westbound Through (Airport Road)	253	195	-23%	46	D	201	36	1,140	942	-17%	48	D
<b>General Traffic Intersection Total</b>	<b>3,117</b>	<b>3,072</b>	<b>-1%</b>	<b>9.6</b>	<b>A</b>			<b>2,572</b>	<b>2,332</b>	<b>-9%</b>	<b>28.6</b>	<b>C</b>
TEL - Southbound Through (SH 119)	90	90	0%	5	A	69	2	60	60	0%	11	B
<b>TEL - Intersection Total</b>	<b>90</b>	<b>90</b>	<b>0%</b>	<b>5.3</b>	<b>A</b>			<b>60</b>	<b>60</b>	<b>0%</b>	<b>11.2</b>	<b>B</b>
Bus Southbound Through (SH 119)	4	4	0%	0	A			4	4	0%	0	A
Bus Eastbound Right-Turn (Airport Road)	2	2	0%	5	A			2	2	0%	2	A
Bus Westbound Through (Airport Road)	2	2	0%	102	F			2	2	0%	74	E
<b>Bus Intersection Total</b>	<b>8</b>	<b>8</b>	<b>0%</b>	<b>26.6</b>	<b>C</b>			<b>8</b>	<b>8</b>	<b>0%</b>	<b>19.1</b>	<b>B</b>
<b>NB SH 119 / Airport Road</b>												
Northbound Left-Turn (SH 119)	217	187	-14%	9	A	100	5	830	639	-23%	25	C
Northbound Through (SH 119)	792	653	-18%	8	A	235	5	1,939	1,571	-19%	21	C
Northbound Right-Turn (SH 119)	2	8	300%	4	A	3	0	9	4	-56%	8	A
Eastbound Left-Turn (Airport Road)	18	17	-6%	4	A	20	1	13	13	0%	90	B
Eastbound Through (Airport Road)	25	25	0%	4	A	20	1	29	28	-3%	81	F
Eastbound Right-Turn (Airport Road)	43	44	2%	55	E	134	15	22	22	0%	56	E
Westbound Through (Airport Road)	5	1	-80%	1	A	69	1	3	3	0%	4	A
<b>General Traffic Intersection Total</b>	<b>1,102</b>	<b>935</b>	<b>-15%</b>	<b>10.5</b>	<b>B</b>			<b>2,845</b>	<b>2,280</b>	<b>-20%</b>	<b>23.6</b>	<b>C</b>
TEL - Northbound Left-Turn (SH 119)	4	4	0%	4	A	100	5	293	293	0%	26	C
TEL - Northbound Through (SH 119)	24	24	0%	6	A	36	0	252	252	0%	26	C
<b>TEL - Intersection Total</b>	<b>28</b>	<b>28</b>	<b>0%</b>	<b>5.9</b>	<b>A</b>			<b>545</b>	<b>545</b>	<b>0%</b>	<b>24.8</b>	<b>C</b>
Bus Northbound Left-Turn (SH 119)	2	2	0%	5	A			2	2	0%	33	C
Bus Northbound Through (SH 119)	4	4	0%	2	A			4	3	-25%	14	B
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>2.8</b>	<b>A</b>			<b>6</b>	<b>5</b>	<b>-17%</b>	<b>21.6</b>	<b>C</b>
<b>SB SH 119 / Niwot Road</b>												
Southbound Left-Turn (SH 119)	87	82	-6%	12	B	89	3	175	182	4%	26	C
Southbound Through (SH 119)	1,868	1,864	0%	19	B	1,194	79	1,004	1,009	0%	30	C
Southbound Right-Turn (SH 119)	134	120	-10%	9	A	112	3	36	39	8%	5	A
Eastbound Through (Niwot Road)	112	107	-4%	84	F	289	61	406	354	-13%	354	F
Eastbound Right-Turn (Niwot Road)	47	47	0%	4	A	0	0	163	148	-9%	31	B
Westbound Left-Turn (Niwot Road)	389	193	-50%	118	F	659	257	120	113	-6%	40	D
Westbound Through (Niwot Road)	205	153	-25%	38	D	281	35	138	129	-7%	18	B
<b>General Traffic Intersection Total</b>	<b>2,842</b>	<b>2,566</b>	<b>-10%</b>	<b>29.3</b>	<b>C</b>			<b>2,042</b>	<b>1,974</b>	<b>-3%</b>	<b>108.4</b>	<b>F</b>
TEL - Southbound Through (SH 119)	801	801	0%	15	B	952	78	122	122	0%	26	C
<b>TEL - Intersection Total</b>	<b>801</b>	<b>801</b>	<b>0%</b>	<b>15.1</b>	<b>B</b>			<b>122</b>	<b>122</b>	<b>0%</b>	<b>26.3</b>	<b>C</b>
Bus Southbound Through (SH 119)	6	6	0%	38	D			6	6	0%	31	C
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>38.2</b>	<b>D</b>			<b>6</b>	<b>6</b>	<b>0%</b>	<b>31.3</b>	<b>C</b>
<b>NB SH 119 / Niwot Road</b>												
Northbound Left-Turn (SH 119)	35	36	3%	38	D	101	8	65	56	-14%	10	B
Northbound Through (SH 119)	821	725	-12%	23	B	636	57	2,527	1,987	-21%	14	B
Northbound Right-Turn (SH 119)	43	43	0%	5	A	49	0	250	242	-3%	9	A
Eastbound Left-Turn (Niwot Road)	41	39	-5%	21	C	66	2	177	148	-16%	34	C
Eastbound Through (Niwot Road)	158	149	-6%	16	B	163	13	404	383	-5%	45	D
Westbound Through (Niwot Road)	559	407	-27%	283	F	1,516	1,109	193	189	-2%	54	D
Westbound Right-Turn (Niwot Road)	146	96	-34%	23	F	1,516	1,109	96	74	-23%	38	B
<b>General Traffic Intersection Total</b>	<b>1,803</b>	<b>1,495</b>	<b>-17%</b>	<b>117.6</b>	<b>F</b>			<b>3,688</b>	<b>3,079</b>	<b>-17%</b>	<b>21.0</b>	<b>C</b>
TEL - Northbound Through (SH 119)	31	31	0%	37	D	88	6	547	547	0%	10	A
<b>TEL - Intersection Total</b>	<b>31</b>	<b>31</b>	<b>0%</b>	<b>36.6</b>	<b>D</b>			<b>547</b>	<b>547</b>	<b>0%</b>	<b>9.9</b>	<b>A</b>
Bus Northbound Through (SH 119)	6	6	0%	8	A			6	5	-17%	8	A
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>7.9</b>	<b>A</b>			<b>6</b>	<b>5</b>	<b>-17%</b>	<b>7.6</b>	<b>A</b>
<b>SB SH 119 / SH 52 (Mineral Road)</b>												
Southbound Left-Turn (SH 119)	60	77	28%	28	C	203	18	120	121	1%	10	A
Southbound Through (SH 119)	2,171	2,018	-7%	34	C	1,404	158	1,154	1,137	-1%	7	A
Southbound Right-Turn (SH 119)	10	4	-60%	16	B	0	0	11	9	-18%	9	A
Eastbound Through (Mineral Road)	57	45	-21%	58	E	110	17	95	165	73%	79	E
Eastbound Right-Turn (Mineral Road)	25	23	-8%	18	B	56	0	31	11	-65%	9	B
Westbound Left-Turn (Mineral Road)	472	220	-53%	54	D	463	217	201	161	-20%	119	F
Westbound Through (Mineral Road)	111	99	-11%	28	C	293	25	43	40	-7%	57	E
<b>General Traffic Intersection Total</b>	<b>2,906</b>	<b>2,486</b>	<b>-14%</b>	<b>36.2</b>	<b>D</b>			<b>1,655</b>	<b>1,587</b>	<b>-4%</b>	<b>24.6</b>	<b>C</b>
TEL - Southbound Left-Turn (SH 119)	70	70	0%	26	C	56	0	5	9	80%	6	A
TEL - Southbound Through (SH 119)	794	794	0%	17	B	56	0	115	115	0%	3	A
<b>TEL - Intersection Total</b>	<b>864</b>	<b>864</b>	<b>0%</b>	<b>29.3</b>	<b>C</b>			<b>124</b>	<b>124</b>	<b>0%</b>	<b>3.2</b>	<b>A</b>
Bus Southbound Through (SH 119)	6	6	0%	13	B			6	6	0%	4	A
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>13.2</b>	<b>B</b>			<b>6</b>	<b>6</b>	<b>0%</b>	<b>3.9</b>	<b>A</b>
<b>NB SH 119 / SH 52 (Mineral Road)</b>												
Northbound Left-Turn (SH 119)	21	21	0%	55	D	62	5	6	3	-50%	9	A
Northbound Through (SH 119)	818	741	-9%	36	D	534	90	2,545	1,817	-29%	8	A
Northbound Right-Turn (SH 119)	190	145	-24%	12	B	190	10	318	99	-69%	10	A
Eastbound Left-Turn (Mineral Road)	5	5	0%	125	F	210	56	18	5	-72%	32	C
Eastbound Through (Mineral Road)	182	191	5%	43	D	193	47	206	183	-11%	44	D
Westbound Through (Mineral Road)	559	539	-4%	15	B	573	135	539	239	-56%	29	B
Westbound Right-Turn (Mineral Road)	75	68	-9%	18	B	573	135	369	360	-2%	2	A
<b>General Traffic Intersection Total</b>	<b>1,850</b>	<b>1,710</b>	<b>-8%</b>	<b>53.2</b>	<b>D</b>			<b>3,696</b>	<b>2,706</b>	<b>-27%</b>	<b>14.3</b>	<b>B</b>
TEL - Northbound Left-Turn (SH 119)	3	3	0%	35	D	0	0	4	4	0%	13	B
TEL - Northbound Through (SH 119)	32	32	0%	16	B	0	0	457	457	0%	10	B
<b>TEL - Intersection Total</b>	<b>35</b>	<b>35</b>	<b>0%</b>	<b>17.3</b>	<b>B</b>			<b>461</b>	<b>461</b>	<b>0%</b>	<b>10.4</b>	<b>B</b>
Bus Northbound Through (SH 119)	6	6	0%	21	C			6	5	-17%	26	C
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>21.2</b>	<b>C</b>			<b>6</b>	<b>5</b>	<b>-17%</b>	<b>25.8</b>	<b>C</b>
<b>SB SH 119 / 63rd Street</b>												
Southbound Left-Turn (SH 119)	742	681	-8%	30	C	1,091	172	204	205	0%	9	A
Southbound Through (SH 119)	1,942	1,760	-9%	34	C	2,959	620	1,184	1,165	-2%	16	B
Southbound Right-Turn (SH 119)	9	12	33%	28	C	10						

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## Appendix X

### TEL At-Grade (Lane Conversion) Intersection Level of Service by Hour

2045 TEL B (Lane Conversion) - Intersection Level of Service by Hour

Intersection / Movement		6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM
SH 119 / Hover Street	Northbound Left-Turn (Hover Street)	E	E	E	E	E	E	E	E	E	E	E	E	E	E
	Northbound Through (Hover Street)	C	C	C	C	C	C	C	D	D	D	D	D	D	D
	Northbound Right-Turn (Hover Street)	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	Southbound Left-Turn (Hover Street)	E	E	E	E	E	E	E	E	E	E	E	E	E	E
	Southbound Through (Hover Street)	C	C	D	C	C	C	C	D	D	D	D	D	D	D
	Southbound Right-Turn (Hover Street)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Left-Turn (SH 119)	D	C	C	C	C	C	C	A	B	B	B	B	B	B
	Eastbound Through (SH 119)	D	D	D	D	D	D	D	C	C	C	C	C	C	C
	Eastbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (SH 119)	E	E	E	E	E	E	E	E	E	E	E	E	E	E
Westbound Through (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Westbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		B	C	C	C	C	C	C	C	C	C	C	C	C	C
SB SH 119 / Airport Road	Southbound Left-Turn (SH 119)	A	A	A	A	A	A	A	B	B	B	B	B	B	A
	Southbound Through (SH 119)	A	A	A	A	A	A	A	B	B	B	C	B	B	B
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	B	B	C	B	A
	Eastbound Through (Airport Road)	E	E	D	D	E	E	D	D	D	D	D	D	D	D
	Eastbound Right-Turn (Airport Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (Airport Road)	B	B	B	A	B	B	A	C	C	D	D	C	C	D
	Westbound Through (Airport Road)	D	D	D	D	D	E	E	D	D	D	D	D	D	D
<b>Intersection Total</b>		A	A	B	A	B	B	B	C	C	C	C	C	C	C
NB SH 119 / Airport Road	Northbound Left-Turn (SH 119)	A	A	A	A	B	B	B	A	A	B	B	C	B	A
	Northbound Through (SH 119)	B	A	A	A	B	B	B	B	B	B	C	C	B	B
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Left-Turn (Airport Road)	A	A	A	A	A	A	A	F	F	F	F	F	F	F
	Eastbound Through (Airport Road)	A	A	B	D	B	B	C	F	F	E	F	F	F	E
	Westbound Through (Airport Road)	D	E	E	D	E	D	D	D	D	D	D	E	D	D
	Westbound Right-Turn (Airport Road)	A	A	B	A	A	A	A	A	A	A	A	A	A	A
<b>Intersection Total</b>		B	B	B	B	B	B	B	B	B	A	C	C	B	B
SB SH 119 / Niwot Road	Southbound Left-Turn (SH 119)	A	B	B	B	A	A	B	C	C	C	C	C	C	C
	Southbound Through (SH 119)	B	B	B	B	B	B	B	E	E	C	C	C	C	C
	Southbound Right-Turn (SH 119)	A	A	B	A	A	A	A	C	C	A	A	A	A	A
	Eastbound Through (Niwot Road)	E	F	F	E	E	F	F	C	C	F	F	F	F	C
	Eastbound Right-Turn (Niwot Road)	A	B	B	A	A	E	E	A	A	E	F	F	F	A
	Westbound Left-Turn (Niwot Road)	D	F	F	F	E	D	D	E	D	D	D	D	D	D
	Westbound Through (Niwot Road)	D	D	D	D	D	D	D	B	B	B	B	B	B	B
<b>Intersection Total</b>		B	C	C	C	C	C	C	D	D	D	E	F	D	C
NB SH 119 / Niwot Road	Northbound Left-Turn (SH 119)	D	D	D	D	D	D	D	A	A	A	A	B	A	A
	Northbound Through (SH 119)	C	D	D	D	D	E	E	A	B	B	C	B	B	A
	Northbound Right-Turn (SH 119)	A	A	A	A	B	C	C	A	A	A	B	A	A	A
	Eastbound Left-Turn (Niwot Road)	A	C	C	C	C	B	B	C	C	C	D	C	C	C
	Eastbound Through (Niwot Road)	B	B	B	B	C	B	B	D	D	D	D	D	D	E
	Westbound Through (Niwot Road)	C	F	F	F	F	D	D	E	E	E	E	D	D	D
	Westbound Right-Turn (Niwot Road)	A	F	F	F	F	D	B	B	C	B	B	A	A	A
<b>Intersection Total</b>		C	F	F	F	E	D	D	B	B	C	C	C	B	B
SB SH 119 / Mineral Road	Southbound Left-Turn (SH 119)	D	C	C	C	B	B	C	C	C	B	A	A	A	A
	Southbound Through (SH 119)	C	C	C	C	C	C	C	A	A	A	A	A	A	A
	Southbound Right-Turn (SH 119)	B	B	B	A	A	A	B	B	B	A	A	A	B	A
	Eastbound Through (Mineral Road)	E	E	E	E	E	E	E	F	F	F	F	E	E	E
	Eastbound Right-Turn (Mineral Road)	B	B	B	B	A	A	B	B	B	B	A	A	B	B
	Westbound Left-Turn (Mineral Road)	D	D	E	E	D	C	C	F	F	F	F	F	F	F
	Westbound Through (Mineral Road)	C	C	C	C	C	C	C	E	E	D	D	E	D	C
<b>Intersection Total</b>		C	D	D	C	C	C	C	C	C	C	C	C	C	B
NB SH 119 / Mineral Road	Northbound Left-Turn (SH 119)	B	D	F	E	E	D	D	A	C	B	A	A	A	A
	Northbound Through (SH 119)	B	D	D	D	D	E	E	A	A	A	A	A	A	A
	Northbound Right-Turn (SH 119)	A	B	B	C	C	C	D	A	B	B	B	A	B	A
	Eastbound Left-Turn (Mineral Road)	F	F	F	F	F	F	F	B	C	C	C	C	B	B
	Eastbound Through (Mineral Road)	D	D	D	D	D	D	D	D	D	D	D	D	D	E
	Westbound Through (Mineral Road)	D	F	F	F	F	C	C	E	F	E	E	E	E	E
	Westbound Right-Turn (Mineral Road)	A	B	F	F	C	A	A	A	A	A	A	A	A	A
<b>Intersection Total</b>		C	D	F	F	E	D	D	B	C	B	B	B	B	B
SB SH 119 / 63rd Street	Southbound Left-Turn (SH 119)	C	C	D	B	A	A	A	B	B	B	A	A	A	A
	Southbound Through (SH 119)	D	F	E	E	E	D	D	C	C	B	B	B	B	A
	Southbound Right-Turn (SH 119)	A	C	D	C	C	B	B	A	A	A	A	B	A	A
	Eastbound Through (63rd Street)	F	F	F	F	E	E	E	E	E	E	E	E	E	E
	Eastbound Right-Turn (63rd Street)	A	F	F	E	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (63rd Street)	E	F	F	F	F	F	F	F	F	F	F	F	F	F
	Westbound Through (63rd Street)	D	E	E	E	E	D	D	D	D	D	E	E	E	E
<b>Intersection Total</b>		D	F	F	E	E	D	D	C	C	C	C	C	C	D
NB SH 119 / 63rd Street	Northbound Left-Turn (SH 119)	A	C	D	D	E	C	C	A	A	A	A	B	B	A
	Northbound Through (SH 119)	B	C	E	F	E	E	D	A	A	A	A	A	A	A
	Northbound Right-Turn (SH 119)	A	B	D	C	C	C	B	A	A	A	A	A	A	A
	Eastbound Left-Turn (63rd Street)	D	D	C	D	D	E	E	B	C	B	B	B	A	A
	Eastbound Through (63rd Street)	D	C	C	C	C	C	D	D	E	D	D	D	D	D
	Westbound Through (63rd Street)	D	F	F	F	F	F	F	F	F	F	F	F	F	F
	Westbound Right-Turn (63rd Street)	A	B	F	F	F	F	F	F	F	F	F	F	F	F
<b>Intersection Total</b>		C	D	F	F	F	F	F	F	F	F	F	F	F	F
SB SH 119 / Jay Road	Southbound Left-Turn (SH 119)	A	B	A	B	C	B	C	B	A	A	B	A	B	B
	Southbound Through (SH 119)	B	D	F	F	E	C	C	B	B	B	B	B	B	B
	Southbound Right-Turn (SH 119)	A	B	D	E	D	B	B	B	B	A	A	A	A	A
	Eastbound Through (Jay Road)	E	F	F	F	F	F	F	F	F	F	F	F	F	F
	Eastbound Right-Turn (Jay Road)	A	C	F	F	E	B	B	D	F	F	F	F	F	F
	Westbound Left-Turn (Jay Road)	C	C	E	E	C	C	B	E	E	F	F	F	F	E
	Westbound Through (Jay Road)	C	C	B	C	C	C	C	E	E	E	E	E	E	E
<b>Intersection Total</b>		B	D	F	F	E	C	C	D	D	F	F	F	F	F
NB SH 119 / Jay Road	Northbound Left-Turn (SH 119)	A	C	E	F	B	B	B	B	B	C	D	D	D	C
	Northbound Through (SH 119)	A	D	F	F	C	C	C	B	D	D	F	F	F	D
	Northbound Right-Turn (SH 119)	A	B	F	F	B	B	B	A	C	D	F	F	F	C
	Eastbound Left-Turn (Jay Road)	E	D	D	D	E	E	E	F	F	F	F	E	E	F
	Eastbound Through (Jay Road)	E	D	D	D	E	E	E	B	A	B	B	B	B	C
	Westbound Through (Jay Road)	E	E	F	F	E	E	E	F	F	F	F	F	F	F
	Westbound Right-Turn (Jay Road)	A	D	F	F	D	C	C	D	D	F	F	F	F	F
<b>Intersection Total</b>		C	D	F	F	D	C	C	C	D	E	F	F	F	E
Diagonal Hwy / 47th Street	Northbound Left-Turn (47th Street)	C	C	C	C	C	C	C	C	C	C	F	F	F	F
	Northbound Through (47th Street)	B	B	C	B	C	C	C	C	C	C	F	F	F	F
	Northbound Right-Turn (47th Street)	A	B	B	A	A	B	B	A	C	D	F	F	F	F
	Southbound Left-Turn (47th Street)	A	C	C	C	C	C	C	D	C	D	E	F	D	
	Southbound Through (47th Street)	B	C	C	B	B	B	B	C	C	C	C	C	C	
	Southbound Right-Turn (47th Street)	A	A	A	A	A	A	A	A	A	A	A	A	A	
	Eastbound Left-Turn (Diagonal Hwy)	A	A	B	A	A	B	B	A	A	A	A	B	B	B
	Eastbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	C	F	F	D
	Eastbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (Diagonal Hwy)	B	B	B	B	B	B	B	B	B	B	C	B	C	B
Westbound Through (Diagonal Hwy)	A	A	B	A	A	B	A	A	A	A	A	A	A	A	
Westbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		A	B	B	B	A	A	A	A	A	A	D	F	F	D
Diagonal Hwy / SB Foothills Pkwy Ramps	Southbound Left-Turn (Foothills Pkwy)	C	C	C	C	C	C	C	C	C	C	B	C	C	C
	Southbound Through (Foothills Pkwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Southbound Right-Turn (Foothills Pkwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	B	F	F	F
	Eastbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	F	F	D
	Westbound Left-Turn (Diagonal Hwy)	A	B	C	B	B	B	C	C	D	D	C	C	C	C
	Westbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
<b>Intersection Total</b>		A	A	A	A	A	A	A	A	A	A	B	F	F	E

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## Appendix Y

### TEL (Grade Separation) Peak Hour Intersection Results

SH 119 Traffic Analysis

2045 TEL C (Grade Separated) - Peak Hour Intersection Results<sup>(1)</sup>

Intersection / Movement	Weekday AM Peak-Hour (7:00 AM - 8:00 AM)						Weekday PM Peak-Hour (5:00 PM - 6:00 PM)					
	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Model Maximum Queue (ft.)	Balanced Turning Movement Volume (veh.)	Model Volume (veh.)	Error % <sup>(2)</sup>	Delay (sec.)	Level of Service	Model Maximum Queue (ft.)
<b>SH 119 / Hoyer Street</b>												
Northbound Left-Turn (Hoyer Street)	230	228	-1%	69	E	208	60	164	166	-1%	73	E
Northbound Through (Hoyer Street)	611	611	0%	28	C	218	42	730	725	-1%	55	D
Northbound Right-Turn (Hoyer Street)	68	66	-3%	11	B	84	4	98	95	-3%	27	C
Southbound Left-Turn (Hoyer Street)	116	115	-1%	69	E	145	34	215	218	1%	73	E
Southbound Through (Hoyer Street)	705	691	-2%	34	C	308	59	1,041	1,048	1%	66	E
Southbound Right-Turn (Hoyer Street)	598	621	4%	4	A	176	3	244	251	3%	17	B
Eastbound Left-Turn (SH 119)	244	241	-1%	50	D	186	20	896	802	-10%	12	B
Eastbound Through (SH 119)	500	425	-15%	58	E	244	31	1,167	1,093	-6%	22	C
Eastbound Right-Turn (SH 119)	132	124	-6%	3	A	95	1	373	354	-5%	5	A
Westbound Left-Turn (SH 119)	57	56	-2%	58	E	87	16	126	123	-2%	66	E
Westbound Through (SH 119)	1,249	1,233	-1%	0	A	0	0	625	619	-1%	0	A
Westbound Right-Turn (SH 119)	115	108	-6%	3	A	55	1	231	226	-2%	5	A
<b>General Traffic Intersection Total</b>	<b>4,625</b>	<b>4,519</b>	<b>-2%</b>	<b>23.9</b>	<b>C</b>			<b>5,910</b>	<b>5,720</b>	<b>-3%</b>	<b>33.1</b>	<b>C</b>
Bus Eastbound Left-Turn (SH 119)	4	4	0%	27	C			4	3	-25%	20	B
Bus Southbound Right-Turn (Hoyer Street)	4	4	0%	6	A			4	4	0%	12	B
<b>Bus Intersection Total</b>	<b>8</b>	<b>8</b>	<b>0%</b>	<b>16.6</b>	<b>B</b>			<b>8</b>	<b>7</b>	<b>-13%</b>	<b>15.4</b>	<b>B</b>
<b>SB SH 119 / Airport Road</b>												
Southbound Left-Turn (SH 119)	0	0	-	0	A	0	0	8	9	13%	25	C
Southbound Through (SH 119)	1,426	1,425	0%	7	A	278	10	918	922	0%	31	C
Southbound Right-Turn (SH 119)	19	19	0%	1	A	8	0	48	52	8%	10	A
Eastbound Left-Turn (Airport Road)	48	46	-4%	10	B	26	2	38	39	3%	20	C
Eastbound Right-Turn (Airport Road)	1,156	1,153	0%	5	A	0	0	312	322	3%	1	A
Westbound Left-Turn (Airport Road)	11	30	173%	12	B	225	61	5	12	140%	4	A
Westbound Through (Airport Road)	257	221	-14%	76	E	224	61	1,178	1,061	-10%	29	C
<b>General Traffic Intersection Total</b>	<b>2,917</b>	<b>2,894</b>	<b>-1%</b>	<b>12.1</b>	<b>B</b>			<b>2,507</b>	<b>2,417</b>	<b>-4%</b>	<b>25.0</b>	<b>C</b>
TEL - Southbound Through (SH 119)	632	632	0%	7	A	0	0	59	59	0%	0	A
<b>TEL - Intersection Total</b>	<b>632</b>	<b>632</b>	<b>0%</b>	<b>0.6</b>	<b>A</b>			<b>59</b>	<b>59</b>	<b>0%</b>	<b>0.1</b>	<b>A</b>
Bus Southbound Through (SH 119)	4	4	0%	0	A			4	4	0%	0	A
Bus Eastbound Right-Turn (Airport Road)	2	2	0%	6	A			2	2	0%	2	A
Bus Westbound Through (Airport Road)	2	2	0%	81	F			2	2	0%	27	C
<b>Bus Intersection Total</b>	<b>8</b>	<b>8</b>	<b>0%</b>	<b>22.0</b>	<b>C</b>			<b>8</b>	<b>8</b>	<b>0%</b>	<b>7.2</b>	<b>A</b>
<b>NB SH 119 / Airport Road</b>												
Northbound Left-Turn (SH 119)	206	193	-6%	13	B	138	8	884	784	-11%	24	C
Northbound Through (SH 119)	709	658	-7%	16	B	333	14	1,706	1,513	-11%	21	C
Northbound Right-Turn (SH 119)	2	1	-50%	2	A	1	0	8	8	0%	7	A
Eastbound Left-Turn (Airport Road)	23	22	-4%	10	B	26	2	15	15	0%	42	E
Eastbound Through (Airport Road)	25	23	-8%	8	B	26	2	31	34	10%	41	D
Westbound Through (Airport Road)	42	43	2%	52	D	124	13	23	24	4%	57	E
Westbound Right-Turn (Airport Road)	5	1	-80%	8	A	80	1	3	2	-33%	2	A
<b>General Traffic Intersection Total</b>	<b>1,012</b>	<b>941</b>	<b>-7%</b>	<b>16.9</b>	<b>B</b>			<b>2,670</b>	<b>2,380</b>	<b>-11%</b>	<b>22.9</b>	<b>C</b>
TEL - Northbound Left	20	20	0%	9	A	138	8	269	269	0%	29	C
TEL - Northbound Through	139	139	0%	3	A	0	0	712	712	0%	19	B
<b>TEL - Intersection Total</b>	<b>159</b>	<b>159</b>	<b>0%</b>	<b>4.2</b>	<b>A</b>			<b>981</b>	<b>981</b>	<b>0%</b>	<b>22.0</b>	<b>C</b>
Bus Northbound Left-Turn (SH 119)	2	2	0%	7	A			2	2	0%	29	C
Bus Northbound Through (SH 119)	4	4	0%	1	A			4	3	-25%	14	B
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>3.3</b>	<b>A</b>			<b>6</b>	<b>5</b>	<b>-17%</b>	<b>19.7</b>	<b>B</b>
<b>SB SH 119 / Niwot Road</b>												
Southbound Left-Turn (SH 119)	91	86	-5%	9	A	96	3	187	191	2%	16	B
Southbound Through (SH 119)	1,882	1,886	0%	19	B	1,048	77	996	1,008	1%	19	B
Southbound Right-Turn (SH 119)	168	153	-9%	9	A	123	4	30	31	3%	4	A
Eastbound Through (Niwot Road)	109	104	-5%	93	D	311	68	332	337	2%	164	F
Eastbound Right-Turn (Niwot Road)	51	51	0%	3	A	0	0	119	126	6%	5	A
Westbound Left-Turn (Niwot Road)	385	359	-7%	75	E	639	137	112	110	-2%	15	B
Westbound Through (Niwot Road)	232	223	-4%	31	C	262	41	124	112	-10%	14	B
<b>General Traffic Intersection Total</b>	<b>2,917</b>	<b>2,862</b>	<b>-2%</b>	<b>29.0</b>	<b>C</b>			<b>1,900</b>	<b>1,915</b>	<b>1%</b>	<b>50.2</b>	<b>D</b>
TEL - Southbound Through	1,084	1,084	0%	3	A	0	0	81	81	0%	1	A
<b>TEL - Intersection Total</b>	<b>1,084</b>	<b>1,084</b>	<b>0%</b>	<b>3.3</b>	<b>A</b>			<b>81</b>	<b>81</b>	<b>0%</b>	<b>22.2</b>	<b>C</b>
Bus Southbound Through (SH 119)	6	6	0%	24	C			6	6	0%	22	C
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>23.6</b>	<b>C</b>			<b>6</b>	<b>6</b>	<b>0%</b>	<b>22.1</b>	<b>C</b>
<b>NB SH 119 / Niwot Road</b>												
Northbound Left-Turn (SH 119)	40	41	2%	12	B	60	3	62	52	-16%	6	A
Northbound Through (SH 119)	730	696	-5%	11	B	187	12	2,320	2,088	-10%	16	A
Northbound Right-Turn (SH 119)	43	45	5%	3	A	35	0	291	283	-3%	12	B
Eastbound Left-Turn (Niwot Road)	41	39	-5%	23	C	68	1	142	142	0%	22	C
Eastbound Through (Niwot Road)	159	150	-6%	11	B	126	8	377	385	2%	38	D
Westbound Through (Niwot Road)	577	548	-5%	73	E	1,178	320	174	170	-3%	49	D
Westbound Right-Turn (Niwot Road)	147	135	-8%	10	B	178	320	74	75	1%	6	A
<b>General Traffic Intersection Total</b>	<b>1,737</b>	<b>1,654</b>	<b>-5%</b>	<b>34.7</b>	<b>C</b>			<b>3,440</b>	<b>3,195</b>	<b>-7%</b>	<b>20.2</b>	<b>C</b>
TEL - Northbound Through	158	158	0%	1	A	10	0	1,043	1,043	0%	3	A
<b>TEL - Intersection Total</b>	<b>158</b>	<b>158</b>	<b>0%</b>	<b>0.9</b>	<b>A</b>			<b>1,043</b>	<b>1,043</b>	<b>0%</b>	<b>2.9</b>	<b>A</b>
Bus Northbound Through (SH 119)	6	6	0%	1	A			6	5	-17%	2	A
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>0.9</b>	<b>A</b>			<b>6</b>	<b>5</b>	<b>-17%</b>	<b>2.1</b>	<b>A</b>
<b>SB SH 119 / SH 52 (Mineral Road)</b>												
Southbound Left-Turn (SH 119)	134	144	7%	32	C	252	25	107	107	0%	6	A
Southbound Through (SH 119)	2,179	2,119	-3%	36	D	1,234	171	1,114	1,111	0%	6	A
Southbound Right-Turn (SH 119)	11	10	-9%	19	B	16	0	10	5	-50%	7	A
Eastbound Through (Mineral Road)	56	57	2%	33	C	147	22	45	47	8%	8	A
Eastbound Right-Turn (Mineral Road)	26	11	-58%	20	B	16	0	30	10	-67%	7	A
Westbound Left-Turn (Mineral Road)	472	462	-2%	34	C	464	96	187	187	0%	119	F
Westbound Through (Mineral Road)	112	122	9%	43	D	403	48	43	54	26%	54	D
<b>General Traffic Intersection Total</b>	<b>2,990</b>	<b>2,925</b>	<b>-2%</b>	<b>36.2</b>	<b>D</b>			<b>1,582</b>	<b>1,561</b>	<b>-1%</b>	<b>25.4</b>	<b>C</b>
TEL - Southbound Left	6	6	0%	29	C	0	0	10	10	0%	9	A
TEL - Southbound Through	1,071	1,071	0%	7	A	0	0	67	67	0%	1	A
<b>TEL - Intersection Total</b>	<b>1,077</b>	<b>1,077</b>	<b>0%</b>	<b>6.9</b>	<b>A</b>			<b>77</b>	<b>77</b>	<b>0%</b>	<b>2.4</b>	<b>A</b>
Bus Southbound Through (SH 119)	6	6	0%	4	A			6	6	0%	2	A
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>4.2</b>	<b>A</b>			<b>6</b>	<b>6</b>	<b>0%</b>	<b>2.2</b>	<b>A</b>
<b>NB SH 119 / SH 52 (Mineral Road)</b>												
Northbound Left-Turn (SH 119)	-6	9	-250%	9	A	75	4	-8	3	-138%	11	B
Northbound Through (SH 119)	745	700	-6%	19	B	453	35	2,298	1,994	-13%	8	A
Northbound Right-Turn (SH 119)	191	151	-21%	8	A	137	5	325	223	-31%	8	A
Eastbound Left-Turn (Mineral Road)	5	5	0%	68	E	294	67	18	18	0%	19	B
Eastbound Through (Mineral Road)	191	202	6%	50	D	276	59	190	187	-2%	37	D
Westbound Through (Mineral Road)	558	545	-2%	13	B	192	13	219	217	-1%	59	E
Westbound Right-Turn (Mineral Road)	73	76	4%	1	A	192	13	372	371	0%	2	A
<b>General Traffic Intersection Total</b>	<b>1,758</b>	<b>1,688</b>	<b>-4%</b>	<b>25.7</b>	<b>C</b>			<b>3,414</b>	<b>3,013</b>	<b>-12%</b>	<b>12.8</b>	<b>B</b>
TEL - Northbound Left	31	31	0%	21	C	0	0	19	19	0%	16	B
TEL - Northbound Through	148	148	0%	2	A	0	0	1,028	1,028	0%	7	A
<b>TEL - Intersection Total</b>	<b>179</b>	<b>179</b>	<b>0%</b>	<b>17.9</b>	<b>B</b>			<b>1,047</b>	<b>1,047</b>	<b>0%</b>	<b>7.5</b>	<b>A</b>
Bus Northbound Through (SH 119)	6	6	0%	18	B			6	5	-17%	23	C
<b>Bus Intersection Total</b>	<b>6</b>	<b>6</b>	<b>0%</b>	<b>17.9</b>	<b>B</b>			<b>6</b>	<b>5</b>	<b>-17%</b>	<b>22.9</b>	<b>C</b>
<b>SB SH 119 / 63rd Street</b>												
Southbound Left-Turn (SH 119)	813	749	-8%	17	B	760	86	199	197	-1%	22	C
Southbound Through (SH 119)	1,821	1,778	-2%	13	B	488	25	821	844	3%	30	C
Southbound Right-Turn (SH 119)	9	11	22%	5	A	3	0	14	11	-21%	10	B
Eastbound Through (63rd Street)	40											

# technical report

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## Appendix Z

### TEL (Grade Separation) Intersection Level of Service by Hour

2045 TEL C (Grade Separated) - Intersection Level of Service by Hour

Intersection / Movement		6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM
SH 119 / Hover Street	Northbound Left-Turn (Hover Street)	E	E	E	E	E	E	E	E	E	E	E	E	E	E
	Northbound Through (Hover Street)	C	C	C	C	C	C	C	E	E	D	E	E	D	D
	Northbound Right-Turn (Hover Street)	B	B	B	B	B	B	B	C	C	C	C	C	C	C
	Southbound Left-Turn (Hover Street)	E	E	E	E	E	E	E	E	E	E	E	E	E	E
	Southbound Through (Hover Street)	C	C	D	C	C	C	C	D	D	D	D	E	E	D
	Southbound Right-Turn (Hover Street)	A	A	A	A	A	A	A	A	A	A	B	B	A	A
	Eastbound Left-Turn (SH 119)	D	D	D	D	D	D	D	A	A	B	B	B	B	A
	Eastbound Through (SH 119)	D	E	E	E	E	D	D	A	B	B	C	C	B	A
	Eastbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (SH 119)	E	E	E	E	E	E	E	E	E	E	E	E	E	E
	Westbound Through (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Westbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		B	C	C	C	C	C	C	C	C	C	C	C	C	B
SB SH 119 / Airport Road	Southbound Left-Turn (SH 119)	A	A	A	A	A	A	A	C	C	C	D	C	C	C
	Southbound Through (SH 119)	A	A	A	A	A	A	A	D	D	C	C	C	C	C
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Through (Airport Road)	E	E	E	E	E	E	D	C	C	C	B	C	C	C
	Eastbound Right-Turn (Airport Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (Airport Road)	A	B	B	A	A	B	B	A	A	A	A	A	A	A
	Westbound Through (Airport Road)	E	E	E	E	E	E	E	C	C	C	C	C	C	C
<b>Intersection Total</b>		A	B	B	B	B	B	B	C	C	C	C	C	C	C
NB SH 119 / Airport Road	Northbound Left-Turn (SH 119)	B	B	B	B	B	B	B	A	A	B	C	C	B	A
	Northbound Through (SH 119)	B	B	B	B	B	B	B	B	B	B	C	C	C	B
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Left-Turn (Airport Road)	B	B	A	B	A	A	B	C	D	D	D	D	D	D
	Eastbound Through (Airport Road)	B	A	B	D	C	B	C	D	D	D	D	D	D	D
	Westbound Through (Airport Road)	E	D	E	D	E	D	D	D	D	E	D	E	D	D
	Westbound Right-Turn (Airport Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
<b>Intersection Total</b>		B	B	B	B	B	B	B	B	B	B	C	C	B	B
SB SH 119 / Niwot Road	Southbound Left-Turn (SH 119)	A	A	A	A	A	A	B	C	B	B	B	B	B	B
	Southbound Through (SH 119)	B	B	B	B	B	B	B	C	C	C	B	B	B	B
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Through (Niwot Road)	E	F	F	E	E	F	F	C	C	E	F	F	F	D
	Eastbound Right-Turn (Niwot Road)	A	B	B	A	A	E	E	A	A	B	F	F	F	A
	Westbound Left-Turn (Niwot Road)	C	E	D	C	C	C	C	C	C	C	B	B	B	B
	Westbound Through (Niwot Road)	C	C	C	C	C	C	C	C	B	B	B	B	B	B
<b>Intersection Total</b>		B	C	C	B	B	C	C	C	C	C	D	D	B	B
NB SH 119 / Niwot Road	Northbound Left-Turn (SH 119)	A	B	A	B	B	C	C	A	A	A	A	A	A	A
	Northbound Through (SH 119)	A	B	A	B	B	C	D	A	B	B	B	B	A	A
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	B	B	A	A
	Eastbound Left-Turn (Niwot Road)	A	C	B	B	B	A	B	A	B	C	C	C	B	B
	Eastbound Through (Niwot Road)	A	B	B	B	B	B	B	D	D	D	D	D	D	D
	Westbound Through (Niwot Road)	C	E	D	C	C	C	C	C	D	D	D	D	D	D
	Westbound Right-Turn (Niwot Road)	A	D	C	A	A	A	A	B	B	B	A	A	A	A
<b>Intersection Total</b>		B	C	C	B	B	C	C	B	B	B	C	C	B	A
SB SH 119 / Mineral Road	Southbound Left-Turn (SH 119)	D	C	C	C	C	B	C	B	B	A	A	A	A	A
	Southbound Through (SH 119)	C	D	C	C	C	C	C	A	A	A	A	A	A	A
	Southbound Right-Turn (SH 119)	B	B	B	A	A	A	B	A	A	A	A	A	A	A
	Eastbound Through (Mineral Road)	E	E	E	E	E	E	E	E	F	F	F	F	E	E
	Eastbound Right-Turn (Mineral Road)	B	B	D	A	B	B	A	B	A	B	A	A	A	A
	Westbound Left-Turn (Mineral Road)	C	C	D	C	C	C	C	F	F	F	F	F	F	F
	Westbound Through (Mineral Road)	D	D	D	D	D	E	E	D	D	D	D	D	D	D
<b>Intersection Total</b>		C	D	D	C	C	C	C	C	C	C	C	C	C	B
NB SH 119 / Mineral Road	Northbound Left-Turn (SH 119)	C	A	A	A	A	A	A	B	C	A	A	B	A	A
	Northbound Through (SH 119)	D	B	B	B	B	B	C	A	B	B	A	A	A	A
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	B	A	B	B	A	A	A	A
	Eastbound Left-Turn (Mineral Road)	E	E	E	E	E	E	E	B	C	B	B	B	B	B
	Eastbound Through (Mineral Road)	D	D	D	D	D	D	D	D	D	D	C	D	D	E
	Westbound Through (Mineral Road)	C	C	D	C	C	C	C	E	F	E	E	E	E	E
	Westbound Right-Turn (Mineral Road)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
<b>Intersection Total</b>		C	C	C	C	B	B	C	B	C	B	B	B	B	B
SB SH 119 / 63rd Street	Southbound Left-Turn (SH 119)	A	B	C	B	A	B	B	B	B	B	B	C	B	B
	Southbound Through (SH 119)	A	B	A	A	A	B	B	C	C	C	C	C	C	C
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	B	A	A
	Eastbound Through (63rd Street)	E	F	F	E	E	E	E	E	E	E	E	E	E	E
	Eastbound Right-Turn (63rd Street)	A	C	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (63rd Street)	E	F	F	F	F	C	C	F	F	F	F	F	F	F
	Westbound Through (63rd Street)	D	D	E	E	E	C	D	D	D	E	E	E	E	D
<b>Intersection Total</b>		B	D	D	D	C	B	B	D	D	D	D	D	D	D
NB SH 119 / 63rd Street	Northbound Left-Turn (SH 119)	A	D	E	E	D	B	A	A	B	B	B	D	C	A
	Northbound Through (SH 119)	A	C	F	E	D	C	B	A	B	B	B	B	B	A
	Northbound Right-Turn (SH 119)	A	D	D	B	A	A	A	A	A	A	A	A	A	A
	Eastbound Left-Turn (63rd Street)	C	C	C	C	C	D	E	C	C	C	C	C	C	C
	Eastbound Through (63rd Street)	D	B	B	B	B	D	D	D	D	C	C	C	C	C
	Westbound Through (63rd Street)	D	F	F	F	F	F	F	F	F	F	F	F	F	F
	Westbound Right-Turn (63rd Street)	A	D	F	F	F	F	E	A	A	D	F	F	F	F
<b>Intersection Total</b>		C	E	F	F	F	F	E	C	C	E	F	F	F	F
SB SH 119 / Jay Road	Southbound Left-Turn (SH 119)	A	B	B	C	B	A	A	B	A	D	D	C	C	C
	Southbound Through (SH 119)	A	B	C	B	B	B	B	C	C	C	C	C	C	C
	Southbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Through (Jay Road)	E	E	F	F	E	E	E	E	F	F	F	F	F	F
	Eastbound Right-Turn (Jay Road)	A	B	C	C	A	A	A	B	C	F	F	F	F	F
	Westbound Left-Turn (Jay Road)	B	C	E	D	C	C	C	F	E	E	E	E	E	E
	Westbound Through (Jay Road)	C	B	B	C	C	C	C	E	D	D	D	D	D	D
<b>Intersection Total</b>		B	C	C	C	C	B	C	D	D	F	F	F	F	F
NB SH 119 / Jay Road	Northbound Left-Turn (SH 119)	A	C	E	D	C	C	C	B	B	B	D	D	C	A
	Northbound Through (SH 119)	A	C	E	D	C	C	C	B	C	C	E	E	D	B
	Northbound Right-Turn (SH 119)	A	A	A	A	A	A	A	A	A	A	D	D	C	A
	Eastbound Left-Turn (Jay Road)	F	E	D	E	E	E	E	E	E	F	F	F	F	F
	Eastbound Through (Jay Road)	E	E	D	E	E	E	E	B	A	C	C	C	C	C
	Westbound Through (Jay Road)	E	E	F	F	E	E	E	E	E	F	F	F	F	F
	Westbound Right-Turn (Jay Road)	A	D	F	F	C	D	D	D	D	F	F	F	F	E
<b>Intersection Total</b>		C	D	F	E	D	D	D	C	C	D	F	F	F	C
Diagonal Hwy / 47th Street	Northbound Left-Turn (47th Street)	B	C	E	C	C	C	C	C	C	C	C	E	D	B
	Northbound Through (47th Street)	B	B	C	B	B	C	C	B	B	C	C	E	D	B
	Northbound Right-Turn (47th Street)	A	A	B	A	A	B	B	B	B	C	F	D	A	A
	Southbound Left-Turn (47th Street)	A	C	C	C	C	C	C	C	C	C	C	D	D	B
	Southbound Through (47th Street)	B	C	C	B	B	B	B	B	B	B	B	B	B	B
	Southbound Right-Turn (47th Street)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Left-Turn (Diagonal Hwy)	A	A	B	B	B	B	B	B	B	B	B	B	C	A
	Eastbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	E	D	A
	Eastbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Westbound Left-Turn (Diagonal Hwy)	B	B	B	B	B	B	B	A	C	C	C	C	C	B
	Westbound Through (Diagonal Hwy)	A	A	B	A	A	B	B	B	B	B	B	B	B	B
Westbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
<b>Intersection Total</b>		A	B	B	B	A	A	B	B	B	B	B	D	C	A
Diagonal Hwy / SB Foothills Pkwy Ramps	Southbound Left-Turn (Foothills Pkwy)	C	C	C	C	C	C	C	C	C	B	B	B	C	C
	Southbound Through (Foothills Pkwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Southbound Right-Turn (Foothills Pkwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	Eastbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	F	F
	Eastbound Right-Turn (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	E	D	A
	Westbound Left-Turn (Diagonal Hwy)	A	B	C	B	B	B	C	C	C	D	E	D	C	B
	Westbound Through (Diagonal Hwy)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
<b>Intersection Total</b>		A	A	A	A	A	A	A	A	A	A	A	E	E	A

# technical report

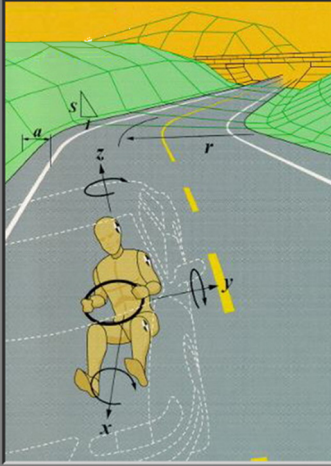
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## Appendix AA

### Safety Assessment Report



CDOT Safety Engineering  
and Analysis Group



Committed to Excellence in  
Transportation Engineering  
and Science

# Safety Assessment Report

SH 119B: MP 44.90 to MP 54.56

SH 157A: MP 3.50 to MP 4.53

SH 52A: MP 0.00 to MP 0.08

Existing Conditions Safety Analysis

February 2021

Prepared for:

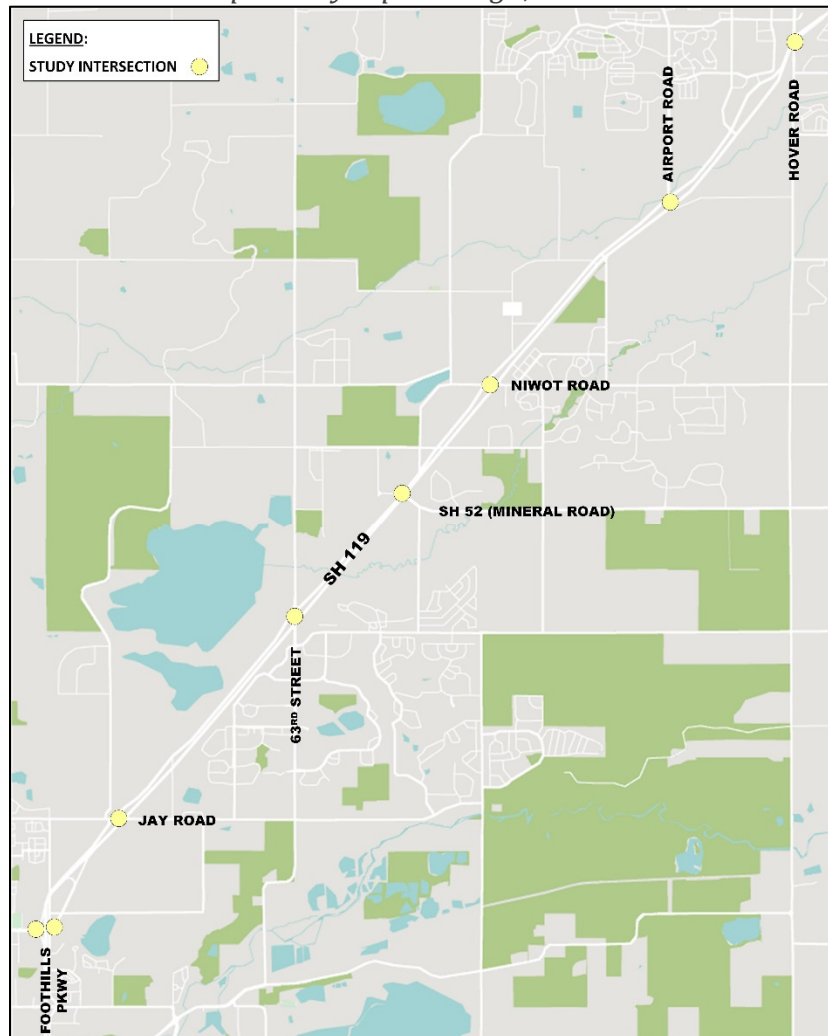
The Colorado Department of Transportation

HQ Safety and Traffic Engineering Branch

2829 W. Howard Place, 4th Floor

Denver, Colorado 80204

Prepared by: Apex Design, PC

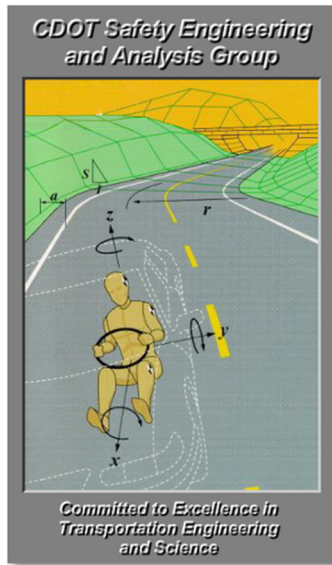


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Any intentional or inadvertent release of this report, or any data derived from its use shall not constitute a waiver of privilege pursuant to 23 U.S.C.A. 409.



## A Statement of Philosophy

The efficient and responsible investment of resources in addressing safety problems is a difficult task. Since crashes occur on all highways in use, it is inappropriate to say of any highway that it is safe. However, it is correct to say that highways can be built to be safer or less safe. Road safety is a matter of degree. When making decisions effecting road safety, it is critical to understand that the expenditure of limited available funds on improvements in places where it prevents few injuries and saves few lives can mean that injuries will occur and lives will be lost by not spending them in places where more accidents could have been prevented.<sup>1</sup> It is CDOT's objective to maximize accident reduction within the limitations of available budgets by making road safety improvements at locations where it does the most good or prevents the most accidents.

## Introduction

The primary intent of this project is to support the State Highway (SH) 119 (Boulder to Longmont) Level-2 Intermediate Grade Traffic and Revenue Study between milepost (MP) 44.90 to MP 54.56 and SH 157 between MP 3.50 to MP 4.53. An opportunity exists for the detection of safety problems and the implementation of selected improvements at locations where it is justified by crash experience.

The scope of this report is as follows:

- Assess the magnitude and nature of the safety problem within the project limits;
- Relate crash causality to roadway geometrics, roadside features, traffic control devices, traffic operations, driver behavior, and vehicle type;
- Suggest cost effective counter measures to address identified problems.

This report is based on the comprehensive analysis of five years of crash history on SH 119 between MP 44.90 to MP 54.56 and SH 157 between MP 3.50 to MP 4.53, and video log review. CDOT maintains an online video log that was used to surveil the study area. The video log was used along with Google Earth to review existing roadway features along the segment to better understand operating conditions along the roadway. The Region is advised to verify through field survey, the information included in this report regarding physical features and roadside characteristics in the study area.

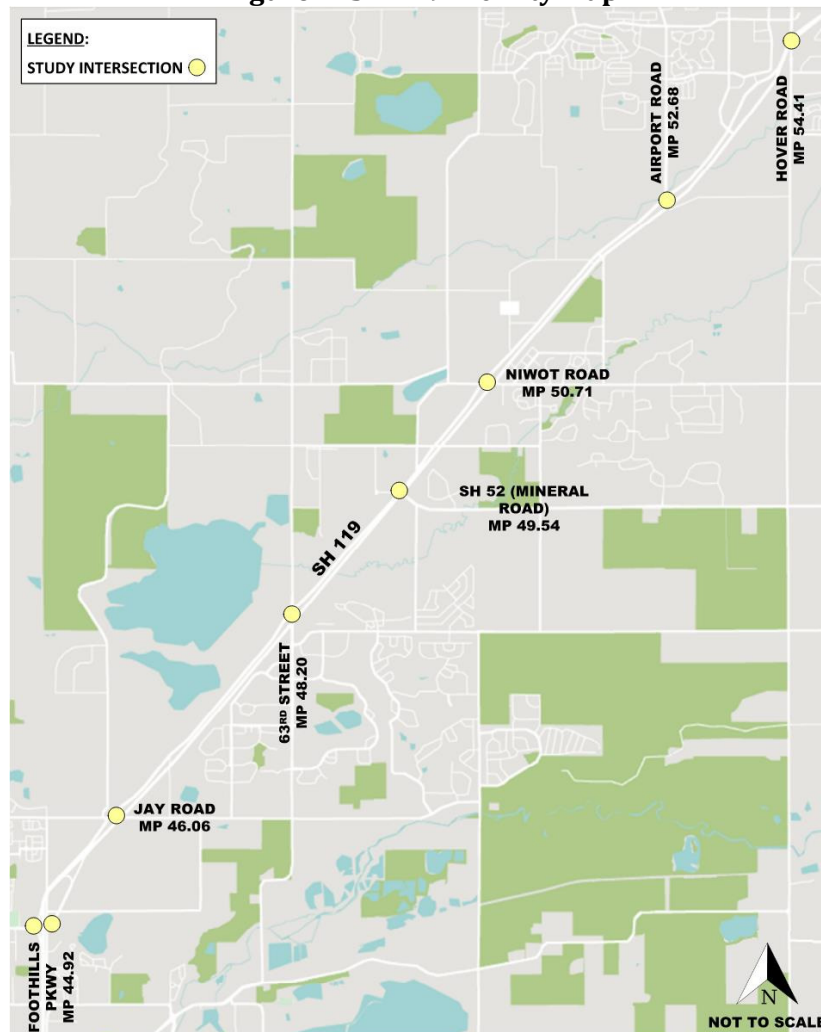
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<sup>1</sup> Hauer, E., (1999) Safety Review of Highway 407: Confronting Two Myths. TRB  
Colorado Department of Transportation  
Safety and Traffic Engineering Branch

## Site Location and Conditions

This safety assessment report addresses SH 119 in the City of Boulder (Foothill Parkway Interchange) beginning at MP 44.90 to MP 54.56 in the City of Longmont (immediately east of Hover Road intersection). The included SH 119 distance is approximately ten miles. This segment of SH 119 is primarily classified as an urban 4-lane divided Principal Arterial – Freeways and Expressways along the diagonal portion of the roadway. The 2018 average daily traffic (ADT) ranges from 28,500 vehicles per day (vpd) west of Hover Road intersection, 42,000 vpd south of the SH 52 / Mineral Road intersection, and 58,000 vpd south of the Jay Road intersection with daily truck traffic ranging from 8.8 to 10.0 percent. The speed limit ranges from 45 to 65 miles per hour (mph). A vicinity map showing the SH 119 study corridor is provided on **Figure 1**.

**Figure 1: SH 119 Vicinity Map**



This assessment also addresses SH 157 (Foothills Pkwy) in the City of Boulder beginning at MP 3.50 to MP 4.53. This segment is located at the southwest end of the project limits and is where SH 119 and SH 157 merge together. The included distance is approximately 1.03 miles. This segment of SH

157 is primarily classified as an urban 4-lane divided Principal Arterial – Freeways and Expressways. The 2018 ADT was 40,700 vpd south of the Foothills Parkway interchange with daily truck traffic of approximately ten percent.

The following roads intersect with SH 119 within the study segment:

- MP 44.92: Foothills Parkway Southbound (SB) Ramp
- MP 45.02: 47<sup>th</sup> Street
- MP 46.06: Jay Road
- MP 48.20: 63<sup>rd</sup> Street
- MP 49.54: SH 52 / Mineral Road
- MP 50.71: Niwot Road
- MP 52.68: Airport Road
- MP 54.41: Hover Road

# Crash History and Problem Analysis

## Crash History

The crash history for the period of January 1, 2015 through December 31, 2019 was examined to locate crash clusters and identify collision causes. Within the study period, 968 crashes were reported along SH 119 between MP 44.90 and MP 54.56 including intersection, non-intersection, and driveway crashes. Of these, there were 353 injury collisions and three fatal collisions; 482 injured and three killed. Along SH 157 between MP 3.50 and MP 4.53 there were 31 reported non-intersection and ramp crashes. Of these, there were eight injury collisions with 14 injured. **Table 1** summarizes the crash totals for this segment of SH 119 and SH 157 over the five-year study period.

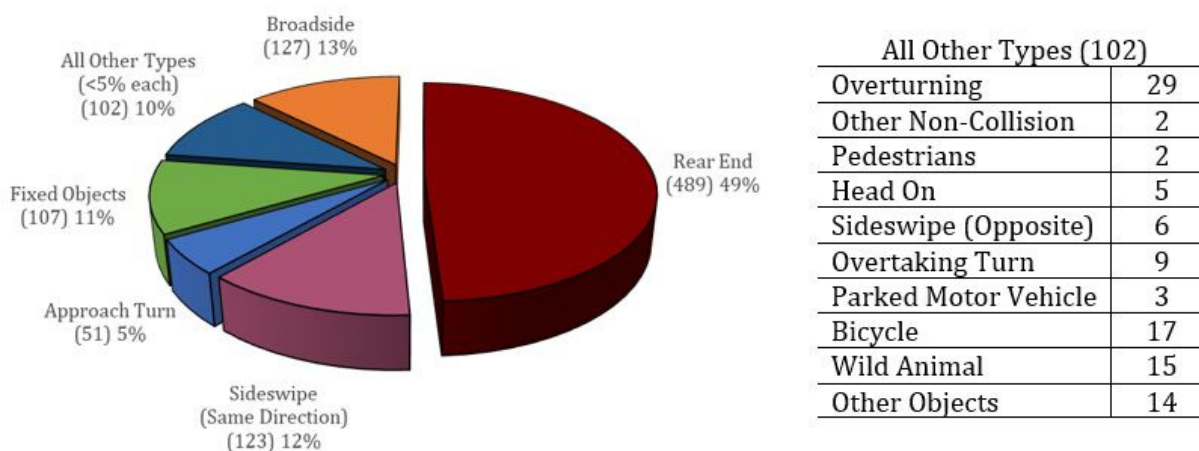
**Table 1: Total Crash History of SH 119 (MP 44.90 to MP 54.56) and SH 157 (MP 3.50 to MP 4.53) by Year**

Year	Crashes				Persons	
	PDO*	Injury	Fatal	Total	Injured	Killed
2015	111	78	0	189	112	0
2016	146	52	0	198	68	0
2017	130	71	1	202	104	1
2018	135	88	2	225	122	2
2019	113	72	0	185	90	0
<b>Total</b>	<b>635</b>	<b>361</b>	<b>3</b>	<b>999</b>	<b>496</b>	<b>3</b>
<b>Average/Year</b>	<b>127</b>	<b>72.2</b>	<b>0.6</b>	<b>199.8</b>	<b>99.2</b>	<b>0.6</b>

\*PDO – Property Damage Only crashes

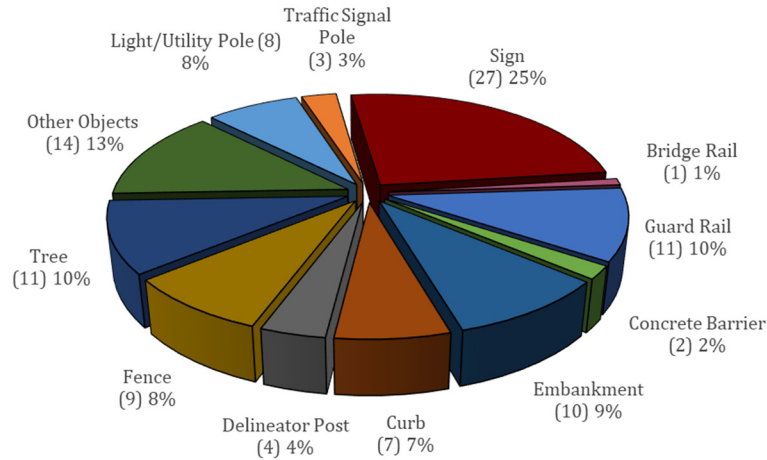
Rear end collisions were the most common crash type observed accounting for 49% of all crashes. Other common crash types along this corridor included broadside, sideswipe (same direction), and fixed object. **Figure 2** below displays the crash distribution by type for the study segment.

**Figure 2: Crash Distribution by Type**



**Figure 3** shows the breakdown of the fixed object accidents. Signs and other fixed objects accounted for the highest amount of fixed object accidents with 25% and 13%, respectively.

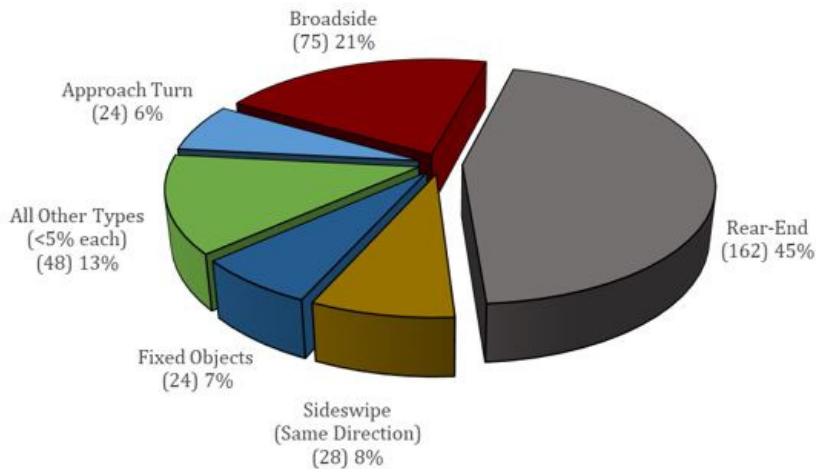
**Figure 3: Fixed Object Crash Distribution by Type**



### Injury Crashes

There were 361 injury crashes during the five-year study period accounting for 36% of the total crashes. **Figure 4** shows the breakdown of injury crashes by type.

**Figure 4: Injury Crash Distribution by Type**



All Other Types (48)	
Bicycle	16
Head On	4
Overtaking Turn	2
Overturning	14
Pedestrian	2
Sideswipe (Opposite)	2
Wild Animal	4
Other Objects	4

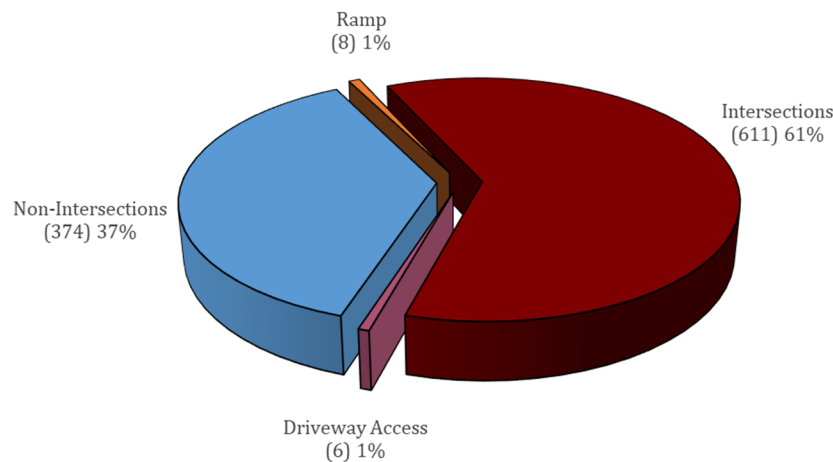
## Fatal Crashes

There were three fatal crashes during the five-year study period: two broadside type and one overturning type and of the three fatal crashes one involved a motorcycle. Of the two broadside fatal crashes, one occurred at the non-signalized intersection of SH 119 / 55<sup>th</sup> Street and one occurred at the signalized intersection of SH 119 / Niwot Road. All three crashes occurred is daylight, dry roadway conditions with no apparent contributing factor.

## Crash Locations

The majority of the crashes along SH 119 and SH 157 occurred at intersections<sup>2</sup> (611 of 999, 61%), followed by crashes at non-intersections (374 of 999, 37%), ramp crashes (8 of 999, 1%), and driveway access crashes (6 of 999, 1%). Crash location is identified in the field during the generation of the crash report by the responding officer. Crash locations are identified as intersection, non-intersection, driveway, or ramp. **Figure 5** shows the breakdown of crashes by location. The magnitude of the safety problems at specific locations were assessed using Safety Performance Functions, and specific patterns were determined using direct diagnostic analysis techniques. The complete listing and detailed crash summary sheets for this summary corridors of SH 119 and SH 157 are provided in the **Appendix**.

**Figure 5: Crash by Location**



## Safety Performance Function

The assessment of the magnitude of safety problems is refined through the use of Safety Performance Functions (SPF). The SPF reflects the complex relationship between traffic exposure measured in Average Daily Traffic (ADT), and crash count measured in crashes per year. The SPF model provides an estimate of the normal or expected crash frequency and severity for a range of ADT among similar facilities. Two kinds of SPF were calibrated. The first addresses the total number of crashes and the

<sup>2</sup> Crashes located at or are related to intersections.



second addresses collisions involving an injury or fatality. This approach assesses the magnitude of the safety problem from the frequency and severity standpoint.

All dataset preparation was performed using the Colorado Department of Transportation (CDOT) crash databases. Crash history for each facility was prepared using the most recent five years of available crash data. The ADT for each roadway and/or intersection approach (major and minor) over the five years were entered into the same dataset. Each dataset is corrected for the regression to the mean bias using the Empirical Bayes (EB) procedure.

Development of the SPF lends itself to the conceptual formulation of the Level of Service of Safety (LOSS). The concept of level of service uses qualitative measures that characterize safety of an intersection in reference to its expected performance. If the level of safety predicted by the SPF will represent a normal or expected number of crashes at a specific level of ADT, selected percentiles within the frequency distribution can be stratified to represent specific levels of safety.

- LOSS I – Below 20<sup>th</sup> Percentile  
*Indicates a low potential for crash reduction.*
- LOSS II – 20<sup>th</sup> Percentile to Mean  
*Indicates a low to moderate potential for crash reduction.*
- LOSS III – Mean to 80<sup>th</sup> Percentile  
*Indicates a moderate to high potential for crash reduction.*
- LOSS IV – Above 80<sup>th</sup> Percentile  
*Indicates a high potential for crash reductions.*

LOSS reflects how the roadway or intersection is performing in regard to its expected crash frequency at a specific level of ADT (major and minor). It only provides a crash frequency and severity comparison with the expected norm. It does not, however, provide any information related to the nature of the safety problem itself. If a safety problem is present, LOSS will only describe its magnitude from the frequency and severity standpoints. The nature of the problem is determined through diagnostic analysis using direct diagnostic and pattern recognition techniques discussed later in this assessment.

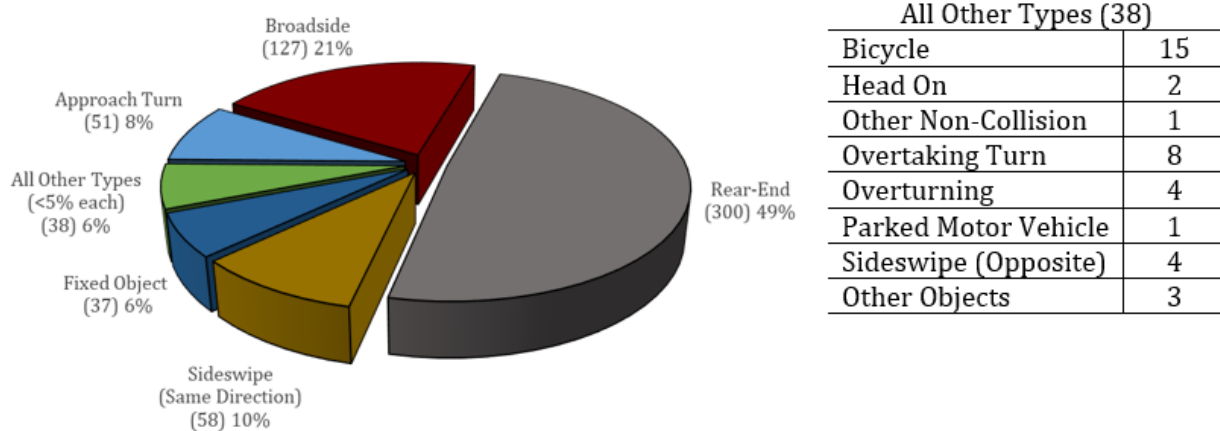
## **Pattern Recognition**

The roadways and intersections within the project limits were tested for the presence of patterns related to crash type, severity, direction of travel, road conditions, spatial distribution of crashes, time of day, and behavioral attributes. Pattern recognition analysis for SH 119 and SH 157 was performed using normative percentages for diagnostics of safety problems for comparable roadways and intersections. These diagnostic norms were developed using the same data points as the SPF analysis.

## Intersection Collision Analysis

Roads intersecting with SH 119 within the study limit were examined and reviewed using the SPF analysis. Crashes that can be attributed to intersections accounted for 61% of all crashes (611 of 999) observed on SH 119 between MP 44.90 and MP 54.56. **Figure 6** shows the breakdown of the intersection crashes by type for the corridor. Rear end collisions were the most common crash type observed accounting for 49% of intersection crashes. Other common intersection crash types include broadside and sideswipe (same direction), accounting for 21%, and 10%, respectively.

**Figure 6: Intersection Crashes**



## Intersection Analysis

**Table 2** provides the crash history and LOSS by location for the signalized intersections that experienced crashes. Airport Road is broken into two intersections, northbound, unsignalized and southbound, signalized to provide the LOSS for this split intersection. The other split intersections along SH 119 were evaluated as one signalized intersection for LOSS purposes.

**Table 2: Signalized Intersection Collisions by Location**

SH	MP	Description	Number of Crashes				LOSS All	LOSS INJ + FAT
			PDO	INJ	FAT	Total		
119B	44.92	Foothills Pkwy SB Ramp	11	5	0	16	II	II
119B	45.02	47 <sup>th</sup> St	12	13	0	25	II	IV
119B	46.06	Jay Rd	47	25	0	72	II	III
119B	48.20	63 <sup>rd</sup> St	65	37	0	102	III	IV
119B	49.54	SH 52	42	27	0	69	III	IV
119B	50.71	Niwot Rd	34	17	1	52	III	IV
119B	52.68	Airport Rd NB	1	6	0	7	I	II
119B	52.68	Airport Rd SB	14	11	0	25	II	II
119B	54.41	Hover Rd	81	40	0	121	III/IV	IV
<b>Total</b>			<b>308</b>	<b>181</b>	<b>1</b>	<b>490</b>		
<b>Average/Year</b>			<b>61.6</b>	<b>36.2</b>	<b>0.2</b>	<b>98.0</b>		

The following sections will further discuss intersections with high crash frequency and/or moderate to high potential for crash reduction.

## MP 44.92 – Foothills Pkwy SB Ramp

SH 119B MP 44.90 to 44.94

**Classification:** 3-Lane Undivided Signalized 4-leg Intersection

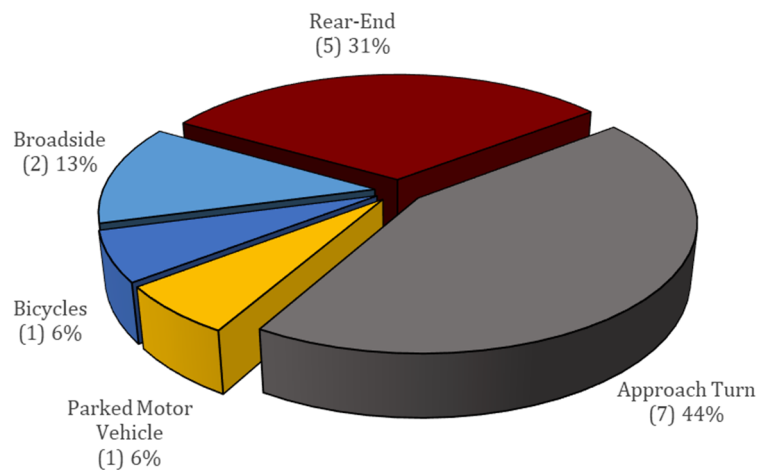
**ADT:** Primary – 24,658 VPD (SH 119B)

**Total Crashes:** 16 (5 injury crashes)

**LOSS:** II (all collisions); II (injury & fatal collisions)

**Significant Crash Pattern:** Approach turn. While not noted as significant, there was a high frequency of rear-end crashes. Additionally, one of the crashes was a bicycle crash resulting in injuries.

**Figure 7: Foothills Pkwy SB Ramp Crashes**



### *Approach Turn Collision Analysis*

**Total Crashes:** 7 (3 injury crashes)

**Causal Factor:** All approach turn crashes (7) were between the westbound left-turning vehicle and the eastbound through vehicle. A majority of the crashes (5) occurred in the PM; however, lighting was not flagged as an issue. Most of these crashes (6) occurred between 2016 and 2017 and were caused by the westbound left being a permissive-only movement as well as median vegetation. A protected-permissive arrow was installed for the westbound left and the vegetation was addressed at the end of 2017. Since then, only (1) approach turn crash has occurred at the intersection.

**Recommendation:** It is recommended that the westbound left movement continue to be monitored to determine if vegetation maintenance in the median is needed or if the movement should be changed to protected-only.

### *Rear-end Collision Analysis*

**Total Crashes:** 5 (1 injury crash)

**Causal Factor:** Rear-end crashes occurred in the eastbound (3) and southbound (2) directions of travel. Weather was noted as a factor for (4) of the crashes.

**Recommendation:** It is recommended to review/update the existing red/yellow clearance intervals which may help reduce the frequency of rear-end type crashes. It is also recommended that the snow removal plan be reviewed to reduce the amount of rear end crashes due to snowy road conditions.

### *Bicycle Collision Analysis*

**Total Crashes:** 1 (1 injury crash)

**Causal Factor:** A bicycle crash occurred on 8/18/2016 when a bike traveling in the northbound direction was hit by a vehicle traveling in the eastbound direction.

**Recommendation:** No bicycle crash pattern was identified and there are no recommendations at this time.

### MP 45.02 – 47<sup>th</sup> Street

SH 119B MP 44.98 to 45.05

**Classification:** 4-Lane Divided Signalized 4-leg Intersection

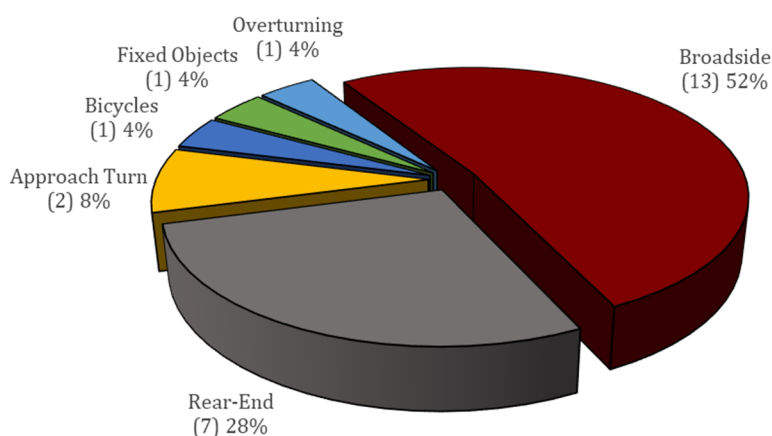
**ADT:** Primary – 13,949 VPD (SH 119B)

**Total Crashes:** 25 (13 injury crashes)

**LOSS:** II (all collisions); IV (injury & fatal collisions)

**Significant Crash Pattern:** Broadside. Additionally, one of the crashes was a bicycle crash resulting in injuries. Although rear-end crashes account for 28% of the crashes at this intersection, this crash type falls below the average when compared to similar intersections and were not flagged as a significant crash pattern.

**Figure 8: 47<sup>th</sup> Street Crashes**



### *Broadside Collision Analysis*

**Total Crashes:** 13 (9 injury crashes)

**Causal Factor:** Seven of the 13 Broadside crashes occurred traveling eastbound straight through the intersection. Of the seven crashes, the eastbound vehicles broadsided southbound (2), northbound (4), and westbound (1) vehicles.

**Recommendation:** It is recommended to review/update the all red and yellow clearance intervals to ensure appropriate signal change period which can improve the dilemma zone for eastbound vehicles.

### *Bicycle Collision Analysis*

**Total Crashes:** 1 (1 injury crash)

**Causal Factor:** A bicycle crash occurred on 6/3/2019 when a bike riding in the southbound direction was hit by a vehicle traveling in the northbound direction. The road condition was wet and the vehicle was charged with careless driving.

**Recommendation:** No bicycle crash pattern was identified and there are no recommendations at this time.

### MP 46.06 – Jay Road

SH 119B MP 45.95 to 46.17

**Classification:** 6-Lane Divided Signalized 4-leg Intersection

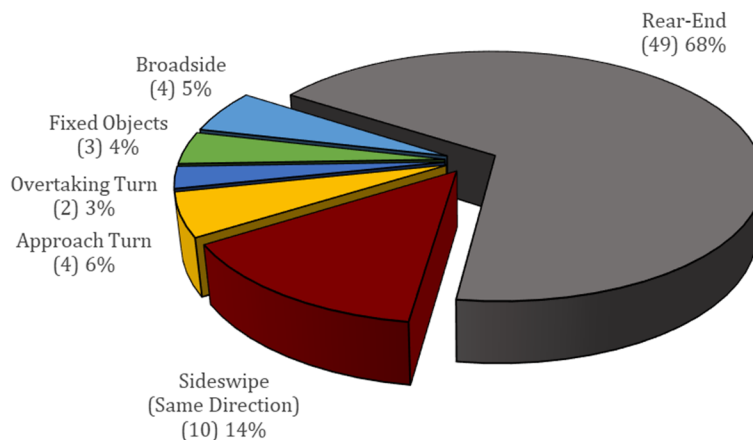
**ADT:** Primary – 56,309 VPD (SH 119B)

**Total Crashes:** 72 (25 injury crashes)

**LOSS:** II (all collisions); III (injury & fatal collisions)

**Significant Crash Pattern:** Rear-end and sideswipe (same direction).

**Figure 9: Jay Road Crashes**



### *Rear-end Collision Analysis*

**Total Crashes:** 49 (15 injury crashes)

**Causal Factor:** Rear-end crashes occurred in the eastbound Jay Road (5), westbound Jay Road (7), northbound SH 119 (26), and southbound SH 119 (11) directions. Of the (26) northbound rear-end crashes (20) were in the PM.

**Recommendation:** Currently, ADVANCED TRAFFIC CONTROL (W3-3) is provided in the northbound direction before the Jay Road intersection close to the start of the northbound turn lanes. It is recommended to relocate the W3-3 signs further south to provide more advance warning to the upcoming signalized intersection. It is also recommended to consider instead to utilize the BE PREPARED TO STOP (W3-4) and WHEN FLASHING (W16-13P) signs with flashing beacons due to 20 of the 26 northbound rear-end crashes occurred during the PM commuter period when traffic is heavier and lighting can be limited. It is recommended to consider adding flashing beacons to the W3-3 signs in the southbound direction at their current location. It is recommended to review/update the existing red/yellow clearance intervals to help reduce the frequency of rear-end type crashes.

### *Sideswipe (Same Direction) Collision Analysis*

**Total Crashes:** 10 (2 injury crashes)

**Causal Factor:** Sideswipe (same direction) crashes occurred in the eastbound (1), westbound (3), northbound (2), and southbound (4) directions.

**Recommendation:** No sideswipe crash pattern was identified and there are no recommendations at this time.

### MP 48.20 – 63<sup>rd</sup> Street

SH 119B MP 48.00 to 48.39

**Classification:** 6-Lane Divided Signalized 4-leg Intersection

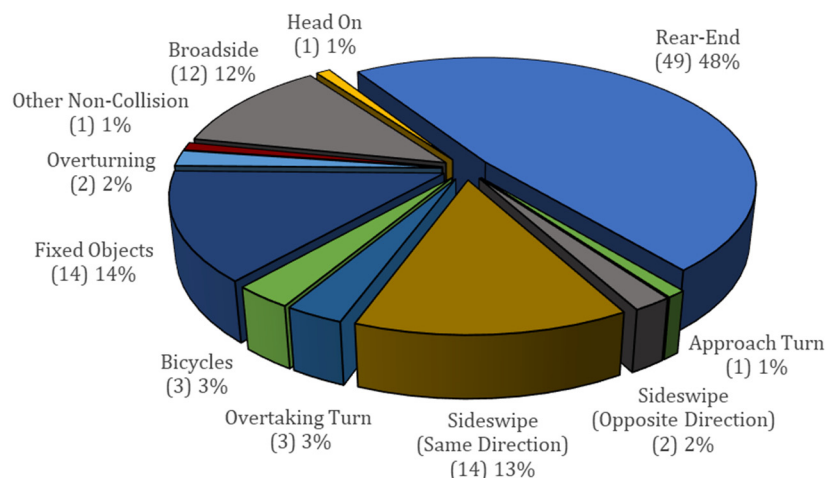
**ADT:** Primary – 48,050 VPD (SH 119B)

**Total Crashes:** 102 (37 injury crashes)

**LOSS:** III (all collisions); IV (injury & fatal collisions)

**Significant Crash Pattern:** Fixed objects. While not noted as significant, there were a high frequency of rear-end crashes (48%), and sideswipe (same direction) crashes (13%) which were also reviewed for any patterns. Additionally, there were several bicycle crashes that resulted in injuries.

**Figure 10: 63<sup>rd</sup> Street Crashes**



*Fixed Object Collision Analysis*

**Total Crashes:** 14 (1 injury crashes)

**Causal Factor:** Fixed object crashes included (1) curb/raised median, (2) signs, (2) delineator posts, and (9) other fixed objects. The crashes occurred in the eastbound (1), northbound (11), and southbound (2) directions. The majority of the fixed object crashes were northbound SH 119 (9) vehicles making right turns (8) onto 63<sup>rd</sup> Street and colliding with the railroad crossing arm (8). Most of these crashes were due to snowy (5) or icy (1) road conditions.

**Recommendation:** There does not appear to be any issues with the railroad crossing arm but it is recommended that the snow/ice removal plan be reviewed to reduce the amount of fixed object crashes due to snowy/icy road conditions.

*Rear-end Collision Analysis*

**Total Crashes:** 49 (24 injury crashes)

**Causal Factor:** Rear-end crashes occurred in the westbound 63<sup>rd</sup> Avenue (1), northbound SH 119 (29), and southbound SH 119(19) directions. The majority of these crashes occurred in the PM peak period (24).

**Recommendation:** The northbound sign indicating the upcoming 63<sup>rd</sup> Street intersection is very faded and should be replaced. It is recommended that BE PREPARED TO STOP (W3-4) and WHEN FLASHING (W16-13P) signs with flashing beacons be added for both the northbound and southbound directions of travel. It is recommended to review/update the existing red/yellow clearance intervals to help reduce the frequency of rear-end type crashes.

### *Sideswipe (Same Direction) Collision Analysis*

**Total Crashes:** 14 (2 injury crashes)

**Causal Factor:** Sideswipe (same direction) occurred in the westbound 63<sup>rd</sup> Avenue (2), northbound SH 119 (7), and southbound SH 119 (5) directions. A majority of these crashes (8) occurred when a northbound or southbound vehicle making a left turn collided with another turning vehicle. There is an existing lane configuration sign and striping for westbound 63<sup>rd</sup> Avenue vehicles making a left onto SH 119.

**Recommendation:** No sideswipe (same direction) crash pattern was identified and there are no recommendations at this time.

### *Bicycle Collision Analysis*

**Total Crashes:** 3 (3 injury crashes)

**Causal Factor:** The first bicycle crash occurred when a vehicle was in the merge lane from 63<sup>rd</sup> Street trying to merge onto southbound SH 119 and rear-ended a bicycle traveling southbound on SH 119 in the bicycle lane. The other two bicycle crashes occurred when vehicles traveling southbound on 63<sup>rd</sup> Street tried to make right turns onto southbound SH 119 in the designated through lane after being stopped at a red light. Each of these vehicles collided with a southbound bicycle traveling straight through the intersection in the bicycle lane. There is an existing BEGIN RIGHT TURN LANE YIELD TO BIKES (R4-4) sign and a dedicated bicycle lane for southbound 63<sup>rd</sup> Street.

**Recommendation:** No bicycle crash pattern was identified and there are no recommendations at this time.

### MP 49.54 – SH 52 / Mineral Road

SH 119B MP 49.43 to 49.65

SH 52A MP 0.0 to 0.08

**Classification:** 4-Lane Divided Signalized 4-leg Intersection

**ADT:** Primary – 41,071 (SH 119B)

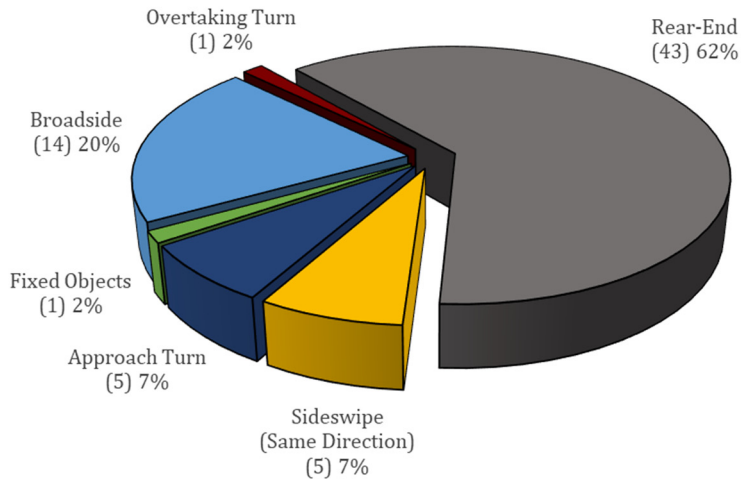
**Total Crashes:** 69 (27 injury crashes)

**LOSS:** III (all collisions); IV (injury & fatal collisions)

**Significant Crash Pattern:** Broadside. While not noted as significant, there were a high frequency of rear-end crashes (43).



**Figure 11: SH 52 Crashes**



*Broadside Collision Analysis*

**Total Crashes:** 14 (10 injury crashes)

**Causal Factor:** Broadside crashes occurred in the westbound SH 52 (1), northbound SH 119 (10), and southbound SH 119(3) directions. A majority of the crashes (9) occurred when a northbound through vehicle ran a red light and hit a westbound vehicle. There was a total of (6) of the northbound crashes that occurred in the PM.

**Recommendation:** A pattern of northbound vehicles entering the intersection in the all red clearance interval is a broadside crash pattern. Two recommendations would be to review/update the existing red/yellow clearance intervals and consider installation of BE PREPARED TO STOP (W3-4) and WHEN FLASHING (W16-13P) signs with flashing beacons at the location of the current ADVANCED TRAFFIC CONTROL (W3-3) signs.

*Rear-end Collision Analysis*

**Total Crashes:** 43 (13 injury crashes)

**Causal Factor:** Rear end crashes occurred in the westbound (5), northbound (29), and southbound (9) directions.

**Recommendation:** It is recommended to follow the two recommendations for broadside crashes and those mitigation measure can also provide reduction in the frequency of rear-end crashes.

## MP 50.71 – Niwot Road

SH 119B MP 50.61 to 50.81

**Classification:** 4-Lane Divided Signalized 4-leg Intersection

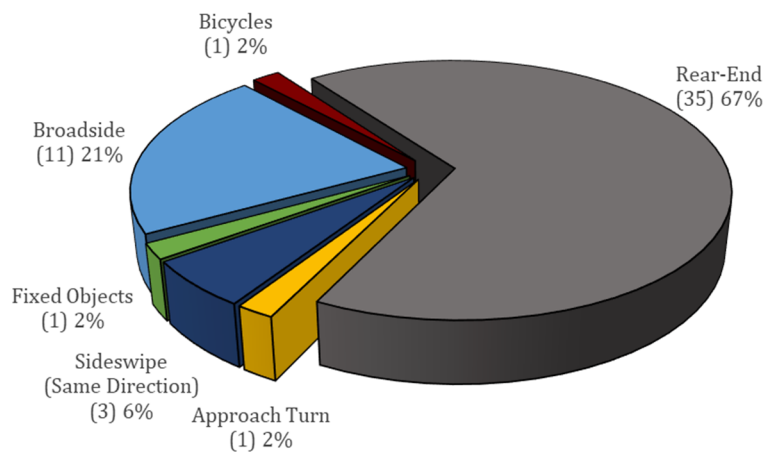
**ADT:** Primary – 37,600 VPD (SH 119B)

**Total Crashes:** 52 (17 injury crashes) (1 fatal crash)

**LOSS:** III (all collisions); IV (injury & fatal collisions)

**Significant Crash Pattern:** Broadsides and rear-ends. Additionally, there was a bicycle crash that resulted in injuries.

**Figure 12: Niwot Road Crashes**



### *Broadside Collision Analysis*

**Total Crashes:** 11 (5 injury crashes) (1 fatal crash)

**Causal Factor:** Broadside crashes occurred in the eastbound Niwot Road (5), westbound Niwot Road (3), northbound SH 119 (1), and southbound SH 119 (2) directions. A majority of the crashes (8) occurred when eastbound and westbound vehicles ran red lights and hit vehicles traveling along SH 119.

**Recommendation:** The frequency of westbound and eastbound vehicles entering the intersection in the all red clearance interval indicates a recommendation to review/update the existing red/yellow clearance intervals to help reduce the frequency of broadside type crashes.

### *Rear-end Collision Analysis*

**Total Crashes:** 35 (10 injury crashes)

**Causal Factor:** Rear end crashes occurred in the westbound (2), northbound SH 119 (18), and southbound SH 119 (15) directions. The majority of the northbound crashes (13) happened in the PM while a majority of the southbound crashes (15) happened in the AM which indicates a commuter congestion pattern.

**Recommendation:** It is recommended to consider installation of BE PREPARED TO STOP (W3-4) and WHEN FLASHING (W16-13P) signs with flashing beacons at the location of the current ADVANCED TRAFFIC CONTROL (W3-3) signs.

### *Bicycle Collision Analysis*

**Total Crashes:** 1 (1 injury crashes)

**Causal Factor:** The crash occurred when a vehicle was traveling eastbound on Niwot Rd and completed a right turn onto southbound SH 119; hitting the bicyclist that was traveling eastbound on the shoulder of Niwot Rd.

**Recommendation:** No bicycle crash pattern was identified and there are no recommendations at this time.

### *Fatal Collision Analysis*

**Total Crashes:** 1 (1 injury crashes)

**Causal Factor:** The crash occurred when a vehicle was traveling eastbound on Niwot Rd and broadsided a vehicle traveling southbound on SH 119. The eastbound driver was killed in the crash.

**Recommendation:** This fatal crash is part of the Broadsided crash pattern that was identified and it is recommended to proceed with the previous recommendation to evaluate the existing red/yellow clearance intervals to help reduce the frequency of broadside type crashes.

### MP 52.68 – Airport Road NB

SH 119B MP 52.58 to 52.78

**Classification:** 4-Lane Undivided Signalized 4-leg Intersection

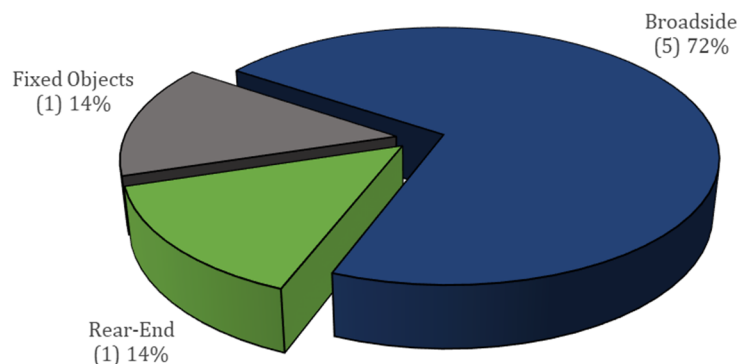
**ADT:** Primary – 33,930 VPD (SH 119B)

**Total Crashes:** 7 (6 injury crashes)

**LOSS:** I (all collisions); II (injury & fatal collisions)

**Significant Crash Pattern:** Broadsided.

**Figure 13: Airport Road NB Crashes**



### *Broadside Collision Analysis*

**Total Crashes:** 5 (4 injury crashes)

**Causal Factor:** Broadside crashes occurred in the eastbound Airport Road (5) direction. Most of the crashes (4) were with eastbound vehicles failing to stop and hitting northbound vehicles going straight.

**Recommendation:** It is recommended to review sight distance at this intersection for eastbound traveling vehicles and to review the need for a traffic signal at this location based on the MUTCD Warrant 7: Crash Experience.

### MP 52.68 – Airport Road SB

SH 119B MP 52.58 to 52.78

**Classification:** 4-Lane Undivided Signalized 4-leg Intersection

**ADT:** Primary – 33,930 (SH 119B)

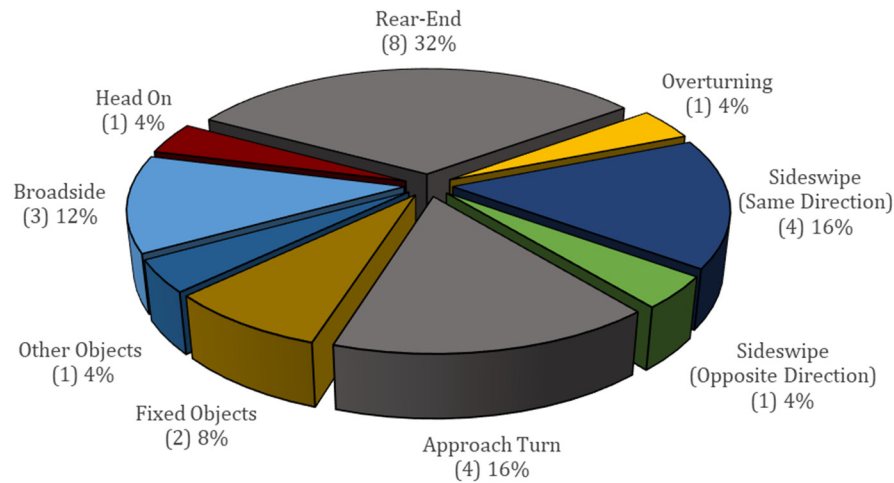
**Total Crashes:** 25 (11 injury crashes)

**LOSS:** II (all collisions); II (injury & fatal collisions)

**Significant Crash Pattern:** None detected.

**Recommendation:** No crash pattern was identified and there are no recommendations at this time.

**Figure 14: Airport Road SB Crashes**



### MP 54.41 – Hover Road

SH 119B MP 54.26 to 54.56

**Classification:** 4-Lane Divided Signalized 4-leg Intersection

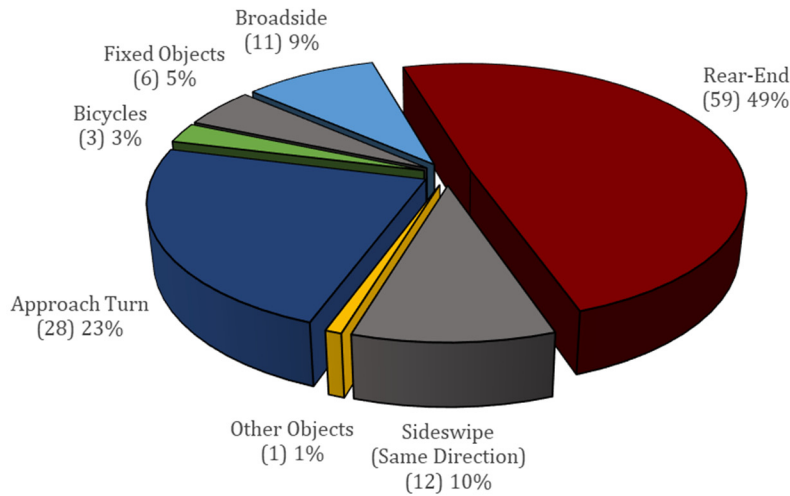
**ADT:** Primary – 26,345 VPD (SH 119B)

**Total Crashes:** 121 (40 injury crashes)

**LOSS:** III/IV (all collisions); IV (injury & fatal collisions)

**Significant Crash Pattern:** Approach turns. While not noted as significant, there were a high frequency of rear-end crashes and there were several bicycle crashes that resulted in injuries.

**Figure 15: Hover Road Crashes**



*Approach Turn Collision Analysis*

**Total Crashes:** 28 (16 injury crashes)

**Causal Factor:** Approach turn crashes occurred in the westbound, (1), northbound SH 119 (14), and southbound SH 119 (13) directions.

**Recommendation:** Consider changing the northbound and southbound lefts to protected only phasing and continue monitoring the intersection for the approach turn crash pattern.

*Rear-end Collision Analysis*

**Total Crashes:** 59 (16 injury crash)

**Causal Factor:** Rear-end crashes occurred in the eastbound (12), westbound (14), northbound SH 119 (12), and southbound SH 119 (21) directions.

**Recommendation:** It is recommended to review/update the existing red/yellow clearance intervals to help reduce the frequency of rear-end type crashes.

*Bicycle Collision Analysis*

**Total Crashes:** 3 (2 injury crashes)

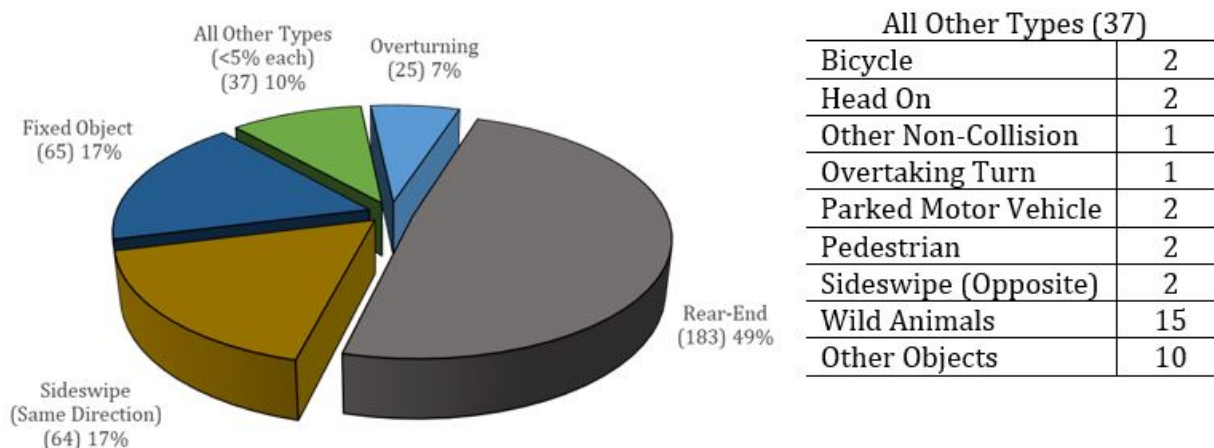
**Causal Factor:** The first crash occurred when a northbound vehicle received a green light to make a right turn and struck a bicycle that was in the crosswalk against crosswalk signage. The second crash occurred when a southbound vehicle making a right turn struck a bicycle traveling southbound. The last crash occurred with a northbound vehicle making a right turn on a red arrow and collided with an eastbound bicycle that was crossing the intersection.

**Recommendation:** No bicycle crash pattern was identified and there are no recommendations at this time.

## Non-Intersection Analysis

Non-intersection crashes account for 37% of all crashes (374 of 999) observed on SH 119 and SH 157. Rear end crashes was the most common crash type accounting for 49% of all non-intersection collisions. Fixed objects and sideswipe same collisions were also notable accounting for 17% and 17% percent of all non-intersection crashes. **Figure 16** shows the breakdown of the non-intersection crashes by type for the corridor.

**Figure 16: Non-Intersection Crashes**



## Non-Intersection Analysis Segments

**Table 3** lists the milepost range and crash frequency for each of the mainline SH 119 and SH 157 segments, split at the interchange locations as dictated by SPF analysis methodology. Crash diagnostics and pattern recognition techniques were applied in these sections to identify correctable crash patterns.

**Table 3: Non-Intersection Collisions by Location**

SH	MP Range	Description	Number of Crashes				LOSS All	LOSS INJ + FAT
			PDO	INJ	FAT	Total		
157A	3.50 – 4.53	Foothills Pkwy Interchange	17	7	0	24	I	I
119B	45.05 – 45.33	Foothills Pkwy Interchange	7	3	0	10	III	III
119B	45.33 – 45.77	Foothills Pkwy Interchange to Jay Rd	7	5	0	12	III	III
119B	45.77 – 48.20	Jay Rd to 63 <sup>rd</sup> St	59	36	1	96	III	IV
119B	48.21 – 49.54	63 <sup>rd</sup> St to SH 52	56	26	0	82	III	III
119B	49.55 – 50.71	SH 52 to Niwot Rd	32	16	0	48	III	III
119B	50.72 – 52.68	Niwot Rd to Airport Rd	37	16	0	53	III	III
119B	52.69 – 54.41	Airport Rd to Hover Rd	34	15	0	49	III	III
<b>Total</b>			<b>249</b>	<b>124</b>	<b>1</b>	<b>374</b>		
<b>Average/Year</b>			<b>49.8</b>	<b>24.8</b>	<b>0.2</b>	<b>47.8</b>		

The following sections will further discuss non-intersection segments with high crash frequency and/or moderate to high potential for crash reduction.

### SH 157A MP 3.50 – 4.53

**Classification:** Urban 4-Lane Divided Freeways

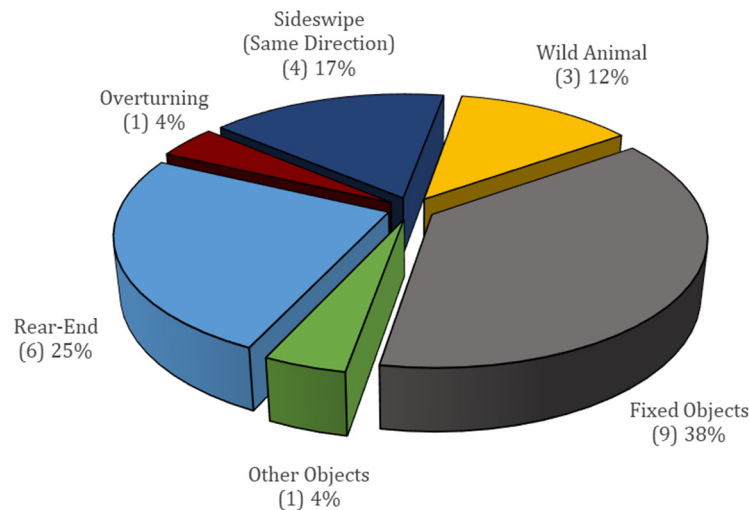
**ADT:** Primary – 44,740 VPD (SH 157A)

**Total Crashes:** 24 (7 injury crashes)

**LOSS:** I (all collisions); I (injury & fatal collisions)

**Significant Crash Pattern:** Guard Rail.

**Figure 17: SH 157A MP 3.50-4.53 Segment Non-Intersection Crashes**



### *Guard Rail Collision Analysis*

**Total Crashes:** 8 (1 injury crashes)

**Causal Factor:** Guard rail crashes occurred in the northbound (6), and southbound (2) directions. Four of the guard rail crashes occurred in rain or snowy weather conditions.

**Recommendation:** No guard rail crash pattern was identified and there are no recommendations at this time.

### SH 119B MP 45.05 – 45.33

**Classification:** Rural 3-Lane Undivided Highway

**ADT:** Primary – 12,259 VPD (SH 119B)

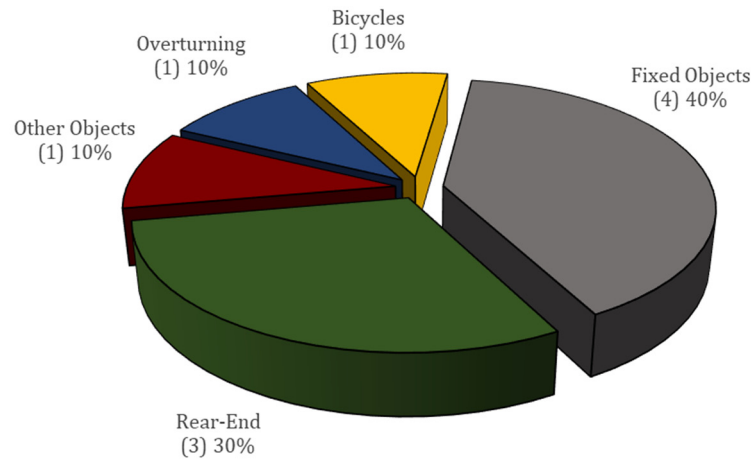
**Total Crashes:** 10 (3 injury crashes)

**LOSS:** III (all collisions); III (injury & fatal collisions)

**Significant Crash Pattern:** None.

**Recommendation:** No crash pattern was identified. However, there was a bicycle crash that resulted in an injury.

**Figure 18: SH 119B MP 45.05 – 45.33 Segment Non-Intersection Crashes**



*Bicycle Collision Analysis*

**Total Crashes:** 1 (1 injury crashes)

**Causal Factor:** The crash occurred when a bicycle traveling northbound on SH 119 changed lanes unsafely and hit a northbound vehicle.

**Recommendation:** No bicycle crash pattern was identified and there are no recommendations at this time.

SH 119B MP 45.33 – 45.77

**Classification:** Urban 2-3 Lane Undivided Signalized 4-leg Intersection

**ADT:** Primary – 11,400 VPD (SH 119B)

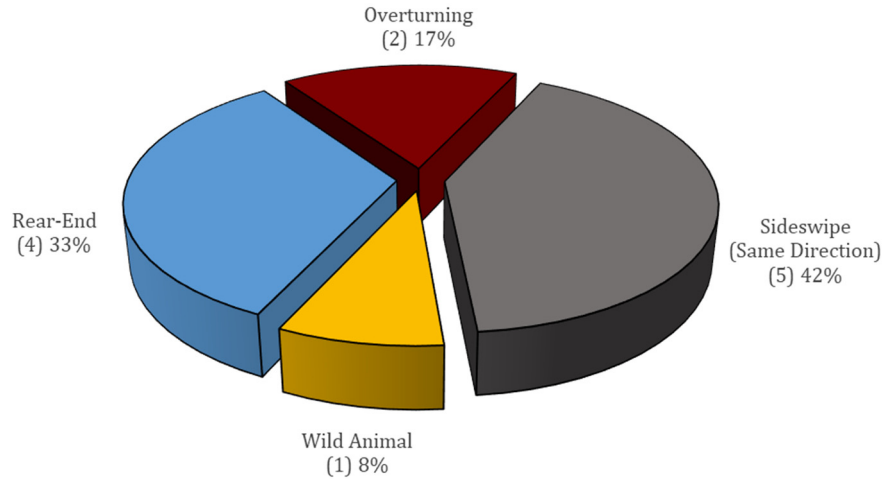
**Total Crashes:** 12 (5 injury crashes)

**LOSS:** III (all collisions); III (injury & fatal collisions)

**Significant Crash Pattern:** Sideswipe (same direction).



**Figure 19: SH 119B MP 45.33 – 45.77 Segment Non-Intersection Crashes**



*Sideswipe (Same Direction) Collision Analysis*

**Total Crashes:** 5 (2 injury crashes)

**Causal Factor:** Sideswipe (same direction) occurred in the northbound (3) and southbound (2) directions.

**Recommendation:** No sideswipe (same direction) crash pattern was identified and there are no recommendations at this time.

[SH 119B MP 45.77 – 48.20](#)

**Classification:** 6-Lane Divided Signalized 4-leg Intersection

**ADT:** Primary – 53,167 VPD (SH 119B)

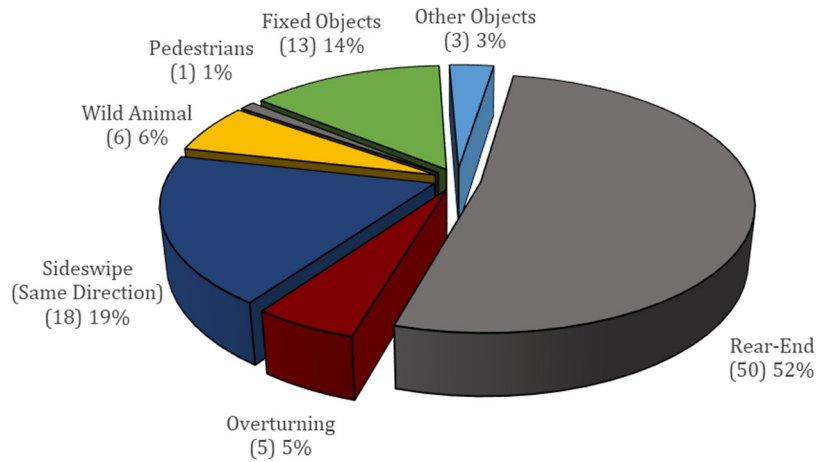
**Total Crashes:** 96 (36 injury crashes) (1 fatal crash)

**LOSS:** III (all collisions); IV (injury & fatal collisions)

**Significant Crash Pattern:** Overturning, sideswipe (same direction), wild animal, and fixed objects.

Additionally, there was a pedestrian crash that resulted in an injury. Although rear-end crashes account for 42% of the crashes at this intersection, this crash type falls below the average when compared to similar intersections and were not flagged as a significant crash pattern.

**Figure 20: SH 119B MP 45.77 – 48.20 Segment Non-Intersection Crashes**



*Overturning Collision Analysis*

**Total Crashes:** 5 (2 injury crashes) (1 fatal crash)

**Causal Factor:** Overturning crashes occurred in the northbound (3) and southbound (2) directions. Two (2) of the overturning crashes involved motorcycles resulting in an injury and a fatality.

**Recommendation:** No overturning crash pattern was identified and there are no recommendations at this time.

*Sideswipe (Same Direction) Collision Analysis*

**Total Crashes:** 18 (3 injury crashes)

**Causal Factor:** Sideswipe (same direction) occurred in the northbound (9) and southbound (9) directions. The majority of the northbound crashes (7) occurred near the Jay Road and 63<sup>rd</sup> Street intersections in the PM. While the majority of the southbound crashes (6) occurred near these intersections in the AM.

**Recommendation:** There are no recommendations at this time. However, these crashes seem to be due to congestion at the Jay Road and 63<sup>rd</sup> Street intersections and could be reduced if the intersections congestion issues are addressed.

*Wild Animal Collision Analysis*

**Total Crashes:** 6 (3 injury crashes)

**Causal Factor:** Wild animal crashes occurred in the northbound (4) and southbound (2) directions at different locations within this segment of SH 119. A majority of these crashes (5) occurred in dark-unlighted conditions. The wild animal crashes consisted of deer (3), elk (2), and cattle (1).

**Recommendation:** No wild animal crash pattern was identified and there are no recommendations at this time.

### *Fixed Objects Collision Analysis*

**Total Crashes:** 13 (5 injury crashes)

**Causal Factor:** Fixed object crashes consisted of signs (5), embankment cut/fill slope (3), tree/shrubbery (2), fence (2), and other fixed object (1). The fixed object crashes occurred in the eastbound (1), northbound (8) and southbound (4) directions. Three of the eight northbound crashes occurred in snowy roadway conditions and half occurred during daylight lighting conditions. There was no pattern of the same object being hit for the northbound crashes.

**Recommendation:** No fixed object crash pattern was identified and there are no recommendations at this time.

### *Pedestrian Collision Analysis*

**Total Crashes:** 1 (1 injury crash)

**Causal Factor:** The crash occurred when a pedestrian was walking eastbound across SH 119 and was hit by a vehicle traveling southbound along SH 119.

**Recommendation:** No crash pattern was identified and there are no recommendations at this time.

### *Fatal Collision Analysis*

**Total Crashes:** 1 (1 injury crashes)

**Causal Factor:** The fatal crash occurred when a motorcycle was traveling northbound on SH 119 and lost control while changing lanes causing the motorcycle to overturn. The motorcycle driver was killed in the crash.

**Recommendation:** No crash pattern was identified and there are no recommendations at this time.

### SH 119B MP 48.21 – 49.54

**Classification:** Urban 4-Lane Divided Signalized 4-leg Intersection

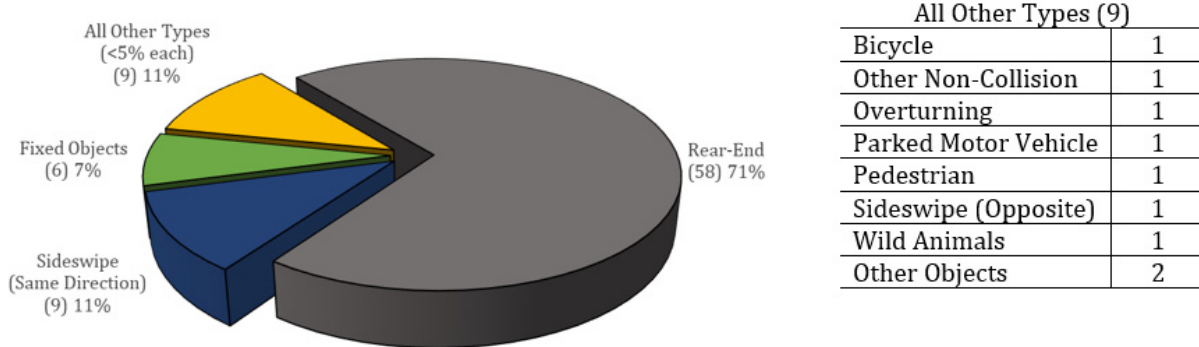
**ADT:** Primary – 44,000 VPD (SH 119B)

**Total Crashes:** 82 (26 injury crashes)

**LOSS:** III (all collisions); III (injury & fatal collisions)

**Significant Crash Pattern:** Rear-end and fixed objects. Additionally, there were bicycle and pedestrian crashes that resulted in injuries.

**Figure 21: SH 119B MP 48.21 – 49.54 Segment Non-Intersection Crashes**



*Rear-end Collision Analysis*

**Total Crashes:** 58 (20 injury crashes)

**Causal Factor:** Rear end crashes occurred in the northbound (47) and southbound (11) directions. The majority of the northbound crashes (45) happened in the PM and were caused by congestion at the SH 52 intersection.

**Recommendation:** There are no recommendations at this time. However, these crashes seem to be due to congestion at the SH 52 intersection and could be reduced if the intersection congestion issues are addressed.

*Fixed Object Collision Analysis*

**Total Crashes:** 6 (1 injury crashes)

**Causal Factor:** Fixed object crashes included signs (2), guard rail (2), bridge rail (1), and light/utility pole (1). The crashes occurred in the northbound (3) and southbound (3) directions.

**Recommendation:** No fixed object crash pattern was identified and there are no recommendations at this time.

*Bicycle Collision Analysis*

**Total Crashes:** 1 (1 injury crashes)

**Causal Factor:** The crash occurred when a bicycle traveling northbound on SH 119 changed lanes and was struck by a vehicle traveling northbound.

**Recommendation:** No bicycle crash pattern was identified and there are no recommendations at this time.

*Pedestrian Collision Analysis*

**Total Crashes:** 1 (1 injury crashes)

**Causal Factor:** The pedestrian crash occurred when a pedestrian under the influence of alcohol/drugs ran from the median in front of a vehicle traveling northbound on SH 119. The pedestrian was injured in the crash.

**Recommendation:** No pedestrian crash pattern was identified and there are no recommendations at this time.

SH 119B MP 49.55 – 50.71

**Classification:** Urban 4-Lane Divided Signalized 4-leg Intersection

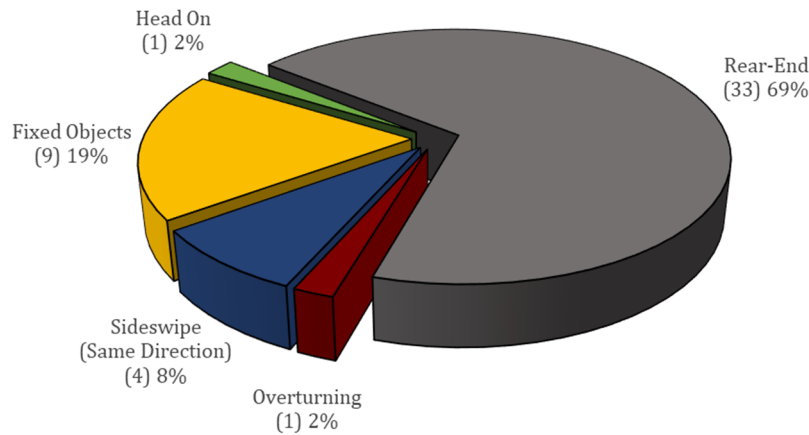
**ADT:** Primary – 37,600 VPD (SH 119B)

**Total Crashes:** 48 (16 injury crashes)

**LOSS:** III (all collisions); III (injury & fatal collisions)

**Significant Crash Pattern:** Rear-end and fixed objects.

**Figure 22: SH 119B MP 49.55 – 50.71 Segment Non-Intersection Crashes**



*Rear-end Collision Analysis*

**Total Crashes:** 33 (12 injury crashes)

**Causal Factor:** Rear end crashes occurred in the northbound (12) and southbound (21) directions. The majority of the northbound crashes (11) happened in the PM while a majority of the southbound crashes (19) happened in the AM and were caused by congestion at the SH 52 and Niwot Road intersections.

**Recommendation:** There are no recommendations at this time. However, these crashes seem to be due to congestion at the SH 52 and Niwot Road intersections and could be reduced if the intersections congestion issues are addressed.

*Fixed Object Collision Analysis*

**Total Crashes:** 9 (3 injury crashes)

**Causal Factor:** Fixed object crashes consisted of signs (2), embankment cut/fill slope (2), tree/shrubbery (2), fence (1), traffic signal pole (1), and other fixed object (1). A majority of the crashes occurred due to drivers being asleep at the wheel (3) or driver fatigue (1).

**Recommendation:** No fixed object crash pattern was identified and there are no recommendations at this time.

SH 119B MP 50.72 – 52.68

**Classification:** Urban 4-Lane Divided Signalized 4-leg Intersection

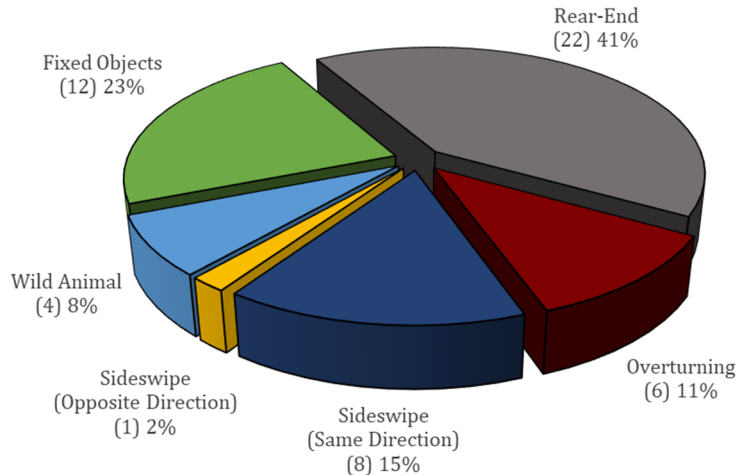
**ADT:** Primary – 37,600 VPD (SH 119B)

**Total Crashes:** 53 (16 injury crashes)

**LOSS:** III (all collisions); III (injury & fatal collisions)

**Significant Crash Pattern:** Overturning and fixed objects

**Figure 23: SH 119B MP 50.72 – 52.68 Segment Non-Intersection Crashes**



*Overturning Collision Analysis*

**Total Crashes:** 6 (2 injury crashes)

**Causal Factor:** Overturning crashes occurred in the northbound (4) and southbound (2) directions. Dark-unlighted conditions were documented for three (3) of the crashes. Alcohol also contributed to two (2) of the crashes.

**Recommendation:** No overturning crash pattern was identified and there are no recommendations at this time.

*Fixed Object Collision Analysis*

**Total Crashes:** 12 (4 injury crashes)

**Causal Factor:** Fixed object crashes consisted of signs (5), embankment cut/fill slope (4), tree/shrubbery (1), fence (1), and concrete barrier (1). The crashes occurred in the northbound (7) and southbound (5) directions. The majority of the fixed object crashes were during dark-unlighted (5) or dawn/dusk (2) conditions. There was no pattern of the same object being hit for the northbound crashes.

**Recommendation:** No fixed object crash pattern was identified and there are no recommendations at this time.

[SH 119B MP 52.69 – 54.41](#)

**Classification:** Urban 4-Lane Divided Signalized 4-leg Intersection

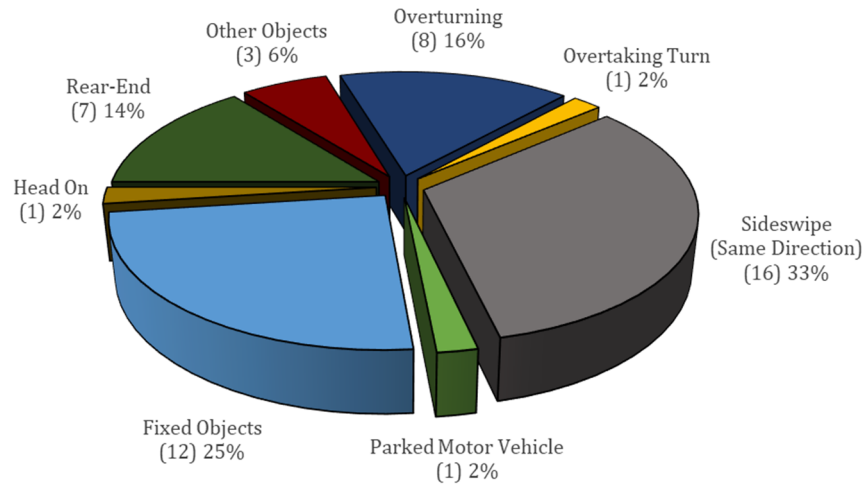
**ADT:** Primary – 29,600 VPD (SH 119B)

**Total Crashes:** 49 (15 injury crashes)

**LOSS:** III (all collisions); III (injury & fatal collisions)

**Significant Crash Pattern:** Overturning, sideswipe same direction, and fixed objects.

**Figure 24: SH 119B MP 52.69 – 54.41 Segment Non-Intersection Crashes**



*Overturning Collision Analysis*

**Total Crashes:** 8 (4 injury crashes)

**Causal Factor:** Overturning crashes occurred in the northbound (4) and southbound (4) directions. A majority of these crashes (5) occurred during dark-unlighted conditions.

**Recommendation:** No overturning crash pattern was identified and there are no recommendations at this time.

*Sideswipe (Same Direction) Collision Analysis*

**Total Crashes:** 16 (6 injury crashes)

**Causal Factor:** Sideswipe (same direction) crashes occurred in the northbound (8) and southbound (8) directions. A majority of these crashes (14) occurred when a vehicle was attempting to change lanes.

**Recommendation:** No sideswipe (same direction) crash pattern was identified and there are no recommendations at this time.

### *Fixed Object Collision Analysis*

**Total Crashes:** 12 (2 injury crashes)

**Causal Factor:** Fixed object crashes consisted of signs (5), embankment cut/fill slope (1), tree/shrubbery (2), fence (2), traffic signal pole (1), and guard rail (1). The crashes occurred in the northbound (6) and southbound (6) directions. The majority of the fixed object crashes occurred during dark-unlighted (5) or dawn/dusk (1) conditions. Alcohol was also documented for four (4) of the fixed object crashes.

**Recommendation:** No fixed object crash pattern was identified and there are no recommendations at this time.



## **Freight Crash Analysis**

Specifically, freight related crashes were reviewed. Of the 999 crashes, 24 crashes involved freight as vehicle one (approximately 2% of the total crashes), and 18 of those crashes were at an intersection. There were also twelve crashes with freight involved as vehicle two, and ten of those crashes were at an intersection. No freight crash pattern was identified and there are no recommendations at this time.

The Regional Multimodal Freight Plan completed in 2020 by the Denver Regional Council of Governments (DRCOG) also did not identify any crash patterns or recommendations specifically for SH 119.

There were no documented crashes involving a train along the corridor.

## Conclusion and Recommendations

These conclusions and recommendations are based on the analysis of five years of crash history on SH 119 between MP 44.90 and MP 54.56 and SH 157 between MP 3.50 to MP 4.53, and review of video log. The Region is advised to verify through field survey, the observations made in this report regarding physical features, roadside characteristics and traffic control devices.

There were 968 crashes were reported along SH 119 between MP 44.90 and MP 54.56 including intersection, non-intersection, ramp crashes, and driveway crashes. Of these, there were 353 injury collisions and three fatal collisions; 482 injured and three killed. Along SH 157 between MP 3.50 and MP 4.53 there were 31 reported non-intersection and ramp crashes. Of these, there were eight injury collisions with 14 injured.

## General Recommendations

General recommendation for SH 119B between MP 44.90 and MP 54.56 and SH 157A between MP 3.50 and 4.53 include the following features typically associated with roadway improvements that would be proposed as part of the SH 119 Level-2 Intermediate Grade Traffic and Revenue Study should be provided:

- Good skid resistance and drainage of the roadway surface,
- Adjustment, repair, and upgrade of existing guard rail to meet current standards,
- Elimination of pavement edge drop-offs (Safety Edge Application),
- Crown correction where required,
- Appropriate advance warning signing of curves, and
- Replace all button reflectors and guard rail reflectors to ensure good nighttime and inclement weather (fog, snow, rain, etc.) delineation.
- All pedestrian signal heads should have countdown displays as per the 2009 MUTCD.
- Review signal timing plans to ensure appropriate signal change period and for corridor progression.

## Intersection Specific Recommendations

### MP 44.92 – Foothills Pkwy SB Ramp

SH 119B MP 44.90 to 44.94

**Classification:** 3-Lane Undivided Signalized 4-leg Intersection

**ADT:** Primary – 24,658 VPD (SH 119B)

**Total Crashes:** 16 (5 injury crashes)

**LOSS:** II (all collisions); II (injury & fatal collisions)

- It is recommended that the westbound left movement continue to be monitored to determine if vegetation maintenance in the median is needed or if the movement should be changed to protected-only.
- It is recommended to review/update the existing red/yellow clearance intervals which may help reduce the frequency of rear-end type crashes.
- It is recommended that the snow removal plan be reviewed to reduce the amount of rear end crashes due to snowy road conditions.

### MP 45.02 – 47<sup>th</sup> Street

SH 119B MP 44.98 to 45.05

**Classification:** 4-Lane Divided Signalized 4-leg Intersection

**ADT:** Primary – 13,949 VPD (SH 119B)

**Total Crashes:** 25 (13 injury crashes)

**LOSS:** II (all collisions); IV (injury & fatal collisions)

- It is recommended to review/update the all red and yellow clearance intervals to ensure appropriate signal change period which can improve the dilemma zone for eastbound vehicles.

### MP 46.06 – Jay Road

SH 119B MP 45.95 to 46.17

**Classification:** 6-Lane Divided Signalized 4-leg Intersection

**ADT:** Primary – 56,309 VPD (SH 119B)

**Total Crashes:** 72 (25 injury crashes)

**LOSS:** II (all collisions); III (injury & fatal collisions)

- Currently, ADVANCED TRAFFIC CONTROL (W3-3) is provided in the northbound direction before the Jay Road intersection close to the start of the northbound turn lanes. It is recommended to relocate the W3-3 signs further south to provide more advance warning to the upcoming signalized intersection.
- It is also recommended to consider instead to utilize the BE PREPARED TO STOP (W3-4) and WHEN FLASHING (W16-13P) signs with flashing beacons due to 20 of the 26 northbound rear-end crashes occurred during the PM commuter period when traffic is heavier and lighting can be limited.
- It is recommended to consider adding flashing beacons to the W3-3 signs in the southbound direction at their current location.
- It is recommended to review/update the existing red/yellow clearance intervals to help reduce the frequency of rear-end type crashes.

### MP 48.20 – 63<sup>rd</sup> Street

SH 119B MP 48.00 to 48.39

**Classification:** 6-Lane Divided Signalized 4-leg Intersection

**ADT:** Primary – 48,050 VPD (SH 119B)

**Total Crashes:** 102 (37 injury crashes)

**LOSS:** III (all collisions); IV (injury & fatal collisions)

- It is recommended that the snow/ice removal plan be reviewed to reduce the amount of fixed object crashes due to snowy/icy road conditions.
- The northbound sign indicating the upcoming 63<sup>rd</sup> Street intersection is very faded and should be replaced.
- It is recommended that BE PREPARED TO STOP (W3-4) and WHEN FLASHING (W16-13P) signs with flashing beacons be added for both the northbound and southbound directions of travel.
- It is recommended to review/update the existing red/yellow clearance intervals to help reduce the frequency of rear-end type crashes.

### MP 49.54 – SH 52 / Mineral Road

SH 119B MP 49.43 to 49.65

SH 52A MP 0.0 to 0.08

**Classification:** 4-Lane Divided Signalized 4-leg Intersection

**ADT:** Primary – 41,071 (SH 119B)

**Total Crashes:** 69 (27 injury crashes)

**LOSS:** III (all collisions); IV (injury & fatal collisions)

- Two recommendations would be to review/update the existing red/yellow clearance intervals and consider installation of BE PREPARED TO STOP (W3-4) and WHEN FLASHING (W16-13P) signs with flashing beacons at the location of the current ADVANCED TRAFFIC CONTROL (W3-3) signs.

### MP 50.71 – Niwot Road

SH 119B MP 50.61 to 50.81

**Classification:** 4-Lane Divided Signalized 4-leg Intersection

**ADT:** Primary – 37,600 VPD (SH 119B)

**Total Crashes:** 52 (17 injury crashes) (1 fatal crash)

**LOSS:** III (all collisions); IV (injury & fatal collisions)

- It is recommended to review/update the existing red/yellow clearance intervals to help reduce the frequency of broadside type crashes.
- It is recommended to consider installation of BE PREPARED TO STOP (W3-4) and WHEN FLASHING (W16-13P) signs with flashing beacons at the location of the current ADVANCED TRAFFIC CONTROL (W3-3) signs.

### MP 52.68 – Airport Road NB

SH 119B MP 52.58 to 52.78

**Classification:** 4-Lane Undivided Signalized 4-leg Intersection

**ADT:** Primary – 33,930 VPD (SH 119B)

**Total Crashes:** 7 (6 injury crashes)

**LOSS:** I (all collisions); II (injury & fatal collisions)

- It is recommended to review sight distance at this intersection for eastbound traveling vehicles and to review the need for a traffic signal at this location based on the MUTCD Warrant 7: Crash Experience.

### MP 54.41 – Hover Road

SH 119B MP 54.26 to 54.56

**Classification:** 4-Lane Divided Signalized 4-leg Intersection

**ADT:** Primary – 26,345 VPD (SH 119B)

**Total Crashes:** 121 (40 injury crashes)

**LOSS:** III/IV (all collisions); IV (injury & fatal collisions)

- Consider changing the northbound and southbound lefts to protected only phasing and continue monitoring the intersection for the approach turn crash pattern.
- It is recommended to review/update the existing red/yellow clearance intervals to help reduce the frequency of rear-end type crashes.

## Non-Intersection Specific Recommendations

There are no non-intersection specific recommendations; however, there are non-intersection crashes related to the commuter congestion at the signalized intersections. The reduction of these type of crashes by installing the intersection specific recommendation could reduce the frequency of congestion related crashes such as rear-end crashes and sideswipe (same direction) crashes. A summary of the intersection specific recommendations that may reduce the associated non-intersection crashes follows:

### SH 119B MP 45.77 – 48.20

**Classification:** 6-Lane Divided Signalized 4-leg Intersection

**ADT:** Primary – 53,167 VPD (SH 119B)

**Total Crashes:** 96 (36 injury crashes) (1 fatal crash)

**LOSS:** III (all collisions); IV (injury & fatal collisions)

#### *Sideswipe (Same Direction) Collision Analysis*

**Recommendation:** There are no safety recommendations at this time. However, these crashes seem to be due to congestion at the Jay Road and 63<sup>rd</sup> Street intersections and could be reduced if the intersections congestion issues are addressed which were to update and enhance traffic signage and review/update the existing red/yellow clearance intervals. It is recommended that a traffic analysis be completed to address congestion mitigation strategies at this location.

### SH 119B MP 48.21 – 49.54

**Classification:** Urban 4-Lane Divided Signalized 4-leg Intersection

**ADT:** Primary – 44,000 VPD (SH 119B)

**Total Crashes:** 82 (26 injury crashes)

**LOSS:** III (all collisions); III (injury & fatal collisions)

#### *Rear-end Collision Analysis*

**Recommendation:** There are no recommendations at this time. However, these crashes seem to be due to congestion at the SH 52 intersection and could be reduced if the intersection congestion issues are addressed which were to update and enhance traffic signage and review/update the existing red/yellow clearance intervals.

### SH 119B MP 49.55 – 50.71

**Classification:** Urban 4-Lane Divided Signalized 4-leg Intersection

**ADT:** Primary – 37,600 VPD (SH 119B)

**Total Crashes:** 48 (16 injury crashes)

**LOSS:** III (all collisions); III (injury & fatal collisions)

#### *Rear-end Collision Analysis*

**Total Crashes:** 33 (12 injury crashes)

**Causal Factor:** Rear end crashes occurred in the northbound (12) and southbound (21) directions. The majority of the northbound crashes (11) happened in the PM while a majority

of the southbound crashes (19) happened in the AM and were caused by congestion at the SH 52 and Niwot Road intersections.

**Recommendation:** There are no recommendations at this time. However, these crashes seem to be due to congestion at the SH 52 and Niwot Road intersections and could be reduced if the intersections congestion issues are addressed which were to update and enhance traffic signage and review/update the existing red/yellow clearance intervals.

## Appendix

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### Detailed Summary of Accident History

- Overall 2015 to 2019 Detailed Summary
- Individual Year General Summary
  - 2015
  - 2016
  - 2017
  - 2018
  - 2019
- Intersection General Summary
  - MP 44.89: Foothills Pkwy SB Ramp
  - MP 45.02: 47th St
  - MP 46.06: Jay Rd
  - MP 48.20: 63rd St
  - MP 49.54: SH 52
  - MP 50.71: Niwot Rd
  - MP 52.68: Airport Rd
  - MP 54.41: Hover Rd
- Non-Intersection General Summary
  - SH 157A MP 3.50 – 4.53
  - SH 119B MP 45.33 – 45.77
  - SH 119B MP 45.77 – 48.20
  - SH 119B MP 48.21 – 49.54
  - SH 119B MP 49.55 – 50.71
  - SH 119B MP 50.72 – 52.68
  - SH 119B MP 52.69 – 54.41

### Highway CORIS (Colorado Roadway Inventory System)

- Highway CORIS displays the current state of the system at the time of this safety assessment

### Accident Listing Jan 1, 2015 through Dec 31, 2019



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Detailed Summary of Crashes Report**

09/22/2020

Job #: 20200922074819

**Location: 119B 157A/52A Begin: 44.80 End: 54.55 From:01/01/2015 To:12/31/2019**

**Severity**

PDO:	652	
INJ:	371	510 :Injured
FAT:	3	3 :Killed
<b>Total:</b>	<b>1026</b>	

**Number of Vehicles**

One Vehicle:	164
Two Vehicles:	759
Three or More:	103
Unknown:	0
<b>Total:</b>	<b>1026</b>

**Location**

On Road:	883
Off Road Left:	61
Off Road Right:	79
Off Road at Tee:	1
Off in Median:	1
Unknown:	1
<b>Total:</b>	<b>1026</b>

**Lighting Conditions**

Daylight:	754
Dawn or Dusk:	44
Dark - Lighted:	105
Dark - Unlighted:	123
Unknown:	0
<b>Total:</b>	<b>1026</b>

**Weather Conditions**

None:	915
Rain:	27
Snow/Sleet/Hail:	71
Fog:	0
Dust:	0
Wind:	8
Unknown:	5
<b>Total:</b>	<b>1026</b>

**Crash Rates**

PDO:	0.95 *	* MVMT
INJ:	0.54 *	** 100 MVMT
FAT:	0.44 **	
<b>Total:</b>	<b>1.50 *</b>	

**Crash Type**

Overtuning:	31	Bridge Abutment:	0
Other Non Collision:	2	Column/Pier:	0
Pedestrians:	2	Culvert/Headwall:	0
Broadside:	127	Embankment:	11
Head On:	5	Curb:	10
Rear End:	497	Delineator Post:	4
Sideswipe (Same):	127	Fence:	9
Sideswipe (Opposite):	6	Tree:	11
Approach Turn:	51	Large Boulders or Rocks:	0
Overtaking Turn:	11	Barricade:	0
Parked Motor Vehicle:	3	Wall/Building:	0
Railway Vehicle:	0	Crash Cushion:	0
Bicycle:	17	Mailbox:	0
Motorized Bicycle:	0	Other Fixed Object:	15
Domestic Animal:	0	Total Fixed Objects:	115
Wild Animal:	17	Rocks in Roadway:	0
Light/Utility Pole:	10	Vehicle Cargo/Debris:	5
Traffic Signal Pole:	3	Road Maintenance Equipment:	2
Sign:	28	Involving Other Object:	8
Bridge Rail:	1	Total Other Objects:	15
Guard Rail:	11	Unknown:	0
Cable Rail:	0	<b>Total:</b>	<b>1026</b>
Concrete Barrier:	2		

**Mainline/Ramps/Frontage Roads**

Mainline:	1018	<b>Frontage/Ramp Intersections</b>
Crossroad (A):	0	M: 0 N: 0 O: 0 P: 0
<b>Ramps</b>		
B: 3 F: 0 J: 0		Left Frontage Rd (L): 0
C: 0 G: 0 K: 0		Rt Frontage Rd (R): 0
D: 3 H: 0 T: 0		HOV Lanes (V): 0
E: 2 I: 0 Z: 0		Unknown: 0
		<b>Total: 1026</b>

**Road Description**

At Intersection:	347
At Driveway Access:	6
Intersection Related:	263
Non Intersection:	401
In Alley:	0
Roundabout:	0
Ramp:	9
Parking Lot:	0
Unknown:	0
<b>Total:</b>	<b>1026</b>

**Road Conditions**

Dry:	870
Wet:	52
Muddy:	0
Snowy:	46
Icy:	35
Slushy:	5
Foreign Material:	0
With Road Treatment:	0
Dry w/Icy Road Treatment:	7
Wet w/Icy Road Treatment:	0
Snowy w/Icy Road Treatment:	4
Icy w/Icy Road Treatment:	4
Slushy w/Icy Road Treatment:	2
Unknown:	1
<b>Total:</b>	<b>1026</b>

**ADT: 38,629 Length: 9.72**





**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
Detailed Summary of Crashes Report**

09/22/2020

Job #: 20200922074819

**Location: 119B 157A/52A Begin: 44.80 End: 54.55 From:01/01/2015 To:12/31/2019**

Vehicle Type	Veh 1	Veh 2	Veh 3
Passenger Car/Van:	532	418	55
Passenger Car/Van w/Trl:	1	1	0
Pickup Truck/Utility Van:	133	105	15
Pickup Truck/Utility Van w/Trl:	7	2	0
SUV:	281	295	30
SUV w/Trl:	1	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Bus > 15 People:	25	12	0
School Bus < 15 People:	1	0	0
Non School Bus < 15 People:	8	8	0
Motorhome:	0	0	0
Motorcycle:	9	8	0
Bicycle:	7	10	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	18	0	1
Other:	3	2	1
Unknown:	0	1	1
<b>Total:</b>	<b>1026</b>	<b>862</b>	<b>103</b>

Vehicle Movement	Veh 1	Veh 2	Veh 3
Going Straight:	622	331	26
Slowing:	51	117	13
Stopped in Traffic:	5	338	57
Making Right Turn:	54	10	1
Making Left Turn:	95	45	2
Making U-Turn:	8	0	0
Passing:	6	1	0
Backing:	8	0	0
Enter/Leave Parked Position:	5	2	1
Starting in Traffic:	0	0	0
Parked:	0	4	1
Changing Lanes:	83	7	0
Avoiding Object/Veh in Road:	9	2	0
Weaving:	20	0	0
Wrong Way:	2	0	0
Other:	58	5	1
Unknown:	0	0	1
<b>Total:</b>	<b>1026</b>	<b>862</b>	<b>103</b>

Contributing Factor	Veh 1	Veh 2	Veh 3
No Apparent Contributing Factor:	466	837	102
Asleep at the Wheel:	19	1	0
Illness:	11	0	0
Distracted by Passenger:	12	0	0
Driver Inexperience:	96	3	0
Driver Fatigue:	14	0	0
Driver Preoccupied:	164	2	0
Driver Unfamiliar with Area:	59	0	0
Driver Emotionally Upset:	6	0	0
Evading Law Enforcement Officer:	1	0	0
Physical Disability:	0	0	0
Unknown:	178	19	1
<b>Total:</b>	<b>1026</b>	<b>862</b>	<b>103</b>

Direction	Veh 1	Veh 2	Veh 3
North:	418	357	51
Northeast:	55	43	8
East:	113	72	4
Southeast:	5	3	0
South:	276	273	28
Southwest:	43	42	3
West:	114	70	8
Northwest:	2	2	0
Unknown:	0	0	1
<b>Total:</b>	<b>1026</b>	<b>862</b>	<b>103</b>

Condition of Driver	Veh 1	Veh 2	Veh 3
No Impairment Suspected:	974	858	102
Alcohol Involved:	33	2	0
RX, Medication, or Drugs Involved:	11	0	1
Illegal Drugs Involved:	0	0	0
Alcohol and Drugs Involved:	8	2	0
Driver/Pedestrian not Observed:	0	0	0
Unknown:	0	0	0
<b>Total:</b>	<b>1026</b>	<b>862</b>	<b>103</b>

**ADT: 38,629 Length: 9.72**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**General Summary of Crashes Report**

09/22/2020

Job #: 20200922075028

**Location: 119B 157A/52A Begin: 44.80 End: 54.55 From:01/01/2015 To:12/31/2015**

**Severity**

PDO:	114	
INJ:	81	116 :Injured
FAT:	0	0 :Killed
<b>Total:</b>	<b>195</b>	

**Number of Vehicles**

One Vehicle:	35
Two Vehicles:	140
Three or More:	20
Unknown:	0
<b>Total:</b>	<b>195</b>

**Location**

On Road:	165
Off Road:	30
Unknown:	0
<b>Total:</b>	<b>195</b>

**Mainline/Ramps/Frontage Rds**

Mainline:	193
Ramps:	2
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>195</b>

**Lighting Conditions**

Daylight:	142
Dawn or Dusk:	9
Dark - Lighted:	21
Dark - Unlighted:	23
Unknown:	0
<b>Total:</b>	<b>195</b>

**Crash Rates**

PDO:	0.84*	* Per MVMT
INJ:	0.59*	** Per 100 MVMT
FAT:	0.00**	
<b>Total:</b>	<b>1.43*</b>	

**Crash Type**

Overtuning:	9
Other Non Collision:	1
Pedestrians:	1
Broadside:	29
Head On:	2
Rear End:	79
Sideswipe Same:	20
Sideswipe Opposite:	2
Approach Turn:	14
Overtaking Turn:	2
Parked Motor Vehicle:	2
Railway Vehicle:	0
Bicycles:	2
Domestic Animal:	0
Wild Animal:	3
Fixed Objects:	23
Other Objects:	6
Unknown:	0
<b>Total:</b>	<b>195</b>

**Weather Conditions**

None:	162
Rain:	8
Snow/Sleet/Hail:	20
Fog:	0
Dust:	0
Wind:	1
Unknown:	4
<b>Total:</b>	<b>195</b>

**Road Conditions**

Dry:	140
Wet:	18
Muddy:	0
Snowy:	14
Icy:	18
Slushy:	0
Foreign Material:	0
With Road Treatment:	5
Unknown:	0
<b>Total:</b>	<b>195</b>

**Vehicle Types**

	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	92	78	13
Passenger Car/Van w/Trailer:	1	0	0
Pickup Truck/Utility Van:	31	15	2
Pickup Truck/Utility Van w/Trailer:	1	0	0
SUV:	53	56	5
SUV w/Trailer:	1	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	7	3	0
School Bus < 15 People:	1	0	0
Non School Bus < 15 People:	1	3	0
Motorhome:	0	0	0
Motorcycle:	2	2	0
Bicycle:	0	2	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	4	0	0
Other:	1	1	0
Unknown:	0	0	0
<b>Total:</b>	<b>195</b>	<b>160</b>	<b>20</b>

**ADT: 38,426 Length: 9.72**



**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

09/22/2020

Job #: 20200922075120

**Location: 119B 157A/52A      Begin: 44.80    End: 54.55    From:01/01/2016    To:12/31/2016**

Severity	
PDO:	152
INJ:	54      71 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>206</b>

Number of Vehicles	
One Vehicle:	24
Two Vehicles:	159
Three or More:	23
Unknown:	0
<b>Total:</b>	<b>206</b>

Location	
On Road:	184
Off Road:	21
Unknown:	1
<b>Total:</b>	<b>206</b>

Mainline/Ramps/Frontage Rds	
Mainline:	204
Ramps:	2
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>206</b>

Lighting Conditions	
Daylight:	154
Dawn or Dusk:	17
Dark - Lighted:	18
Dark - Unlighted:	17
Unknown:	0
<b>Total:</b>	<b>206</b>

Crash Rates	
PDO:	1.11*      * Per MVMT
INJ:	0.39*      ** Per 100 MVMT
FAT:	0.00**
<b>Total:</b>	<b>1.50*</b>

Crash Type	
Overtuning:	7
Other Non Collision:	0
Pedestrians:	0
Broadside:	20
Head On:	0
Rear End:	113
Sideswipe Same:	32
Sideswipe Opposite:	2
Approach Turn:	10
Overtaking Turn:	1
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	3
Domestic Animal:	0
Wild Animal:	1
Fixed Objects:	16
Other Objects:	1
Unknown:	0
<b>Total:</b>	<b>206</b>

Weather Conditions	
None:	190
Rain:	2
Snow/Sleet/Hail:	12
Fog:	0
Dust:	0
Wind:	2
Unknown:	0
<b>Total:</b>	<b>206</b>

Road Conditions	
Dry:	185
Wet:	5
Muddy:	0
Snowy:	8
Icy:	3
Slushy:	3
Foreign Material:	0
With Road Treatment:	2
Unknown:	0
<b>Total:</b>	<b>206</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	120	98	13
Passenger Car/Van w/Trailer:	0	1	0
Pickup Truck/Utility Van:	20	23	2
Pickup Truck/Utility Van w/Trailer:	1	1	0
SUV:	50	53	7
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	8	0	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	1	1	0
Motorhome:	0	0	0
Motorcycle:	1	3	0
Bicycle:	1	2	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	4	0	0
Other:	0	0	1
Unknown:	0	0	0
<b>Total:</b>	<b>206</b>	<b>182</b>	<b>23</b>

**ADT: 38,609      Length: 9.72**



**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

09/22/2020

Job #: 20200922082356

**Location: 119B 157A/52A      Begin: 44.80    End: 54.55    From:01/01/2017    To:12/31/2017**

Severity	
PDO:	134
INJ:	72      106 :Injured
FAT:	1      1 :Killed
<b>Total:</b>	<b>207</b>

Number of Vehicles	
One Vehicle:	46
Two Vehicles:	145
Three or More:	16
Unknown:	0
<b>Total:</b>	<b>207</b>

Location	
On Road:	167
Off Road:	40
Unknown:	0
<b>Total:</b>	<b>207</b>

Mainline/Ramps/Frontage Rds	
Mainline:	205
Ramps:	2
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>207</b>

Lighting Conditions	
Daylight:	144
Dawn or Dusk:	5
Dark - Lighted:	25
Dark - Unlighted:	33
Unknown:	0
<b>Total:</b>	<b>207</b>

Crash Rates	
PDO:	0.94*      * Per MVMT
INJ:	0.51*      ** Per 100 MVMT
FAT:	0.70**
<b>Total:</b>	<b>1.46*</b>

Crash Type	
Overtuning:	9
Other Non Collision:	0
Pedestrians:	0
Broadside:	20
Head On:	1
Rear End:	95
Sideswipe Same:	26
Sideswipe Opposite:	1
Approach Turn:	11
Overtaking Turn:	0
Parked Motor Vehicle:	1
Railway Vehicle:	0
Bicycles:	4
Domestic Animal:	0
Wild Animal:	6
Fixed Objects:	30
Other Objects:	3
Unknown:	0
<b>Total:</b>	<b>207</b>

Weather Conditions	
None:	183
Rain:	5
Snow/Sleet/Hail:	17
Fog:	0
Dust:	0
Wind:	2
Unknown:	0
<b>Total:</b>	<b>207</b>

Road Conditions	
Dry:	178
Wet:	8
Muddy:	0
Snowy:	8
Icy:	9
Slushy:	1
Foreign Material:	0
With Road Treatment:	3
Unknown:	0
<b>Total:</b>	<b>207</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	111	80	9
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	30	18	3
Pickup Truck/Utility Van w/Trailer:	2	1	0
SUV:	52	59	4
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	4	2	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	1	1	0
Motorhome:	0	0	0
Motorcycle:	1	0	0
Bicycle:	4	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	2	0	0
Other:	0	0	0
Unknown:	0	0	0
<b>Total:</b>	<b>207</b>	<b>161</b>	<b>16</b>

**ADT: 40,057      Length: 9.72**



**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

09/22/2020

Job #: 20200922082517

**Location: 119B 157A/52A      Begin: 44.80    End: 54.55    From:01/01/2018    To:12/31/2018**

Severity	
PDO:	137
INJ:	91      126 :Injured
FAT:	2      2 :Killed
<b>Total:</b>	<b>230</b>

Number of Vehicles	
One Vehicle:	33
Two Vehicles:	171
Three or More:	26
Unknown:	0
<b>Total:</b>	<b>230</b>

Location	
On Road:	203
Off Road:	27
Unknown:	0
<b>Total:</b>	<b>230</b>

Mainline/Ramps/Frontage Rds	
Mainline:	230
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>230</b>

Lighting Conditions	
Daylight:	171
Dawn or Dusk:	9
Dark - Lighted:	25
Dark - Unlighted:	25
Unknown:	0
<b>Total:</b>	<b>230</b>

Crash Rates	
PDO:	1.02*      * Per MVMT
INJ:	0.67*      ** Per 100 MVMT
FAT:	1.48**
<b>Total:</b>	<b>1.70*</b>

Crash Type	
Overtuning:	4
Other Non Collision:	1
Pedestrians:	1
Broadside:	29
Head On:	2
Rear End:	115
Sideswipe Same:	26
Sideswipe Opposite:	0
Approach Turn:	12
Overtaking Turn:	6
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	2
Domestic Animal:	0
Wild Animal:	5
Fixed Objects:	24
Other Objects:	3
Unknown:	0
<b>Total:</b>	<b>230</b>

Weather Conditions	
None:	210
Rain:	6
Snow/Sleet/Hail:	12
Fog:	0
Dust:	0
Wind:	1
Unknown:	1
<b>Total:</b>	<b>230</b>

Road Conditions	
Dry:	205
Wet:	11
Muddy:	0
Snowy:	9
Icy:	2
Slushy:	1
Foreign Material:	0
With Road Treatment:	2
Unknown:	0
<b>Total:</b>	<b>230</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	125	85	12
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	29	27	3
Pickup Truck/Utility Van w/Trailer:	2	0	0
SUV:	59	74	9
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	3	5	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	3	2	0
Motorhome:	0	0	0
Motorcycle:	3	2	0
Bicycle:	0	2	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	5	0	1
Other:	1	0	0
Unknown:	0	0	1
<b>Total:</b>	<b>230</b>	<b>197</b>	<b>26</b>

**ADT: 38,025      Length: 9.72**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**General Summary of Crashes Report**

09/22/2020

Job #: 20200922082615

**Location: 119B 157A/52A      Begin: 44.80    End: 54.55    From:01/01/2019    To:12/31/2019**

Severity	
PDO:	115
INJ:	73      91 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>188</b>

Number of Vehicles	
One Vehicle:	26
Two Vehicles:	144
Three or More:	18
Unknown:	0
<b>Total:</b>	<b>188</b>

Location	
On Road:	164
Off Road:	24
Unknown:	0
<b>Total:</b>	<b>188</b>

Mainline/Ramps/Frontage Rds	
Mainline:	186
Ramps:	2
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>188</b>

Lighting Conditions	
Daylight:	143
Dawn or Dusk:	4
Dark - Lighted:	16
Dark - Unlighted:	25
Unknown:	0
<b>Total:</b>	<b>188</b>

Crash Rates	
PDO:	0.85*      * Per MVMT
INJ:	0.54*      ** Per 100 MVMT
FAT:	0.00**
<b>Total:</b>	<b>1.39*</b>

Crash Type	
Overtuning:	2
Other Non Collision:	0
Pedestrians:	0
Broadside:	29
Head On:	0
Rear End:	95
Sideswipe Same:	23
Sideswipe Opposite:	1
Approach Turn:	4
Overtaking Turn:	2
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	6
Domestic Animal:	0
Wild Animal:	2
Fixed Objects:	22
Other Objects:	2
Unknown:	0
<b>Total:</b>	<b>188</b>

Weather Conditions	
None:	170
Rain:	6
Snow/Sleet/Hail:	10
Fog:	0
Dust:	0
Wind:	2
Unknown:	0
<b>Total:</b>	<b>188</b>

Road Conditions	
Dry:	162
Wet:	10
Muddy:	0
Snowy:	7
Icy:	3
Slushy:	0
Foreign Material:	0
With Road Treatment:	5
Unknown:	1
<b>Total:</b>	<b>188</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	84	77	8
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	23	22	5
Pickup Truck/Utility Van w/Trailer:	1	0	0
SUV:	67	53	5
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	3	2	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	2	1	0
Motorhome:	0	0	0
Motorcycle:	2	1	0
Bicycle:	2	4	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	3	0	0
Other:	1	1	0
Unknown:	0	1	0
<b>Total:</b>	<b>188</b>	<b>162</b>	<b>18</b>

**ADT: 38,025      Length: 9.72**



**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

09/21/2020

Job #: 20200921163422

**Location: 119B      Begin: 44.90    End: 44.94    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	11
INJ:	5      8 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>16</b>

Number of Vehicles	
One Vehicle:	0
Two Vehicles:	16
Three or More:	0
Unknown:	0
<b>Total:</b>	<b>16</b>

Location	
On Road:	16
Off Road:	0
Unknown:	0
<b>Total:</b>	<b>16</b>

Mainline/Ramps/Frontage Rds	
Mainline:	16
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>16</b>

Lighting Conditions	
Daylight:	10
Dawn or Dusk:	0
Dark - Lighted:	4
Dark - Unlighted:	2
Unknown:	0
<b>Total:</b>	<b>16</b>

Crash Rates	
PDO:	7.88*      * Per MVMT
INJ:	3.58*      ** Per 100 MVMT
FAT:	0.00**
<b>Total:</b>	<b>11.46*</b>

Crash Type	
Overtuning:	0
Other Non Collision:	0
Pedestrians:	0
Broadside:	2
Head On:	0
Rear End:	5
Sideswipe Same:	0
Sideswipe Opposite:	0
Approach Turn:	7
Overtaking Turn:	0
Parked Motor Vehicle:	1
Railway Vehicle:	0
Bicycles:	1
Domestic Animal:	0
Wild Animal:	0
Fixed Objects:	0
Other Objects:	0
Unknown:	0
<b>Total:</b>	<b>16</b>

Weather Conditions	
None:	13
Rain:	0
Snow/Sleet/Hail:	3
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
<b>Total:</b>	<b>16</b>

Road Conditions	
Dry:	10
Wet:	2
Muddy:	0
Snowy:	3
Icy:	1
Slushy:	0
Foreign Material:	0
With Road Treatment:	0
Unknown:	0
<b>Total:</b>	<b>16</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	2	10	0
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	1	1	0
Pickup Truck/Utility Van w/Trailer:	0	0	0
SUV:	9	4	0
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	1	0	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	2	1	0
Motorhome:	0	0	0
Motorcycle:	0	0	0
Bicycle:	1	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	0	0	0
Other:	0	0	0
Unknown:	0	0	0
<b>Total:</b>	<b>16</b>	<b>16</b>	<b>0</b>

**ADT: 24,658      Length: 0.03**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/21/2020

Job #: 20200921172807

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04490\_04494 **Cutoff:** 5 Acc's @ 95%

CATEGORY	Statewide Average		This Location		Probability
	# Crashes	%	# Crashes	%	%
Property Damage Only (PDO)	136	58.87%	11	68.75%	85.52%
Injury (INJ)	95	41.13%	5	31.25%	29.62%
Fatal (FAT)	0	0.00%	0	0.00%	N/A
Persons Injured	132		8		
Persons Killed	0		0		N/A
Single Vehicle Accidents	18	7.79%	0	0.00%	N/A
Two Vehicle Accidents	195	84.42%	16	100.00%	100.00% <span style="color:red">◀</span>
Three or More Vehicle Accidents	17	7.36%	0	0.00%	N/A
Unknown Number of Vehicles	1	0.43%	0	0.00%	N/A
On Road	222	96.10%	16	100.00%	100.00% <span style="color:red">◀</span>
Off Road	8	3.46%	0	0.00%	N/A
Off Road Left	3	1.30%	0	0.00%	N/A
Off Road Right	5	2.16%	0	0.00%	N/A
Off Road at Tee	0	0.00%	0	0.00%	N/A
Off Road in Median	0	0.00%	0	0.00%	N/A
Unknown Road Location	1	0.43%	0	0.00%	N/A
Overturning	2	0.87%	0	0.00%	N/A
Other Non Collision	0	0.00%	0	0.00%	N/A
Vehicle Cargo or Debris	0	0.00%	0	0.00%	N/A
Pedestrian	8	3.46%	0	0.00%	N/A
Broadside	82	35.50%	2	12.50%	4.14%
Head On	1	0.43%	0	0.00%	N/A
Rear End	54	23.38%	5	31.25%	85.08%
Sideswipe (Same Direction)	30	12.99%	0	0.00%	N/A
Sideswipe (Opposite Direction)	1	0.43%	0	0.00%	N/A
Approach Turn	12	5.19%	7	43.75%	100.00% <span style="color:red">◀</span>
Overtaking Turn	8	3.46%	0	0.00%	N/A
Parked Motor Vehicle	19	8.23%	1	6.25%	61.64%
Railway Vehicle	0	0.00%	0	0.00%	N/A
Bicycle or Pedal Cycle	5	2.16%	1	6.25%	95.40%
Motorized Bicycle	0	0.00%	0	0.00%	N/A
Domestic Animal	0	0.00%	0	0.00%	N/A
Wild Animal	0	0.00%	0	0.00%	N/A
Light or Utility Pole	1	0.43%	0	0.00%	N/A
Bridge Rail	0	0.00%	0	0.00%	N/A
Guard Rail	0	0.00%	0	0.00%	N/A
Cable Rail	0	0.00%	0	0.00%	N/A
Concrete Barrier	0	0.00%	0	0.00%	N/A
Bridge Abutment	0	0.00%	0	0.00%	N/A
Culvert or Headwall	0	0.00%	0	0.00%	N/A
Delineator Post	0	0.00%	0	0.00%	N/A
Large Boulders or Rocks	0	0.00%	0	0.00%	N/A
Rocks in Roadway	0	0.00%	0	0.00%	N/A
Barricade	0	0.00%	0	0.00%	N/A
Wall or Building	0	0.00%	0	0.00%	N/A
Mailbox	1	0.43%	0	0.00%	N/A
Other Fixed Object	2	0.87%	0	0.00%	N/A
Road Maintenance Equipment	0	0.00%	0	0.00%	N/A
Unknown Accident Type	1	0.43%	0	0.00%	N/A

**Highway Class:** CO - Urban 3-Lane Undivided Signalized 4-Leg Intersections (2002)





**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/21/2020

Job #: 20200921172807

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04490\_04494 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability	
	CATEGORY	# Crashes	%	# Crashes	%	%
	Total Fixed Objects	8	3.46%	0	0.00%	N/A
	Total Other Objects	0	0.00%	0	0.00%	N/A
	Daylight	197	85.28%	10	62.50%	2.16%
	Dawn or Dusk	7	3.03%	0	0.00%	N/A
	Dark - Lighted	22	9.52%	4	25.00%	98.60%
	Dark - Unlighted	2	0.87%	2	12.50%	99.97%
	Unknown Lighting	3	1.30%	0	0.00%	N/A
	No Adverse Weather	214	92.64%	13	81.25%	10.87%
	Rain	7	3.03%	0	0.00%	N/A
	Snow or Sleet or Hail	5	2.16%	3	18.75%	99.97%
	Fog	0	0.00%	0	0.00%	N/A
	Dust	0	0.00%	0	0.00%	N/A
	Wind	2	0.87%	0	0.00%	N/A
	Unknown Weather	3	1.30%	0	0.00%	N/A
	Dry Road	202	87.45%	10	62.50%	1.02%
	Wet Road	19	8.23%	2	12.50%	86.06%
	Muddy Road	0	0.00%	0	0.00%	N/A
	Snowy Road	4	1.73%	3	18.75%	99.99%
	Icy Road	1	0.43%	1	6.25%	99.78%
	Slushy Road	0	0.00%	0	0.00%	N/A
	Foreign Material Road	0	0.00%	0	0.00%	N/A
	With Road Treatment	0	0.00%	0	0.00%	N/A
	Dry with Icy Road Treatment	0	0.00%	0	0.00%	N/A
	Wet with Icy Road Treatment	0	0.00%	0	0.00%	N/A
	Snowy with Icy Road Treatment	0	0.00%	0	0.00%	N/A
	Icy with Icy Road Treatment	0	0.00%	0	0.00%	N/A
	Slushy with Icy Road Treatment	0	0.00%	0	0.00%	N/A
	Unknown Road Condition	5	2.16%	0	0.00%	N/A
	Driver 1 - No Apparent Contributing Factor	139	60.17%	9	56.25%	46.71%
	Driver 1 - Asleep at the Wheel	1	0.43%	0	0.00%	N/A
	Driver 1 - Illness	0	0.00%	0	0.00%	N/A
	Driver 1 - Distracted by Passenger	3	1.30%	0	0.00%	N/A
	Driver 1 - Driver Inexperience	6	2.60%	2	12.50%	99.24%
	Driver 1 - Driver Fatigue	0	0.00%	0	0.00%	N/A
	Driver 1 - Driver Preoccupied	33	14.29%	0	0.00%	N/A
	Driver 1 - Driver Unfamiliar with Area	10	4.33%	2	12.50%	97.02%
	Driver 1 - Driver Emotionally Upset	1	0.43%	0	0.00%	N/A
	Driver 1 - Evading Law Enforcement Officer	0	0.00%	0	0.00%	N/A
	Driver 1 - Physical Disability	0	0.00%	0	0.00%	N/A
	Driver 1 - Unknown Contributing Factor	38	16.45%	3	18.75%	73.73%
	Driver 1 - No Impairment Suspected	185	80.09%	15	93.75%	97.14% <span style="color:red">◀</span>
	Driver 1 - Alcohol Involved	6	2.60%	1	6.25%	93.64%
	Driver 1 - RX, Medication, or Drugs Involved	0	0.00%	0	0.00%	N/A
	Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
	Driver 1 - Alcohol and Drugs Involved	0	0.00%	0	0.00%	N/A
	Driver 1 - Driver/Pedestrian not Observed	2	0.87%	0	0.00%	N/A
	Driver 1 - Unknown Condition of Driver/Pedestrian	38	16.45%	0	0.00%	N/A
	Total Accidents	231		16		
	Total Number of Records	0		0		N/A

**Highway Class:** CO - Urban 3-Lane Undivided Signalized 4-Leg Intersections (2002)



Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

09/21/2020

Job #: 20200921164929

Location: 000000119B

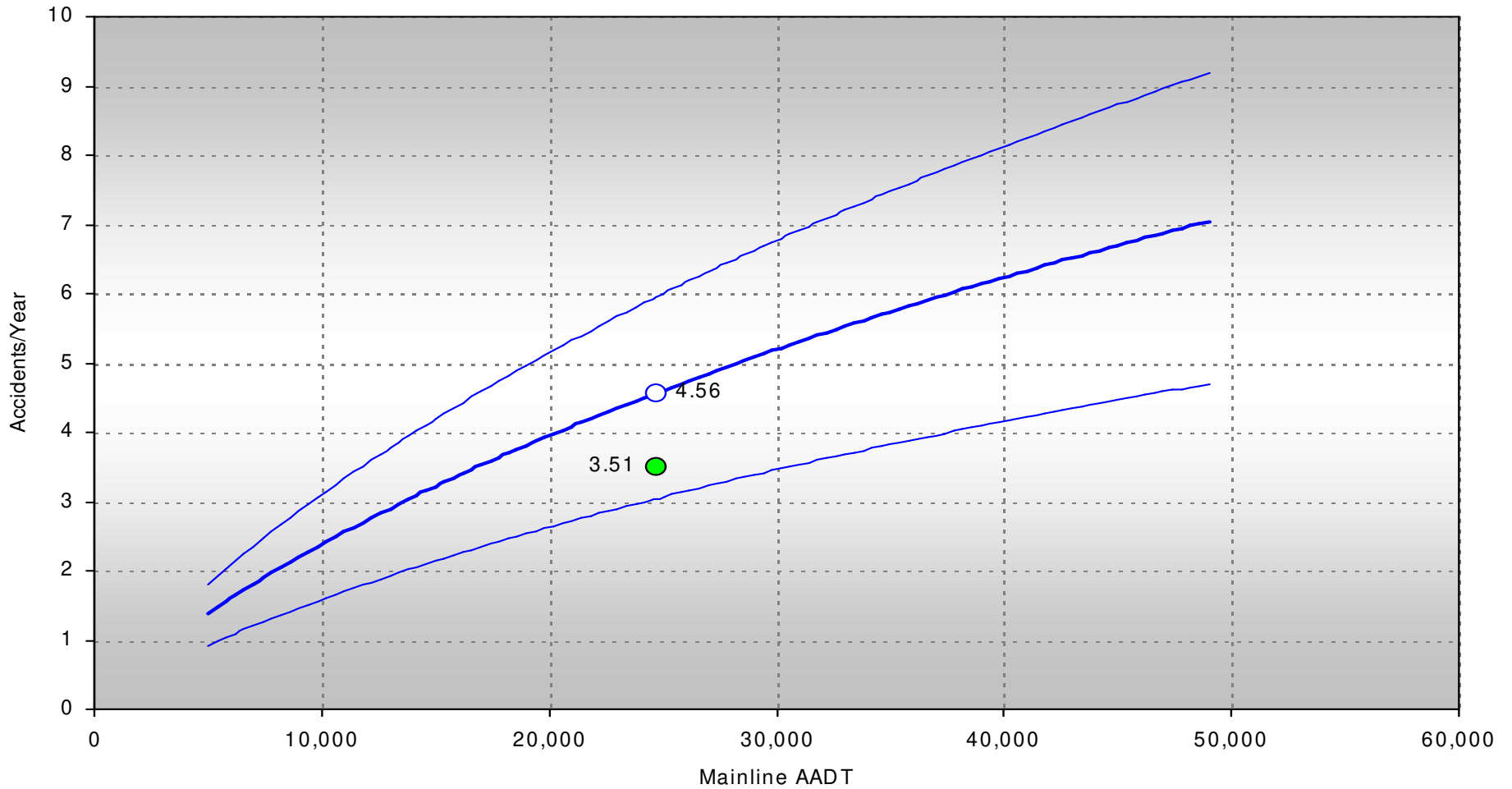
Begin:44.90

End:44.94

From:01/01/2015

To:12/31/2019

— Lower Limit (20%) — Total — Upper Limit (80%) ● Observed (EB) ○ Expected





Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

09/21/2020

Job #: 20200921165028

Location: 000000119B

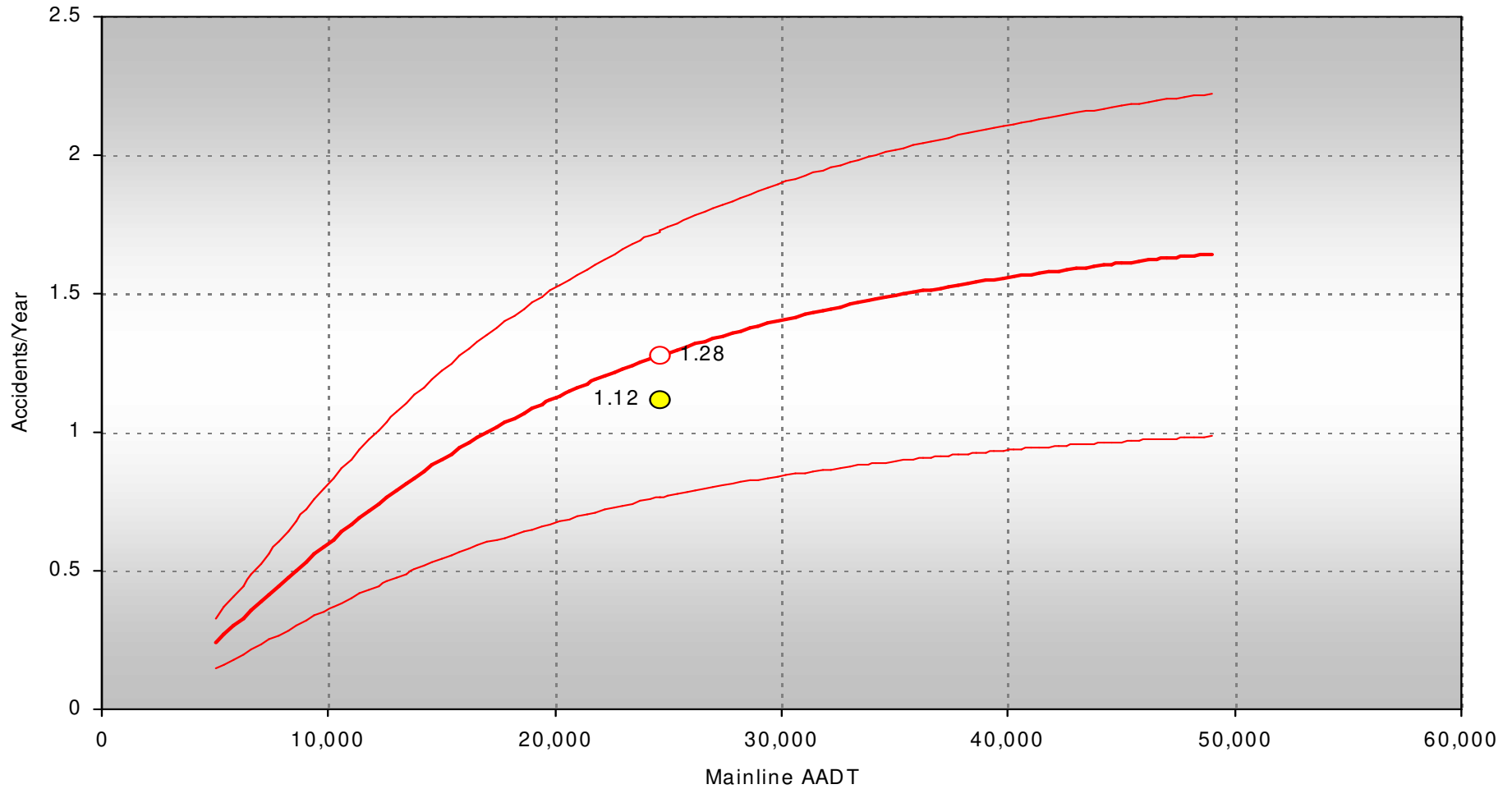
Begin:44.90

End:44.94

From:01/01/2015

To:12/31/2019

— Lower Limit (20%) — INJ + FAT — Upper Limit (80%) ● Observed (EB) ○ Expected





**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**General Summary of Crashes Report**

09/02/2020

Job #: 20200902170216

**Location: 119B**      **Begin: 44.99**    **End: 45.05**    **From:01/01/2015**    **To:12/31/2019**

**Severity**

PDO:	12	
INJ:	13	16 :Injured
FAT:	0	0 :Killed
<b>Total:</b>	<b>25</b>	

**Crash Type**

Overtuning:	1
Other Non Collision:	0
Pedestrians:	0
Broadside:	13
Head On:	0
Rear End:	7
Sideswipe Same:	0
Sideswipe Opposite:	0
Approach Turn:	2
Overtaking Turn:	0
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	1
Domestic Animal:	0
Wild Animal:	0
Fixed Objects:	0
Other Objects:	1
Unknown:	0
<b>Total:</b>	<b>25</b>

**Weather Conditions**

None:	21
Rain:	1
Snow/Sleet/Hail:	3
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
<b>Total:</b>	<b>25</b>

**Number of Vehicles**

One Vehicle:	2
Two Vehicles:	20
Three or More:	3
Unknown:	0
<b>Total:</b>	<b>25</b>

**Road Conditions**

Dry:	17
Wet:	5
Muddy:	0
Snowy:	1
Icy:	0
Slushy:	0
Foreign Material:	0
With Road Treatment:	2
Unknown:	0
<b>Total:</b>	<b>25</b>

**Location**

On Road:	23
Off Road:	1
Unknown:	1
<b>Total:</b>	<b>25</b>

**Mainline/Ramps/Frontage Rds**

Mainline:	25
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>25</b>

**Vehicle Types**

	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	9	10	1
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	3	0	0
Pickup Truck/Utility Van w/Trailer:	0	0	0
SUV:	10	11	1
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	1	1	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	0	0	0
Motorhome:	0	0	0
Motorcycle:	1	0	0
Bicycle:	0	1	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	1	0	0
Other:	0	0	1
Unknown:	0	0	0
<b>Total:</b>	<b>25</b>	<b>23</b>	<b>3</b>

**Lighting Conditions**

Daylight:	20
Dawn or Dusk:	1
Dark - Lighted:	3
Dark - Unlighted:	1
Unknown:	0
<b>Total:</b>	<b>25</b>

**Crash Rates**

PDO:	5.18*	* Per MVMT
INJ:	5.61*	** Per 100 MVMT
FAT:	0.00**	
<b>Total:</b>	<b>10.79</b> *	

**ADT: 13,949**      **Length: 0.09**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902170952

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04499\_04505 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	CATEGORY	Statewide Average		This Location		Probability
		# Crashes	%	# Crashes	%	%
	Property Damage Only (PDO)	4,301	71.16%	12	48.00%	1.24%
	Injury (INJ)	1,723	28.51%	13	52.00%	99.64%
	Fatal (FAT)	20	0.33%	0	0.00%	N/A
	Persons Injured	2,451		16		
	Persons Killed	21		0		N/A
	Single Vehicle Accidents	283	4.68%	2	8.00%	89.01%
	Two Vehicle Accidents	5,298	87.66%	20	80.00%	18.83%
	Three or More Vehicle Accidents	462	7.64%	3	12.00%	88.05%
	Unknown Number of Vehicles	1	0.02%	0	0.00%	N/A
	On Road	5,789	95.78%	23	92.00%	28.48%
	Off Road	254	4.20%	1	4.00%	71.68%
	Off Road Left	111	1.84%	0	0.00%	N/A
	Off Road Right	130	2.15%	1	4.00%	89.98%
	Off Road at Tee	3	0.05%	0	0.00%	N/A
	Off Road in Median	10	0.17%	0	0.00%	N/A
	Unknown Road Location	1	0.02%	1	4.00%	100.00%
	Overturning	29	0.48%	1	4.00%	99.36%
	Other Non Collision	13	0.22%	0	0.00%	N/A
	Vehicle Cargo or Debris	8	0.13%	0	0.00%	N/A
	Pedestrian	112	1.85%	0	0.00%	N/A
	Broadside	873	14.44%	13	52.00%	100.00%
	Head On	20	0.33%	0	0.00%	N/A
	Rear End	3,015	49.88%	7	28.00%	2.22%
	Sideswipe (Same Direction)	528	8.74%	0	0.00%	N/A
	Sideswipe (Opposite Direction)	36	0.60%	0	0.00%	N/A
	Approach Turn	968	16.02%	2	8.00%	21.24%
	Overtaking Turn	50	0.83%	0	0.00%	N/A
	Parked Motor Vehicle	13	0.22%	0	0.00%	N/A
	Railway Vehicle	0	0.00%	0	0.00%	N/A
	Bicycle or Pedal Cycle	114	1.89%	1	4.00%	91.98%
	Motorized Bicycle	0	0.00%	0	0.00%	N/A
	Domestic Animal	2	0.03%	0	0.00%	N/A
	Wild Animal	7	0.12%	0	0.00%	N/A
	Light or Utility Pole	36	0.60%	0	0.00%	N/A
	Bridge Rail	0	0.00%	0	0.00%	N/A
	Guard Rail	0	0.00%	0	0.00%	N/A
	Cable Rail	0	0.00%	0	0.00%	N/A
	Concrete Barrier	9	0.15%	0	0.00%	N/A
	Bridge Abutment	0	0.00%	0	0.00%	N/A
	Culvert or Headwall	0	0.00%	0	0.00%	N/A
	Delineator Post	3	0.05%	0	0.00%	N/A
	Large Boulders or Rocks	0	0.00%	0	0.00%	N/A
	Rocks in Roadway	0	0.00%	0	0.00%	N/A
	Barricade	2	0.03%	0	0.00%	N/A
	Wall or Building	5	0.08%	0	0.00%	N/A
	Mailbox	0	0.00%	0	0.00%	N/A
	Other Fixed Object	16	0.26%	0	0.00%	N/A
	Road Maintenance Equipment	7	0.12%	0	0.00%	N/A
	Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT 0-32000 ADT (2018)



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902170952

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04499\_04505 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability
	CATEGORY	# Crashes	%	# Crashes	%
Total Fixed Objects	242	4.00%	0	0.00%	N/A
Total Other Objects	22	0.36%	1	4.00%	99.62%
Daylight	4,337	71.76%	20	80.00%	87.51%
Dawn or Dusk	271	4.48%	1	4.00%	69.04%
Dark - Lighted	1,339	22.15%	3	12.00%	16.31%
Dark - Unlighted	89	1.47%	1	4.00%	94.80%
Unknown Lighting	8	0.13%	0	0.00%	N/A
No Adverse Weather	5,371	88.86%	21	84.00%	30.12%
Rain	242	4.00%	1	4.00%	73.54%
Snow or Sleet or Hail	354	5.86%	3	12.00%	94.44%
Fog	15	0.25%	0	0.00%	N/A
Dust	1	0.02%	0	0.00%	N/A
Wind	38	0.63%	0	0.00%	N/A
Unknown Weather	23	0.38%	0	0.00%	N/A
Dry Road	5,126	84.81%	17	68.00%	2.73%
Wet Road	442	7.31%	5	20.00%	99.19%
Muddy Road	2	0.03%	0	0.00%	N/A
Snowy Road	184	3.04%	1	4.00%	82.41%
Icy Road	178	2.95%	0	0.00%	N/A
Slushy Road	28	0.46%	0	0.00%	N/A
Foreign Material Road	7	0.12%	0	0.00%	N/A
With Road Treatment	0	0.00%	0	0.00%	N/A
Dry with Icy Road Treatment	20	0.33%	1	4.00%	99.69%
Wet with Icy Road Treatment	9	0.15%	0	0.00%	N/A
Snowy with Icy Road Treatment	25	0.41%	0	0.00%	N/A
Icy with Icy Road Treatment	11	0.18%	0	0.00%	N/A
Slushy with Icy Road Treatment	3	0.05%	1	4.00%	99.99%
Unknown Road Condition	9	0.15%	0	0.00%	N/A
Driver 1 - No Apparent Contributing Factor	2,897	47.93%	11	44.00%	42.47%
Driver 1 - Asleep at the Wheel	25	0.41%	0	0.00%	N/A
Driver 1 - Illness	42	0.69%	0	0.00%	N/A
Driver 1 - Distracted by Passenger	83	1.37%	0	0.00%	N/A
Driver 1 - Driver Inexperience	506	8.37%	1	4.00%	36.91%
Driver 1 - Driver Fatigue	55	0.91%	0	0.00%	N/A
Driver 1 - Driver Preoccupied	788	13.04%	4	16.00%	78.00%
Driver 1 - Driver Unfamiliar with Area	191	3.16%	1	4.00%	81.36%
Driver 1 - Driver Emotionally Upset	12	0.20%	0	0.00%	N/A
Driver 1 - Evading Law Enforcement Officer	15	0.25%	0	0.00%	N/A
Driver 1 - Physical Disability	15	0.25%	0	0.00%	N/A
Driver 1 - Unknown Contributing Factor	1,415	23.41%	8	32.00%	89.14%
Driver 1 - No Impairment Suspected	5,740	94.97%	25	100.00%	100.00%
Driver 1 - Alcohol Involved	214	3.54%	0	0.00%	N/A
Driver 1 - RX, Medication, or Drugs Involved	46	0.76%	0	0.00%	N/A
Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Alcohol and Drugs Involved	44	0.73%	0	0.00%	N/A
Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
Total Accidents	6,044		25		
Total Number of Records	165		0		N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT 0-32000 ADT (2018)



Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Signalized 4-Lane (Mainline) Ramp Intersections (2011)

09/02/2020

Job #: 20200902170651

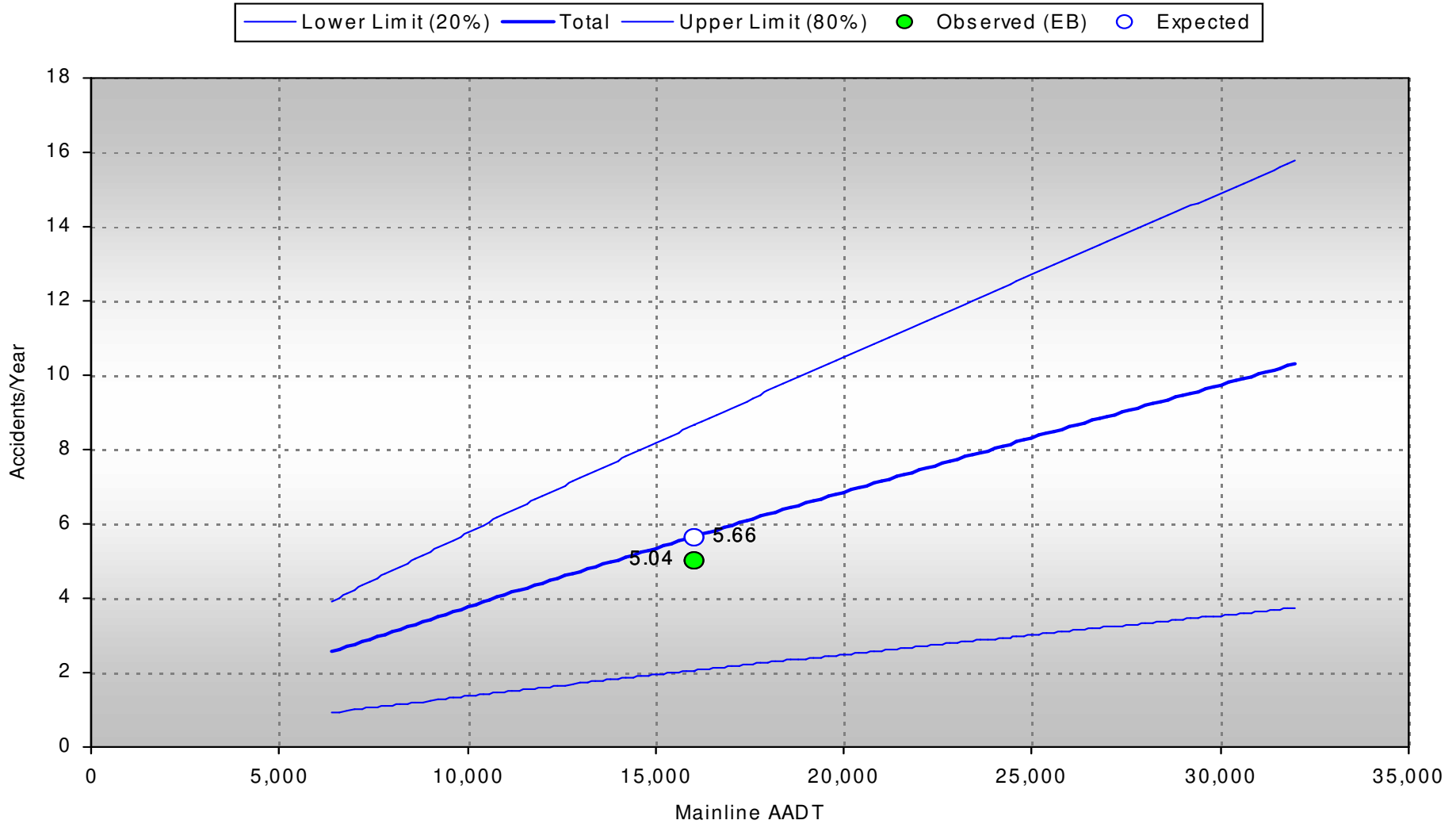
Location: 000000119B

Begin:44.99

End:45.05

From:01/01/2015

To:12/31/2019





Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Signalized 4-Lane (Mainline) Ramp Intersections (2011)

09/02/2020

Job #: 20200902170753

Location: 000000119B

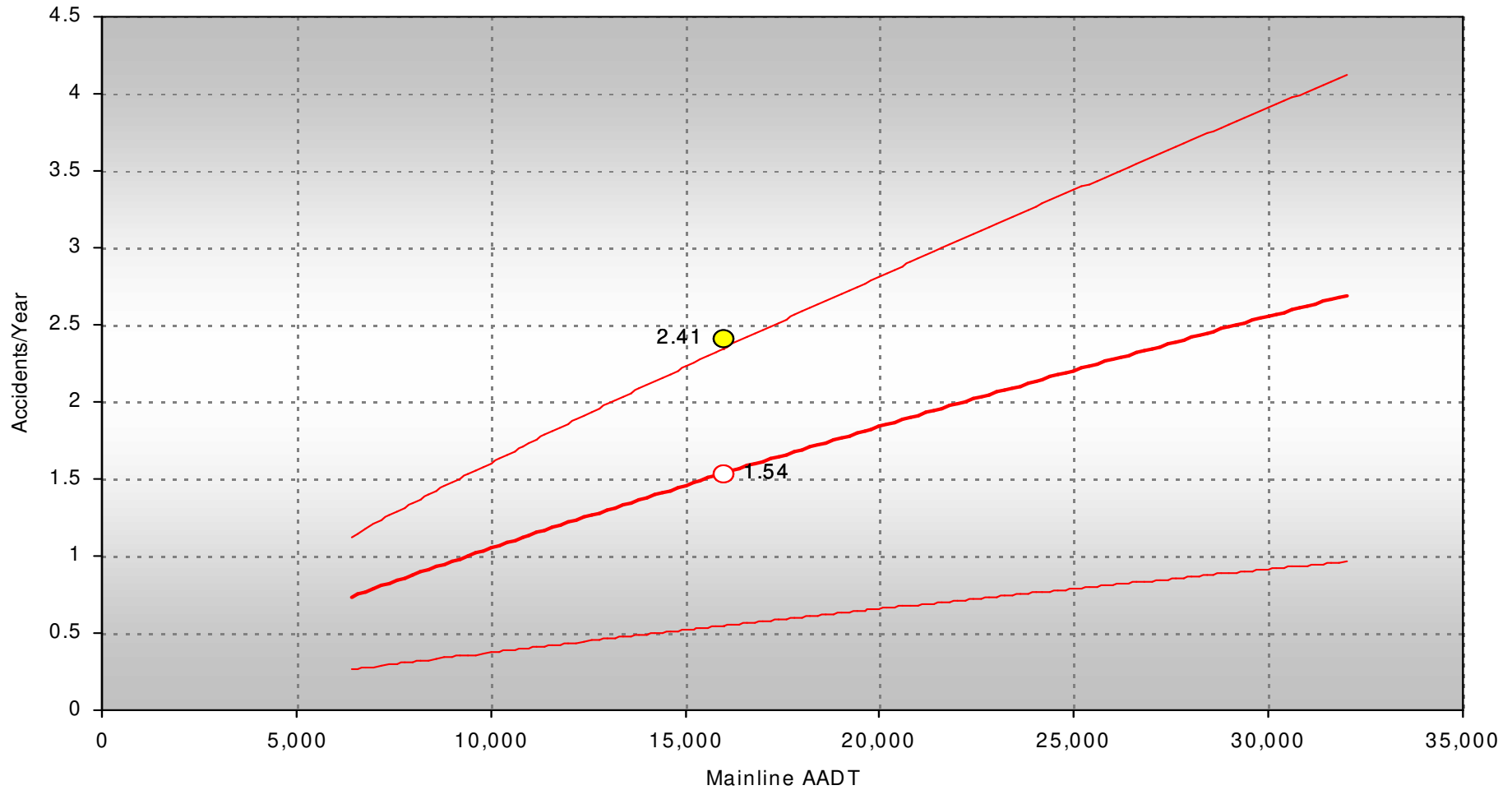
Begin:44.99

End:45.05

From:01/01/2015

To:12/31/2019

— Lower Limit (20%) — INJ + FAT — Upper Limit (80%) ● Observed (EB) ○ Expected







**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**General Summary of Crashes Report**

08/28/2020

Job #: 20200828135029

**Location: 119B      Begin: 45.95    End: 46.17    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	47
INJ:	25      34 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>72</b>

Number of Vehicles	
One Vehicle:	2
Two Vehicles:	66
Three or More:	4
Unknown:	0
<b>Total:</b>	<b>72</b>

Location	
On Road:	69
Off Road:	3
Unknown:	0
<b>Total:</b>	<b>72</b>

Mainline/Ramps/Frontage Rds	
Mainline:	72
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>72</b>

Lighting Conditions	
Daylight:	56
Dawn or Dusk:	1
Dark - Lighted:	11
Dark - Unlighted:	4
Unknown:	0
<b>Total:</b>	<b>72</b>

Crash Rates	
PDO:	1.93*      * Per MVMT
INJ:	1.03*      ** Per 100 MVMT
FAT:	0.00**
<b>Total:</b>	<b>2.95*</b>

Crash Type	
Overtuning:	0
Other Non Collision:	0
Pedestrians:	0
Broadside:	4
Head On:	0
Rear End:	49
Sideswipe Same:	10
Sideswipe Opposite:	0
Approach Turn:	4
Overtaking Turn:	2
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	0
Domestic Animal:	0
Wild Animal:	0
Fixed Objects:	3
Other Objects:	0
Unknown:	0
<b>Total:</b>	<b>72</b>

Weather Conditions	
None:	62
Rain:	5
Snow/Sleet/Hail:	4
Fog:	0
Dust:	0
Wind:	0
Unknown:	1
<b>Total:</b>	<b>72</b>

Road Conditions	
Dry:	61
Wet:	7
Muddy:	0
Snowy:	2
Icy:	0
Slushy:	0
Foreign Material:	0
With Road Treatment:	2
Unknown:	0
<b>Total:</b>	<b>72</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	44	37	3
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	8	6	1
Pickup Truck/Utility Van w/Trailer:	0	0	0
SUV:	19	22	0
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	0	2	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	0	2	0
Motorhome:	0	0	0
Motorcycle:	0	1	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	1	0	0
Other:	0	0	0
Unknown:	0	0	0
<b>Total:</b>	<b>72</b>	<b>70</b>	<b>4</b>

**ADT: 56,309      Length: 0.23**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

08/28/2020

Job #: 20200828141010

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04595\_04617 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	CATEGORY	Statewide Average		This Location		Probability
		# Crashes	%	# Crashes	%	%
	Property Damage Only (PDO)	2,920	75.24%	47	65.28%	3.77%
	Injury (INJ)	957	24.66%	25	34.72%	98.00%
	Fatal (FAT)	4	0.10%	0	0.00%	N/A
	Persons Injured	1,356		34		
	Persons Killed	4		0		N/A
	Single Vehicle Accidents	154	3.97%	2	2.78%	45.19%
	Two Vehicle Accidents	3,257	83.92%	66	91.67%	98.17%
	Three or More Vehicle Accidents	470	12.11%	4	5.56%	5.39%
	Unknown Number of Vehicles	0	0.00%	0	0.00%	N/A
	On Road	3,736	96.26%	69	95.83%	50.72%
	Off Road	145	3.74%	3	4.17%	71.76%
	Off Road Left	67	1.73%	2	2.78%	87.15%
	Off Road Right	71	1.83%	1	1.39%	61.97%
	Off Road at Tee	4	0.10%	0	0.00%	N/A
	Off Road in Median	3	0.08%	0	0.00%	N/A
	Unknown Road Location	0	0.00%	0	0.00%	N/A
	Overturning	26	0.67%	0	0.00%	N/A
	Other Non Collision	5	0.13%	0	0.00%	N/A
	Vehicle Cargo or Debris	5	0.13%	0	0.00%	N/A
	Pedestrian	51	1.31%	0	0.00%	N/A
	Broadside	406	10.46%	4	5.56%	11.61%
	Head On	10	0.26%	0	0.00%	N/A
	Rear End	2,229	57.43%	49	68.06%	97.53%
	Sideswipe (Same Direction)	338	8.71%	10	13.89%	95.33%
	Sideswipe (Opposite Direction)	10	0.26%	0	0.00%	N/A
	Approach Turn	613	15.79%	4	5.56%	0.75%
	Overtaking Turn	12	0.31%	2	2.78%	99.85%
	Parked Motor Vehicle	3	0.08%	0	0.00%	N/A
	Railway Vehicle	0	0.00%	0	0.00%	N/A
	Bicycle or Pedal Cycle	34	0.88%	0	0.00%	N/A
	Motorized Bicycle	0	0.00%	0	0.00%	N/A
	Domestic Animal	0	0.00%	0	0.00%	N/A
	Wild Animal	0	0.00%	0	0.00%	N/A
	Light or Utility Pole	16	0.41%	1	1.39%	96.41%
	Bridge Rail	1	0.03%	0	0.00%	N/A
	Guard Rail	2	0.05%	0	0.00%	N/A
	Cable Rail	0	0.00%	0	0.00%	N/A
	Concrete Barrier	2	0.05%	0	0.00%	N/A
	Bridge Abutment	0	0.00%	0	0.00%	N/A
	Culvert or Headwall	1	0.03%	0	0.00%	N/A
	Delineator Post	1	0.03%	0	0.00%	N/A
	Large Boulders or Rocks	0	0.00%	0	0.00%	N/A
	Rocks in Roadway	0	0.00%	0	0.00%	N/A
	Barricade	0	0.00%	0	0.00%	N/A
	Wall or Building	4	0.10%	0	0.00%	N/A
	Mailbox	0	0.00%	0	0.00%	N/A
	Other Fixed Object	2	0.05%	0	0.00%	N/A
	Road Maintenance Equipment	1	0.03%	0	0.00%	N/A
	Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban 6-Lane Divided Signalized 4-Leg Intersections - AADT >48000 ADT (2018)



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

08/28/2020

Job #: 20200828141010

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04595\_04617 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability
	CATEGORY	# Crashes	%	# Crashes	%
Total Fixed Objects	136	3.50%	3	4.17%	75.45%
Total Other Objects	8	0.21%	0	0.00%	N/A
Daylight	2,839	73.15%	56	77.78%	84.62%
Dawn or Dusk	175	4.51%	1	1.39%	15.87%
Dark - Lighted	832	21.44%	11	15.28%	12.72%
Dark - Unlighted	27	0.70%	4	5.56%	99.98%
Unknown Lighting	8	0.21%	0	0.00%	N/A
No Adverse Weather	3,510	90.44%	62	86.11%	14.72%
Rain	156	4.02%	5	6.94%	93.04%
Snow or Sleet or Hail	173	4.46%	4	5.56%	78.22%
Fog	10	0.26%	0	0.00%	N/A
Dust	0	0.00%	0	0.00%	N/A
Wind	8	0.21%	0	0.00%	N/A
Unknown Weather	24	0.62%	1	1.39%	92.64%
Dry Road	3,363	86.65%	61	84.72%	36.45%
Wet Road	292	7.52%	7	9.72%	82.72%
Muddy Road	2	0.05%	0	0.00%	N/A
Snowy Road	78	2.01%	2	2.78%	82.34%
Icy Road	90	2.32%	0	0.00%	N/A
Slushy Road	17	0.44%	0	0.00%	N/A
Foreign Material Road	2	0.05%	0	0.00%	N/A
With Road Treatment	0	0.00%	0	0.00%	N/A
Dry with Icy Road Treatment	15	0.39%	1	1.39%	96.81%
Wet with Icy Road Treatment	5	0.13%	0	0.00%	N/A
Snowy with Icy Road Treatment	7	0.18%	0	0.00%	N/A
Icy with Icy Road Treatment	3	0.08%	1	1.39%	99.85%
Slushy with Icy Road Treatment	2	0.05%	0	0.00%	N/A
Unknown Road Condition	5	0.13%	0	0.00%	N/A
Driver 1 - No Apparent Contributing Factor	1,800	46.38%	27	37.50%	8.12%
Driver 1 - Asleep at the Wheel	16	0.41%	0	0.00%	N/A
Driver 1 - Illness	20	0.52%	1	1.39%	94.65%
Driver 1 - Distracted by Passenger	57	1.47%	1	1.39%	71.45%
Driver 1 - Driver Inexperience	237	6.11%	4	5.56%	54.94%
Driver 1 - Driver Fatigue	25	0.64%	1	1.39%	92.11%
Driver 1 - Driver Preoccupied	618	15.92%	21	29.17%	99.86%
Driver 1 - Driver Unfamiliar with Area	81	2.09%	7	9.72%	99.99%
Driver 1 - Driver Emotionally Upset	8	0.21%	1	1.39%	99.01%
Driver 1 - Evading Law Enforcement Officer	4	0.10%	0	0.00%	N/A
Driver 1 - Physical Disability	4	0.10%	0	0.00%	N/A
Driver 1 - Unknown Contributing Factor	1,011	26.05%	9	12.50%	0.41%
Driver 1 - No Impairment Suspected	3,717	95.77%	71	98.61%	95.53%
Driver 1 - Alcohol Involved	132	3.40%	0	0.00%	N/A
Driver 1 - RX, Medication, or Drugs Involved	9	0.23%	0	0.00%	N/A
Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Alcohol and Drugs Involved	23	0.59%	1	1.39%	93.16%
Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
Total Accidents	3,881		72		
Total Number of Records	44		0		N/A

**Highway Class:** CO - Urban 6-Lane Divided Signalized 4-Leg Intersections - AADT >48000 ADT (2018)



Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 6-Lane Divided Signalized 4-Leg Intersections (2018)

08/28/2020

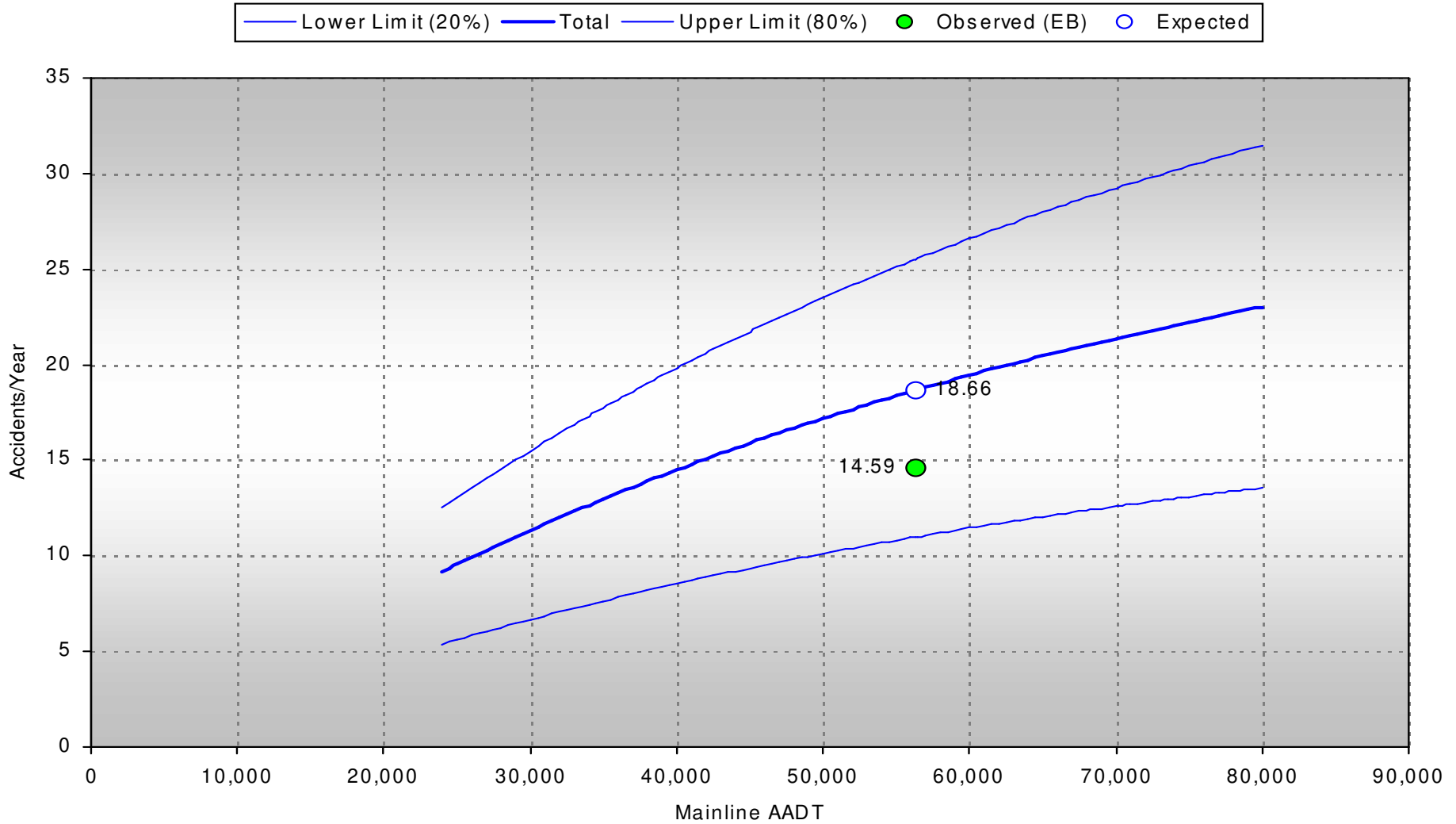
Job #: 20200828140406

Location: 000000119B

Begin:45.95

End:46.17

From:01/01/2015 To:12/31/2019





Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 6-Lane Divided Signalized 4-Leg Intersections (2018)

08/28/2020

Job #: 20200828140509

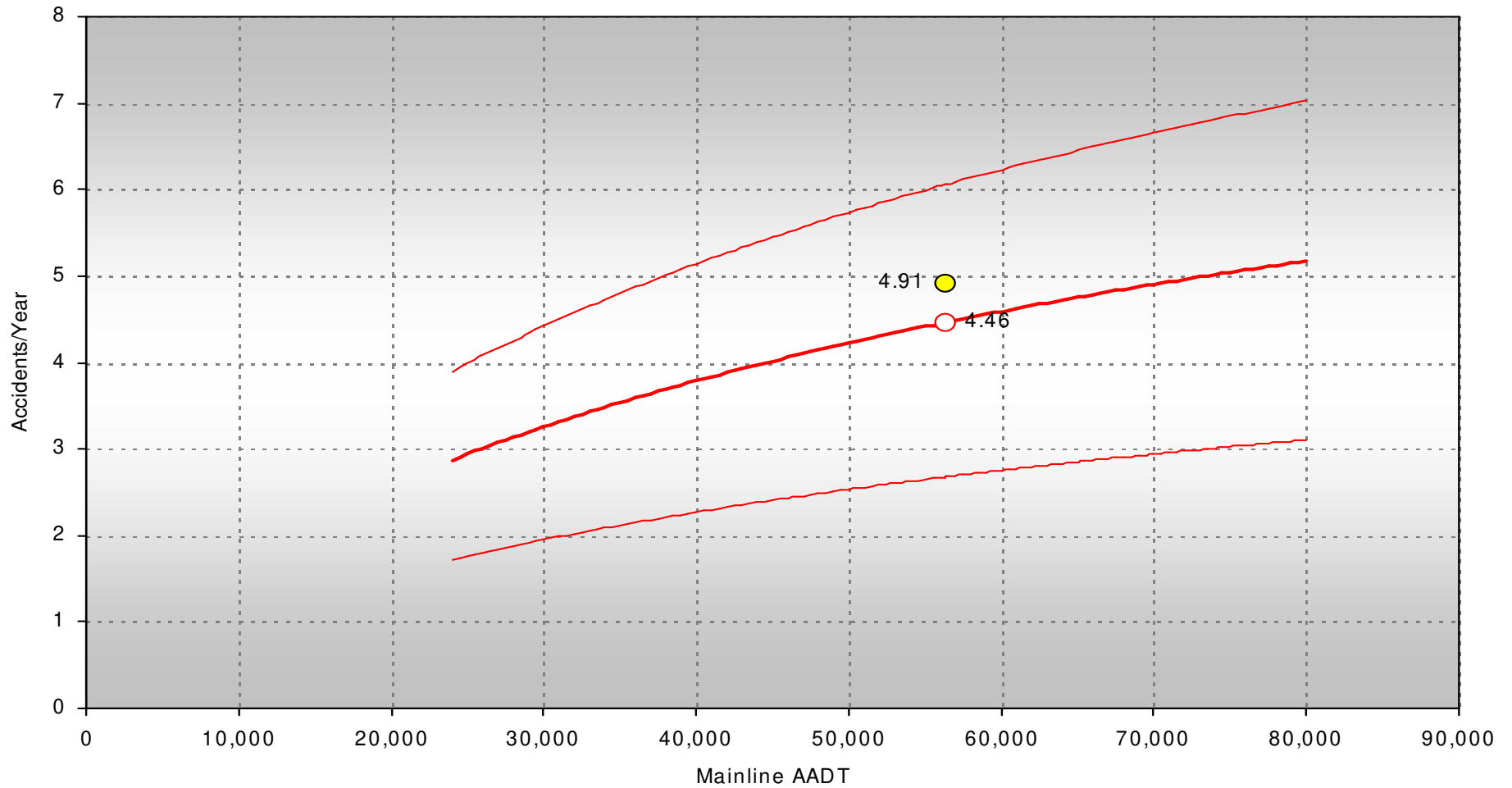
Location: 000000119B

Begin:45.95

End:46.17

From:01/01/2015 To:12/31/2019

— Lower Limit (20%) — INJ + FAT — Upper Limit (80%) ● Observed (EB) ○ Expected





**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

08/31/2020

Job #: 20200831165900

**Location: 119B      Begin: 48.00    End: 48.39    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	65
INJ:	37      52 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>102</b>

Number of Vehicles	
One Vehicle:	15
Two Vehicles:	75
Three or More:	12
Unknown:	0
<b>Total:</b>	<b>102</b>

Location	
On Road:	88
Off Road:	14
Unknown:	0
<b>Total:</b>	<b>102</b>

Mainline/Ramps/Frontage Rds	
Mainline:	102
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>102</b>

Lighting Conditions	
Daylight:	73
Dawn or Dusk:	0
Dark - Lighted:	24
Dark - Unlighted:	5
Unknown:	0
<b>Total:</b>	<b>102</b>

Crash Rates	
PDO:	1.97*      * Per MVMT
INJ:	1.12*      ** Per 100 MVMT
FAT:	0.00**
<b>Total:</b>	<b>3.09*</b>

Crash Type	
Overtuning:	2
Other Non Collision:	1
Pedestrians:	0
Broadside:	12
Head On:	1
Rear End:	49
Sideswipe Same:	14
Sideswipe Opposite:	2
Approach Turn:	1
Overtaking Turn:	3
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	3
Domestic Animal:	0
Wild Animal:	0
Fixed Objects:	14
Other Objects:	0
Unknown:	0
<b>Total:</b>	<b>102</b>

Weather Conditions	
None:	89
Rain:	0
Snow/Sleet/Hail:	10
Fog:	0
Dust:	0
Wind:	1
Unknown:	2
<b>Total:</b>	<b>102</b>

Road Conditions	
Dry:	86
Wet:	1
Muddy:	0
Snowy:	9
Icy:	5
Slushy:	0
Foreign Material:	0
With Road Treatment:	1
Unknown:	0
<b>Total:</b>	<b>102</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	64	38	5
Passenger Car/Van w/Trailer:	0	1	0
Pickup Truck/Utility Van:	11	13	1
Pickup Truck/Utility Van w/Trailer:	2	0	0
SUV:	18	29	5
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	4	0	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	0	1	0
Motorhome:	0	0	0
Motorcycle:	0	2	0
Bicycle:	0	3	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	3	0	0
Other:	0	0	0
Unknown:	0	0	1
<b>Total:</b>	<b>102</b>	<b>87</b>	<b>12</b>

**ADT: 48,050      Length: 0.37**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

08/31/2020

Job #: 20200831171830

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04800\_04839 **Cutoff:** 5 Acc's @ 95%

CATEGORY	Statewide Average		This Location		Probability
	# Crashes	%	# Crashes	%	%
Property Damage Only (PDO)	6,608	75.04%	65	63.73%	0.73%
Injury (INJ)	2,184	24.80%	37	36.27%	99.65%
Fatal (FAT)	14	0.16%	0	0.00%	N/A
Persons Injured	3,076		52		
Persons Killed	15		0		N/A
Single Vehicle Accidents	324	3.68%	15	14.71%	100.00%
Two Vehicle Accidents	7,546	85.69%	75	73.53%	0.09%
Three or More Vehicle Accidents	936	10.63%	12	11.76%	71.32%
Unknown Number of Vehicles	0	0.00%	0	0.00%	N/A
On Road	8,506	96.59%	88	86.27%	0.00%
Off Road	299	3.40%	14	13.73%	100.00%
Off Road Left	132	1.50%	8	7.84%	100.00%
Off Road Right	154	1.75%	6	5.88%	99.78%
Off Road at Tee	5	0.06%	0	0.00%	N/A
Off Road in Median	8	0.09%	0	0.00%	N/A
Unknown Road Location	1	0.01%	0	0.00%	N/A
Overturning	52	0.59%	2	1.96%	97.71%
Other Non Collision	15	0.17%	1	0.98%	98.66%
Vehicle Cargo or Debris	14	0.16%	0	0.00%	N/A
Pedestrian	149	1.69%	0	0.00%	N/A
Broadside	963	10.94%	12	11.76%	67.74%
Head On	18	0.20%	1	0.98%	98.12%
Rear End	4,756	54.01%	49	48.04%	13.35%
Sideswipe (Same Direction)	858	9.74%	14	13.73%	93.02%
Sideswipe (Opposite Direction)	39	0.44%	2	1.96%	98.92%
Approach Turn	1,458	16.56%	1	0.98%	0.00%
Overtaking Turn	41	0.47%	3	2.94%	99.86%
Parked Motor Vehicle	14	0.16%	0	0.00%	N/A
Railway Vehicle	7	0.08%	0	0.00%	N/A
Bicycle or Pedal Cycle	127	1.44%	3	2.94%	93.93%
Motorized Bicycle	0	0.00%	0	0.00%	N/A
Domestic Animal	0	0.00%	0	0.00%	N/A
Wild Animal	6	0.07%	0	0.00%	N/A
Light or Utility Pole	35	0.40%	0	0.00%	N/A
Bridge Rail	3	0.03%	0	0.00%	N/A
Guard Rail	5	0.06%	0	0.00%	N/A
Cable Rail	0	0.00%	0	0.00%	N/A
Concrete Barrier	7	0.08%	0	0.00%	N/A
Bridge Abutment	0	0.00%	0	0.00%	N/A
Culvert or Headwall	1	0.01%	0	0.00%	N/A
Delineator Post	4	0.05%	2	1.96%	100.00%
Large Boulders or Rocks	1	0.01%	0	0.00%	N/A
Rocks in Roadway	0	0.00%	0	0.00%	N/A
Barricade	3	0.03%	0	0.00%	N/A
Wall or Building	7	0.08%	0	0.00%	N/A
Mailbox	0	0.00%	0	0.00%	N/A
Other Fixed Object	23	0.26%	9	8.82%	100.00%
Road Maintenance Equipment	5	0.06%	0	0.00%	N/A
Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban 6-Lane Divided Signalized 4-Leg Intersections - AADT All Totals (2018)



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

08/31/2020

Job #: 20200831171830

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04800\_04839 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability
	CATEGORY	# Crashes	%	# Crashes	%
Total Fixed Objects	282	3.20%	14	13.73%	100.00%
Total Other Objects	21	0.24%	0	0.00%	N/A
Daylight	6,379	72.44%	73	71.57%	45.92%
Dawn or Dusk	355	4.03%	0	0.00%	N/A
Dark - Lighted	1,980	22.48%	24	23.53%	65.17%
Dark - Unlighted	73	0.83%	5	4.90%	99.98%
Unknown Lighting	19	0.22%	0	0.00%	N/A
No Adverse Weather	7,882	89.51%	89	87.25%	27.13%
Rain	381	4.33%	0	0.00%	N/A
Snow or Sleet or Hail	463	5.26%	10	9.80%	98.15%
Fog	15	0.17%	0	0.00%	N/A
Dust	0	0.00%	0	0.00%	N/A
Wind	23	0.26%	1	0.98%	97.04%
Unknown Weather	42	0.48%	2	1.96%	98.69%
Dry Road	7,506	85.24%	86	84.31%	43.81%
Wet Road	713	8.10%	1	0.98%	0.18%
Muddy Road	4	0.05%	0	0.00%	N/A
Snowy Road	217	2.46%	9	8.82%	99.98%
Icy Road	234	2.66%	5	4.90%	94.49%
Slushy Road	43	0.49%	0	0.00%	N/A
Foreign Material Road	2	0.02%	0	0.00%	N/A
With Road Treatment	0	0.00%	0	0.00%	N/A
Dry with Icy Road Treatment	21	0.24%	0	0.00%	N/A
Wet with Icy Road Treatment	13	0.15%	0	0.00%	N/A
Snowy with Icy Road Treatment	15	0.17%	0	0.00%	N/A
Icy with Icy Road Treatment	12	0.14%	1	0.98%	99.13%
Slushy with Icy Road Treatment	7	0.08%	0	0.00%	N/A
Unknown Road Condition	19	0.22%	0	0.00%	N/A
Driver 1 - No Apparent Contributing Factor	4,179	47.46%	51	50.00%	73.05%
Driver 1 - Asleep at the Wheel	27	0.31%	0	0.00%	N/A
Driver 1 - Illness	48	0.55%	2	1.96%	98.14%
Driver 1 - Distracted by Passenger	123	1.40%	0	0.00%	N/A
Driver 1 - Driver Inexperience	627	7.12%	10	9.80%	88.98%
Driver 1 - Driver Fatigue	53	0.60%	0	0.00%	N/A
Driver 1 - Driver Preoccupied	1,327	15.07%	14	13.73%	41.69%
Driver 1 - Driver Unfamiliar with Area	195	2.21%	10	9.80%	100.00%
Driver 1 - Driver Emotionally Upset	19	0.22%	1	0.98%	97.92%
Driver 1 - Evading Law Enforcement Officer	10	0.11%	0	0.00%	N/A
Driver 1 - Physical Disability	10	0.11%	0	0.00%	N/A
Driver 1 - Unknown Contributing Factor	2,188	24.85%	14	13.73%	0.45%
Driver 1 - No Impairment Suspected	8,442	95.87%	95	93.14%	13.00%
Driver 1 - Alcohol Involved	286	3.25%	4	3.92%	76.24%
Driver 1 - RX, Medication, or Drugs Involved	27	0.31%	3	2.94%	99.97%
Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Alcohol and Drugs Involved	51	0.58%	0	0.00%	N/A
Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
Total Accidents	8,806		102		
Total Number of Records	113		0		N/A

**Highway Class:** CO - Urban 6-Lane Divided Signalized 4-Leg Intersections - AADT All Totals (2018)





Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 6-Lane Divided Signalized 4-Leg Intersections (2018)

08/31/2020

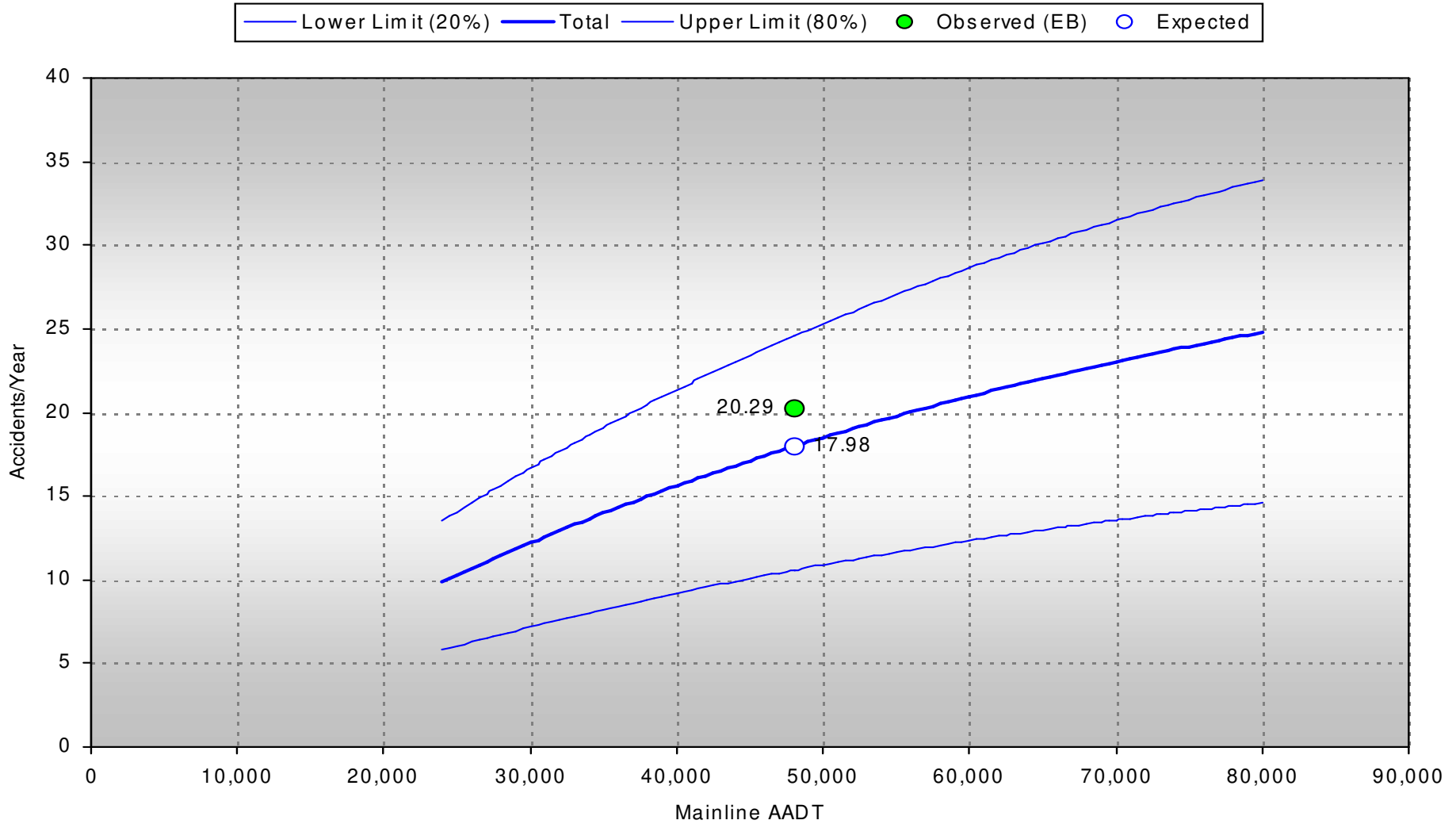
Job #: 20200831171330

Location: 000000119B

Begin:48.00

End:48.39

From:01/01/2015 To:12/31/2019





Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 6-Lane Divided Signalized 4-Leg Intersections (2018)

08/31/2020

Job #: 20200831171432

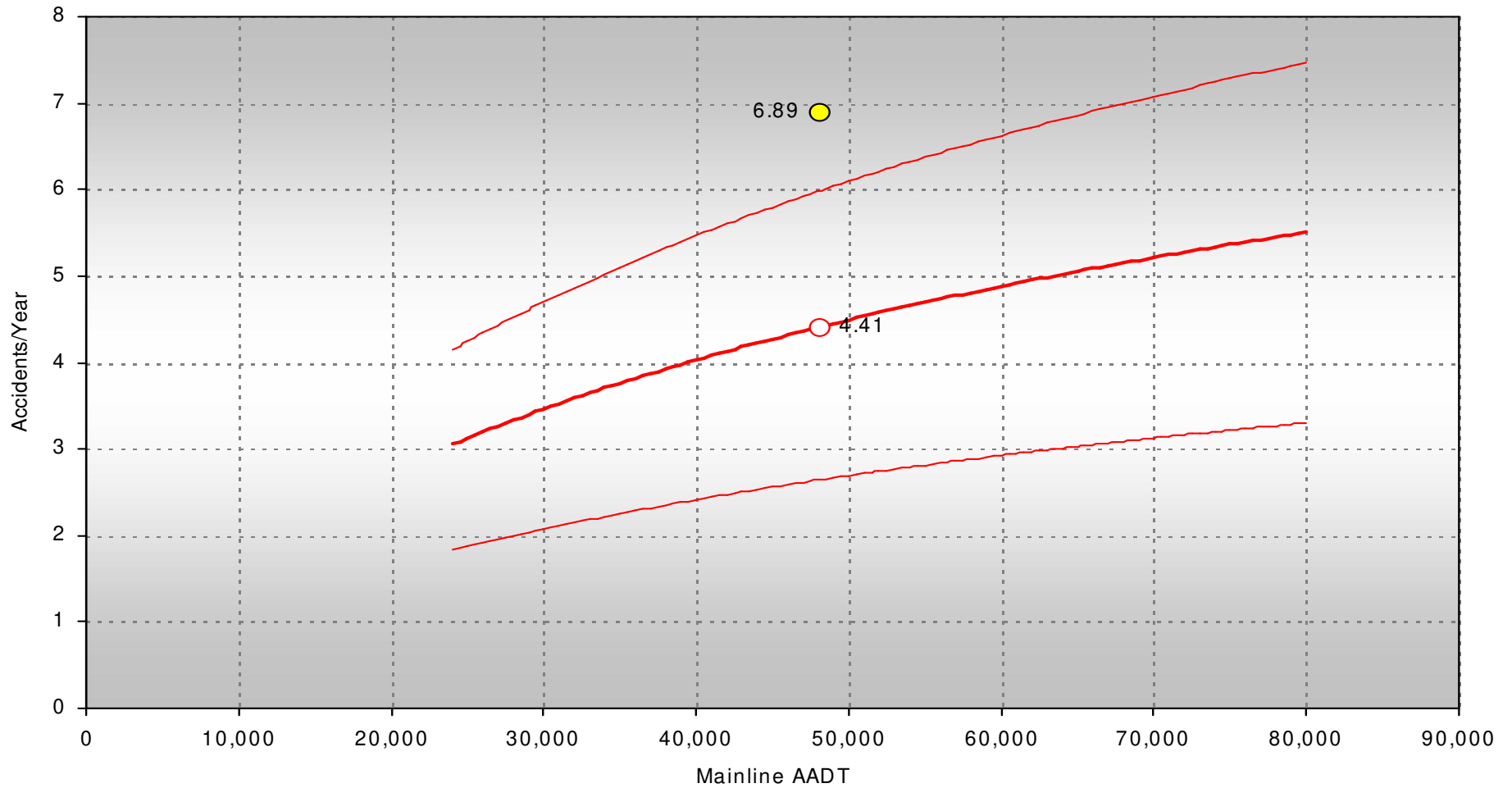
Location: 000000119B

Begin:48.00

End:48.39

From:01/01/2015 To:12/31/2019

— Lower Limit (20%) — INJ + FAT — Upper Limit (80%) ● Observed (EB) ○ Expected





**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

08/31/2020

Job #: 20200831172530

**Location: 119B 52A      Begin: 49.43    End: 49.65    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	42
INJ:	27      45 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>69</b>

Number of Vehicles	
One Vehicle:	0
Two Vehicles:	56
Three or More:	13
Unknown:	0
<b>Total:</b>	<b>69</b>

Location	
On Road:	69
Off Road:	0
Unknown:	0
<b>Total:</b>	<b>69</b>

Mainline/Ramps/Frontage Rds	
Mainline:	69
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>69</b>

Lighting Conditions	
Daylight:	58
Dawn or Dusk:	2
Dark - Lighted:	6
Dark - Unlighted:	3
Unknown:	0
<b>Total:</b>	<b>69</b>

Crash Rates	
PDO:	2.60*      * Per MVMT
INJ:	1.67*      ** Per 100 MVMT
FAT:	0.00**
<b>Total:</b>	<b>4.28*</b>

Crash Type	
Overtuning:	0
Other Non Collision:	0
Pedestrians:	0
Broadside:	14
Head On:	0
Rear End:	43
Sideswipe Same:	5
Sideswipe Opposite:	0
Approach Turn:	5
Overtaking Turn:	1
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	0
Domestic Animal:	0
Wild Animal:	0
Fixed Objects:	0
Other Objects:	1
Unknown:	0
<b>Total:</b>	<b>69</b>

Weather Conditions	
None:	64
Rain:	1
Snow/Sleet/Hail:	3
Fog:	0
Dust:	0
Wind:	1
Unknown:	0
<b>Total:</b>	<b>69</b>

Road Conditions	
Dry:	63
Wet:	2
Muddy:	0
Snowy:	2
Icy:	2
Slushy:	0
Foreign Material:	0
With Road Treatment:	0
Unknown:	0
<b>Total:</b>	<b>69</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	34	23	6
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	9	13	1
Pickup Truck/Utility Van w/Trailer:	1	1	0
SUV:	20	30	6
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	4	0	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	0	1	0
Motorhome:	0	0	0
Motorcycle:	0	1	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	1	0	0
Other:	0	0	0
Unknown:	0	0	0
<b>Total:</b>	<b>69</b>	<b>69</b>	<b>13</b>

**ADT: 41,071      Length: 0.21**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

08/31/2020

Job #: 20200831173421

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04943\_04965 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	CATEGORY	Statewide Average		This Location		Probability
		# Crashes	%	# Crashes	%	%
	Property Damage Only (PDO)	3,039	73.69%	42	60.87%	1.35%
	Injury (INJ)	1,074	26.04%	27	39.13%	99.41%
	Fatal (FAT)	11	0.27%	0	0.00%	N/A
	Persons Injured	1,524		45		
	Persons Killed	11		0		N/A
	Single Vehicle Accidents	165	4.00%	0	0.00%	N/A
	Two Vehicle Accidents	3,519	85.33%	56	81.16%	20.51%
	Three or More Vehicle Accidents	440	10.67%	13	18.84%	98.68%
	Unknown Number of Vehicles	0	0.00%	0	0.00%	N/A
	On Road	3,974	96.36%	69	100.00%	100.00%
	Off Road	150	3.64%	0	0.00%	N/A
	Off Road Left	74	1.79%	0	0.00%	N/A
	Off Road Right	71	1.72%	0	0.00%	N/A
	Off Road at Tee	0	0.00%	0	0.00%	N/A
	Off Road in Median	5	0.12%	0	0.00%	N/A
	Unknown Road Location	0	0.00%	0	0.00%	N/A
	Overturning	17	0.41%	0	0.00%	N/A
	Other Non Collision	3	0.07%	0	0.00%	N/A
	Vehicle Cargo or Debris	6	0.15%	1	1.45%	99.53%
	Pedestrian	51	1.24%	0	0.00%	N/A
	Broadside	427	10.35%	14	20.29%	99.58%
	Head On	10	0.24%	0	0.00%	N/A
	Rear End	2,311	56.04%	43	62.32%	88.00%
	Sideswipe (Same Direction)	387	9.38%	5	7.25%	36.20%
	Sideswipe (Opposite Direction)	29	0.70%	0	0.00%	N/A
	Approach Turn	650	15.76%	5	7.25%	2.95%
	Overtaking Turn	19	0.46%	1	1.45%	95.94%
	Parked Motor Vehicle	7	0.17%	0	0.00%	N/A
	Railway Vehicle	0	0.00%	0	0.00%	N/A
	Bicycle or Pedal Cycle	50	1.21%	0	0.00%	N/A
	Motorized Bicycle	0	0.00%	0	0.00%	N/A
	Domestic Animal	3	0.07%	0	0.00%	N/A
	Wild Animal	7	0.17%	0	0.00%	N/A
	Light or Utility Pole	15	0.36%	0	0.00%	N/A
	Bridge Rail	0	0.00%	0	0.00%	N/A
	Guard Rail	2	0.05%	0	0.00%	N/A
	Cable Rail	0	0.00%	0	0.00%	N/A
	Concrete Barrier	1	0.02%	0	0.00%	N/A
	Bridge Abutment	0	0.00%	0	0.00%	N/A
	Culvert or Headwall	1	0.02%	0	0.00%	N/A
	Delineator Post	4	0.10%	0	0.00%	N/A
	Large Boulders or Rocks	1	0.02%	0	0.00%	N/A
	Rocks in Roadway	0	0.00%	0	0.00%	N/A
	Barricade	1	0.02%	0	0.00%	N/A
	Wall or Building	1	0.02%	0	0.00%	N/A
	Mailbox	0	0.00%	0	0.00%	N/A
	Other Fixed Object	11	0.27%	0	0.00%	N/A
	Road Maintenance Equipment	2	0.05%	0	0.00%	N/A
	Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

08/31/2020

Job #: 20200831173421

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04943\_04965 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability
	CATEGORY	# Crashes	%	# Crashes	%
Total Fixed Objects	141	3.42%	0	0.00%	N/A
Total Other Objects	12	0.29%	1	1.45%	98.25%
Daylight	2,971	72.04%	58	84.06%	99.35%
Dawn or Dusk	167	4.05%	2	2.90%	46.69%
Dark - Lighted	942	22.84%	6	8.70%	0.19%
Dark - Unlighted	36	0.87%	3	4.35%	99.68%
Unknown Lighting	8	0.19%	0	0.00%	N/A
No Adverse Weather	3,674	89.09%	64	92.75%	88.43%
Rain	179	4.34%	1	1.45%	19.33%
Snow or Sleet or Hail	201	4.87%	3	4.35%	56.45%
Fog	8	0.19%	0	0.00%	N/A
Dust	0	0.00%	0	0.00%	N/A
Wind	12	0.29%	1	1.45%	98.25%
Unknown Weather	50	1.21%	0	0.00%	N/A
Dry Road	3,534	85.69%	63	91.30%	94.21%
Wet Road	321	7.78%	2	2.90%	8.78%
Muddy Road	0	0.00%	0	0.00%	N/A
Snowy Road	100	2.42%	2	2.90%	76.54%
Icy Road	96	2.33%	2	2.90%	78.30%
Slushy Road	22	0.53%	0	0.00%	N/A
Foreign Material Road	1	0.02%	0	0.00%	N/A
With Road Treatment	0	0.00%	0	0.00%	N/A
Dry with Icy Road Treatment	12	0.29%	0	0.00%	N/A
Wet with Icy Road Treatment	3	0.07%	0	0.00%	N/A
Snowy with Icy Road Treatment	14	0.34%	0	0.00%	N/A
Icy with Icy Road Treatment	3	0.07%	0	0.00%	N/A
Slushy with Icy Road Treatment	1	0.02%	0	0.00%	N/A
Unknown Road Condition	17	0.41%	0	0.00%	N/A
Driver 1 - No Apparent Contributing Factor	1,777	43.09%	27	39.13%	29.53%
Driver 1 - Asleep at the Wheel	17	0.41%	1	1.45%	96.68%
Driver 1 - Illness	27	0.65%	0	0.00%	N/A
Driver 1 - Distracted by Passenger	56	1.36%	2	2.90%	93.22%
Driver 1 - Driver Inexperience	360	8.73%	8	11.59%	85.44%
Driver 1 - Driver Fatigue	29	0.70%	1	1.45%	91.48%
Driver 1 - Driver Preoccupied	656	15.91%	20	28.99%	99.81%
Driver 1 - Driver Unfamiliar with Area	106	2.57%	2	2.90%	73.85%
Driver 1 - Driver Emotionally Upset	16	0.39%	0	0.00%	N/A
Driver 1 - Evading Law Enforcement Officer	8	0.19%	0	0.00%	N/A
Driver 1 - Physical Disability	7	0.17%	0	0.00%	N/A
Driver 1 - Unknown Contributing Factor	1,065	25.82%	8	11.59%	0.31%
Driver 1 - No Impairment Suspected	3,917	94.98%	68	98.55%	97.14%
Driver 1 - Alcohol Involved	165	4.00%	1	1.45%	23.16%
Driver 1 - RX, Medication, or Drugs Involved	20	0.48%	0	0.00%	N/A
Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Alcohol and Drugs Involved	22	0.53%	0	0.00%	N/A
Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
Total Accidents	4,124		69		
Total Number of Records	59		0		N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)



Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

08/31/2020

Job #: 20200831173140

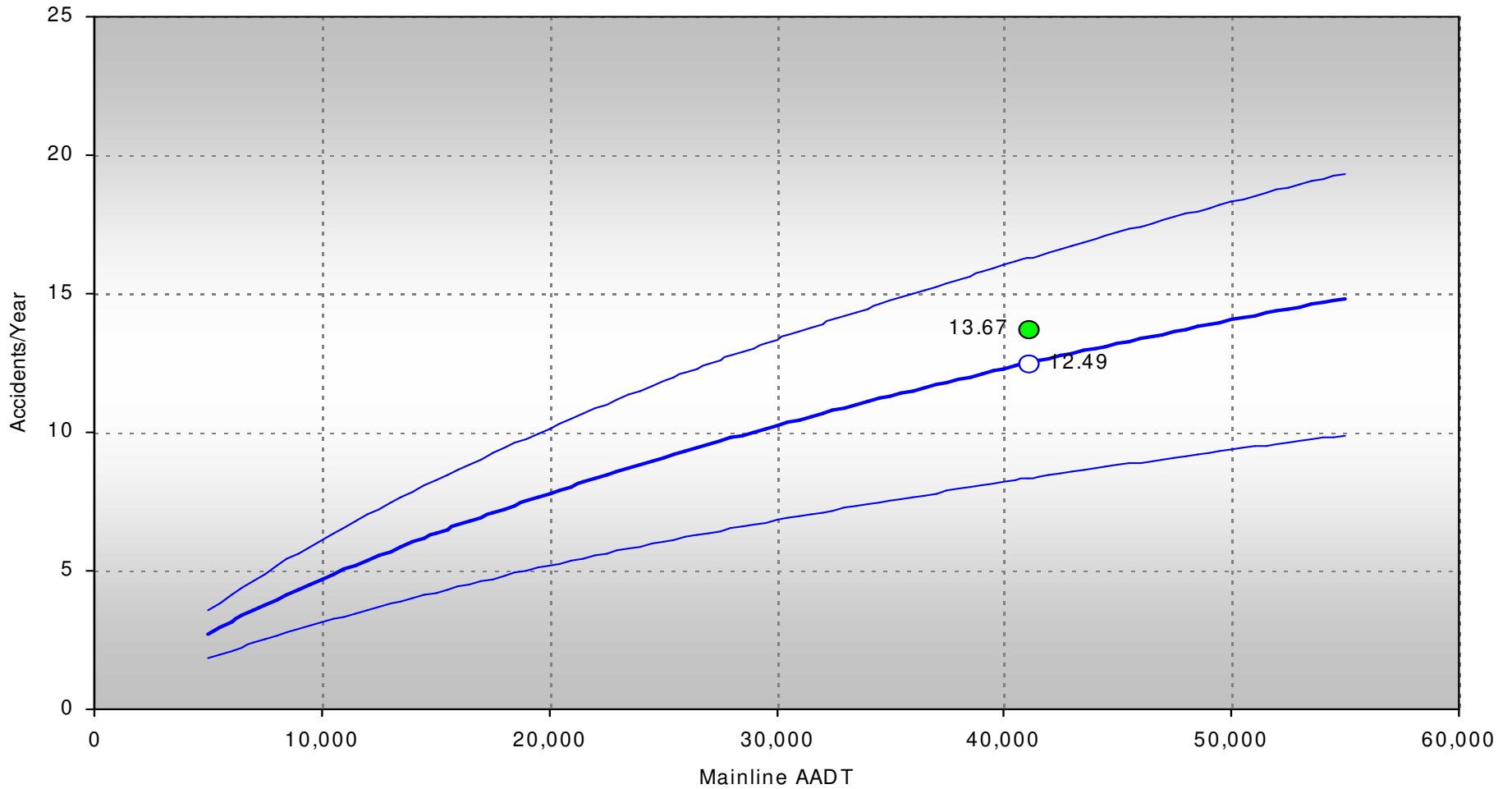
Location: 000000119B 52A

Begin:49.43

End:49.65

From:01/01/2015 To:12/31/2019

— Lower Limit (20%) — Total — Upper Limit (80%) ● Observed (EB) ○ Expected





Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

08/31/2020

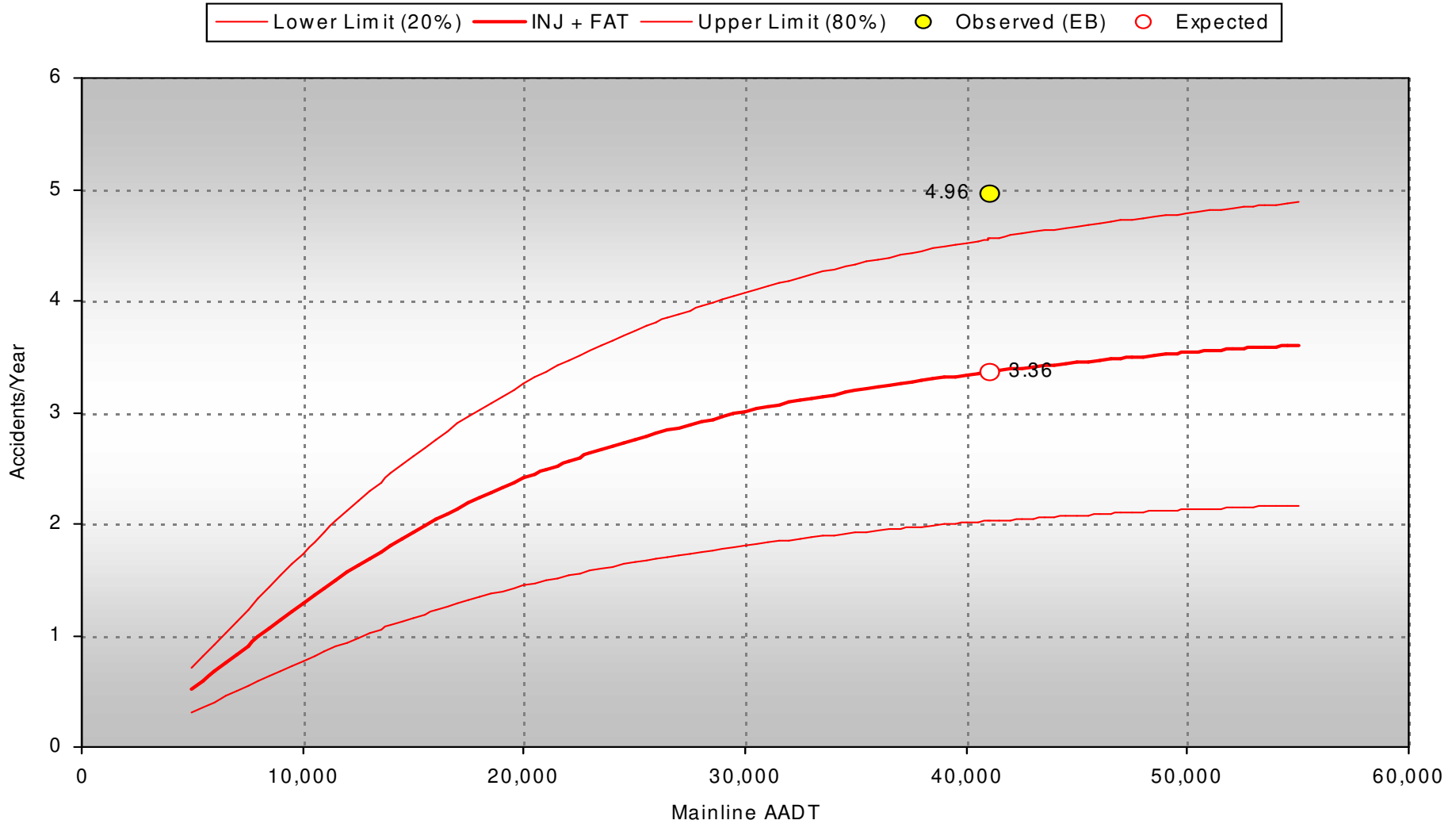
Job #: 20200831173045

Location: 000000119B 52A

Begin:49.43

End:49.65

From:01/01/2015 To:12/31/2019





**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

08/31/2020

Job #: 20200831174023

**Location: 119B      Begin: 50.61    End: 50.81    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	34
INJ:	17      29 :Injured
FAT:	1      1 :Killed
<b>Total:</b>	<b>52</b>

Number of Vehicles	
One Vehicle:	0
Two Vehicles:	43
Three or More:	9
Unknown:	0
<b>Total:</b>	<b>52</b>

Location	
On Road:	51
Off Road:	1
Unknown:	0
<b>Total:</b>	<b>52</b>

Mainline/Ramps/Frontage Rds	
Mainline:	52
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>52</b>

Lighting Conditions	
Daylight:	44
Dawn or Dusk:	2
Dark - Lighted:	3
Dark - Unlighted:	3
Unknown:	0
<b>Total:</b>	<b>52</b>

Crash Rates	
PDO:	2.43*      * Per MVMT
INJ:	1.21*      ** Per 100 MVMT
FAT:	7.14**
<b>Total:</b>	<b>3.71*</b>

Crash Type	
Overtuning:	0
Other Non Collision:	0
Pedestrians:	0
Broadside:	11
Head On:	0
Rear End:	35
Sideswipe Same:	3
Sideswipe Opposite:	0
Approach Turn:	1
Overtaking Turn:	0
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	1
Domestic Animal:	0
Wild Animal:	0
Fixed Objects:	1
Other Objects:	0
Unknown:	0
<b>Total:</b>	<b>52</b>

Weather Conditions	
None:	49
Rain:	0
Snow/Sleet/Hail:	3
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
<b>Total:</b>	<b>52</b>

Road Conditions	
Dry:	47
Wet:	2
Muddy:	0
Snowy:	1
Icy:	1
Slushy:	0
Foreign Material:	0
With Road Treatment:	1
Unknown:	0
<b>Total:</b>	<b>52</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	27	27	5
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	4	7	1
Pickup Truck/Utility Van w/Trailer:	0	0	0
SUV:	19	16	3
SUV w/Trailer:	1	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	0	1	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	0	0	0
Motorhome:	0	0	0
Motorcycle:	0	0	0
Bicycle:	0	1	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	1	0	0
Other:	0	0	0
Unknown:	0	0	0
<b>Total:</b>	<b>52</b>	<b>52</b>	<b>9</b>

**ADT: 37,600      Length: 0.20**





**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

08/31/2020

Job #: 20200831174941

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_05061\_05081 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	CATEGORY	Statewide Average		This Location		Probability
		# Crashes	%	# Crashes	%	%
	Property Damage Only (PDO)	3,039	73.69%	34	65.38%	11.62%
	Injury (INJ)	1,074	26.04%	17	32.69%	89.24%
	Fatal (FAT)	11	0.27%	1	1.92%	99.14%
	Persons Injured	1,524		29		
	Persons Killed	11		1		
	Single Vehicle Accidents	165	4.00%	0	0.00%	N/A
	Two Vehicle Accidents	3,519	85.33%	43	82.69%	35.12%
	Three or More Vehicle Accidents	440	10.67%	9	17.31%	95.39% <span style="color:red">◀</span>
	Unknown Number of Vehicles	0	0.00%	0	0.00%	N/A
	On Road	3,974	96.36%	51	98.08%	85.44%
	Off Road	150	3.64%	1	1.92%	43.15%
	Off Road Left	74	1.79%	1	1.92%	76.06%
	Off Road Right	71	1.72%	0	0.00%	N/A
	Off Road at Tee	0	0.00%	0	0.00%	N/A
	Off Road in Median	5	0.12%	0	0.00%	N/A
	Unknown Road Location	0	0.00%	0	0.00%	N/A
	Overturning	17	0.41%	0	0.00%	N/A
	Other Non Collision	3	0.07%	0	0.00%	N/A
	Vehicle Cargo or Debris	6	0.15%	0	0.00%	N/A
	Pedestrian	51	1.24%	0	0.00%	N/A
	Broadside	427	10.35%	11	21.15%	99.40% <span style="color:red">◀</span>
	Head On	10	0.24%	0	0.00%	N/A
	Rear End	2,311	56.04%	35	67.31%	96.38% <span style="color:red">◀</span>
	Sideswipe (Same Direction)	387	9.38%	3	5.77%	26.87%
	Sideswipe (Opposite Direction)	29	0.70%	0	0.00%	N/A
	Approach Turn	650	15.76%	1	1.92%	0.14%
	Overtaking Turn	19	0.46%	0	0.00%	N/A
	Parked Motor Vehicle	7	0.17%	0	0.00%	N/A
	Railway Vehicle	0	0.00%	0	0.00%	N/A
	Bicycle or Pedal Cycle	50	1.21%	1	1.92%	86.87%
	Motorized Bicycle	0	0.00%	0	0.00%	N/A
	Domestic Animal	3	0.07%	0	0.00%	N/A
	Wild Animal	7	0.17%	0	0.00%	N/A
	Light or Utility Pole	15	0.36%	0	0.00%	N/A
	Bridge Rail	0	0.00%	0	0.00%	N/A
	Guard Rail	2	0.05%	0	0.00%	N/A
	Cable Rail	0	0.00%	0	0.00%	N/A
	Concrete Barrier	1	0.02%	0	0.00%	N/A
	Bridge Abutment	0	0.00%	0	0.00%	N/A
	Culvert or Headwall	1	0.02%	0	0.00%	N/A
	Delineator Post	4	0.10%	1	1.92%	99.88%
	Large Boulders or Rocks	1	0.02%	0	0.00%	N/A
	Rocks in Roadway	0	0.00%	0	0.00%	N/A
	Barricade	1	0.02%	0	0.00%	N/A
	Wall or Building	1	0.02%	0	0.00%	N/A
	Mailbox	0	0.00%	0	0.00%	N/A
	Other Fixed Object	11	0.27%	0	0.00%	N/A
	Road Maintenance Equipment	2	0.05%	0	0.00%	N/A
	Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

08/31/2020

Job #: 20200831174941

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_05061\_05081 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability
	CATEGORY	# Crashes	%	# Crashes	%
Total Fixed Objects	141	3.42%	1	1.92%	46.54%
Total Other Objects	12	0.29%	0	0.00%	N/A
Daylight	2,971	72.04%	44	84.62%	98.91%
Dawn or Dusk	167	4.05%	2	3.85%	64.75%
Dark - Lighted	942	22.84%	3	5.77%	0.10%
Dark - Unlighted	36	0.87%	3	5.77%	99.89%
Unknown Lighting	8	0.19%	0	0.00%	N/A
No Adverse Weather	3,674	89.09%	49	94.23%	93.30%
Rain	179	4.34%	0	0.00%	N/A
Snow or Sleet or Hail	201	4.87%	3	5.77%	75.28%
Fog	8	0.19%	0	0.00%	N/A
Dust	0	0.00%	0	0.00%	N/A
Wind	12	0.29%	0	0.00%	N/A
Unknown Weather	50	1.21%	0	0.00%	N/A
Dry Road	3,534	85.69%	47	90.38%	88.27%
Wet Road	321	7.78%	2	3.85%	21.94%
Muddy Road	0	0.00%	0	0.00%	N/A
Snowy Road	100	2.42%	1	1.92%	63.96%
Icy Road	96	2.33%	1	1.92%	65.80%
Slushy Road	22	0.53%	0	0.00%	N/A
Foreign Material Road	1	0.02%	0	0.00%	N/A
With Road Treatment	0	0.00%	0	0.00%	N/A
Dry with Icy Road Treatment	12	0.29%	0	0.00%	N/A
Wet with Icy Road Treatment	3	0.07%	0	0.00%	N/A
Snowy with Icy Road Treatment	14	0.34%	1	1.92%	98.63%
Icy with Icy Road Treatment	3	0.07%	0	0.00%	N/A
Slushy with Icy Road Treatment	1	0.02%	0	0.00%	N/A
Unknown Road Condition	17	0.41%	0	0.00%	N/A
Driver 1 - No Apparent Contributing Factor	1,777	43.09%	19	36.54%	20.86%
Driver 1 - Asleep at the Wheel	17	0.41%	1	1.92%	98.03%
Driver 1 - Illness	27	0.65%	1	1.92%	95.42%
Driver 1 - Distracted by Passenger	56	1.36%	1	1.92%	84.28%
Driver 1 - Driver Inexperience	360	8.73%	3	5.77%	32.40%
Driver 1 - Driver Fatigue	29	0.70%	2	3.85%	99.41%
Driver 1 - Driver Preoccupied	656	15.91%	12	23.08%	93.96%
Driver 1 - Driver Unfamiliar with Area	106	2.57%	6	11.54%	99.96%
Driver 1 - Driver Emotionally Upset	16	0.39%	0	0.00%	N/A
Driver 1 - Evading Law Enforcement Officer	8	0.19%	0	0.00%	N/A
Driver 1 - Physical Disability	7	0.17%	0	0.00%	N/A
Driver 1 - Unknown Contributing Factor	1,065	25.82%	7	13.46%	2.47%
Driver 1 - No Impairment Suspected	3,917	94.98%	49	94.23%	48.80%
Driver 1 - Alcohol Involved	165	4.00%	1	1.92%	37.89%
Driver 1 - RX, Medication, or Drugs Involved	20	0.48%	1	1.92%	97.34%
Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Alcohol and Drugs Involved	22	0.53%	1	1.92%	96.84%
Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
Total Accidents	4,124		52		
Total Number of Records	59		0		N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)



Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

08/31/2020

Job #: 20200831174532

Location: 000000119B

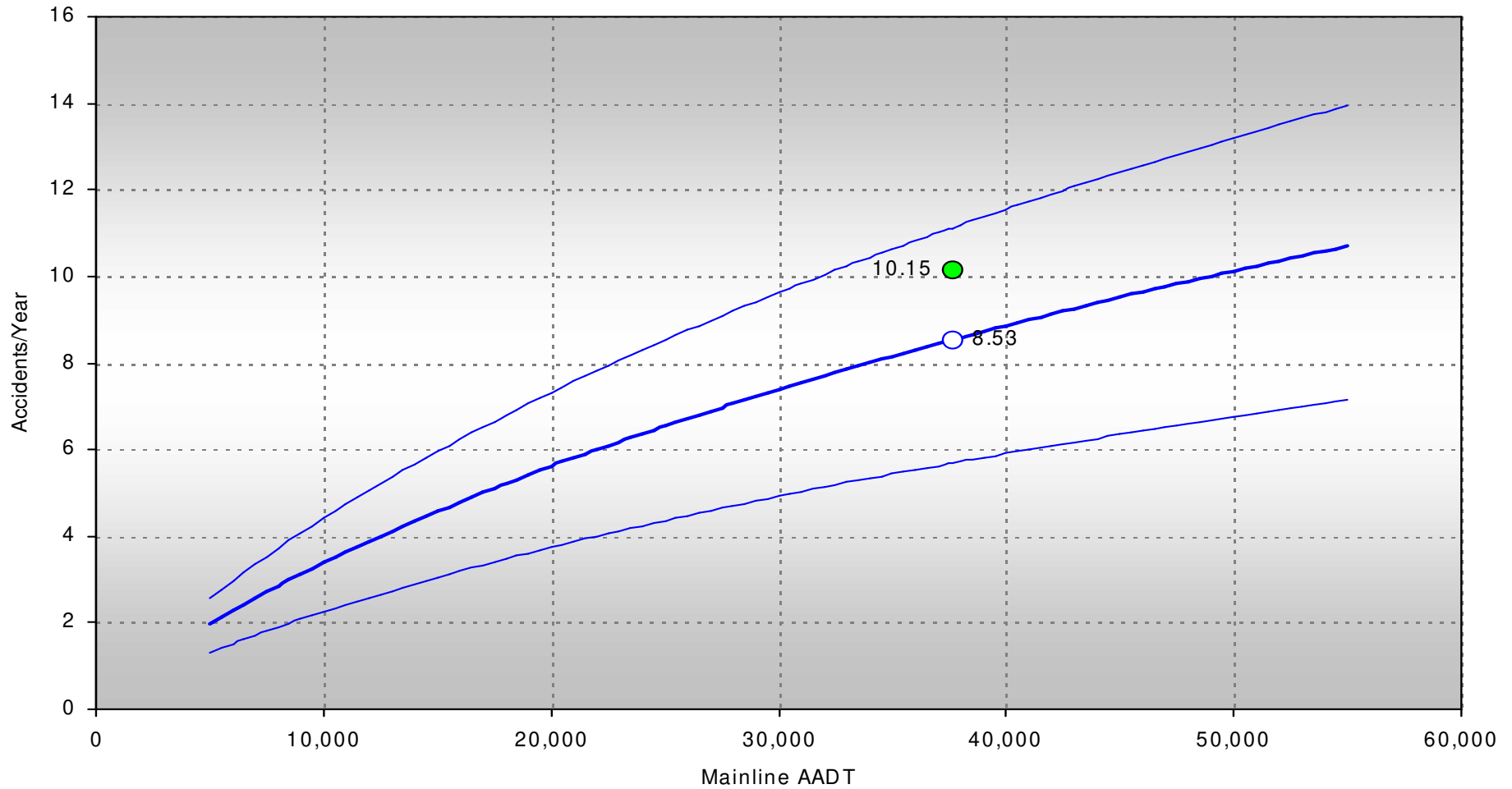
Begin:50.61

End:50.81

From:01/01/2015

To:12/31/2019

— Lower Limit (20%) — Total — Upper Limit (80%) ● Observed (EB) ○ Expected





Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

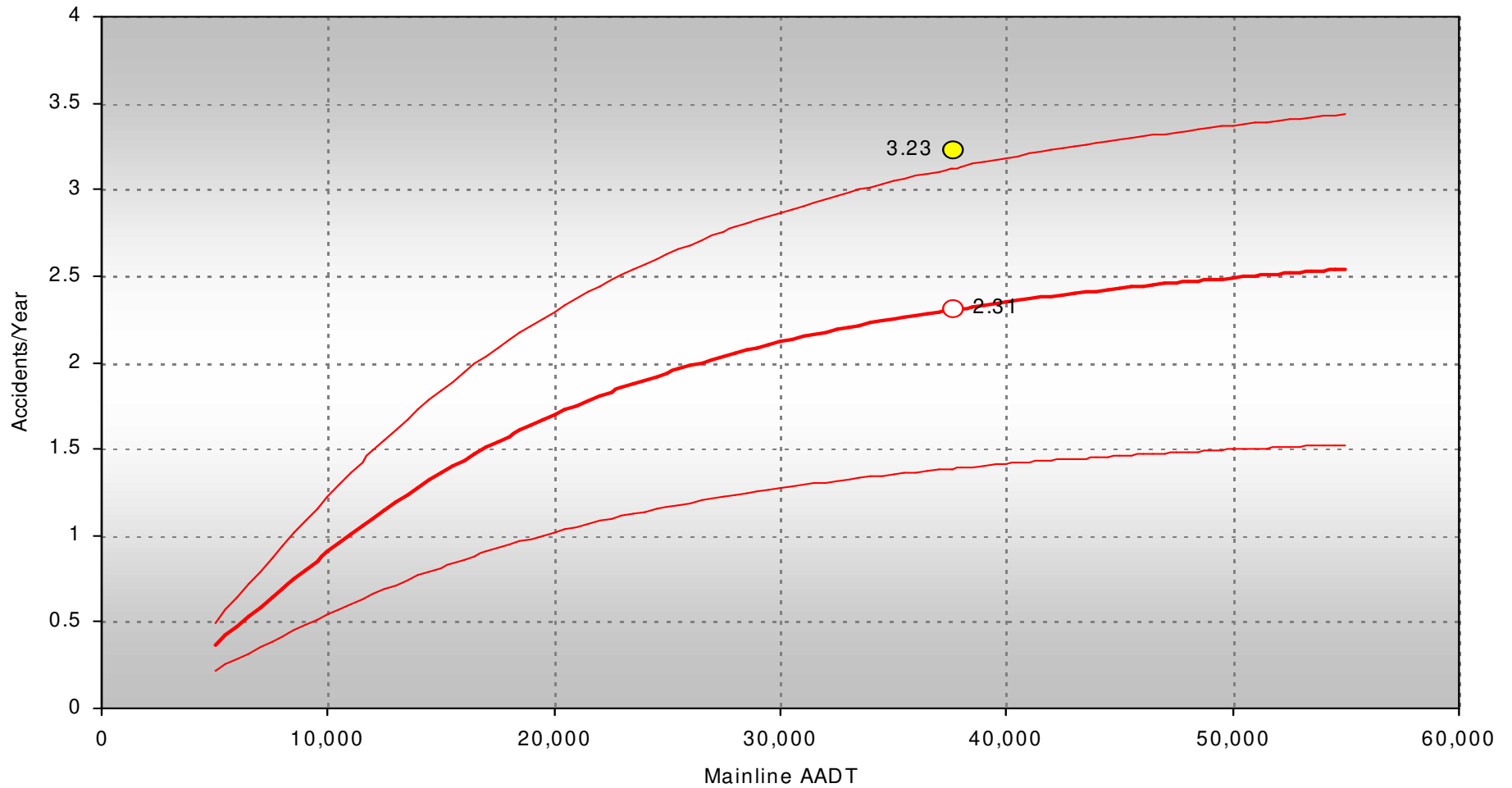
08/31/2020

Job #: 20200831174612

Location: 000000119B

Begin:50.61 End:50.81 From:01/01/2015 To:12/31/2019

— Lower Limit (20%) — INJ + FAT — Upper Limit (80%) ● Observed (EB) ○ Expected





**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

09/02/2020

Job #: 20200902150811

**Location: 119B      Begin: 52.58    End: 52.78    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	1
INJ:	6      9 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>7</b>

Number of Vehicles	
One Vehicle:	1
Two Vehicles:	6
Three or More:	0
Unknown:	0
<b>Total:</b>	<b>7</b>

Location	
On Road:	6
Off Road:	1
Unknown:	0
<b>Total:</b>	<b>7</b>

Mainline/Ramps/Frontage Rds	
Mainline:	7
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>7</b>

Lighting Conditions	
Daylight:	4
Dawn or Dusk:	1
Dark - Lighted:	1
Dark - Unlighted:	1
Unknown:	0
<b>Total:</b>	<b>7</b>

Crash Rates	
PDO:	0.08*      * Per MVMT
INJ:	0.49*      ** Per 100 MVMT
FAT:	0.00**
<b>Total:</b>	<b>0.57*</b>

Crash Type	
Overtuning:	0
Other Non Collision:	0
Pedestrians:	0
Broadside:	5
Head On:	0
Rear End:	1
Sideswipe Same:	0
Sideswipe Opposite:	0
Approach Turn:	0
Overtaking Turn:	0
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	0
Domestic Animal:	0
Wild Animal:	0
Fixed Objects:	1
Other Objects:	0
Unknown:	0
<b>Total:</b>	<b>7</b>

Weather Conditions	
None:	5
Rain:	1
Snow/Sleet/Hail:	1
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
<b>Total:</b>	<b>7</b>

Road Conditions	
Dry:	4
Wet:	1
Muddy:	0
Snowy:	0
Icy:	1
Slushy:	0
Foreign Material:	0
With Road Treatment:	1
Unknown:	0
<b>Total:</b>	<b>7</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	4	5	0
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	2	1	0
Pickup Truck/Utility Van w/Trailer:	1	0	0
SUV:	0	0	0
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	0	0	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	0	0	0
Motorhome:	0	0	0
Motorcycle:	0	0	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	0	0	0
Other:	0	0	0
Unknown:	0	0	0
<b>Total:</b>	<b>7</b>	<b>6</b>	<b>0</b>

**ADT: 33,930      Length: 0.19**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902151632

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_05258\_05278 **Cutoff:** 5 Acc's @ 95%

CATEGORY	Statewide Average		This Location		Probability
	# Crashes	%	# Crashes	%	%
Property Damage Only (PDO)	220	66.27%	1	14.29%	0.73%
Injury (INJ)	112	33.73%	6	85.71%	99.95%
Fatal (FAT)	0	0.00%	0	0.00%	N/A
Persons Injured	149		9		
Persons Killed	0		0		N/A
Single Vehicle Accidents	20	6.02%	1	14.29%	93.78%
Two Vehicle Accidents	304	91.57%	6	85.71%	46.03%
Three or More Vehicle Accidents	8	2.41%	0	0.00%	N/A
Unknown Number of Vehicles	0	0.00%	0	0.00%	N/A
On Road	313	94.28%	6	85.71%	33.80%
Off Road	19	5.72%	1	14.29%	94.33%
Off Road Left	9	2.71%	0	0.00%	N/A
Off Road Right	10	3.01%	1	14.29%	98.28%
Off Road at Tee	0	0.00%	0	0.00%	N/A
Off Road in Median	0	0.00%	0	0.00%	N/A
Unknown Road Location	0	0.00%	0	0.00%	N/A
Overturning	1	0.30%	0	0.00%	N/A
Other Non Collision	0	0.00%	0	0.00%	N/A
Vehicle Cargo or Debris	1	0.30%	0	0.00%	N/A
Pedestrian	6	1.81%	0	0.00%	N/A
Broadside	131	39.46%	5	71.43%	98.25%
Head On	3	0.90%	0	0.00%	N/A
Rear End	48	14.46%	1	14.29%	73.17%
Sideswipe (Same Direction)	45	13.55%	0	0.00%	N/A
Sideswipe (Opposite Direction)	2	0.60%	0	0.00%	N/A
Approach Turn	26	7.83%	0	0.00%	N/A
Overtaking Turn	33	9.94%	0	0.00%	N/A
Parked Motor Vehicle	3	0.90%	0	0.00%	N/A
Railway Vehicle	4	1.20%	0	0.00%	N/A
Bicycle or Pedal Cycle	9	2.71%	0	0.00%	N/A
Motorized Bicycle	0	0.00%	0	0.00%	N/A
Domestic Animal	0	0.00%	0	0.00%	N/A
Wild Animal	0	0.00%	0	0.00%	N/A
Light or Utility Pole	6	1.81%	0	0.00%	N/A
Bridge Rail	0	0.00%	0	0.00%	N/A
Guard Rail	0	0.00%	0	0.00%	N/A
Cable Rail	0	0.00%	0	0.00%	N/A
Concrete Barrier	1	0.30%	0	0.00%	N/A
Bridge Abutment	0	0.00%	0	0.00%	N/A
Culvert or Headwall	0	0.00%	0	0.00%	N/A
Delineator Post	0	0.00%	0	0.00%	N/A
Large Boulders or Rocks	2	0.60%	0	0.00%	N/A
Rocks in Roadway	0	0.00%	0	0.00%	N/A
Barricade	0	0.00%	0	0.00%	N/A
Wall or Building	3	0.90%	0	0.00%	N/A
Mailbox	0	0.00%	0	0.00%	N/A
Other Fixed Object	2	0.60%	0	0.00%	N/A
Road Maintenance Equipment	0	0.00%	0	0.00%	N/A
Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban N-Lanes OneWay (ML) TwoWay (SR) UnDivided UnSignalized 4-Leg Intersections (2018)



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902151632

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_05258\_05278 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	CATEGORY	Statewide Average		This Location		Probability
		# Crashes	%	# Crashes	%	%
	Total Fixed Objects	20	6.02%	1	14.29%	93.78%
	Total Other Objects	1	0.30%	0	0.00%	N/A
	Daylight	280	84.34%	4	57.14%	8.22%
	Dawn or Dusk	9	2.71%	1	14.29%	98.59%
	Dark - Lighted	34	10.24%	1	14.29%	84.43%
	Dark - Unlighted	7	2.11%	1	14.29%	99.13%
	Unknown Lighting	2	0.60%	0	0.00%	N/A
	No Adverse Weather	273	82.23%	5	71.43%	36.12%
	Rain	10	3.01%	1	14.29%	98.28%
	Snow or Sleet or Hail	21	6.33%	1	14.29%	93.21%
	Fog	0	0.00%	0	0.00%	N/A
	Dust	0	0.00%	0	0.00%	N/A
	Wind	1	0.30%	0	0.00%	N/A
	Unknown Weather	27	8.13%	0	0.00%	N/A
	Dry Road	285	85.84%	4	57.14%	6.37%
	Wet Road	19	5.72%	1	14.29%	94.33%
	Muddy Road	1	0.30%	0	0.00%	N/A
	Snowy Road	8	2.41%	0	0.00%	N/A
	Icy Road	14	4.22%	1	14.29%	96.76%
	Slushy Road	1	0.30%	0	0.00%	N/A
	Foreign Material Road	0	0.00%	0	0.00%	N/A
	With Road Treatment	0	0.00%	0	0.00%	N/A
	Dry with Icy Road Treatment	0	0.00%	1	14.29%	100.00%
	Wet with Icy Road Treatment	0	0.00%	0	0.00%	N/A
	Snowy with Icy Road Treatment	2	0.60%	0	0.00%	N/A
	Icy with Icy Road Treatment	0	0.00%	0	0.00%	N/A
	Slushy with Icy Road Treatment	1	0.30%	0	0.00%	N/A
	Unknown Road Condition	1	0.30%	0	0.00%	N/A
	Driver 1 - No Apparent Contributing Factor	143	43.07%	4	57.14%	87.09%
	Driver 1 - Asleep at the Wheel	0	0.00%	0	0.00%	N/A
	Driver 1 - Illness	3	0.90%	0	0.00%	N/A
	Driver 1 - Distracted by Passenger	3	0.90%	0	0.00%	N/A
	Driver 1 - Driver Inexperience	38	11.45%	1	14.29%	81.34%
	Driver 1 - Driver Fatigue	8	2.41%	0	0.00%	N/A
	Driver 1 - Driver Preoccupied	26	7.83%	1	14.29%	90.11%
	Driver 1 - Driver Unfamiliar with Area	44	13.25%	1	14.29%	76.50%
	Driver 1 - Driver Emotionally Upset	0	0.00%	0	0.00%	N/A
	Driver 1 - Evading Law Enforcement Officer	3	0.90%	0	0.00%	N/A
	Driver 1 - Physical Disability	0	0.00%	0	0.00%	N/A
	Driver 1 - Unknown Contributing Factor	64	19.28%	0	0.00%	N/A
	Driver 1 - No Impairment Suspected	322	96.99%	7	100.00%	100.00%
	Driver 1 - Alcohol Involved	7	2.11%	0	0.00%	N/A
	Driver 1 - RX, Medication, or Drugs Involved	1	0.30%	0	0.00%	N/A
	Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
	Driver 1 - Alcohol and Drugs Involved	2	0.60%	0	0.00%	N/A
	Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
	Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
	Total Accidents	332		7		
	Total Number of Records	4		0		N/A

**Highway Class:** CO - Urban N-Lanes OneWay (ML) TwoWay (SR) UnDivided UnSignalized 4-Leg Intersections (2018)



Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban N-Lanes 1W (ML) 2W (SR) UnDivided UnSignalized 4-Leg

09/02/2020

Job #: 20200902151405

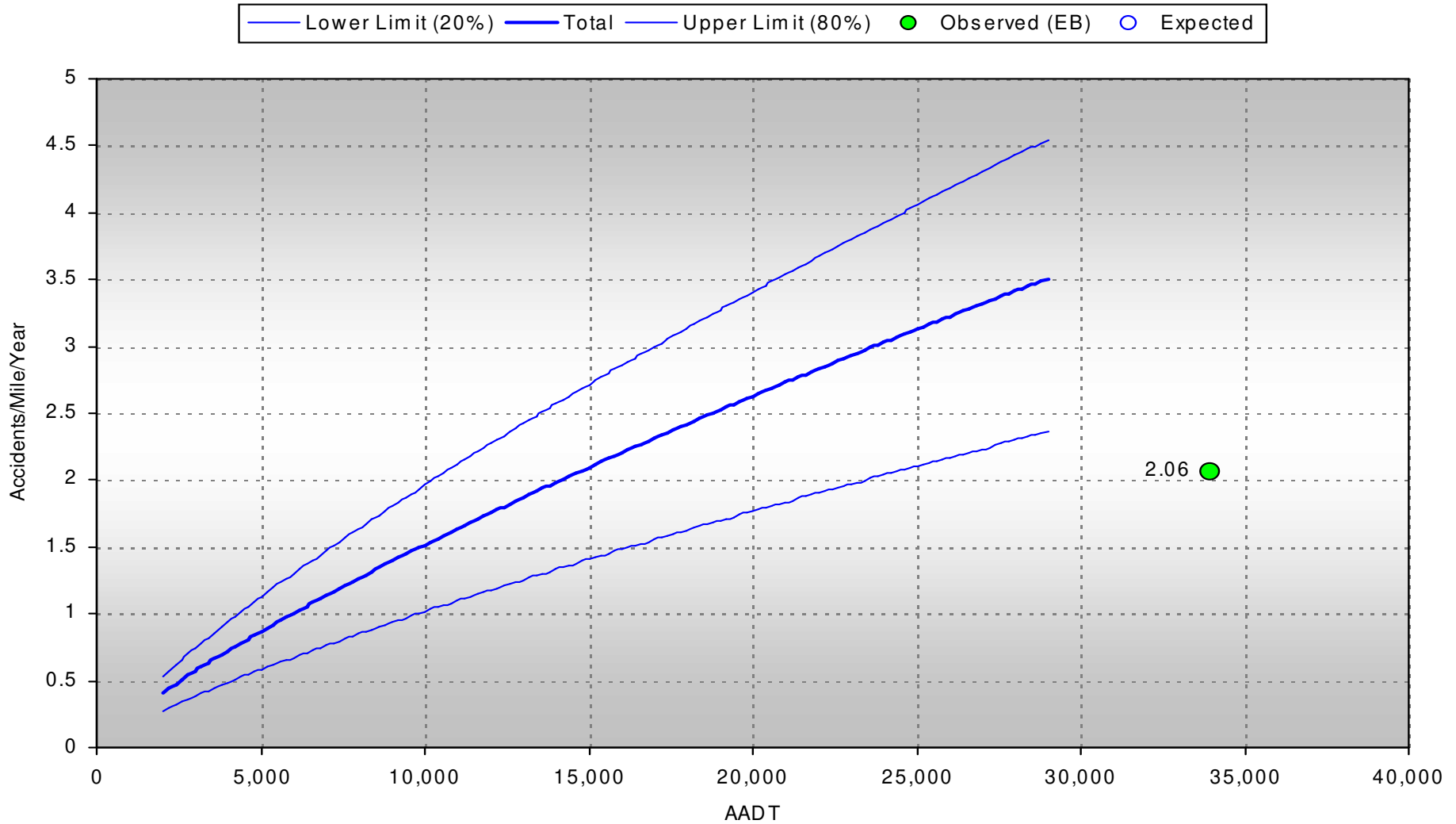
Location: 000000119B

Intersections (2018)

Begin:52.58

End:52.78

From:01/01/2015 To:12/31/2019







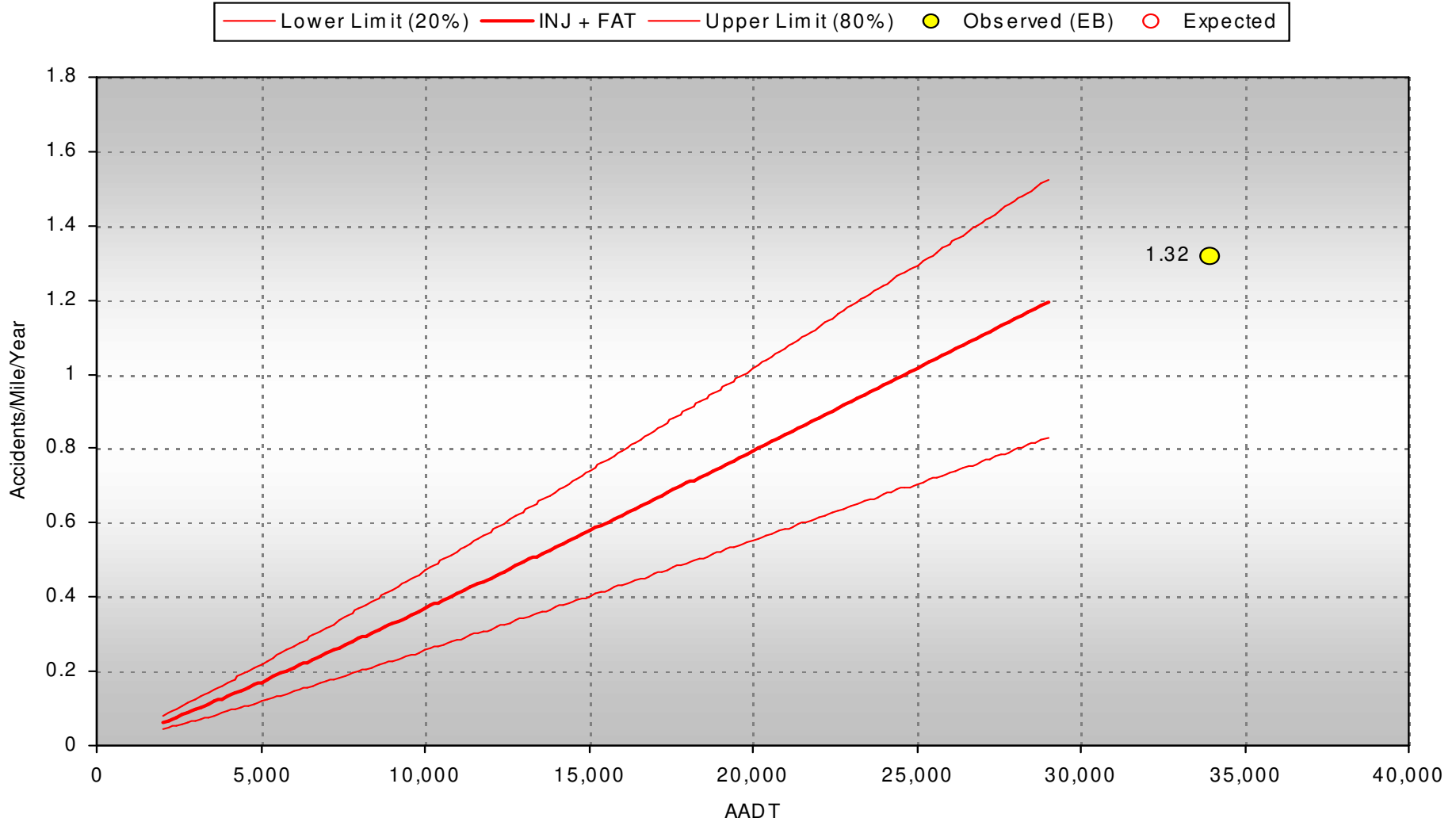
Location: 000000119B

Intersections (2018)

Begin:52.58

End:52.78

From:01/01/2015 To:12/31/2019





**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

09/02/2020

Job #: 20200902151938

**Location: 119B      Begin: 52.58    End: 52.78    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	14
INJ:	11      20 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>25</b>

Number of Vehicles	
One Vehicle:	3
Two Vehicles:	21
Three or More:	1
Unknown:	0
<b>Total:</b>	<b>25</b>

Location	
On Road:	22
Off Road:	3
Unknown:	0
<b>Total:</b>	<b>25</b>

Mainline/Ramps/Frontage Rds	
Mainline:	25
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>25</b>

Lighting Conditions	
Daylight:	23
Dawn or Dusk:	0
Dark - Lighted:	1
Dark - Unlighted:	1
Unknown:	0
<b>Total:</b>	<b>25</b>

Crash Rates	
PDO:	1.14*      * Per MVMT
INJ:	0.89*      ** Per 100 MVMT
FAT:	0.00**
<b>Total:</b>	<b>2.03*</b>

Crash Type	
Overtuning:	1
Other Non Collision:	0
Pedestrians:	0
Broadside:	3
Head On:	1
Rear End:	8
Sideswipe Same:	4
Sideswipe Opposite:	1
Approach Turn:	4
Overtaking Turn:	0
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	0
Domestic Animal:	0
Wild Animal:	0
Fixed Objects:	2
Other Objects:	1
Unknown:	0
<b>Total:</b>	<b>25</b>

Weather Conditions	
None:	23
Rain:	0
Snow/Sleet/Hail:	1
Fog:	0
Dust:	0
Wind:	0
Unknown:	1
<b>Total:</b>	<b>25</b>

Road Conditions	
Dry:	21
Wet:	0
Muddy:	0
Snowy:	0
Icy:	1
Slushy:	0
Foreign Material:	0
With Road Treatment:	3
Unknown:	0
<b>Total:</b>	<b>25</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	17	14	1
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	3	4	0
Pickup Truck/Utility Van w/Trailer:	0	0	0
SUV:	5	4	0
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	0	0	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	0	0	0
Motorhome:	0	0	0
Motorcycle:	0	0	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	0	0	0
Other:	0	0	0
Unknown:	0	0	0
<b>Total:</b>	<b>25</b>	<b>22</b>	<b>1</b>

**ADT: 33,930      Length: 0.19**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902152447

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_05258\_05278 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	CATEGORY	Statewide Average		This Location		Probability
		# Crashes	%	# Crashes	%	%
	Property Damage Only (PDO)	1,193	74.56%	14	56.00%	3.35%
	Injury (INJ)	401	25.06%	11	44.00%	98.90%
	Fatal (FAT)	6	0.38%	0	0.00%	N/A
	Persons Injured	560		20		
	Persons Killed	6		0		N/A
	Single Vehicle Accidents	36	2.25%	3	12.00%	99.78%
	Two Vehicle Accidents	1,462	91.38%	21	84.00%	16.44%
	Three or More Vehicle Accidents	102	6.38%	1	4.00%	52.06%
	Unknown Number of Vehicles	0	0.00%	0	0.00%	N/A
	On Road	1,566	97.88%	22	88.00%	1.56%
	Off Road	34	2.13%	3	12.00%	99.82%
	Off Road Left	10	0.63%	1	4.00%	98.93%
	Off Road Right	21	1.31%	2	8.00%	99.58%
	Off Road at Tee	0	0.00%	0	0.00%	N/A
	Off Road in Median	3	0.19%	0	0.00%	N/A
	Unknown Road Location	0	0.00%	0	0.00%	N/A
	Overturning	6	0.38%	1	4.00%	99.60%
	Other Non Collision	2	0.13%	0	0.00%	N/A
	Vehicle Cargo or Debris	0	0.00%	1	4.00%	100.00%
	Pedestrian	27	1.69%	0	0.00%	N/A
	Broadside	486	30.38%	3	12.00%	3.05%
	Head On	6	0.38%	1	4.00%	99.60%
	Rear End	380	23.75%	8	32.00%	88.33%
	Sideswipe (Same Direction)	290	18.13%	4	16.00%	51.62%
	Sideswipe (Opposite Direction)	3	0.19%	1	4.00%	99.90%
	Approach Turn	136	8.50%	4	16.00%	94.39%
	Overtaking Turn	172	10.75%	0	0.00%	N/A
	Parked Motor Vehicle	9	0.56%	0	0.00%	N/A
	Railway Vehicle	1	0.06%	0	0.00%	N/A
	Bicycle or Pedal Cycle	50	3.13%	0	0.00%	N/A
	Motorized Bicycle	0	0.00%	0	0.00%	N/A
	Domestic Animal	0	0.00%	0	0.00%	N/A
	Wild Animal	0	0.00%	0	0.00%	N/A
	Light or Utility Pole	3	0.19%	0	0.00%	N/A
	Bridge Rail	2	0.13%	0	0.00%	N/A
	Guard Rail	2	0.13%	0	0.00%	N/A
	Cable Rail	0	0.00%	0	0.00%	N/A
	Concrete Barrier	0	0.00%	1	4.00%	100.00%
	Bridge Abutment	0	0.00%	0	0.00%	N/A
	Culvert or Headwall	0	0.00%	0	0.00%	N/A
	Delineator Post	0	0.00%	0	0.00%	N/A
	Large Boulders or Rocks	1	0.06%	0	0.00%	N/A
	Rocks in Roadway	0	0.00%	0	0.00%	N/A
	Barricade	0	0.00%	0	0.00%	N/A
	Wall or Building	4	0.25%	0	0.00%	N/A
	Mailbox	0	0.00%	0	0.00%	N/A
	Other Fixed Object	2	0.13%	0	0.00%	N/A
	Road Maintenance Equipment	0	0.00%	0	0.00%	N/A
	Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban N-Lanes OneWay (ML) TwoWay (SR) UnDivided Signalized 4-Leg Intersections (2018)



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902152447

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_05258\_05278 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability
	CATEGORY	# Crashes	%	# Crashes	%
Total Fixed Objects	31	1.94%	2	8.00%	98.78%
Total Other Objects	1	0.06%	1	4.00%	99.99%
Daylight	1,092	68.25%	23	92.00%	99.91%
Dawn or Dusk	73	4.56%	0	0.00%	N/A
Dark - Lighted	414	25.88%	1	4.00%	0.55%
Dark - Unlighted	15	0.94%	1	4.00%	97.71%
Unknown Lighting	6	0.38%	0	0.00%	N/A
No Adverse Weather	1,285	80.31%	23	92.00%	97.03%
Rain	55	3.44%	0	0.00%	N/A
Snow or Sleet or Hail	63	3.94%	1	4.00%	74.17%
Fog	0	0.00%	0	0.00%	N/A
Dust	0	0.00%	0	0.00%	N/A
Wind	1	0.06%	0	0.00%	N/A
Unknown Weather	196	12.25%	1	4.00%	17.12%
Dry Road	1,395	87.19%	21	84.00%	40.11%
Wet Road	109	6.81%	0	0.00%	N/A
Muddy Road	2	0.13%	0	0.00%	N/A
Snowy Road	31	1.94%	0	0.00%	N/A
Icy Road	40	2.50%	1	4.00%	87.14%
Slushy Road	8	0.50%	0	0.00%	N/A
Foreign Material Road	0	0.00%	0	0.00%	N/A
With Road Treatment	0	0.00%	0	0.00%	N/A
Dry with Icy Road Treatment	4	0.25%	2	8.00%	100.00%
Wet with Icy Road Treatment	3	0.19%	0	0.00%	N/A
Snowy with Icy Road Treatment	4	0.25%	1	4.00%	99.82%
Icy with Icy Road Treatment	2	0.13%	0	0.00%	N/A
Slushy with Icy Road Treatment	1	0.06%	0	0.00%	N/A
Unknown Road Condition	1	0.06%	0	0.00%	N/A
Driver 1 - No Apparent Contributing Factor	765	47.81%	10	40.00%	28.15%
Driver 1 - Asleep at the Wheel	4	0.25%	0	0.00%	N/A
Driver 1 - Illness	9	0.56%	0	0.00%	N/A
Driver 1 - Distracted by Passenger	19	1.19%	0	0.00%	N/A
Driver 1 - Driver Inexperience	89	5.56%	4	16.00%	98.89%
Driver 1 - Driver Fatigue	13	0.81%	0	0.00%	N/A
Driver 1 - Driver Preoccupied	134	8.38%	3	12.00%	84.76%
Driver 1 - Driver Unfamiliar with Area	132	8.25%	3	12.00%	85.35%
Driver 1 - Driver Emotionally Upset	2	0.13%	0	0.00%	N/A
Driver 1 - Evading Law Enforcement Officer	0	0.00%	0	0.00%	N/A
Driver 1 - Physical Disability	2	0.13%	0	0.00%	N/A
Driver 1 - Unknown Contributing Factor	431	26.94%	5	20.00%	29.81%
Driver 1 - No Impairment Suspected	1,541	96.31%	24	96.00%	60.91%
Driver 1 - Alcohol Involved	49	3.06%	1	4.00%	82.24%
Driver 1 - RX, Medication, or Drugs Involved	4	0.25%	0	0.00%	N/A
Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Alcohol and Drugs Involved	6	0.38%	0	0.00%	N/A
Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
Total Accidents	1,600		25		
Total Number of Records	55		0		N/A

**Highway Class:** CO - Urban N-Lanes OneWay (ML) TwoWay (SR) UnDivided Signalized 4-Leg Intersections (2018)



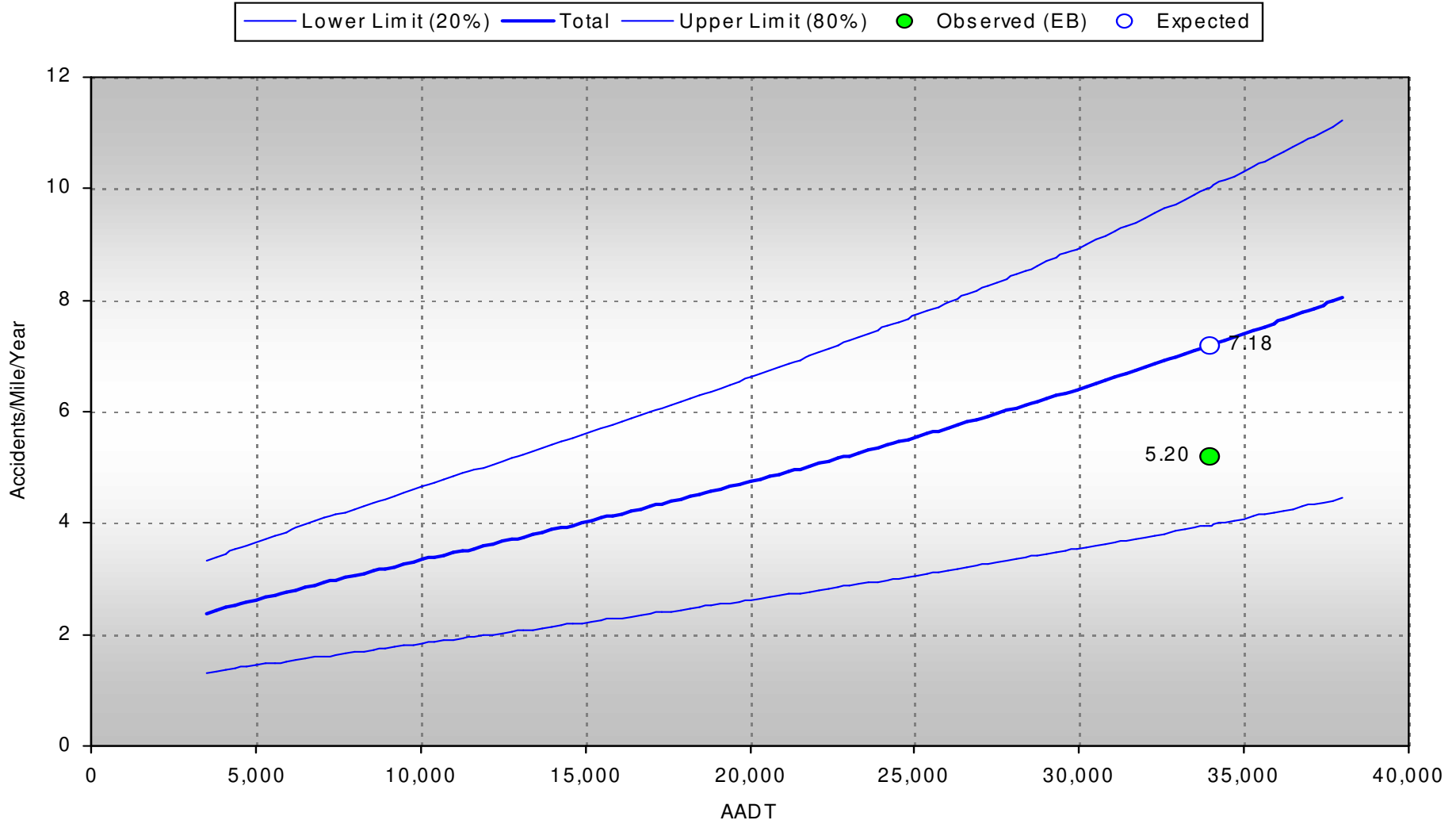
Location: 000000119B

(2018)

Begin:52.58

End:52.78

From:01/01/2015 To:12/31/2019





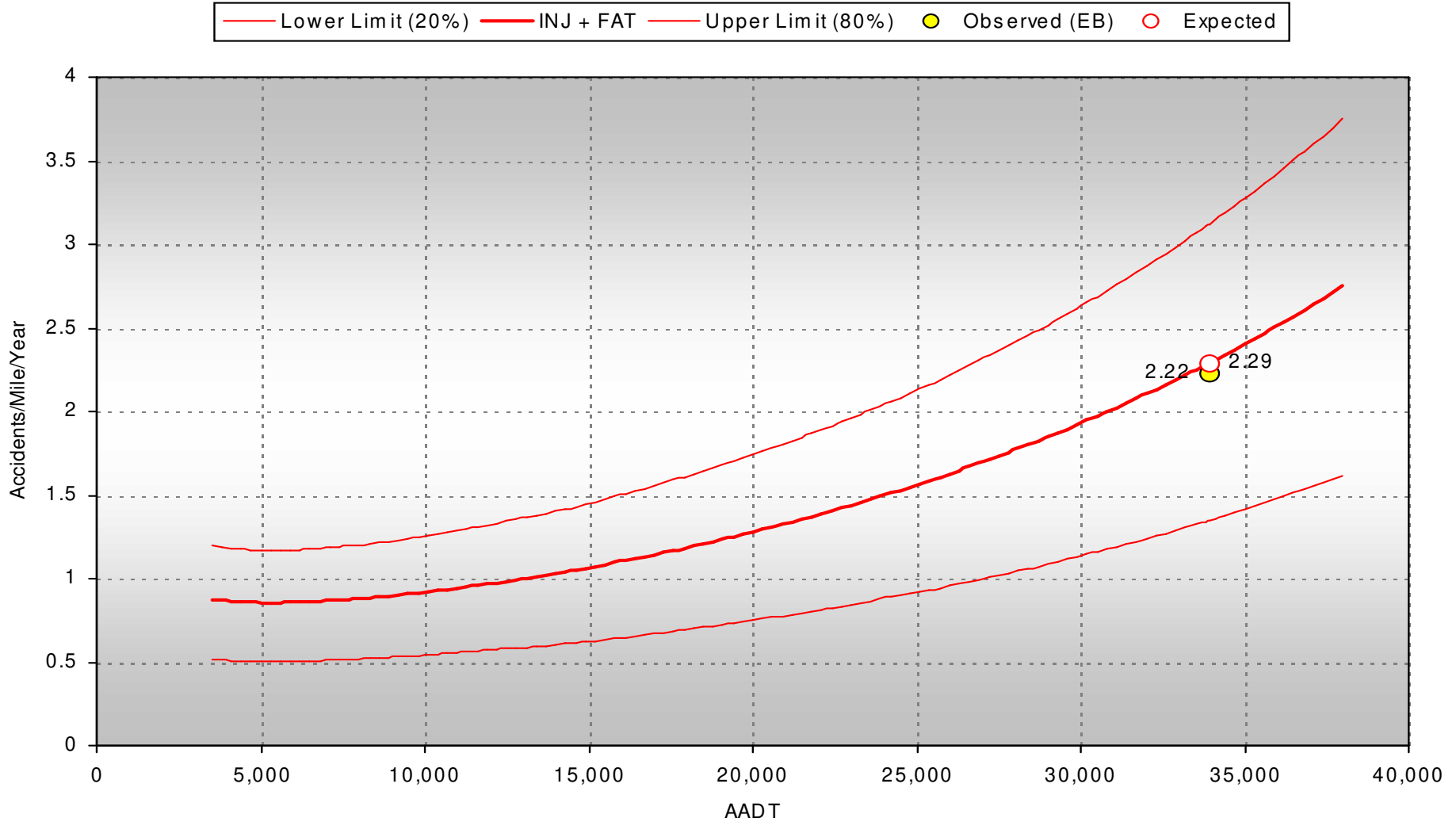
Location: 000000119B

(2018)

Begin:52.58

End:52.78

From:01/01/2015 To:12/31/2019





**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

08/31/2020

Job #: 20200831175322

**Location: 119B      Begin: 54.26    End: 54.56    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	81
INJ:	40      54 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>121</b>

Number of Vehicles	
One Vehicle:	6
Two Vehicles:	109
Three or More:	6
Unknown:	0
<b>Total:</b>	<b>121</b>

Location	
On Road:	115
Off Road:	6
Unknown:	0
<b>Total:</b>	<b>121</b>

Mainline/Ramps/Frontage Rds	
Mainline:	121
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>121</b>

Lighting Conditions	
Daylight:	88
Dawn or Dusk:	8
Dark - Lighted:	25
Dark - Unlighted:	0
Unknown:	0
<b>Total:</b>	<b>121</b>

Crash Rates	
PDO:	5.97*      * Per MVMT
INJ:	2.95*      ** Per 100 MVMT
FAT:	0.00**
<b>Total:</b>	<b>8.92*</b>

Crash Type	
Overtuning:	0
Other Non Collision:	0
Pedestrians:	0
Broadside:	11
Head On:	0
Rear End:	59
Sideswipe Same:	12
Sideswipe Opposite:	0
Approach Turn:	28
Overtaking Turn:	1
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	3
Domestic Animal:	0
Wild Animal:	0
Fixed Objects:	6
Other Objects:	1
Unknown:	0
<b>Total:</b>	<b>121</b>

Weather Conditions	
None:	110
Rain:	1
Snow/Sleet/Hail:	9
Fog:	0
Dust:	0
Wind:	0
Unknown:	1
<b>Total:</b>	<b>121</b>

Road Conditions	
Dry:	106
Wet:	2
Muddy:	0
Snowy:	7
Icy:	4
Slushy:	1
Foreign Material:	0
With Road Treatment:	1
Unknown:	0
<b>Total:</b>	<b>121</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	60	53	5
Passenger Car/Van w/Trailer:	1	0	0
Pickup Truck/Utility Van:	17	13	0
Pickup Truck/Utility Van w/Trailer:	1	1	0
SUV:	32	41	1
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	4	3	0
School Bus < 15 People:	1	0	0
Non School Bus < 15 People:	0	2	0
Motorhome:	0	0	0
Motorcycle:	2	0	0
Bicycle:	2	1	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	1	0	0
Other:	0	1	0
Unknown:	0	0	0
<b>Total:</b>	<b>121</b>	<b>115</b>	<b>6</b>

**ADT: 26,345      Length: 0.28**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

08/31/2020

Job #: 20200831180008

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_05426\_05456 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	CATEGORY	Statewide Average		This Location		Probability
		# Crashes	%	# Crashes	%	%
	Property Damage Only (PDO)	7,340	72.19%	81	66.94%	11.88%
	Injury (INJ)	2,797	27.51%	40	33.06%	92.70%
	Fatal (FAT)	31	0.30%	0	0.00%	N/A
	Persons Injured	3,975		54		
	Persons Killed	32		0		N/A
	Single Vehicle Accidents	448	4.41%	6	4.96%	71.47%
	Two Vehicle Accidents	8,817	86.71%	109	90.08%	89.38%
	Three or More Vehicle Accidents	902	8.87%	6	4.96%	8.04%
	Unknown Number of Vehicles	1	0.01%	0	0.00%	N/A
	On Road	9,763	96.02%	115	95.04%	35.17%
	Off Road	404	3.97%	6	4.96%	79.32%
	Off Road Left	185	1.82%	3	2.48%	82.05%
	Off Road Right	201	1.98%	3	2.48%	78.17%
	Off Road at Tee	3	0.03%	0	0.00%	N/A
	Off Road in Median	15	0.15%	0	0.00%	N/A
	Unknown Road Location	1	0.01%	0	0.00%	N/A
	Overturning	46	0.45%	0	0.00%	N/A
	Other Non Collision	16	0.16%	0	0.00%	N/A
	Vehicle Cargo or Debris	14	0.14%	0	0.00%	N/A
	Pedestrian	163	1.60%	0	0.00%	N/A
	Broadside	1,300	12.79%	11	9.09%	13.81%
	Head On	30	0.30%	0	0.00%	N/A
	Rear End	5,326	52.38%	59	48.76%	23.99%
	Sideswipe (Same Direction)	915	9.00%	12	9.92%	70.67%
	Sideswipe (Opposite Direction)	65	0.64%	0	0.00%	N/A
	Approach Turn	1,618	15.91%	28	23.14%	98.61%
	Overtaking Turn	69	0.68%	1	0.83%	80.14%
	Parked Motor Vehicle	20	0.20%	0	0.00%	N/A
	Railway Vehicle	0	0.00%	0	0.00%	N/A
	Bicycle or Pedal Cycle	164	1.61%	3	2.48%	86.73%
	Motorized Bicycle	0	0.00%	0	0.00%	N/A
	Domestic Animal	5	0.05%	0	0.00%	N/A
	Wild Animal	14	0.14%	0	0.00%	N/A
	Light or Utility Pole	51	0.50%	0	0.00%	N/A
	Bridge Rail	0	0.00%	0	0.00%	N/A
	Guard Rail	2	0.02%	0	0.00%	N/A
	Cable Rail	0	0.00%	0	0.00%	N/A
	Concrete Barrier	10	0.10%	0	0.00%	N/A
	Bridge Abutment	0	0.00%	0	0.00%	N/A
	Culvert or Headwall	1	0.01%	0	0.00%	N/A
	Delineator Post	7	0.07%	0	0.00%	N/A
	Large Boulders or Rocks	1	0.01%	0	0.00%	N/A
	Rocks in Roadway	0	0.00%	0	0.00%	N/A
	Barricade	3	0.03%	0	0.00%	N/A
	Wall or Building	6	0.06%	0	0.00%	N/A
	Mailbox	0	0.00%	0	0.00%	N/A
	Other Fixed Object	27	0.27%	0	0.00%	N/A
	Road Maintenance Equipment	9	0.09%	1	0.83%	99.47%
	Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT All Totals (2018)





**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

08/31/2020

Job #: 20200831180008

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_05426\_05456 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability
	CATEGORY	# Crashes	%	# Crashes	%
Total Fixed Objects	383	3.77%	6	4.96%	82.72%
Total Other Objects	34	0.33%	1	0.83%	93.75%
Daylight	7,308	71.87%	88	72.73%	61.66%
Dawn or Dusk	438	4.31%	8	6.61%	92.17%
Dark - Lighted	2,281	22.43%	25	20.66%	36.68%
Dark - Unlighted	125	1.23%	0	0.00%	N/A
Unknown Lighting	16	0.16%	0	0.00%	N/A
No Adverse Weather	9,045	88.96%	110	90.91%	79.37%
Rain	421	4.14%	1	0.83%	3.73%
Snow or Sleet or Hail	555	5.46%	9	7.44%	87.43%
Fog	23	0.23%	0	0.00%	N/A
Dust	1	0.01%	0	0.00%	N/A
Wind	50	0.49%	0	0.00%	N/A
Unknown Weather	73	0.72%	1	0.83%	78.41%
Dry Road	8,660	85.17%	106	87.60%	80.92%
Wet Road	763	7.50%	2	1.65%	0.47%
Muddy Road	2	0.02%	0	0.00%	N/A
Snowy Road	284	2.79%	7	5.79%	97.93%
Icy Road	274	2.69%	4	3.31%	77.16%
Slushy Road	50	0.49%	1	0.83%	88.01%
Foreign Material Road	8	0.08%	0	0.00%	N/A
With Road Treatment	0	0.00%	0	0.00%	N/A
Dry with Icy Road Treatment	32	0.31%	0	0.00%	N/A
Wet with Icy Road Treatment	12	0.12%	0	0.00%	N/A
Snowy with Icy Road Treatment	39	0.38%	1	0.83%	92.08%
Icy with Icy Road Treatment	14	0.14%	0	0.00%	N/A
Slushy with Icy Road Treatment	4	0.04%	0	0.00%	N/A
Unknown Road Condition	26	0.26%	0	0.00%	N/A
Driver 1 - No Apparent Contributing Factor	4,674	45.97%	47	38.84%	6.87%
Driver 1 - Asleep at the Wheel	42	0.41%	0	0.00%	N/A
Driver 1 - Illness	69	0.68%	0	0.00%	N/A
Driver 1 - Distracted by Passenger	139	1.37%	3	2.48%	91.49%
Driver 1 - Driver Inexperience	866	8.52%	10	8.26%	54.32%
Driver 1 - Driver Fatigue	84	0.83%	2	1.65%	92.05%
Driver 1 - Driver Preoccupied	1,444	14.20%	14	11.57%	24.74%
Driver 1 - Driver Unfamiliar with Area	297	2.92%	4	3.31%	72.03%
Driver 1 - Driver Emotionally Upset	28	0.28%	1	0.83%	95.56%
Driver 1 - Evading Law Enforcement Officer	23	0.23%	0	0.00%	N/A
Driver 1 - Physical Disability	22	0.22%	0	0.00%	N/A
Driver 1 - Unknown Contributing Factor	2,480	24.39%	40	33.06%	98.81%
Driver 1 - No Impairment Suspected	9,657	94.97%	118	97.52%	94.59%
Driver 1 - Alcohol Involved	379	3.73%	2	1.65%	16.71%
Driver 1 - RX, Medication, or Drugs Involved	66	0.65%	1	0.83%	81.43%
Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Alcohol and Drugs Involved	66	0.65%	0	0.00%	N/A
Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
Total Accidents	10,168		121		
Total Number of Records	224		0		N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT All Totals (2018)



Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

08/31/2020

Job #: 20200831175732

Location: 000000119B

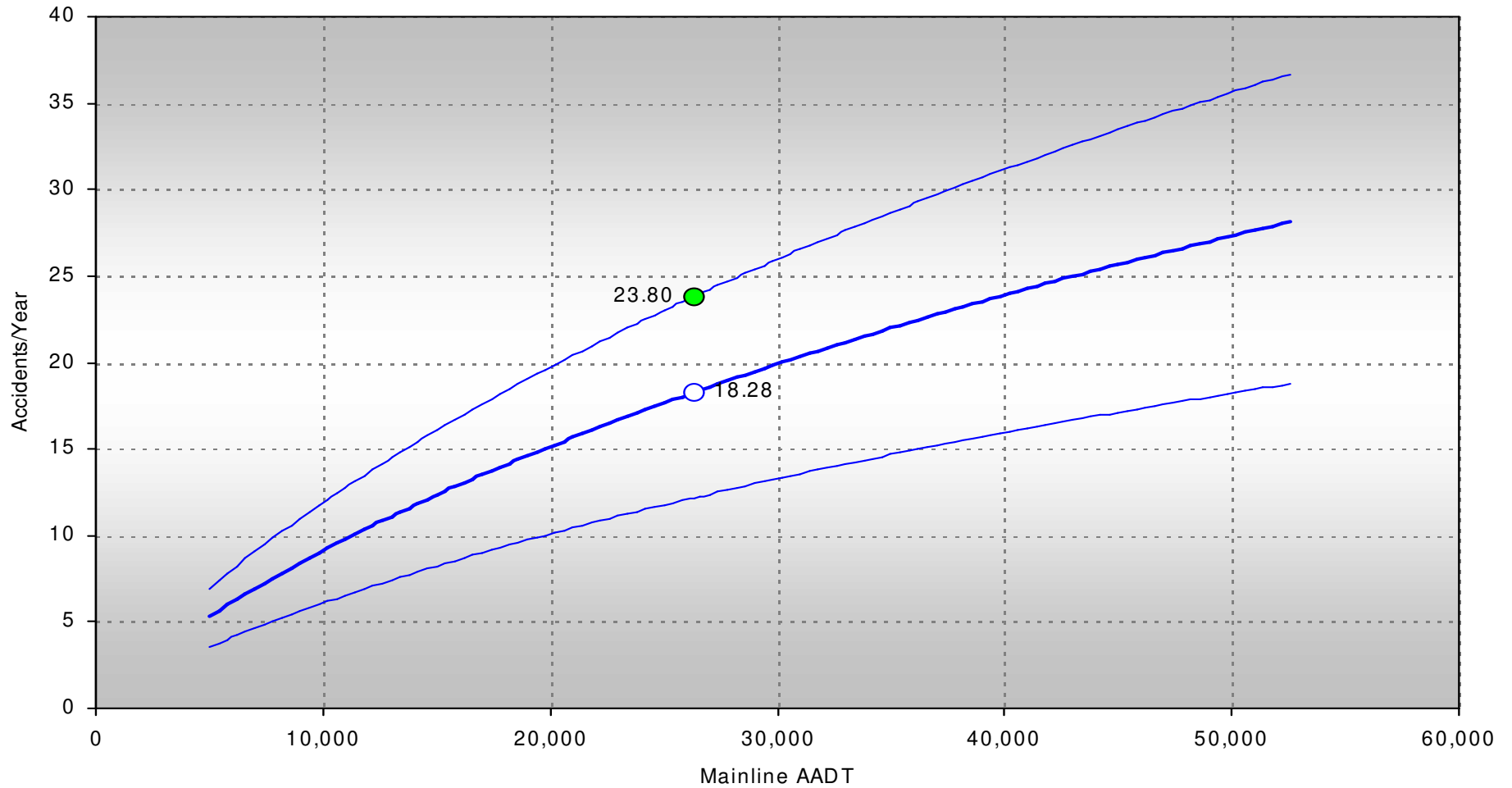
Begin:54.26

End:54.56

From:01/01/2015

To:12/31/2019

— Lower Limit (20%) — Total — Upper Limit (80%) ● Observed (EB) ○ Expected





Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

08/31/2020

Job #: 20200831175656

Location: 000000119B

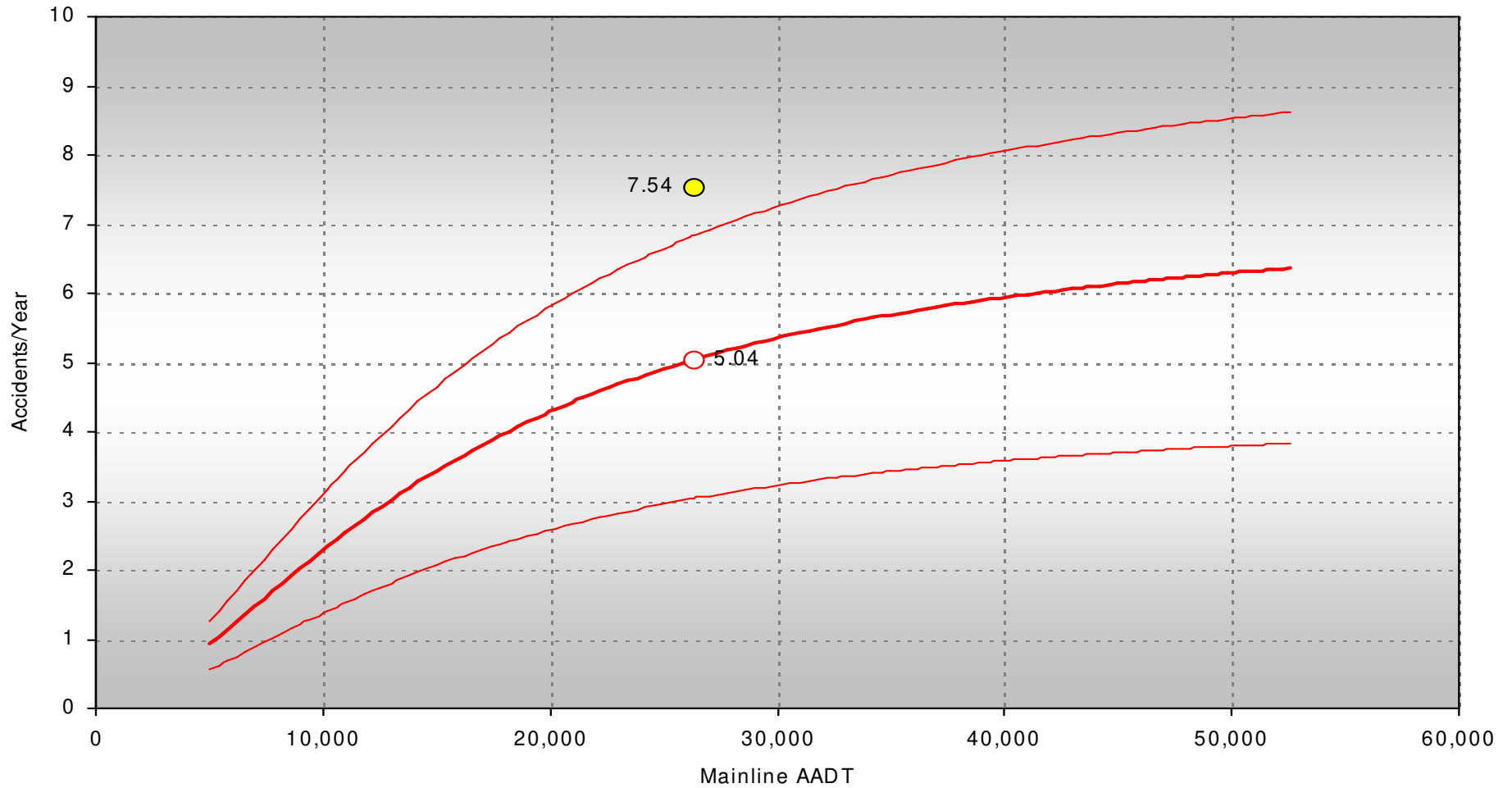
Begin:54.26

End:54.56

From:01/01/2015

To:12/31/2019

— Lower Limit (20%) — INJ + FAT — Upper Limit (80%) ● Observed (EB) ○ Expected





**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

09/01/2020

Job #: 20200901100942

**Location: 157A      Begin: 3.50    End: 4.53    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	17
INJ:	7      12 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>24</b>

Number of Vehicles	
One Vehicle:	11
Two Vehicles:	10
Three or More:	3
Unknown:	0
<b>Total:</b>	<b>24</b>

Location	
On Road:	15
Off Road:	9
Unknown:	0
<b>Total:</b>	<b>24</b>

Mainline/Ramps/Frontage Rds	
Mainline:	24
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>24</b>

Lighting Conditions	
Daylight:	18
Dawn or Dusk:	1
Dark - Lighted:	2
Dark - Unlighted:	3
Unknown:	0
<b>Total:</b>	<b>24</b>

Crash Rates	
PDO:	0.20*      * Per MVMT
INJ:	0.08*      ** Per 100 MVMT
FAT:	0.00**
<b>Total:</b>	<b>0.28*</b>

Crash Type	
Overtuning:	1
Other Non Collision:	0
Pedestrians:	0
Broadside:	0
Head On:	0
Rear End:	6
Sideswipe Same:	4
Sideswipe Opposite:	0
Approach Turn:	0
Overtaking Turn:	0
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	0
Domestic Animal:	0
Wild Animal:	3
Fixed Objects:	9
Other Objects:	1
Unknown:	0
<b>Total:</b>	<b>24</b>

Weather Conditions	
None:	16
Rain:	3
Snow/Sleet/Hail:	4
Fog:	0
Dust:	0
Wind:	1
Unknown:	0
<b>Total:</b>	<b>24</b>

Road Conditions	
Dry:	12
Wet:	7
Muddy:	0
Snowy:	0
Icy:	5
Slushy:	0
Foreign Material:	0
With Road Treatment:	0
Unknown:	0
<b>Total:</b>	<b>24</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	14	6	1
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	1	2	1
Pickup Truck/Utility Van w/Trailer:	0	0	0
SUV:	6	5	1
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	1	0	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	0	0	0
Motorhome:	0	0	0
Motorcycle:	1	0	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	1	0	0
Other:	0	0	0
Unknown:	0	0	0
<b>Total:</b>	<b>24</b>	<b>13</b>	<b>3</b>

**ADT: 44,740      Length: 1.06**




**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902110542

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE157A\_00350\_00453 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	CATEGORY	Statewide Average		This Location		Probability
		# Crashes	%	# Crashes	%	%
	Property Damage Only (PDO)	2,335	70.25%	17	70.83%	60.12%
	Injury (INJ)	950	28.58%	7	29.17%	62.50%
	Fatal (FAT)	39	1.17%	0	0.00%	N/A
	Persons Injured	1,323		12		
	Persons Killed	44		0		N/A
	Single Vehicle Accidents	2,134	64.20%	11	45.83%	5.05%
	Two Vehicle Accidents	1,051	31.62%	10	41.67%	89.72%
	Three or More Vehicle Accidents	139	4.18%	3	12.50%	98.34%
	Unknown Number of Vehicles	0	0.00%	0	0.00%	N/A
	On Road	1,598	48.07%	15	62.50%	94.78%
	Off Road	1,726	51.93%	9	37.50%	11.30%
	Off Road Left	949	28.55%	2	8.33%	1.71%
	Off Road Right	766	23.04%	7	29.17%	83.16%
	Off Road at Tee	0	0.00%	0	0.00%	N/A
	Off Road in Median	11	0.33%	0	0.00%	N/A
	Unknown Road Location	0	0.00%	0	0.00%	N/A
	Overtaking	411	12.36%	1	4.17%	18.47%
	Other Non Collision	59	1.77%	0	0.00%	N/A
	Vehicle Cargo or Debris	117	3.52%	1	4.17%	79.37%
	Pedestrian	11	0.33%	0	0.00%	N/A
	Broadside	0	0.00%	0	0.00%	N/A
	Head On	12	0.36%	0	0.00%	N/A
	Rear End	490	14.74%	6	25.00%	94.72%
	Sideswipe (Same Direction)	434	13.06%	4	16.67%	80.36%
	Sideswipe (Opposite Direction)	7	0.21%	0	0.00%	N/A
	Approach Turn	1	0.03%	0	0.00%	N/A
	Overtaking Turn	5	0.15%	0	0.00%	N/A
	Parked Motor Vehicle	23	0.69%	0	0.00%	N/A
	Railway Vehicle	0	0.00%	0	0.00%	N/A
	Bicycle or Pedal Cycle	0	0.00%	0	0.00%	N/A
	Motorized Bicycle	0	0.00%	0	0.00%	N/A
	Domestic Animal	24	0.72%	0	0.00%	N/A
	Wild Animal	369	11.10%	3	12.50%	72.67%
	Light or Utility Pole	46	1.38%	0	0.00%	N/A
	Bridge Rail	20	0.60%	0	0.00%	N/A
	Guard Rail	339	10.20%	8	33.33%	99.96% 
	Cable Rail	326	9.81%	0	0.00%	N/A
	Concrete Barrier	176	5.29%	0	0.00%	N/A
	Bridge Abutment	0	0.00%	0	0.00%	N/A
	Culvert or Headwall	12	0.36%	0	0.00%	N/A
	Delineator Post	61	1.84%	0	0.00%	N/A
	Large Boulders or Rocks	10	0.30%	0	0.00%	N/A
	Rocks in Roadway	0	0.00%	0	0.00%	N/A
	Barricade	2	0.06%	0	0.00%	N/A
	Wall or Building	0	0.00%	0	0.00%	N/A
	Mailbox	0	0.00%	0	0.00%	N/A
	Other Fixed Object	7	0.21%	0	0.00%	N/A
	Road Maintenance Equipment	6	0.18%	0	0.00%	N/A
	Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban Flat Rolling Mountainous 4-Lane Divided Freeways - AADT 0 - 50000 ADT (2016)



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902110542

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE157A\_00350\_00453 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability	
	CATEGORY	# Crashes	%	# Crashes	%	%
	Total Fixed Objects	1,294	38.93%	9	37.50%	53.23%
	Total Other Objects	184	5.54%	1	4.17%	61.35%
	Daylight	2,005	60.32%	18	75.00%	95.73%
	Dawn or Dusk	218	6.56%	1	4.17%	52.70%
	Dark - Lighted	380	11.43%	2	8.33%	47.20%
	Dark - Unlighted	719	21.63%	3	12.50%	20.51%
	Unknown Lighting	2	0.06%	0	0.00%	N/A
	No Adverse Weather	2,488	74.85%	16	66.67%	23.92%
	Rain	230	6.92%	3	12.50%	91.97%
	Snow or Sleet or Hail	534	16.06%	4	16.67%	66.01%
	Fog	14	0.42%	0	0.00%	N/A
	Dust	1	0.03%	0	0.00%	N/A
	Wind	54	1.62%	1	4.17%	94.25%
	Unknown Weather	3	0.09%	0	0.00%	N/A
	Dry Road	2,307	69.40%	12	50.00%	3.64%
	Wet Road	342	10.29%	7	29.17%	99.80%
	Muddy Road	0	0.00%	0	0.00%	N/A
	Snowy Road	179	5.39%	0	0.00%	N/A
	Icy Road	326	9.81%	5	20.83%	97.46%
	Slushy Road	66	1.99%	0	0.00%	N/A
	Foreign Material Road	2	0.06%	0	0.00%	N/A
	With Road Treatment	0	0.00%	0	0.00%	N/A
	Dry with Icy Road Treatment	16	0.48%	0	0.00%	N/A
	Wet with Icy Road Treatment	6	0.18%	0	0.00%	N/A
	Snowy with Icy Road Treatment	19	0.57%	0	0.00%	N/A
	Icy with Icy Road Treatment	21	0.63%	0	0.00%	N/A
	Slushy with Icy Road Treatment	5	0.15%	0	0.00%	N/A
	Unknown Road Condition	35	1.05%	0	0.00%	N/A
	Driver 1 - No Apparent Contributing Factor	1,670	50.24%	15	62.50%	92.08%
	Driver 1 - Asleep at the Wheel	164	4.93%	1	4.17%	66.67%
	Driver 1 - Illness	35	1.05%	0	0.00%	N/A
	Driver 1 - Distracted by Passenger	25	0.75%	0	0.00%	N/A
	Driver 1 - Driver Inexperience	287	8.63%	2	8.33%	65.64%
	Driver 1 - Driver Fatigue	60	1.81%	0	0.00%	N/A
	Driver 1 - Driver Preoccupied	286	8.60%	0	0.00%	N/A
	Driver 1 - Driver Unfamiliar with Area	83	2.50%	0	0.00%	N/A
	Driver 1 - Driver Emotionally Upset	6	0.18%	0	0.00%	N/A
	Driver 1 - Evading Law Enforcement Officer	2	0.06%	0	0.00%	N/A
	Driver 1 - Physical Disability	2	0.06%	0	0.00%	N/A
	Driver 1 - Unknown Contributing Factor	704	21.18%	6	25.00%	76.79%
	Driver 1 - No Impairment Suspected	3,112	93.62%	24	100.00%	100.00%
	Driver 1 - Alcohol Involved	141	4.24%	0	0.00%	N/A
	Driver 1 - RX, Medication, or Drugs Involved	39	1.17%	0	0.00%	N/A
	Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
	Driver 1 - Alcohol and Drugs Involved	32	0.96%	0	0.00%	N/A
	Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
	Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
	Total Accidents	3,324		24		
	Total Number of Records	65		0		N/A

**Highway Class:** CO - Urban Flat Rolling Mountainous 4-Lane Divided Freeways - AADT 0 - 50000 ADT (2016)



Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban Flat Rolling Mountainous 4-Lane Divided Freeways (2016)

09/01/2020

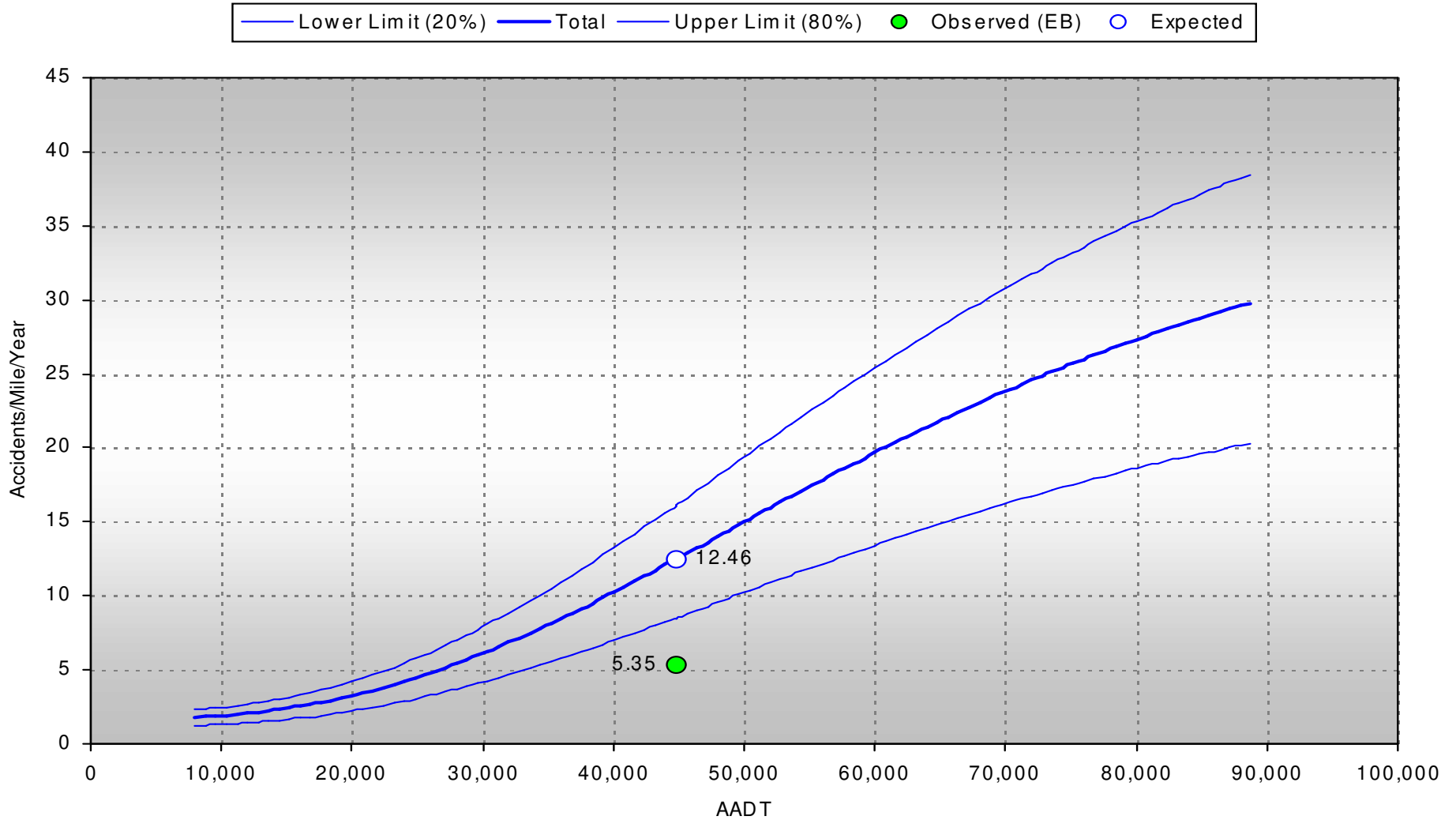
Job #: 20200901112604

Location: 000000157A

Begin:3.50

End:4.53

From:01/01/2015 To:12/31/2019





Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban Flat Rolling Mountainous 4-Lane Divided Freeways (2016)

09/01/2020

Job #: 20200901112655

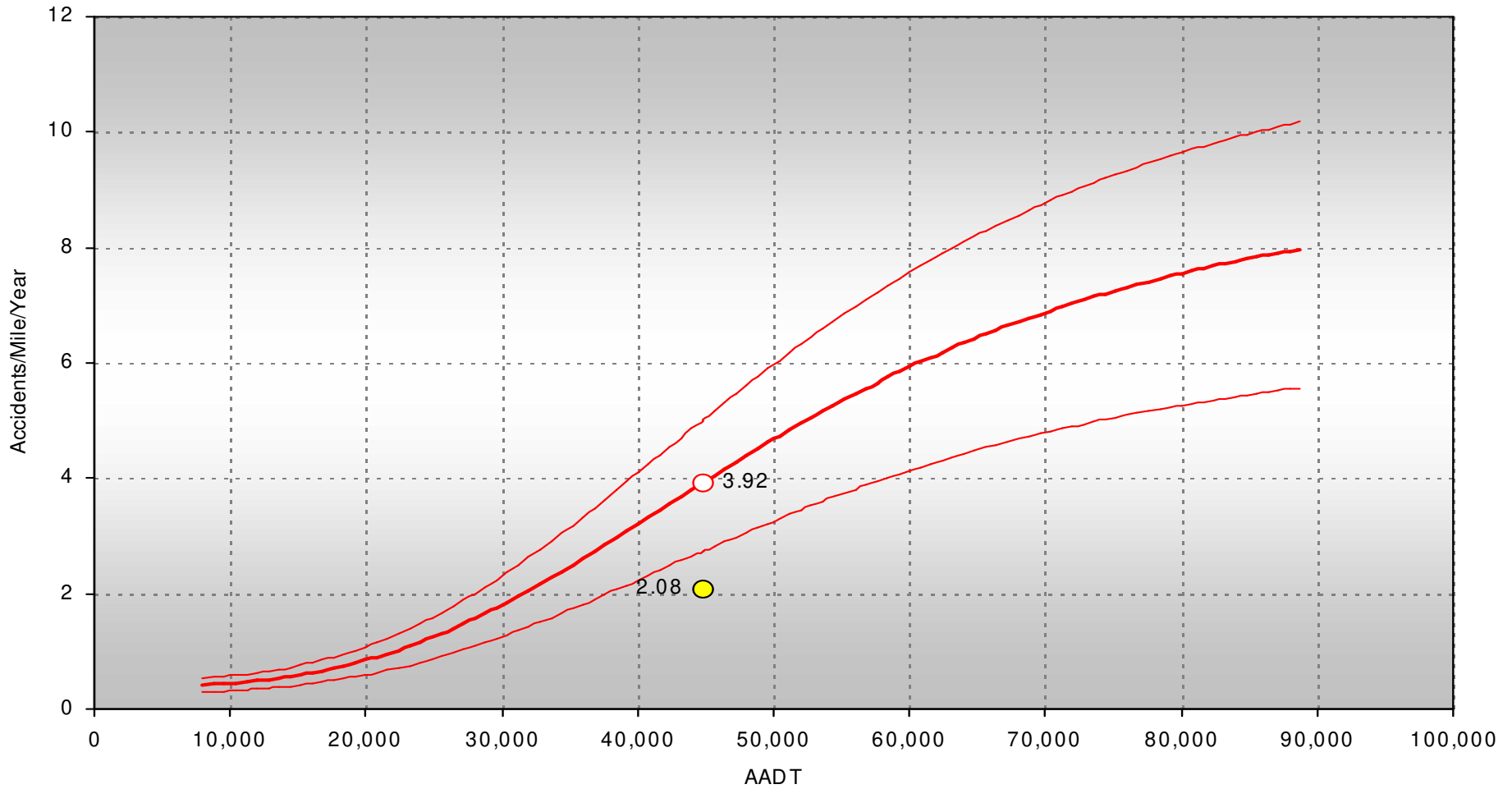
Location: 000000157A

Begin:3.50

End:4.53

From:01/01/2015 To:12/31/2019

— Lower Limit (20%) — INJ + FAT — Upper Limit (80%) ● Observed (EB) ○ Expected







Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
Pattern Recognition Listing

09/01/2020

Job #: 20200901105854

Comparing: RT157-A MP 3.50 To 4.53

Min # of Accidents: 5

Probability Confidence: 95%

**Pattern Recognition Listing**

<u>CRASH PATTERN</u>	<u>%</u>
On Road	96.88%
Rear End	95.73%
Guard Rail	99.97%
Daylight	97.96%
Wet Road	99.85%
Icy Road	97.93%
Driver 1 - No Apparent Contributing Fact	95.11%
Driver 1 - No Impairment Suspected	100.00%

**Highway Class:** CO - Urban Flat Rolling Mountainous 4-Lane Divided Freeways - AADT 0 - 50000 ADT (2016)



**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

09/21/2020

Job #: 20200921165957

**Location: 119B      Begin: 45.05    End: 45.33    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	7
INJ:	3      4 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>10</b>

Number of Vehicles	
One Vehicle:	5
Two Vehicles:	3
Three or More:	2
Unknown:	0
<b>Total:</b>	<b>10</b>

Location	
On Road:	6
Off Road:	4
Unknown:	0
<b>Total:</b>	<b>10</b>

Mainline/Ramps/Frontage Rds	
Mainline:	10
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>10</b>

Lighting Conditions	
Daylight:	8
Dawn or Dusk:	0
Dark - Lighted:	1
Dark - Unlighted:	1
Unknown:	0
<b>Total:</b>	<b>10</b>

Crash Rates	
PDO:	0.98*      * Per MVMT
INJ:	0.42*      ** Per 100 MVMT
FAT:	0.00**
<b>Total:</b>	<b>1.40*</b>

Crash Type	
Overtuning:	1
Other Non Collision:	0
Pedestrians:	0
Broadside:	0
Head On:	0
Rear End:	3
Sideswipe Same:	0
Sideswipe Opposite:	0
Approach Turn:	0
Overtaking Turn:	0
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	1
Domestic Animal:	0
Wild Animal:	0
Fixed Objects:	4
Other Objects:	1
Unknown:	0
<b>Total:</b>	<b>10</b>

Weather Conditions	
None:	9
Rain:	1
Snow/Sleet/Hail:	0
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
<b>Total:</b>	<b>10</b>

Road Conditions	
Dry:	10
Wet:	0
Muddy:	0
Snowy:	0
Icy:	0
Slushy:	0
Foreign Material:	0
With Road Treatment:	0
Unknown:	0
<b>Total:</b>	<b>10</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	6	2	2
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	0	1	0
Pickup Truck/Utility Van w/Trailer:	0	0	0
SUV:	2	2	0
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	0	0	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	0	0	0
Motorhome:	0	0	0
Motorcycle:	1	0	0
Bicycle:	1	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	0	0	0
Other:	0	0	0
Unknown:	0	0	0
<b>Total:</b>	<b>10</b>	<b>5</b>	<b>2</b>

**ADT: 12,259      Length: 0.31**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/21/2020

Job #: 20200921171023

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04505\_04533 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	CATEGORY	Statewide Average		This Location		Probability
		# Crashes	%	# Crashes	%	%
	Property Damage Only (PDO)	37	52.86%	7	70.00%	92.22%
	Injury (INJ)	30	42.86%	3	30.00%	31.34%
	Fatal (FAT)	3	4.29%	0	0.00%	N/A
	Persons Injured	58		4		
	Persons Killed	3		0		N/A
	Single Vehicle Accidents	25	35.71%	5	50.00%	89.64%
	Two Vehicle Accidents	42	60.00%	3	30.00%	5.48%
	Three or More Vehicle Accidents	3	4.29%	2	20.00%	99.25%
	Unknown Number of Vehicles	0	0.00%	0	0.00%	N/A
	On Road	50	71.43%	6	60.00%	31.27%
	Off Road	19	27.14%	4	40.00%	89.43%
	Off Road Left	9	12.86%	2	20.00%	87.25%
	Off Road Right	10	14.29%	2	20.00%	83.84%
	Off Road at Tee	0	0.00%	0	0.00%	N/A
	Off Road in Median	0	0.00%	0	0.00%	N/A
	Unknown Road Location	1	1.43%	0	0.00%	N/A
	Overturning	9	12.86%	1	10.00%	62.51%
	Other Non Collision	2	2.86%	0	0.00%	N/A
	Vehicle Cargo or Debris	0	0.00%	1	10.00%	100.00%
	Pedestrian	1	1.43%	0	0.00%	N/A
	Broadside	16	22.86%	0	0.00%	N/A
	Head On	2	2.86%	0	0.00%	N/A
	Rear End	11	15.71%	3	30.00%	94.20%
	Sideswipe (Same Direction)	5	7.14%	0	0.00%	N/A
	Sideswipe (Opposite Direction)	0	0.00%	0	0.00%	N/A
	Approach Turn	2	2.86%	0	0.00%	N/A
	Overtaking Turn	6	8.57%	0	0.00%	N/A
	Parked Motor Vehicle	1	1.43%	0	0.00%	N/A
	Railway Vehicle	0	0.00%	0	0.00%	N/A
	Bicycle or Pedal Cycle	0	0.00%	1	10.00%	100.00%
	Motorized Bicycle	0	0.00%	0	0.00%	N/A
	Domestic Animal	1	1.43%	0	0.00%	N/A
	Wild Animal	3	4.29%	0	0.00%	N/A
	Light or Utility Pole	0	0.00%	1	10.00%	100.00%
	Bridge Rail	0	0.00%	0	0.00%	N/A
	Guard Rail	0	0.00%	0	0.00%	N/A
	Cable Rail	0	0.00%	0	0.00%	N/A
	Concrete Barrier	0	0.00%	0	0.00%	N/A
	Bridge Abutment	0	0.00%	0	0.00%	N/A
	Culvert or Headwall	1	1.43%	0	0.00%	N/A
	Delineator Post	1	1.43%	1	10.00%	99.15%
	Large Boulders or Rocks	0	0.00%	0	0.00%	N/A
	Rocks in Roadway	0	0.00%	0	0.00%	N/A
	Barricade	0	0.00%	0	0.00%	N/A
	Wall or Building	0	0.00%	0	0.00%	N/A
	Mailbox	0	0.00%	0	0.00%	N/A
	Other Fixed Object	2	2.86%	0	0.00%	N/A
	Road Maintenance Equipment	1	1.43%	0	0.00%	N/A
	Unknown Accident Type	1	1.43%	0	0.00%	N/A

**Highway Class:** CO - Rural 3-Lane Undivided Unsignalized 4-Leg Intersections (2002)



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/21/2020

Job #: 20200921171023

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04505\_04533 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability
	CATEGORY	# Crashes	%	# Crashes	%
Total Fixed Objects	8	11.43%	4	40.00%	99.70%
Total Other Objects	2	2.86%	1	10.00%	96.85%
Daylight	46	65.71%	8	80.00%	90.66%
Dawn or Dusk	3	4.29%	0	0.00%	N/A
Dark - Lighted	5	7.14%	1	10.00%	84.32%
Dark - Unlighted	13	18.57%	1	10.00%	42.05%
Unknown Lighting	3	4.29%	0	0.00%	N/A
No Adverse Weather	55	78.57%	9	90.00%	91.03%
Rain	2	2.86%	1	10.00%	96.85%
Snow or Sleet or Hail	9	12.86%	0	0.00%	N/A
Fog	0	0.00%	0	0.00%	N/A
Dust	0	0.00%	0	0.00%	N/A
Wind	1	1.43%	0	0.00%	N/A
Unknown Weather	3	4.29%	0	0.00%	N/A
Dry Road	46	65.71%	10	100.00%	100.00%
Wet Road	2	2.86%	0	0.00%	N/A
Muddy Road	0	0.00%	0	0.00%	N/A
Snowy Road	4	5.71%	0	0.00%	N/A
Icy Road	9	12.86%	0	0.00%	N/A
Slushy Road	2	2.86%	0	0.00%	N/A
Foreign Material Road	0	0.00%	0	0.00%	N/A
With Road Treatment	1	1.43%	0	0.00%	N/A
Dry with Icy Road Treatment	1	1.43%	0	0.00%	N/A
Wet with Icy Road Treatment	0	0.00%	0	0.00%	N/A
Snowy with Icy Road Treatment	0	0.00%	0	0.00%	N/A
Icy with Icy Road Treatment	0	0.00%	0	0.00%	N/A
Slushy with Icy Road Treatment	0	0.00%	0	0.00%	N/A
Unknown Road Condition	5	7.14%	0	0.00%	N/A
Driver 1 - No Apparent Contributing Factor	44	62.86%	7	70.00%	78.22%
Driver 1 - Asleep at the Wheel	3	4.29%	0	0.00%	N/A
Driver 1 - Illness	0	0.00%	0	0.00%	N/A
Driver 1 - Distracted by Passenger	1	1.43%	0	0.00%	N/A
Driver 1 - Driver Inexperience	4	5.71%	0	0.00%	N/A
Driver 1 - Driver Fatigue	1	1.43%	0	0.00%	N/A
Driver 1 - Driver Preoccupied	8	11.43%	2	20.00%	90.31%
Driver 1 - Driver Unfamiliar with Area	5	7.14%	1	10.00%	84.32%
Driver 1 - Driver Emotionally Upset	0	0.00%	0	0.00%	N/A
Driver 1 - Evading Law Enforcement Officer	0	0.00%	0	0.00%	N/A
Driver 1 - Physical Disability	0	0.00%	0	0.00%	N/A
Driver 1 - Unknown Contributing Factor	4	5.71%	0	0.00%	N/A
Driver 1 - No Impairment Suspected	59	84.29%	10	100.00%	100.00%
Driver 1 - Alcohol Involved	5	7.14%	0	0.00%	N/A
Driver 1 - RX, Medication, or Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Alcohol and Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Driver/Pedestrian not Observed	5	7.14%	0	0.00%	N/A
Driver 1 - Unknown Condition of Driver/Pedestrian	1	1.43%	0	0.00%	N/A
Total Accidents	70		10		
Total Number of Records	0		0		N/A

**Highway Class:** CO - Rural 3-Lane Undivided Unsignalized 4-Leg Intersections (2002)



Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Rural Flat and Rolling 3-Lane UnDivided Highways (2016)

09/21/2020

Job #: 20200921170522

Location: 000000119B

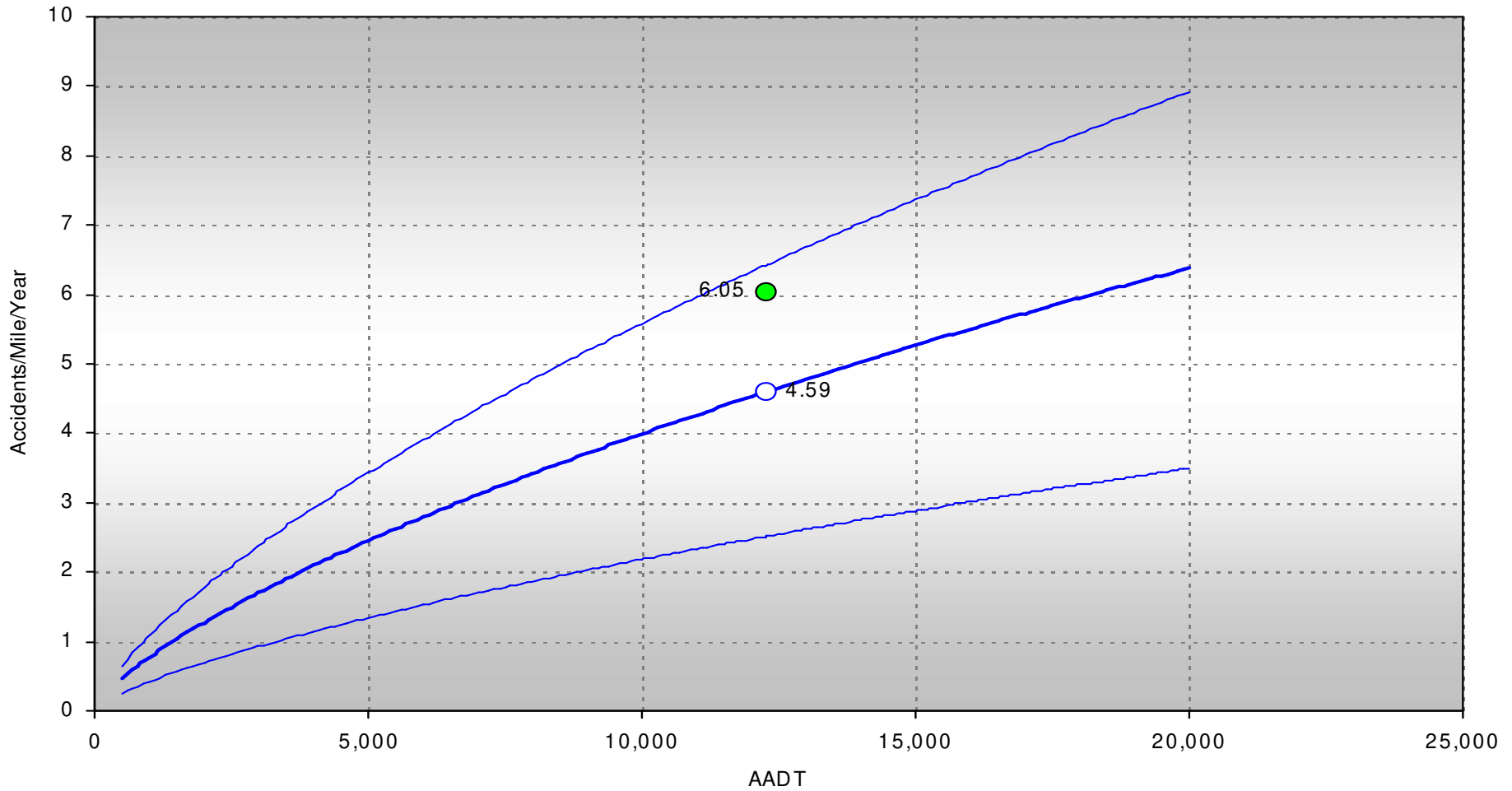
Begin:45.05

End:45.33

From:01/01/2015

To:12/31/2019

— Lower Limit (20%) — Total — Upper Limit (80%) ● Observed (EB) ○ Expected





Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Rural Flat and Rolling 3-Lane UnDivided Highways (2016)

09/21/2020

Job #: 20200921170420

Location: 000000119B

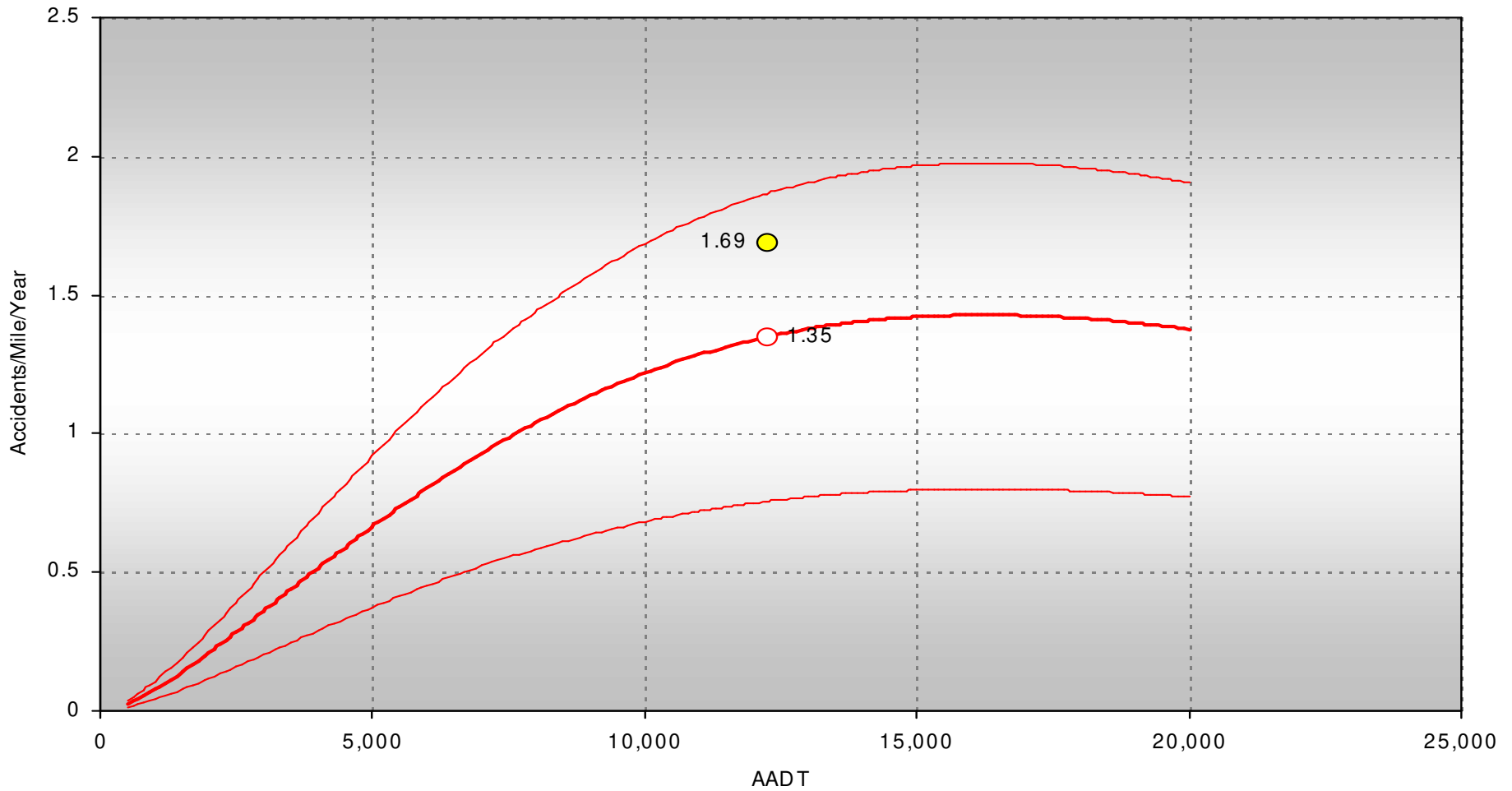
Begin:45.05

End:45.33

From:01/01/2015

To:12/31/2019

— Lower Limit (20%) — INJ + FAT — Upper Limit (80%) ● Observed (EB) ○ Expected





**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

09/01/2020

Job #: 20200901114122

**Location: 119B      Begin: 45.33    End: 45.77    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	7
INJ:	5      5 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>12</b>

Number of Vehicles	
One Vehicle:	3
Two Vehicles:	8
Three or More:	1
Unknown:	0
<b>Total:</b>	<b>12</b>

Location	
On Road:	10
Off Road:	2
Unknown:	0
<b>Total:</b>	<b>12</b>

Mainline/Ramps/Frontage Rds	
Mainline:	12
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>12</b>

Lighting Conditions	
Daylight:	8
Dawn or Dusk:	1
Dark - Lighted:	0
Dark - Unlighted:	3
Unknown:	0
<b>Total:</b>	<b>12</b>

Crash Rates	
PDO:	0.94*      * Per MVMT
INJ:	0.67*      ** Per 100 MVMT
FAT:	0.00**
<b>Total:</b>	<b>1.61*</b>

Crash Type	
Overtuning:	2
Other Non Collision:	0
Pedestrians:	0
Broadside:	0
Head On:	0
Rear End:	4
Sideswipe Same:	5
Sideswipe Opposite:	0
Approach Turn:	0
Overtaking Turn:	0
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	0
Domestic Animal:	0
Wild Animal:	1
Fixed Objects:	0
Other Objects:	0
Unknown:	0
<b>Total:</b>	<b>12</b>

Weather Conditions	
None:	10
Rain:	1
Snow/Sleet/Hail:	1
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
<b>Total:</b>	<b>12</b>

Road Conditions	
Dry:	10
Wet:	2
Muddy:	0
Snowy:	0
Icy:	0
Slushy:	0
Foreign Material:	0
With Road Treatment:	0
Unknown:	0
<b>Total:</b>	<b>12</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	7	4	0
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	2	1	0
Pickup Truck/Utility Van w/Trailer:	0	0	0
SUV:	2	3	1
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	0	0	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	0	0	0
Motorhome:	0	0	0
Motorcycle:	0	0	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	1	0	0
Other:	0	0	0
Unknown:	0	1	0
<b>Total:</b>	<b>12</b>	<b>9</b>	<b>1</b>

**ADT: 11,400      Length: 0.35**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902105845

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04533\_04577 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	CATEGORY	Statewide Average		This Location		Probability
		# Crashes	%	# Crashes	%	%
	Property Damage Only (PDO)	1,524	76.93%	7	58.33%	12.04%
	Injury (INJ)	456	23.02%	5	41.67%	96.25% <span style="color:red">◀</span>
	Fatal (FAT)	1	0.05%	0	0.00%	N/A
	Persons Injured	620		5		
	Persons Killed	1		0		N/A
	Single Vehicle Accidents	40	2.02%	3	25.00%	99.99%
	Two Vehicle Accidents	1,798	90.76%	8	66.67%	1.97%
	Three or More Vehicle Accidents	143	7.22%	1	8.33%	78.69%
	Unknown Number of Vehicles	0	0.00%	0	0.00%	N/A
	On Road	1,947	98.28%	10	83.33%	1.73%
	Off Road	34	1.72%	2	16.67%	99.90%
	Off Road Left	19	0.96%	0	0.00%	N/A
	Off Road Right	15	0.76%	2	16.67%	99.99%
	Off Road at Tee	0	0.00%	0	0.00%	N/A
	Off Road in Median	0	0.00%	0	0.00%	N/A
	Unknown Road Location	0	0.00%	0	0.00%	N/A
	Overtaking	8	0.40%	2	16.67%	100.00%
	Other Non Collision	4	0.20%	0	0.00%	N/A
	Vehicle Cargo or Debris	0	0.00%	0	0.00%	N/A
	Pedestrian	77	3.89%	0	0.00%	N/A
	Broadside	888	44.83%	0	0.00%	N/A
	Head On	5	0.25%	0	0.00%	N/A
	Rear End	386	19.49%	4	33.33%	93.41%
	Sideswipe (Same Direction)	260	13.12%	5	41.67%	99.77% <span style="color:red">◀</span>
	Sideswipe (Opposite Direction)	10	0.50%	0	0.00%	N/A
	Approach Turn	7	0.35%	0	0.00%	N/A
	Overtaking Turn	214	10.80%	0	0.00%	N/A
	Parked Motor Vehicle	36	1.82%	0	0.00%	N/A
	Railway Vehicle	4	0.20%	0	0.00%	N/A
	Bicycle or Pedal Cycle	48	2.42%	0	0.00%	N/A
	Motorized Bicycle	0	0.00%	0	0.00%	N/A
	Domestic Animal	0	0.00%	0	0.00%	N/A
	Wild Animal	0	0.00%	1	8.33%	100.00%
	Light or Utility Pole	8	0.40%	0	0.00%	N/A
	Bridge Rail	0	0.00%	0	0.00%	N/A
	Guard Rail	0	0.00%	0	0.00%	N/A
	Cable Rail	0	0.00%	0	0.00%	N/A
	Concrete Barrier	4	0.20%	0	0.00%	N/A
	Bridge Abutment	0	0.00%	0	0.00%	N/A
	Culvert or Headwall	0	0.00%	0	0.00%	N/A
	Delineator Post	0	0.00%	0	0.00%	N/A
	Large Boulders or Rocks	0	0.00%	0	0.00%	N/A
	Rocks in Roadway	0	0.00%	0	0.00%	N/A
	Barricade	0	0.00%	0	0.00%	N/A
	Wall or Building	2	0.10%	0	0.00%	N/A
	Mailbox	0	0.00%	0	0.00%	N/A
	Other Fixed Object	4	0.20%	0	0.00%	N/A
	Road Maintenance Equipment	0	0.00%	0	0.00%	N/A
	Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban 2-3 Lane OneWay (ML) OneWay (SR) UnDivided Signalized 4-Leg Intersections (2018)





**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902105845

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04533\_04577 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability
	CATEGORY	# Crashes	%	# Crashes	%
Total Fixed Objects	33	1.67%	0	0.00%	N/A
Total Other Objects	1	0.05%	0	0.00%	N/A
Daylight	1,344	67.84%	8	66.67%	57.27%
Dawn or Dusk	62	3.13%	1	8.33%	94.75%
Dark - Lighted	546	27.56%	0	0.00%	N/A
Dark - Unlighted	22	1.11%	3	25.00%	100.00%
Unknown Lighting	7	0.35%	0	0.00%	N/A
No Adverse Weather	1,036	52.30%	10	83.33%	99.50%
Rain	67	3.38%	1	8.33%	93.97%
Snow or Sleet or Hail	97	4.90%	1	8.33%	88.57%
Fog	1	0.05%	0	0.00%	N/A
Dust	0	0.00%	0	0.00%	N/A
Wind	5	0.25%	0	0.00%	N/A
Unknown Weather	775	39.12%	0	0.00%	N/A
Dry Road	1,674	84.50%	10	83.33%	57.57%
Wet Road	162	8.18%	2	16.67%	93.12%
Muddy Road	0	0.00%	0	0.00%	N/A
Snowy Road	47	2.37%	0	0.00%	N/A
Icy Road	68	3.43%	0	0.00%	N/A
Slushy Road	20	1.01%	0	0.00%	N/A
Foreign Material Road	0	0.00%	0	0.00%	N/A
With Road Treatment	0	0.00%	0	0.00%	N/A
Dry with Icy Road Treatment	1	0.05%	0	0.00%	N/A
Wet with Icy Road Treatment	3	0.15%	0	0.00%	N/A
Snowy with Icy Road Treatment	1	0.05%	0	0.00%	N/A
Icy with Icy Road Treatment	3	0.15%	0	0.00%	N/A
Slushy with Icy Road Treatment	0	0.00%	0	0.00%	N/A
Unknown Road Condition	2	0.10%	0	0.00%	N/A
Driver 1 - No Apparent Contributing Factor	599	30.24%	7	58.33%	99.00%
Driver 1 - Asleep at the Wheel	5	0.25%	0	0.00%	N/A
Driver 1 - Illness	5	0.25%	0	0.00%	N/A
Driver 1 - Distracted by Passenger	23	1.16%	0	0.00%	N/A
Driver 1 - Driver Inexperience	95	4.80%	1	8.33%	88.96%
Driver 1 - Driver Fatigue	16	0.81%	0	0.00%	N/A
Driver 1 - Driver Preoccupied	165	8.33%	0	0.00%	N/A
Driver 1 - Driver Unfamiliar with Area	164	8.28%	0	0.00%	N/A
Driver 1 - Driver Emotionally Upset	2	0.10%	0	0.00%	N/A
Driver 1 - Evading Law Enforcement Officer	2	0.10%	0	0.00%	N/A
Driver 1 - Physical Disability	2	0.10%	0	0.00%	N/A
Driver 1 - Unknown Contributing Factor	903	45.58%	4	33.33%	29.02%
Driver 1 - No Impairment Suspected	1,902	96.01%	10	83.33%	8.05%
Driver 1 - Alcohol Involved	71	3.58%	1	8.33%	93.32%
Driver 1 - RX, Medication, or Drugs Involved	2	0.10%	0	0.00%	N/A
Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Alcohol and Drugs Involved	6	0.30%	1	8.33%	99.94%
Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
Total Accidents	1,981		12		
Total Number of Records	100		0		N/A

**Highway Class:** CO - Urban 2-3 Lane OneWay (ML) OneWay (SR) UnDivided Signalized 4-Leg Intersections (2018)



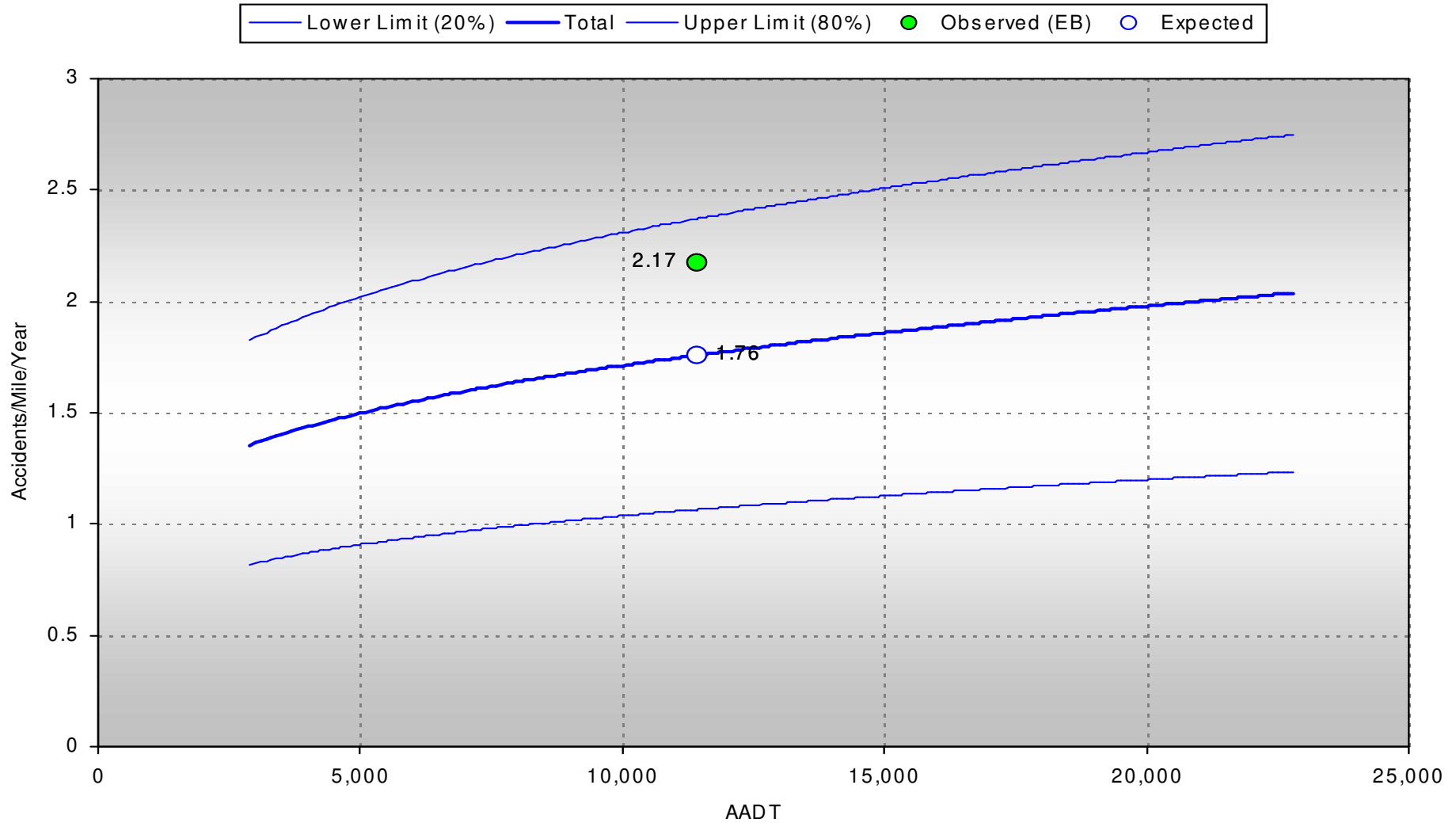
Location: 000000119B

(2018)

Begin:45.33

End:45.77

From:01/01/2015 To:12/31/2019





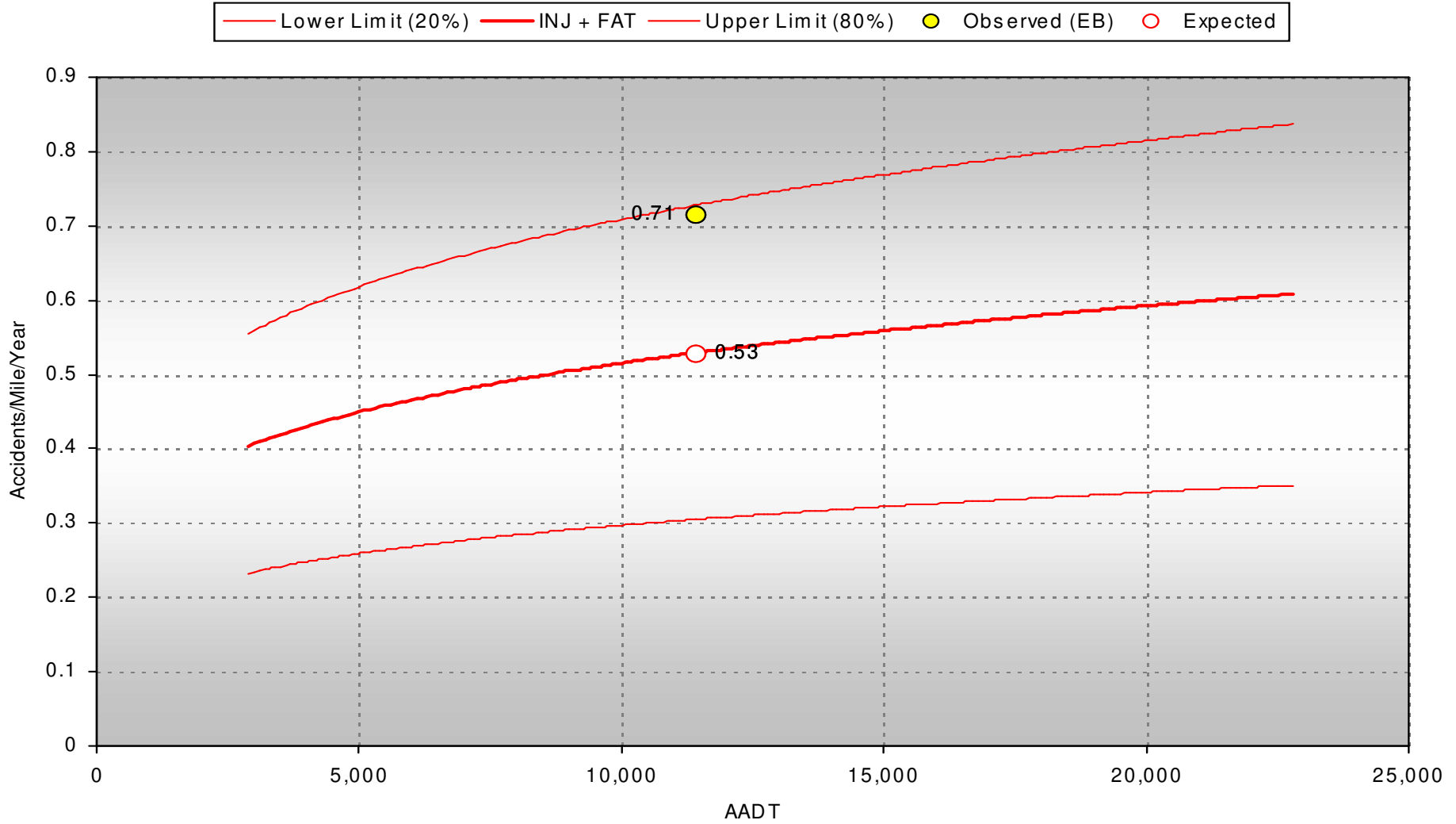
Location: 000000119B

(2018)

Begin:45.33

End:45.77

From:01/01/2015 To:12/31/2019





**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Pattern Recognition Listing**

09/01/2020

Job #: 20200901115215

**Comparing: RT119-B MP 45.33 To 45.77      Min # of Accidents: 5      Probability Confidence: 95%**

**Pattern Recognition Listing**

<u>CRASH PATTERN</u>	<u>%</u>
Injury (INJ)	99.74%
Single Vehicle Accidents	100.00%
Three or More Vehicle Accidents	96.25%
Off Road	100.00%
Off Road Right	100.00%
Total Fixed Objects	100.00%
Dark - Unlighted	100.00%
No Adverse Weather	100.00%
Driver 1 - No Apparent Contributing Fact	99.97%

**Highway Class: CO - Urban 2-3 Lane OneWay (ML) OneWay (SR) UnDivided Signalized 4-Leg Intersections (2018)**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**General Summary of Crashes Report**

09/01/2020

Job #: 20200901115945

**Location: 119B      Begin: 45.77    End: 48.20    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	59
INJ:	36      53 :Injured
FAT:	1      1 :Killed
<b>Total:</b>	<b>96</b>

Number of Vehicles	
One Vehicle:	26
Two Vehicles:	64
Three or More:	6
Unknown:	0
<b>Total:</b>	<b>96</b>

Location	
On Road:	81
Off Road:	15
Unknown:	0
<b>Total:</b>	<b>96</b>

Mainline/Ramps/Frontage Rds	
Mainline:	96
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>96</b>

Lighting Conditions	
Daylight:	65
Dawn or Dusk:	5
Dark - Lighted:	2
Dark - Unlighted:	24
Unknown:	0
<b>Total:</b>	<b>96</b>

Crash Rates	
PDO:	0.25*      * Per MVMT
INJ:	0.15*      ** Per 100 MVMT
FAT:	0.43**
<b>Total:</b>	<b>0.41*</b>

Crash Type	
Overtuning:	5
Other Non Collision:	0
Pedestrians:	1
Broadside:	0
Head On:	0
Rear End:	50
Sideswipe Same:	18
Sideswipe Opposite:	0
Approach Turn:	0
Overtaking Turn:	0
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	0
Domestic Animal:	0
Wild Animal:	6
Fixed Objects:	13
Other Objects:	3
Unknown:	0
<b>Total:</b>	<b>96</b>

Weather Conditions	
None:	81
Rain:	3
Snow/Sleet/Hail:	10
Fog:	0
Dust:	0
Wind:	2
Unknown:	0
<b>Total:</b>	<b>96</b>

Road Conditions	
Dry:	80
Wet:	4
Muddy:	0
Snowy:	8
Icy:	1
Slushy:	3
Foreign Material:	0
With Road Treatment:	0
Unknown:	0
<b>Total:</b>	<b>96</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	57	39	4
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	7	4	1
Pickup Truck/Utility Van w/Trailer:	0	0	0
SUV:	26	25	1
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	2	1	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	0	1	0
Motorhome:	0	0	0
Motorcycle:	3	0	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	0	0	0
Other:	1	0	0
Unknown:	0	0	0
<b>Total:</b>	<b>96</b>	<b>70</b>	<b>6</b>

**ADT: 53,167      Length: 2.41**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902105258

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04577\_04820 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	CATEGORY	Statewide Average		This Location		Probability
		# Crashes	%	# Crashes	%	%
	Property Damage Only (PDO)	3,039	73.69%	59	61.46%	0.58%
	Injury (INJ)	1,074	26.04%	36	37.50%	99.51%
	Fatal (FAT)	11	0.27%	1	1.04%	97.25%
	Persons Injured	1,524		53		
	Persons Killed	11		1		
	Single Vehicle Accidents	165	4.00%	26	27.08%	100.00%
	Two Vehicle Accidents	3,519	85.33%	64	66.67%	0.00%
	Three or More Vehicle Accidents	440	10.67%	6	6.25%	10.23%
	Unknown Number of Vehicles	0	0.00%	0	0.00%	N/A
	On Road	3,974	96.36%	81	84.38%	0.00%
	Off Road	150	3.64%	15	15.63%	100.00%
	Off Road Left	74	1.79%	5	5.21%	99.22%
	Off Road Right	71	1.72%	10	10.42%	100.00%
	Off Road at Tee	0	0.00%	0	0.00%	N/A
	Off Road in Median	5	0.12%	0	0.00%	N/A
	Unknown Road Location	0	0.00%	0	0.00%	N/A
	Overtaking	17	0.41%	5	5.21%	100.00%
	Other Non Collision	3	0.07%	0	0.00%	N/A
	Vehicle Cargo or Debris	6	0.15%	0	0.00%	N/A
	Pedestrian	51	1.24%	1	1.04%	66.68%
	Broadside	427	10.35%	0	0.00%	N/A
	Head On	10	0.24%	0	0.00%	N/A
	Rear End	2,311	56.04%	50	52.08%	24.83%
	Sideswipe (Same Direction)	387	9.38%	18	18.75%	99.86%
	Sideswipe (Opposite Direction)	29	0.70%	0	0.00%	N/A
	Approach Turn	650	15.76%	0	0.00%	N/A
	Overtaking Turn	19	0.46%	0	0.00%	N/A
	Parked Motor Vehicle	7	0.17%	0	0.00%	N/A
	Railway Vehicle	0	0.00%	0	0.00%	N/A
	Bicycle or Pedal Cycle	50	1.21%	0	0.00%	N/A
	Motorized Bicycle	0	0.00%	0	0.00%	N/A
	Domestic Animal	3	0.07%	0	0.00%	N/A
	Wild Animal	7	0.17%	6	6.25%	100.00%
	Light or Utility Pole	15	0.36%	0	0.00%	N/A
	Bridge Rail	0	0.00%	0	0.00%	N/A
	Guard Rail	2	0.05%	0	0.00%	N/A
	Cable Rail	0	0.00%	0	0.00%	N/A
	Concrete Barrier	1	0.02%	0	0.00%	N/A
	Bridge Abutment	0	0.00%	0	0.00%	N/A
	Culvert or Headwall	1	0.02%	0	0.00%	N/A
	Delineator Post	4	0.10%	0	0.00%	N/A
	Large Boulders or Rocks	1	0.02%	0	0.00%	N/A
	Rocks in Roadway	0	0.00%	0	0.00%	N/A
	Barricade	1	0.02%	0	0.00%	N/A
	Wall or Building	1	0.02%	0	0.00%	N/A
	Mailbox	0	0.00%	0	0.00%	N/A
	Other Fixed Object	11	0.27%	1	1.04%	97.25%
	Road Maintenance Equipment	2	0.05%	0	0.00%	N/A
	Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902105258

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04577\_04820 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability
	CATEGORY	# Crashes	%	# Crashes	%
Total Fixed Objects	141	3.42%	13	13.54%	100.00%
Total Other Objects	12	0.29%	3	3.13%	99.98%
Daylight	2,971	72.04%	65	67.71%	20.12%
Dawn or Dusk	167	4.05%	5	5.21%	80.60%
Dark - Lighted	942	22.84%	2	2.08%	0.00%
Dark - Unlighted	36	0.87%	24	25.00%	100.00%
Unknown Lighting	8	0.19%	0	0.00%	N/A
No Adverse Weather	3,674	89.09%	81	84.38%	9.79%
Rain	179	4.34%	3	3.13%	39.67%
Snow or Sleet or Hail	201	4.87%	10	10.42%	99.29%
Fog	8	0.19%	0	0.00%	N/A
Dust	0	0.00%	0	0.00%	N/A
Wind	12	0.29%	2	2.08%	99.71%
Unknown Weather	50	1.21%	0	0.00%	N/A
Dry Road	3,534	85.69%	80	83.33%	29.46%
Wet Road	321	7.78%	4	4.17%	12.39%
Muddy Road	0	0.00%	0	0.00%	N/A
Snowy Road	100	2.42%	8	8.33%	99.94%
Icy Road	96	2.33%	1	1.04%	34.27%
Slushy Road	22	0.53%	3	3.13%	99.82%
Foreign Material Road	1	0.02%	0	0.00%	N/A
With Road Treatment	0	0.00%	0	0.00%	N/A
Dry with Icy Road Treatment	12	0.29%	0	0.00%	N/A
Wet with Icy Road Treatment	3	0.07%	0	0.00%	N/A
Snowy with Icy Road Treatment	14	0.34%	0	0.00%	N/A
Icy with Icy Road Treatment	3	0.07%	0	0.00%	N/A
Slushy with Icy Road Treatment	1	0.02%	0	0.00%	N/A
Unknown Road Condition	17	0.41%	0	0.00%	N/A
Driver 1 - No Apparent Contributing Factor	1,777	43.09%	53	55.21%	99.36%
Driver 1 - Asleep at the Wheel	17	0.41%	3	3.13%	99.93%
Driver 1 - Illness	27	0.65%	1	1.04%	86.90%
Driver 1 - Distracted by Passenger	56	1.36%	0	0.00%	N/A
Driver 1 - Driver Inexperience	360	8.73%	15	15.63%	99.11%
Driver 1 - Driver Fatigue	29	0.70%	1	1.04%	85.32%
Driver 1 - Driver Preoccupied	656	15.91%	11	11.46%	14.51%
Driver 1 - Driver Unfamiliar with Area	106	2.57%	2	2.08%	55.06%
Driver 1 - Driver Emotionally Upset	16	0.39%	0	0.00%	N/A
Driver 1 - Evading Law Enforcement Officer	8	0.19%	0	0.00%	N/A
Driver 1 - Physical Disability	7	0.17%	0	0.00%	N/A
Driver 1 - Unknown Contributing Factor	1,065	25.82%	10	10.42%	0.02%
Driver 1 - No Impairment Suspected	3,917	94.98%	91	94.79%	53.10%
Driver 1 - Alcohol Involved	165	4.00%	2	2.08%	25.64%
Driver 1 - RX, Medication, or Drugs Involved	20	0.48%	2	2.08%	98.83%
Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Alcohol and Drugs Involved	22	0.53%	1	1.04%	90.65%
Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
Total Accidents	4,124		96		
Total Number of Records	59		0		N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)



Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 6-Lane Divided Signalized 4-Leg Intersections (2018)

09/01/2020

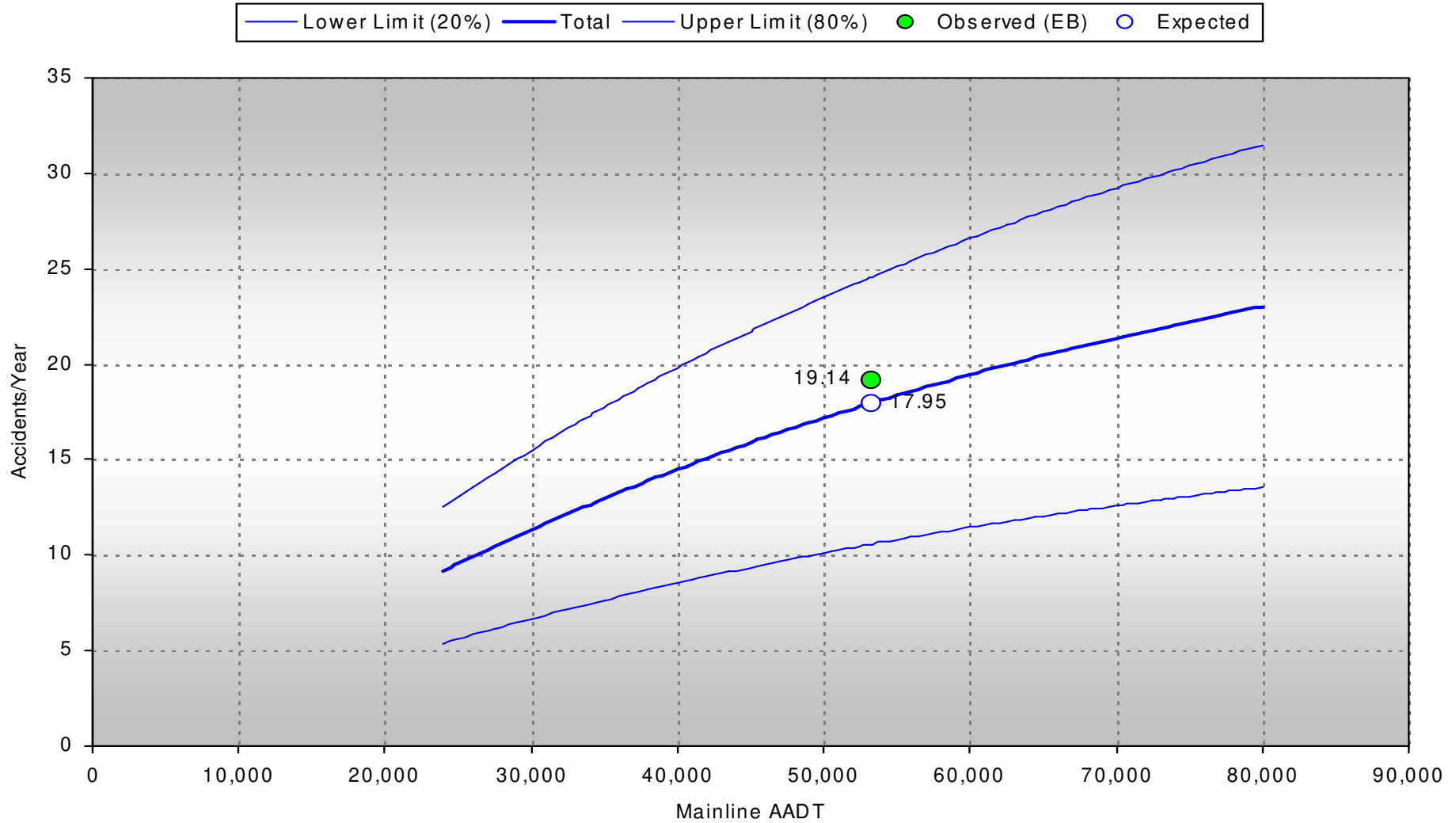
Job #: 20200901120551

Location: 000000119B

Begin:45.77

End:48.20

From:01/01/2015 To:12/31/2019







Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 6-Lane Divided Signalized 4-Leg Intersections (2018)

09/01/2020

Job #: 20200901120633

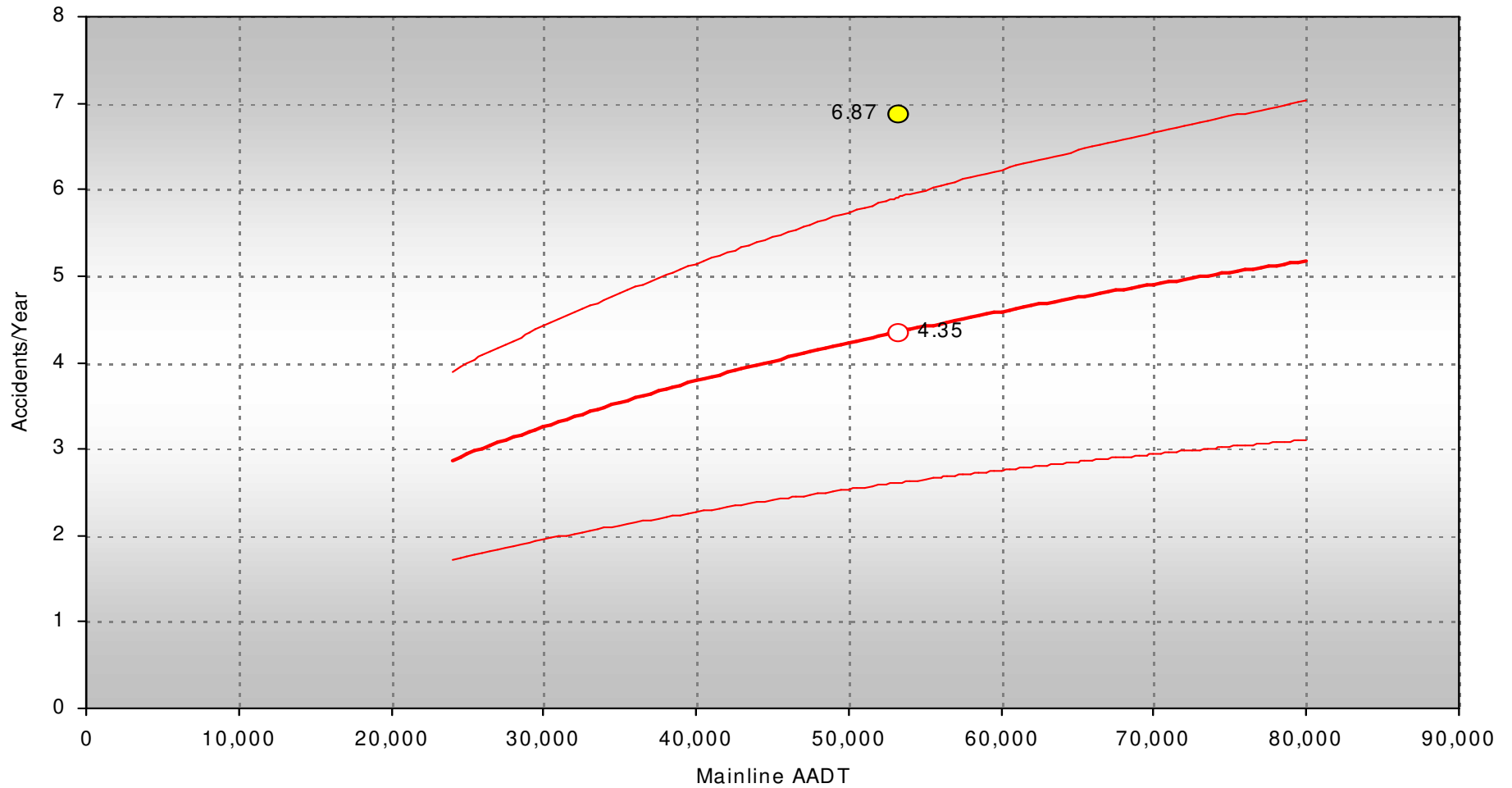
Location: 000000119B

Begin:45.77

End:48.20

From:01/01/2015 To:12/31/2019

— Lower Limit (20%) — INJ + FAT — Upper Limit (80%) ● Observed (EB) ○ Expected





**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Pattern Recognition Listing**

09/01/2020

Job #: 20200901120917

Comparing: RT119-B MP 45.77 To 48.20

Min # of Accidents: 5

Probability Confidence: 95%

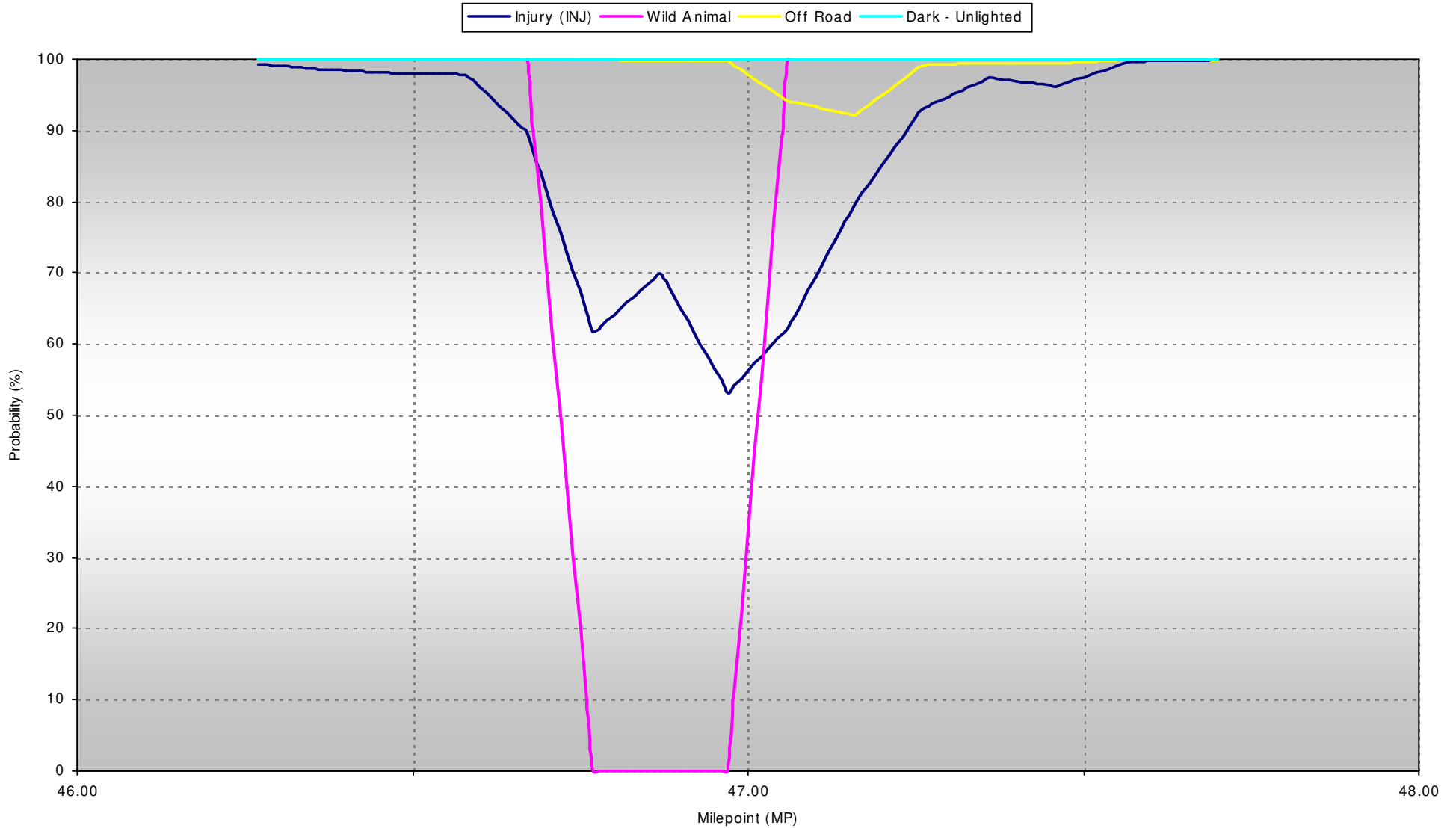
**Pattern Recognition Listing**

<u>CRASH PATTERN</u>	<u>%</u>
Injury (INJ)	99.33%
Single Vehicle Accidents	100.00%
Off Road	100.00%
Off Road Right	99.95%
Sideswipe (Same Direction)	100.00%
Wild Animal	100.00%
Total Fixed Objects	99.94%
Daylight	96.46%
Dark - Unlighted	100.00%
Snow or Sleet or Hail	99.01%
Snowy Road	99.99%
Driver 1 - No Apparent Contributing Fact	99.80%
Driver 1 - Driver Inexperience	99.99%

**Highway Class: CO - Urban 6-Lane Divided Signalized 4-Leg Intersections - AADT >48000 ADT (2018)**



Pattern Recognition Graph for RT119-B From 46.00 To 48.00 - From 01/01/2015 To 12/31/2019





**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

09/01/2020

Job #: 20200901161421

**Location: 119B      Begin: 48.21    End: 49.54    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	56
INJ:	26      30 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>82</b>

Number of Vehicles	
One Vehicle:	10
Two Vehicles:	59
Three or More:	13
Unknown:	0
<b>Total:</b>	<b>82</b>

Location	
On Road:	73
Off Road:	9
Unknown:	0
<b>Total:</b>	<b>82</b>

Mainline/Ramps/Frontage Rds	
Mainline:	82
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>82</b>

Lighting Conditions	
Daylight:	61
Dawn or Dusk:	5
Dark - Lighted:	1
Dark - Unlighted:	15
Unknown:	0
<b>Total:</b>	<b>82</b>

Crash Rates	
PDO:	0.51 *      * Per MVMT
INJ:	0.24 *      ** Per 100 MVMT
FAT:	0.00 **
<b>Total:</b>	<b>0.75 *</b>

Crash Type	
Overtuning:	1
Other Non Collision:	1
Pedestrians:	1
Broadside:	0
Head On:	0
Rear End:	58
Sideswipe Same:	9
Sideswipe Opposite:	1
Approach Turn:	0
Overtaking Turn:	0
Parked Motor Vehicle:	1
Railway Vehicle:	0
Bicycles:	1
Domestic Animal:	0
Wild Animal:	1
Fixed Objects:	6
Other Objects:	2
Unknown:	0
<b>Total:</b>	<b>82</b>

Weather Conditions	
None:	74
Rain:	4
Snow/Sleet/Hail:	3
Fog:	0
Dust:	0
Wind:	1
Unknown:	0
<b>Total:</b>	<b>82</b>

Road Conditions	
Dry:	74
Wet:	5
Muddy:	0
Snowy:	1
Icy:	2
Slushy:	0
Foreign Material:	0
With Road Treatment:	0
Unknown:	0
<b>Total:</b>	<b>82</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	43	37	9
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	9	6	1
Pickup Truck/Utility Van w/Trailer:	0	0	0
SUV:	23	29	2
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	1	0	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	1	0	0
Motorhome:	0	0	0
Motorcycle:	0	0	0
Bicycle:	1	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	2	0	1
Other:	2	0	0
Unknown:	0	0	0
<b>Total:</b>	<b>82</b>	<b>72</b>	<b>13</b>

**ADT: 44,000      Length: 1.36**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902104835

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04821\_04954 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	CATEGORY	Statewide Average		This Location		Probability
		# Crashes	%	# Crashes	%	%
	Property Damage Only (PDO)	3,039	73.69%	56	68.29%	16.21%
	Injury (INJ)	1,074	26.04%	26	31.71%	90.03%
	Fatal (FAT)	11	0.27%	0	0.00%	N/A
	Persons Injured	1,524		30		
	Persons Killed	11		0		N/A
	Single Vehicle Accidents	165	4.00%	10	12.20%	99.96%
	Two Vehicle Accidents	3,519	85.33%	59	71.95%	0.13%
	Three or More Vehicle Accidents	440	10.67%	13	15.85%	94.86%
	Unknown Number of Vehicles	0	0.00%	0	0.00%	N/A
	On Road	3,974	96.36%	73	89.02%	0.30%
	Off Road	150	3.64%	9	10.98%	99.92%
	Off Road Left	74	1.79%	6	7.32%	99.93%
	Off Road Right	71	1.72%	3	3.66%	94.65%
	Off Road at Tee	0	0.00%	0	0.00%	N/A
	Off Road in Median	5	0.12%	0	0.00%	N/A
	Unknown Road Location	0	0.00%	0	0.00%	N/A
	Overtaking	17	0.41%	1	1.22%	95.46%
	Other Non Collision	3	0.07%	1	1.22%	99.83%
	Vehicle Cargo or Debris	6	0.15%	1	1.22%	99.35%
	Pedestrian	51	1.24%	1	1.22%	73.06%
	Broadside	427	10.35%	0	0.00%	N/A
	Head On	10	0.24%	0	0.00%	N/A
	Rear End	2,311	56.04%	58	70.73%	99.78%
	Sideswipe (Same Direction)	387	9.38%	9	10.98%	76.16%
	Sideswipe (Opposite Direction)	29	0.70%	1	1.22%	88.62%
	Approach Turn	650	15.76%	0	0.00%	N/A
	Overtaking Turn	19	0.46%	0	0.00%	N/A
	Parked Motor Vehicle	7	0.17%	1	1.22%	99.13%
	Railway Vehicle	0	0.00%	0	0.00%	N/A
	Bicycle or Pedal Cycle	50	1.21%	1	1.22%	73.79%
	Motorized Bicycle	0	0.00%	0	0.00%	N/A
	Domestic Animal	3	0.07%	0	0.00%	N/A
	Wild Animal	7	0.17%	1	1.22%	99.13%
	Light or Utility Pole	15	0.36%	1	1.22%	96.37%
	Bridge Rail	0	0.00%	1	1.22%	100.00%
	Guard Rail	2	0.05%	2	2.44%	100.00%
	Cable Rail	0	0.00%	0	0.00%	N/A
	Concrete Barrier	1	0.02%	0	0.00%	N/A
	Bridge Abutment	0	0.00%	0	0.00%	N/A
	Culvert or Headwall	1	0.02%	0	0.00%	N/A
	Delineator Post	4	0.10%	0	0.00%	N/A
	Large Boulders or Rocks	1	0.02%	0	0.00%	N/A
	Rocks in Roadway	0	0.00%	0	0.00%	N/A
	Barricade	1	0.02%	0	0.00%	N/A
	Wall or Building	1	0.02%	0	0.00%	N/A
	Mailbox	0	0.00%	0	0.00%	N/A
	Other Fixed Object	11	0.27%	0	0.00%	N/A
	Road Maintenance Equipment	2	0.05%	0	0.00%	N/A
	Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902104835

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04821\_04954 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability
	CATEGORY	# Crashes	%	# Crashes	%
Total Fixed Objects	141	3.42%	6	7.32%	97.77%
Total Other Objects	12	0.29%	2	2.44%	99.82%
Daylight	2,971	72.04%	61	74.39%	72.06%
Dawn or Dusk	167	4.05%	5	6.10%	88.46%
Dark - Lighted	942	22.84%	1	1.22%	0.00%
Dark - Unlighted	36	0.87%	15	18.29%	100.00%
Unknown Lighting	8	0.19%	0	0.00%	N/A
No Adverse Weather	3,674	89.09%	74	90.24%	68.34%
Rain	179	4.34%	4	4.88%	71.61%
Snow or Sleet or Hail	201	4.87%	3	3.66%	42.93%
Fog	8	0.19%	0	0.00%	N/A
Dust	0	0.00%	0	0.00%	N/A
Wind	12	0.29%	1	1.22%	97.59%
Unknown Weather	50	1.21%	0	0.00%	N/A
Dry Road	3,534	85.69%	74	90.24%	91.51%
Wet Road	321	7.78%	5	6.10%	37.79%
Muddy Road	0	0.00%	0	0.00%	N/A
Snowy Road	100	2.42%	1	1.22%	40.59%
Icy Road	96	2.33%	2	2.44%	70.16%
Slushy Road	22	0.53%	0	0.00%	N/A
Foreign Material Road	1	0.02%	0	0.00%	N/A
With Road Treatment	0	0.00%	0	0.00%	N/A
Dry with Icy Road Treatment	12	0.29%	0	0.00%	N/A
Wet with Icy Road Treatment	3	0.07%	0	0.00%	N/A
Snowy with Icy Road Treatment	14	0.34%	0	0.00%	N/A
Icy with Icy Road Treatment	3	0.07%	0	0.00%	N/A
Slushy with Icy Road Treatment	1	0.02%	0	0.00%	N/A
Unknown Road Condition	17	0.41%	0	0.00%	N/A
Driver 1 - No Apparent Contributing Factor	1,777	43.09%	39	47.56%	82.38%
Driver 1 - Asleep at the Wheel	17	0.41%	2	2.44%	99.51%
Driver 1 - Illness	27	0.65%	0	0.00%	N/A
Driver 1 - Distracted by Passenger	56	1.36%	3	3.66%	97.42%
Driver 1 - Driver Inexperience	360	8.73%	4	4.88%	14.70%
Driver 1 - Driver Fatigue	29	0.70%	3	3.66%	99.72%
Driver 1 - Driver Preoccupied	656	15.91%	16	19.51%	85.14%
Driver 1 - Driver Unfamiliar with Area	106	2.57%	1	1.22%	37.40%
Driver 1 - Driver Emotionally Upset	16	0.39%	1	1.22%	95.93%
Driver 1 - Evading Law Enforcement Officer	8	0.19%	0	0.00%	N/A
Driver 1 - Physical Disability	7	0.17%	0	0.00%	N/A
Driver 1 - Unknown Contributing Factor	1,065	25.82%	13	15.85%	2.23%
Driver 1 - No Impairment Suspected	3,917	94.98%	73	89.02%	2.18%
Driver 1 - Alcohol Involved	165	4.00%	6	7.32%	95.39%
Driver 1 - RX, Medication, or Drugs Involved	20	0.48%	2	2.44%	99.24%
Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Alcohol and Drugs Involved	22	0.53%	1	1.22%	92.86%
Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
Total Accidents	4,124		82		
Total Number of Records	59		0		N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)



Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

09/01/2020

Job #: 20200901162334

Location: 000000119B

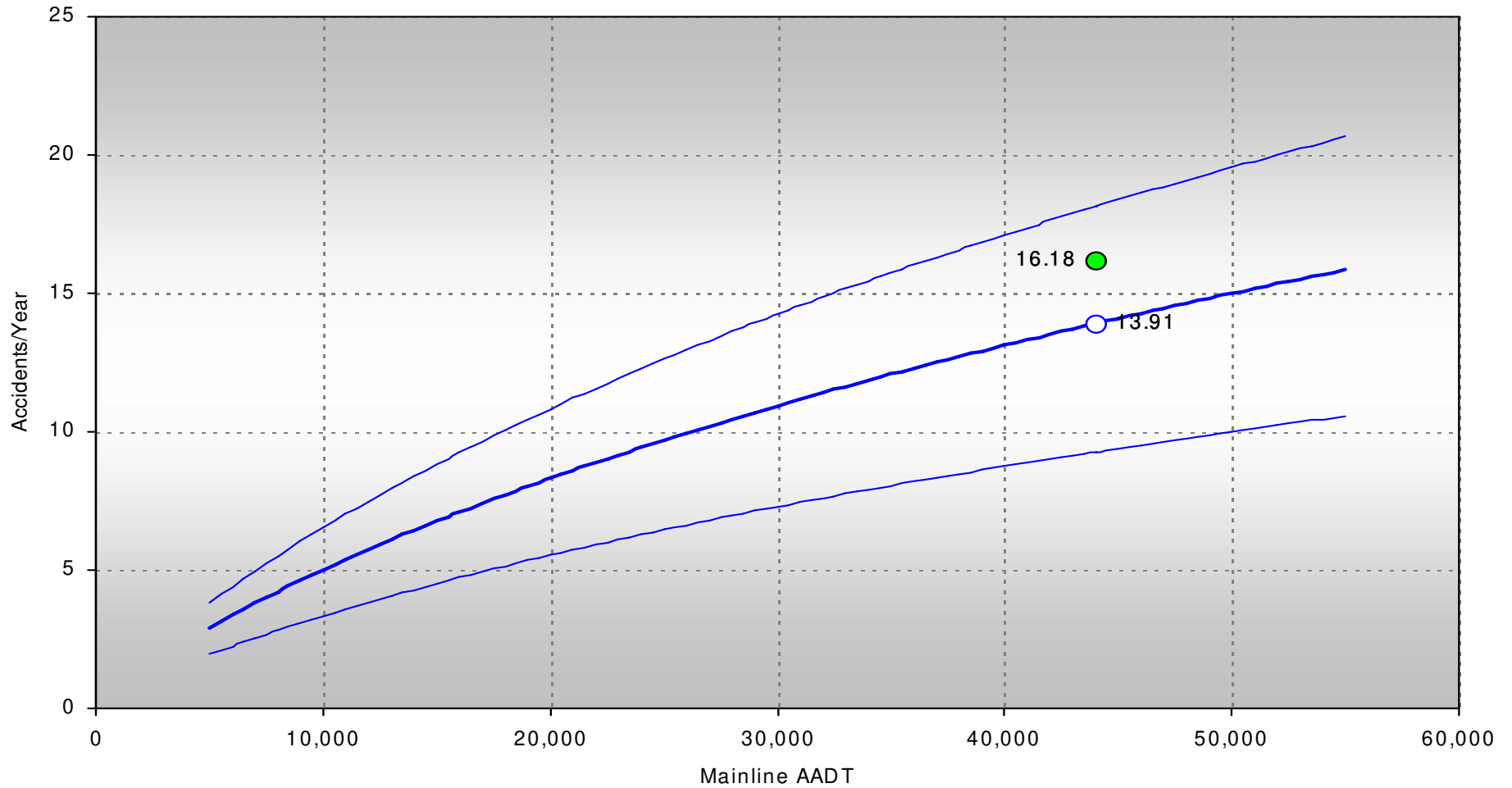
Begin:48.21

End:49.54

From:01/01/2015

To:12/31/2019

— Lower Limit (20%) — Total — Upper Limit (80%) ● Observed (EB) ○ Expected





Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

09/01/2020

Job #: 20200901162255

Location: 000000119B

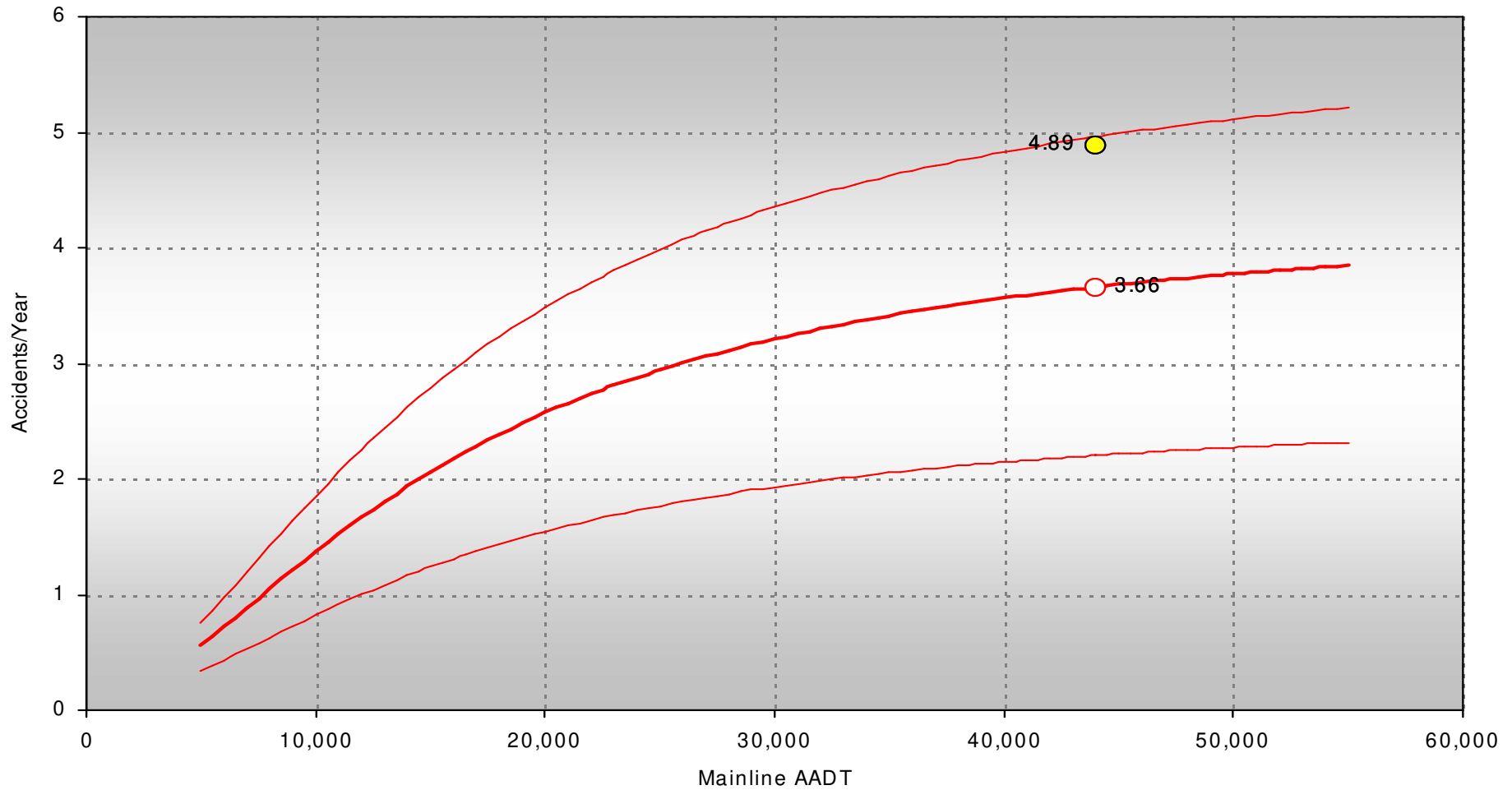
Begin:48.21

End:49.54

From:01/01/2015

To:12/31/2019

— Lower Limit (20%) — INJ + FAT — Upper Limit (80%) ● Observed (EB) ○ Expected







**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Pattern Recognition Listing**

09/01/2020

Job #: 20200901162555

Comparing: RT119-B MP 48.21 To 49.54

Min # of Accidents: 5

Probability Confidence: 95%

**Pattern Recognition Listing**

**CRASH PATTERN**

**%**

Single Vehicle Accidents	99.61%
Three or More Vehicle Accidents	97.95%
Off Road	99.78%
Rear End	99.93%
Total Fixed Objects	97.79%
Dawn or Dusk	96.82%
Dark - Unlighted	100.00%
Driver 1 - Alcohol Involved	95.73%

**Highway Class: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)**



**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

09/01/2020

Job #: 20200901163053

**Location: 119B      Begin: 49.55    End: 50.71    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	32
INJ:	16      21 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>48</b>

Number of Vehicles	
One Vehicle:	10
Two Vehicles:	30
Three or More:	8
Unknown:	0
<b>Total:</b>	<b>48</b>

Location	
On Road:	38
Off Road:	10
Unknown:	0
<b>Total:</b>	<b>48</b>

Mainline/Ramps/Frontage Rds	
Mainline:	48
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>48</b>

Lighting Conditions	
Daylight:	33
Dawn or Dusk:	3
Dark - Lighted:	3
Dark - Unlighted:	9
Unknown:	0
<b>Total:</b>	<b>48</b>

Crash Rates	
PDO:	0.41 *      * Per MVMT
INJ:	0.20 *      ** Per 100 MVMT
FAT:	0.00 **
<b>Total:</b>	<b>0.61 *</b>

Crash Type	
Overtuning:	1
Other Non Collision:	0
Pedestrians:	0
Broadside:	0
Head On:	1
Rear End:	33
Sideswipe Same:	4
Sideswipe Opposite:	0
Approach Turn:	0
Overtaking Turn:	0
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	0
Domestic Animal:	0
Wild Animal:	0
Fixed Objects:	9
Other Objects:	0
Unknown:	0
<b>Total:</b>	<b>48</b>

Weather Conditions	
None:	46
Rain:	0
Snow/Sleet/Hail:	1
Fog:	0
Dust:	0
Wind:	1
Unknown:	0
<b>Total:</b>	<b>48</b>

Road Conditions	
Dry:	44
Wet:	2
Muddy:	0
Snowy:	1
Icy:	0
Slushy:	0
Foreign Material:	0
With Road Treatment:	1
Unknown:	0
<b>Total:</b>	<b>48</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	25	17	4
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	10	4	1
Pickup Truck/Utility Van w/Trailer:	0	0	0
SUV:	11	17	3
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	1	0	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	0	0	0
Motorhome:	0	0	0
Motorcycle:	0	0	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	1	0	0
Other:	0	0	0
Unknown:	0	0	0
<b>Total:</b>	<b>48</b>	<b>38</b>	<b>8</b>

**ADT: 37,600      Length: 1.14**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902104434

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04955\_05071 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	CATEGORY	Statewide Average		This Location		Probability
		# Crashes	%	# Crashes	%	%
	Property Damage Only (PDO)	3,039	73.69%	32	66.67%	17.24%
	Injury (INJ)	1,074	26.04%	16	33.33%	90.32%
	Fatal (FAT)	11	0.27%	0	0.00%	N/A
	Persons Injured	1,524		21		
	Persons Killed	11		0		N/A
	Single Vehicle Accidents	165	4.00%	10	20.83%	100.00% <span style="color:red">◀</span>
	Two Vehicle Accidents	3,519	85.33%	30	62.50%	0.01%
	Three or More Vehicle Accidents	440	10.67%	8	16.67%	93.50%
	Unknown Number of Vehicles	0	0.00%	0	0.00%	N/A
	On Road	3,974	96.36%	38	79.17%	0.00%
	Off Road	150	3.64%	10	20.83%	100.00% <span style="color:red">◀</span>
	Off Road Left	74	1.79%	4	8.33%	99.83%
	Off Road Right	71	1.72%	6	12.50%	100.00% <span style="color:red">◀</span>
	Off Road at Tee	0	0.00%	0	0.00%	N/A
	Off Road in Median	5	0.12%	0	0.00%	N/A
	Unknown Road Location	0	0.00%	0	0.00%	N/A
	Overturning	17	0.41%	1	2.08%	98.31%
	Other Non Collision	3	0.07%	0	0.00%	N/A
	Vehicle Cargo or Debris	6	0.15%	0	0.00%	N/A
	Pedestrian	51	1.24%	0	0.00%	N/A
	Broadside	427	10.35%	0	0.00%	N/A
	Head On	10	0.24%	1	2.08%	99.38%
	Rear End	2,311	56.04%	33	68.75%	97.42% <span style="color:red">◀</span>
	Sideswipe (Same Direction)	387	9.38%	4	8.33%	52.66%
	Sideswipe (Opposite Direction)	29	0.70%	0	0.00%	N/A
	Approach Turn	650	15.76%	0	0.00%	N/A
	Overtaking Turn	19	0.46%	0	0.00%	N/A
	Parked Motor Vehicle	7	0.17%	0	0.00%	N/A
	Railway Vehicle	0	0.00%	0	0.00%	N/A
	Bicycle or Pedal Cycle	50	1.21%	0	0.00%	N/A
	Motorized Bicycle	0	0.00%	0	0.00%	N/A
	Domestic Animal	3	0.07%	0	0.00%	N/A
	Wild Animal	7	0.17%	0	0.00%	N/A
	Light or Utility Pole	15	0.36%	0	0.00%	N/A
	Bridge Rail	0	0.00%	0	0.00%	N/A
	Guard Rail	2	0.05%	0	0.00%	N/A
	Cable Rail	0	0.00%	0	0.00%	N/A
	Concrete Barrier	1	0.02%	0	0.00%	N/A
	Bridge Abutment	0	0.00%	0	0.00%	N/A
	Culvert or Headwall	1	0.02%	0	0.00%	N/A
	Delineator Post	4	0.10%	0	0.00%	N/A
	Large Boulders or Rocks	1	0.02%	0	0.00%	N/A
	Rocks in Roadway	0	0.00%	0	0.00%	N/A
	Barricade	1	0.02%	0	0.00%	N/A
	Wall or Building	1	0.02%	0	0.00%	N/A
	Mailbox	0	0.00%	0	0.00%	N/A
	Other Fixed Object	11	0.27%	1	2.08%	99.26%
	Road Maintenance Equipment	2	0.05%	0	0.00%	N/A
	Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902104434

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_04955\_05071 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability
	CATEGORY	# Crashes	%	# Crashes	%
Total Fixed Objects	141	3.42%	9	18.75%	100.00%
Total Other Objects	12	0.29%	0	0.00%	N/A
Daylight	2,971	72.04%	33	68.75%	35.65%
Dawn or Dusk	167	4.05%	3	6.25%	87.10%
Dark - Lighted	942	22.84%	3	6.25%	0.22%
Dark - Unlighted	36	0.87%	9	18.75%	100.00%
Unknown Lighting	8	0.19%	0	0.00%	N/A
No Adverse Weather	3,674	89.09%	46	95.83%	97.32%
Rain	179	4.34%	0	0.00%	N/A
Snow or Sleet or Hail	201	4.87%	1	2.08%	31.43%
Fog	8	0.19%	0	0.00%	N/A
Dust	0	0.00%	0	0.00%	N/A
Wind	12	0.29%	1	2.08%	99.13%
Unknown Weather	50	1.21%	0	0.00%	N/A
Dry Road	3,534	85.69%	44	91.67%	92.69%
Wet Road	321	7.78%	2	4.17%	26.77%
Muddy Road	0	0.00%	0	0.00%	N/A
Snowy Road	100	2.42%	1	2.08%	67.50%
Icy Road	96	2.33%	0	0.00%	N/A
Slushy Road	22	0.53%	0	0.00%	N/A
Foreign Material Road	1	0.02%	0	0.00%	N/A
With Road Treatment	0	0.00%	0	0.00%	N/A
Dry with Icy Road Treatment	12	0.29%	0	0.00%	N/A
Wet with Icy Road Treatment	3	0.07%	0	0.00%	N/A
Snowy with Icy Road Treatment	14	0.34%	0	0.00%	N/A
Icy with Icy Road Treatment	3	0.07%	1	2.08%	99.94%
Slushy with Icy Road Treatment	1	0.02%	0	0.00%	N/A
Unknown Road Condition	17	0.41%	0	0.00%	N/A
Driver 1 - No Apparent Contributing Factor	1,777	43.09%	16	33.33%	11.05%
Driver 1 - Asleep at the Wheel	17	0.41%	3	6.25%	100.00%
Driver 1 - Illness	27	0.65%	3	6.25%	99.97%
Driver 1 - Distracted by Passenger	56	1.36%	1	2.08%	86.16%
Driver 1 - Driver Inexperience	360	8.73%	7	14.58%	94.54%
Driver 1 - Driver Fatigue	29	0.70%	2	4.17%	99.53%
Driver 1 - Driver Preoccupied	656	15.91%	14	29.17%	99.40%
Driver 1 - Driver Unfamiliar with Area	106	2.57%	1	2.08%	64.94%
Driver 1 - Driver Emotionally Upset	16	0.39%	0	0.00%	N/A
Driver 1 - Evading Law Enforcement Officer	8	0.19%	0	0.00%	N/A
Driver 1 - Physical Disability	7	0.17%	0	0.00%	N/A
Driver 1 - Unknown Contributing Factor	1,065	25.82%	1	2.08%	0.00%
Driver 1 - No Impairment Suspected	3,917	94.98%	46	95.83%	70.14%
Driver 1 - Alcohol Involved	165	4.00%	1	2.08%	42.27%
Driver 1 - RX, Medication, or Drugs Involved	20	0.48%	0	0.00%	N/A
Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Alcohol and Drugs Involved	22	0.53%	1	2.08%	97.27%
Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
Total Accidents	4,124		48		
Total Number of Records	59		0		N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)



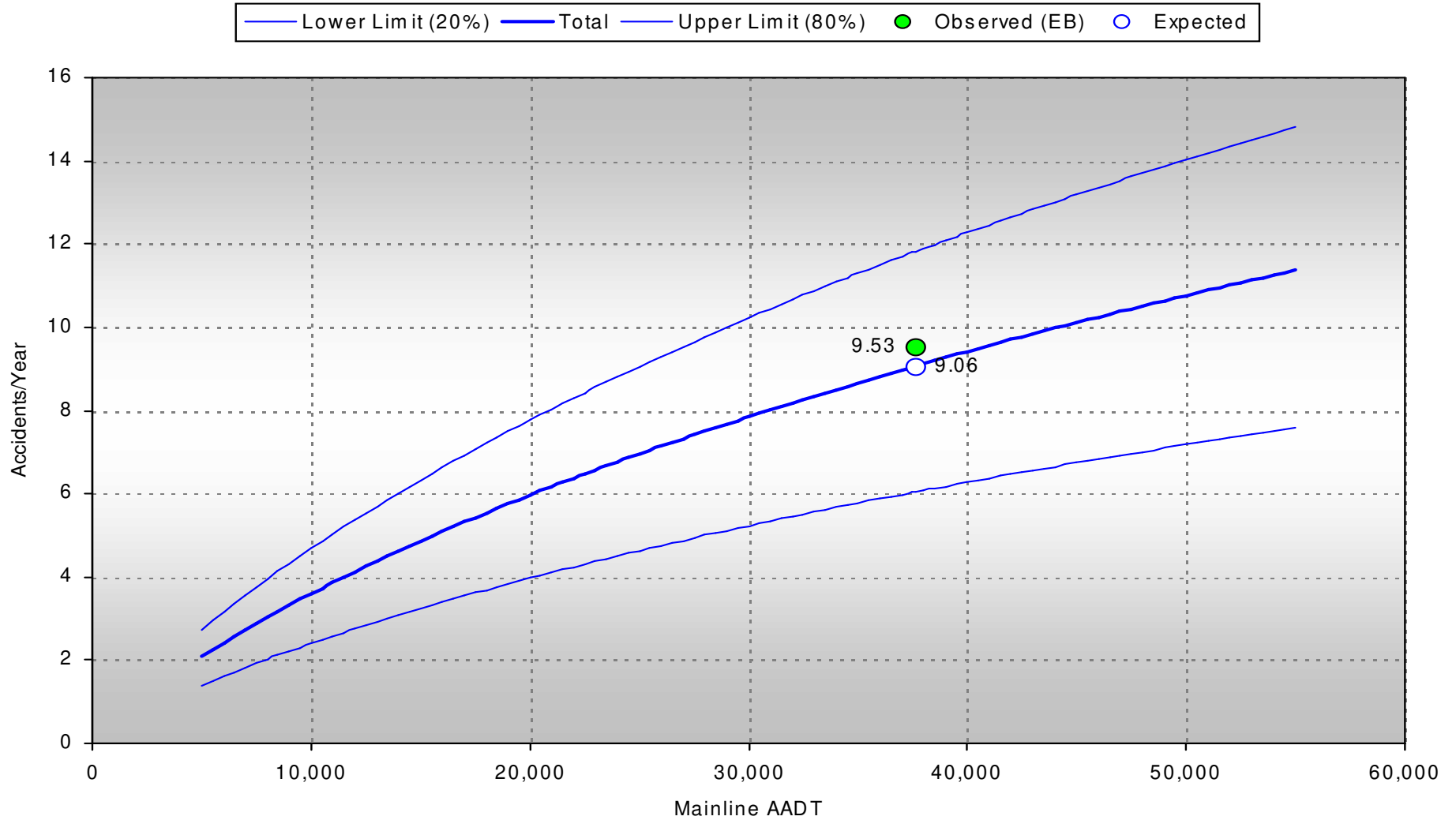
Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

09/01/2020

Job #: 20200901163458

Location: 000000119B

Begin:49.55 End:50.71 From:01/01/2015 To:12/31/2019





Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

09/01/2020

Job #: 20200901163536

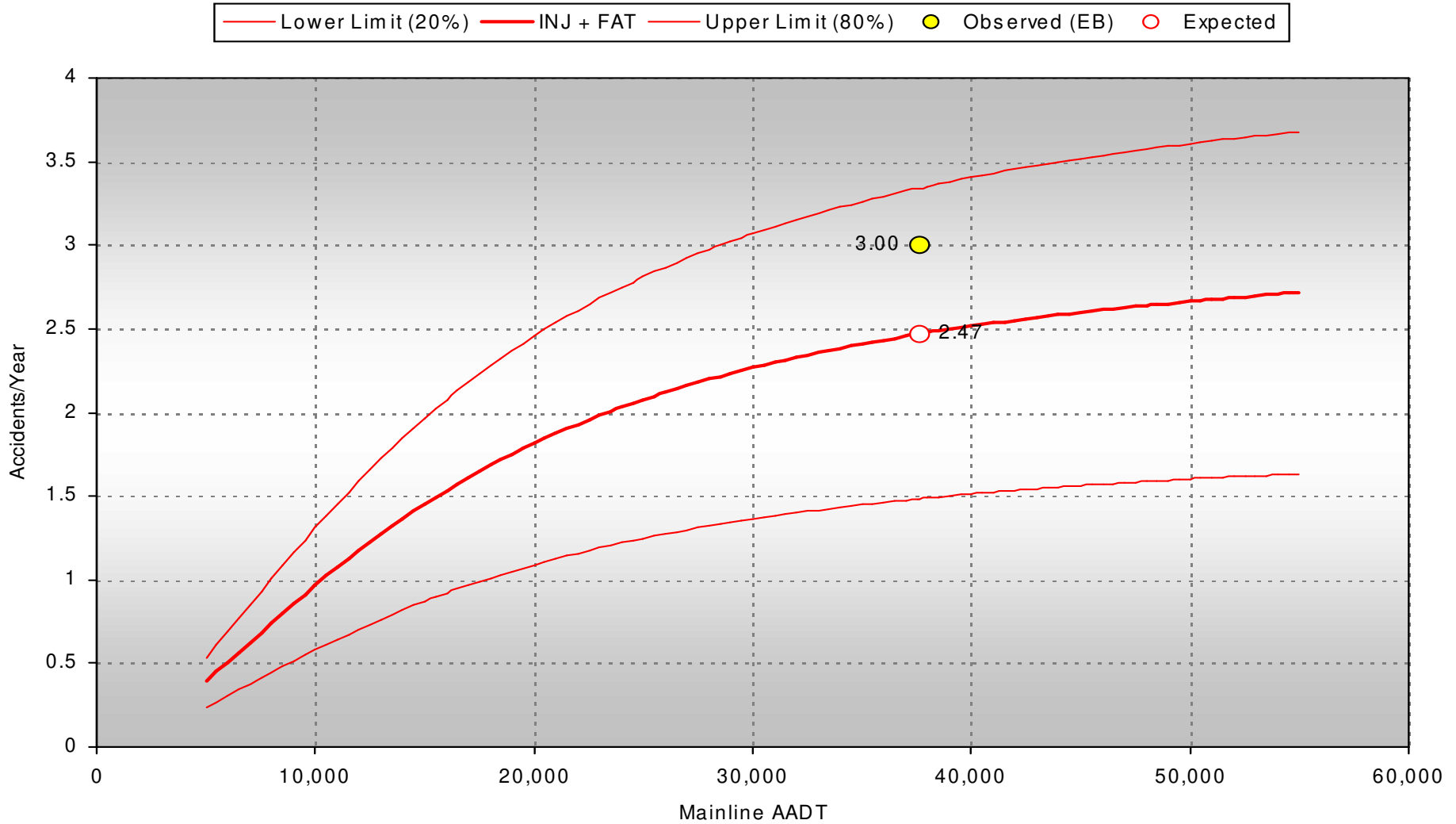
Location: 000000119B

Begin:49.55

End:50.71

From:01/01/2015

To:12/31/2019





**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Pattern Recognition Listing**

09/01/2020

Job #: 20200901163724

**Comparing: RT119-B MP 49.55 To 50.71      Min # of Accidents: 5      Probability Confidence: 95%**

**Pattern Recognition Listing**

<b>CRASH PATTERN</b>	<b>%</b>
Single Vehicle Accidents	100.00%
Three or More Vehicle Accidents	95.57%
Off Road	100.00%
Off Road Right	100.00%
Rear End	98.06%
Total Fixed Objects	100.00%
Dark - Unlighted	100.00%
No Adverse Weather	95.20%
Dry Road	97.92%
Driver 1 - Driver Preoccupied	98.88%

**Highway Class: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)**



**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

09/01/2020

Job #: 20200901164246

**Location: 119B      Begin: 50.72    End: 52.68    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	37
INJ:	16      20 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>53</b>

Number of Vehicles	
One Vehicle:	22
Two Vehicles:	26
Three or More:	5
Unknown:	0
<b>Total:</b>	<b>53</b>

Location	
On Road:	35
Off Road:	18
Unknown:	0
<b>Total:</b>	<b>53</b>

Mainline/Ramps/Frontage Rds	
Mainline:	53
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>53</b>

Lighting Conditions	
Daylight:	33
Dawn or Dusk:	4
Dark - Lighted:	1
Dark - Unlighted:	15
Unknown:	0
<b>Total:</b>	<b>53</b>

Crash Rates	
PDO:	0.27*      * Per MVMT
INJ:	0.12*      ** Per 100 MVMT
FAT:	0.00**
<b>Total:</b>	<b>0.38*</b>

Crash Type	
Overtuning:	6
Other Non Collision:	0
Pedestrians:	0
Broadside:	0
Head On:	0
Rear End:	22
Sideswipe Same:	8
Sideswipe Opposite:	1
Approach Turn:	0
Overtaking Turn:	0
Parked Motor Vehicle:	0
Railway Vehicle:	0
Bicycles:	0
Domestic Animal:	0
Wild Animal:	4
Fixed Objects:	12
Other Objects:	0
Unknown:	0
<b>Total:</b>	<b>53</b>

Weather Conditions	
None:	47
Rain:	1
Snow/Sleet/Hail:	4
Fog:	0
Dust:	0
Wind:	1
Unknown:	0
<b>Total:</b>	<b>53</b>

Road Conditions	
Dry:	45
Wet:	2
Muddy:	0
Snowy:	4
Icy:	1
Slushy:	0
Foreign Material:	0
With Road Treatment:	1
Unknown:	0
<b>Total:</b>	<b>53</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	24	17	4
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	8	4	1
Pickup Truck/Utility Van w/Trailer:	0	0	0
SUV:	18	9	0
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	1	1	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	1	0	0
Motorhome:	0	0	0
Motorcycle:	0	0	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	1	0	0
Other:	0	0	0
Unknown:	0	0	0
<b>Total:</b>	<b>53</b>	<b>31</b>	<b>5</b>

**ADT: 37,600      Length: 2.00**





**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902103008

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_05072\_05268 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	CATEGORY	Statewide Average		This Location		Probability
		# Crashes	%	# Crashes	%	%
	Property Damage Only (PDO)	3,039	73.69%	37	69.81%	30.72%
	Injury (INJ)	1,074	26.04%	16	30.19%	80.28%
	Fatal (FAT)	11	0.27%	0	0.00%	N/A
	Persons Injured	1,524		20		
	Persons Killed	11		0		N/A
	Single Vehicle Accidents	165	4.00%	22	41.51%	100.00%
	Two Vehicle Accidents	3,519	85.33%	26	49.06%	0.00%
	Three or More Vehicle Accidents	440	10.67%	5	9.43%	49.64%
	Unknown Number of Vehicles	0	0.00%	0	0.00%	N/A
	On Road	3,974	96.36%	35	66.04%	0.00%
	Off Road	150	3.64%	18	33.96%	100.00%
	Off Road Left	74	1.79%	10	18.87%	100.00%
	Off Road Right	71	1.72%	8	15.09%	100.00%
	Off Road at Tee	0	0.00%	0	0.00%	N/A
	Off Road in Median	5	0.12%	0	0.00%	N/A
	Unknown Road Location	0	0.00%	0	0.00%	N/A
	Overtaking	17	0.41%	6	11.32%	100.00%
	Other Non Collision	3	0.07%	0	0.00%	N/A
	Vehicle Cargo or Debris	6	0.15%	0	0.00%	N/A
	Pedestrian	51	1.24%	0	0.00%	N/A
	Broadside	427	10.35%	0	0.00%	N/A
	Head On	10	0.24%	0	0.00%	N/A
	Rear End	2,311	56.04%	22	41.51%	2.36%
	Sideswipe (Same Direction)	387	9.38%	8	15.09%	94.31%
	Sideswipe (Opposite Direction)	29	0.70%	1	1.89%	94.62%
	Approach Turn	650	15.76%	0	0.00%	N/A
	Overtaking Turn	19	0.46%	0	0.00%	N/A
	Parked Motor Vehicle	7	0.17%	0	0.00%	N/A
	Railway Vehicle	0	0.00%	0	0.00%	N/A
	Bicycle or Pedal Cycle	50	1.21%	0	0.00%	N/A
	Motorized Bicycle	0	0.00%	0	0.00%	N/A
	Domestic Animal	3	0.07%	0	0.00%	N/A
	Wild Animal	7	0.17%	4	7.55%	100.00%
	Light or Utility Pole	15	0.36%	0	0.00%	N/A
	Bridge Rail	0	0.00%	0	0.00%	N/A
	Guard Rail	2	0.05%	0	0.00%	N/A
	Cable Rail	0	0.00%	0	0.00%	N/A
	Concrete Barrier	1	0.02%	1	1.89%	99.99%
	Bridge Abutment	0	0.00%	0	0.00%	N/A
	Culvert or Headwall	1	0.02%	0	0.00%	N/A
	Delineator Post	4	0.10%	0	0.00%	N/A
	Large Boulders or Rocks	1	0.02%	0	0.00%	N/A
	Rocks in Roadway	0	0.00%	0	0.00%	N/A
	Barricade	1	0.02%	0	0.00%	N/A
	Wall or Building	1	0.02%	0	0.00%	N/A
	Mailbox	0	0.00%	0	0.00%	N/A
	Other Fixed Object	11	0.27%	0	0.00%	N/A
	Road Maintenance Equipment	2	0.05%	0	0.00%	N/A
	Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902103008

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_05072\_05268 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability
	CATEGORY	# Crashes	%	# Crashes	%
Total Fixed Objects	141	3.42%	12	22.64%	100.00%
Total Other Objects	12	0.29%	0	0.00%	N/A
Daylight	2,971	72.04%	33	62.26%	7.87%
Dawn or Dusk	167	4.05%	4	7.55%	93.72%
Dark - Lighted	942	22.84%	1	1.89%	0.00%
Dark - Unlighted	36	0.87%	15	28.30%	100.00%
Unknown Lighting	8	0.19%	0	0.00%	N/A
No Adverse Weather	3,674	89.09%	47	88.68%	52.64%
Rain	179	4.34%	1	1.89%	32.41%
Snow or Sleet or Hail	201	4.87%	4	7.55%	88.48%
Fog	8	0.19%	0	0.00%	N/A
Dust	0	0.00%	0	0.00%	N/A
Wind	12	0.29%	1	1.89%	98.94%
Unknown Weather	50	1.21%	0	0.00%	N/A
Dry Road	3,534	85.69%	45	84.91%	49.39%
Wet Road	321	7.78%	2	3.77%	20.86%
Muddy Road	0	0.00%	0	0.00%	N/A
Snowy Road	100	2.42%	4	7.55%	99.08%
Icy Road	96	2.33%	1	1.89%	64.95%
Slushy Road	22	0.53%	0	0.00%	N/A
Foreign Material Road	1	0.02%	0	0.00%	N/A
With Road Treatment	0	0.00%	0	0.00%	N/A
Dry with Icy Road Treatment	12	0.29%	0	0.00%	N/A
Wet with Icy Road Treatment	3	0.07%	0	0.00%	N/A
Snowy with Icy Road Treatment	14	0.34%	1	1.89%	98.58%
Icy with Icy Road Treatment	3	0.07%	0	0.00%	N/A
Slushy with Icy Road Treatment	1	0.02%	0	0.00%	N/A
Unknown Road Condition	17	0.41%	0	0.00%	N/A
Driver 1 - No Apparent Contributing Factor	1,777	43.09%	26	49.06%	84.52%
Driver 1 - Asleep at the Wheel	17	0.41%	6	11.32%	100.00%
Driver 1 - Illness	27	0.65%	1	1.89%	95.26%
Driver 1 - Distracted by Passenger	56	1.36%	1	1.89%	83.80%
Driver 1 - Driver Inexperience	360	8.73%	3	5.66%	30.94%
Driver 1 - Driver Fatigue	29	0.70%	0	0.00%	N/A
Driver 1 - Driver Preoccupied	656	15.91%	3	5.66%	2.25%
Driver 1 - Driver Unfamiliar with Area	106	2.57%	0	0.00%	N/A
Driver 1 - Driver Emotionally Upset	16	0.39%	0	0.00%	N/A
Driver 1 - Evading Law Enforcement Officer	8	0.19%	0	0.00%	N/A
Driver 1 - Physical Disability	7	0.17%	0	0.00%	N/A
Driver 1 - Unknown Contributing Factor	1,065	25.82%	13	24.53%	48.68%
Driver 1 - No Impairment Suspected	3,917	94.98%	49	92.45%	27.52%
Driver 1 - Alcohol Involved	165	4.00%	2	3.77%	64.35%
Driver 1 - RX, Medication, or Drugs Involved	20	0.48%	1	1.89%	97.25%
Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Alcohol and Drugs Involved	22	0.53%	1	1.89%	96.72%
Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
Total Accidents	4,124		53		
Total Number of Records	59		0		N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)



Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

09/01/2020

Job #: 20200901164746

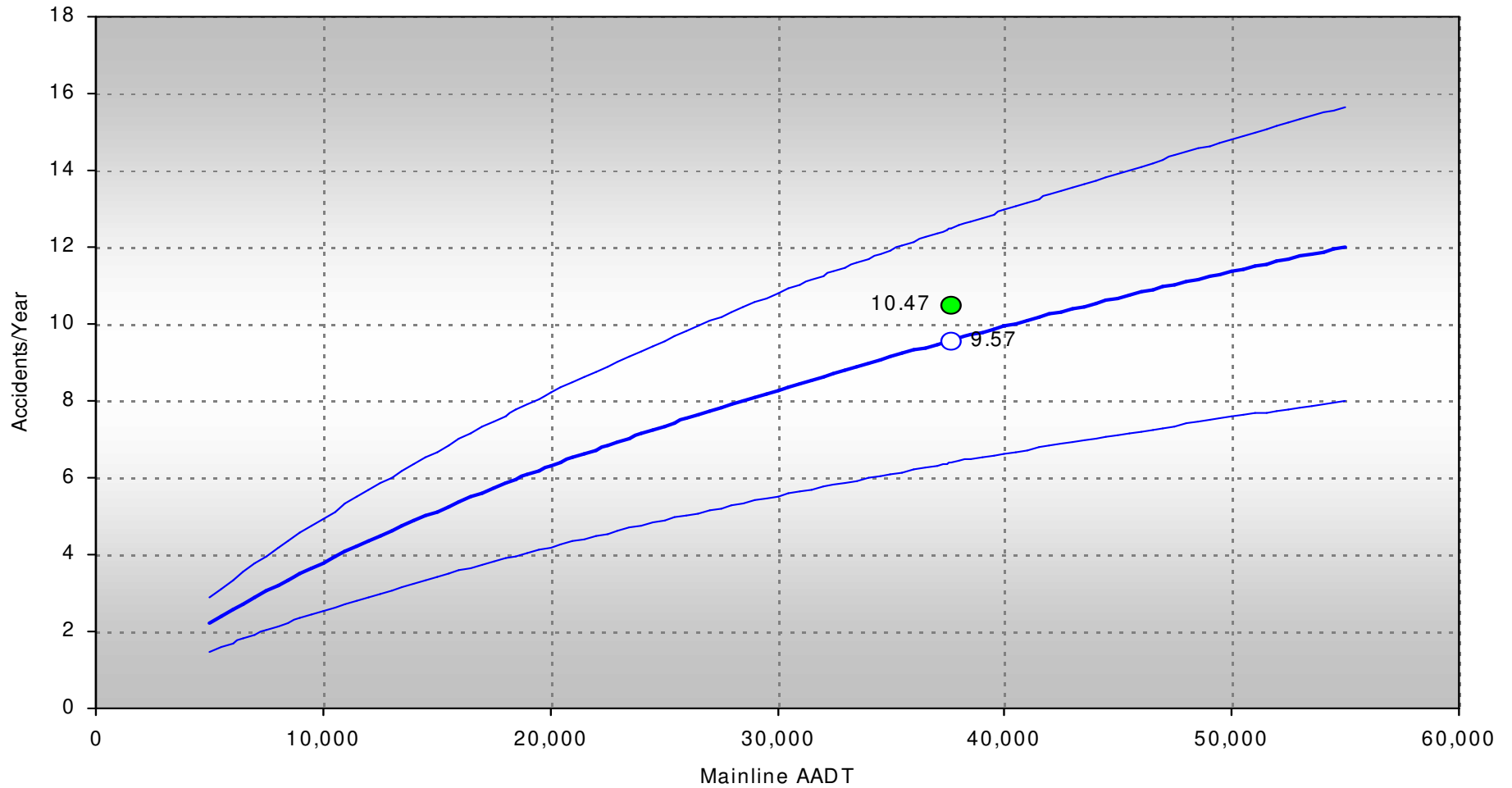
Location: 000000119B

Begin:50.72

End:52.68

From:01/01/2015 To:12/31/2019

— Lower Limit (20%) — Total — Upper Limit (80%) ● Observed (EB) ○ Expected





Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

09/01/2020

Job #: 20200901164703

Location: 000000119B

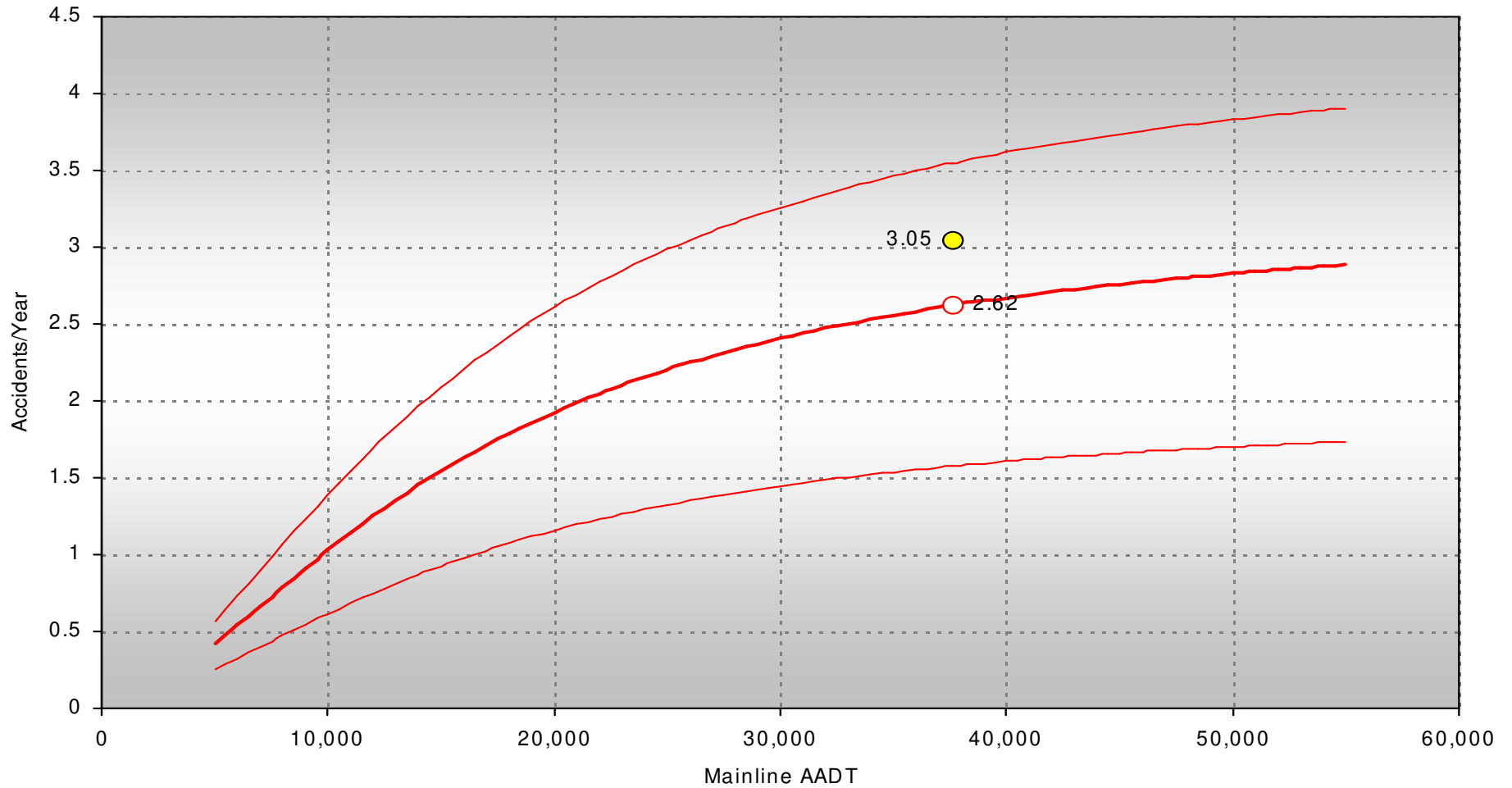
Begin: 50.72

End: 52.68

From: 01/01/2015

To: 12/31/2019

— Lower Limit (20%) — INJ + FAT — Upper Limit (80%) ● Observed (EB) ○ Expected





**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Pattern Recognition Listing**

09/01/2020

Job #: 20200901164942

**Comparing: RT119-B MP 50.72 To 52.68      Min # of Accidents: 5      Probability Confidence: 95%**

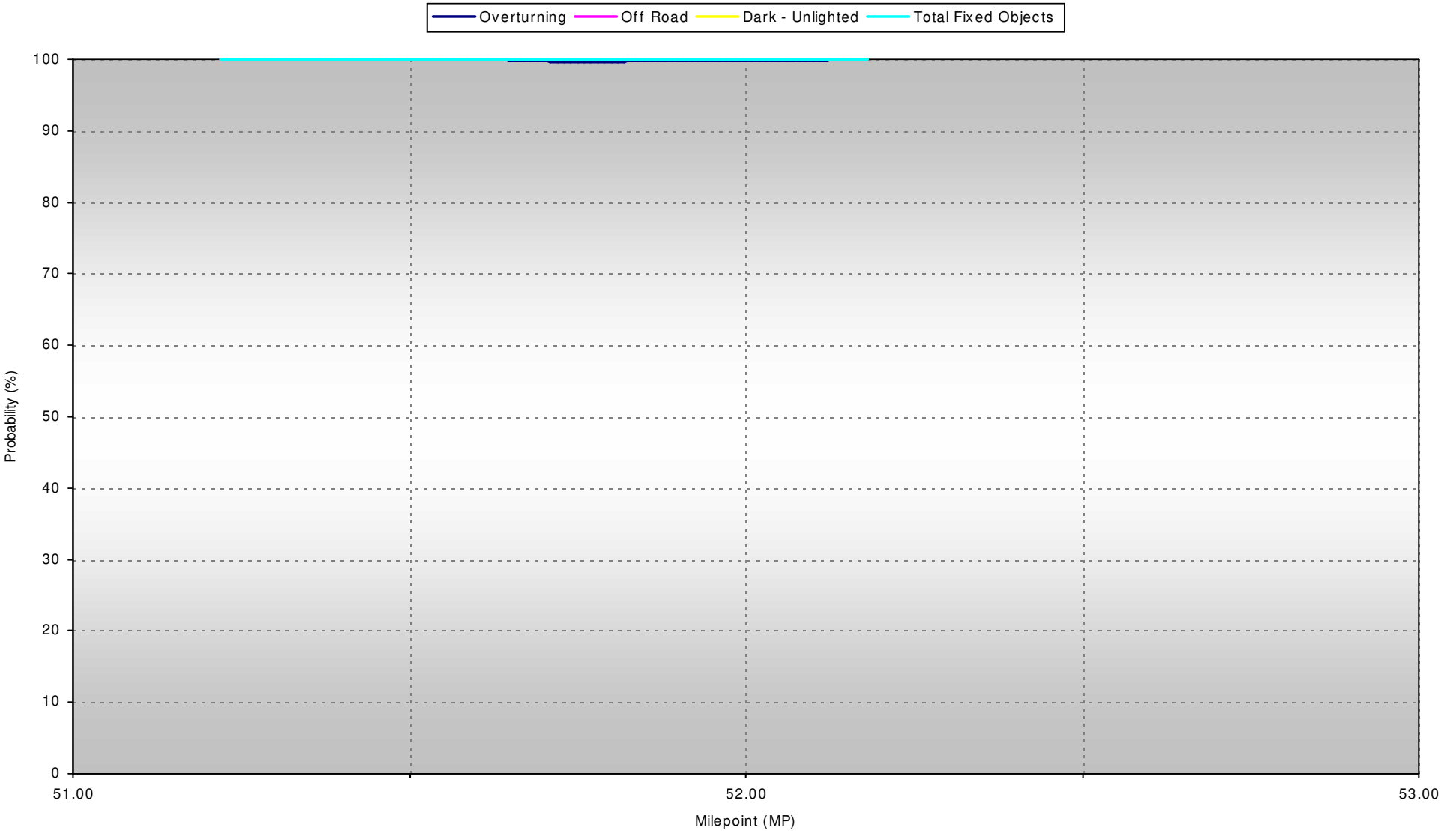
**Pattern Recognition Listing**

<b>CRASH PATTERN</b>	<b>%</b>
Single Vehicle Accidents	100.00%
Off Road	100.00%
Off Road Left	100.00%
Off Road Right	100.00%
Overturning	100.00%
Total Fixed Objects	100.00%
Dark - Unlighted	100.00%
Driver 1 - Asleep at the Wheel	100.00%

**Highway Class: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT >32000 ADT (2018)**



Pattern Recognition Graph for RT119-B From 51.00 To 53.00 - From 01/01/2015 To 12/31/2019





**Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
General Summary of Crashes Report**

09/01/2020

Job #: 20200901165428

**Location: 119B      Begin: 52.69    End: 54.41    From:01/01/2015    To:12/31/2019**

Severity	
PDO:	34
INJ:	15      16 :Injured
FAT:	0      0 :Killed
<b>Total:</b>	<b>49</b>

Number of Vehicles	
One Vehicle:	20
Two Vehicles:	26
Three or More:	3
Unknown:	0
<b>Total:</b>	<b>49</b>

Location	
On Road:	27
Off Road:	22
Unknown:	0
<b>Total:</b>	<b>49</b>

Mainline/Ramps/Frontage Rds	
Mainline:	49
Ramps:	0
Frontage/Ramp Intsx:	0
Frontage Roads:	0
HOV Lanes:	0
Unknown:	0
<b>Total:</b>	<b>49</b>

Lighting Conditions	
Daylight:	27
Dawn or Dusk:	2
Dark - Lighted:	7
Dark - Unlighted:	13
Unknown:	0
<b>Total:</b>	<b>49</b>

Crash Rates	
PDO:	0.38*      * Per MVMT
INJ:	0.17*      ** Per 100 MVMT
FAT:	0.00**
<b>Total:</b>	<b>0.54*</b>

Crash Type	
Overtuning:	8
Other Non Collision:	0
Pedestrians:	0
Broadside:	0
Head On:	1
Rear End:	7
Sideswipe Same:	16
Sideswipe Opposite:	0
Approach Turn:	0
Overtaking Turn:	1
Parked Motor Vehicle:	1
Railway Vehicle:	0
Bicycles:	0
Domestic Animal:	0
Wild Animal:	0
Fixed Objects:	12
Other Objects:	3
Unknown:	0
<b>Total:</b>	<b>49</b>

Weather Conditions	
None:	45
Rain:	2
Snow/Sleet/Hail:	2
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
<b>Total:</b>	<b>49</b>

Road Conditions	
Dry:	39
Wet:	2
Muddy:	0
Snowy:	1
Icy:	4
Slushy:	1
Foreign Material:	0
With Road Treatment:	2
Unknown:	0
<b>Total:</b>	<b>49</b>

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Passenger Car/Van:	23	14	0
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	12	5	0
Pickup Truck/Utility Van w/Trailer:	1	1	0
SUV:	10	7	3
SUV w/Trailer:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	1	0	0
School Bus < 15 People:	0	0	0
Non School Bus < 15 People:	0	1	0
Motorhome:	0	0	0
Motorcycle:	1	0	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	1	0	0
Other:	0	1	0
Unknown:	0	0	0
<b>Total:</b>	<b>49</b>	<b>29</b>	<b>3</b>

**ADT: 29,600      Length: 1.67**



**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902101246

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_05269\_05441 **Cutoff:** 5 Acc's @ 95%

CATEGORY	Statewide Average		This Location		Probability
	# Crashes	%	# Crashes	%	%
Property Damage Only (PDO)	7,340	72.19%	34	69.39%	38.23%
Injury (INJ)	2,797	27.51%	15	30.61%	74.54%
Fatal (FAT)	31	0.30%	0	0.00%	N/A
Persons Injured	3,975		16		
Persons Killed	32		0		N/A
Single Vehicle Accidents	448	4.41%	20	40.82%	100.00%
Two Vehicle Accidents	8,817	86.71%	26	53.06%	0.00%
Three or More Vehicle Accidents	902	8.87%	3	6.12%	35.77%
Unknown Number of Vehicles	1	0.01%	0	0.00%	N/A
On Road	9,763	96.02%	27	55.10%	0.00%
Off Road	404	3.97%	22	44.90%	100.00%
Off Road Left	185	1.82%	12	24.49%	100.00%
Off Road Right	201	1.98%	9	18.37%	100.00%
Off Road at Tee	3	0.03%	0	0.00%	N/A
Off Road in Median	15	0.15%	1	2.04%	99.76%
Unknown Road Location	1	0.01%	0	0.00%	N/A
Overtaking	46	0.45%	8	16.33%	100.00%
Other Non Collision	16	0.16%	0	0.00%	N/A
Vehicle Cargo or Debris	14	0.14%	1	2.04%	99.79%
Pedestrian	163	1.60%	0	0.00%	N/A
Broadside	1,300	12.79%	0	0.00%	N/A
Head On	30	0.30%	1	2.04%	99.07%
Rear End	5,326	52.38%	7	14.29%	0.00%
Sideswipe (Same Direction)	915	9.00%	16	32.65%	100.00%
Sideswipe (Opposite Direction)	65	0.64%	0	0.00%	N/A
Approach Turn	1,618	15.91%	0	0.00%	N/A
Overtaking Turn	69	0.68%	1	2.04%	95.61%
Parked Motor Vehicle	20	0.20%	1	2.04%	99.57%
Railway Vehicle	0	0.00%	0	0.00%	N/A
Bicycle or Pedal Cycle	164	1.61%	0	0.00%	N/A
Motorized Bicycle	0	0.00%	0	0.00%	N/A
Domestic Animal	5	0.05%	0	0.00%	N/A
Wild Animal	14	0.14%	0	0.00%	N/A
Light or Utility Pole	51	0.50%	0	0.00%	N/A
Bridge Rail	0	0.00%	0	0.00%	N/A
Guard Rail	2	0.02%	1	2.04%	100.00%
Cable Rail	0	0.00%	0	0.00%	N/A
Concrete Barrier	10	0.10%	0	0.00%	N/A
Bridge Abutment	0	0.00%	0	0.00%	N/A
Culvert or Headwall	1	0.01%	0	0.00%	N/A
Delineator Post	7	0.07%	0	0.00%	N/A
Large Boulders or Rocks	1	0.01%	0	0.00%	N/A
Rocks in Roadway	0	0.00%	0	0.00%	N/A
Barricade	3	0.03%	0	0.00%	N/A
Wall or Building	6	0.06%	0	0.00%	N/A
Mailbox	0	0.00%	0	0.00%	N/A
Other Fixed Object	27	0.27%	0	0.00%	N/A
Road Maintenance Equipment	9	0.09%	1	2.04%	99.91%
Unknown Accident Type	0	0.00%	0	0.00%	N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT All Totals (2018)





**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Direct Diagnostics (Spot Location) Analysis**

09/02/2020

Job #: 20200902101246

**Location File:** DIRECT\_DIAGNOSTICS\_FOR\_RTE119B\_05269\_05441 **Cutoff:** 5 Acc's @ 95%

Baseline Statistics	Statewide Average		This Location		Probability
	CATEGORY	# Crashes	%	# Crashes	%
Total Fixed Objects	383	3.77%	12	24.49%	100.00%
Total Other Objects	34	0.33%	3	6.12%	100.00%
Daylight	7,308	71.87%	27	55.10%	0.90%
Dawn or Dusk	438	4.31%	2	4.08%	64.61%
Dark - Lighted	2,281	22.43%	7	14.29%	11.24%
Dark - Unlighted	125	1.23%	13	26.53%	100.00%
Unknown Lighting	16	0.16%	0	0.00%	N/A
No Adverse Weather	9,045	88.96%	45	91.84%	80.45%
Rain	421	4.14%	2	4.08%	66.88%
Snow or Sleet or Hail	555	5.46%	2	4.08%	49.52%
Fog	23	0.23%	0	0.00%	N/A
Dust	1	0.01%	0	0.00%	N/A
Wind	50	0.49%	0	0.00%	N/A
Unknown Weather	73	0.72%	0	0.00%	N/A
Dry Road	8,660	85.17%	39	79.59%	18.18%
Wet Road	763	7.50%	2	4.08%	27.82%
Muddy Road	2	0.02%	0	0.00%	N/A
Snowy Road	284	2.79%	1	2.04%	60.09%
Icy Road	274	2.69%	4	8.16%	98.99%
Slushy Road	50	0.49%	1	2.04%	97.56%
Foreign Material Road	8	0.08%	0	0.00%	N/A
With Road Treatment	0	0.00%	0	0.00%	N/A
Dry with Icy Road Treatment	32	0.31%	0	0.00%	N/A
Wet with Icy Road Treatment	12	0.12%	0	0.00%	N/A
Snowy with Icy Road Treatment	39	0.38%	0	0.00%	N/A
Icy with Icy Road Treatment	14	0.14%	1	2.04%	99.79%
Slushy with Icy Road Treatment	4	0.04%	1	2.04%	99.98%
Unknown Road Condition	26	0.26%	0	0.00%	N/A
Driver 1 - No Apparent Contributing Factor	4,674	45.97%	13	26.53%	0.42%
Driver 1 - Asleep at the Wheel	42	0.41%	1	2.04%	98.24%
Driver 1 - Illness	69	0.68%	1	2.04%	95.61%
Driver 1 - Distracted by Passenger	139	1.37%	0	0.00%	N/A
Driver 1 - Driver Inexperience	866	8.52%	6	12.24%	87.99%
Driver 1 - Driver Fatigue	84	0.83%	1	2.04%	93.78%
Driver 1 - Driver Preoccupied	1,444	14.20%	5	10.20%	28.66%
Driver 1 - Driver Unfamiliar with Area	297	2.92%	2	4.08%	82.80%
Driver 1 - Driver Emotionally Upset	28	0.28%	1	2.04%	99.18%
Driver 1 - Evading Law Enforcement Officer	23	0.23%	0	0.00%	N/A
Driver 1 - Physical Disability	22	0.22%	0	0.00%	N/A
Driver 1 - Unknown Contributing Factor	2,480	24.39%	19	38.78%	99.18%
Driver 1 - No Impairment Suspected	9,657	94.97%	42	85.71%	1.09%
Driver 1 - Alcohol Involved	379	3.73%	6	12.24%	99.78%
Driver 1 - RX, Medication, or Drugs Involved	66	0.65%	1	2.04%	95.95%
Driver 1 - Illegal Drugs Involved	0	0.00%	0	0.00%	N/A
Driver 1 - Alcohol and Drugs Involved	66	0.65%	0	0.00%	N/A
Driver 1 - Driver/Pedestrian not Observed	0	0.00%	0	0.00%	N/A
Driver 1 - Unknown Condition of Driver/Pedestrian	0	0.00%	0	0.00%	N/A
Total Accidents	10,168		49		
Total Number of Records	224		0		N/A

**Highway Class:** CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT All Totals (2018)



Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

09/01/2020

Job #: 20200901165804

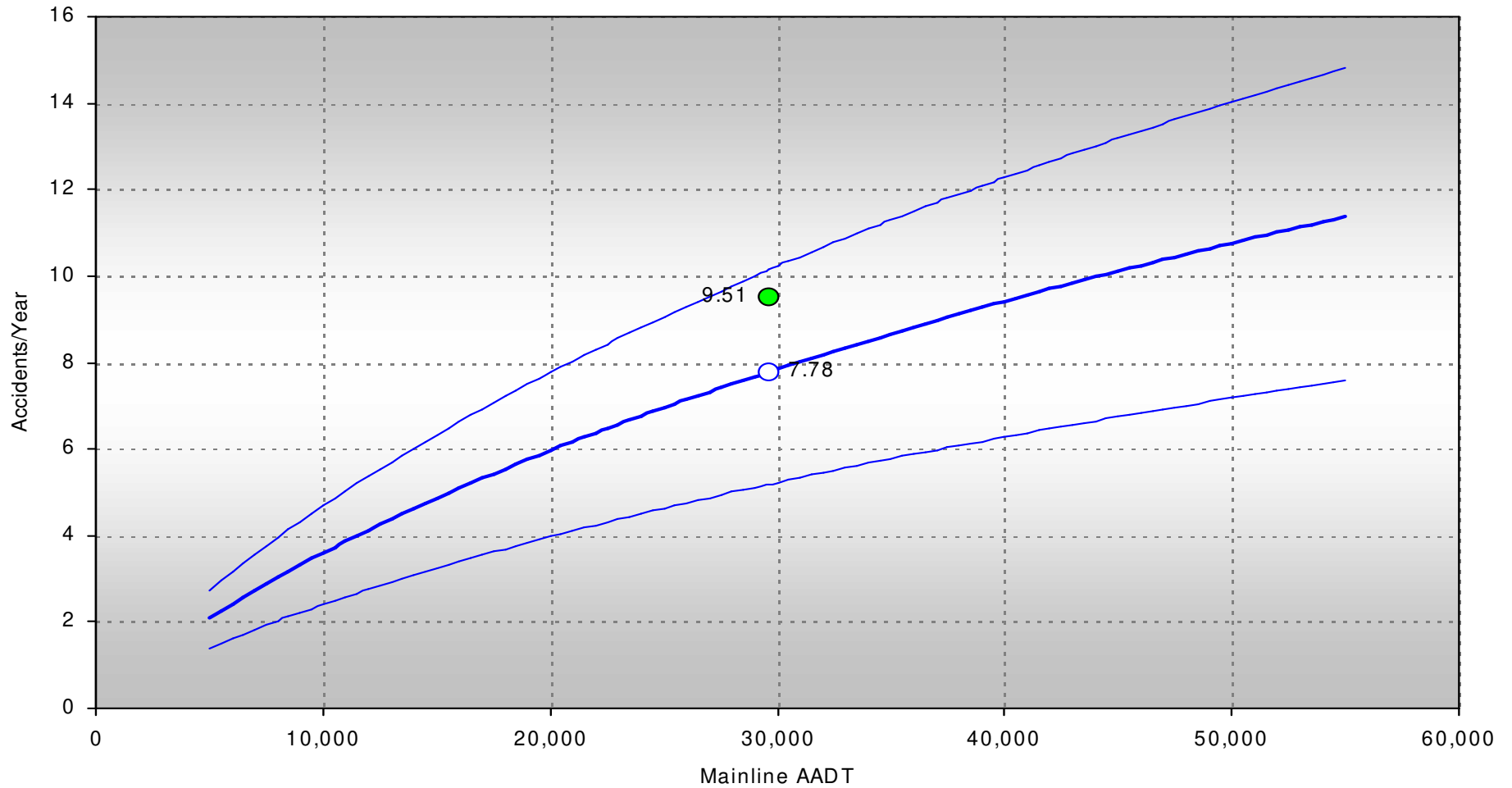
Location: 000000119B

Begin:52.69

End:54.41

From:01/01/2015 To:12/31/2019

— Lower Limit (20%) — Total — Upper Limit (80%) ● Observed (EB) ○ Expected





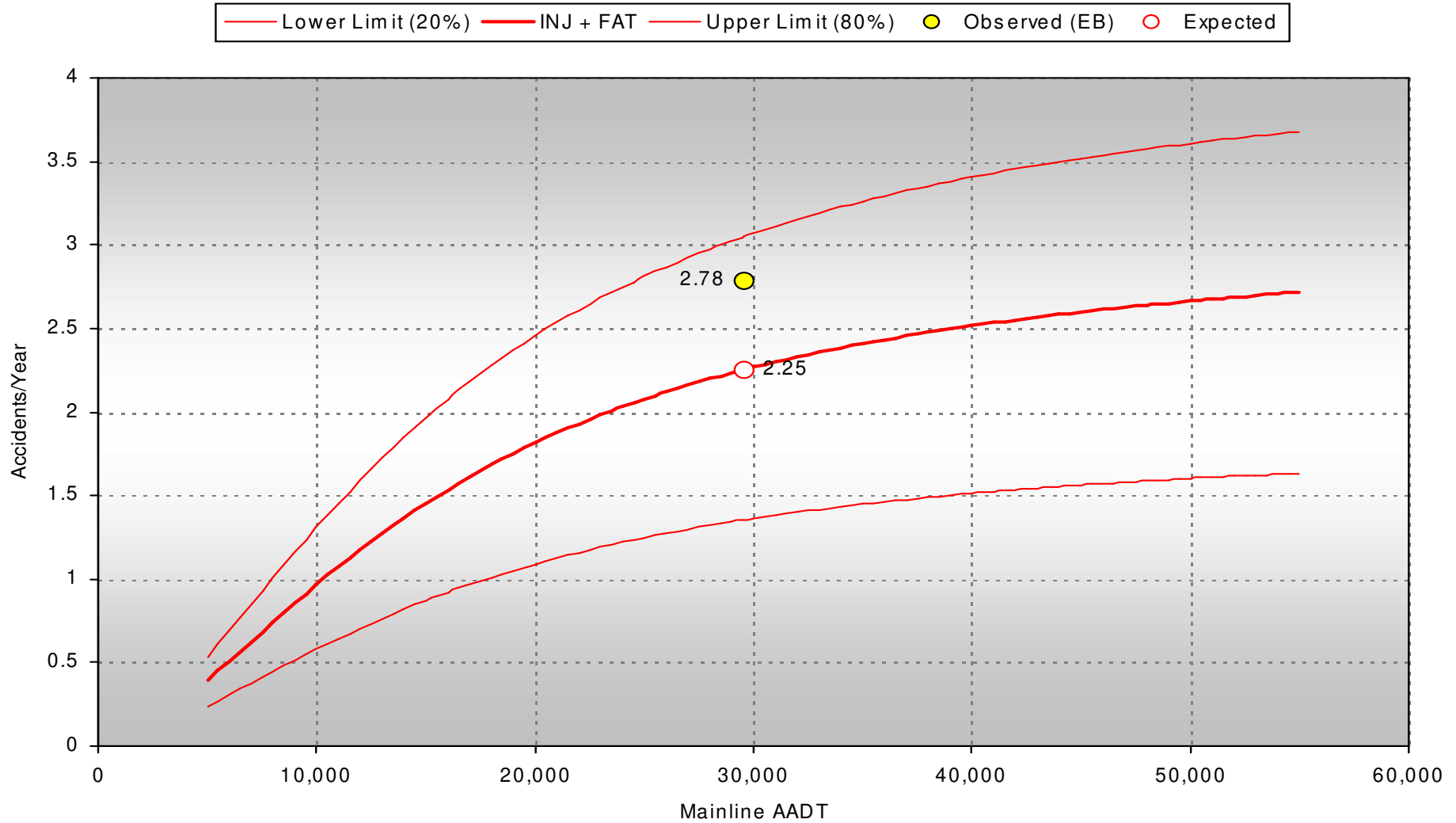
Colorado Department of Transportation  
DiExSys™ Roadway Safety Systems  
SPF Model: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections (2018)

09/01/2020

Job #: 20200901165843

Location: 000000119B

Begin: 52.69 End: 54.41 From: 01/01/2015 To: 12/31/2019





**Colorado Department of Transportation**  
**DiExSys™ Roadway Safety Systems**  
**Pattern Recognition Listing**

09/01/2020

Job #: 20200901170104

**Comparing: RT119-B MP 52.69 To 54.41      Min # of Accidents: 5      Probability Confidence: 95%**

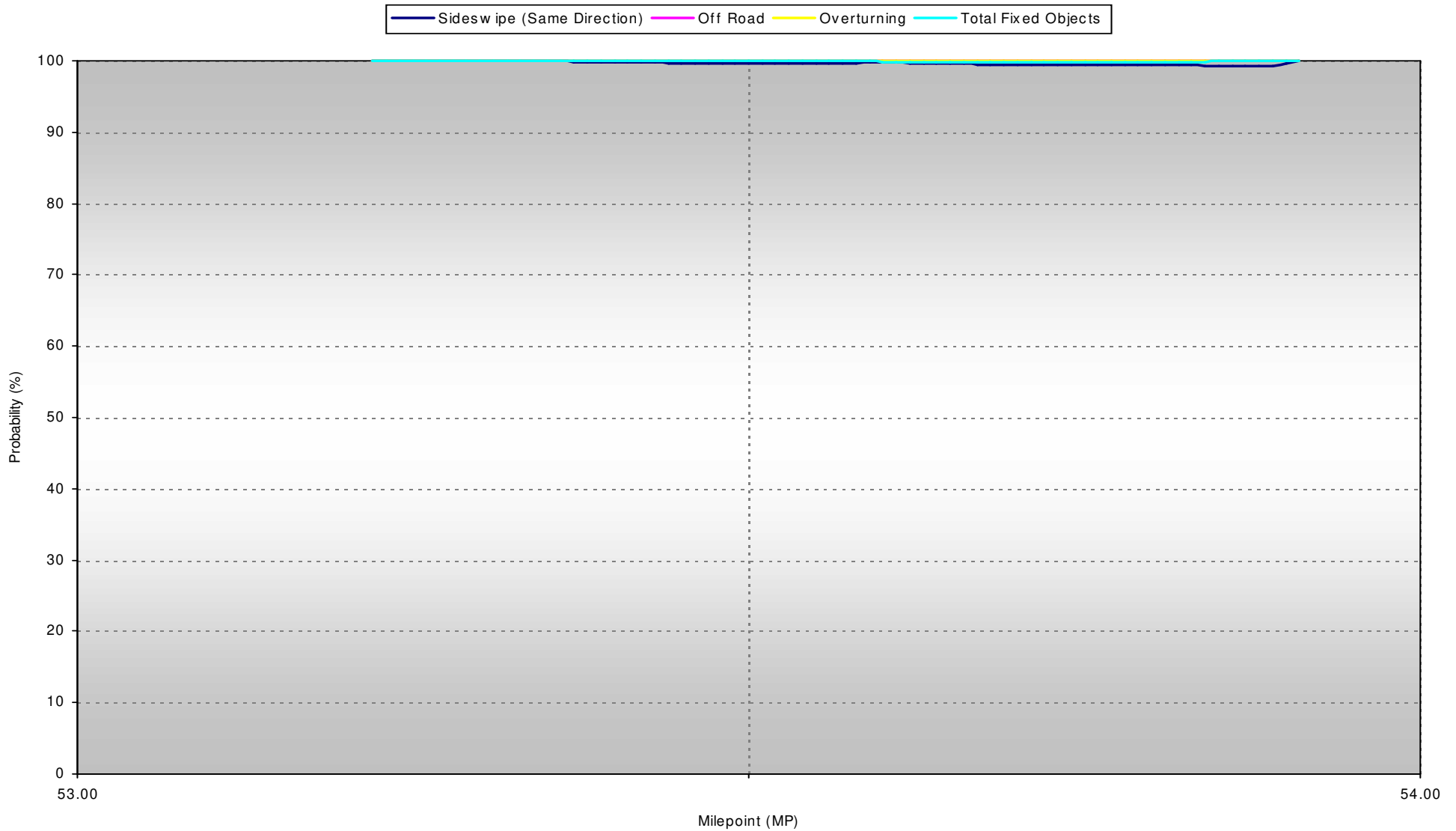
**Pattern Recognition Listing**

<b>CRASH PATTERN</b>	<b>%</b>
Single Vehicle Accidents	100.00%
Off Road	100.00%
Off Road Left	100.00%
Off Road Right	100.00%
Overturning	100.00%
Sideswipe (Same Direction)	99.98%
Sign	100.00%
Total Fixed Objects	100.00%
Dark - Unlighted	100.00%
Driver 1 - Unknown Contributing Factor	98.74%
Driver 1 - Alcohol Involved	100.00%

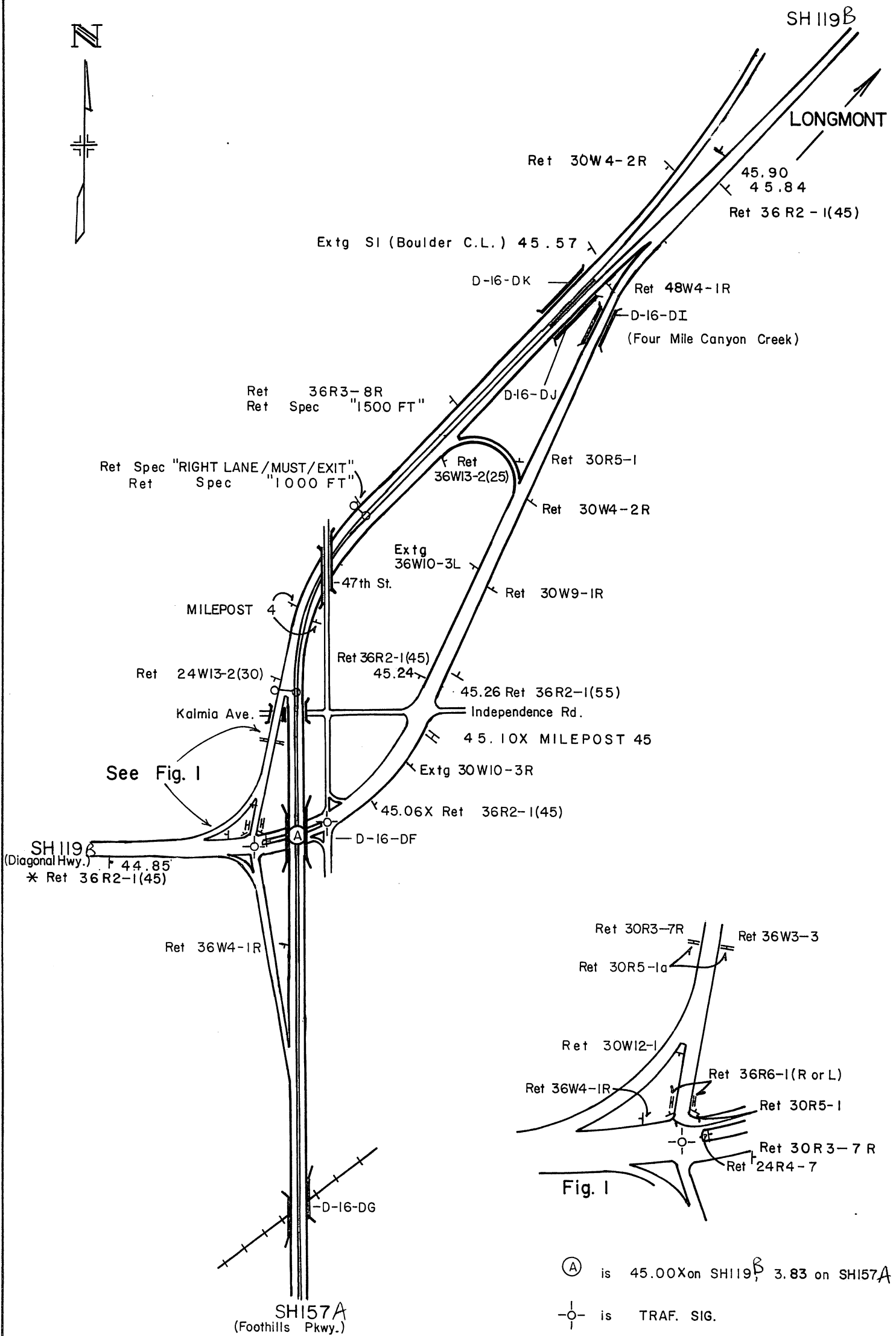
**Highway Class: CO - Urban 4-Lane Divided Signalized 4-Leg Intersections - AADT 0-32000 ADT (2018)**



Pattern Recognition Graph for RT119-B From 53.00 To 54.00 - From 01/01/2015 To 12/31/2019



COLORADO - DIVISION OF HIGHWAYS - STAFF TRAFFIC AND SAFETY PROJECTS BRANCH



- Ⓐ is 45.00X on SH119<sup>β</sup> 3.83 on SH157<sup>α</sup>
- ⊖ is TRAF. SIG.
- is Sign Structure

\* Missing on I-30-91

NOT TO SCALE

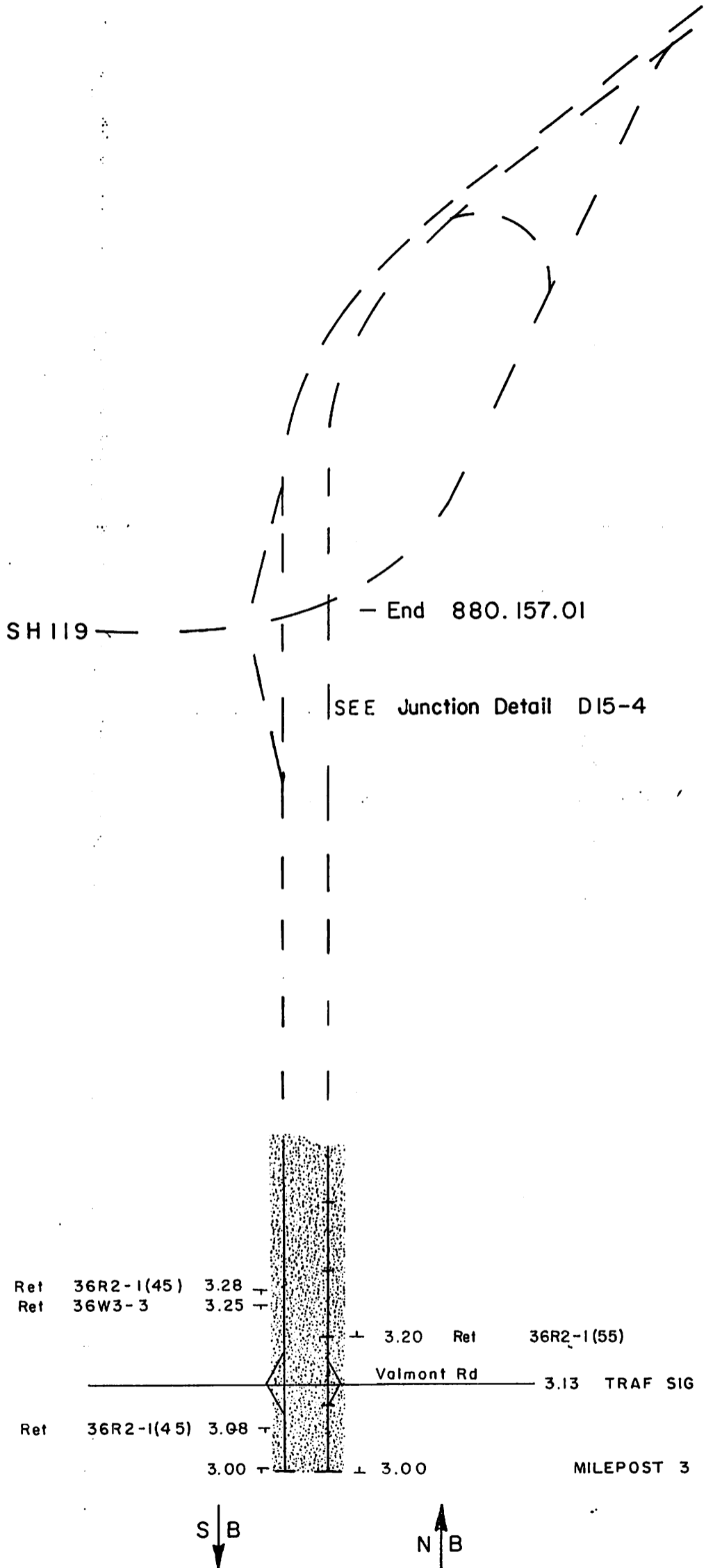
Junction of SH119<sup>β</sup> and SH157<sup>α</sup> in Boulder

Issued: 3-3-89

Revised: 2-19-91

Jct. Detail: D16-1

RECOMMENDED TRAFFIC CONTROL CHANGES AND ADDITIONS (two mile)

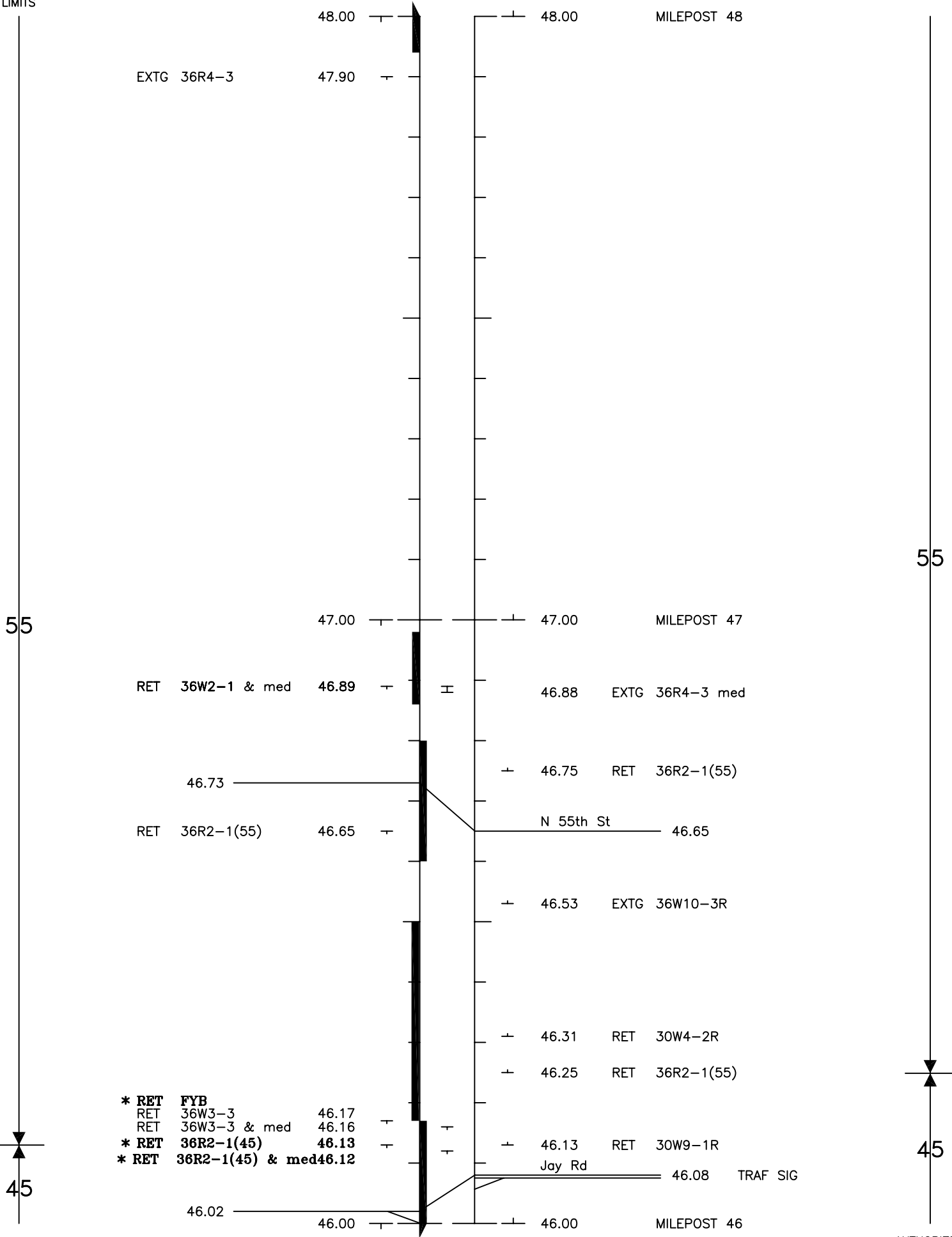


	FILE	MEMO	SHEET	DATE
	880.157.01	4951	3	3-3-89
SH 157 From SH 36 in Boulder To SH 119 in Boulder				
Supersedes Initial issue				

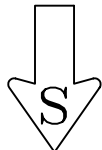
AUTHORIZED SPEED LIMITS AND RECOMMENDED TRAFFIC CONTROL DEVICES



AUTHORIZED SPEED LIMITS



Traffic Engineer \_\_\_\_\_  
Date: \_\_\_\_\_



\*MISSING ON 4-15-97  
SIGNLOG ON 4-15-97

	<b>FILE</b>	<b>MEMO</b>	<b>SHEET</b>	Implemented with changes as marked
	880.119.02	5937	2	Date: _____ By: _____

SH 119 FROM SH 36 IN BOULDER TO SH 287 IN LONGMONT

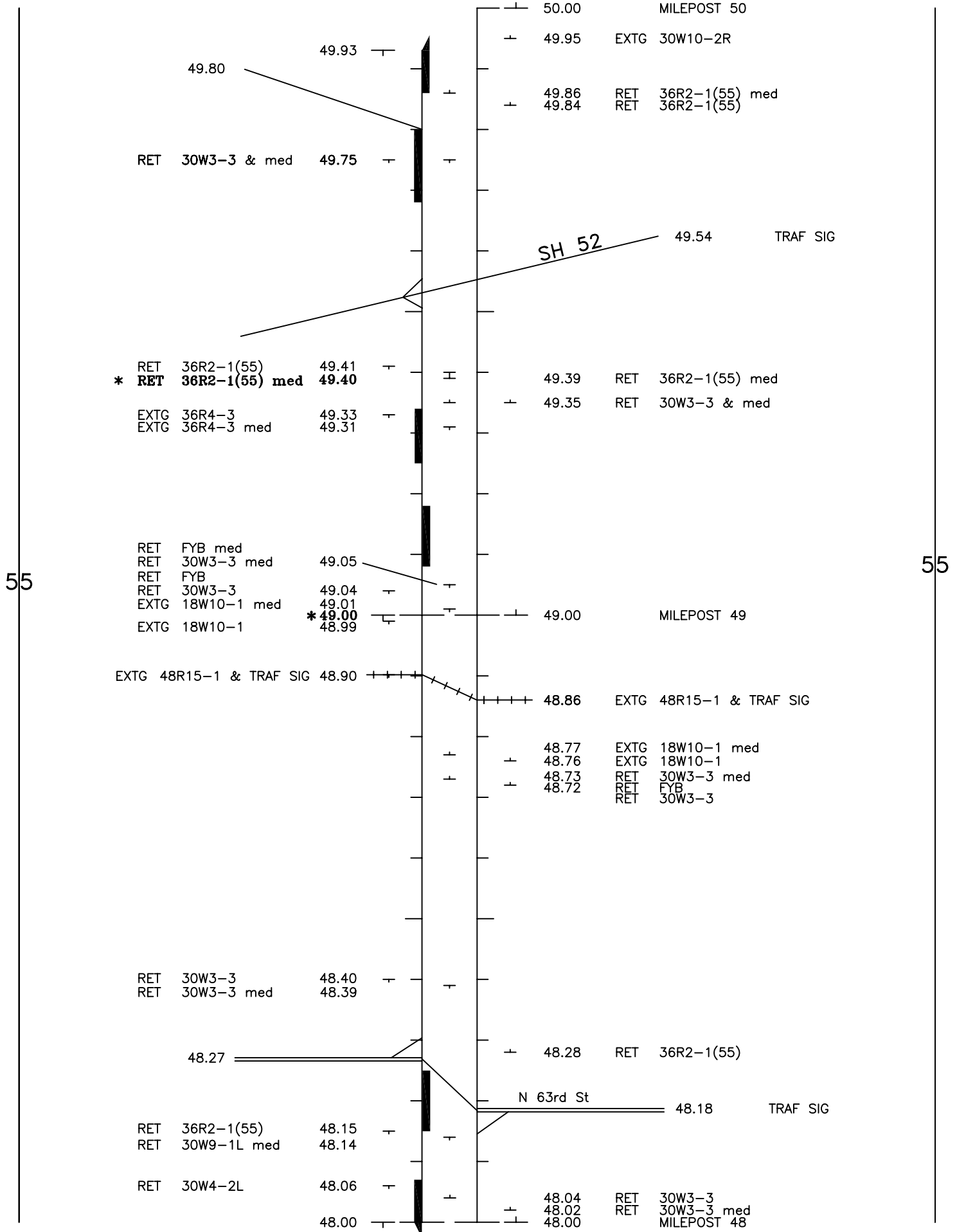
SUPERSEDES SHEET 2, MEMO 5215, 8-9-92



# AUTHORIZED SPEED LIMITS AND RECOMMENDED TRAFFIC CONTROL DEVICES



AUTHORIZED  
SPEED  
LIMITS



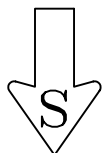
55

55

AUTHORIZED  
SPEED  
LIMITS

Traffic Engineer \_\_\_\_\_

Date: \_\_\_\_\_



SIGNLOG ON 4-15-97

FILE	MEMO	SHEET	Implemented with changes as marked
880.119.02	5937	3	Date: _____ By: _____

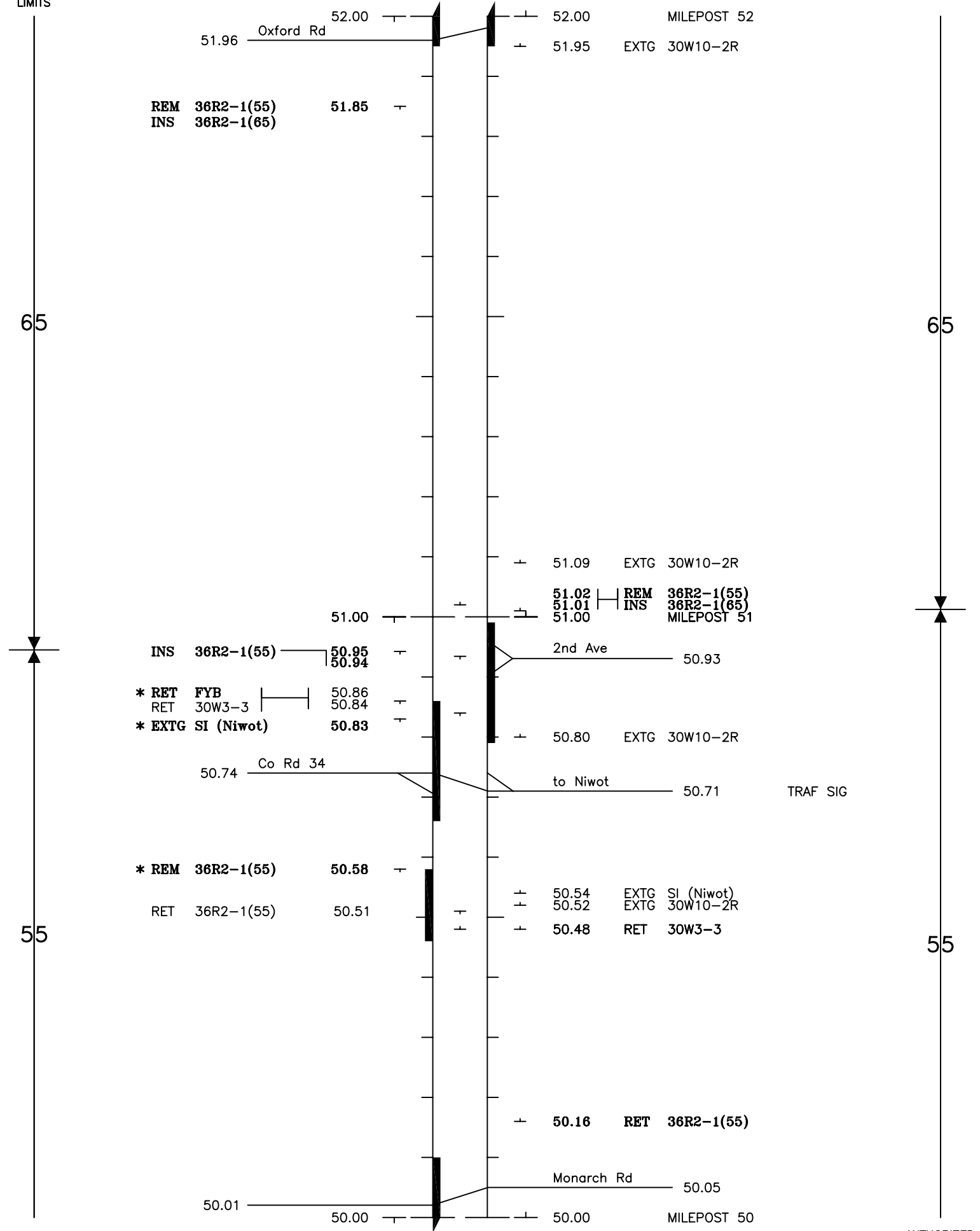
SH 119 FROM SH 36 IN BOULDER TO SH 287 IN LONGMONT

**SUPERSEDES** SHEET 3, MEMO 5705, 10-6-93

# AUTHORIZED SPEED LIMITS AND RECOMMENDED TRAFFIC CONTROL DEVICES



AUTHORIZED  
SPEED  
LIMITS



AUTHORIZED  
SPEED  
LIMITS

\_\_\_\_\_  
Traffic Engineer  
Date: \_\_\_\_\_



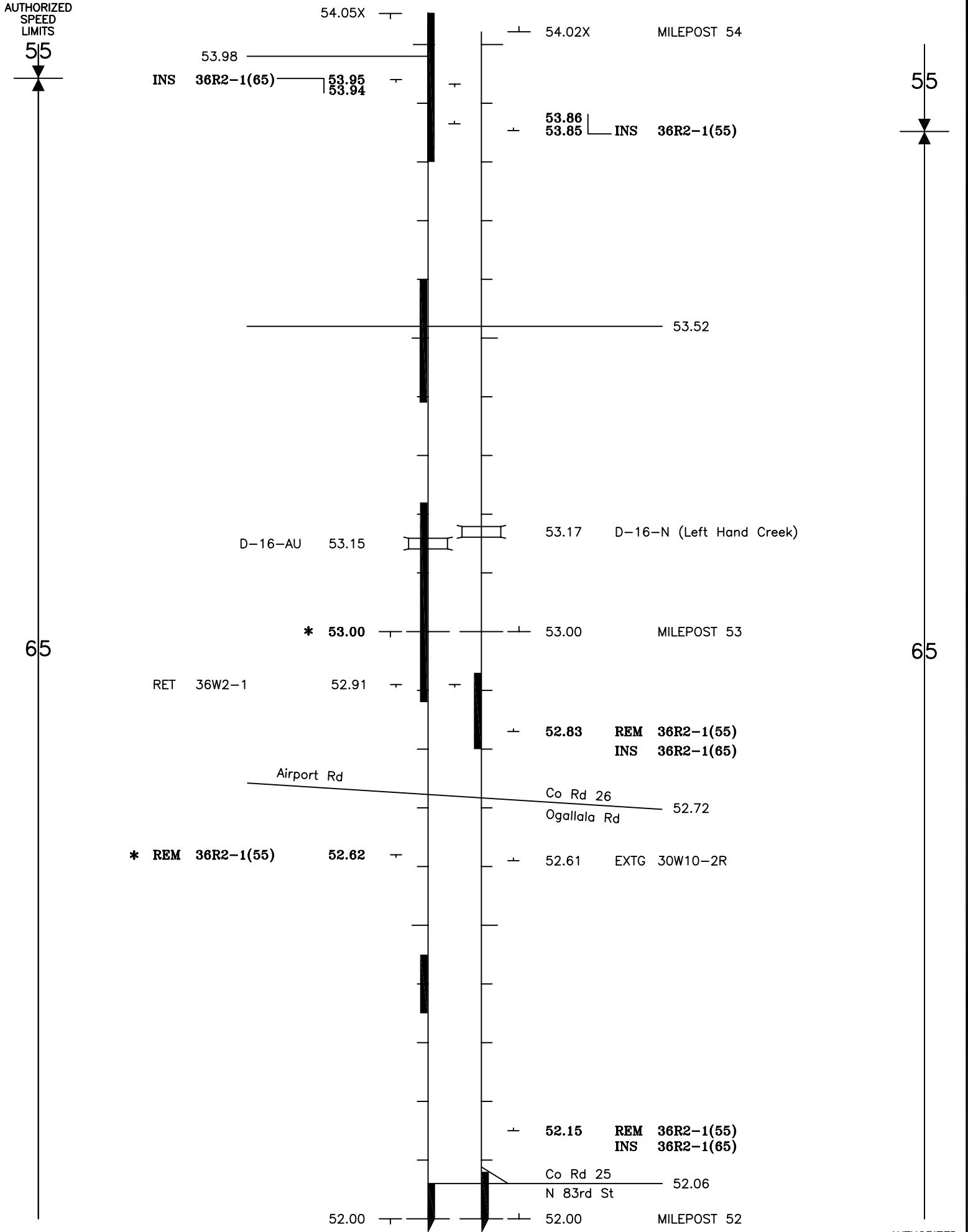
\*MISSING ON 4-15-97  
SIGNLOG ON 4-15-97

	<b>FILE</b>	<b>MEMO</b>	<b>SHEET</b>	Implemented with changes as marked
	880.119.02	5937	4	Date: _____ By: _____

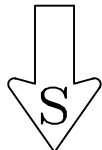
**SH 119 FROM SH 36 IN BOULDER TO SH 287 IN LONGMONT**

**SUPERSEDES SHEET 4, MEMO 5705, 10-6-93**

AUTHORIZED SPEED LIMITS AND RECOMMENDED TRAFFIC CONTROL DEVICES



\_\_\_\_\_  
Traffic Engineer  
Date: \_\_\_\_\_



SIGNLOG ON 4-15-97

	<b>FILE</b>	<b>MEMO</b>	<b>SHEET</b>	Implemented with changes as marked
	880.119.02	5937	5	Date: _____ By: _____

**SH 119 FROM SH 36 IN BOULDER TO SH 287 IN LONGMONT**

**SUPERSEDES SHEET 5, MEMO 5705, 10--6-93**

## SH 157 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
1	157A	3.52	2/23/2017	1709	PDO	17-2275	OFF RIGHT	NON-INTERSECTION	3	ICY	DARK-LIGHTED	SNOW/SLEET/HAIL
2	157A	3.54	7/12/2015	1828	INJ	15-8648	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
3	157A	3.55	3/27/2018	738	PDO	18-03671	OFF RIGHT	NON-INTERSECTION	1	ICY	DAYLIGHT	NONE
4	157A	3.57	5/3/2017	1028	INJ	17-5278	ON	NON-INTERSECTION	2	WET	DAYLIGHT	RAIN
5	157A	3.57	7/31/2017	955	PDO	17-09613	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
6	157A	3.59	5/3/2017	1010	PDO	17-5277	ON	NON-INTERSECTION	1	WET	DAYLIGHT	RAIN
7	157A	3.72	5/14/2019	923	PDO	19-05200	ON	RAMP	3	DRY	DAYLIGHT	NONE
8	157A	3.72	10/18/2016	1519	PDO	16-14030	OFF AT TEE	RAMP	1	DRY	DAYLIGHT	NONE
9	157A	3.73	11/6/2018	1300	INJ	1D184670	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
10	157A	3.73	9/9/2016	1452	PDO	16-12014	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
11	157A	3.73	4/8/2017	2046	PDO	17-4224	ON	NON-INTERSECTION	5	DRY	DARK-UNLIGHTED	NONE
12	157A	3.73	11/7/2019	12	PDO	19-13202	OFF RIGHT	NON-INTERSECTION	1	WET	DARK-UNLIGHTED	RAIN
13	157A	3.73	11/8/2019	834	PDO	19-13254	ON	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
14	157A	3.74	7/23/2016	1448	PDO	16-9446	ON	RAMP	3	DRY	DAYLIGHT	NONE
15	157A	3.74	8/10/2019	1615	PDO	19-09010	OFF RIGHT	RAMP	1	DRY	DAYLIGHT	NONE
16	157A	3.76	2/26/2015	1226	PDO	15-2360	ON	NON-INTERSECTION	2	ICY	DAYLIGHT	SNOW/SLEET/HAIL
17	157A	3.77	3/26/2018	1840	PDO	18-03654	OFF RIGHT	NON-INTERSECTION	1	WET	DARK-UNLIGHTED	SNOW/SLEET/HAIL
18	157A	3.79	8/31/2016	1017	PDO	16-11510	OFF RIGHT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
19	157A	3.95	4/28/2015	1440	PDO	15-5149	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
20	157A	3.99	11/11/2018	1205	PDO	1D184758	OFF RIGHT	NON-INTERSECTION	1	WET	DAYLIGHT	SNOW/SLEET/HAIL
21	157A	3.99	6/23/2019	536	PDO	1D192548	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
22	157A	4	1/6/2015	735	INJ	1D-15-0083	ON	NON-INTERSECTION	2	ICY	DAYLIGHT	NONE
23	157A	4	1/6/2015	735	INJ	1D-15-0082	OFF RIGHT	NON-INTERSECTION	1	ICY	DAYLIGHT	NONE
24	157A	4	1/9/2017	645	PDO	1D-17-0172	ON	NON-INTERSECTION	3	WET	DAWN OR DUSK	WIND
25	157A	4	1/18/2017	1745	INJ	1D-17-0322	ON	NON-INTERSECTION	2	DRY	DARK-LIGHTED	NONE
26	157A	4.03	11/5/2015	653	PDO	1D-15-5264	ON	NON-INTERSECTION	2	WET	DAYLIGHT	NONE
27	157A	4.1	8/5/2018	1812	INJ	1D183232	ON	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
28	157A	4.2	11/26/2015	1500	PDO	15-15195	OFF RIGHT	RAMP	1	ICY	DAYLIGHT	SNOW/SLEET/HAIL
29	157A	4.21	5/26/2017	600	INJ	1D-17-2331	ON	RAMP	2	DRY	DAYLIGHT	NONE
30	157A	4.22	2/23/2017	1545	PDO	17-2272	OFF RIGHT	RAMP	1	ICY	DAYLIGHT	SNOW/SLEET/HAIL
31	157A	4.5	5/29/2018	845	PDO	1D182200	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
32	157A	3.77	12/15/2015	735	PDO	1D-15-5933	OFF RIGHT	RAMP	1	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL

## SH 157 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
1	GUARD RAIL	N	SUV	DRIVER INEXPERIENCE	30	GOING STRAIGHT
2	CURB/RAISED MEDIAN	N	PASSENGER CAR/VAN	UNKNOWN	45	OTHER
3	GUARD RAIL	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	40	GOING STRAIGHT
4	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	20	SLOWING
5	SIDESWIPE (SAME DIRECTION)	S	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	50	WEAVING
6	WILD ANIMAL	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
7	REAR-END	S	PICKUP TRUCK/UTILITY VAN	UNKNOWN	20	GOING STRAIGHT
8	INVOLVING OTHER OBJECT	E	PASSENGER CAR/VAN	UNKNOWN	20	MAKING RIGHT TURN
9	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
10	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
11	VEHICLE CARGO/DEBRIS	S	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	OTHER
12	GUARD RAIL	S	PASSENGER CAR/VAN	UNKNOWN	55	OTHER
13	WILD ANIMAL	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
14	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
15	FENCE	S	PASSENGER CAR/VAN	UNKNOWN	45	OTHER
16	SIDESWIPE (SAME DIRECTION)	N	SUV	UNKNOWN	35	OTHER
17	GUARD RAIL	N	PASSENGER CAR/VAN	UNKNOWN	55	GOING STRAIGHT
18	GUARD RAIL	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
19	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
20	GUARD RAIL	N	SUV	NO APPARENT CONTRIBUTING FACTOR	50	OTHER
21	GUARD RAIL	S	PASSENGER CAR/VAN	ASLEEP AT WHEEL	50	OTHER
22	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
23	GUARD RAIL	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
24	REAR-END	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
25	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
26	SIDESWIPE (SAME DIRECTION)	N	SUV	UNKNOWN	55	GOING STRAIGHT
27	OVERTURNING	N	MOTORCYCLE	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
28	LIGHT/UTILITY POLE	S	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	OTHER
29	HEAD-ON	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	75	OTHER
30	LIGHT/UTILITY POLE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	35	MAKING RIGHT TURN
31	WILD ANIMAL	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
32	LIGHT/UTILITY POLE	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	30	OTHER

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
1	119B	44.81	1/2/2018	1848	INJ	18-00056	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-LIGHTED	NONE
2	119B	44.82	6/7/2015	2300	PDO	15-6988	ON	NON-INTERSECTION	1	DRY	DARK-LIGHTED	NONE
3	119B	44.86	9/8/2015	1720	INJ	15-11586	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
4	119B	44.92	8/5/2016	2038	INJ	16-10101	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
5	119B	44.92	2/12/2018	115	INJ	18-01712	ON	AT INTERSECTION	2	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
6	119B	44.92	8/22/2018	935	INJ	18-10597	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
7	119B	44.92	11/7/2017	1945	PDO	110717	ON	AT INTERSECTION	2	ICY	DARK-LIGHTED	SNOW/SLEET/HAIL
8	119B	44.92	11/22/2015	845	PDO	15-15035	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
9	119B	44.92	12/4/2015	1347	PDO	15-15450	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
10	119B	44.92	8/18/2016	1140	INJ	16-10722	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
11	119B	44.92	12/15/2015	855	PDO	15-15935	ON	AT INTERSECTION	2	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
12	119B	44.92	8/28/2017	900	PDO	17-11159	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
14	119B	44.94	6/8/2016	2347	PDO	16-7251	ON	NON-INTERSECTION	1	DRY	DARK-LIGHTED	NONE
15	119B	44.92	3/10/2016	1724	PDO	16-3108	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
16	119B	44.92	2/26/2015	1925	PDO	15-2395	ON	AT INTERSECTION	2	SNOWY	DARK-UNLIGHTED	NONE
17	119B	44.92	11/8/2017	800	PDO	17-14736	ON	AT INTERSECTION	2	WET	DAYLIGHT	NONE
18	119B	44.92	3/20/2016	2045	INJ	16-3666	ON	AT INTERSECTION	2	WET	DARK-LIGHTED	NONE
19	119B	44.92	4/2/2016	2016	PDO	16-4183	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
20	119B	44.92	5/12/2017	831	PDO	17-5737	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
21	119B	44.92	12/2/2017	1940	PDO	17-15837	ON	AT INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
22	119B	44.98	5/18/2017	1615	PDO	1D-17-2213	ON	NON-INTERSECTION	2	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
23	119B	44.98	6/16/2016	1456	INJ	1D-16-2652	ON	NON-INTERSECTION	5	DRY	DAYLIGHT	NONE
24	119B	45	3/8/2016	1715	INJ	16-2991	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
25	119B	45	8/3/2018	2125	PDO	1D183212	ON	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
26	119B	45	8/26/2018	1915	INJ	1D183553	OFF RIGHT	NON-INTERSECTION	1	DRY	DAWN OR DUSK	NONE
27	119B	45	5/28/2015	800	INJ	1D-15-2482	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
28	119B	45	1/22/2018	1720	INJ	1D-18-0344	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
29	119B	45.01	9/27/2017	849	PDO	17-12756	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
30	119B	45.01	7/13/2018	1311	PDO	18-08667	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
31	119B	45.02	2/10/2016	1306	INJ	16-1701	ON	AT INTERSECTION	4	DRY	DAYLIGHT	NONE
32	119B	45.02	10/5/2015	1906	INJ	15-12878	ON	AT INTERSECTION	2	WET	DARK-LIGHTED	RAIN
33	119B	45.02	3/9/2016	1530	PDO	16-3039	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
34	119B	45.02	6/3/2019	1255	INJ	19-06020	ON	AT INTERSECTION	2	WET	DAYLIGHT	NONE
35	119B	45.02	1/20/2017	1545	INJ	17-764	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
36	119B	45.02	2/24/2015	1535	PDO	15-2289	ON	AT INTERSECTION	2	SNOWY	DAYLIGHT	NONE
37	119B	45.02	10/13/2015	1221	PDO	15-13210	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
38	119B	45.02	10/30/2015	914	INJ	15-14006	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
39	119B	45.02	11/18/2015	1032	INJ	15-14883	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
40	119B	45.02	4/4/2016	2030	INJ	16-4274	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
41	119B	45.02	4/17/2016	1443	INJ	16-4853	ON	AT INTERSECTION	2	WET	DAYLIGHT	SNOW/SLEET/HAIL
42	119B	45.02	12/30/2016	1045	INJ	16-17190	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
43	119B	45.02	5/30/2018	1829	PDO	18-06636	ON	AT INTERSECTION	2	WET	DAYLIGHT	NONE
44	119B	45.02	7/13/2019	2230	INJ	19-71709	ON	AT INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
45	119B	45.02	7/16/2019	1639	PDO	19-07890	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
46	119B	45.02	4/2/2015	1815	PDO	15-3970	ON	INTERSECTION RELATED	2	WET	DAWN OR DUSK	SNOW/SLEET/HAIL
47	119B	45.02	9/6/2016	1445	INJ	16-11846	ON	AT INTERSECTION	3	DRY	DAYLIGHT	NONE
48	119B	45.02	11/18/2018	2132	PDO	18-14877	ON	AT INTERSECTION	2	DRY W/VIS ICY ROAD TREATMENT	DARK-LIGHTED	NONE
49	119B	45.02	12/9/2015	1454	PDO	15-15681	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
50	119B	45.02	7/26/2016	1332	PDO	16-9569	UNKNOWN	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
51	119B	45.02	1/21/2017	1313	PDO	17-798	OFF RIGHT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
1	LIGHT/UTILITY POLE	W	PASSENGER CAR/VAN	DRIVER EMOTIONALLY UPSET	45	GOING STRAIGHT
2	WILD ANIMAL	E	SUV	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
3	REAR-END	E	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
4	APPROACH TURN	W	SUV	DRIVER INEXPERIENCE	15	MAKING LEFT TURN
5	REAR-END	E	SUV	NO APPARENT CONTRIBUTING FACTOR	0	STOPPED IN TRAFFIC
6	APPROACH TURN	W	SUV	NO APPARENT CONTRIBUTING FACTOR	5	MAKING LEFT TURN
7	REAR-END	E	SUV	UNKNOWN	10	GOING STRAIGHT
8	BROADSIDE	S	SUV	DRIVER UNFAMILIAR WITH AREA	10	MAKING RIGHT TURN
9	BROADSIDE	E	PICKUP TRUCK/UTILITY VAN	UNKNOWN	30	GOING STRAIGHT
10	BICYCLE	N	BICYCLE	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
11	PARKED MOTOR VEHICLE	W	NON-SCHOOL BUS < 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	10	MAKING RIGHT TURN
12	REAR-END	S	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	5	BACKING
14	OVERTURNING	E	PASSENGER CAR/VAN	DRIVER FATIGUE	35	GOING STRAIGHT
15	APPROACH TURN	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	MAKING LEFT TURN
16	REAR-END	E	SUV	NO APPARENT CONTRIBUTING FACTOR	30	OTHER
17	REAR-END	S	NON-SCHOOL BUS < 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	10	MAKING RIGHT TURN
18	APPROACH TURN	W	SUV	NO APPARENT CONTRIBUTING FACTOR	30	MAKING LEFT TURN
19	APPROACH TURN	W	SUV	UNKNOWN	40	MAKING LEFT TURN
20	APPROACH TURN	W	SUV	DRIVER UNFAMILIAR WITH AREA	15	MAKING LEFT TURN
21	APPROACH TURN	W	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	20	MAKING LEFT TURN
22	SIDESWIPE (SAME DIRECTION)	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	UK	CHANGING LANES
23	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
24	REAR-END	E	SUV	UNKNOWN	30	GOING STRAIGHT
25	WILD ANIMAL	S	SUV	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
26	EMBANKMENT CUT/FILL SLOPE	S	PICKUP TRUCK/UTILITY VAN	UNKNOWN	45	GOING STRAIGHT
27	CURB/RAISED MEDIAN	S	PICKUP TRUCK/UTILITY VAN	ASLEEP AT WHEEL	50	GOING STRAIGHT
28	OVERTAKING TURN	N	SUV	DRIVER UNFAMILIAR WITH AREA	15	MAKING U-TURN
29	REAR-END	E	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
30	REAR-END	E	SUV	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
31	BROADSIDE	N	SUV	UNKNOWN	30	GOING STRAIGHT
32	BROADSIDE	W	SUV	UNKNOWN	40	GOING STRAIGHT
33	REAR-END	E	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	5	BACKING
34	BICYCLE	N	SUV	UNKNOWN	15	MAKING LEFT TURN
35	BROADSIDE	E	SUV	DRIVER PREOCCUPIED	35	GOING STRAIGHT
36	BROADSIDE	W	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	30	GOING STRAIGHT
37	BROADSIDE	E	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
38	BROADSIDE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
39	BROADSIDE	E	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
40	BROADSIDE	N	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	MAKING RIGHT TURN
41	BROADSIDE	S	PASSENGER CAR/VAN	UNKNOWN	20	GOING STRAIGHT
42	BROADSIDE	E	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	40	GOING STRAIGHT
43	BROADSIDE	N	PASSENGER CAR/VAN	UNKNOWN	UK	MAKING RIGHT TURN
44	BROADSIDE	N	SUV	NO APPARENT CONTRIBUTING FACTOR	20	MAKING RIGHT TURN
45	BROADSIDE	E	PASSENGER CAR/VAN	UNKNOWN	45	GOING STRAIGHT
46	REAR-END	E	SUV	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
47	REAR-END	E	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	DRIVER PREOCCUPIED	25	GOING STRAIGHT
48	REAR-END	E	PASSENGER CAR/VAN	UNKNOWN	20	MAKING RIGHT TURN
49	APPROACH TURN	W	SUV	DRIVER UNFAMILIAR WITH AREA	5	MAKING LEFT TURN
50	APPROACH TURN	E	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	20	MAKING LEFT TURN
51	LIGHT/UTILITY POLE	E	PICKUP TRUCK/UTILITY VAN	DRIVER UNFAMILIAR WITH AREA	35	AVOIDING OBJECT/VEHICLE IN ROAD

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
52	119B	45.02	7/3/2015	1430	INJ	15-8242	ON	AT INTERSECTION	1	DRY	DAYLIGHT	NONE
53	119B	45.02	3/4/2015	1431	PDO	1D-15-1127	OFF RIGHT	AT INTERSECTION	1	SLUSHY W/VIS ICY ROAD TREATMENT	DAYLIGHT	SNOW/SLEET/HAIL
54	119B	45.02	10/26/2016	1600	PDO	1D-16-4793	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
55	119B	45.03	1/4/2017	1227	PDO	17-105	OFF RIGHT	RAMP	1	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
56	119B	45.04	3/16/2016	1827	INJ	16-3456	ON	NON-INTERSECTION	2	DRY	DAWN OR DUSK	NONE
57	119B	45.06	8/14/2017	1320	INJ	17-10326	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
58	119B	45.08	3/20/2015	2315	PDO	1D-15-1395	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
59	119B	45.1	2/1/2016	900	PDO	16-1307	ON	AT INTERSECTION	2	ICY	DAYLIGHT	SNOW/SLEET/HAIL
60	119B	45.1	8/2/2015	1415	INJ	1D-15-3581	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
61	119B	45.1	4/11/2016	730	INJ	1D-16-1644	ON	AT INTERSECTION	2	WET	DAYLIGHT	NONE
62	119B	45.1	12/14/2015	2044	PDO	15-15920	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-LIGHTED	NONE
63	119B	45.1	11/18/2019	720	PDO	1D194890	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
64	119B	45.1	7/1/2019	1513	INJ	1D192681	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
65	119B	45.15	7/17/2015	1600	INJ	15-8885	ON	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
66	119B	45.2	1/6/2015	1400	PDO	1D-15-0094	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
67	119B	45.2	6/27/2016	908	PDO	1D-16-2812	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	RAIN
68	119B	45.3	7/16/2015	1030	PDO	1D-15-3289	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
69	119B	45.3	6/1/2018	720	PDO	1D182259	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
70	119B	45.32	6/16/2016	1633	PDO	1D-16-2654	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
71	119B	45.4	12/13/2016	1500	PDO	1D-16-5635	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
72	119B	45.4	2/20/2019	725	PDO	1D190710	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
73	119B	45.4	7/7/2017	203	PDO	1D-17-3017	ON	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
74	119B	45.4	2/20/2019	745	INJ	1D190711	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
75	119B	45.45	3/22/2016	1913	PDO	16-3760	ON	NON-INTERSECTION	2	DRY	DAWN OR DUSK	NONE
76	119B	45.5	4/3/2019	1615	PDO	1D191402	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
77	119B	45.6	12/16/2019	1945	INJ	1D195280	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
78	119B	45.6	10/3/2016	1455	PDO	1D-16-4390	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
79	119B	45.67	1/17/2018	740	INJ	1D-18-0249	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
80	119B	45.7	3/16/2018	2230	INJ	1D181131	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
81	119B	45.7	10/1/2019	1528	INJ	1D194113	ON	NON-INTERSECTION	2	WET	DAYLIGHT	RAIN
82	119B	45.7	12/13/2016	1210	PDO	1D-16-5631	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
83	119B	45.7	1/21/2015	857	PDO	1D-15-0338	ON	NON-INTERSECTION	2	WET	DAYLIGHT	SNOW/SLEET/HAIL
84	119B	45.8	10/31/2018	1640	INJ	1D184576	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
85	119B	45.8	6/23/2016	1801	PDO	1D-16-2763	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
86	119B	45.8	5/5/2018	2140	PDO	1D181838	ON	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
87	119B	45.87	5/8/2018	2015	PDO	1D181883	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
88	119B	45.88	4/30/2018	1510	INJ	1D181744	OFF RIGHT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
89	119B	45.9	7/17/2015	1325	INJ	1D-15-3310	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
90	119B	45.9	2/22/2019	1650	PDO	1D190759	ON	NON-INTERSECTION	2	SNOWY	DAWN OR DUSK	SNOW/SLEET/HAIL
91	119B	45.9	4/25/2018	1312	PDO	1D181694	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
92	119B	45.9	4/25/2018	1310	INJ	1D181674	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
93	119B	45.9	1/25/2018	1620	PDO	1D180386	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
94	119B	45.9	3/11/2019	1735	PDO	1D191063	ON	NON-INTERSECTION	4	DRY	DAYLIGHT	NONE
95	119B	45.97	4/14/2016	1840	INJ	1D-16-1702	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
96	119B	45.97	12/10/2015	1740	PDO	1D-15-5840	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
97	119B	45.97	8/1/2016	1930	PDO	1D-16-3371	ON	NON-INTERSECTION	2	DRY	DAWN OR DUSK	NONE
98	119B	45.97	10/31/2016	2235	PDO	1D-16-4884	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
99	119B	45.97	10/19/2017	917	PDO	1D-17-4679	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
100	119B	45.98	12/29/2018	1530	INJ	1D185456	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
101	119B	46	11/1/2018	915	PDO	1D184599	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE



## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
52	INVOLVING OTHER OBJECT	N	MOTORCYCLE	DRIVER INEXPERIENCE	30	GOING STRAIGHT
53	OVERTURNING	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	OTHER
54	SIDESWIPE (SAME DIRECTION)	N	SUV	NO APPARENT CONTRIBUTING FACTOR	55	CHANGING LANES
55	LIGHT/UTILITY POLE	S	PASSENGER CAR/VAN	UNKNOWN	35	GOING STRAIGHT
56	REAR-END	N	SUV	UNKNOWN	25	GOING STRAIGHT
57	BICYCLE	N	BICYCLE	NO APPARENT CONTRIBUTING FACTOR	UK	CHANGING LANES
58	FENCE	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	OTHER
59	SIDESWIPE (SAME DIRECTION)	E	SUV	DRIVER INEXPERIENCE	35	CHANGING LANES
60	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	45	GOING STRAIGHT
61	BICYCLE	W	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	MAKING LEFT TURN
62	LIGHT/UTILITY POLE	E	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	30	MAKING RIGHT TURN
63	REAR-END	W	SUV	NO APPARENT CONTRIBUTING FACTOR	10	ENTERING/LEAVING PARKED POSITION
64	BICYCLE	E	BICYCLE	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
65	OVERTURNING	N	MOTORCYCLE	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
66	FENCE	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
67	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	SLOWING
68	VEHICLE CARGO/DEBRIS	S	SUV	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
69	DELINEATOR POST	S	SUV	NO APPARENT CONTRIBUTING FACTOR	55	CHANGING LANES
70	REAR-END	N	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	30	GOING STRAIGHT
71	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
72	REAR-END	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
73	WILD ANIMAL	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
74	SIDESWIPE (SAME DIRECTION)	SW	SUV	UNKNOWN	35	GOING STRAIGHT
75	SIDESWIPE (SAME DIRECTION)	N	SUV	NO APPARENT CONTRIBUTING FACTOR	45	PASSING
76	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	UNKNOWN	65	WEAVING
77	OVERTURNING	NE	PASSENGER CAR/VAN	UNKNOWN	70	OTHER
78	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	40	GOING STRAIGHT
79	SIDESWIPE (SAME DIRECTION)	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	55	CHANGING LANES
80	OVERTURNING	N	PASSENGER CAR/VAN	UNKNOWN	55	OTHER
81	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
82	SIDESWIPE (SAME DIRECTION)	N	PICKUP TRUCK/UTILITY VAN W/TRAILER	UNKNOWN	5	CHANGING LANES
83	SIDESWIPE (SAME DIRECTION)	N	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	PASSING
84	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	CHANGING LANES
85	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	45	GOING STRAIGHT
86	WILD ANIMAL	N	SUV	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
87	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	60	GOING STRAIGHT
88	SIGN	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	OTHER
89	REAR-END	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	55	SLOWING
90	SIDESWIPE (SAME DIRECTION)	N	SUV	DRIVER INEXPERIENCE	15	CHANGING LANES
91	BROADSIDE	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT
92	REAR-END	NE	SUV	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
93	SIDESWIPE (SAME DIRECTION)	NE	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	40	CHANGING LANES
94	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
95	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
96	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	50	OTHER
97	SIDESWIPE (SAME DIRECTION)	NE	SUV	DRIVER FATIGUE	50	CHANGING LANES
98	WILD ANIMAL	N	SUV	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
99	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	5	GOING STRAIGHT
100	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	25	GOING STRAIGHT
101	SIDESWIPE (SAME DIRECTION)	SW	PASSENGER CAR/VAN	UNKNOWN	65	CHANGING LANES

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
102	119B	46	11/11/2018	530	PDO	1D184752	ON	NON-INTERSECTION	2	SNOWY	DARK-UNLIGHTED	SNOW/SLEET/HAIL
103	119B	46	8/5/2015	1415	PDO	1D-15-3645	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
104	119B	46	5/28/2016	2000	PDO	1D-16-2352	ON	INTERSECTION RELATED	2	DRY	DAWN OR DUSK	NONE
105	119B	46	3/6/2019	1445	PDO	1D190986	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
106	119B	46	10/24/2019	1520	PDO	1D194477	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
107	119B	46.04	2/16/2018	1822	INJ	1D180710	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
108	119B	46.05	12/6/2019	1954	INJ	1D195140	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
109	119B	46.06	7/29/2016	915	PDO	1D-16-3302	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
110	119B	46.06	4/11/2016	1130	PDO	1D-16-1646	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
111	119B	46.06	9/21/2016	1320	PDO	1D-16-4193	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
112	119B	46.06	12/18/2016	500	PDO	1D-16-5749	OFF LEFT	NON-INTERSECTION	1	SNOWY	DARK-UNLIGHTED	NONE
113	119B	46.07	3/21/2015	2150	PDO	1D-15-1410	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
114	119B	46.07	5/28/2015	1650	PDO	1D-15-2491	ON	AT INTERSECTION	2	WET	DAYLIGHT	RAIN
115	119B	46.07	9/19/2018	1040	PDO	1D183917	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
116	119B	46.07	10/18/2018	1015	PDO	1D184368	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
117	119B	46.07	7/11/2018	2340	PDO	1D182867	ON	AT INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
118	119B	46.07	9/1/2018	2338	INJ	1D183646	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
119	119B	46.07	7/6/2015	915	PDO	1D-15-3114	ON	INTERSECTION RELATED	2	WET	DAYLIGHT	RAIN
120	119B	46.07	2/23/2017	2130	INJ	1D-17-0899	ON	AT INTERSECTION	2	SNOWY	DARK-LIGHTED	SNOW/SLEET/HAIL
121	119B	46.07	2/18/2018	2005	INJ	1D180734	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
122	119B	46.07	3/13/2018	1500	INJ	1D181087	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
123	119B	46.07	7/19/2019	2036	INJ	1D192946	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
124	119B	46.07	3/2/2015	1345	PDO	1D-15-1096	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
125	119B	46.07	10/2/2016	1520	PDO	1D-16-4373	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
126	119B	46.07	10/26/2016	1150	INJ	1D-16-4783	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
127	119B	46.07	3/8/2017	1715	PDO	1D-17-1079	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
128	119B	46.07	3/16/2017	1600	INJ	1D-17-1224	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
129	119B	46.07	6/29/2017	1430	INJ	1D-17-2901	ON	INTERSECTION RELATED	4	DRY	DAYLIGHT	NONE
130	119B	46.07	11/7/2017	740	PDO	1D-17-4989	ON	AT INTERSECTION	2	ICY W/VIS ICY ROAD TREATMENT	DAYLIGHT	NONE
131	119B	46.07	3/18/2018	1610	PDO	1D181160	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
132	119B	46.07	5/10/2018	1537	PDO	1D181918	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
133	119B	46.07	2/26/2019	1612	INJ	1D190818	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
134	119B	46.07	5/7/2019	1249	PDO	1D191909	ON	AT INTERSECTION	2	WET	DAYLIGHT	RAIN
135	119B	46.07	7/1/2019	1120	INJ	1D192668	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
136	119B	46.07	7/15/2019	1851	PDO	1D192868	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
137	119B	46.07	7/16/2019	1215	PDO	1D192882	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
138	119B	46.07	11/7/2019	1852	INJ	1D194707	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
139	119B	46.07	4/14/2016	1856	INJ	1D-16-1703	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
140	119B	46.07	11/7/2016	1540	PDO	1D-16-4999	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
141	119B	46.07	5/9/2018	2115	PDO	1D181903	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
142	119B	46.07	5/20/2018	1055	PDO	1D182062	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
143	119B	46.07	8/10/2017	1750	PDO	1D-17-3571	ON	AT INTERSECTION	2	WET	DAYLIGHT	RAIN
144	119B	46.07	3/15/2019	1315	PDO	1D191139	OFF LEFT	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
145	119B	46.07	10/26/2015	2200	INJ	1D-15-5098	OFF LEFT	AT INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
146	119B	46.07	3/4/2016	1930	INJ	1D-16-1031	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
147	119B	46.07	10/11/2018	1131	PDO	1D184263	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
148	119B	46.07	12/8/2018	830	PDO	1D185196	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
149	119B	46.07	11/16/2018	1104	INJ	1D184847	OFF RIGHT	AT INTERSECTION	1	DRY	DAYLIGHT	NONE
150	119B	46.07	4/13/2016	1410	INJ	1D-16-1680	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
151	119B	46.07	8/11/2017	2315	PDO	1D-17-3602	ON	INTERSECTION RELATED	2	DRY	DARK-UNLIGHTED	NONE

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
102	SIDESWIPE (SAME DIRECTION)	SW	SUV	NO APPARENT CONTRIBUTING FACTOR	35	OTHER
103	REAR-END	N	SUV	DRIVER INEXPERIENCE	15	GOING STRAIGHT
104	REAR-END	N	SUV	DRIVER PREOCCUPIED	55	GOING STRAIGHT
105	REAR-END	N	SUV	DRIVER PREOCCUPIED	35	GOING STRAIGHT
106	REAR-END	N	SUV	DISTRACTED BY PASSENGER	50	GOING STRAIGHT
107	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
108	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
109	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
110	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
111	REAR-END	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	15	SLOWING
112	EMBANKMENT CUT/FILL SLOPE	E	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	15	GOING STRAIGHT
113	REAR-END	N	SUV	UNKNOWN	40	GOING STRAIGHT
114	REAR-END	S	SUV	DRIVER PREOCCUPIED	10	GOING STRAIGHT
115	REAR-END	W	SUV	DRIVER UNFAMILIAR WITH AREA	15	MAKING LEFT TURN
116	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
117	SIDESWIPE (SAME DIRECTION)	SW	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	15	MAKING LEFT TURN
118	OVERTAKING TURN	N	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	40	MAKING U-TURN
119	REAR-END	SW	PICKUP TRUCK/UTILITY VAN	UNKNOWN	5	GOING STRAIGHT
120	BROADSIDE	NW	SUV	DRIVER FATIGUE	20	GOING STRAIGHT
121	BROADSIDE	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	0	STOPPED IN TRAFFIC
122	BROADSIDE	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	MAKING RIGHT TURN
123	BROADSIDE	E	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
124	REAR-END	NE	SUV	NO APPARENT CONTRIBUTING FACTOR	5	MAKING RIGHT TURN
125	REAR-END	N	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	25	GOING STRAIGHT
126	REAR-END	S	SUV	DRIVER PREOCCUPIED	10	GOING STRAIGHT
127	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	MAKING RIGHT TURN
128	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	20	SLOWING
129	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	60	GOING STRAIGHT
130	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	20	MAKING RIGHT TURN
131	REAR-END	N	PICKUP TRUCK/UTILITY VAN	UNKNOWN	5	GOING STRAIGHT
132	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	5	GOING STRAIGHT
133	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	UK	MAKING RIGHT TURN
134	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	3	GOING STRAIGHT
135	REAR-END	W	PASSENGER CAR/VAN	UNKNOWN	45	GOING STRAIGHT
136	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
137	REAR-END	N	SUV	DRIVER PREOCCUPIED	25	GOING STRAIGHT
138	REAR-END	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	10	GOING STRAIGHT
139	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	20	CHANGING LANES
140	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	CHANGING LANES
141	SIDESWIPE (SAME DIRECTION)	W	SUV	DRIVER UNFAMILIAR WITH AREA	20	MAKING LEFT TURN
142	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	10	CHANGING LANES
143	APPROACH TURN	E	SUV	NO APPARENT CONTRIBUTING FACTOR	10	MAKING LEFT TURN
144	LIGHT/UTILITY POLE	S	PICKUP TRUCK/UTILITY VAN	UNKNOWN	60	CHANGING LANES
145	TRAFFIC SIGNAL POLE	N	SUV	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
146	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	15	GOING STRAIGHT
147	REAR-END	W	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	5	SLOWING
148	REAR-END	W	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	20	SLOWING
149	SIGN	E	SUV	ILLNESS	45	GOING STRAIGHT
150	REAR-END	E	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	15	GOING STRAIGHT
151	REAR-END	W	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	SLOWING

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#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
152	119B	46.07	8/31/2015	1520	PDO	1D-15-4084	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
153	119B	46.07	5/6/2016	2140	PDO	1D-16-2040	ON	AT INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
154	119B	46.07	7/8/2016	1545	PDO	1D-16-2974	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
155	119B	46.07	9/4/2017	2250	PDO	1D-17-3981	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
156	119B	46.07	2/20/2018	930	PDO	1D180763	ON	AT INTERSECTION	2	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
157	119B	46.07	9/5/2018	1648	INJ	1D183700	ON	AT INTERSECTION	2	WET	DAYLIGHT	RAIN
158	119B	46.07	3/8/2019	1711	PDO	1D191021	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
159	119B	46.07	2/25/2016	1030	PDO	1D-16-0904	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
160	119B	46.07	3/11/2016	1555	PDO	1D-16-1144	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
161	119B	46.07	2/17/2017	854	PDO	1D-17-0779	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
162	119B	46.07	7/7/2015	1200	INJ	1D-15-3132	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
163	119B	46.07	12/26/2015	2139	PDO	1D-15-6154	ON	AT INTERSECTION	2	DRY W/VIS ICY ROAD TREATMENT	DARK-LIGHTED	NONE
164	119B	46.07	3/27/2018	1830	PDO	1D181294	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
165	119B	46.07	5/5/2018	921	PDO	1D181823	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
166	119B	46.08	7/11/2018	930	PDO	1D182855	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
167	119B	46.08	6/1/2019	750	INJ	1D192291	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
168	119B	46.08	6/12/2016	1203	PDO	1D-16-2579	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
169	119B	46.09	12/14/2015	1115	INJ	1D-15-5912	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
170	119B	46.1	8/15/2019	1255	INJ	1D193356	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
171	119B	46.1	9/21/2016	1415	PDO	1D-16-4197	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
172	119B	46.1	2/24/2017	815	INJ	1D-17-0905	ON	NON-INTERSECTION	2	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
173	119B	46.1	11/27/2015	1525	INJ	1D-15-5642	ON	AT INTERSECTION	2	WET	DAYLIGHT	SNOW/SLEET/HAIL
174	119B	46.1	7/21/2016	1730	PDO	1D-16-3186	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
175	119B	46.1	8/29/2016	1310	INJ	1D-16-3814	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
176	119B	46.1	10/2/2017	900	INJ	1D-17-4424	ON	NON-INTERSECTION	3	WET	DAYLIGHT	RAIN
177	119B	46.1	7/13/2016	825	PDO	1D-16-3047	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
178	119B	46.1	5/31/2019	1140	PDO	1D192278	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
179	119B	46.1	2/27/2019	955	PDO	1D190829	ON	INTERSECTION RELATED	2	WET	DAYLIGHT	SNOW/SLEET/HAIL
180	119B	46.11	12/8/2015	1845	PDO	1D-15-5810	ON	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
181	119B	46.14	4/27/2017	1150	PDO	1D-17-1853	OFF RIGHT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
182	119B	46.17	8/25/2015	1225	INJ		ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	UNKNOWN
183	119B	46.17	11/9/2015	820	INJ	1D-15-5339	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
184	119B	46.17	11/10/2016	1643	PDO	1D-16-5053	ON	NON-INTERSECTION	2	DRY	DAWN OR DUSK	NONE
185	119B	46.17	8/26/2019	905	INJ	1D193530	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
186	119B	46.17	10/16/2017	1840	PDO	1D-17-4649	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
187	119B	46.17	4/23/2017	2145	INJ	1D-17-1803	ON	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
188	119B	46.17	4/16/2016	2215	PDO	1D-16-1734	OFF RIGHT	NON-INTERSECTION	1	SLUSHY	DARK-UNLIGHTED	SNOW/SLEET/HAIL
189	119B	46.17	12/21/2017	1442	INJ	1D-17-5679	OFF RIGHT	NON-INTERSECTION	1	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
190	119B	46.2	5/14/2018	750	PDO	1D181956	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
191	119B	46.2	1/19/2015	1515	INJ	1D-15-0317	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
192	119B	46.2	8/22/2019	910	PDO	1D193462	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
193	119B	46.2	12/16/2019	2031	INJ	1D195281	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
194	119B	46.21	11/8/2017	1244	INJ	1D-17-5015	ON	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
195	119B	46.27	11/14/2018	845	INJ	1D184812	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
196	119B	46.27	10/10/2017	2115	PDO	1D-17-4563	OFF LEFT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
197	119B	46.27	9/7/2017	1750	PDO	1D-17-4033	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
198	119B	46.3	1/23/2019	1515	PDO	1D190309	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	WIND
199	119B	46.37	4/17/2019	2135	INJ	1D191628	ON	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
200	119B	46.47	11/24/2019	1400	PDO	1D194970	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
201	119B	46.5	5/17/2018	1225	PDO	1D182010	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
152	REAR-END	NW	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	SLOWING
153	REAR-END	SW	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	20	GOING STRAIGHT
154	REAR-END	E	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	5	GOING STRAIGHT
155	REAR-END	E	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	15	MAKING RIGHT TURN
156	REAR-END	W	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	15	GOING STRAIGHT
157	REAR-END	E	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	SLOWING
158	REAR-END	E	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	30	GOING STRAIGHT
159	SIDESWIPE (SAME DIRECTION)	W	SUV	NO APPARENT CONTRIBUTING FACTOR	25	MAKING LEFT TURN
160	SIDESWIPE (SAME DIRECTION)	E	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	5	OTHER
161	SIDESWIPE (SAME DIRECTION)	W	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	20	MAKING LEFT TURN
162	APPROACH TURN	E	SUV	DRIVER EMOTIONALLY UPSET	40	GOING STRAIGHT
163	APPROACH TURN	E	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	MAKING LEFT TURN
164	APPROACH TURN	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	MAKING LEFT TURN
165	OVERTAKING TURN	W	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	GOING STRAIGHT
166	REAR-END	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	7	OTHER
167	REAR-END	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	20	SLOWING
168	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
169	REAR-END	S	PASSENGER CAR/VAN	UNKNOWN	10	GOING STRAIGHT
170	REAR-END	S	PICKUP TRUCK/UTILITY VAN	DRIVER UNFAMILIAR WITH AREA	35	GOING STRAIGHT
171	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	SLOWING
172	SIDESWIPE (SAME DIRECTION)	S	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
173	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	CHANGING LANES
174	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	35	GOING STRAIGHT
175	REAR-END	N	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	DRIVER INEXPERIENCE	15	SLOWING
176	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
177	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	SLOWING
178	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
179	REAR-END	NE	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	20	MAKING LEFT TURN
180	WILD ANIMAL	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
181	SIGN	N	PASSENGER CAR/VAN	ILLNESS	55	GOING STRAIGHT
182	REAR-END	SW	PASSENGER CAR/VAN	UNKNOWN	5	GOING STRAIGHT
183	REAR-END	S	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	55	GOING STRAIGHT
184	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	45	GOING STRAIGHT
185	REAR-END	S	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT
186	SIDESWIPE (SAME DIRECTION)	N	SUV	NO APPARENT CONTRIBUTING FACTOR	45	CHANGING LANES
187	WILD ANIMAL	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
188	TREE/SHRUBBERY	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
189	TREE/SHRUBBERY	N	SUV	NO APPARENT CONTRIBUTING FACTOR	55	OTHER
190	REAR-END	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	30	GOING STRAIGHT
191	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
192	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
193	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	45	GOING STRAIGHT
194	WILD ANIMAL	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
195	REAR-END	S	SUV	DRIVER PREOCCUPIED	15	GOING STRAIGHT
196	OVERTURNING	N	SUV	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
197	OVERTURNING	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
198	SIDESWIPE (SAME DIRECTION)	S	PICKUP TRUCK/UTILITY VAN	UNKNOWN	65	CHANGING LANES
199	INVOLVING OTHER OBJECT	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	AVOIDING OBJECT/VEHICLE IN ROAD
200	REAR-END	N	PASSENGER CAR/VAN	ASLEEP AT WHEEL	55	GOING STRAIGHT
201	BROADSIDE	E	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
202	119B	46.5	8/9/2016	1300	PDO	1D-16-3492	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
203	119B	46.5	8/18/2019	1905	INJ	1D193409	OFF RIGHT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
204	119B	46.5	8/31/2019	645	INJ	1D193618	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
205	119B	46.5	1/18/2017	1720	INJ	1D-17-0320	OFF LEFT	NON-INTERSECTION	1	DRY	DAWN OR DUSK	NONE
206	119B	46.6	6/22/2016	850	PDO	1D-16-2730	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
207	119B	46.66	8/9/2016	1215	PDO	1D-16-3490	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
208	119B	46.66	1/11/2015	850	INJ	1D-15-0196	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
209	119B	46.66	12/23/2015	1535	INJ	1D-15-6099	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
210	119B	46.66	10/10/2016	1650	INJ	1D-16-4502	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
211	119B	46.66	6/10/2016	1048	INJ	1D-16-2552	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
212	119B	46.66	1/16/2017	933	PDO	1D-17-0276	ON	NON-INTERSECTION	2	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
213	119B	46.66	12/22/2016	1510	PDO	1D-16-5872	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
214	119B	46.66	1/18/2018	1615	INJ	1D-18-0275	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
215	119B	46.66	1/18/2018	1615	FAT	1D-18-0275	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
216	119B	46.66	2/18/2018	2255	INJ	1D180736	ON	AT INTERSECTION	2	WET	DARK-UNLIGHTED	RAIN
217	119B	46.66	7/17/2019	1139	INJ	1D192902	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
218	119B	46.66	4/28/2018	1440	PDO	1D181718	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
219	119B	46.66	9/22/2018	2310	PDO	1D183970	OFF RIGHT	AT INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
220	119B	46.66	7/1/2017	207	INJ	1D-17-2933	OFF RIGHT	INTERSECTION RELATED	1	DRY	DARK-UNLIGHTED	NONE
221	119B	46.67	3/8/2017	1650	PDO	1D-17-1077	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
222	119B	46.68	12/15/2016	1355	PDO	1D-16-5666	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
223	119B	46.7	2/29/2016	808	PDO	1D-16-0964	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
224	119B	46.7	10/3/2019	915	INJ	1D194147	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
225	119B	46.7	7/7/2015	1625	INJ	1D-15-3138	ON	NON-INTERSECTION	2	WET	DAYLIGHT	RAIN
226	119B	46.7	10/13/2016	1805	PDO	1D-16-4555	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
227	119B	46.7	10/14/2019	900	PDO	1D194332	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
228	119B	46.76	8/9/2016	1630	PDO	1D-16-3498	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
229	119B	46.8	7/24/2015	1530	PDO	1D-15-3436	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
230	119B	46.8	11/28/2018	830	PDO	1D185004	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
231	119B	46.8	6/22/2016	915	PDO	1D-16-2731	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
232	119B	46.8	11/5/2015	2140	PDO	1D-15-5287	ON	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
233	119B	46.98	11/11/2018	805	PDO	1D184754	OFF RIGHT	NON-INTERSECTION	1	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
234	119B	47	10/9/2018	745	PDO	1D184217	ON	NON-INTERSECTION	2	WET	DAYLIGHT	RAIN
235	119B	47	8/22/2016	1120	PDO	1D-16-3705	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
236	119B	47	2/24/2017	720	PDO	1D-17-0903	ON	NON-INTERSECTION	2	SLUSHY	DAYLIGHT	SNOW/SLEET/HAIL
237	119B	47.02	7/24/2018	840	PDO	1D183053	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
238	119B	47.1	11/2/2017	920	PDO	1D-17-4910	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
239	119B	47.2	3/19/2015	1320	INJ	1D-15-1365	ON	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
240	119B	47.2	9/19/2019	900	PDO	1D193921	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
241	119B	47.3	4/16/2018	810	PDO	1D191602	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
242	119B	47.3	9/5/2019	2326	INJ	1D193696	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
243	119B	47.4	1/22/2018	1805	PDO	1D-18-0345	ON	NON-INTERSECTION	2	DRY	DARK-LIGHTED	NONE
244	119B	47.5	12/18/2018	2103	INJ	1D185348	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
245	119B	47.5	8/1/2016	715	INJ	1D-16-3360	ON	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
246	119B	47.5	7/4/2017	2240	INJ	1D-17-2977	ON	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
247	119B	47.6	1/27/2017	1730	INJ	1D-17-0461	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
248	119B	47.64	8/5/2017	1236	INJ	17-09883	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
249	119B	47.65	11/17/2018	900	PDO	1D184859	ON	NON-INTERSECTION	1	SLUSHY	DAYLIGHT	SNOW/SLEET/HAIL
250	119B	47.7	10/11/2015	218	INJ	1D-15-4806	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
251	119B	47.8	11/29/2018	1718	PDO	1D185033	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
202	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	2	GOING STRAIGHT
203	OTHER FIXED OBJECT	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	75	GOING STRAIGHT
204	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	UNKNOWN	55	WEAVING
205	EMBANKMENT CUT/FILL SLOPE	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	55	AVOIDING OBJECT/VEHICLE IN ROAD
206	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
207	BROADSIDE	E	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
208	SIDESWIPE (SAME DIRECTION)	N	SUV	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
209	BROADSIDE	E	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	15	GOING STRAIGHT
210	BROADSIDE	E	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT
211	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
212	SIDESWIPE (SAME DIRECTION)	N	SUV	DRIVER INEXPERIENCE	25	OTHER
213	BROADSIDE	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
214	BROADSIDE	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
215	BROADSIDE	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
216	BROADSIDE	E	SUV	DRIVER INEXPERIENCE	10	GOING STRAIGHT
217	BROADSIDE	S	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	10	GOING STRAIGHT
218	SIDESWIPE (SAME DIRECTION)	SW	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	15	MAKING RIGHT TURN
219	LIGHT/UTILITY POLE	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	MAKING LEFT TURN
220	TREE/SHRUBBERY	S	PASSENGER CAR/VAN	ASLEEP AT WHEEL	55	GOING STRAIGHT
221	REAR-END	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
222	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	25	GOING STRAIGHT
223	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	55	CHANGING LANES
224	SIDESWIPE (SAME DIRECTION)	S	SUV	DRIVER PREOCCUPIED	45	CHANGING LANES
225	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	55	GOING STRAIGHT
226	REAR-END	W	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	WEAVING
227	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
228	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	CHANGING LANES
229	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
230	REAR-END	SW	SUV	UNKNOWN	15	GOING STRAIGHT
231	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	15	GOING STRAIGHT
232	INVOLVING OTHER OBJECT	N	SUV	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
233	FENCE	S	SUV	DRIVER INEXPERIENCE	40	OTHER
234	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
235	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
236	SIDESWIPE (SAME DIRECTION)	N	SUV	ASLEEP AT WHEEL	40	WEAVING
237	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
238	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	60	GOING STRAIGHT
239	OVERTURNING	N	PASSENGER CAR/VAN	UNKNOWN	65	AVOIDING OBJECT/VEHICLE IN ROAD
240	SIGN	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	45	GOING STRAIGHT
241	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
242	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	65	GOING STRAIGHT
243	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	CHANGING LANES
244	PEDESTRIAN	E	OTHER - SEE REPORT	NO APPARENT CONTRIBUTING FACTOR	UK	GOING STRAIGHT
245	OVERTURNING	S	MOTORCYCLE	DRIVER INEXPERIENCE	30	SLOWING
246	WILD ANIMAL	NE	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
247	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	45	OTHER
248	REAR-END	N	PICKUP TRUCK/UTILITY VAN	DRIVER INEXPERIENCE	25	GOING STRAIGHT
249	INVOLVING OTHER OBJECT	NE	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	AVOIDING OBJECT/VEHICLE IN ROAD
250	EMBANKMENT CUT/FILL SLOPE	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
251	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
252	119B	47.88	7/7/2017	1940	FAT	1D-17-3027	ON	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
253	119B	47.9	1/2/2018	1720	PDO	1D-18-0021	ON	INTERSECTION RELATED	2	DRY	DARK-UNLIGHTED	NONE
254	119B	47.99	3/10/2016	1655	PDO	1D-16-1130	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
255	119B	48	9/18/2018	755	INJ	1D183898	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
256	119B	48	11/7/2018	1657	PDO	1D184687	ON	NON-INTERSECTION	2	DRY	DARK-LIGHTED	NONE
257	119B	48	10/6/2015	1635	INJ	1D-15-4721	ON	NON-INTERSECTION	3	WET	DAYLIGHT	NONE
258	119B	48	9/14/2017	1345	PDO	1D-17-4133	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
259	119B	48	4/12/2019	1825	PDO	1D191542	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
260	119B	48	8/29/2017	545	PDO	1D-17-3885	OFF RIGHT	NON-INTERSECTION	1	DRY	DAWN OR DUSK	NONE
261	119B	48	3/7/2019	1800	PDO	1D190990	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
262	119B	48.01	1/2/2015	1215	INJ	1D-15-0031	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
263	119B	48.01	11/11/2018	710	PDO	1D184753	OFF RIGHT	NON-INTERSECTION	1	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
264	119B	48.01	7/15/2016	1050	PDO	1D-16-3088	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
265	119B	48.02	11/8/2017	1918	INJ	1D-17-5024	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
266	119B	48.05	6/19/2016	820	PDO	1D-16-2697	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
267	119B	48.08	3/7/2018	708	PDO	1D181000	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
268	119B	48.1	12/1/2016	1120	PDO	1D-16-5387	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
269	119B	48.1	6/4/2019	1654	PDO	1D192334	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
270	119B	48.1	2/20/2017	1600	PDO	1D-17-0816	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	WIND
271	119B	48.1	8/13/2019	122	PDO	1D193307	OFF LEFT	INTERSECTION RELATED	1	DRY	DARK-LIGHTED	NONE
272	119B	48.11	7/12/2016	1630	PDO	1D-16-3032	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
273	119B	48.16	2/7/2018	911	INJ	1D180550	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
274	119B	48.17	8/30/2018	1822	PDO	1D183609	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
275	119B	48.17	4/11/2019	1655	PDO	1D191527	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
276	119B	48.18	11/27/2019	817	INJ	1D194998	ON	NON-INTERSECTION	2	ICY	DAYLIGHT	NONE
277	119B	48.19	7/16/2019	830	INJ	1D192878	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
278	119B	48.2	6/18/2018	1103	PDO	18-07479	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
279	119B	48.2	5/19/2019	1751	INJ	1D192113	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
280	119B	48.2	7/14/2015	1718	PDO	1D-15-3248	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
281	119B	48.2	1/12/2018	1553	INJ	1D-18-0165	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
282	119B	48.2	12/10/2015	1830	INJ		ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
283	119B	48.2	5/4/2018	1555	INJ	1D181810	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
284	119B	48.2	6/11/2018	1434	PDO	1D182390	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
285	119B	48.2	1/9/2016	1640	PDO	1D-16-0162	ON	AT INTERSECTION	4	DRY	DAYLIGHT	NONE
286	119B	48.2	10/26/2019	1251	PDO	1D194511	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
287	119B	48.2	11/18/2019	1712	INJ	1D194877	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
288	119B	48.2	3/28/2019	1705	PDO	1D191324	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
289	119B	48.21	10/6/2017	935	PDO	17-13169	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
290	119B	48.21	9/28/2015	1710	PDO	15-12531	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
291	119B	48.21	4/14/2018	1710	INJ	18-04497	ON	AT INTERSECTION	2	DRY	DAYLIGHT	UNKNOWN
292	119B	48.21	12/15/2018	105	INJ	1D185294	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
293	119B	48.21	7/23/2015	1745	PDO	1D-15-3415	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
294	119B	48.21	12/17/2015	906	INJ	1D-15-5985	ON	INTERSECTION RELATED	2	ICY W/VIS ICY ROAD TREATMENT	DAYLIGHT	NONE
295	119B	48.21	8/7/2015	2112	INJ	1D-15-3695	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
296	119B	48.21	1/25/2018	1800	PDO	1D180387	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
297	119B	48.21	6/23/2019	2100	PDO	1D192556	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
298	119B	48.21	12/3/2017	1910	PDO	1D-17-5388	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
299	119B	48.21	7/18/2019	1605	PDO	1D192921	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
300	119B	48.21	8/14/2019	1630	PDO	1D193341	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
301	119B	48.21	9/25/2015	1520	PDO	1D-15-4523	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE



## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
252	OVERTURNING	N	MOTORCYCLE	NO APPARENT CONTRIBUTING FACTOR	55	CHANGING LANES
253	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
254	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
255	REAR-END	S	MOTORCYCLE	NO APPARENT CONTRIBUTING FACTOR	25	CHANGING LANES
256	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
257	REAR-END	NE	SUV	NO APPARENT CONTRIBUTING FACTOR	5	ENTERING/LEAVING PARKED POSITION
258	REAR-END	NE	PICKUP TRUCK/UTILITY VAN W/TRAILER	ILLNESS	15	ENTERING/LEAVING PARKED POSITION
259	SIDESWIPE (SAME DIRECTION)	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	45	OTHER
260	SIGN	N	PASSENGER CAR/VAN	ASLEEP AT WHEEL	55	GOING STRAIGHT
261	FENCE	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	OTHER
262	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	15	GOING STRAIGHT
263	SIGN	NE	SUV	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
264	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	MAKING LEFT TURN
265	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	25	SLOWING
266	REAR-END	E	PASSENGER CAR/VAN	UNKNOWN	75	GOING STRAIGHT
267	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	CHANGING LANES
268	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
269	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
270	SIDESWIPE (SAME DIRECTION)	N	SUV	UNKNOWN	55	CHANGING LANES
271	OTHER FIXED OBJECT	N	SUV	UNKNOWN	55	MAKING RIGHT TURN
272	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	CHANGING LANES
273	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
274	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	CHANGING LANES
275	REAR-END	N	SUV	UNKNOWN	10	GOING STRAIGHT
276	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
277	BICYCLE	S	PASSENGER CAR/VAN	UNKNOWN	45	GOING STRAIGHT
278	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	5	SLOWING
279	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
280	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
281	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	50	GOING STRAIGHT
282	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	65	GOING STRAIGHT
283	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
284	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
285	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
286	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
287	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	3	GOING STRAIGHT
288	SIDESWIPE (SAME DIRECTION)	N	SUV	NO APPARENT CONTRIBUTING FACTOR	10	MAKING LEFT TURN
289	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	5	GOING STRAIGHT
290	SIDESWIPE (OPPOSITE DIRECTION)	N	PASSENGER CAR/VAN	ASLEEP AT WHEEL	45	GOING STRAIGHT
291	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	40	GOING STRAIGHT
292	BROADSIDE	N	SUV	UNKNOWN	40	GOING STRAIGHT
293	OVERTAKING TURN	N	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	10	MAKING U-TURN
294	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	5	GOING STRAIGHT
295	BROADSIDE	N	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	25	GOING STRAIGHT
296	BROADSIDE	N	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	20	GOING STRAIGHT
297	BROADSIDE	NE	SUV	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
298	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	10	MAKING LEFT TURN
299	REAR-END	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	5	BACKING
300	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
301	SIDESWIPE (SAME DIRECTION)	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
302	119B	48.21	9/19/2016	1455	PDO	1D-16-4151	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
303	119B	48.21	6/12/2018	1440	PDO	1D182403	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
304	119B	48.21	2/21/2019	1435	PDO	1D190735	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
305	119B	48.21	2/20/2019	1150	PDO	1D190716	ON	AT INTERSECTION	3	DRY	DAYLIGHT	WIND
306	119B	48.21	6/26/2015	1235	INJ	1D-15-2971	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
307	119B	48.21	7/3/2018	345	PDO	1D182714	OFF RIGHT	AT INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
308	119B	48.21	10/20/2018	1936	PDO	1D184410	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
309	119B	48.21	11/6/2018	1510	INJ	1D184673	ON	AT INTERSECTION	3	DRY	DAYLIGHT	NONE
310	119B	48.21	7/26/2018	1630	PDO	1D183089	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
311	119B	48.21	9/5/2018	1310	INJ	1D183697	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
312	119B	48.21	9/26/2018	1800	INJ	1D184034	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
313	119B	48.21	10/29/2018	1200	INJ	1D184537	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
314	119B	48.21	11/27/2018	1655	INJ	1D184989	ON	AT INTERSECTION	4	DRY	DARK-LIGHTED	NONE
315	119B	48.21	12/13/2018	1700	PDO	1D185267	ON	AT INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
316	119B	48.21	7/8/2018	1240	PDO	1D182797	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
317	119B	48.21	7/6/2018	1040	INJ	1D182761	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
318	119B	48.21	11/3/2018	1815	INJ	1D184633	ON	AT INTERSECTION	3	DRY	DARK-LIGHTED	NONE
319	119B	48.21	10/4/2018	1950	PDO	1D184155	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
320	119B	48.21	7/5/2019	750	PDO	1D192730	ON	AT INTERSECTION	3	DRY	DAYLIGHT	NONE
321	119B	48.21	8/6/2019	1045	INJ	1D193198	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
322	119B	48.21	1/21/2018	814	INJ	1D-18-0321	ON	AT INTERSECTION	2	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
323	119B	48.21	12/2/2019	1742	INJ	1D195080	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
324	119B	48.21	12/3/2019	2215	PDO	1D195092	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
325	119B	48.21	12/17/2015	1240	PDO	1D-15-5989	OFF RIGHT	INTERSECTION RELATED	1	SNOWY	DAYLIGHT	NONE
326	119B	48.21	12/17/2016	1132	PDO	1D-16-5722	OFF LEFT	INTERSECTION RELATED	1	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
327	119B	48.21	8/6/2015	950	INJ	1D-15-3663	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
328	119B	48.21	9/20/2016	1145	PDO	1D-16-4166	ON	AT INTERSECTION	1	DRY	DAYLIGHT	NONE
329	119B	48.21	6/30/2019	930	PDO	1D192655	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
330	119B	48.21	10/4/2019	1952	PDO	1D194181	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
331	119B	48.21	9/11/2015	1220	INJ	1D-15-4280	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
332	119B	48.21	8/25/2016	1735	INJ	1D-16-3755	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
333	119B	48.21	3/30/2017	1155	PDO	1D-17-1418	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
334	119B	48.21	5/20/2017	1050	PDO	1D-17-2234	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
335	119B	48.21	6/4/2018	1705	PDO	1D182302	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
336	119B	48.21	11/11/2019	1120	PDO	1D194773	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
337	119B	48.21	8/26/2015	1350	PDO	1D-15-4000	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	UNKNOWN
338	119B	48.21	9/26/2017	2330	INJ	1D-17-4346	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
339	119B	48.21	2/20/2018	855	INJ	1D180761	ON	AT INTERSECTION	2	SNOWY	DAYLIGHT	NONE
340	119B	48.21	1/9/2019	2135	PDO	1D190129	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
341	119B	48.21	4/10/2017	1230	PDO	1D-17-1580	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
342	119B	48.21	1/24/2019	1040	INJ	1D190324	ON	AT INTERSECTION	3	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
343	119B	48.21	7/5/2017	1815	PDO	1D-17-2996	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
344	119B	48.21	12/21/2017	550	PDO	1D-17-5666	OFF RIGHT	AT INTERSECTION	1	SNOWY	DARK-UNLIGHTED	SNOW/SLEET/HAIL
345	119B	48.21	3/21/2017	1255	PDO	1D-17-1306	OFF LEFT	AT INTERSECTION	1	DRY	DAYLIGHT	NONE
346	119B	48.21	4/19/2017	1605	PDO	1D-17-1733	OFF LEFT	AT INTERSECTION	1	DRY	DAYLIGHT	NONE
347	119B	48.21	3/4/2015	500	INJ	1D-15-1115	OFF LEFT	AT INTERSECTION	1	SNOWY	DARK-LIGHTED	SNOW/SLEET/HAIL
348	119B	48.21	8/5/2016	1130	PDO	1D-16-3422	OFF RIGHT	AT INTERSECTION	1	DRY	DAYLIGHT	NONE
349	119B	48.21	12/6/2016	2200	PDO	1D-16-5467	OFF RIGHT	AT INTERSECTION	1	ICY	DARK-LIGHTED	SNOW/SLEET/HAIL
350	119B	48.21	3/23/2016	1350	PDO	1D-16-1340	OFF RIGHT	AT INTERSECTION	1	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
351	119B	48.22	11/11/2019	750	PDO	1D194769	ON	INTERSECTION RELATED	2	ICY	DAYLIGHT	SNOW/SLEET/HAIL

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
302	SIDESWIPE (SAME DIRECTION)	S	SUV	DRIVER INEXPERIENCE	30	MAKING LEFT TURN
303	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	CHANGING LANES
304	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	MAKING LEFT TURN
305	OVERTAKING TURN	N	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	OTHER
306	BICYCLE	S	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	5	MAKING RIGHT TURN
307	CURB/RAISED MEDIAN	N	PASSENGER CAR/VAN	ILLNESS	30	GOING STRAIGHT
308	BROADSIDE	N	SUV	DRIVER INEXPERIENCE	30	GOING STRAIGHT
309	BROADSIDE	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
310	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	45	GOING STRAIGHT
311	REAR-END	SW	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	5	ENTERING/LEAVING PARKED POSITION
312	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
313	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
314	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	40	GOING STRAIGHT
315	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	55	GOING STRAIGHT
316	OVERTAKING TURN	N	SUV	DRIVER PREOCCUPIED	55	MAKING LEFT TURN
317	BICYCLE	S	PICKUP TRUCK/UTILITY VAN	DRIVER UNFAMILIAR WITH AREA	5	MAKING RIGHT TURN
318	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	40	GOING STRAIGHT
319	SIDESWIPE (SAME DIRECTION)	W	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	10	MAKING LEFT TURN
320	BROADSIDE	N	SUV	DRIVER UNFAMILIAR WITH AREA	40	GOING STRAIGHT
321	BROADSIDE	W	PASSENGER CAR/VAN	DRIVER EMOTIONALLY UPSET	55	GOING STRAIGHT
322	HEAD-ON	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
323	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
324	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	15	GOING STRAIGHT
325	OTHER FIXED OBJECT	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	35	MAKING RIGHT TURN
326	OTHER FIXED OBJECT	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	50	MAKING RIGHT TURN
327	OVERTURNING	NE	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	GOING STRAIGHT
328	OVERTURNING	E	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	DRIVER INEXPERIENCE	15	MAKING LEFT TURN
329	BROADSIDE	E	SUV	DRIVER UNFAMILIAR WITH AREA	55	GOING STRAIGHT
330	BROADSIDE	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
331	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
332	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	3	GOING STRAIGHT
333	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	MAKING RIGHT TURN
334	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT
335	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	MAKING LEFT TURN
336	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	10	WEAVING
337	SIDESWIPE (SAME DIRECTION)	SW	PICKUP TRUCK/UTILITY VAN	UNKNOWN	20	MAKING LEFT TURN
338	SIDESWIPE (SAME DIRECTION)	N	SUV	UNKNOWN	55	GOING STRAIGHT
339	SIDESWIPE (SAME DIRECTION)	W	PICKUP TRUCK/UTILITY VAN W/TRAILER	DRIVER PREOCCUPIED	15	CHANGING LANES
340	SIDESWIPE (SAME DIRECTION)	S	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	UNKNOWN	20	MAKING LEFT TURN
341	SIDESWIPE (OPPOSITE DIRECTION)	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	40	GOING STRAIGHT
342	SIDESWIPE (OPPOSITE DIRECTION)	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	35	GOING STRAIGHT
343	APPROACH TURN	S	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	GOING STRAIGHT
344	SIGN	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
345	DELINEATOR POST	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	MAKING LEFT TURN
346	DELINEATOR POST	S	PASSENGER CAR/VAN	UNKNOWN	60	MAKING RIGHT TURN
347	OTHER FIXED OBJECT	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	20	MAKING RIGHT TURN
348	OTHER FIXED OBJECT	N	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	DRIVER INEXPERIENCE	10	MAKING RIGHT TURN
349	OTHER FIXED OBJECT	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	35	MAKING RIGHT TURN
350	OTHER FIXED OBJECT	N	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	DRIVER INEXPERIENCE	5	MAKING RIGHT TURN
351	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
352	119B	48.22	7/23/2015	40	PDO	1D-15-3399	OFF LEFT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
353	119B	48.22	4/18/2019	1050	INJ	1D191635	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
354	119B	48.22	3/21/2018	615	PDO	1D181203	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
355	119B	48.23	4/18/2019	1050	PDO	1D191636	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
356	119B	48.23	1/3/2017	815	PDO	1D-17-0030	ON	INTERSECTION RELATED	2	ICY	DAYLIGHT	SNOW/SLEET/HAIL
357	119B	48.23	10/20/2017	1630	PDO	1D-17-4703	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
358	119B	48.23	9/13/2016	1705	PDO	1D-16-4052	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
359	119B	48.23	2/8/2018	1045	INJ	1D180571	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
360	119B	48.24	2/17/2015	1310	INJ	1D-15-0836	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
361	119B	48.24	2/9/2017	1841	PDO	1D-17-0672	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
362	119B	48.27	5/27/2015	2115	INJ	1D-15-2477	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
363	119B	48.27	9/2/2015	1957	PDO	1D-15-4138	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
364	119B	48.27	4/1/2015	1515	PDO	1D-15-1568	OFF LEFT	INTERSECTION RELATED	1	DRY	DAYLIGHT	NONE
365	119B	48.27	5/17/2015	1600	PDO	1D-15-2315	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
366	119B	48.27	2/16/2015	1900	PDO	1D-15-0808	OFF LEFT	AT INTERSECTION	1	SNOWY	DARK-UNLIGHTED	SNOW/SLEET/HAIL
367	119B	48.27	2/22/2015	1545	INJ	1D-15-0933	ON	INTERSECTION RELATED	3	ICY	DAYLIGHT	NONE
368	119B	48.27	9/26/2017	1458	INJ	17-12730	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
369	119B	48.27	2/17/2015	950	PDO	15-1971	OFF LEFT	NON-INTERSECTION	2	ICY	DAYLIGHT	NONE
370	119B	48.27	2/17/2015	850	PDO	15-1978	OFF LEFT	AT INTERSECTION	1	ICY	DAYLIGHT	NONE
371	119B	48.27	11/13/2015	723	PDO	1D-15-5395	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
372	119B	48.27	10/18/2016	2240	PDO	1D-16-4651	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
373	119B	48.27	10/6/2015	1630	INJ	1D-15-4720	ON	AT INTERSECTION	2	WET	DAYLIGHT	NONE
374	119B	48.27	5/8/2017	1520	INJ	1D-17-2019	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
375	119B	48.29	2/5/2019	1440	INJ	1D190495	ON	NON-INTERSECTION	5	DRY	DAYLIGHT	NONE
376	119B	48.3	10/5/2016	840	PDO	1D-16-4426	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
377	119B	48.3	8/6/2019	1822	INJ	1D193210	ON	NON-INTERSECTION	4	DRY	DAYLIGHT	NONE
378	119B	48.3	10/21/2019	1150	PDO	1D194421	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
379	119B	48.31	8/22/2017	1645	PDO	1D-17-3771	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
380	119B	48.31	8/5/2015	910	INJ	1D-15-3639	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
381	119B	48.31	10/31/2016	1640	PDO	1D-16-4877	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
382	119B	48.31	1/9/2018	1745	PDO	1D-18-0127	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
383	119B	48.33	5/17/2017	915	PDO	1D-17-2177	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
384	119B	48.37	2/19/2015	829	PDO	1D-15-0868	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
385	119B	48.37	2/10/2015	600	INJ	1D-15-0670	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
386	119B	48.37	5/20/2015	720	PDO	1D-15-2346	ON	NON-INTERSECTION	2	WET	DAYLIGHT	RAIN
387	119B	48.37	2/10/2015	711	PDO	1D-15-0671	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
388	119B	48.37	10/30/2015	835	INJ	1D-15-5154	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
389	119B	48.37	2/28/2017	1820	PDO	1D-17-0957	ON	INTERSECTION RELATED	2	DRY	DARK-UNLIGHTED	NONE
390	119B	48.4	2/11/2016	1445	PDO	1D-16-0688	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
391	119B	48.4	8/26/2019	1720	PDO	1D193535	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
392	119B	48.41	8/16/2017	720	INJ	1D-17-3663	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
393	119B	48.41	10/17/2017	1700	PDO	1D-17-4657	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
394	119B	48.41	12/20/2017	1728	PDO	1D-17-5657	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
395	119B	48.41	8/12/2015	1730	PDO	1D-15-3770	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
396	119B	48.41	6/13/2018	825	PDO	1D182417	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
397	119B	48.44	3/15/2019	1656	INJ	1D191144	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
398	119B	48.47	4/2/2015	1250	INJ	1D-15-1582	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
399	119B	48.5	6/26/2017	1530	PDO	1D-17-2856	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
400	119B	48.5	1/17/2019	110	PDO	1D190226	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-LIGHTED	NONE
401	119B	48.51	9/3/2018	1558	PDO	1D183660	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
352	SIGN	SW	PASSENGER CAR/VAN	UNKNOWN	55	GOING STRAIGHT
353	REAR-END	S	SUV	DRIVER PREOCCUPIED	15	GOING STRAIGHT
354	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	MAKING RIGHT TURN
355	REAR-END	SW	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	35	SLOWING
356	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
357	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	CHANGING LANES
358	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	30	GOING STRAIGHT
359	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	50	GOING STRAIGHT
360	REAR-END	N	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	55	GOING STRAIGHT
361	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	40	MAKING RIGHT TURN
362	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	BACKING
363	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
364	SIGN	SW	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	10	MAKING LEFT TURN
365	BROADSIDE	W	SUV	DRIVER PREOCCUPIED	35	GOING STRAIGHT
366	OTHER FIXED OBJECT	NE	PICKUP TRUCK/UTILITY VAN	DRIVER UNFAMILIAR WITH AREA	15	MAKING RIGHT TURN
367	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
368	REAR-END	W	PASSENGER CAR/VAN	UNKNOWN	55	GOING STRAIGHT
369	PARKED MOTOR VEHICLE	E	PASSENGER CAR/VAN	UNKNOWN	20	MAKING RIGHT TURN
370	OTHER FIXED OBJECT	E	PASSENGER CAR/VAN	UNKNOWN	20	MAKING RIGHT TURN
371	REAR-END	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	5	MAKING RIGHT TURN
372	BROADSIDE	NE	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
373	REAR-END	NE	PICKUP TRUCK/UTILITY VAN	DRIVER UNFAMILIAR WITH AREA	45	GOING STRAIGHT
374	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
375	SIDESWIPE (SAME DIRECTION)	W	PASSENGER CAR/VAN	UNKNOWN	55	WEAVING
376	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
377	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	65	GOING STRAIGHT
378	GUARD RAIL	N	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	55	OTHER
379	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
380	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
381	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	30	GOING STRAIGHT
382	REAR-END	N	PASSENGER CAR/VAN	DISTRACTED BY PASSENGER	5	GOING STRAIGHT
383	REAR-END	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	20	GOING STRAIGHT
384	OTHER NON-COLLISION	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
385	REAR-END	S	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT
386	REAR-END	S	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	55	GOING STRAIGHT
387	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	CHANGING LANES
388	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
389	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
390	SIDESWIPE (SAME DIRECTION)	N	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	55	WEAVING
391	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
392	BICYCLE	N	BICYCLE	DRIVER INEXPERIENCE	20	CHANGING LANES
393	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	55	GOING STRAIGHT
394	REAR-END	N	SUV	DRIVER PREOCCUPIED	45	GOING STRAIGHT
395	REAR-END	N	PASSENGER CAR/VAN	DISTRACTED BY PASSENGER	25	GOING STRAIGHT
396	REAR-END	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
397	SIDESWIPE (SAME DIRECTION)	N	NON-SCHOOL BUS < 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	40	CHANGING LANES
398	REAR-END	SW	SUV	NO APPARENT CONTRIBUTING FACTOR	UK	GOING STRAIGHT
399	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
400	GUARD RAIL	N	SUV	UNKNOWN	60	GOING STRAIGHT
401	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	10	SLOWING

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
402	119B	48.6	12/6/2018	1640	PDO	1D185156	ON	NON-INTERSECTION	2	DRY	DAWN OR DUSK	NONE
403	119B	48.6	7/12/2015	2236	INJ	1D-15-3202	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
404	119B	48.6	2/16/2016	1830	PDO	1D-16-0761	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
405	119B	48.61	1/14/2016	1700	PDO	1D-16-0232	ON	NON-INTERSECTION	2	DRY	DAWN OR DUSK	NONE
406	119B	48.7	10/13/2016	1110	PDO	1D-16-4544	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
407	119B	48.7	4/26/2018	1635	PDO	1D181697	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
408	119B	48.7	4/30/2019	1605	INJ	1D191815	ON	NON-INTERSECTION	4	WET	DAYLIGHT	RAIN
409	119B	48.7	1/17/2019	1807	INJ	1D190238	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
410	119B	48.71	11/28/2018	1550	PDO	1D185011	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
411	119B	48.71	10/26/2015	300	PDO	1D-15-5088	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
412	119B	48.71	2/4/2018	840	PDO	1D180513	ON	NON-INTERSECTION	2	ICY	DAYLIGHT	SNOW/SLEET/HAIL
413	119B	48.77	7/1/2015	1650	PDO	1D-15-3054	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
414	119B	48.8	11/13/2018	1730	PDO	1D184799	ON	NON-INTERSECTION	3	DRY	DARK-UNLIGHTED	NONE
415	119B	48.8	8/1/2016	1430	PDO	1D-16-3367	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
416	119B	48.8	9/29/2016	1520	INJ	1D-16-4327	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
417	119B	48.81	4/18/2018	1920	PDO	1D181584	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
418	119B	48.9	3/18/2018	1825	INJ	1D181163	OFF RIGHT	NON-INTERSECTION	1	WET	DAWN OR DUSK	RAIN
419	119B	48.9	5/31/2016	1430	INJ	1D-16-2391	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
420	119B	48.9	9/14/2016	650	PDO	1D-16-4058	ON	NON-INTERSECTION	4	DRY	DAYLIGHT	NONE
421	119B	48.9	11/1/2016	1454	PDO	1D-16-4895	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
422	119B	48.9	11/28/2016	1720	PDO	1D-16-5337	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
423	119B	48.99	9/12/2018	1552	INJ	1D183806	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
424	119B	48.99	8/14/2018	1700	PDO	1D183371	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
425	119B	49	8/29/2018	1739	PDO	1D183590	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
426	119B	49	10/10/2018	1706	INJ	1D184253	ON	NON-INTERSECTION	2	WET	DAYLIGHT	SNOW/SLEET/HAIL
427	119B	49	12/7/2018	1414	PDO	1D185175	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
428	119B	49	12/14/2018	1604	INJ	1D185285	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
429	119B	49	1/27/2015	1120	PDO	1D-15-0439	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
430	119B	49	11/6/2018	1745	PDO	1D184676	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
431	119B	49	5/28/2019	1724	INJ	1D192248	ON	NON-INTERSECTION	2	WET	DAYLIGHT	RAIN
432	119B	49	9/30/2016	1414	PDO	1D-16-4342	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
433	119B	49.04	1/18/2017	1705	PDO	1D-17-0319	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
434	119B	49.04	6/20/2018	1045	INJ	1D182526	ON	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
435	119B	49.05	9/15/2017	1445	INJ	1D-17-4157	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
436	119B	49.1	10/2/2018	1701	PDO	1D184127	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
437	119B	49.1	12/7/2018	1358	PDO	1D185174	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
438	119B	49.1	12/20/2016	1750	INJ	1D-16-5833	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
439	119B	49.1	4/14/2015	1530	INJ	1D-15-1783	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
440	119B	49.1	7/11/2016	1456	PDO	1D-16-3016	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	WIND
441	119B	49.1	1/7/2018	1735	PDO	1D-18-0103	ON	INTERSECTION RELATED	2	DRY	DARK-UNLIGHTED	NONE
442	119B	49.1	6/14/2018	1624	INJ	1D182441	ON	NON-INTERSECTION	4	DRY	DAYLIGHT	NONE
443	119B	49.1	3/11/2019	1445	PDO	1D191059	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
444	119B	49.1	9/6/2019	1607	INJ	1D193707	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
445	119B	49.1	12/6/2019	1755	PDO	1D195138	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
446	119B	49.13	9/26/2019	1815	PDO	1D194054	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
447	119B	49.2	9/25/2018	1702	PDO	1D184010	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
448	119B	49.2	10/2/2018	1435	PDO	1D184120	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
449	119B	49.2	6/24/2019	8	PDO	1D192558	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
450	119B	49.2	8/11/2016	1807	PDO	1D-16-3540	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
451	119B	49.2	6/23/2017	1525	PDO	1D-17-2809	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
402	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	30	GOING STRAIGHT
403	PEDESTRIAN	E	OTHER - SEE REPORT	NO APPARENT CONTRIBUTING FACTOR	UK	GOING STRAIGHT
404	SIDESWIPE (SAME DIRECTION)	N	SUV	NO APPARENT CONTRIBUTING FACTOR	55	CHANGING LANES
405	REAR-END	NE	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	55	GOING STRAIGHT
406	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
407	REAR-END	N	PASSENGER CAR/VAN	DISTRACTED BY PASSENGER	15	GOING STRAIGHT
408	REAR-END	N	SUV	DRIVER PREOCCUPIED	35	GOING STRAIGHT
409	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	40	CHANGING LANES
410	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
411	BRIDGE RAIL	N	SUV	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
412	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
413	SIDESWIPE (SAME DIRECTION)	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	55	PASSING
414	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	45	GOING STRAIGHT
415	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	35	GOING STRAIGHT
416	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	40	GOING STRAIGHT
417	OTHER NON-COLLISION	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	OTHER
418	LIGHT/UTILITY POLE	S	SUV	UNKNOWN	67	OTHER
419	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	40	GOING STRAIGHT
420	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
421	REAR-END	S	SUV	DRIVER PREOCCUPIED	25	GOING STRAIGHT
422	REAR-END	N	PASSENGER CAR/VAN	DRIVER FATIGUE	30	CHANGING LANES
423	REAR-END	N	PICKUP TRUCK/UTILITY VAN	DRIVER INEXPERIENCE	30	GOING STRAIGHT
424	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
425	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
426	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
427	REAR-END	NE	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	35	GOING STRAIGHT
428	REAR-END	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
429	VEHICLE CARGO/DEBRIS	S	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
430	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	35	GOING STRAIGHT
431	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
432	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	UNKNOWN	10	CHANGING LANES
433	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
434	WILD ANIMAL	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	60	GOING STRAIGHT
435	REAR-END	NE	SUV	UNKNOWN	UK	GOING STRAIGHT
436	REAR-END	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
437	INVOLVING OTHER OBJECT	NE	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
438	REAR-END	N	PASSENGER CAR/VAN	DRIVER EMOTIONALLY UPSET	15	GOING STRAIGHT
439	REAR-END	NE	PASSENGER CAR/VAN	DRIVER FATIGUE	10	GOING STRAIGHT
440	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	30	CHANGING LANES
441	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	10	BACKING
442	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	50	GOING STRAIGHT
443	REAR-END	NE	SUV	DRIVER INEXPERIENCE	30	GOING STRAIGHT
444	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
445	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	70	GOING STRAIGHT
446	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
447	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
448	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	40	GOING STRAIGHT
449	REAR-END	E	OTHER - SEE REPORT	UNKNOWN	55	GOING STRAIGHT
450	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	25	GOING STRAIGHT
451	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
452	119B	49.2	7/16/2019	1507	INJ	1D192886	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
453	119B	49.2	8/29/2019	1855	INJ	1D193590	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
454	119B	49.2	9/23/2019	1855	INJ	1D194000	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
455	119B	49.2	11/5/2019	1110	PDO	1D194663	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
456	119B	49.2	2/23/2017	2215	PDO	1D-17-0900	ON	NON-INTERSECTION	1	SNOWY	DARK-UNLIGHTED	SNOW/SLEET/HAIL
457	119B	49.2	4/16/2019	1045	PDO	1D191606	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
458	119B	49.2	9/9/2019	1255	PDO	1D193754	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
459	119B	49.2	4/7/2017	550	PDO	1D-17-1530	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
460	119B	49.2	3/5/2019	1030	PDO	1D190963	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
461	119B	49.2	3/25/2019	2150	PDO	1D191289	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
462	119B	49.21	12/6/2016	1454	INJ	1D-16-5444	ON	INTERSECTION RELATED	4	DRY	DAYLIGHT	NONE
463	119B	49.3	11/27/2017	1510	PDO	1D-17-5300	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
464	119B	49.34	11/1/2016	1725	INJ	1D-16-4897	ON	NON-INTERSECTION	2	DRY	DAWN OR DUSK	NONE
465	119B	49.34	12/3/2016	1825	PDO	1D-16-5422	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
466	119B	49.4	8/30/2018	1330	INJ	1D183604	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
467	119B	49.4	7/7/2016	830	INJ	1D-16-2955	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
468	119B	49.4	7/9/2019	1450	PDO	1D192784	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
469	119B	49.4	1/31/2018	905	INJ	1D180460	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
470	119B	49.42	1/25/2017	1810	PDO	1D-17-0428	ON	INTERSECTION RELATED	3	DRY	DARK-UNLIGHTED	NONE
471	119B	49.44	9/26/2018	1635	INJ	1D184030	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
472	119B	49.44	4/13/2016	2120	PDO	1D-16-1683	OFF LEFT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
473	119B	49.44	11/23/2015	1625	PDO	1D-15-5589	ON	NON-INTERSECTION	2	DRY	DAWN OR DUSK	NONE
474	119B	49.44	12/8/2015	1816	PDO	1D-15-5809	ON	INTERSECTION RELATED	2	DRY	DARK-UNLIGHTED	NONE
475	119B	49.44	1/3/2018	1625	INJ	1D-18-0033	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
476	119B	49.44	8/5/2015	1425	INJ	1D-15-3646	ON	INTERSECTION RELATED	4	DRY	DAYLIGHT	NONE
477	119B	49.44	5/12/2017	1700	INJ	1D-17-2081	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
478	119B	49.45	2/9/2016	1515	PDO	1D-16-0661	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
479	119B	49.45	1/28/2017	1416	INJ	1D-17-0480	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
480	119B	49.45	2/7/2018	1710	INJ	1D180556	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
481	119B	49.5	7/23/2015	1715	PDO	1D-15-3411	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
482	119B	49.5	6/10/2016	1600	PDO	1D-16-2561	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
483	119B	49.53	7/20/2018	900	PDO	1D182983	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
484	119B	49.53	7/10/2018	1506	INJ	1D182841	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
485	119B	49.53	8/29/2018	1540	INJ	1D183588	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
486	119B	49.53	9/17/2018	1757	INJ	1D183889	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
487	119B	49.53	2/1/2017	1040	PDO	1D-17-0534	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
488	119B	49.53	1/31/2015	2210	PDO	1D-15-0502	ON	INTERSECTION RELATED	2	ICY	DARK-UNLIGHTED	SNOW/SLEET/HAIL
489	119B	49.53	2/15/2019	1315	INJ	1D190651	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
490	119B	49.53	2/5/2019	1600	PDO	1D190497	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
491	119B	49.54	11/23/2018	1404	INJ	1D184945	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
492	119B	49.54	10/9/2018	1305	PDO	1D184224	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
493	119B	49.54	11/16/2018	1145	PDO	1D184849	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
494	119B	49.54	2/17/2015	628	INJ	1D-15-0821	ON	AT INTERSECTION	3	ICY	DARK-LIGHTED	NONE
495	119B	49.54	2/23/2015	1400	INJ	1D-15-0955	ON	AT INTERSECTION	2	WET	DAYLIGHT	NONE
496	119B	49.54	5/26/2015	1300	PDO	1D-15-2443	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
497	119B	49.54	12/5/2016	1440	PDO	1D-16-5445	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
498	119B	49.54	5/18/2015	1245	PDO	1D-15-2323	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
499	119B	49.54	2/14/2016	1220	INJ	1D-16-0738	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
500	119B	49.54	6/13/2016	1419	INJ	1D-16-2596	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
501	119B	49.54	12/10/2017	1545	PDO	1D-17-5505	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE



## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
452	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
453	REAR-END	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
454	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
455	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
456	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	UK	CHANGING LANES
457	SIDESWIPE (SAME DIRECTION)	S	PICKUP TRUCK/UTILITY VAN	UNKNOWN	67	PASSING
458	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	OTHER
459	SIGN	S	SUV	ASLEEP AT WHEEL	55	WEAVING
460	REAR-END	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
461	SIDESWIPE (SAME DIRECTION)	W	SUV	NO APPARENT CONTRIBUTING FACTOR	20	MAKING LEFT TURN
462	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	55	GOING STRAIGHT
463	REAR-END	NE	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
464	REAR-END	N	PICKUP TRUCK/UTILITY VAN	DRIVER FATIGUE	10	GOING STRAIGHT
465	REAR-END	N	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
466	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	55	GOING STRAIGHT
467	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	15	SLOWING
468	REAR-END	NE	NON-SCHOOL BUS < 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	10	ENTERING/LEAVING PARKED POSITION
469	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	2	GOING STRAIGHT
470	REAR-END	N	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT
471	REAR-END	N	SUV	DRIVER PREOCCUPIED	15	GOING STRAIGHT
472	OVERTURNING	S	SUV	UNKNOWN	55	GOING STRAIGHT
473	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	20	GOING STRAIGHT
474	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	35	GOING STRAIGHT
475	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	20	GOING STRAIGHT
476	REAR-END	N	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	UNKNOWN	55	GOING STRAIGHT
477	REAR-END	N	SUV	DRIVER PREOCCUPIED	10	GOING STRAIGHT
478	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
479	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	20	GOING STRAIGHT
480	REAR-END	N	SUV	DRIVER PREOCCUPIED	45	GOING STRAIGHT
481	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	30	GOING STRAIGHT
482	REAR-END	N	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	35	SLOWING
483	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
484	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	55	GOING STRAIGHT
485	REAR-END	N	SUV	DRIVER PREOCCUPIED	50	GOING STRAIGHT
486	REAR-END	N	PASSENGER CAR/VAN	DISTRACTED BY PASSENGER	40	GOING STRAIGHT
487	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
488	REAR-END	N	SUV	DRIVER INEXPERIENCE	5	GOING STRAIGHT
489	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
490	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
491	BROADSIDE	N	SUV	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
492	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT
493	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
494	BROADSIDE	N	SUV	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
495	BROADSIDE	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
496	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	25	GOING STRAIGHT
497	REAR-END	N	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	45	GOING STRAIGHT
498	BROADSIDE	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	10	MAKING LEFT TURN
499	BROADSIDE	N	SUV	DRIVER INEXPERIENCE	50	GOING STRAIGHT
500	BROADSIDE	N	SUV	DRIVER PREOCCUPIED	40	GOING STRAIGHT
501	BROADSIDE	N	SUV	UNKNOWN	50	GOING STRAIGHT

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
502	119B	49.54	3/2/2019	1640	INJ	1D190900	ON	AT INTERSECTION	2	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
503	119B	49.54	4/24/2019	711	PDO	1D191737	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
504	119B	49.54	5/28/2019	1724	INJ	1D192249	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
505	119B	49.54	10/13/2015	1119	PDO	1D-15-4843	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
506	119B	49.54	1/25/2016	753	PDO	1D-16-0388	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
507	119B	49.54	9/30/2016	600	PDO	1D-16-4316	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
508	119B	49.54	10/19/2016	1645	PDO	1D-16-4663	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
509	119B	49.54	7/24/2017	1820	PDO	1D-17-3310	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
510	119B	49.54	1/5/2018	1200	PDO	1D-18-0065	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
511	119B	49.54	11/8/2019	1106	PDO	1D194714	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
512	119B	49.54	6/15/2016	715	PDO	1D-16-2618	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
513	119B	49.54	10/5/2016	630	PDO	1D-16-4418	ON	AT INTERSECTION	2	DRY	DAWN OR DUSK	NONE
514	119B	49.54	6/8/2017	2350	PDO	1D-17-2561	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
515	119B	49.54	4/8/2018	1105	INJ	1D181457	ON	AT INTERSECTION	2	DRY	DAYLIGHT	WIND
516	119B	49.54	4/19/2016	2124	PDO	1D-16-1779	ON	AT DRIVEWAY ACCESS	2	DRY	DARK-LIGHTED	NONE
517	119B	49.54	1/3/2019	845	PDO	1D190032	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
518	119B	49.54	2/7/2019	1515	PDO	1D190542	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
519	119B	49.54	8/31/2019	2210	PDO	1D193629	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
520	119B	49.54	1/18/2018	1800	PDO	1D-18-0280	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
521	119B	49.55	9/5/2018	601	PDO	1D183686	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
522	119B	49.55	10/19/2018	850	INJ	1D184386	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
523	119B	49.55	7/11/2016	1535	INJ	1D-16-3017	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
524	119B	49.55	7/5/2017	740	PDO	1D-17-2982	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
525	119B	49.55	10/19/2016	849	INJ	1D-16-4655	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
526	119B	49.55	3/21/2017	710	PDO	1D-17-1299	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
527	119B	49.57	5/10/2019	1551	INJ	1D191966	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
528	119B	49.6	8/16/2018	1851	INJ	1D183411	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
529	119B	49.6	8/18/2017	824	INJ	1D-17-3707	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
530	119B	49.61	11/1/2016	2210	INJ	1D-16-4901	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
531	119B	49.64	3/13/2015	700	PDO	1D-15-1269	ON	NON-INTERSECTION	2	DRY	DAWN OR DUSK	NONE
532	119B	49.64	3/17/2017	1500	PDO	1D-17-1241	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
533	119B	49.7	3/16/2015	750	PDO	1D-15-1324	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
534	119B	49.72	8/4/2017	1330	INJ	1D-17-3475	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
535	119B	49.74	3/8/2017	1630	INJ	1D-17-1075	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
536	119B	49.74	10/26/2017	640	PDO	1D-17-4787	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
537	119B	49.78	4/24/2015	850	INJ	1D-15-1952	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
538	119B	49.8	12/7/2018	635	PDO	1D185168	ON	NON-INTERSECTION	4	DRY	DAYLIGHT	NONE
539	119B	49.8	7/23/2015	730	INJ	1D-15-3403	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
540	119B	49.81	9/27/2018	1640	INJ	1D184050	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
541	119B	49.81	11/13/2018	835	INJ	1D184784	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
542	119B	49.81	1/7/2016	640	PDO	1D-16-0102	ON	NON-INTERSECTION	2	DRY	DAWN OR DUSK	NONE
543	119B	49.83	5/11/2017	900	PDO	1D-17-2058	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
544	119B	49.83	2/11/2016	655	PDO	1D-16-0678	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
545	119B	49.84	11/30/2016	1722	PDO	1D-16-5373	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
546	119B	49.84	12/4/2017	1745	PDO	1D-17-5404	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
547	119B	49.9	12/7/2018	635	PDO	1D185169	ON	NON-INTERSECTION	4	DRY	DAWN OR DUSK	NONE
548	119B	49.9	4/26/2017	843	PDO	1D-17-1836	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
549	119B	49.9	3/19/2018	1120	PDO	1D181178	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
550	119B	49.9	12/6/2016	730	PDO	1D-16-5453	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
551	119B	49.9	1/28/2019	455	PDO	1D190372	OFF RIGHT	NON-INTERSECTION	1	SNOWY	DARK-UNLIGHTED	SNOW/SLEET/HAIL

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
502	BROADSIDE	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	30	SLOWING
503	BROADSIDE	N	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	DRIVER PREOCCUPIED	55	SLOWING
504	BROADSIDE	S	SUV	DRIVER PREOCCUPIED	55	GOING STRAIGHT
505	REAR-END	NE	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	BACKING
506	REAR-END	SW	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT
507	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	35	GOING STRAIGHT
508	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	55	GOING STRAIGHT
509	REAR-END	N	PICKUP TRUCK/UTILITY VAN	UNKNOWN	45	OTHER
510	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	10	GOING STRAIGHT
511	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
512	SIDESWIPE (SAME DIRECTION)	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	10	MAKING RIGHT TURN
513	APPROACH TURN	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
514	APPROACH TURN	N	SUV	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
515	APPROACH TURN	NE	SUV	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
516	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	45	GOING STRAIGHT
517	REAR-END	SW	SUV	UNKNOWN	55	GOING STRAIGHT
518	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
519	OVERTAKING TURN	N	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	50	MAKING LEFT TURN
520	SIDESWIPE (SAME DIRECTION)	S	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	20	MAKING LEFT TURN
521	REAR-END	S	SUV	DRIVER INEXPERIENCE	15	GOING STRAIGHT
522	REAR-END	S	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	15	GOING STRAIGHT
523	REAR-END	NE	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	35	GOING STRAIGHT
524	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
525	REAR-END	S	SUV	DRIVER PREOCCUPIED	10	GOING STRAIGHT
526	SIDESWIPE (SAME DIRECTION)	N	SUV	DRIVER UNFAMILIAR WITH AREA	15	CHANGING LANES
527	REAR-END	S	SUV	DRIVER PREOCCUPIED	10	GOING STRAIGHT
528	REAR-END	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
529	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	50	GOING STRAIGHT
530	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	70	GOING STRAIGHT
531	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
532	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	30	SLOWING
533	REAR-END	SW	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	15	GOING STRAIGHT
534	REAR-END	N	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	5	GOING STRAIGHT
535	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	45	GOING STRAIGHT
536	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
537	REAR-END	SW	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	DRIVER PREOCCUPIED	60	GOING STRAIGHT
538	REAR-END	SW	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
539	REAR-END	S	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	45	GOING STRAIGHT
540	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
541	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
542	REAR-END	S	SUV	DRIVER PREOCCUPIED	55	GOING STRAIGHT
543	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
544	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
545	EMBANKMENT CUT/FILL SLOPE	N	SUV	ASLEEP AT WHEEL	40	WEAVING
546	REAR-END	N	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT
547	REAR-END	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	45	GOING STRAIGHT
548	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	2	OTHER
549	SIDESWIPE (SAME DIRECTION)	NE	SUV	NO APPARENT CONTRIBUTING FACTOR	55	CHANGING LANES
550	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
551	EMBANKMENT CUT/FILL SLOPE	S	SUV	DRIVER INEXPERIENCE	40	OTHER

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
552	119B	49.94	12/4/2017	1725	PDO	1D-17-5402	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
553	119B	50	9/24/2018	840	INJ	1D183986	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
554	119B	50	12/10/2018	1845	PDO	1D185225	ON	NON-INTERSECTION	2	DRY	DARK-LIGHTED	NONE
555	119B	50	2/24/2016	1250	PDO	1D-16-0882	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
556	119B	50	1/5/2016	630	PDO	1D-16-0066	ON	INTERSECTION RELATED	2	DRY	DAWN OR DUSK	NONE
557	119B	50	9/20/2017	845	INJ	1D-17-4236	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
558	119B	50	1/19/2019	2230	PDO	1D190274	OFF LEFT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
559	119B	50.02	10/4/2017	800	PDO	1D-17-4461	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
560	119B	50.03	2/22/2015	445	INJ	1D-15-0922	ON	AT INTERSECTION	2	SNOWY	DARK-UNLIGHTED	SNOW/SLEET/HAIL
561	119B	50.03	10/25/2019	625	INJ	1D194490	ON	AT INTERSECTION	2	DRY	DAWN OR DUSK	NONE
562	119B	50.05	11/14/2018	843	INJ	1D184813	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
563	119B	50.06	7/30/2015	1755	INJ	1D-15-3543	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
564	119B	50.06	7/20/2018	1155	INJ	1D182987	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
565	119B	50.06	8/24/2018	801	PDO	1D183520	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
566	119B	50.06	8/5/2019	800	INJ	1D193179	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
567	119B	50.06	1/15/2015	1820	PDO	1D-15-0271	ON	AT INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
568	119B	50.06	4/17/2015	910	PDO	1D-15-1823	ON	AT INTERSECTION	2	WET	DAYLIGHT	RAIN
569	119B	50.06	9/22/2015	1040	INJ	1D-15-4479	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
570	119B	50.06	12/17/2015	1112	INJ	1D-15-5987	ON	AT INTERSECTION	2	SNOWY	DAYLIGHT	NONE
571	119B	50.06	4/26/2017	2225	INJ	1D-17-1845	ON	AT INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
572	119B	50.06	9/26/2017	1827	INJ	1D-17-4341	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
573	119B	50.06	12/26/2017	900	INJ	1D-17-5729	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
574	119B	50.06	1/2/2018	1110	INJ	1D-18-0013	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
575	119B	50.06	6/11/2018	935	INJ	1D182384	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
576	119B	50.06	6/30/2018	510	PDO	1D182674	ON	AT INTERSECTION	2	DRY	DAWN OR DUSK	NONE
577	119B	50.06	1/16/2019	2126	INJ	1D190224	ON	AT INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
578	119B	50.06	3/23/2019	1825	PDO	1D191255	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
579	119B	50.06	4/6/2019	1500	PDO	1D191448	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
580	119B	50.06	5/10/2019	1220	INJ	1D191960	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
581	119B	50.06	7/24/2019	1255	INJ	1D193012	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
582	119B	50.06	10/14/2019	1400	INJ	1D194334	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
583	119B	50.06	10/3/2017	825	PDO	1D-17-4444	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
584	119B	50.06	8/24/2019	1247	INJ	1D193499	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
585	119B	50.06	1/3/2017	450	PDO	1D-17-0026	OFF RIGHT	AT INTERSECTION	1	ICY	DARK-UNLIGHTED	SNOW/SLEET/HAIL
586	119B	50.06	6/10/2018	1600	PDO	1D182375	OFF RIGHT	AT INTERSECTION	1	DRY	DAYLIGHT	NONE
587	119B	50.06	8/18/2016	930	PDO	1D-16-3619	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
588	119B	50.06	10/17/2018	255	PDO	1D184341	ON	AT INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
589	119B	50.06	12/30/2017	1045	PDO	1D-17-5781	ON	INTERSECTION RELATED	1	DRY W/VIS ICY ROAD TREATMENT	DAYLIGHT	NONE
590	119B	50.06	7/1/2016	1138	PDO	1D-16-2860	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
591	119B	50.06	2/15/2019	640	PDO	1D190648	ON	AT INTERSECTION	2	DRY W/VIS ICY ROAD TREATMENT	DAYLIGHT	NONE
592	119B	50.06	2/22/2019	1752	INJ	1D190762	ON	AT INTERSECTION	2	SNOWY	DARK-UNLIGHTED	SNOW/SLEET/HAIL
593	119B	50.06	7/8/2019	1120	PDO	1D192769	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
594	119B	50.06	1/15/2019	1818	PDO	1D190208	ON	AT INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
595	119B	50.06	6/14/2018	850	PDO	1D182431	OFF LEFT	AT INTERSECTION	1	DRY	DAYLIGHT	NONE
596	119B	50.1	4/16/2018	854	PDO	1D181549	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
597	119B	50.1	3/12/2017	1300	PDO	1D-17-1136	OFF RIGHT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
598	119B	50.1	6/6/2017	1600	INJ	1D-17-2510	OFF RIGHT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
599	119B	50.1	4/6/2015	751	PDO	1A-15-1656	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
600	119B	50.1	4/7/2015	2031	PDO	1D-15-1676	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
601	119B	50.16	3/9/2017	1535	PDO	1D-17-1089	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
552	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	SLOWING
553	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	28	SLOWING
554	SIDESWIPE (SAME DIRECTION)	S	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	CHANGING LANES
555	BROADSIDE	W	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	15	GOING STRAIGHT
556	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
557	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	15	SLOWING
558	SIGN	N	PICKUP TRUCK/UTILITY VAN	ASLEEP AT WHEEL	65	GOING STRAIGHT
559	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
560	BROADSIDE	W	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
561	BROADSIDE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
562	REAR-END	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
563	BROADSIDE	W	PICKUP TRUCK/UTILITY VAN	DRIVER INEXPERIENCE	10	GOING STRAIGHT
564	BROADSIDE	W	PICKUP TRUCK/UTILITY VAN	DRIVER UNFAMILIAR WITH AREA	20	GOING STRAIGHT
565	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
566	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
567	BROADSIDE	E	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	35	GOING STRAIGHT
568	BROADSIDE	W	SUV	ILLNESS	5	GOING STRAIGHT
569	BROADSIDE	W	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	UNKNOWN	20	GOING STRAIGHT
570	BROADSIDE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
571	BROADSIDE	E	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	10	MAKING RIGHT TURN
572	BROADSIDE	W	SUV	DRIVER INEXPERIENCE	15	GOING STRAIGHT
573	BROADSIDE	W	PASSENGER CAR/VAN	DISTRACTED BY PASSENGER	25	GOING STRAIGHT
574	BROADSIDE	W	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	MAKING LEFT TURN
575	BROADSIDE	W	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	10	GOING STRAIGHT
576	BROADSIDE	E	PICKUP TRUCK/UTILITY VAN	DRIVER UNFAMILIAR WITH AREA	10	MAKING U-TURN
577	BROADSIDE	W	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
578	BROADSIDE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
579	BROADSIDE	W	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
580	BROADSIDE	W	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
581	BROADSIDE	W	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
582	BROADSIDE	W	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
583	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	15	GOING STRAIGHT
584	BICYCLE	E	SUV	DRIVER UNFAMILIAR WITH AREA	10	GOING STRAIGHT
585	SIGN	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	55	MAKING RIGHT TURN
586	SIGN	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	MAKING LEFT TURN
587	REAR-END	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	45	CHANGING LANES
588	BROADSIDE	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
589	OTHER FIXED OBJECT	E	SUV	DRIVER INEXPERIENCE	55	MAKING RIGHT TURN
590	BROADSIDE	W	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	DRIVER UNFAMILIAR WITH AREA	10	GOING STRAIGHT
591	BROADSIDE	W	PICKUP TRUCK/UTILITY VAN	DRIVER UNFAMILIAR WITH AREA	10	GOING STRAIGHT
592	BROADSIDE	W	SUV	DRIVER INEXPERIENCE	15	GOING STRAIGHT
593	BROADSIDE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	20	MAKING LEFT TURN
594	APPROACH TURN	W	SUV	DRIVER INEXPERIENCE	5	MAKING LEFT TURN
595	SIGN	SW	SUV	UNKNOWN	10	MAKING LEFT TURN
596	REAR-END	S	SUV	DRIVER INEXPERIENCE	50	SLOWING
597	SIGN	S	PICKUP TRUCK/UTILITY VAN	ILLNESS	55	GOING STRAIGHT
598	OTHER FIXED OBJECT	SW	PASSENGER CAR/VAN	ILLNESS	55	GOING STRAIGHT
599	REAR-END	SW	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	5	GOING STRAIGHT
600	SIDESWIPE (SAME DIRECTION)	NE	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	CHANGING LANES
601	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	40	CHANGING LANES

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
602	119B	50.21	2/6/2018	1830	PDO	1D180541	ON	INTERSECTION RELATED	2	DRY	DARK-UNLIGHTED	NONE
603	119B	50.26	10/3/2016	1721	PDO	1D-16-4394	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	WIND
604	119B	50.3	3/23/2017	740	PDO	1D-17-1328	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
605	119B	50.4	6/23/2016	820	INJ	1D-16-2750	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
606	119B	50.4	10/14/2016	1745	INJ	1D-16-4579	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
607	119B	50.5	6/28/2019	1620	PDO	1D192634	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
608	119B	50.5	7/7/2019	1220	INJ	1D192755	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
609	119B	50.5	2/14/2018	1300	PDO	1D180676	OFF RIGHT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
610	119B	50.5	3/4/2019	250	INJ	1D190934	OFF LEFT	NON-INTERSECTION	1	ICY W/VIS ICY ROAD TREATMENT	DAYLIGHT	NONE
611	119B	50.51	5/24/2018	1250	INJ	1D182125	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
612	119B	50.51	10/11/2016	1300	PDO	1D-16-4513	ON	INTERSECTION RELATED	2	DRY	DAWN OR DUSK	NONE
613	119B	50.51	10/26/2016	1415	PDO	1D-16-4788	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
614	119B	50.51	1/24/2017	1623	PDO	1D-17-0408	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
615	119B	50.58	4/12/2019	1725	INJ	1D191541	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
616	119B	50.6	1/6/2016	1150	INJ	1D-16-0083	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
617	119B	50.6	3/30/2016	1745	PDO	1D-16-1477	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
618	119B	50.6	2/2/2018	1602	PDO	1D180494	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
619	119B	50.6	3/3/2018	930	PDO	1D180947	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
620	119B	50.6	6/10/2018	1200	PDO	1D182372	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
621	119B	50.6	9/28/2019	1535	PDO	1D194072	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
622	119B	50.6	6/9/2018	645	INJ	1D182359	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
623	119B	50.6	5/29/2017	21	INJ	1D-17-2385	OFF LEFT	NON-INTERSECTION	1	WET	DARK-LIGHTED	NONE
624	119B	50.6	1/24/2019	2234	PDO	1D190333	OFF RIGHT	NON-INTERSECTION	1	WET	DARK-UNLIGHTED	NONE
625	119B	50.6	6/17/2016	1350	PDO	1D-16-2669	OFF RIGHT	INTERSECTION RELATED	1	DRY	DAYLIGHT	NONE
626	119B	50.61	9/6/2016	1604	PDO	1D-16-3939	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
627	119B	50.61	1/12/2016	1650	PDO	1D-16-0201	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
628	119B	50.61	2/19/2016	1550	INJ	1D-16-0806	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
629	119B	50.61	8/9/2016	1600	PDO	1D-16-3496	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
630	119B	50.61	10/13/2016	1150	INJ	1D-16-4546	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
631	119B	50.61	1/11/2017	1710	INJ	1D-17-0208	ON	NON-INTERSECTION	2	DRY	DARK-LIGHTED	NONE
632	119B	50.61	6/17/2016	951	PDO	1D-16-2666	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
633	119B	50.7	4/17/2017	1141	PDO	1D-17-1690	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
634	119B	50.7	12/15/2015	1010	PDO	1D-15-5937	ON	INTERSECTION RELATED	2	ICY	DAYLIGHT	SNOW/SLEET/HAIL
635	119B	50.7	4/27/2019	1805	PDO	1D191783	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
636	119B	50.71	1/29/2015	1950	PDO	1D-15-0473	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
637	119B	50.71	11/24/2016	2013	PDO	1D-16-5300	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
638	119B	50.71	7/24/2017	1620	PDO	1D-17-3306	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
639	119B	50.71	2/25/2015	1515	INJ	1D-15-0995	ON	AT INTERSECTION	2	WET	DAYLIGHT	SNOW/SLEET/HAIL
640	119B	50.71	2/26/2015	940	PDO	1D-15-1013	ON	AT INTERSECTION	2	SNOWY W/VIS ICY ROAD TREATMENT	DAYLIGHT	NONE
641	119B	50.71	3/23/2016	1015	PDO	1D-16-1328	ON	AT INTERSECTION	2	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
642	119B	50.71	6/6/2016	1435	PDO	1D-16-2486	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
643	119B	50.71	6/20/2016	1630	INJ	1D-16-2718	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
644	119B	50.71	7/4/2016	1105	INJ	1D-16-2908	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
645	119B	50.71	12/12/2016	1410	PDO	1D-16-5618	ON	AT INTERSECTION	3	DRY	DAYLIGHT	NONE
646	119B	50.71	4/17/2017	1035	INJ	1D-17-1689	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
647	119B	50.71	5/14/2017	1330	INJ	1D-17-2118	ON	AT INTERSECTION	3	DRY	DAYLIGHT	NONE
648	119B	50.71	6/18/2018	1100	FAT	1D182502	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
649	119B	50.71	5/6/2015	745	PDO	1D-15-2111	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
650	119B	50.71	9/10/2015	1525	PDO	1D-15-4263	ON	AT INTERSECTION	3	DRY	DAYLIGHT	NONE
651	119B	50.71	9/23/2015	1621	PDO	1D-15-4490	ON	AT INTERSECTION	3	DRY	DAYLIGHT	NONE

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
602	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
603	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
604	REAR-END	S	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	45	GOING STRAIGHT
605	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT
606	REAR-END	N	PASSENGER CAR/VAN	DISTRACTED BY PASSENGER	55	GOING STRAIGHT
607	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
608	BICYCLE	N	BICYCLE	NO APPARENT CONTRIBUTING FACTOR	15	CHANGING LANES
609	TREE/SHRUBBERY	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
610	TREE/SHRUBBERY	N	PICKUP TRUCK/UTILITY VAN	DRIVER FATIGUE	45	GOING STRAIGHT
611	HEAD-ON	S	PASSENGER CAR/VAN	ILLNESS	65	GOING STRAIGHT
612	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	25	GOING STRAIGHT
613	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	40	GOING STRAIGHT
614	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	35	GOING STRAIGHT
615	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	55	GOING STRAIGHT
616	BROADSIDE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
617	REAR-END	NE	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
618	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
619	REAR-END	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	50	GOING STRAIGHT
620	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
621	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
622	BICYCLE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	15	MAKING LEFT TURN
623	TRAFFIC SIGNAL POLE	N	SUV	ASLEEP AT WHEEL	50	GOING STRAIGHT
624	FENCE	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	70	WEAVING
625	OTHER FIXED OBJECT	NE	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	DRIVER INEXPERIENCE	40	GOING STRAIGHT
626	OVERTURNING	N	PICKUP TRUCK/UTILITY VAN	DRIVER INEXPERIENCE	10	GOING STRAIGHT
627	REAR-END	N	PICKUP TRUCK/UTILITY VAN	DISTRACTED BY PASSENGER	20	GOING STRAIGHT
628	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
629	REAR-END	N	PICKUP TRUCK/UTILITY VAN	DRIVER FATIGUE	55	GOING STRAIGHT
630	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	45	GOING STRAIGHT
631	REAR-END	N	SUV	DRIVER PREOCCUPIED	30	GOING STRAIGHT
632	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	59	CHANGING LANES
633	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
634	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
635	REAR-END	N	SUV	DRIVER INEXPERIENCE	45	GOING STRAIGHT
636	REAR-END	NE	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
637	REAR-END	S	PASSENGER CAR/VAN	UNKNOWN	10	GOING STRAIGHT
638	REAR-END	N	SUV	DRIVER PREOCCUPIED	20	GOING STRAIGHT
639	BROADSIDE	S	SUV	DRIVER PREOCCUPIED	55	GOING STRAIGHT
640	BROADSIDE	N	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	GOING STRAIGHT
641	BROADSIDE	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
642	BROADSIDE	W	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	25	GOING STRAIGHT
643	BROADSIDE	E	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	35	GOING STRAIGHT
644	BROADSIDE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
645	BROADSIDE	E	PASSENGER CAR/VAN	ILLNESS	35	GOING STRAIGHT
646	BROADSIDE	W	SUV	DRIVER PREOCCUPIED	43	GOING STRAIGHT
647	BROADSIDE	W	SUV	DRIVER UNFAMILIAR WITH AREA	15	GOING STRAIGHT
648	BROADSIDE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
649	REAR-END	W	PASSENGER CAR/VAN	UNKNOWN	10	GOING STRAIGHT
650	REAR-END	NE	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
651	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	SLOWING

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
652	119B	50.71	10/1/2015	1530	INJ	1D-15-4643	ON	INTERSECTION RELATED	4	DRY	DAYLIGHT	NONE
653	119B	50.71	10/17/2015	908	PDO		ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
654	119B	50.71	1/13/2016	1704	PDO	1D-16-0213	ON	INTERSECTION RELATED	2	DRY	DAWN OR DUSK	NONE
655	119B	50.71	9/11/2017	1400	PDO	17-5351	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
656	119B	50.71	1/22/2019	655	PDO	1D190297	ON	INTERSECTION RELATED	3	DRY	DARK-UNLIGHTED	NONE
657	119B	50.71	5/13/2019	2035	PDO	1D192004	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
658	119B	50.71	5/21/2019	1706	PDO	1D192143	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
659	119B	50.71	10/15/2015	1625	INJ	1D-15-4885	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
660	119B	50.71	1/16/2018	1624	PDO	1D-18-0241	OFF LEFT	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
661	119B	50.71	11/24/2017	930	PDO	1D-17-5262	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
662	119B	50.71	8/15/2018	1145	PDO	1D183404	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
663	119B	50.71	8/29/2015	750	PDO	1D-15-4049	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
664	119B	50.71	2/27/2019	1345	INJ	1D190832	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
665	119B	50.71	1/10/2018	1300	PDO	1D-18-0131	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
666	119B	50.71	9/7/2019	1110	INJ	1D193719	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
667	119B	50.72	6/18/2016	1145	PDO	1D-16-2681	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
668	119B	50.72	6/27/2016	1005	PDO	1D-16-2815	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
669	119B	50.72	8/4/2016	840	PDO	1D-16-3404	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
670	119B	50.73	1/13/2017	719	PDO	1D-17-0229	OFF RIGHT	NON-INTERSECTION	1	DRY	DAWN OR DUSK	NONE
671	119B	50.73	11/30/2015	925	PDO	1D-15-5672	ON	INTERSECTION RELATED	2	WET	DAYLIGHT	NONE
672	119B	50.74	7/5/2017	1545	INJ	1D-17-2993	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
673	119B	50.74	11/3/2017	1600	PDO	1D-17-4934	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
674	119B	50.75	2/22/2015	1830	PDO	1D-15-0936	ON	NON-INTERSECTION	2	ICY	DARK-LIGHTED	NONE
675	119B	50.75	12/21/2016	640	PDO	1D-16-5841	ON	INTERSECTION RELATED	2	DRY	DAWN OR DUSK	NONE
676	119B	50.76	12/19/2017	1215	INJ	1D-17-5634	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
677	119B	50.77	11/22/2017	1715	INJ	1D-17-5252	ON	INTERSECTION RELATED	2	DRY	DARK-UNLIGHTED	NONE
678	119B	50.77	10/16/2017	530	PDO	1D-17-4641	ON	INTERSECTION RELATED	2	DRY	DARK-UNLIGHTED	NONE
679	119B	50.78	7/3/2016	515	INJ	1D-16-2892	OFF LEFT	NON-INTERSECTION	1	DRY	DAWN OR DUSK	NONE
680	119B	50.79	1/22/2015	716	INJ	1D-15-0356	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
681	119B	50.8	9/11/2019	1616	PDO	1D193784	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
682	119B	50.81	8/29/2018	800	PDO	1D183586	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
683	119B	50.81	9/13/2017	1544	PDO	1D-17-4121	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
684	119B	50.81	10/10/2017	720	PDO	1D-17-4554	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
685	119B	50.81	12/7/2017	750	PDO	1D-17-5447	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
686	119B	50.81	2/17/2017	1529	PDO	1D-17-0786	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
687	119B	50.81	7/5/2017	235	INJ	1D-17-2980	OFF LEFT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
688	119B	50.81	8/30/2017	640	INJ	1D-17-3907	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
689	119B	50.81	1/8/2019	837	INJ	1D190102	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
690	119B	50.81	7/10/2017	700	PDO	1D-17-3057	ON	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
691	119B	50.81	8/31/2017	200	PDO	1D-17-3918	OFF LEFT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
692	119B	50.81	12/15/2017	1145	INJ	1D-17-5570	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
693	119B	50.9	10/24/2019	735	PDO	1D194467	ON	NON-INTERSECTION	2	WET	DAYLIGHT	NONE
694	119B	50.9	3/22/2017	640	PDO	1D-17-1315	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
695	119B	50.9	8/25/2019	2145	PDO	1D193520	ON	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
696	119B	50.91	11/9/2017	1830	INJ	1D-17-5046	ON	NON-INTERSECTION	4	DRY	DARK-UNLIGHTED	NONE
697	119B	50.91	1/18/2019	800	PDO	1D190251	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
698	119B	50.91	11/11/2017	1543	PDO	1D-17-5076	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
699	119B	50.91	10/31/2017	1645	PDO	1D-17-4879	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
700	119B	50.93	11/14/2016	1540	INJ	1D-16-5122	ON	AT INTERSECTION	3	DRY	DAYLIGHT	NONE
701	119B	51	10/24/2018	720	INJ	1D184462	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE



## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
652	REAR-END	NE	PASSENGER CAR/VAN	UNKNOWN	55	SLOWING
653	REAR-END	SW	SUV	UNKNOWN	20	GOING STRAIGHT
654	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
655	REAR-END	SW	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT
656	REAR-END	S	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	15	SLOWING
657	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
658	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	40	PASSING
659	APPROACH TURN	E	SUV W/TRAILER	DRIVER FATIGUE	5	MAKING LEFT TURN
660	DELINEATOR POST	NE	PASSENGER CAR/VAN	DRIVER FATIGUE	55	WEAVING
661	SIDESWIPE (SAME DIRECTION)	S	SUV	DRIVER UNFAMILIAR WITH AREA	5	MAKING LEFT TURN
662	SIDESWIPE (SAME DIRECTION)	W	SUV	DRIVER UNFAMILIAR WITH AREA	10	MAKING LEFT TURN
663	BROADSIDE	E	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	35	GOING STRAIGHT
664	REAR-END	W	SUV	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
665	SIDESWIPE (SAME DIRECTION)	W	PICKUP TRUCK/UTILITY VAN	UNKNOWN	20	MAKING LEFT TURN
666	BICYCLE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	20	MAKING RIGHT TURN
667	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
668	REAR-END	S	SUV	DRIVER PREOCCUPIED	55	GOING STRAIGHT
669	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
670	SIGN	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	CHANGING LANES
671	REAR-END	SW	SUV	DRIVER PREOCCUPIED	10	GOING STRAIGHT
672	REAR-END	S	SUV	DRIVER PREOCCUPIED	30	GOING STRAIGHT
673	REAR-END	N	PICKUP TRUCK/UTILITY VAN	UNKNOWN	25	GOING STRAIGHT
674	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	54	GOING STRAIGHT
675	REAR-END	S	PASSENGER CAR/VAN	UNKNOWN	5	GOING STRAIGHT
676	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
677	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	GOING STRAIGHT
678	REAR-END	N	PASSENGER CAR/VAN	ASLEEP AT WHEEL	55	GOING STRAIGHT
679	CONCRETE BARRIER	SW	PASSENGER CAR/VAN	ASLEEP AT WHEEL	65	GOING STRAIGHT
680	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT
681	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
682	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	5	GOING STRAIGHT
683	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	25	GOING STRAIGHT
684	REAR-END	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
685	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	45	SLOWING
686	OVERTURNING	N	SUV	UNKNOWN	35	GOING STRAIGHT
687	OVERTURNING	S	SUV	UNKNOWN	75	OTHER
688	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	40	SLOWING
689	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	15	GOING STRAIGHT
690	WILD ANIMAL	NE	SUV	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
691	SIGN	N	PASSENGER CAR/VAN	ASLEEP AT WHEEL	55	WEAVING
692	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	55	GOING STRAIGHT
693	REAR-END	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
694	REAR-END	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	40	GOING STRAIGHT
695	WILD ANIMAL	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
696	REAR-END	N	PICKUP TRUCK/UTILITY VAN	UNKNOWN	65	GOING STRAIGHT
697	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
698	REAR-END	N	SUV	DRIVER PREOCCUPIED	45	SLOWING
699	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
700	REAR-END	N	SUV	DRIVER PREOCCUPIED	30	GOING STRAIGHT
701	REAR-END	S	NON-SCHOOL BUS < 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	65	GOING STRAIGHT

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
702	119B	51	7/15/2018	1515	PDO	1D182920	OFF RIGHT	NON-INTERSECTION	1	WET	DAYLIGHT	RAIN
703	119B	51	9/17/2019	845	INJ	1D193887	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
704	119B	51	6/18/2019	1945	PDO	1D192502	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
705	119B	51	7/12/2019	1355	PDO	1D192836	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
706	119B	51.01	5/6/2015	530	PDO	1D-15-2110	OFF LEFT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
707	119B	51.01	7/11/2016	1700	PDO	1D-16-3019	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
708	119B	51.01	8/12/2017	1600	PDO	1D-17-3613	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
709	119B	51.03	1/5/2015	1345	PDO	1D-15-0067	ON	NON-INTERSECTION	1	DRY	DAYLIGHT	WIND
710	119B	51.1	6/11/2016	945	PDO	1D-16-2571	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
711	119B	51.1	1/1/2017	930	PDO	1D-17-0005	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
712	119B	51.1	2/20/2019	825	PDO	1D190714	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
713	119B	51.2	11/18/2015	2045	INJ	1D-15-5496	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
714	119B	51.2	6/15/2016	1920	PDO	1D-16-2633	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
715	119B	51.21	2/1/2016	714	PDO	1D-16-0519	OFF RIGHT	NON-INTERSECTION	1	SNOWY W/VIS ICY ROAD TREATMENT	DAYLIGHT	SNOW/SLEET/HAIL
716	119B	51.3	8/30/2017	1725	INJ	1D-17-3914	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
717	119B	51.4	7/19/2017	1800	INJ	1D-17-3218	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
718	119B	51.4	5/10/2018	1255	PDO	1D181911	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
719	119B	51.4	12/30/2016	746	PDO	1D-16-5971	ON	NON-INTERSECTION	2	DRY	DAWN OR DUSK	NONE
720	119B	51.5	5/16/2019	1657	PDO	1D192056	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
721	119B	51.5	8/5/2019	1430	INJ	1D193186	OFF RIGHT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
722	119B	51.5	12/14/2016	1731	PDO	1D-16-5651	ON	NON-INTERSECTION	3	DRY	DARK-UNLIGHTED	NONE
723	119B	51.51	8/3/2017	1425	INJ	1D-17-3462	OFF RIGHT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
724	119B	51.7	7/8/2016	150	PDO	1D-16-2965	OFF LEFT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
725	119B	51.7	2/20/2017	1752	PDO	1D-17-0822	OFF LEFT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
726	119B	51.8	1/30/2018	1340	PDO	1D180456	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
727	119B	51.88	3/26/2016	550	PDO	1D-16-1412	OFF RIGHT	NON-INTERSECTION	1	SNOWY	DARK-UNLIGHTED	SNOW/SLEET/HAIL
728	119B	51.88	11/2/2016	1533	PDO	1D-16-4913	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
729	119B	51.88	11/27/2019	430	INJ	1D194997	OFF RIGHT	NON-INTERSECTION	1	SNOWY	DARK-UNLIGHTED	NONE
730	119B	51.9	8/22/2019	1524	PDO	1D193467	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
731	119B	51.9	8/11/2017	2305	PDO	1D-17-3601	OFF LEFT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
732	119B	51.98	5/19/2018	1200	INJ	1D182046	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
733	119B	51.98	4/1/2019	1500	PDO	1D191376	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
734	119B	51.98	7/10/2018	826	INJ	1D182831	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
735	119B	51.98	2/10/2015	1239	INJ	1D-15-0676	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
736	119B	51.98	8/30/2016	1110	INJ	1D-16-3828	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
737	119B	51.98	9/14/2016	1800	PDO	1D-16-4072	ON	AT INTERSECTION	2	WET	DAYLIGHT	RAIN
738	119B	51.98	4/10/2018	1440	PDO	1D181486	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
739	119B	51.98	7/30/2018	1910	INJ	1D183145	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
740	119B	52	10/1/2018	2250	PDO	1D184104	ON	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
741	119B	52	9/19/2015	1235	PDO	1D-15-4421	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
742	119B	52.01	5/3/2017	1450	PDO	1D-17-1950	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
743	119B	52.01	6/29/2015	1210	PDO	1D-15-3017	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
744	119B	52.06	8/29/2017	1725	INJ	1D-17-3902	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
745	119B	52.06	12/16/2015	1601	PDO	1D-15-5972	ON	AT INTERSECTION	3	ICY	DAYLIGHT	NONE
746	119B	52.06	6/8/2017	1730	INJ	1D-17-2554	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
747	119B	52.08	7/8/2016	1100	PDO	1D-16-2968	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
748	119B	52.08	9/20/2015	1235	PDO	1D-15-4420	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
749	119B	52.1	5/8/2018	735	PDO	1D181869	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
750	119B	52.11	3/4/2015	820	INJ	1D-15-1123	ON	NON-INTERSECTION	2	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
751	119B	52.16	3/10/2017	1530	INJ	1D-17-1102	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
702	EMBANKMENT CUT/FILL SLOPE	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	65	GOING STRAIGHT
703	REAR-END	S	SUV	DISTRACTED BY PASSENGER	45	GOING STRAIGHT
704	REAR-END	W	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	OTHER
705	SIDESWIPE (SAME DIRECTION)	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	65	CHANGING LANES
706	WILD ANIMAL	W	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	55	AVOIDING OBJECT/VEHICLE IN ROAD
707	REAR-END	NE	PICKUP TRUCK/UTILITY VAN	UNKNOWN	10	GOING STRAIGHT
708	REAR-END	N	SUV	UNKNOWN	65	GOING STRAIGHT
709	OVERTURNING	S	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
710	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	25	GOING STRAIGHT
711	EMBANKMENT CUT/FILL SLOPE	N	PASSENGER CAR/VAN	ASLEEP AT WHEEL	55	GOING STRAIGHT
712	SIDESWIPE (SAME DIRECTION)	SW	SUV	NO APPARENT CONTRIBUTING FACTOR	65	CHANGING LANES
713	SIDESWIPE (SAME DIRECTION)	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	65	CHANGING LANES
714	TREE/SHRUBBERY	S	SUV	DRIVER PREOCCUPIED	65	GOING STRAIGHT
715	OVERTURNING	N	SUV	NO APPARENT CONTRIBUTING FACTOR	60	OTHER
716	REAR-END	N	PASSENGER CAR/VAN	ASLEEP AT WHEEL	45	GOING STRAIGHT
717	BROADSIDE	W	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
718	REAR-END	N	PICKUP TRUCK/UTILITY VAN	UNKNOWN	35	CHANGING LANES
719	REAR-END	SW	SUV	NO APPARENT CONTRIBUTING FACTOR	40	WEAVING
720	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
721	EMBANKMENT CUT/FILL SLOPE	NE	PASSENGER CAR/VAN	ILLNESS	55	GOING STRAIGHT
722	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	SLOWING
723	FENCE	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	55	WRONG WAY
724	OVERTURNING	N	SUV	UNKNOWN	65	WEAVING
725	EMBANKMENT CUT/FILL SLOPE	N	SUV	ASLEEP AT WHEEL	40	WEAVING
726	REAR-END	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
727	SIGN	S	SUV	NO APPARENT CONTRIBUTING FACTOR	50	OTHER
728	REAR-END	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	35	GOING STRAIGHT
729	SIGN	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	OTHER
730	REAR-END	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
731	SIGN	NE	PASSENGER CAR/VAN	UNKNOWN	65	GOING STRAIGHT
732	BROADSIDE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
733	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	15	MAKING RIGHT TURN
734	BROADSIDE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
735	BICYCLE	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
736	BROADSIDE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
737	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	DRIVER FATIGUE	55	OTHER
738	REAR-END	NE	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	40	GOING STRAIGHT
739	BROADSIDE	E	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
740	WILD ANIMAL	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
741	REAR-END	N	PASSENGER CAR/VAN	UNKNOWN	20	GOING STRAIGHT
742	SIDESWIPE (SAME DIRECTION)	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	35	CHANGING LANES
743	REAR-END	S	PICKUP TRUCK/UTILITY VAN	ASLEEP AT WHEEL	65	GOING STRAIGHT
744	BROADSIDE	E	SUV	DRIVER UNFAMILIAR WITH AREA	10	GOING STRAIGHT
745	SIDESWIPE (OPPOSITE DIRECTION)	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	UK	GOING STRAIGHT
746	BROADSIDE	E	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
747	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	SLOWING
748	OVERTAKING TURN	N	SUV	DRIVER UNFAMILIAR WITH AREA	40	MAKING LEFT TURN
749	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
750	SIDESWIPE (SAME DIRECTION)	S	SUV	UNKNOWN	40	GOING STRAIGHT
751	SIDESWIPE (SAME DIRECTION)	N	SUV	UNKNOWN	55	PASSING

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
752	119B	52.46	5/25/2017	1715	PDO	1D-17-2323	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
753	119B	52.6	11/29/2018	2225	INJ	1D185042	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
754	119B	52.67	5/3/2019	1505	PDO	1D191852	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
755	119B	52.68	7/29/2015	1030	INJ	1D-15-3518	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
756	119B	52.68	12/17/2018	1335	PDO	1D185326	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
757	119B	52.68	9/26/2018	900	INJ	1D184025	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
758	119B	52.68	10/6/2018	1218	PDO	1D184181	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
759	119B	52.68	5/13/2015	1911	INJ	1D-15-2250	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
760	119B	52.68	8/25/2015	1140	PDO	1D-15-3980	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	UNKNOWN
761	119B	52.68	3/11/2015	830	INJ	1D-15-1242	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
762	119B	52.68	6/9/2015	1532	INJ	1D-15-2678	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
763	119B	52.68	3/8/2017	1600	PDO	1D-17-1074	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
764	119B	52.68	11/8/2019	1533	INJ	1D194719	OFF LEFT	INTERSECTION RELATED	1	DRY W/VIS ICY ROAD TREATMENT	DAYLIGHT	NONE
765	119B	52.68	2/21/2015	1455	INJ	1D-15-0908	ON	AT INTERSECTION	2	ICY	DAYLIGHT	SNOW/SLEET/HAIL
766	119B	52.68	8/11/2018	1450	PDO	1D183327	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
767	119B	52.68	2/26/2015	1715	INJ	1D-15-1026	ON	NON-INTERSECTION	2	SNOWY	DAWN OR DUSK	SNOW/SLEET/HAIL
768	119B	52.68	8/5/2017	2315	INJ	1D-17-3496	OFF RIGHT	AT INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
769	119B	52.68	11/6/2015	1300	PDO	1D-15-5300	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
770	119B	52.68	10/4/2015	1810	INJ	1D-15-4691	ON	AT INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
771	119B	52.68	12/16/2015	1615	PDO	1D-15-5974	ON	AT INTERSECTION	2	SNOWY W/VIS ICY ROAD TREATMENT	DAYLIGHT	NONE
772	119B	52.68	2/2/2017	440	INJ	1D-17-0558	ON	AT INTERSECTION	2	ICY	DARK-LIGHTED	SNOW/SLEET/HAIL
773	119B	52.68	8/30/2017	1630	INJ	1D-17-3917	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
774	119B	52.68	6/13/2018	1710	INJ	1D182422	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
775	119B	52.68	6/17/2018	1215	PDO	1D182486	ON	AT INTERSECTION	2	WET	DAYLIGHT	RAIN
776	119B	52.68	1/11/2018	845	INJ	1D-18-0152	ON	AT INTERSECTION	3	DRY	DAYLIGHT	NONE
777	119B	52.68	8/3/2019	840	INJ	1D193160	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
778	119B	52.68	4/9/2016	1755	PDO	1D-16-1622	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
779	119B	52.68	8/25/2016	1345	PDO	1D-16-3752	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
780	119B	52.68	7/1/2016	1142	INJ	1D-16-2861	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
781	119B	52.68	11/14/2016	2030	PDO	1D-16-5132	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
782	119B	52.68	1/24/2018	635	INJ	1D-18-0361	OFF RIGHT	AT INTERSECTION	1	DRY W/VIS ICY ROAD TREATMENT	DAWN OR DUSK	NONE
783	119B	52.68	3/6/2019	1210	INJ	1D190982	OFF RIGHT	INTERSECTION RELATED	1	DRY W/VIS ICY ROAD TREATMENT	DAYLIGHT	NONE
784	119B	52.68	3/24/2017	845	PDO	1D-17-1350	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
785	119B	52.68	6/27/2017	1655	INJ	1D-17-2873	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
786	119B	52.69	10/1/2018	955	INJ	1D184094	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
787	119B	52.7	6/7/2015	300	PDO	1D-15-2632	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
788	119B	52.75	3/8/2019	717	PDO	1D191016	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
789	119B	52.78	12/10/2018	745	PDO	1D185218	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
790	119B	52.78	11/9/2017	1813	INJ	1D-17-5048	OFF LEFT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
791	119B	52.78	2/13/2017	2008	PDO	1D-17-0724	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
792	119B	52.8	6/15/2018	940	PDO	1D182457	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
793	119B	52.8	7/5/2019	2215	INJ	1D192741	ON	AT INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
794	119B	52.8	6/4/2019	1538	PDO	1D192331	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
795	119B	52.8	11/6/2019	1955	PDO	1D194692	ON	INTERSECTION RELATED	2	WET	DARK-LIGHTED	RAIN
796	119B	52.88	11/1/2017	1601	INJ	1D-17-4897	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
797	119B	52.9	4/19/2018	700	PDO	1D181590	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
798	119B	52.9	4/3/2018	2202	PDO	1D181395	OFF RIGHT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
799	119B	52.9	3/6/2019	815	PDO	1D190981	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
800	119B	52.93	4/3/2017	0	INJ	1D-17-1462	OFF LEFT	NON-INTERSECTION	1	WET	DARK-UNLIGHTED	RAIN
801	119B	52.97	9/21/2019	349	PDO	1D193954	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
752	BROADSIDE	E	SUV	NO APPARENT CONTRIBUTING FACTOR	40	GOING STRAIGHT
753	OVERTURNING	N	PASSENGER CAR/VAN	UNKNOWN	65	GOING STRAIGHT
754	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	20	CHANGING LANES
755	REAR-END	S	PASSENGER CAR/VAN	UNKNOWN	10	MAKING RIGHT TURN
756	REAR-END	N	SUV	DRIVER INEXPERIENCE	10	GOING STRAIGHT
757	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	35	CHANGING LANES
758	APPROACH TURN	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	15	MAKING LEFT TURN
759	REAR-END	E	PICKUP TRUCK/UTILITY VAN	DRIVER UNFAMILIAR WITH AREA	20	MAKING LEFT TURN
760	REAR-END	N	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT
761	APPROACH TURN	N	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	15	MAKING LEFT TURN
762	APPROACH TURN	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	10	MAKING LEFT TURN
763	APPROACH TURN	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	MAKING LEFT TURN
764	CONCRETE BARRIER	S	PASSENGER CAR/VAN	UNKNOWN	60	MAKING RIGHT TURN
765	HEAD-ON	S	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	30	OTHER
766	REAR-END	N	SUV	DRIVER UNFAMILIAR WITH AREA	50	MAKING LEFT TURN
767	SIDESWIPE (SAME DIRECTION)	SW	SUV	NO APPARENT CONTRIBUTING FACTOR	40	OTHER
768	OVERTURNING	N	PASSENGER CAR/VAN	UNKNOWN	50	MAKING LEFT TURN
769	VEHICLE CARGO/DEBRIS	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	65	GOING STRAIGHT
770	BROADSIDE	E	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
771	BROADSIDE	W	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	45	GOING STRAIGHT
772	BROADSIDE	E	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	30	SLOWING
773	BROADSIDE	E	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	25	GOING STRAIGHT
774	BROADSIDE	E	PICKUP TRUCK/UTILITY VAN W/TRAILER	NO APPARENT CONTRIBUTING FACTOR	10	MAKING LEFT TURN
775	BROADSIDE	E	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	MAKING LEFT TURN
776	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
777	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
778	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	60	GOING STRAIGHT
779	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	45	MAKING LEFT TURN
780	SIDESWIPE (OPPOSITE DIRECTION)	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
781	SIDESWIPE (OPPOSITE DIRECTION)	N	SUV	UNKNOWN	15	GOING STRAIGHT
782	TREE/SHRUBBERY	NE	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	MAKING LEFT TURN
783	TREE/SHRUBBERY	N	PASSENGER CAR/VAN	UNKNOWN	45	MAKING LEFT TURN
784	BROADSIDE	W	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
785	BROADSIDE	W	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	15	GOING STRAIGHT
786	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
787	TRAFFIC SIGNAL POLE	NE	SUV	UNKNOWN	75	GOING STRAIGHT
788	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	45	GOING STRAIGHT
789	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	GOING STRAIGHT
790	INVOLVING OTHER OBJECT	N	PASSENGER CAR/VAN	UNKNOWN	60	WEAVING
791	FENCE	S	SUV	UNKNOWN	60	WEAVING
792	SIDESWIPE (SAME DIRECTION)	SW	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	UK	CHANGING LANES
793	BROADSIDE	S	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
794	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
795	REAR-END	S	SUV	UNKNOWN	65	OTHER
796	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	55	CHANGING LANES
797	REAR-END	SW	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
798	EMBANKMENT CUT/FILL SLOPE	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	60	AVOIDING OBJECT/VEHICLE IN ROAD
799	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	60	GOING STRAIGHT
800	OVERTURNING	N	PASSENGER CAR/VAN	UNKNOWN	65	OTHER
801	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	DRIVER FATIGUE	60	CHANGING LANES

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
802	119B	53	7/5/2018	1418	INJ	1D182751	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
803	119B	53	1/8/2016	2020	INJ	1D-16-0150	ON	NON-INTERSECTION	2	DRY	DARK-LIGHTED	NONE
804	119B	53	6/4/2019	240	PDO	1D192325	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-LIGHTED	NONE
805	119B	53	1/8/2016	2330	PDO	1D-16-0156	OFF LEFT	NON-INTERSECTION	1	ICY W/VIS ICY ROAD TREATMENT	DARK-UNLIGHTED	NONE
806	119B	53	5/21/2019	158	PDO	1D192131	ON	NON-INTERSECTION	2	SLUSHY W/VIS ICY ROAD TREATMENT	DARK-LIGHTED	SNOW/SLEET/HAIL
807	119B	53.08	10/24/2017	2330	PDO	1D-17-4777	OFF RIGHT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
808	119B	53.08	10/23/2015	1005	INJ	1D-15-5036	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
809	119B	53.08	4/5/2017	515	PDO	1D-17-1500	OFF LEFT	NON-INTERSECTION	1	ICY	DARK-UNLIGHTED	NONE
810	119B	53.2	1/3/2019	1015	PDO	1D190035	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
811	119B	53.3	1/8/2016	1140	INJ	1D-16-0135	ON	NON-INTERSECTION	2	SLUSHY	DAYLIGHT	NONE
812	119B	53.5	2/7/2017	130	PDO	1D-17-0635	OFF RIGHT	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
813	119B	53.5	8/12/2016	1015	PDO	1D-16-3545	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
814	119B	53.5	1/31/2015	2300	PDO	1D-15-0504	OFF LEFT	NON-INTERSECTION	1	SNOWY	DARK-UNLIGHTED	SNOW/SLEET/HAIL
815	119B	53.53	11/18/2016	1725	PDO	1D-16-5221	ON	INTERSECTION RELATED	2	DRY	DARK-UNLIGHTED	NONE
816	119B	53.54	8/1/2018	758	INJ	1D183170	ON	AT INTERSECTION	3	DRY	DAYLIGHT	NONE
817	119B	53.54	7/19/2018	1949	INJ	1D182977	ON	AT INTERSECTION	2	DRY	DAWN OR DUSK	NONE
818	119B	53.54	2/7/2015	1447	INJ	1D-15-0634	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
819	119B	53.54	7/17/2015	1305	PDO	1D-15-3309	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
820	119B	53.54	9/11/2015	910	PDO	1D-15-4277	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
821	119B	53.54	10/22/2018	1258	PDO	1D184436	OFF RIGHT	AT INTERSECTION	1	DRY	DAYLIGHT	NONE
822	119B	53.54	8/4/2019	932	PDO	2019-7322	OFF RIGHT	INTERSECTION RELATED	1	UNKNOWN	DAYLIGHT	NONE
823	119B	53.54	6/13/2017	2200	INJ	1D-17-2647	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
824	119B	53.54	12/24/2017	1652	INJ	1D-17-5716	ON	AT INTERSECTION	2	ICY	DARK-LIGHTED	SNOW/SLEET/HAIL
825	119B	53.54	5/2/2018	2200	INJ	1D181777	ON	AT INTERSECTION	2	WET	DARK-LIGHTED	NONE
826	119B	53.54	3/20/2019	1852	INJ	1D191211	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
827	119B	53.54	6/11/2019	1810	INJ	1D192433	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
828	119B	53.57	7/7/2017	1120	PDO	1D-17-3019	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
829	119B	53.6	10/5/2015	1446	INJ	1D-15-4703	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
830	119B	53.64	8/8/2017	1235	PDO	1D-17-3541	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
831	119B	53.74	4/13/2015	300	PDO	1D-15-1759	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
832	119B	53.8	6/29/2018	2215	INJ	1D182670	OFF LEFT	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
833	119B	53.87	7/5/2017	807	PDO	1D-17-2983	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
834	119B	54	9/21/2018	845	PDO	1D183949	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
835	119B	54.06	2/10/2016	450	INJ	1D-16-0671	ON	NON-INTERSECTION	2	DRY	DARK-LIGHTED	NONE
836	119B	54.11	7/19/2017	1730	INJ	2017-6271	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
837	119B	54.13	4/28/2019	732	INJ	2019-3785	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
838	119B	54.25	10/6/2017	1815	PDO	2017-9019	ON	NON-INTERSECTION	2	DRY	DAWN OR DUSK	NONE
839	119B	54.3	10/22/2015	729	PDO	2015-9640	ON	NON-INTERSECTION	2	WET	DAYLIGHT	RAIN
840	119B	54.31	11/10/2018	1519	PDO	2018-10572	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
841	119B	54.31	1/19/2018	2120	PDO	1D-18-0295	ON	NON-INTERSECTION	1	DRY	DARK-UNLIGHTED	NONE
842	119B	54.31	1/6/2015	530	PDO	2015-122	OFF RIGHT	NON-INTERSECTION	1	ICY	DARK-UNLIGHTED	NONE
843	119B	54.34	7/17/2016	1309	PDO	2016-6350	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
844	119B	54.34	9/15/2018	1934	INJ	2018-8642	ON	NON-INTERSECTION	2	DRY	DARK-LIGHTED	NONE
845	119B	54.34	8/27/2016	1600	PDO	2016-7788	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
846	119B	54.36	12/21/2015	535	PDO	2015-11515	OFF LEFT	NON-INTERSECTION	1	ICY	DAWN OR DUSK	NONE
847	119B	54.37	6/20/2016	930	PDO	2016-5468	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
848	119B	54.38	3/13/2015	652	INJ	2015-2132	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
849	119B	54.38	8/29/2018	752	PDO	2018-8013	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
850	119B	54.39	1/24/2019	704	PDO	2019-718	ON	INTERSECTION RELATED	2	ICY	DAYLIGHT	SNOW/SLEET/HAIL
851	119B	54.39	1/8/2016	1000	PDO	2016-211	ON	INTERSECTION RELATED	2	SLUSHY	DAYLIGHT	SNOW/SLEET/HAIL

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
802	VEHICLE CARGO/DEBRIS	N	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	GOING STRAIGHT
803	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	50	OTHER
804	GUARD RAIL	S	SUV	UNKNOWN	40	OTHER
805	TREE/SHRUBBERY	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	65	OTHER
806	ROAD MAINTENANCE EQUIPMENT	N	PASSENGER CAR/VAN	UNKNOWN	40	WRONG WAY
807	FENCE	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	60	OTHER
808	SIDESWIPE (SAME DIRECTION)	NE	PICKUP TRUCK/UTILITY VAN W/TRAILER	NO APPARENT CONTRIBUTING FACTOR	55	CHANGING LANES
809	OVERTURNING	S	PICKUP TRUCK/UTILITY VAN	DRIVER INEXPERIENCE	65	OTHER
810	SIDESWIPE (SAME DIRECTION)	N	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	45	CHANGING LANES
811	SIDESWIPE (SAME DIRECTION)	NE	PASSENGER CAR/VAN	UNKNOWN	55	OTHER
812	PARKED MOTOR VEHICLE	N	PICKUP TRUCK/UTILITY VAN	UNKNOWN	35	GOING STRAIGHT
813	SIGN	N	PASSENGER CAR/VAN	ILLNESS	60	GOING STRAIGHT
814	OVERTURNING	N	SUV	NO APPARENT CONTRIBUTING FACTOR	50	OTHER
815	BROADSIDE	S	NON-SCHOOL BUS < 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	30	CHANGING LANES
816	BROADSIDE	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
817	SIDESWIPE (SAME DIRECTION)	S	NON-SCHOOL BUS < 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
818	BROADSIDE	W	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
819	BROADSIDE	W	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
820	BROADSIDE	W	SUV	DRIVER UNFAMILIAR WITH AREA	20	GOING STRAIGHT
821	OTHER FIXED OBJECT	E	NON-SCHOOL BUS < 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	5	MAKING U-TURN
822	SIGN	S	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	GOING STRAIGHT
823	BROADSIDE	W	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	10	GOING STRAIGHT
824	BROADSIDE	W	PICKUP TRUCK/UTILITY VAN	UNKNOWN	20	OTHER
825	BROADSIDE	W	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	15	GOING STRAIGHT
826	BROADSIDE	W	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
827	BROADSIDE	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
828	REAR-END	N	PICKUP TRUCK/UTILITY VAN W/TRAILER	NO APPARENT CONTRIBUTING FACTOR	65	GOING STRAIGHT
829	OVERTURNING	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	60	CHANGING LANES
830	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	50	CHANGING LANES
831	OVERTURNING	N	PICKUP TRUCK/UTILITY VAN	ASLEEP AT WHEEL	65	GOING STRAIGHT
832	SIGN	N	PASSENGER CAR/VAN	UNKNOWN	35	AVOIDING OBJECT/VEHICLE IN ROAD
833	SIGN	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	60	GOING STRAIGHT
834	REAR-END	S	PASSENGER CAR/VAN	UNKNOWN	55	CHANGING LANES
835	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	60	CHANGING LANES
836	OVERTURNING	E	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	50	GOING STRAIGHT
837	OVERTURNING	W	MOTORCYCLE	NO APPARENT CONTRIBUTING FACTOR	70	GOING STRAIGHT
838	SIDESWIPE (SAME DIRECTION)	W	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	25	CHANGING LANES
839	REAR-END	SW	PICKUP TRUCK/UTILITY VAN	UNKNOWN	40	CHANGING LANES
840	OVERTAKING TURN	SW	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	15	MAKING U-TURN
841	OVERTURNING	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	55	AVOIDING OBJECT/VEHICLE IN ROAD
842	TREE/SHRUBBERY	SW	SUV	DRIVER INEXPERIENCE	35	GOING STRAIGHT
843	REAR-END	E	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	35	GOING STRAIGHT
844	SIDESWIPE (SAME DIRECTION)	SW	SUV	UNKNOWN	40	CHANGING LANES
845	REAR-END	W	PASSENGER CAR/VAN	UNKNOWN	30	GOING STRAIGHT
846	SIGN	S	PICKUP TRUCK/UTILITY VAN	DRIVER UNFAMILIAR WITH AREA	45	OTHER
847	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	STOPPED IN TRAFFIC
848	REAR-END	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
849	SIDESWIPE (SAME DIRECTION)	W	PASSENGER CAR/VAN	DRIVER EMOTIONALLY UPSET	39	CHANGING LANES
850	REAR-END	E	PASSENGER CAR/VAN	UNKNOWN	25	SLOWING
851	REAR-END	E	SUV	UNKNOWN	20	SLOWING

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
852	119B	54.4	6/18/2015	1058	PDO	2015-5281	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
853	119B	54.4	8/3/2016	2035	PDO	2016-6953	ON	INTERSECTION RELATED	2	DRY	DAWN OR DUSK	NONE
854	119B	54.4	12/18/2016	1831	PDO	2016-11533	ON	INTERSECTION RELATED	2	SNOWY	DARK-LIGHTED	NONE
855	119B	54.4	1/30/2016	1924	INJ	2016-902	ON	INTERSECTION RELATED	2	SNOWY	DARK-LIGHTED	SNOW/SLEET/HAIL
856	119B	54.4	2/10/2017	2037	PDO	2017-1228	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
857	119B	54.4	12/16/2015	737	PDO		ON	INTERSECTION RELATED	2	SNOWY	DAYLIGHT	NONE
858	119B	54.4	2/21/2015	1456	PDO	2015-1546	ON	INTERSECTION RELATED	6	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
859	119B	54.4	5/31/2015	1818	PDO	2015-4740	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
860	119B	54.4	7/1/2015	1508	PDO	2015-5724	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
861	119B	54.4	2/7/2019	1552	PDO	2019-1233	ON	NON-INTERSECTION	3	DRY	DAYLIGHT	NONE
862	119B	54.4	9/3/2015	1812	PDO		ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
863	119B	54.4	3/19/2018	1517	PDO	2018-2429	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
864	119B	54.4	5/26/2015	1655	PDO	2015-4580	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
865	119B	54.4	2/3/2016	1640	INJ	2016-1027	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
866	119B	54.4	12/21/2017	627	INJ	2017-11550	ON	INTERSECTION RELATED	2	SNOWY W/VIS ICY ROAD TREATMENT	DARK-LIGHTED	SNOW/SLEET/HAIL
867	119B	54.41	4/30/2015	1744	INJ	2015-3703	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
868	119B	54.41	12/22/2018	33	PDO	2018-12017	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
869	119B	54.41	11/1/2016	1315	PDO	2016-10079	ON	AT DRIVEWAY ACCESS	2	DRY	DAYLIGHT	NONE
870	119B	54.41	7/14/2015	805	INJ	2015-6122	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
871	119B	54.41	10/19/2015	653	INJ	2015-9506	ON	AT INTERSECTION	4	DRY	DAYLIGHT	NONE
872	119B	54.41	8/31/2016	1930	PDO	2016-7941	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
873	119B	54.41	8/7/2018	2004	PDO	2018-7278	ON	AT INTERSECTION	2	DRY	DAWN OR DUSK	NONE
874	119B	54.41	12/3/2017	1304	PDO	2017-10920	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
875	119B	54.41	1/19/2015	1026	PDO	2015-492	OFF LEFT	AT INTERSECTION	1	DRY	DAYLIGHT	NONE
876	119B	54.41	12/3/2015	1349	INJ	2015-10979	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
877	119B	54.41	1/30/2019	1241	PDO	2019-924	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
878	119B	54.41	6/13/2019	2113	PDO	2019-5439	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
879	119B	54.41	12/25/2017	1721	INJ	2017-11681	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
880	119B	54.41	9/14/2017	1154	PDO	2017-8239	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
881	119B	54.41	11/21/2017	641	PDO	2017-10536	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
882	119B	54.41	12/20/2017	1701	PDO	2017-11530	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
883	119B	54.41	10/18/2016	1608	PDO	2016-9607	ON	AT DRIVEWAY ACCESS	2	DRY	DAYLIGHT	NONE
884	119B	54.41	3/11/2015	1958	INJ	2015-2094	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
885	119B	54.41	12/4/2017	1555	INJ	2017-10969	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
886	119B	54.41	6/16/2015	639	PDO	2015-5215	ON	AT INTERSECTION	2	WET	DAYLIGHT	RAIN
887	119B	54.41	9/15/2015	1726	PDO	2015-8334	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
888	119B	54.41	8/27/2016	1200	INJ	2016-7807	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
889	119B	54.41	7/18/2017	1748	INJ	2017-6234	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
890	119B	54.41	2/13/2018	1345	INJ	2018-1399	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
891	119B	54.41	9/27/2018	1813	INJ	2018-9070	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
892	119B	54.41	5/14/2019	1654	PDO	2019-4352	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
893	119B	54.41	7/23/2019	1620	PDO	2019-6876	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
894	119B	54.41	12/20/2017	1220	PDO	2017-11515	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
895	119B	54.41	1/22/2015	1827	PDO	2015-607	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
896	119B	54.41	5/31/2015	1029	INJ	2015-4729	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
897	119B	54.41	11/20/2015	1322	INJ	2015-10612	ON	AT INTERSECTION	5	DRY	DAYLIGHT	NONE
898	119B	54.41	12/10/2015	2138	PDO	2015-11222	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
899	119B	54.41	1/26/2016	1359	INJ	2016-746	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
900	119B	54.41	8/4/2016	1946	INJ	2016-6985	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
901	119B	54.41	8/30/2016	600	PDO	2016-7864	ON	AT INTERSECTION	2	DRY	DAWN OR DUSK	NONE



## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
852	REAR-END	NE	SUV	DRIVER FATIGUE	5	MAKING LEFT TURN
853	REAR-END	N	PICKUP TRUCK/UTILITY VAN	UNKNOWN	3	SLOWING
854	REAR-END	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	10	SLOWING
855	REAR-END	N	SUV	DRIVER PREOCCUPIED	15	SLOWING
856	REAR-END	E	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
857	REAR-END	E	SUV	UNKNOWN	10	SLOWING
858	ROAD MAINTENANCE EQUIPMENT	E	SUV	UNKNOWN	45	GOING STRAIGHT
859	REAR-END	E	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	5	SLOWING
860	SIDESWIPE (SAME DIRECTION)	E	SUV	NO APPARENT CONTRIBUTING FACTOR	UK	CHANGING LANES
861	SIDESWIPE (SAME DIRECTION)	NE	SUV	UNKNOWN	5	CHANGING LANES
862	REAR-END	E	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	15	GOING STRAIGHT
863	REAR-END	E	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	15	GOING STRAIGHT
864	REAR-END	E	PASSENGER CAR/VAN	UNKNOWN	10	GOING STRAIGHT
865	REAR-END	E	PASSENGER CAR/VAN	UNKNOWN	10	GOING STRAIGHT
866	REAR-END	NE	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	20	GOING STRAIGHT
867	APPROACH TURN	N	SUV	NO APPARENT CONTRIBUTING FACTOR	3	MAKING LEFT TURN
868	SIDESWIPE (SAME DIRECTION)	NE	SUV	DRIVER UNFAMILIAR WITH AREA	10	MAKING LEFT TURN
869	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	15	MAKING RIGHT TURN
870	APPROACH TURN	N	SUV	NO APPARENT CONTRIBUTING FACTOR	15	MAKING LEFT TURN
871	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	35	MAKING RIGHT TURN
872	REAR-END	S	SUV	UNKNOWN	20	GOING STRAIGHT
873	REAR-END	S	PASSENGER CAR/VAN	UNKNOWN	35	GOING STRAIGHT
874	SIDESWIPE (SAME DIRECTION)	N	PASSENGER CAR/VAN	UNKNOWN	5	CHANGING LANES
875	CURB/RAISED MEDIAN	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	15	MAKING LEFT TURN
876	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	40	GOING STRAIGHT
877	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
878	REAR-END	S	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	10	GOING STRAIGHT
879	REAR-END	S	PASSENGER CAR/VAN	DISTRACTED BY PASSENGER	10	SLOWING
880	SIDESWIPE (SAME DIRECTION)	S	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
881	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	10	CHANGING LANES
882	REAR-END	S	SUV	DRIVER INEXPERIENCE	10	GOING STRAIGHT
883	REAR-END	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
884	BROADSIDE	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
885	BROADSIDE	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
886	REAR-END	S	SUV	UNKNOWN	35	MAKING RIGHT TURN
887	REAR-END	S	SUV	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
888	REAR-END	N	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
889	REAR-END	N	PASSENGER CAR/VAN	DISTRACTED BY PASSENGER	25	GOING STRAIGHT
890	REAR-END	N	SUV	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
891	REAR-END	S	SUV	UNKNOWN	10	GOING STRAIGHT
892	REAR-END	S	SUV	DRIVER EMOTIONALLY UPSET	25	GOING STRAIGHT
893	REAR-END	N	PICKUP TRUCK/UTILITY VAN	UNKNOWN	50	CHANGING LANES
894	SIDESWIPE (SAME DIRECTION)	S	PICKUP TRUCK/UTILITY VAN	UNKNOWN	35	CHANGING LANES
895	APPROACH TURN	S	SUV	NO APPARENT CONTRIBUTING FACTOR	5	MAKING LEFT TURN
896	APPROACH TURN	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	UK	MAKING LEFT TURN
897	APPROACH TURN	S	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	10	MAKING LEFT TURN
898	APPROACH TURN	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	15	MAKING LEFT TURN
899	APPROACH TURN	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	MAKING LEFT TURN
900	APPROACH TURN	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	45	GOING STRAIGHT
901	APPROACH TURN	S	SUV	DRIVER PREOCCUPIED	20	MAKING LEFT TURN

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#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
902	119B	54.41	10/24/2016	1844	PDO	2016-9806	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
903	119B	54.41	8/4/2017	2016	PDO	2017-6821	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
904	119B	54.41	8/5/2017	1017	INJ	2017-6841	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
905	119B	54.41	2/28/2018	1423	PDO	2018-1828	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
906	119B	54.41	6/4/2018	1009	INJ	2018-5027	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
907	119B	54.41	8/9/2018	1535	PDO	2018-7338	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
908	119B	54.41	9/5/2018	1402	INJ	2018-8270	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
909	119B	54.41	11/27/2018	1749	PDO	2018-11156	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
910	119B	54.41	7/16/2019	757	PDO	2019-6590	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
911	119B	54.41	11/1/2019	1421	PDO	2019-10418	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
912	119B	54.41	9/28/2018	142	INJ	2018-9074	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
913	119B	54.41	2/2/2017	1829	PDO	2017-967	ON	INTERSECTION RELATED	2	DRY	DARK-LIGHTED	NONE
914	119B	54.41	12/3/2017	1010	INJ	2017-10915	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
915	119B	54.41	4/4/2017	1235	INJ	2017-2801	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
916	119B	54.41	5/17/2017	1434	INJ	2017-4185	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
917	119B	54.41	6/6/2017	1111	PDO	2017-4787	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
918	119B	54.41	9/12/2017	2153	PDO	2017-8175	OFF LEFT	INTERSECTION RELATED	1	DRY	DARK-LIGHTED	NONE
919	119B	54.41	9/5/2019	452	PDO	2019-8370	ON	AT INTERSECTION	2	DRY	DAWN OR DUSK	NONE
920	119B	54.41	6/1/2016	945	PDO	2016-4797	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
921	119B	54.41	9/28/2016	747	PDO	2016-8866	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
922	119B	54.41	12/19/2015	622	INJ	2015-11470	ON	AT INTERSECTION	2	ICY	DARK-LIGHTED	NONE
923	119B	54.41	5/5/2017	2000	INJ	2017-3813	OFF RIGHT	NON-INTERSECTION	4	DRY	DAYLIGHT	NONE
924	119B	54.41	2/24/2018	1923	PDO	2018-1697	ON	AT INTERSECTION	2	SNOWY	DARK-LIGHTED	SNOW/SLEET/HAIL
925	119B	54.41	7/22/2019	1837	INJ	2019-6832	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
926	119B	54.41	12/8/2017	1804	PDO	2017-11117	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
927	119B	54.41	2/21/2018	852	PDO	2018-1606	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
928	119B	54.41	1/13/2017	553	PDO	2017-354	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
929	119B	54.41	1/29/2018	1205	INJ	2018-873	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
930	119B	54.41	1/8/2016	817	PDO	2016-206	OFF LEFT	AT INTERSECTION	1	ICY	DAYLIGHT	SNOW/SLEET/HAIL
931	119B	54.41	10/30/2015	1713	PDO	2015-9916	ON	INTERSECTION RELATED	2	DRY	DAWN OR DUSK	NONE
932	119B	54.41	5/17/2017	656	PDO	2017-4162	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
933	119B	54.41	7/8/2016	1605	INJ	2016-6038	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
934	119B	54.41	1/7/2019	1606	INJ	2019-220	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
935	119B	54.41	1/14/2015	653	PDO	2015-355	ON	INTERSECTION RELATED	2	DRY	DAWN OR DUSK	NONE
936	119B	54.41	2/9/2015	1732	PDO	2015-115701	ON	INTERSECTION RELATED	2	DRY	DAWN OR DUSK	NONE
937	119B	54.41	11/27/2015	2106	PDO	2015-10816	ON	AT INTERSECTION	2	ICY	DARK-LIGHTED	SNOW/SLEET/HAIL
938	119B	54.41	1/4/2018	1313	PDO	2018-8	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
939	119B	54.41	3/10/2019	1445	INJ	2019-2175	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
940	119B	54.41	6/4/2019	1246	PDO	2019-5086	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
941	119B	54.41	1/6/2015	533	PDO	2015-119	OFF IN MEDIAN	NON-INTERSECTION	2	ICY	DARK-LIGHTED	NONE
942	119B	54.41	12/27/2016	1259	PDO	2016-11755	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
943	119B	54.41	1/26/2018	1038	PDO	2018-775	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
944	119B	54.41	1/23/2019	1453	PDO	2019-690	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
945	119B	54.41	7/18/2016	1945	PDO	2016-6384	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
946	119B	54.41	5/7/2018	920	INJ	2018-4039	ON	AT INTERSECTION	4	DRY	DAYLIGHT	NONE
947	119B	54.41	11/10/2015	1609	INJ	2015-10298	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
948	119B	54.41	6/1/2018	1744	PDO	2018-4949	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
949	119B	54.41	8/29/2019	1526	INJ	2019-8188	ON	AT INTERSECTION	3	DRY	DAYLIGHT	NONE
950	119B	54.41	2/20/2018	956	PDO	2018-1574	OFF RIGHT	AT INTERSECTION	1	SNOWY	DAYLIGHT	NONE
951	119B	54.41	5/1/2016	1222	PDO	2016-3780	ON	INTERSECTION RELATED	2	WET	DAYLIGHT	NONE

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
902	APPROACH TURN	S	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	10	MAKING LEFT TURN
903	APPROACH TURN	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
904	APPROACH TURN	N	SUV	UNKNOWN	10	MAKING LEFT TURN
905	APPROACH TURN	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	20	MAKING LEFT TURN
906	APPROACH TURN	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	20	MAKING LEFT TURN
907	APPROACH TURN	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	MAKING LEFT TURN
908	APPROACH TURN	S	SUV	DRIVER INEXPERIENCE	15	MAKING LEFT TURN
909	APPROACH TURN	N	PASSENGER CAR/VAN	UNKNOWN	35	GOING STRAIGHT
910	APPROACH TURN	N	MOTORCYCLE	UNKNOWN	10	MAKING LEFT TURN
911	APPROACH TURN	S	PASSENGER CAR/VAN	UNKNOWN	15	MAKING LEFT TURN
912	OVERTAKING TURN	S	MOTORCYCLE	UNKNOWN	35	MAKING LEFT TURN
913	BICYCLE	E	BICYCLE	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
914	BICYCLE	SE	BICYCLE	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
915	APPROACH TURN	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	40	MAKING LEFT TURN
916	APPROACH TURN	N	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	15	MAKING LEFT TURN
917	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	CHANGING LANES
918	CURB/RAISED MEDIAN	E	PASSENGER CAR/VAN	UNKNOWN	35	MAKING RIGHT TURN
919	BROADSIDE	E	PICKUP TRUCK/UTILITY VAN W/TRAILER	UNKNOWN	45	SLOWING
920	REAR-END	W	PASSENGER CAR/VAN	UNKNOWN	15	GOING STRAIGHT
921	SIDESWIPE (SAME DIRECTION)	SW	PASSENGER CAR/VAN	UNKNOWN	30	CHANGING LANES
922	APPROACH TURN	N	SUV	NO APPARENT CONTRIBUTING FACTOR	10	MAKING LEFT TURN
923	SIGN	NE	SUV	UNKNOWN	65	OTHER
924	BROADSIDE	E	PASSENGER CAR/VAN	DISTRACTED BY PASSENGER	10	MAKING LEFT TURN
925	BROADSIDE	S	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	25	MAKING LEFT TURN
926	REAR-END	N	PICKUP TRUCK/UTILITY VAN	UNKNOWN	5	SLOWING
927	REAR-END	SE	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	3	BACKING
928	APPROACH TURN	NE	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	30	GOING STRAIGHT
929	APPROACH TURN	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	UK	MAKING LEFT TURN
930	TREE/SHRUBBERY	E	PASSENGER CAR/VAN	UNKNOWN	20	MAKING RIGHT TURN
931	REAR-END	E	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	7	MAKING RIGHT TURN
932	REAR-END	W	PICKUP TRUCK/UTILITY VAN	UNKNOWN	15	GOING STRAIGHT
933	BICYCLE	NE	SUV	NO APPARENT CONTRIBUTING FACTOR	5	MAKING RIGHT TURN
934	REAR-END	E	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	25	GOING STRAIGHT
935	SIDESWIPE (SAME DIRECTION)	W	SCHOOL BUS < 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
936	SIDESWIPE (SAME DIRECTION)	NE	PASSENGER CAR/VAN W/TRAILER	UNKNOWN	0	STOPPED IN TRAFFIC
937	BROADSIDE	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	GOING STRAIGHT
938	BROADSIDE	SE	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	MAKING LEFT TURN
939	BROADSIDE	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
940	BROADSIDE	W	SUV	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
941	HEAD-ON	SW	PICKUP TRUCK/UTILITY VAN	UNKNOWN	35	CHANGING LANES
942	REAR-END	E	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	3	BACKING
943	REAR-END	SE	PASSENGER CAR/VAN	UNKNOWN	15	MAKING RIGHT TURN
944	REAR-END	SE	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	5	MAKING RIGHT TURN
945	SIDESWIPE (SAME DIRECTION)	NE	PASSENGER CAR/VAN	DRIVER UNFAMILIAR WITH AREA	32	MAKING LEFT TURN
946	SIDESWIPE (SAME DIRECTION)	E	SUV	UNKNOWN	75	GOING STRAIGHT
947	APPROACH TURN	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	MAKING LEFT TURN
948	APPROACH TURN	S	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	15	MAKING LEFT TURN
949	APPROACH TURN	S	SUV	NO APPARENT CONTRIBUTING FACTOR	15	MAKING LEFT TURN
950	CURB/RAISED MEDIAN	E	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	MAKING RIGHT TURN
951	SIDESWIPE (SAME DIRECTION)	S	SUV	NO APPARENT CONTRIBUTING FACTOR	25	MAKING LEFT TURN

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
952	119B	54.41	10/24/2016	1840	PDO	2016-9805	ON	NON-INTERSECTION	2	DRY	DARK-LIGHTED	NONE
953	119B	54.41	10/17/2017	758	PDO	2017-9335	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
954	119B	54.41	7/27/2017	923	INJ	2017-6510	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
955	119B	54.41	9/15/2017	1720	PDO	2017-8305	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
956	119B	54.41	11/16/2017	838	PDO	2017-10381	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
957	119B	54.41	4/7/2017	1050	PDO	2017-2883	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
958	119B	54.42	12/11/2018	1638	PDO	2018-11659	ON	INTERSECTION RELATED	2	DRY	DAWN OR DUSK	NONE
959	119B	54.42	8/3/2017	1545	PDO	2017-6783	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
960	119B	54.42	12/18/2016	838	PDO	2016-11514	OFF LEFT	NON-INTERSECTION	1	SNOWY	DAYLIGHT	NONE
961	119B	54.42	1/31/2018	1920	PDO	2018-954	OFF RIGHT	AT INTERSECTION	1	DRY	DARK-LIGHTED	NONE
962	119B	54.42	9/9/2015	741	PDO	2015-8105	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	UNKNOWN
963	119B	54.42	10/31/2016	1531	PDO	2016-10056	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
964	119B	54.42	11/10/2015	745	PDO	2015-10274	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
965	119B	54.42	7/4/2015	846	INJ	2015-5823	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
966	119B	54.42	3/20/2017	1402	PDO	2017-2354	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
967	119B	54.42	6/28/2018	1131	PDO	2018-5835	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
968	119B	54.42	7/23/2015	1312	PDO	2015-6466	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
969	119B	54.42	1/11/2018	1521	INJ	2018-297	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
970	119B	54.42	3/2/2019	841	PDO	2019-1924	OFF RIGHT	INTERSECTION RELATED	1	SNOWY	DAYLIGHT	SNOW/SLEET/HAIL
971	119B	54.42	1/17/2018	1123	PDO	2018-475	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
972	119B	54.42	6/13/2019	925	INJ	2019-5417	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
973	119B	54.42	4/28/2017	1830	PDO	2017-3552	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
974	119B	54.42	8/24/2017	1804	PDO	2017-7502	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
975	119B	54.42	6/4/2016	744	INJ	2016-9087	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
976	119B	54.43	6/29/2015	2030	PDO	2015-5654	OFF LEFT	NON-INTERSECTION	1	DRY	DAWN OR DUSK	NONE
977	119B	54.43	11/2/2019	1514	PDO	2019-10455	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
978	119B	54.43	2/5/2019	644	PDO	2019-1137	ON	NON-INTERSECTION	2	DRY	DAWN OR DUSK	NONE
979	119B	54.43	5/10/2018	1037	PDO	2018-4159	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
980	119B	54.43	4/22/2017	1047	PDO	2017-3388	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
981	119B	54.44	8/4/2016	1600	PDO	2016-6980	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
982	119B	54.44	5/31/2015	1538	INJ	2015-4738	ON	NON-INTERSECTION	4	DRY	DAYLIGHT	NONE
983	119B	54.45	7/9/2017	1246	PDO	2017-5926	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
984	119B	54.45	12/20/2019	1040	PDO	19-14851	OFF LEFT	NON-INTERSECTION	1	DRY	DAYLIGHT	NONE
985	119B	54.47	11/24/2016	2018	PDO	2016-10794	ON	NON-INTERSECTION	2	DRY	DARK-UNLIGHTED	NONE
986	119B	54.48	9/10/2019	747	INJ	2019-8577	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
987	119B	54.49	12/19/2019	858	PDO	2019-11934	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
988	119B	54.5	6/6/2018	810	PDO	2018-5098	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
989	119B	54.5	12/21/2017	1218	PDO	2017-11560	OFF RIGHT	AT DRIVEWAY ACCESS	1	ICY	DAYLIGHT	NONE
990	119B	54.5	2/10/2016	1223	PDO	2016-1231	ON	AT DRIVEWAY ACCESS	2	DRY	DAYLIGHT	NONE
991	119B	54.51	10/23/2018	1919	INJ	2018-9950	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
992	119B	54.51	10/20/2017	16	INJ	2017-9455	OFF RIGHT	NON-INTERSECTION	1	DRY	DARK-LIGHTED	NONE
993	119B	54.52	11/30/2016	1602	PDO	2016-10943	ON	NON-INTERSECTION	2	DRY	DAYLIGHT	NONE
994	119B	54.54	5/26/2019	2218	PDO	2019-4774	ON	AT DRIVEWAY ACCESS	2	DRY	DARK-UNLIGHTED	NONE
995	119B	54.55	12/19/2015	1552	PDO	2015-11485	OFF RIGHT	NON-INTERSECTION	1	WET	DAYLIGHT	NONE

## SH 119 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
952	SIDESWIPE (SAME DIRECTION)	E	PASSENGER CAR/VAN	UNKNOWN	5	CHANGING LANES
953	REAR-END	W	PASSENGER CAR/VAN	UNKNOWN	UK	SLOWING
954	REAR-END	E	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	5	MAKING LEFT TURN
955	REAR-END	NE	PASSENGER CAR/VAN	UNKNOWN	15	SLOWING
956	BROADSIDE	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	45	GOING STRAIGHT
957	REAR-END	S	PICKUP TRUCK/UTILITY VAN	UNKNOWN	5	GOING STRAIGHT
958	REAR-END	W	PICKUP TRUCK/UTILITY VAN	UNKNOWN	5	GOING STRAIGHT
959	SIDESWIPE (SAME DIRECTION)	W	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	10	WEAVING
960	CURB/RAISED MEDIAN	W	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	15	MAKING RIGHT TURN
961	SIGN	E	HIT & RUN - UNKNOWN	UNKNOWN	45	OTHER
962	REAR-END	SW	PICKUP TRUCK/UTILITY VAN	UNKNOWN	25	SLOWING
963	REAR-END	W	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	8	GOING STRAIGHT
964	REAR-END	W	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	35	GOING STRAIGHT
965	REAR-END	W	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	30	GOING STRAIGHT
966	REAR-END	W	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	20	GOING STRAIGHT
967	REAR-END	W	PICKUP TRUCK/UTILITY VAN	NO APPARENT CONTRIBUTING FACTOR	20	MAKING U-TURN
968	REAR-END	W	SUV	UNKNOWN	10	GOING STRAIGHT
969	REAR-END	SW	SUV	UNKNOWN	10	GOING STRAIGHT
970	CURB/RAISED MEDIAN	W	PASSENGER CAR/VAN	UNKNOWN	5	OTHER
971	REAR-END	SW	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	20	SLOWING
972	REAR-END	W	SUV	DRIVER PREOCCUPIED	10	GOING STRAIGHT
973	REAR-END	E	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	35	GOING STRAIGHT
974	REAR-END	NE	SUV	UNKNOWN	15	GOING STRAIGHT
975	REAR-END	W	PASSENGER CAR/VAN	UNKNOWN	UK	GOING STRAIGHT
976	CURB/RAISED MEDIAN	N	PASSENGER CAR/VAN	UNKNOWN	35	OTHER
977	REAR-END	W	SUV	UNKNOWN	15	GOING STRAIGHT
978	REAR-END	SW	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	20	GOING STRAIGHT
979	SIDESWIPE (SAME DIRECTION)	W	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	45	CHANGING LANES
980	REAR-END	W	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	4	GOING STRAIGHT
981	REAR-END	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	GOING STRAIGHT
982	OVERTURNING	W	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	45	GOING STRAIGHT
983	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	STOPPED IN TRAFFIC
984	OTHER FIXED OBJECT	N	PASSENGER CAR/VAN	EVADING LAW ENFORCEMENT OFFICER	65	OTHER
985	OVERTAKING TURN	E	PASSENGER CAR/VAN	UNKNOWN	15	MAKING U-TURN
986	REAR-END	W	SUV	UNKNOWN	30	GOING STRAIGHT
987	REAR-END	SW	PICKUP TRUCK/UTILITY VAN	UNKNOWN	2	GOING STRAIGHT
988	BROADSIDE	S	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	DRIVER FATIGUE	40	GOING STRAIGHT
989	CURB/RAISED MEDIAN	W	SUV	DRIVER INEXPERIENCE	25	MAKING RIGHT TURN
990	REAR-END	W	PICKUP TRUCK/UTILITY VAN	UNKNOWN	35	GOING STRAIGHT
991	APPROACH TURN	N	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	25	MAKING LEFT TURN
992	INVOLVING OTHER OBJECT	E	PICKUP TRUCK/UTILITY VAN	UNKNOWN	75	WEAVING
993	REAR-END	W	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	20	GOING STRAIGHT
994	SIDESWIPE (SAME DIRECTION)	S	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	UK	CHANGING LANES
995	SIGN	W	PICKUP TRUCK/UTILITY VAN	UNKNOWN	40	GOING STRAIGHT

## SH 52 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Hwy	MP	Date	Time	Severity	Serial #	Location	Road Description	Vehicles	Road Condition	Lighting	Weather
1	52A	0	6/25/2015	636	INJ	1D-15-2950	ON	AT INTERSECTION	5	DRY	DAYLIGHT	NONE
2	52A	0	3/30/2015	1830	INJ	1D-15-1543	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
3	52A	0	3/5/2015	1330	PDO	1D-15-1145	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
4	52A	0	2/19/2018	1900	PDO	1D180753	ON	INTERSECTION RELATED	2	SNOWY	DARK-UNLIGHTED	SNOW/SLEET/HAIL
5	52A	0	4/5/2018	1540	PDO	1D181413	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
6	52A	0	1/28/2017	915	INJ	1D-17-0475	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
7	52A	0	4/1/2018	2205	INJ	1D181362	ON	AT INTERSECTION	2	DRY	DARK-LIGHTED	NONE
8	52A	0	3/12/2018	605	PDO	1D180924	ON	AT INTERSECTION	2	DRY	DAWN OR DUSK	NONE
9	52A	0	11/3/2017	1512	PDO	1D-17-4932	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
10	52A	0	8/15/2016	1655	PDO	1D-16-3579	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
11	52A	0	12/23/2019	720	PDO	1D195375	ON	AT INTERSECTION	3	DRY	DAYLIGHT	NONE
12	52A	0	6/24/2016	1359	PDO	1D-16-2771	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
13	52A	0	12/14/2016	745	PDO	1D-16-5642	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE
14	52A	0	1/28/2015	800	INJ	1D-15-0452	ON	AT INTERSECTION	2	DRY	DAYLIGHT	NONE
15	52A	0.01	4/23/2015	1550	INJ	1D-15-1943	ON	INTERSECTION RELATED	3	DRY	DAYLIGHT	NONE
16	52A	0.01	1/11/2019	1335	PDO	1D190158	ON	INTERSECTION RELATED	2	WET	DAYLIGHT	RAIN
17	52A	0.05	3/18/2015	755	PDO	1D-15-1354	ON	INTERSECTION RELATED	2	DRY	DAYLIGHT	NONE

## SH 52 Accident Listing - Jan 1, 2015 through Dec 31, 2019

#	Accident Type	Direction 1	Vehicle 1	Factor 1	Speed 1	Vehicle Movement 1
1	BROADSIDE	NE	PASSENGER CAR/VAN	ASLEEP AT WHEEL	55	GOING STRAIGHT
2	SIDESWIPE (SAME DIRECTION)	N	SUV	NO APPARENT CONTRIBUTING FACTOR	60	CHANGING LANES
3	REAR-END	N	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	25	GOING STRAIGHT
4	REAR-END	N	SUV	DRIVER INEXPERIENCE	20	SLOWING
5	REAR-END	N	PICKUP TRUCK/UTILITY VAN	DRIVER PREOCCUPIED	5	SLOWING
6	BROADSIDE	N	PASSENGER CAR/VAN	DISTRACTED BY PASSENGER	55	GOING STRAIGHT
7	BROADSIDE	N	PICKUP TRUCK/UTILITY VAN	DRIVER FATIGUE	55	GOING STRAIGHT
8	APPROACH TURN	S	HIT & RUN - UNKNOWN	NO APPARENT CONTRIBUTING FACTOR	UK	MAKING LEFT TURN
9	REAR-END	W	PASSENGER CAR/VAN	DRIVER PREOCCUPIED	5	MAKING RIGHT TURN
10	SIDESWIPE (SAME DIRECTION)	W	PICKUP TRUCK/UTILITY VAN W/TRAILER	NO APPARENT CONTRIBUTING FACTOR	10	CHANGING LANES
11	VEHICLE CARGO/DEBRIS	W	PICKUP TRUCK/UTILITY VAN	UNKNOWN	10	MAKING LEFT TURN
12	BROADSIDE	W	PASSENGER CAR/VAN	DRIVER INEXPERIENCE	10	GOING STRAIGHT
13	REAR-END	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	5	GOING STRAIGHT
14	APPROACH TURN	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	10	MAKING LEFT TURN
15	REAR-END	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	15	GOING STRAIGHT
16	REAR-END	W	TRUCK GVW > 10K/BUSSES > 15 PEOPLE	NO APPARENT CONTRIBUTING FACTOR	3	BACKING
17	REAR-END	W	PASSENGER CAR/VAN	NO APPARENT CONTRIBUTING FACTOR	3	GOING STRAIGHT



## Memorandum

*Date:* December 10, 2021

*Subject:* SH 119 Life Cycle Cost Analysis Technical Memo

A life cycle cost analysis has been prepared to understand the costs and benefits associated with each of the SH 119 alternatives over a 25-year horizon. The evaluation has focused on costs associated with the capital construction of each alternative, maintenance and operations costs over the 25-year planning horizon, and user delay costs associated with commuters traveling the corridor (using transit and passenger vehicles) and commercial trucks using the corridor over the 25-year planning horizon. The total costs have been divided into the total system users served by each of the alternatives (which includes transit, passenger and commercial vehicles). The result of this calculation represents the 25-year average cost per person which provides a representative comparison of the ability of each alternative to serve users, with lower values representing less delay per dollar spent. Given the unquantified ability for the tolled express lane (TEL) alternatives to recover capital costs through the collection of tolls, this income is not included in the evaluation at this time. The remainder of this memo discusses the process used to develop the analysis followed by a summary of the results.

### Units

Given the planning level nature of this analysis, this table lists the cost units included in the evaluation process. These items can be roughly broken into three bins: Roadway Costs, ITS/Toll Devices, and Travel Delay. Definitions for each of the items follows:

- **Baseline Costs (SH 52, Airport, Hover)** – At the start of the evaluation process, the project team identified three fiscally committed improvements along the corridor to be included in a baseline model. These improvements are planned to be constructed using identified funds and representative costs have been included in each of the scenarios to represent the costs associated with corridor benefits occurring in the analysis. Further detail about each project follows:
  - SH 119/SH 52 Split Signalized Intersection (SH 52) – This improvement will divide the highway creating a wide median as occurs elsewhere along SH 119 and resulting in a pair of new signalized intersections for the northbound and southbound directions.
  - Northbound SH 119/Airport Rd Signalization (Airport) – This improvement will install a signal at the intersection.
  - Southbound SH 119/Hover St Tunnel (Hover) – This improvement will construct a tunnel for the southbound SH 119 travel lanes at the Hover St intersection, removing the through travel lanes from the intersection operations.



- Added Lane Miles – These improvements generalize the cost of constructing one mile of new travel lane along the corridor and includes one new lane at 12 feet and a 12-foot shoulder.
- Managed Lane Overpasses (one-way) – This improvement type applies to only the TEL Grade Separated alternative and includes a 16-foot clearance one-lane bridge with a 14-foot lane, a 6-foot inside shoulder, and 8-foot outside shoulder. Given the size of the median it is assumed that one bridge would be built in each direction at each signalized intersection for this alternative.
- Mainline Toll Gantry – Each toll gantry would be designed to capture vehicles in the through travel lane and the inside shoulder along mainline SH 119.
- Side Street Toll Gantry – Each toll gantry would be designed to capture vehicles entering the TEL from side street left turn movements onto SH 119.
- Server and Facility Costs – The server and facility costs include the data processing and fiber network improvements needed to connect the
- Total Hours of Person Delay – This unit value assumes straight line person hours of delay growth between the base year and 2045 and is the cumulative number of hours of delay occurring during the full VISSIM modeling period for the entire model area over the 25-year planning horizon.

The number of units occurring in each component is summarized in the table for each alternative under consideration: No Build, Baseline, Transit Slip Lanes, 3 General Purpose Lanes, TEL and At-Grade Crossings (Add Lane), TEL and At-Grade Crossings (Lane Conversion), and TEL and Grade Separated Crossings.

### **Unit Costs**

Each unit in the first table has been multiplied by the costs contained in the second table. The infrastructure costs are multiplied by separate capital and O&M costs present in the table. The travel delay is multiplied by the commuter cost of user delay and operational cost of trucking delay. This evaluation is meant to provide a comparative assessment of the alternatives and does not include the impacts of inflation – with all calculations based on 2021 dollar values for the costs.

The specific infrastructure unit costs have been developed using the following sources and assumptions:

- Baseline Costs (SH 52, Airport, Hover) – The total cost estimate from this component has been summarized from several sources as described below and totals \$47.8 million.
  - SH 119/SH 52 Split Signalized Intersection (SH 52) – The cost of this improvement has been estimated at \$23.2 million using CDOT's P70 cost planner tool.

- Northbound SH 119/Airport Rd Signalization (Airport) – The cost of this improvement has been estimated at \$500,000 based on CDOT planning estimates.
- Southbound SH 119/Hover St Tunnel (Hover) – The *Building CO 119 and Hover Street Better Together Grand Funds* report has been used to estimate this cost. That study identified the overall cost at \$27.1 million (2024 dollars). A 4% escalation rate per year has been applied to move this project cost to 2021 dollars consistent with this evaluation methodology.
- Added Lane Miles - The cost to add one lane mile have been developed using the CDOT P70 cost planner tool. The cost estimate includes intersection related costs. The estimate also includes Mill and Overlay for all existing lanes during installation of any new lane mile along the corridor.
  - The M&O cost includes a per year per lane-mile cost of \$4,000 representing the current contracted rate between HPTE and CDOT for the TEL maintenance to represent the cost of routine maintenance along the corridor.
  - The ITS M&O cost includes the maintenance of the ITS and toll collection systems along the corridor in the TEL alternatives.
  - The resurface O&M cost per mile includes asphalt resurfacing every 5 years for any new lane miles added to the corridor.
- Managed Lane Overpasses (one-way) – The costs for each overpass include the structure, embankment, structural walls, and generalized cost items using CDOT’s P70 cost planner tool.
- Mainline Toll Gantry – The costs for each gantry include all roadside equipment, optical character recognition (OCR) subsystem, dynamic pricing equipment, CCTV, and DVAS. The costs associated with the initial construction cost of this item have been assumed to need full replacement every seven years, hence the significant O&M costs.
- Side Street Toll Gantry - The costs for each gantry include all roadside equipment, optical character recognition (OCR) subsystem, dynamic pricing equipment, CCTV, and DVAS. The costs associated with the initial construction cost of this item have been assumed to need full replacement every seven years, hence the significant O&M costs. This cost is less than the mainline toll gantry as it is assumed that the device will not need to track shoulder vehicles entering the lane.
- Local Toll Plaza Server and Facilities – The costs for this item include the local toll plaza system, a small local traffic management center, and new fiber to serve the system. The costs associated with the initial construction cost of this item (except fiber) have been assumed to need full replacement every seven years, hence the significant O&M costs.

The user delay costs associated with each project have been divided to represent the commuter cost of user delay and operational cost of trucking delay. The split has been established using the existing truck percent along the corridor, 3.5%. The commuter cost per person has been taken from the *TTI 2019 Urban Mobility Report* and the truck cost has been taken from the *ATRI Operational Cost of Trucking Report, 2020*. Both have been set to 2021 dollars using the Consumer Price Index value of 2.1%.

## Results

Combining each of the infrastructure costs with the delay costs results in the total cost shown in the table. Given the unquantified ability for the tolled express lane (TEL) alternatives to recover capital costs through the collection of tolls, this income is not included in the evaluation at this time. In order to normalize the values so that the alternatives can be compared, an average cost per person has been developed for each alternative. This number divided the total cost by the total system users that benefit from the system over the 25-year planning horizon.

The results of this evaluation demonstrate the comparative system costs beginning with the No Build Condition – which carries a value of \$0.74/person. The analysis indicates that the Baseline alternative provides the best cost ratio resulting in a reduction to \$0.66/person with the construction of the planned and funded corridor improvements. The next best performing scenario is the Transit Slip Lanes alternative which better serves transit users with the extension of bus queue jumps along the corridor.

The next two best performing alternatives are the TEL Add Lane and TEL Grade Separation alternatives at \$0.83/person and \$0.84/person, respectively. These two options show the benefits of the analysis process as there is a significant difference in the total cost between the alternatives which is offset by the number of new users that would benefit from the system. These two alternatives also introduce some of the unknowns from this evaluation, namely that the toll revenue from these alternatives has not been quantified to date. With toll collection in these scenarios some of the costs of the project could be offset which would reduce average cost per person.

Finally, the lowest performing alternatives are the 3 General Purpose Lanes and TEL Lane Conversion. These two scenario's user delay values are impacted by the creation of a bottleneck at the south end of the corridor with the addition of through lane capacity along the corridor but no maintenance of the existing add lane conditions. This condition has been created by the travel demand modeling which increased the demand along the corridor given the new capacity, but the inability to serve the new vehicles at the Jay Rd and 63<sup>rd</sup> St intersections in the VISSIM modeling results in excessive travel times and delay which are significantly worse than the Baseline condition and not likely to occur with drivers choosing other time competitive routes to compensate. While the system wide increases in delay forecast in the VISSIM modeling is exaggerated, the results can be used for comparative purposes, since they identify flaws within the alternatives which suggest other options should move forward.

### SH 119 Life Cycle Cost Analysis - Units

	No Build	Baseline	Transit Slip Lanes	3 General Purpose Lanes	TEL and At-Grade Crossings (Add Lane)	TEL and At-Grade (Lane Conversion)	TEL and Grade Separated Crossings
<b>Roadway Costs</b>							
Baseline Costs (SH 52, Airport, Hover)	0	1	1	1	1	1	1
Added Lane Miles	0	0	6.0	13.8	18.0	16.5	18.5
Managed Lane Overpasses (one-way)	0	0	0	0	0	0	10
<b>ITS/Toll Devices</b>							
Mainline Toll Gantry	0	0	0	0	4	4	4
Side Street Toll Gantry	0	0	0	0	6	6	0
Server and Facility Costs	0	0	0	0	1	1	1
<b>Travel Delay</b>							
Total Hours of Person Delay (25 years)	35,981,000	29,927,000	30,154,000	38,626,000	32,891,000	38,800,000	31,180,000

### SH 119 Life Cycle Cost Analysis - Unit Costs

Unit Costs (2021 Dollars)	Capital	O&M (25 years)	Hourly Cost
Baseline Costs (SH 52, Airport, Hover)	\$47,800,000	\$375,000	
		\$100,000/mi O&M	
		\$375,000/mi ITS O&M	
Added Lane Miles	\$3,607,000	\$480,000/mi resurface <sup>1</sup>	
Managed Lane Overpasses (one-way)	\$7,230,000	\$119,000	
Mainline Toll Gantry	\$484,800	\$3,998,400	
Side Street Toll Gantry	\$436,800	\$3,248,400	
Local Toll Plaza Server and Facilities	\$1,350,000	\$450,000	
Cost of User Delay (Commuter) <sup>2</sup>			\$19.71
Operational Cost of Trucking Delay <sup>3,4</sup>			\$67.90

<sup>1</sup> Per Lane Mile O&M Cost; Per Lane Mile ITS O&M; Per Lane Mile Resurfacing

<sup>2</sup> Assume \$19.71/hour (2021 dollars) for travel time delay costs per person (from TTI 2019 Urban Mobility Report [2017 dollars, \$18.12/hour/person], Consumer Price Index of 2.1%)

<sup>3</sup> Assume \$67.90/hour (2021 dollars) for operational cost of trucking delay per vehicle (from ATRI Operational Cost of Trucking Report, 2020 [2019 dollars, \$65.11/hour/truck], CPI 2.1%)

<sup>4</sup> Assume 3.5% trucks along SH 119 (from CDOT OTIS)

### SH 119 Life Cycle Costs Analysis - Results

Improvement Costs (2021 Dollars)	No Build	Baseline	Transit Slip Lanes	3 General Purpose Lanes	TEL and At-Grade Crossings (Add Lane)	TEL and At-Grade (Lane Conversion)	TEL and Grade Separated Crossings
Baseline Costs (SH 52, Airport, Hover)	\$0	\$48,175,000	\$48,175,000	\$48,175,000	\$48,175,000	\$48,175,000	\$48,175,000
Added Lane Miles	\$0	\$0	\$25,173,000	\$57,580,000	\$82,288,000	\$76,676,000	\$84,309,000
Managed Lane Overpasses (one-way)	\$0	\$0	\$0	\$0	\$0	\$0	\$73,490,000
Mainline Toll Gantry	\$0	\$0	\$0	\$0	\$17,933,000	\$17,933,000	\$17,933,000
Side Street Toll Gantry	\$0	\$0	\$0	\$0	\$22,112,000	\$22,112,000	\$0
Server and Facility Costs	\$0	\$0	\$0	\$0	\$1,800,000	\$1,800,000	\$1,800,000
<b>Subtotal: Infrastructure Costs</b>	<b>\$0</b>	<b>\$48,175,000</b>	<b>\$73,348,000</b>	<b>\$105,755,000</b>	<b>\$172,308,000</b>	<b>\$166,696,000</b>	<b>\$225,707,000</b>
Person Delay	\$684,365,000	\$569,217,000	\$573,534,000	\$734,673,000	\$625,592,000	\$737,982,000	\$593,049,000
Commercial Vehicle Delay	\$85,509,000	\$71,122,000	\$71,661,000	\$91,795,000	\$78,166,000	\$92,209,000	\$74,100,000
<b>Subtotal: Delay Costs</b>	<b>\$769,874,000</b>	<b>\$640,339,000</b>	<b>\$645,195,000</b>	<b>\$826,468,000</b>	<b>\$703,758,000</b>	<b>\$830,191,000</b>	<b>\$667,149,000</b>
<b>TOTAL COST</b>	<b>\$769,874,000</b>	<b>\$688,514,000</b>	<b>\$718,543,000</b>	<b>\$932,223,000</b>	<b>\$876,066,000</b>	<b>\$996,887,000</b>	<b>\$892,856,000</b>
Total System Users	1,046,922,000	1,045,245,000	1,047,553,000	1,066,369,000	1,053,670,000	1,046,332,000	1,065,766,000
<b>AVERAGE COST per PERSON</b>	<b>\$0.74</b>	<b>\$0.66</b>	<b>\$0.69</b>	<b>\$0.87</b>	<b>\$0.83</b>	<b>\$0.95</b>	<b>\$0.84</b>

Cost estimates do not include construction for RTD improvements (including Park-n-Rides) or median bicycle trail facilities.

Analysis is for a 25 year planning period and is for comparative purposes with all costs in 2021 dollars (methodology does not include inflation).

This analysis does not include toll revenues for TEL scenarios.

## Baseline Costs

Location/Description	Project Element	Program Cost (2021 Dollars)	O&M
SH 52 Intersection	Intersection Improvements	\$23,200,000	\$5,000 per year
Airport Road	NB Signal	\$500,000	\$5,000 per year
Hover Street	Intersection Improvements	\$24,100,000	\$5,000 per year
Total		\$47,800,000	\$375,000

SH 52 Intersection costs based on conceptual design using CDOT's P70 cost planner tool (Muller)

Airport Road signal cost based on CDOT planning estimates

Hover intersection back-up costs assume 4% escalation each year to year 2024, escalation removed in cost above to represent 2021 dollars

O&M Costs assume associated stop bars, crosswalks, annual inspections/maintenance of the signal based on CDOT's SB 8 for Boulder

**Roadway Assumptions**

New Lane Mile of Roadway/Add Lane (At-Grade)								
Item	Depth (in)	Lanes of Travel	Width of Travel Way	Shoulder Width	Length (FT)	Quantity (CF)	Quantity (CY)	Quantity (TON)
Emb Matl (CIP)	36	1	12	12	5280	380160	14080	20909
Emb Matl (CIP) (R40)	24	1	12	12	5280	253440	9387	13939
ABC (CL 6)	8	1	12	12	5280	84480	3129	4646
HMA (Gr SX) (75) (PG 64-22)	10	1	12	12	5280	105600	3911	215

Blue Highlight: Indicates values used in CDOT Cost Estimate Form for Construction of One Lane

Initial Construction Mill & Overlay (to accompany all new lane construction along the adjacent GP segment)								
Item	Depth (in)	Lanes of Travel	Width of Travel Way	Shoulder	Length (FT)	Quantity (CF)	Quantity (SY)	
Surface Milling (2.5")	2.5	6	72	36	5280	118800	63360	
310-00608 Full Depth Reclam. of HMA Pvmt (0-8 in.)	2.5	6	72	36	5280	118800	63360	

Blue Highlight: Indicates values used in CDOT Cost Estimate Form for Construction of One Lane

1 Lane Mill & Overlay - Maintenance and Operations							
Item	Depth (in)	Lanes of Travel	Width of Travel Way	Shoulder Width	Length (FT)	Quantity (CF)	Quantity (SY)
Surface Milling (2.5")	2.5	1	12	14	5280	28600	15253
310-00608 Full Depth Reclam. of HMA Pvmt (0-8 in.)	2.5	1	12	14	5280	28600	15253

Blue Highlight: Indicates values used in CDOT Cost Estimate Form for Resurfacing of One Lane

**Managed Lane Maintenance & Operations**

TEL Lane Maintenance	Per Year per Mile	1	\$4,000
ITS and Operations Support	Per Year per Mile	1	\$15,000

TOTAL Managed Lane Maintenance & Operations (over 25 years)		
Lane O&M	Per In-mi	\$100,000
ITS O&M	Per In-mi	\$375,000
Resurfacing	Per In-mi	\$480,000

**Assumption:**

- Merge and weaves will be at-grade, no ramps will be constructed
- Lane mile cost estimates include intersection related cost on CDOT P70 worksheet
- Overpasses are assumed to be 16 foot clearance
- Bridge assumptions include crossing 5 lanes at 12' ft, a 5 ft center median, 5 ft outside shoulders, and 30 feet for bridge slope on each side
- Bridge assumptions include one 14 ft travel lane, and a 6 and 8 foot shoulder on either side (matches C-470/Santa Fe SB to WB direct connect)
- Bridge unit cost of \$600/sq ft has been assumed, includes all costs associated with the bridge construction including Mobilization to Construction, Traffic Control, and Final Striping
- Mill and Overlay is assumed for all existing lanes during installation of new managed lane
- Build up and retaining wall costs have been included in the CDOT worksheet as a 100% contingency
- Managed Lane Maintenance & Operations conducted through service agreement between HPTE and CDOT valued at \$4,000/year/lane-mi
  - Repair and replacement of guardrails, bridge rail, concrete barrier, and attenuators to ensure they are in working condition;
  - Snow and ice removal;
  - Lane striping, lane sweeping/cleaning;
  - Trash and debris removal;
  - Pothole filling, crack sealing, joint repairs, concrete slab replacements, and any additional pavement maintenance;
  - Regular cleaning of static Express Lane signs if they are not easily readable;
  - Repair of damaged static Express Lane signs; and
  - Lane closures and temporary traffic control to perform any of the roadway maintenance activities listed above.
- ITS and Operations Support includes ITS Maintenance and monitoring (equipment and network) costs as well as Operations Support (CTMC and courtesy patrol) cost;
- Resurface asphalt surface every 5 years (at 5 yrs, 10 yrs, 15 yrs, and 20 yrs)
- Retaining Walls - Assumes triangular prefabricated modular retaining walls (T-wall or Gravix System)



Key:   
  Auto-Populated Data Provided in Input Form   
  Model Estimate Auto-populated from Pricing Database Uploads   
  Region Estimate Region Input   
  Region Override Overwritten by Region

Last Update: Update:

**PCPT - MODEL & REGION ESTIMATE FORM**

**PROJECT PROFILE**

Project Name: SH 119 Mobility Improvements   
 Project Number:   
 Sub-Account Number:   
 Project Description: Planning Level Cost Estimate - Resurfacing of one lane of travel along SH 119 for one mile   
 Project Work Type:   
 Estimator:   
 Date:

**PROJECT LOCATION & CHARACTERISTICS**

Select Region: 4 Route: 119B Begin MP: End MP: Length: 1.000   
 SEGMENT MID-POINT DATA: RePt Latitude: Longitude:   
 County: Boulder Co City: None Urban-Rural Class: Urbanized Terrain: Rolling   
 Functional: Principal Arterial - Freys and Expays Primary Surface: Asphalt AADT: 44000 Truck ADT: 700   
 Project Delivery Method: Construction Start (MMM-YY) Construction Duration (mo)

**A - MAJOR CONSTRUCTION ITEMS**

		Model Estimate		Region Estimate		
A-01 MAJOR ITEMS	Unit	Qty	Unit Cost	Cost	Unit Cost	Cost
A-01 202-00220 Rem Asphalt Mat (2.5')	SY	15,253	\$14.00	\$213,547	\$3.00	\$45,760
A-01 310-00605 Full Depth Reclam. of HMA Pmnt (0-8 in.)	SY	16,253	\$3.50	\$53,387	\$3.50	\$53,387
A-01 Major Item Cost:				\$267,000	\$99,000	
<b>A MAJOR CONSTRUCTION ITEMS</b>				<b>SUBTOTAL (A)</b>	<b>\$267,000</b>	
				(% of A)		

**B - MINOR CONSTRUCTION ITEMS**

		Model Estimate		Region Estimate		
B-01 Pavements & Bases	EFFORT	% of (A)	Cost	% of (A)	Cost	
B-02 Earthwork	Minimal	2.0%	\$5,340	0.0%	\$0	
B-03 Removals / Resets	Average	3.0%	\$8,010	0.0%	\$0	
B-04 Environmental	Average	9.0%	\$24,030	0.0%	\$0	
B-05 Structural	Average	5.0%	\$13,350	0.0%	\$0	
B-06 Utilities / Utilities	Below Average	1.0%	\$2,670	0.0%	\$0	
B-07 Roadway Appurtenances / Guardrail	Average	2.0%	\$5,340	0.0%	\$0	
B-08 Mobilization	Average	5.0%	\$13,350	0.0%	\$0	
B-09 Construction Traffic Control / Detour	Average	14.0%	\$37,380	10.0%	\$9,900	
B-10 Lighting & Electrical	Average	15.0%	\$40,050	0.0%	\$0	
B-11 Permanent Signing, Signals, ITS	Average	10.0%	\$26,700	0.0%	\$0	
B-12 Permanent Striping	Above Average	27.0%	\$72,000	0.0%	\$0	
B-13 Miscellaneous	Average	6.0%	\$16,020	0.0%	\$0	
B MINOR CONSTRUCTION ITEMS				<b>SUBTOTAL (B)</b>	<b>\$243,000</b>	
				(% of A)		

**CBI CONSTRUCTION BID ITEMS**

<b>SUBTOTAL (A + B)</b>	<b>(% of A)</b>	<b>\$510,000</b>	<b>\$109,000</b>
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**C - FORCE ACCOUNTS & TSM&O**

		% of CBI		Cost		
C-01 F/A - General		6.00%	\$30,600	0.00%	\$0	
C-02 F/A - Minor Contract Revisions (MCR)		3.00%	\$15,300	0.00%	\$0	
C-03 F/A - Project Communications	TIER 2	0.80%	\$4,080	0.00%	\$0	
<b>SUBTOTAL (C)</b>				<b>(% of CBI)</b>	<b>\$50,000</b>	<b>\$0</b>

**CI CONSTRUCTION ITEMS**

<b>SUBTOTAL (A + B + C)</b>	<b>(% of A)</b>	<b>\$560,000</b>	<b>\$109,000</b>
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**D - CONSTRUCTION ENGINEERING & INDIRECTS**

		% of CI		Cost		
D-01 Construction Contingency (Default: 15%)		15.00%	\$84,000	10.00%	\$10,900	
D-02 Construction Engineering (Default: 12.5%)		12.50%	\$68,500	0.00%	\$0	
D-03 Construction Indirects (Default: 13.5%)		13.50%	\$76,940	0.00%	\$0	
<b>SUBTOTAL (D)</b>				<b>(% of CI)</b>	<b>\$251,000</b>	<b>\$11,000</b>

**PROJECT CONSTRUCTION BUDGET**

<b>CONSTRUCTION (A + B + C + D)</b>	<b>\$811,000</b>	<b>\$120,000</b>
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**E - PRECONSTRUCTION ITEMS**

		% of CI Budget		% of CI		(%CI + Indirect %)	
E-01 Right-of-Way (Phase R)							
E-02 Utilities + Railroad Work (Phase U)	Lump Sum						
E-03 Design & Engineering (Phase D)	Design Maturity: Scoping			10.00%	\$64,400.00	0.00%	\$0.00
E-03.1 Subsurface Utility Engineering (SUE) Budget				1.75%	\$11,270.00	0.00%	\$0.00
E-03.2 Transportation Systems Management & Operation (TSM&O) Budget							
E-04 Environmental (NEPA) (Phase E)	Lump Sum						
E-05 Miscellaneous (Phase M)	Lump Sum						
<b>SUBTOTAL (E)</b>				<b>(% of CI)</b>	<b>13.50%</b>	<b>\$10,215</b>	<b>\$0</b>

ESCALATION	
Construction Start Date:	1/1/2022
Duration of Construction (Months):	12
Escalation from Estimate Date:	4/23/2021
Construction Mid-Point:	6/30/2022
Percent Escalated:	3.60%

<b>PROJECT BASE COST ESTIMATE:</b>	\$900,000	\$120,000
<b>COST-CONSTRUCTION ESCALATION:</b>	\$40,000	\$10,000
<b>TOTAL PROJECT CONSTRUCTION COST ESCALATED:</b>	<b>\$940,000</b>	<b>\$130,000</b>

ESTIMATE RANGE BASED ON NCHRP REPORT 658			
LOW RANGE TOTAL PROJECT CONSTRUCTION COST ESCALATED:	-30%	\$688,000	\$91,000
HGT RANGE TOTAL PROJECT CONSTRUCTION COST ESCALATED:	50%	\$1,410,000	\$195,000



**Overpass Cost Worksheet**

Bridge						
No. of lanes on Cross Street	Assumed Bridge Length	Width of Bridge	No. of Bridges	SF of Bridge	\$/SF of Bridge	TOTAL for 1 Bridges
5	135	28	1	4050	600	\$2,430,000

Retaining Walls								
Height	Length	Sides	No. of Bridges	SF of Bridge	\$/SF of Bridge	Cost for 1 Bridge	Contingency	TOTAL for 1 Bridge
20	800	2	1	32000	75	\$2,400,000	100%	\$4,800,000

Total Capital Cost	
Bridge	\$2,430,000
Retaining Walls	\$4,800,000
<b>Total</b>	<b>\$7,230,000</b>

TOTAL M&O Cost Over 25 years			
Total cost of 1 bridge	Each Site	For No. of Bridges	Cost
Structure Inspection	\$7,000 Each Site every 2 years	1	\$84,000
Maintenance	Each Site	1	\$35,000
<b>Total</b>	<b>Each Site</b>	<b>1</b>	<b>\$119,000</b>

## Toll Gantry Cost Worksheet

### Gantries

One lane (no shoulder)	Each	1	\$170,000
One lane + one shoulder	Each	1	\$210,000

### Roadside Equipment

Toll Zone Cabinet	Each	1	\$30,000
AVI Traffic Speed & Volume Detection Site	Each	1	\$13,500

### OCR

Optical Character Recognition (OCR) Subsystem	Lane	1	\$4,000
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### Dynamic Pricing

Dynamic Toll Rate Sign Components & Equipment Cabinet	Each	1	\$61,000
Radar or Microwave Traffic Speed & Volume Detection Equipment	Each	1	\$39,000
AVI Traffic Speed & Volume Detection Equipment	Each	1	\$38,000

### CCTV (optional if done by others)

CCTV equipment (camera, housing)for 100% coverage of tolling zones (per unit)	Each	1	\$6,000
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### DVAS (optional)

Digital Video Auditing System (DVAS) equipment (per lane)	Each	1	\$2,500
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### TOTAL UNIT COST (Plus 20% contingency)

ML Gantry - One lane + one shoulder	Each Site	1	\$484,800
Side Street - One lane	Each Site	1	\$436,800

### System Maintenance

Toll Zone Maintenance, per lane	Month		\$1,600
Dynamic Toll Rate Signs, per sign (2 per sign, 2 per gantry)	Month		\$700
Radar or Microwave Traffic Speed & Volume Detection Equipment, per device	Month		\$400
AVI Site (Traffic Speed & Volume Detection only), per device	Month		\$500
Annual Performance Audit (dynamically priced managed lanes)	Lane		\$1,000

### TOTAL M&O UNIT COST Over 25 years (Plus 20% contingency)

ML Gantry - One lane + one shoulder	Each Site	1	\$3,998,400
Side Street - One lane	Each Site	1	\$3,248,400

### Assumptions:

1. Gantries are simple (similar to rugged sign-structures) with no architectural features
2. Gantries include all Toll Zone equipment and roadside controller electronics
3. Civil work not included
4. Mobilization and Project Management not included
5. MOT not included
6. Utilities not included
7. Assume all toll electronics refreshed every 10 years
8. Documentation not included
9. Operations costs are included in system maintenance
10. Shoulders wider than 2 feet require shoulder toll instrumentation
11. Communication hardware and operations not included
12. Spare parts not included
13. Toll vendor system procurement not included
14. M&O Assumes full replacement every 7 years (at 7, 14, and 21 years after construction) along with above routine maintenance

## Local Toll Plaza Server and Facility Cost Worksheet

### Local Toll Plaza System

Plaza Server	Each	1	\$70,000
Uninterruptible Power Supply	Each	1	\$14,000

### Facility TMC (optional - CCTV could be integrated with county TMC)

Small Local Traffic Management Center (servers, software, licenses, flat screen monitors, workstations)	Each	1	\$30,000
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### DVAS Server

DVAS Server	Each	1	\$11,000
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### New Fiber

Fiber	Per Mile	1	\$300,000
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### TOTAL UNIT COST (Plus 20% contingency)

Fiber		4	\$1,200,000
Plaza Server	Each Site	1	\$150,000
TOTAL			\$1,350,000

### TOTAL M&O UNIT COST Over 25 years (Plus 20% contingency)

Plaza Server	Each Site	1	\$450,000
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### Assumptions:

1. Plaza Server is located in a secure/climate-controlled building nearby provided by others.
2. All customer service/toll transaction functions handled by E-470 and their costs to SH 119 are
3. Fiber is currently planned by CDOT between Jay Rd and Niwot Rd as part of a separate project, new fiber needed between Niwot Rd and Hover Rd (4 miles)
4. Fiber capital costs assumed to be \$300,000/mile; assumed that no O&M will be needed over 25 years
5. M&O assumes full replacement every 7 years (at 7, 14, and 21 years after construction)

Users and Delay Calculations

<b>Travel Delay</b>	<b>No Build</b>	<b>Optimized (Baseline)</b>	<b>Transit Slip Lanes</b>	<b>3 General Purpose Lanes</b>	<b>TEL and At-Grade Crossings (Add Lane)</b>	<b>TEL and At-Grade (Lane Conversion)</b>	<b>TEL and Grade Separated Crossings</b>
2020 Daily Model Hours of Person Delay	3,392	3,392	3,392	3,392	3,392	3,392	3,392
2045 Daily Model Hours of Person Delay	7,896	5,997	6,068	8,726	6,927	8,781	6,390
Total Hours of Person Delay (25 years)	35,980,500	29,927,438	30,154,451	38,626,348	32,890,761	38,799,876	31,180,380

<b>System Users</b>	<b>No Build</b>	<b>Optimized (Baseline)</b>	<b>Transit Slip Lanes</b>	<b>3 General Purpose Lanes</b>	<b>TEL and At-Grade Crossings (Add Lane)</b>	<b>TEL and At-Grade (Lane Conversion)</b>	<b>TEL and Grade Separated Crossings</b>
2020 Daily Model System Users	146,241	146,241	146,241	146,241	146,241	146,241	146,241
2045 Daily Model System Users	182,205	181,679	182,403	188,306	184,322	182,020	188,117
Total User (25 years)	1,046,921,625	1,045,245,000	1,047,552,750	1,066,368,563	1,053,669,563	1,046,331,938	1,065,766,125

2045 Daily Model Hours of Person Delay from Table 40 in Traffic Analysis Technical Report

2045 Daily Model System Users from Table 40 in Traffic Analysis Technical Report

Delay and Users based on VISSIM model period (6am-8pm)

Assume straight line delay growth over 25 year planning horizon

Conversion between daily and annual, used 255 factor - consistent with I-25/SH 56 Interchange Type Evaluation