

**I-70 Mountain Corridor PEIS 2035 Transportation
Analysis Technical Report**
August 2010

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Section 1. Introduction

This Technical Report describes and quantifies the differences in mobility among alternatives, including the No Action Alternative. The 2035 analyses of travel demand, travel time, and congestion including criteria and comparative analyses of alternatives are discussed.

Documentation provided in this report provides technical support to **Chapter 2** of the *I-70 Mountain Corridor PEIS* (CDOT, 2010).

As described in the PEIS, each Combination Alternative includes variations that construct the transit and preserve the six-lane highway footprint or construct the six-lane highway and preserve the transit footprint. For the alternatives evaluated in this Technical Report, the discussion of Combination alternatives almost always refers to the option to *build highway and transit simultaneously*. Preservation alternatives are considered to be the same as their single-mode counterpart and, therefore, this report focuses on the alternatives listed in the box at right.

Figure 1 displays the I-70 Mountain Corridor.

The following sections summarize the mobility criteria and comparison process, followed by comparisons among alternatives.

Alternatives Evaluated in the Mobility Comparison

- No Action
- Minimal Action
- Rail with Intermountain Connection
- Advanced Guideway System
- Diesel Bus in Guideway
- Dual-Mode Bus in Guideway
- Six-lane Highway 55 mph
- Six-lane Highway 65 mph
- Reversible/HOV/HOT Lanes
- Combination Six-lane Highway with Rail and Intermountain Connection
- Combination Six-lane Highway with Advanced Guideway System (**Preferred Alternative–Maximum Program**)
- Combination Six-lane Highway with Dual-Mode Bus in Guideway
- Combination Six-lane Highway with Diesel Bus in Guideway
- **Preferred Alternative–Minimum Program of Improvements**

Figure 1: I-70 Mountain Corridor in Colorado



Section 2. Mobility Evaluations

2.1 Overview of Mobility Evaluations

The comparisons of each alternative are made with respect to the following factors:

- Accommodation of 2035 Baseline travel demand
- Accommodation of travel growth beyond 2035 (2050 Travel Demand)
- Travel time
- Hours of congestion

The mobility comparisons focus on distinguishing the differences among alternatives. All mobility data for travel performance analysis are derived from the I-70 PEIS travel demand model, which is summarized below.

2.1.1 Travel Demand Model

This section includes an overview of the travel demand model to provide background information for the mobility comparison discussions. For a comprehensive discussion of the model, see *I-70 Mountain Corridor PEIS Travel Demand Technical Report*.

The travel demand model encompasses the transportation network of central and western Colorado that includes I-70. The area is defined by Wyoming to the north, Pueblo to the south, Denver International Airport to the east, and Utah to the west. The model forecasts a set of days in 2000 (calibration days) for the current conditions, and a set of days in 2025. The 2025 demand is then factored by the ratio of socioeconomic data between 2025 and 2035 to produce the 2035 demands for the 2035 Baseline scenario and the project alternatives. Model days can then be extrapolated to an entire year to provide annualized forecasts.

The PEIS travel demand model includes a four-step model similar to those used for metropolitan transportation planning. Briefly, the four steps are:

1. Trip generation. This step establishes the total numbers of trips.
2. Trip distribution. This step links origins to destinations based on the relative distances of their locations.
3. Mode choice. This step determines the choices between auto and transit based on relative times and costs, and traveler preferences.
4. Trip assignment. The purpose of this is to determine the route location for the highway and also the boarding for the transit facility.

The following **selected model days and seasons** represent typical summer and winter weekend and weekdays in the comparative analyses:

- **Summer Thursday** represents a typical workday (of all seasons) in the Corridor.
- **Summer Friday** represents a mixture of weekday travel and recreation—related trips made at the beginning of the weekend. Friday trips were examined only for the western part of the Corridor, west of Vail.
- **Winter Saturday** represents primarily recreation travel, and contains a large proportion of day winter recreation use.
- **Summer Sunday** represents both single-day recreational travel and overnight recreation trips, and the time when the highest daily volumes generally occur in the Corridor. Volumes are

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particularly high on summer Sunday evenings, when both day recreation and overnight recreation participants return home.

For presentation purposes, **Chapter 2** of the *I-70 Mountain Corridor PEIS* (CDOT, 2010) presented data for summer Thursday and summer Sunday as weekday and weekend, respectively. Appendix A provides data for all of the model days evaluated in the travel demand model.

Model Distinctions between 2035 Baseline Scenario and No Action Alternative

The 2035 Baseline scenario is the theoretical 2035 travel demand used for comparison. The No Action Alternative represents 2035 conditions with the implementation of only currently planned projects on the existing network. The distinctions between the 2035 Baseline scenario and No Action Alternative are described below.

2035 Baseline Scenario

The **2035 Baseline demand** defines the project need described in **Chapter 1** of the *I-70 Mountain Corridor PEIS* (CDOT, 2010). The 2035 Baseline is a scenario, not an alternative, and represents a theoretical travel demand that may or may not occur. To produce the 2035 Baseline demand, the 2025 projected demand is used as the starting point. The 2025 demand is then factored by the ratio of socioeconomic data between 2025 and 2035 to produce the 2035 demands. The reason for using this factored approach to 2035 demand rather than the typical four-step process (used to produce the 2025 demand) is that not all required data to use the four-step process for 2035 are available. Please refer to Appendix C of the *I-70 Mountain Corridor PEIS Travel Demand Technical Report* for the details on the development and assumptions for the 2035 demands.

Specific Applications of the Modeling Process

- The model is based primarily on two software applications: TransCAD and VISSIM. TransCAD uses a four-step model to assess a broad study area for demand and transit share by analyzing socioeconomic and recreation use data, transportation networks, and travel costs. One of the TransCAD outputs is an interchange—to—interchange vehicle demand matrix. The traffic simulator VISSIM uses this matrix to produce travel times, LOS, and congestion data.
- The PEIS travel model goes beyond typical metropolitan models by including a traffic simulation component, VISSIM. The traffic simulator provides more reliable estimates of congestion and queuing than the TransCAD model. It is based on more rigorous assumptions regarding driver behavior and the performance of various types of vehicles. The traffic simulator evaluates all alternatives to compare the vehicle performance within the Corridor. For example, the VISSIM model accounts for steep grades in the Corridor and the restrictions on the speeds of loaded freight vehicles, which may then interfere with the free movement of passenger vehicles. To the extent that congestion remains after the introduction of an alternative, the traffic simulator provides an estimate of the discrete measure of performance, by which to compare alternatives on a relative basis.
- At the high levels of demand and congestion that are typical of the I-70 Corridor, differences in travel performance of an alternative forecasted by the traffic simulator are often quite pronounced. This allows for better differentiation among alternatives within common modes, and between the different modes of alternatives.
- The PEIS travel demand model explicitly considers trip purposes included in most metropolitan models:
 - Home-based work trips stratified by income
 - Other Home-based trips
 - Non-home-based trips
 - Commercial vehicle trips
 - Internal-external trips
 - External-external trips
- The model also includes numerous distinct recreational trip purposes, as a basis for determining the effect of each alternative on Corridor travel patterns.

The estimation of future travel demand combines the future socioeconomic data and current travel propensities listed below:

1. Population and employment forecasts from the Colorado Department of Local Affairs and Corridor counties (see Appendix A of the *I-70 Mountain Corridor PEIS Travel Demand Technical Report*)
2. Recreation visitation forecasts from the U.S. Forest Service and Colorado Ski Country USA
3. Current (year 2000) propensities to travel, including trip-making rates, regardless of the traveler's tolerance to congestion
4. The existing transportation network, plus those projects approved and planned for implementation before 2035, as described in the No Action Alternative in **Chapter 2** of the *I-70 Mountain Corridor PEIS* (CDOT, 2010).
5. The 2035 Baseline scenario does not assume any adjustment in travel choice. Therefore, it does not represent equilibrium between supply and demand, or consider choices that travelers may make in their travel plans in response to the adequacy or limitations on capacity.

The 2035 Baseline scenario is based on a theoretical assumption that travel demand in the Corridor will grow in line with socioeconomic projections without consideration for any travel limitations on I-70. In addition, the 2035 Baseline scenario assumes that the projected growth in traffic on I-70 will not influence the population and employment projections, or result in unmet travel demand. Unmet travel demand is described within the next page.

Consideration of the effect of the 2035 Baseline demand on the No Action transportation network produces **2035 Baseline travel performance**. Essentially, the 2035 Baseline travel performance provides an indication of the demand for future travel, as well as a worst-case benchmark of future congestion, if that demand were to be satisfied on the future transportation system. This benchmark is used to measure the mobility benefits resulting from the changes to capacity inherent in each alternative.

The 2035 Baseline scenario was used to classify alternatives according to whether they would be able to meet the need for mobility forecast to the year 2035 and accommodate 2035 Baseline demand.

No Action Alternative

The No Action Alternative described in **Chapter 2** of the *I-70 Mountain Corridor PEIS* (CDOT, 2010) includes previously committed or reasonably foreseeable transportation improvements in the Corridor regardless of which alternative is selected (including the No Action). As described previously, the 2035 Baseline scenario and the No Action Alternative are based on the same highway network. However, unlike the 2035 Baseline scenario, the No Action Alternative represents equilibrium between travelers' trip-making propensities and the resulting levels of congestion.

The Corridor is currently congested on many peak recreational season weekends, and unmet demand is assumed to be occurring (relative to years earlier than 2000). To produce the No Action forecast, the travel demand model—using the assumption that unmet demand will continue due to travelers' intolerance to high levels of congestion—reduces trip generation rates from their year 2000 level until a tolerable level of congestion is reached. However, even with a reduction in trip generation rates from the 2035 Baseline projections, vehicle trips during the peak days on I-70 with the No Action Alternative are still projected to increase by approximately 30 percent to 150 percent at heavily congested locations with unmet demand between years 2000 and 2035. The 150 percent increases occur at Floyd Hill due to diversion of gaming traffic from U.S. 6 after construction of the Central City Parkway.

Induced and Unmet Travel Demand and Development

Unmet and induced travel is a central factor in the analysis of travel performance by alternatives in the Corridor. Improved travel times associated with alternatives could encourage Corridor travelers to make trips they might otherwise forgo, resulting in additional trips beyond the 2035 Baseline forecasts—that is, to induce travel—and possibly induce land use growth in the Corridor. Conversely, with no changes made to I-70 (other than the projects included in the No Action Alternative), increased congestion is expected to result, as population and travel demand increase. This could cause some travelers to forgo trips, resulting in unmet demand.

Approach to Unmet Demand

Induced travel is estimated on an origin-to-destination basis using relationships determined from the I-70 Ridership Survey (see Appendix B, I-70 Ridership Survey, of the *I-70 Mountain Corridor Travel Demand Technical Report*), which:

- Described a hypothetical new transit system for the I-70 Corridor
- Asked respondents how many trips they currently make in the Corridor
- Asked how many additional trips (if any) they would make if the hypothetical transit system or additional travel lanes did exist

The responses to this survey provided a basis for determining total demand if congestion were not an issue on the I-70 corridor. Unmet demand is estimated by gradually reducing the number of trips for an alternative until a tolerable travel time results. An expert panel of Colorado Department of Transportation traffic engineers familiar with the Corridor provided their insights into how much congestion travelers might tolerate to characterize a reasonable travel time.

Evaluation of Demand

The variation in amounts, times, and reasons for travel that could result in inducing or suppressing travel from the 2035 Baseline scenario complicate the comparison of alternatives. A more traditional approach using a fixed level of demand shows that the alternative with the greatest capacity produces the fastest travel times. In the model used for this study, because demand is allowed to vary in response to seasonal demand and to congestion levels, each alternative is forecast to have a unique amount of demand.

As the capacity of alternatives increases from No Action, so does the demand. As a result, demand varies among the alternatives. An assumption that better travel times or fewer hours of congestion would be realized with the higher capacity alternatives would not necessarily be achieved. The additional demand (inducement) would also have the potential to consume part of the additional capacity. A worst-case approach was taken to convey the changes in travel time and congested hours and address the long-term I-70 travel demand.

Changes in travel demand in response to the increased capacity offered by each alternative (induced or suppressed) also influence resulting levels of congestion and travel time in the Corridor. For example, induced travel negates part of an alternative's travel time savings over the No Action Alternative. In addition, with an increased number of vehicles on the road due to changes to socioeconomic condition, travel times are not improved as much as they would be if travel demand remained constant at the No Action level. For this reason, the differences in travel times and other mobility measures for alternatives are not as great as if the same alternatives were tested with a single, fixed demand. In effect, people's propensity to take additional trips (induced travel) results in an increased burden relative to each alternative's ability to accommodate travel demand.

Induced travel and induced development may also have indirect and cumulative impacts on the community values and environmental sensitivity of the Corridor, as described in **Chapter 4**, Cumulative Impacts Analysis, of the *I-70 Mountain Corridor PEIS* (CDOT, 2010).

Section 3 of this document describes how induced and unmet travel demand are addressed and how travel demand is compared across alternatives

2.2 Mobility Criteria and Comparison Process

In recognition of the need for a short- and long-term sustainable transportation vision, the project analysis uses both a 2035 planning horizon and a 2050 long-term horizon. Data for the year 2035 are based on available projections from a variety of sources and provide the foundation for developing and evaluating alternatives. The 2035 planning horizon also provides a milestone allowing projections to 2050. The year 2050 provides a long-term horizon for developing solutions for the Corridor. The alternatives are developed and evaluated on a variety of performance measures that can be reliably established for 2035 and for their ability to meet travel demand in 2050. To account for the increasing variability of projecting into the future, the 2050 travel demand is estimated with a high-low range.

This project began in 2000. Information on characteristics of the Corridor in 2000 provided a complete snapshot of conditions, and this data set was used for calibration of the travel demand model. Furthermore, the 2000 data set provides a base year for comparison purposes to future year scenarios. This data set includes a large amount of travel and socio-economic data, including the 2000 US Census, the I-70 User Survey, and the I-70 ridership survey conducted by the project.

2000 remains a valid base year for comparison purposes of this Tier 1 document since no major changes have taken place in the 144-mile Corridor that notably alter the snapshot of Corridor conditions provided in 2000. There have been no major or minor I-70 infrastructure improvements since 2000, and travel patterns, types, and needs of Corridor users have not changed substantially.

The following mobility criteria are applied for comparisons among alternatives:

- **Travel Demand**
 - **Ability to Accommodate 2035 Baseline Travel Demand**—This involves a comparison of the ability of alternatives to accommodate 2035 Baseline travel demands on an annual basis and for selected model days.
 - **Ability to Accommodate Travel Demand Beyond 2035 (2050 Vision Travel Demand)** – This addresses the ability of each alternative to accommodate the forecasted 2035 Baseline demand and the year in which an alternative might reach its ultimate capacity.
- **Travel Time**—Travel time comparisons are based on peak-period travel times for selected model days. Both highway and transit travel times are evaluated Highway travel time is a common indicator of the performance of each alternative. Comparisons are presented for each alternative for the entire Corridor. Transit travel times are provided as an indication of the performance of the transit systems.
- **Hours of Congestion (LOS F)**—A comparison of the duration of congestion at focal points is made among the alternatives on an annual and peak day basis.

Within discussions for each criterion, alternatives are first summarized for the Corridor and are then examined within specific geographic segments or focal points within the Corridor. These study segments and focal points—of which there are ten in the 144-mile Corridor—are given in **Table 1**. Five representative focal points were chosen for the discussion in **Chapter 1** of the *I-70 Mountain Corridor PEIS* (CDOT, 2010). Similarly, in **Chapter 2** of the *I-70 Mountain Corridor PEIS* (CDOT, 2010), travel

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time and congestion were presented for two larger segments (Glenwood Springs to Silverthorne and Silverthorne to C-470) to provide a simpler, but still meaningful, comparison. In the discussion of unmet demand in **Chapter 2** of the *I-70 Mountain Corridor PEIS* (CDOT, 2010), annual volumes at the 10 focal points were averaged to provide a single overall number. In the discussion that follows, figures summarize data on a corridorwide basis, and comparative tables provide the related thresholds for travel demand performance and data for each alternative

Table 1. Study Segments and Focal Points

Segment Number	Western End of Segment	Eastern End of Segment	Focal Point
1	Glenwood Springs	Eagle/Garfield County Line	No Name Tunnels
2	Eagle/Garfield County Line	Edwards	East of Eagle
3	Edwards	Vail East Entrance	Dowd Canyon
4	Vail East Entrance	Copper Mountain	Approaches to Vail Pass
5	Copper Mountain	Silverthorne	West of Silverthorne
6	Silverthorne	Loveland Pass Interchange	Approaches to EJMT
7	Loveland Pass Interchange	Downieville	East of Empire
8	Downieville	Hidden Valley	Twin Tunnels
9	Hidden Valley	Beaver Brook	Floyd Hill
10	Beaver Brook	C-470	East of Genesee

Section 3. Travel Demand Comparisons

Travel demand comparisons provide the basis to measure the ability of alternatives to meet the underlying need of the project [as described in **Chapter 1** of the *I-70 Mountain Corridor PEIS* (CDOT, 2010)], as follows:

Alternatives that meet the need:

- Would accommodate the projected 2035 travel demand for the Corridor.
- Could also address the continued growth beyond 2035 (2050 travel demands).

Alternatives are compared for their ability to accommodate 2035 travel demand based on annual travel demand and daily travel demand on selected model days. An alternative resulting in suppressed demand does not accommodate travel growth through 2035 and, therefore, does not meet the project need. Alternatives that meet 2035 demands are assessed for their additional capacity and years available to support growth beyond 2035. Alternatives that are determined to meet capacity in or after 2050 are best able to meet the Travel Demand portion of the projects Purpose and Need.

3.1 Ability to Accommodate the Projected 2035 Travel Demand

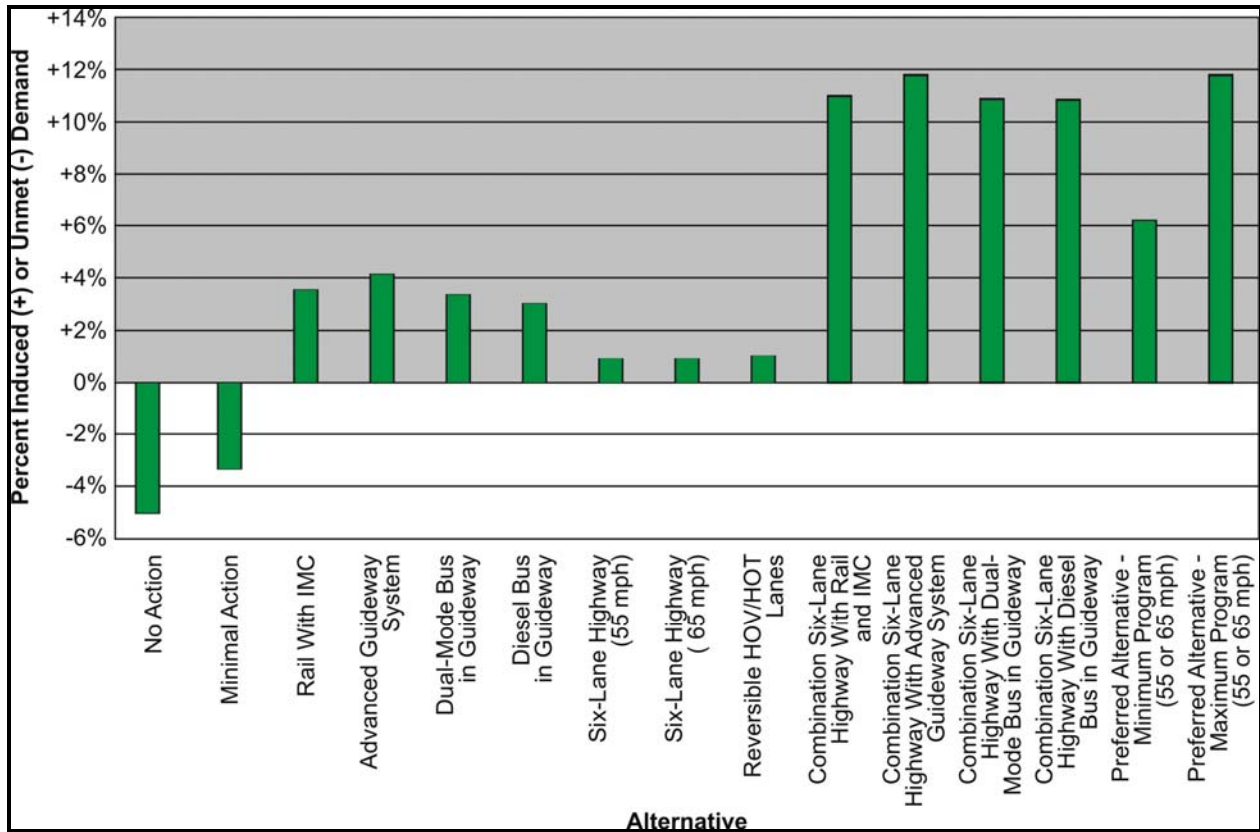
This section provides comparison of alternatives based on:

- Annual travel demand
- Selected model day travel demand

3.1.1 Comparisons of Annual Travel Demand

Figure 2 present the ability of alternatives to accommodate average annual travel demand. This analysis identifies the expected amount of trip suppression or inducement, by each alternative, in comparison to the 2035 Baseline. To present a corridorwide view, an average of total travel demand in person trips of all 10 focal points, for both eastbound and westbound, is used. If the average travel demand for an alternative is greater than the 2035 Baseline demand, the alternative is considered to be inducing the travel demand, resulting in induced trips. If the alternative has an average travel demand less than the 2035 Baseline demand, it is considered to be suppressing the travel demand, resulting in unmet trips.

**Figure 2. Ability of Alternatives to Accommodate Annual Travel Demand
Percent Travel Induced (+) or Suppressed (-)**



The categories for the ability to accommodate average annual travel demands are:

- 2035 Baseline demand or greater—0 percent or more (induced trips)
- Less than 2035 Baseline demand—less than 0 percent (unmet trips)

Only two categories are shown for this comparative analysis, because an alternative that accommodates the 2035 Baseline demand (and no more) would meet this need criterion, just as an alternative with excess capacity to induce demand does. All of the Action Alternatives (Transit, Highway, and Combination alternatives) are shown to accommodate 2035 Baseline demand on an annual basis and fall into the “meets 2035 Baseline demand or greater” category, while the Minimal Action and No Action alternatives do not accommodate 2035 Baseline demand and fall in the “less than 2035 Baseline” category.

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Alternatives rank in the following order, from worst-performing to best-performing for their ability to accommodate 2035 Baseline demand (measured in terms of annual person trips averaged over all 10 focal points):

- The No Action and Minimal Action alternatives suppress trips at a rate of 5 percent and 3 percent, respectively, and do not meet the underlying need to accommodate 2035 Baseline demand.
- Each Highway Alternative induces trips over 2035 Baseline demand by about 1 percent more person trips.
- The Transit-only alternatives induce more trips than the Highway alternatives. Advanced Guideway System and Rail with Intermountain Connection alternatives induce slightly more travel than the Bus in Guideway alternatives (4 percent versus 3 percent).
- The **Preferred Alternative**–Minimum Program induces slightly more than the Transit-only alternatives at 6 percent. There is no major difference between the 55 mph and 65 mph options with regard to the level of inducement.
- The Combination alternatives, including the **Preferred Alternative**–Maximum Program, induce the greatest increase in trip making (11 to 12 percent).

3.1.2 Comparisons of Selected Model Day Travel Demand

A comparison of alternatives based on daily travel demand on selected model days and locations is illustrated on **Table 2**. Selected model day peak-hour person trips are shown at three key focal points:

- **Dowd Canyon**—Summer Friday (reflecting activity in Eagle County)
- **West of Silverthorne**—Summer Sunday and winter Saturday (reflecting activity in Summit County)
- **Twin Tunnels**—Summer Sunday and winter Saturday (reflecting activity in Clear Creek County, Grand County, and the Denver metropolitan area)

Table 3 shows the level of suppressed or induced demand for selected peak days at these three focal points. **Table 3** shows that 6 of the 15 studied alternatives (including the no-action alternative) induce demand at all locations and modeled days. These 6 alternatives are; 6-Lane Highway with Rail & IMC, 6-Lane Highway with AGS, 6-Lane Highway with Dual-Mode Bus in Guideway, 6-Lane Highway with Diesel Bus Guideway, the Preferred Alternative-Minimum Program and Preferred Alternative Maximum Program.

Only the no-action alternative suppresses demand for all time periods and locations. The minimal action alternative suppresses demand in all locations and time periods studied except westbound at the twin tunnels on summer Thursdays. The other alternatives vary in their impact on demand.

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Table 2. Travel Demand for Selected Model Days – Highway and Transit Person Trips

Scenario or Alternative	Winter Saturday		Summer Friday	
	WB Person Trips at Twin Tunnels	WB Person Trips at West of Silverthorne	WB Person Trips at Dowd Canyon	EB Person Trips at Dowd Canyon
2000	59,600 H	44,800 H	40,200 H	38,900 H
	400 T	500 T	200 T	400 T
2035 Baseline	115,100 H	74,700 H	88,100 H	85,300 H
	1,400 T	1,300 T	900 T	1,300 T
No Action Alternative	83,500 H	60,800 H	80,100 H	80,100 H
	1,400 T	1,300 T	900 T	1,300 T
Minimal Action Alternative	84,500 H	62,700 H	79,700 H	79,400 H
	8,400 T	3,600 T	2,400 T	1,900 T
Rail with IMC	83,700 H	57,500 H	79,400 H	77,900 H
	28,500 T	22,800 T	7,900 T	8,000 T
Advanced Guideway System (AGS)	83,800 H	54,900 H	79,300 H	78,000 H
	33,900 T	24,700 T	8,200 T	8,400 T
Dual-Mode Bus in Guideway	82,600 H	55,800 H	79,200 H	78,400 H
	33,800 T	21,600 T	4,900 T	5,200 T
Diesel Bus in Guideway	82,800 H	57,500 H	79,200 H	79,200 H
	32,900 T	19,900 T	4,100 T	4,400 T
6-Lane Highway 55 mph	115,900 H	75,200 H	87,700 H	84,900 H
	1,400 T	1,300 T	900 T	1,300 T
6-Lane Highway 65 mph	115,900 H	75,200 H	87,700 H	84,900 H
	1,400 T	1,300 T	900 T	1,300 T
Reversible HOV/HOT Lanes	116,100 H	77,700 H	87,200 H	84,900 H
	1,300 T	1,300 T	900 T	1,300 T
6-Lane Highway with Rail & IMC	113,000 H	71,000 H	84,700 H	77,900 H
	32,400 T	24,800 T	8,200 T	8,000 T
6-Lane Highway with AGS	111,500 H	69,400 H	84,400 H	78,000 H
	36,500 T	27,000 T	8,600 T	8,400 T
6-Lane Highway with Dual-Mode Bus in Guideway	111,700 H	69,700 H	86,000 H	78,400 H
	34,500 T	24,300 T	6,000 T	5,200 T
6-Lane Highway with Diesel Bus Guideway	112,900 H	71,200 H	86,500 H	79,200 H
	33,000 T	22,500 T	5,200 T	4,400 T
Preferred Alternative–Minimum Program (55 or 65 mph)	92,200 H	58,300 H	85,000 H	82,400 H
	34,400 T	25,000 T	8,700 T	8,700 T
Preferred Alternative–Maximum Program (55 or 65 mph)	111,500 H	69,400 H	84,400 H	78,000 H
	36,500 T	27,000 T	8,600 T	8,400 T

Note: Person trips followed by an "H" are highway person trips, while those followed by a "T" are transit person trips.

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Table 2. Travel Demand for Selected Model Days – Highway and Transit Person Trips (Continued)

Scenario or Alternative	Summer Sunday				Summer Thursday			
	EB Person Trips at West of Silverthorne		EB Person Trips at Twin Tunnels		WB Person Trips at Twin Tunnels		WB Person Trips at West of Silverthorne	
2000	61,000	H	88,000	H	39,000	H	38,000	H
	200	T	100	T	10	T	70	T
2035 Baseline	110,500	H	140,500	H	65,800	H	71,800	H
	700	T	1,400	T	200	T	200	T
No Action Alternative	94,800	H	110,100	H	63,300	H	65,100	H
	700	T	1,400	T	200	T	200	T
Minimal Action Alternative	97,200	H	110,400	H	65,500	H	65,200	H
	3,000	T	4,200	T	1,400	T	1,300	T
Rail with IMC	92,400	H	110,900	H	61,300	H	63,500	H
	16,500	T	21,700	T	8,000	T	7,500	T
Advanced Guideway System (AGS)	91,800	H	112,700	H	61,500	H	62,700	H
	17,000	T	23,600	T	8,200	T	8,800	T
Dual-Mode Bus in Guideway	94,500	H	112,400	H	63,500	H	65,000	H
	16,200	T	19,800	T	6,700	T	5,900	T
Diesel Bus in Guideway	94,400	H	112,300	H	63,100	H	65,300	H
	16,200	T	19,200	T	6,600	T	5,700	T
6-Lane Highway 55 mph	116,700	H	150,700	H	68,000	H	71,100	H
	700	T	1,400	T	200	T	200	T
6-Lane Highway 65 mph	116,700	H	150,700	H	68,000	H	71,100	H
	700	T	1,400	T	200	T	200	T
Reversible HOV/HOT Lanes	116,600	H	149,300	H	67,800	H	71,100	H
	700	T	1,400	T	200	T	200	T
6-Lane Highway with Rail & IMC	111,300	H	114,700	H	65,200	H	67,900	H
	17,800	T	23,000	T	8,500	T	8,200	T
6-Lane Highway with AGS	111,800	H	145,300	H	64,500	H	67,000	H
	18,000	T	24,700	T	9,100	T	9,600	T
6-Lane Highway with Dual-Mode Bus in Guideway	112,400	H	145,400	H	65,900	H	69,800	H
	17,000	T	23,200	T	7,000	T	6,800	T
6-Lane Highway with Diesel Bus Guideway	112,600	H	146,600	H	67,300	H	70,500	H
	16,200	T	20,100	T	6,900	T	5,800	T
Preferred Alternative–Minimum Program (55 or 65 mph)	95,000	H	109,700	H	63,000	H	63,600	H
	17,000	T	27,500	T	8,600	T	9,100	T
Preferred Alternative–Maximum Program (55 or 65 mph)	111,800	H	145,300	H	64,500	H	67,000	H
	18,000	T	24,700	T	9,100	T	9,600	T

Note: Person trips followed by an "H" are highway person trips, while those followed by a "T" are transit person trips.

Table 3. Selected Model Day Induced or Unmet Travel Demand

Scenario or Alternative	Winter Saturday		Summer Friday	
	2035 Person Trips WB at Twin Tunnels	2035 Person Trips WB at West of Silverthorne	2035 Person Trips WB at Dowd Canyon	2035 Person Trips EB at Dowd Canyon
No Action	-27%	-18%	-9%	-6%
Minimal Action	-20%	-13%	-8%	-6%
Rail with IMC	-3%	+6%	-2%	-1%
Advance Guideway System (AGS)	+1%	+5%	-2%	-0%
Dual-Mode Bus in Guideway	+0%	+2%	-5%	-3%
Diesel Bus in Guideway	-0%	+2%	-6%	-4%
6-Lane Highway 55 mph	+1%	+1%	-0%	-1%
6-Lane Highway 65 mph	+1%	+1%	-0%	-1%
Reversible HOV/HOT Lanes	+1%	+4%	-1%	-1%
6-Lane Highway with Rail & IMC	+25%	+26%	+4%	+4%
6-Lane Highway with AGS	+27%	+27%	+4%	+4%
6-Lane Highway with Dual-Mode Bus in Guideway	+26%	+24%	+3%	+3%
6-Lane Highway with Diesel Bus Guideway	+25%	+23%	+3%	+2%
Preferred Alternative–Minimum Program (55 or 65 mph)	+9%	+10%	+5%	+5%
Preferred Alternative–Maximum Program (55 or 65 mph)	+27%	+27%	+4%	+4%

Scenario or Alternative	Summer Sunday		Summer Thursday	
	2035 Person Trips EB at West of Silverthorne	2035 Person Trips EB at Twin Tunnels	2035 Person Trips WB at Twin Tunnels	2035 Person Trips WB at West of Silverthorne
No Action	-14%	-22%	-4%	-9%
Minimal Action	-10%	-19%	+1%	-8%
Rail with IMC	-2%	-7%	+5%	-1%
Advance Guideway System (AGS)	-2%	-4%	+6%	-1%
Dual-Mode Bus in Guideway	-1%	-7%	+6%	-1%
Diesel Bus in Guideway	-1%	-7%	+6%	-1%
6-Lane Highway 55 mph	+6%	+7%	+3%	-1%
6-Lane Highway 65 mph	+6%	+7%	+3%	-1%
Reversible HOV/HOT Lanes	+5%	+6%	+3%	-1%
6-Lane Highway with Rail & IMC	+16%	+15%	+12%	+6%
6-Lane Highway with AGS	+17%	+20%	+12%	+7%
6-Lane Highway with Dual-Mode Bus in Guideway	+16%	+19%	+10%	+7%
6-Lane Highway with Diesel Bus Guideway	+16%	+18%	+12%	+6%
Preferred Alternative–Minimum Program (55 or 65 mph)	+1%	-3%	+8%	+1%
Preferred Alternative–Maximum Program (55 or 65 mph)	+17%	+20%	+12%	+7%

Weekday Travel Demand

Two focal points, Twin Tunnels and West of Silverthorne, are examined for weekday travel demand. While examining weekend travel demand gives an overview of how I-70 might behave under heavy volumes, summer Thursday demand forecasts provide an indication of more everyday travel patterns—when Work and Local Non-Work trips make up most of the traffic, rather than recreational trips. Weekday travel has a greater percentage of local trips. Between 2000 and 2035, the population of Clear Creek County is projected to increase by about 70 percent, and the Summit County by about 130 percent. Clear Creek County employment is projected to increase by about 94 percent during the 35 years, and Summit County employment is forecast to increase by about 130 percent.

Westbound summer Thursday travel at the Twin Tunnels grows at about the same rate as Clear Creek County employment. The 2035 Baseline demand of about 66,000 person trips is projected to be about 70 percent more than the 2000 level. Under different alternatives, the growth in westbound summer Thursday person trips at the Twin Tunnels ranges from about 63 percent with No Action to about 89 percent under the Combination Six-lane Highway with Advanced Guideway System “build simultaneously” Alternative (**Preferred Alternative**–Maximum Program). By comparison, the growth in westbound winter Saturday person trips from 2000 to the 2035 Baseline is about 198 percent here, more than the growth of summer Thursday person trips seen under any alternative.

The summer Thursday growth in westbound person trips at West of Silverthorne is slightly greater than that at the Twin Tunnels, but well below the growth in Summit County population or employment. The 2035 Baseline demand of about 71,800 person trips westbound is about 88 percent greater than the 2000 volume. Growth here under various alternatives ranges from 70 percent (No Action) to 100 percent (Combination Six-lane Highway with Advanced Guideway System “build simultaneously,” **Preferred Alternative**–Maximum Program). The Transit alternatives and the Highway alternatives accommodate slightly under the amount of westbound person trips here as the 2035 Baseline.

Although trip suppression occurs westbound on summer Thursday for these two focal points under No Action, there is hardly any trip suppression eastbound. This result suggests that the suppressed trips are likely some of the few recreational trips heading from the Front Range to Corridor communities to get an early start on the weekend.

3.1.3 Role of Transit in the Corridor

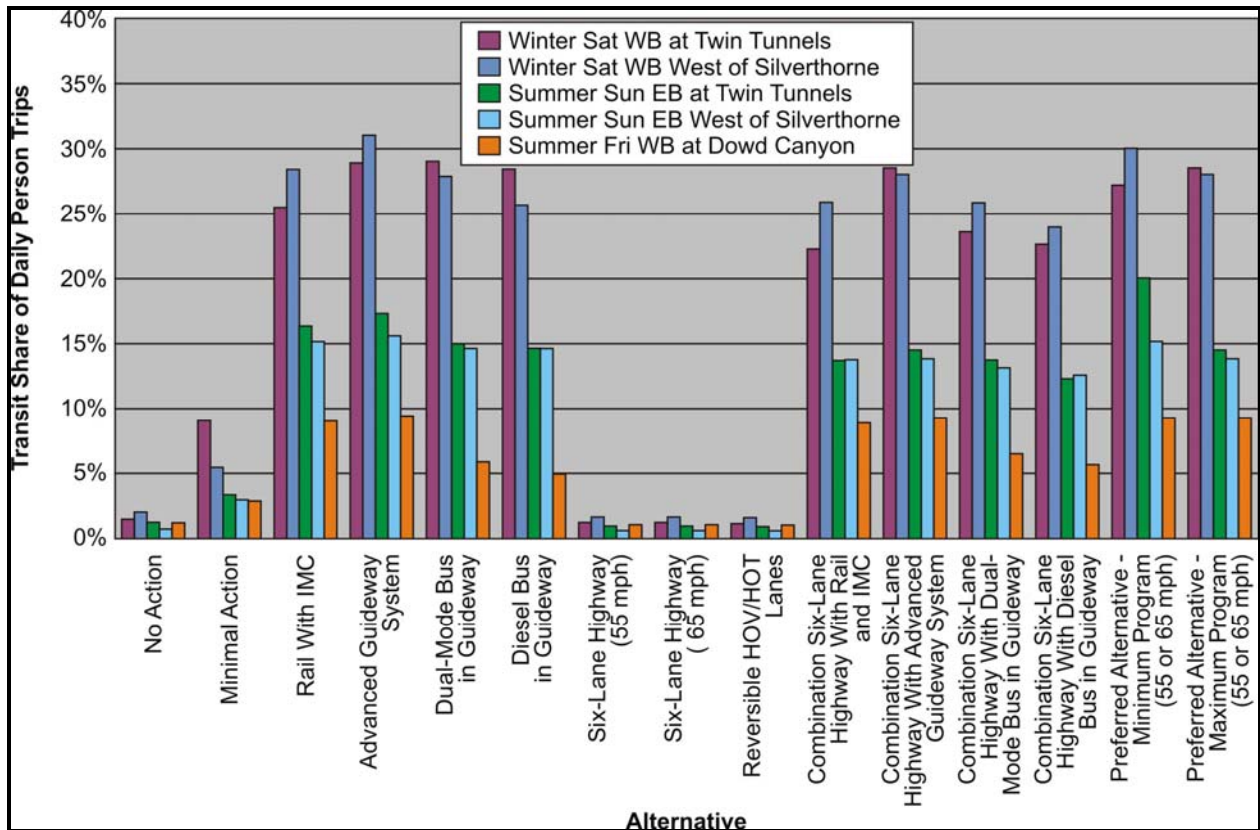
Table 2 provided the number of highway and transit person trips in the Corridor for each alternative. **Figure 3** provides a more graphic comparison of the role that transit would play in the Corridor under each alternative. It illustrates the transit share of daily person trips at selected locations that is projected for each alternative, based on travel demand for selected model days.

For **winter Saturday westbound** at the **Twin Tunnels**, illustrating the weekend winter recreation traffic heading to the mountains from the Front Range, the greatest transit share is projected for the Dual-Mode Bus in Guideway, followed closely by the Advanced Guideway System and the Diesel Bus in Guideway, each at about a 29 percent share. The Rail with Intermountain Connection Alternative carries about a 26 percent transit share, and the Combination alternatives are projected to have a 22 to 29 percent transit share. Transit share under the Highway alternatives is even less, about 1 percent, than that projected for Minimal Action (9 percent) or No Action (2 percent). The transit share for the **Preferred Alternative**–Maximum Program is at about 29 percent at the Twin Tunnels for winter Saturday westbound, and at about 27 percent for the Minimum Program.

Compared to the Twin Tunnels, the **winter Saturday westbound** transit shares at **West of Silverthorne** is slightly higher, with different alternatives having the greatest transit share. Here, the Advanced Guideway System alternative has the greatest share, about 31 percent of westbound person trips. The

Preferred Alternative–Minimum Program has the second greatest share, about 30 percent. The Dual-Mode Bus in Guideway Alternative carries about 28 percent of westbound person trips at West of Silverthorne on transit. The Rail with Intermountain Connection Alternative also has a 28 percent transit share, along with the Combination Six-lane Highway with Advanced Guideway System Alternative (the **Preferred Alternative**–Maximum Program). The Combination Six-lane Highway with Dual-Mode Bus in Guideway Alternative, the Diesel Bus in Guideway Alternative, and the Combination Six-lane Highway with Rail and Intermountain Connection Alternative have a transit share of 26 percent. The Combination Six-lane Highway with Diesel Bus in Guideway Alternative has a transit share of 24 percent. The Minimal Action Alternative results in about 5 percent of person trips on transit here. Summit Stage and other existing services get a mode share of just over 2 percent under No Action, and just under 2 percent with the Highway alternatives.

Figure 3.Percent Transit Share



For **summer Sunday eastbound** at the **Twin Tunnels**, the greatest transit share, about 20 percent, is projected for the **Preferred Alternative**–Minimum Program, followed by the Advanced Guideway System Alternative at about 18 percent. The Rail with Intermountain Connection Alternative has a transit share of about 17 percent for the summer Sunday eastbound at the Twin Tunnels. The Dual-Mode Bus in Guideway Alternative has a transit share of about 15 percent; the Diesel Bus in Guideway alternative, 14 percent, and the **Preferred Alternative**–Maximum Program, also about 14 percent. All the other Combination alternatives have a transit share ranging from 12 to 14 percent. Minimal Action, with its bus in mixed traffic component, has almost a 4 percent share. Transit shares for the Highway alternatives and No Action are 1 percent or less.

West of Silverthorne, the Advanced Guideway System Alternative has the greatest transit share among **summer Sunday eastbound** person trips at about 16 percent. The Rail with Intermountain Connection Alternative, along with Dual-Mode or Diesel Bus in Guideway alternatives, and the **Preferred Alternative**–Minimum Program all have a transit share of about 15 percent. All the Combination alternatives, along with the **Preferred Alternative**–Maximum Program, have a transit share ranging between 13 and 14 percent. Finally, the Minimal Action Alternative results in a 3 percent transit share, while No Action and the three Highway alternatives each attracts just under 1 percent of person trips to transit.

For **summer Friday westbound** travel at **Dowd Canyon**, reflecting the peak travel times on the western side of the Corridor, the Advanced Guideway System and the **Preferred Alternative**–Maximum and Minimum Programs have a transit share of about 9 percent. The Rail with Intermountain Connection and Combination alternatives involving Rail with Intermountain Connection each has about an 8 percent transit share. Combination Six-lane Highway with Dual-Mode and Diesel Bus in Guideway alternatives have the next highest transit share of 6 to 7 percent. The standalone Bus in Guideway alternatives have about a 5 to 6 percent transit share. Minimal Action has about a 3 percent transit share, and the Highway alternatives and No Action have the same amount: just under 1 percent.

3.1.4 Ability to Accommodate Travel Growth Beyond 2035

The ability of an alternative to address the continued growth in travel demand beyond 2035 is measured based on the year in which network capacity of the proposed transportation system is reached. **Figure 4** provides the results of the analysis and comparisons of alternatives’ ability to accommodate travel growth beyond 2035.

Figure 4. Year at Network Capacity by Alternative



The assessment of amount of demand accommodated by alternatives and the year in which the Corridor reaches its network capacity provides two different measures of the same distribution. The amount of demand accommodated is assessed for all alternatives at a given year: 2035. The year in which the Corridor reaches its network capacity is determined at a given level of demand (equal to the alternative's capacity) to find how many years an alternative might accommodate expected travel growth. This analysis measures capacity separately for the eastern part of the Corridor—eastbound from Silverthorne to C-470 on a summer Sunday—and the western part of the Corridor—westbound from Silverthorne to the Eagle/Garfield County Line on a summer Friday.

For the comparisons that follow, the years in which an alternative reaches its capacity are presented, based on a current trend, assuming that:

- Traffic growth that occurs between 2025 and 2035 continues into the future
- The summer Sunday movement from west of the Continental Divide east to the Front Range puts the most pressure on network capacity in the eastern part of the Corridor
- The summer Friday movement westbound from Silverthorne to the Eagle/Garfield County Line puts the most pressure on network capacity in the western part of the Corridor. Glenwood Canyon is not included in the analysis for the western part of the Corridor because little congestion is anticipated there

The forecast of the year the Corridor reaches capacity under the different alternatives is based on assuming no change in vehicle occupancy, transit share, or tolerance to congestion after 2035. Note that under these assumptions, any alternative not able to accommodate the 2035 Baseline demand—that is, any alternative with unmet demand—is considered to have reached its network capacity before 2035.

Network capacity thresholds are as follows:

- Short-term capacity (meets capacity before 2025)
- Intermediate-term capacity (meets capacity between 2025 and 2045)
- Long-term capacity (meets capacity at 2050)

Comparisons for the Western Part of the Corridor

In the western part of the Corridor, the alternatives range from accommodating demand until between 2025 and 2050. The following is the ranking of alternatives from those with the least network capacity (reaching capacity in the earliest year) to those with the greatest network capacity.

- The No Action and Minimal Action alternatives reach network capacity in 2025.
- The Transit alternatives reach network capacity in 2030, with congestion being most pronounced in Dowd Canyon and other urbanizing areas of Eagle County.
- The Highway alternatives, which include six-lane widening in Dowd Canyon and auxiliary lanes on the west side of Vail Pass, reach network capacity in the western part of the Corridor in 2040.
- The Combination alternatives and the **Preferred Alternative** reach capacity in 2050, representing the greatest network capacity and meeting the 2050 Vision. Note that all the improvements associated with bringing the **Preferred Alternative**–Minimum Program to the **Preferred Alternative**–Maximum Program occur in the eastern part of the Corridor. Accordingly, the Minimum and Maximum Programs both reach capacity in the western part of the Corridor in the same year.

Comparisons for the Eastern Part of the Corridor

The following is the ranking of alternatives for the year in which demand in the eastern part of the Corridor reaches I-70's network capacity, ordered from worst-performing to best-performing:

- With no improvements to I-70, the Corridor has reached capacity in 2010 under the No Action Alternative. The Minimal Action Alternative reaches capacity in 2015. These alternatives reach network capacity in the eastern part of the Corridor sooner than the western part because the eastern part of the Corridor is relatively more congested.
- The Transit alternatives and the **Preferred Alternative**–Minimum Program accommodate travel demand to about 2030, resulting in intermediate-term capacity for the Corridor.
- The Highway alternatives accommodate travel demand until reaching network capacity in 2035.
- The Combination “build simultaneously” alternatives, including the **Preferred Alternative**–Maximum Program, accommodate the expected travel growth until 2050, providing the longest-term capacity.

Section 4. Travel Time Comparisons

Travel time provides a common measure for comparing the performance of alternatives. This section provides peak-period highway and transit travel time comparisons for selected model days for alternatives.

For Transit alternatives (Rail with Intermountain Connection, Advanced Guideway System, Dual-Mode and Diesel Bus in Guideway, and the Combination Six-lane Highway with Transit alternatives), the highway travel times demonstrate the positives and negatives that result from overall growth in traffic, but fewer trips on the existing and, in some cases, widened highway occur due to the introduction of transit into the Corridor.

The lead agencies selected the following model days to provide continuity in the comparison of peak-period travel times for alternatives:

- In the eastern part of the Corridor, from Copper Mountain to C-470 (or Jefferson Station for transit comparisons):
 - Winter Saturday—westbound
 - Summer Sunday—eastbound
- For the western part of the Corridor, from Glenwood Springs to Copper Mountain:
 - Summer Friday—eastbound and westbound

The lead agencies selected the winter Saturday and summer Sunday model days to evaluate the performance of alternatives from Copper Mountain (milepost 195) to C-470 (milepost 260), where weekend recreation trips dominate the travel demand. The summer Friday model day was selected to evaluate the performance of alternatives west of Copper Mountain, where Work trips and Local Non-Work trips dominate the travel demand.

Highway versus Transit Travel Time

Highway travel times are a major input factor to the mode choice module in the I-70 travel demand model, which determines the mode choice in a multimodal transportation system. If the highway travel time for a total trip is greater than the transit travel time for the same origin and destination, then the likelihood of taking transit increases. Otherwise, the opposite occurs. The model can reach a balance between various modes of transportation. Therefore, highway travel time comparisons provide a complete travel time performance for a multimodal environment.

Corridorwide Highway travel time is calculated for travel between two points on I-70, given the improvements of the specific alternative, whether it is a Highway, Transit, or Combination alternative. (Note that for the Transit alternatives, about 70 percent or more people, depending on day and location, are forecast to travel by auto.)

Corridorwide Transit travel time is the amount of time expected for travel on the transit system in the case of Transit and Combination alternatives. Calculations include a number of factors that can affect travel times, including the demand on a particular day or the grade of the terrain in a particular direction.

The following sections include descriptions of the development of criteria, thresholds for the travel time comparisons, and highway and transit travel time comparisons.

4.1 Development of Criteria

The initial step in the travel time analysis was to calculate highway and transit travel times within the 10 study segments described in *I-70 Mountain Corridor PEIS Travel Demand Technical Report* and listed in **Table 1** of this Technical Report. **Appendix A** provides the selected model day peak-period travel times for each alternative for each of the 10 segments.

The second step calculated travel times across the Corridor by adding the travel times from the 10 segments.

The comparison of alternatives reports travel time in minutes; however, thresholds for travel time are defined based on the average speed of travel through the corridor. Average speed was established as the measure for travel time, because it is a common performance measure for any alternative, regardless of length or mode of transportation. The lead agencies adopted a minimum speed of 50 mph for the “shortest” travel time threshold. The lead agencies selected this 50 mph speed threshold because it is the lowest current speed limit within the Corridor, occurring at Glenwood Canyon. The threshold between intermediate travel time and longest travel time was set at 30 mph because this average speed reflects considerable queuing within a segment. The same thresholds are used for highway and transit travel times to facilitate comparison of different modes on an equal basis.

In summary, travel time thresholds for both highway and transit travel are based on the following speeds:

- Longest travel time (represented by speeds at less than 30 mph)
- Intermediate travel time (represented by speeds at 30 mph to 50 mph)
- Shortest travel time (represented by speeds at greater than 50 mph)

Calculation of Travel Time Measures

Selected model day peak-period travel time (includes peak direction) indicates the changes to travel time for a particular alternative on the model days examined. This measure of travel time represents the time projected in either the eastbound or westbound direction, and for model days with typically heavy demand. Appendix A provides travel times in each direction. The selected model day peak-period travel time is representative of typical peak travel conditions. Unusual events, such as additional holiday demand or reductions in roadway capacity caused by incidents or severe weather (although these are factors), are not reflected in the computations.

The peak day for one segment may not be the same as the peak day for another segment in the Corridor, nor will it be the same as the selected model day for corridorwide results. As such, the peak-day travel times for each segment are not additive. The peak day for the Corridor as a whole will not be the peak day for every segment within it.

4.2 Highway Travel Time Comparisons

The following discussions provide a comparison of highway travel times for selected model days during the peak-period.

4.2.1 Corridor Summary: Selected Model Day Peak-Period Highway Travel Time

Corridorwide highway travel times for the peak period of travel for the selected peak model days are calculated by adding the travel time of a selected day (**summer Friday**) between Glenwood Springs and Copper Mountain to the travel time of a peak day (**winter Saturday or summer Sunday**) for the eastern

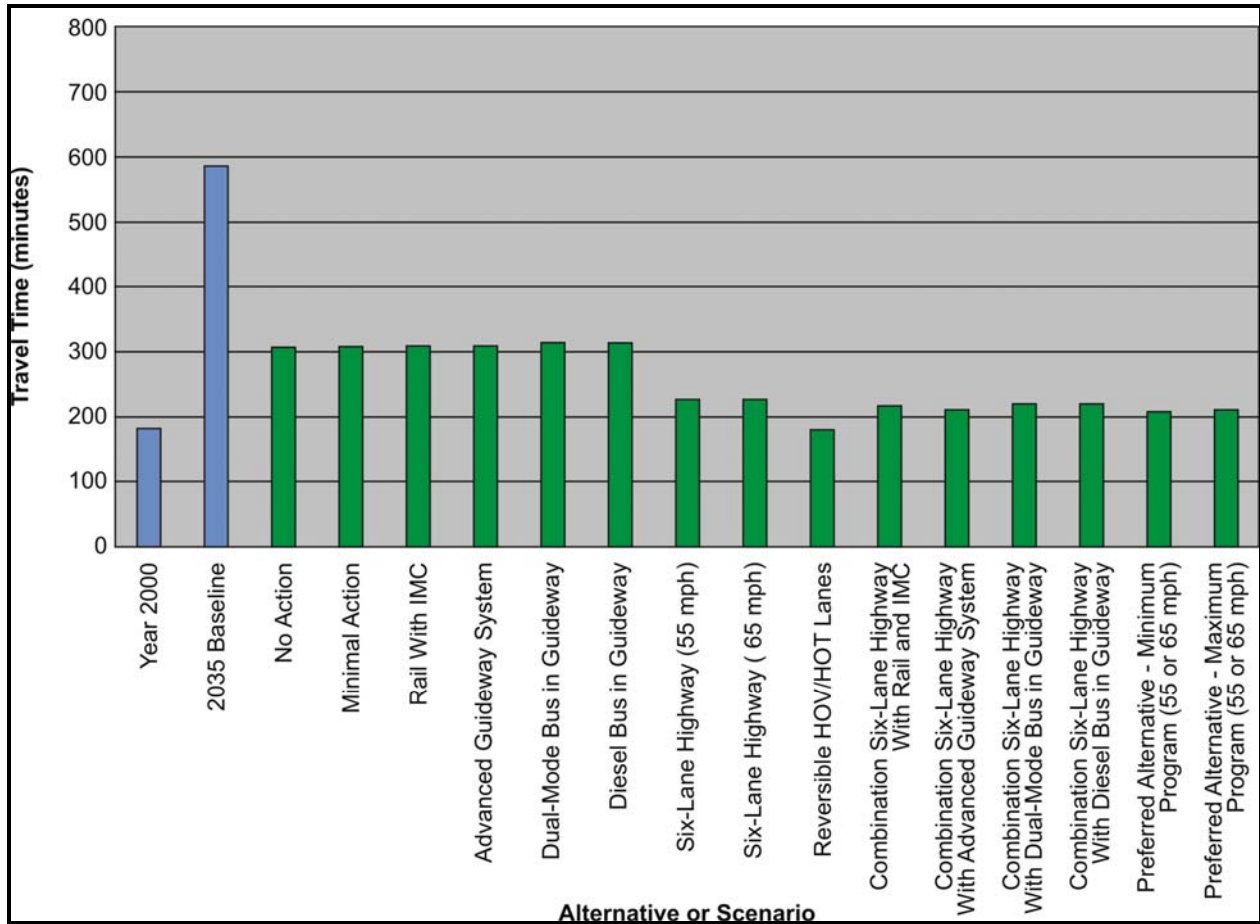
part of the Corridor between Copper Mountain and C-470. Different model days are selected for the eastern part of the Corridor to reflect peak recreational travel and seasonal differences. Westbound, **winter Saturday** experiences a spike of travel demand in the morning as Front Range residents head to the Corridor for recreation. Eastbound volumes are highest on **summer Sunday**, when several adjacent afternoon and evening hours see heavy volumes composed of day recreation and overnight recreation travelers returning to homes in the Front Range.

Since travel times from different model days are added together for two halves of the Corridor, these selected model day peak-period travel times do not reflect the experience of someone traveling the length of the Corridor at once. However, these composite measures are still useful, as they give a worst-case estimate of travel in the Corridor, and allow consistent comparison of alternatives under the most critical conditions.

Figure 5 (westbound) and **Figure 6** (eastbound) illustrate the differences in the corridorwide highway travel time performance of the alternatives under these peak demand conditions for the selected model days. Longest travel time threshold (less than 30 mph) corresponds to travel times of 288 minutes or more (144 miles of entire corridor divided by 30 mph). Intermediate travel time threshold (30 to 50 mph) corresponds to travel times between 173 minutes and 288 minutes. Shortest travel time threshold corresponds to travel times of less than 173 minutes.

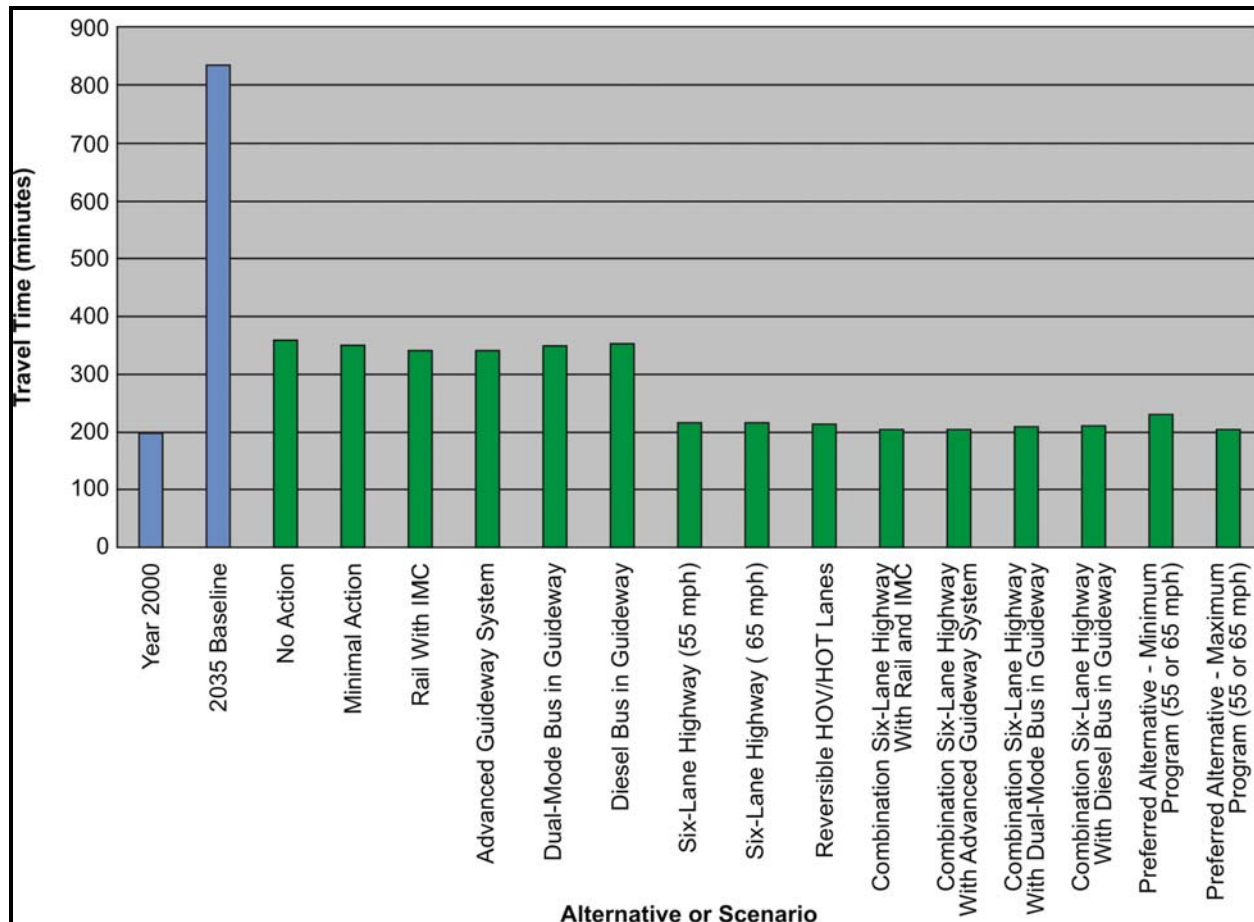
Alternative **westbound** travel times for the length of the Corridor (C-470 to Glenwood Springs) range from 211 minutes with the Combination Six-lane Highway with Advanced Guideway System “build simultaneously” Alternative to 328 minutes with the No Action Alternative. **Figure 5** shows the travel times under each alternative compared to the 2035 Baseline benchmark time of 577 minutes. The 2035 Baseline travel time falls in the longest travel time range for peak-period travel time for winter Saturday (C-470 to Copper Mountain) and summer Friday (Copper Mountain to Glenwood Springs). As shown on **Figure 5**, for travel from C-470 to Glenwood Springs, No Action, Minimal Action and all of the transit alternatives fall within the longest range of westbound travel time. All of the highway and combination alternatives fall within intermediate range.

Figure 5. Selected Model-Day, Peak-period Highway Travel Time (Westbound: C-470 to Glenwood Springs)



Alternative **eastbound** travel times for the length of the Corridor (Glenwood Springs to C-470) range from 205 minutes with the Combination Six-lane Highway with Advanced Guideway System “build simultaneously” Alternative to 359 minutes with the No Action Alternative. **Figure 6** shows the travel times under each alternative compared to the 2035 Baseline benchmark time of 834 minutes, or 13.9 hours. The 2035 Baseline travel time falls in the longest travel time range for peak-period travel time for summer Friday (Glenwood Springs to Copper Mountain) and summer Sunday (Copper Mountain to C-470). The 2035 Baseline eastbound travel time (834 minutes) is about 41 percent more than the 2035 Baseline westbound travel time (577 minutes). As shown on **Figure 6**, for travel from Glenwood Springs to C-470, No Action, Minimal Action and all of the transit alternatives fall within the longest range of eastbound travel time. All of the highway and combination alternatives fall within intermediate range.

Figure 6. Selected Model Day, Peak-period Highway Travel Time (Eastbound: Glenwood Springs to C-470)



4.3 Transit Travel Time Comparison

The following discussions provide a comparison of transit travel times for selected model days during the peak-period.

4.3.1 Corridor Summary: Selected Model Day Peak-Period Transit Travel Time

Similar to highway travel times discussed in **Section 4.2**, corridor wide transit travel times for the peak period of travel for the selected peak model days are calculated by adding the travel time of a selected day (**summer Friday**) between Glenwood Springs and Copper Mountain to the travel time of a peak day (**winter Saturday or summer Sunday**) for the eastern part of the Corridor between Copper Mountain and C-470 (Jefferson Station). **Figure 7** (westbound) and **Figure 8** (eastbound) illustrate the differences in the corridorwide transit travel time performance of the alternatives offering transit systems under these peak demand conditions for the selected model days. The same thresholds for highway travel times are used for transit travel times.

As shown on **Figure 7**, transit travel times from Jefferson Station to Glenwood Springs range from just under 3 hours with the Preferred Alternative (both minimum and maximum programs) to 3 hours and

25 minutes with the Diesel Bus in Guideway Alternative. All of the alternatives fall within the intermediate range of travel time.

**Figure 7. Selected Model-Day, Peak-period Transit Travel Time
(Westbound: C-470 to Glenwood Springs)**

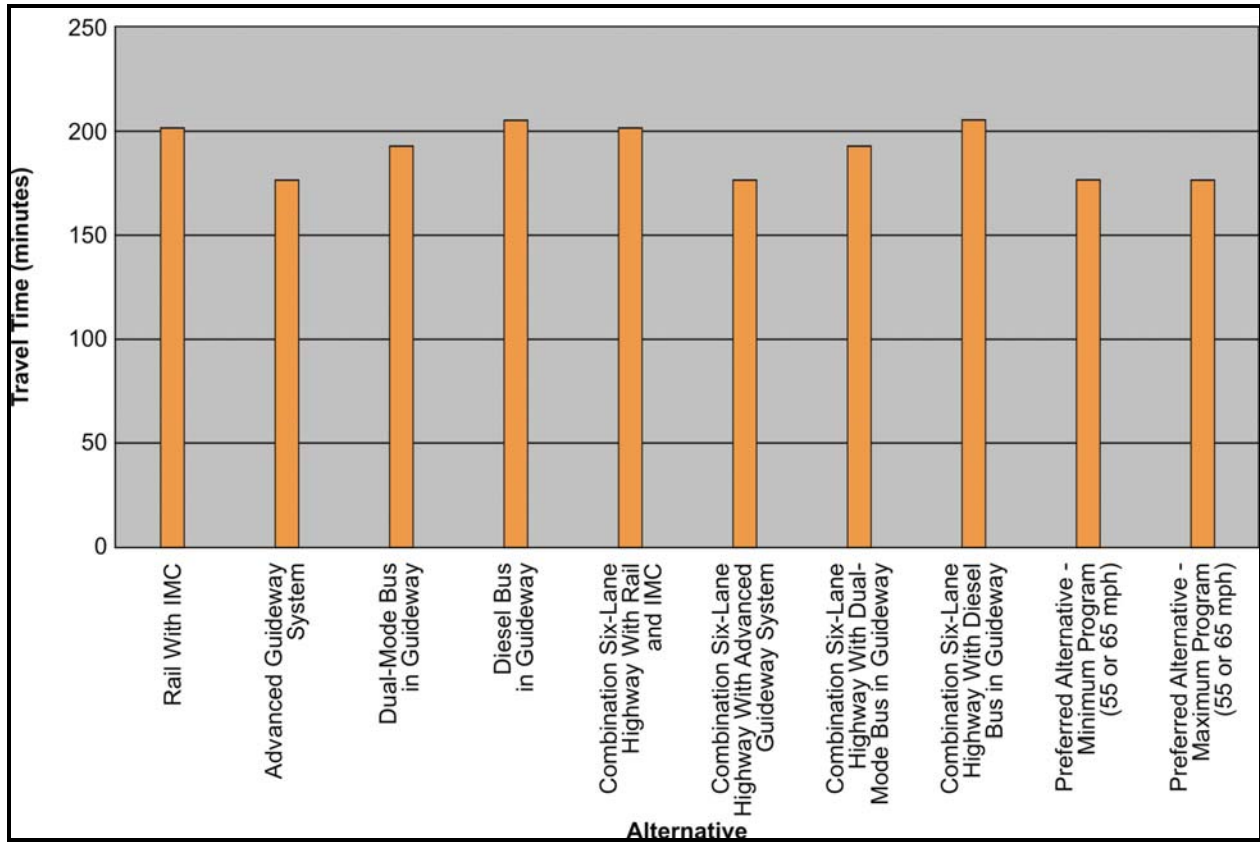
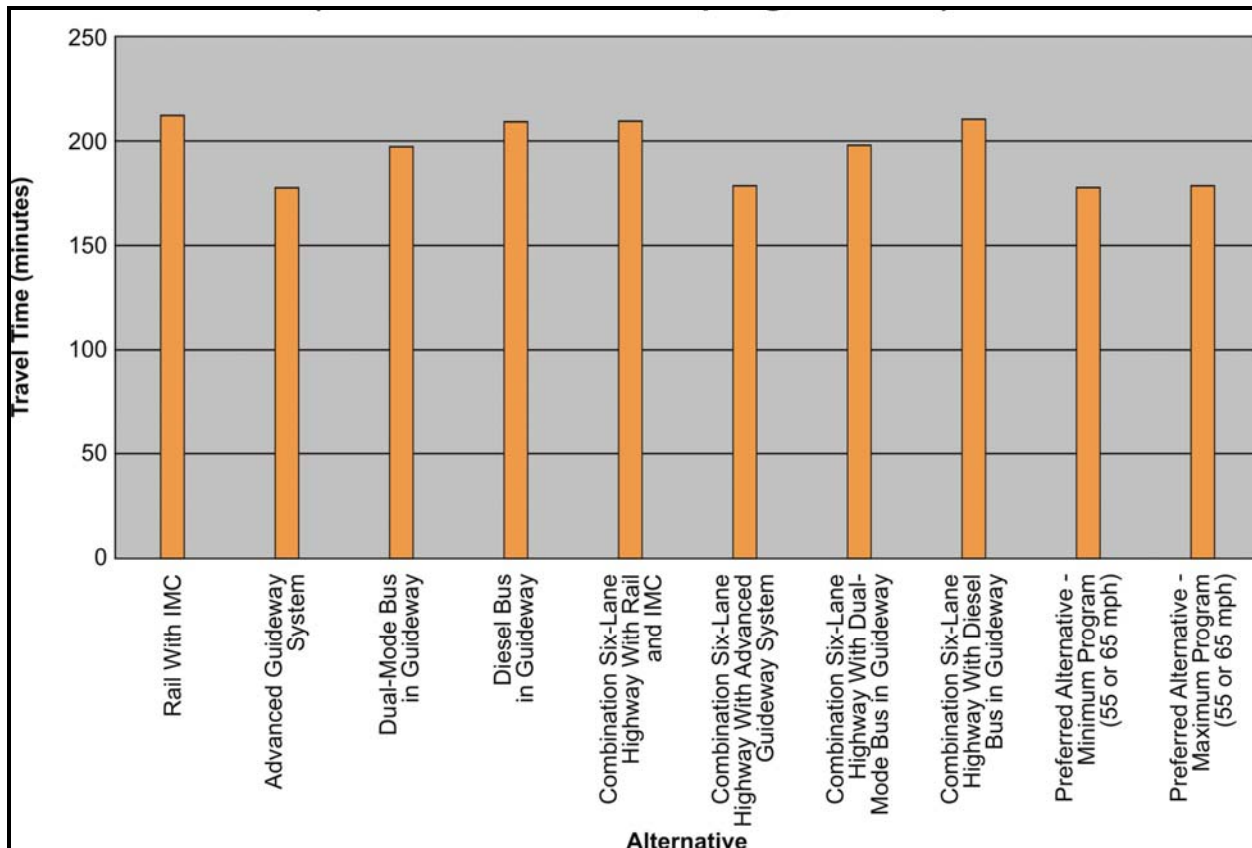


Figure 8. Selected Model Day, Peak-period Transit Travel Time (Eastbound: Glenwood Springs to C-470)



As shown on **Figure 8**, transit travel times from Glenwood Springs to Jefferson Station range from just under 3 hours with the Advanced Guideway System and Preferred Alternatives (both minimum and maximum programs) to 3 hours and 32 minutes with the Rail with Intermountain Connection Alternative. All of the eastbound alternatives fall within the intermediate range of travel time also. Eastbound travel times are not much different than westbound travel times because all the Transit and Combination alternatives provide a dedicated guideway between Eagle Airport and Jefferson Station. Further, there is little congestion in the Corridor west of Eagle Airport, where transit riders would be on a bus in mixed traffic.

Section 5. Congestion Comparison

This section provides comparisons of alternatives based on both **annual hours of congestion** and **peak-day hours of congestion**, which are calculated at the 10 focal points selected to represent levels of congestion in the Corridor. Each focal point is described in the *I-70 Mountain Corridor PEIS Travel Demand Technical Report* and listed in **Table 1** of this Technical Report. “Hours of congestion” is a measure of the ability of each alternative to accommodate the levels of travel demand.

Congestion is defined as traffic that operates at a level of service (LOS) of “F,” or stop-and-go traffic.

Annual hours of congestion comparisons quantify the peak hours throughout the entire year, while peak-day hours of congestion provide a measure of the ability of alternatives to accommodate travel demand

projected for summer and winter recreation trips. **Winter Saturday** was chosen to examine the westbound key focal points from Genesee to Vail Pass, since this day currently experiences noticeable queuing and slowing, such as at the Floyd Hill lane drop and at Georgetown Hill. For the eastbound focal points from Vail Pass to Genesee, volumes on **Summer Sunday** are heavy for several hours at a time, as Denver metropolitan area residents return from recreation in the Corridor. **Summer Friday** is the peak day in either direction for East of Eagle, Dowd Canyon, and Vail Pass. The no Name Tunnels focal point can accommodate the 2035 Baseline travel demand without congestion, hence is not included in the comparisons.

For the annual hours of congestion at a location, “365 hours per year” was selected as the threshold for the greatest category because it represents the point at which congestion (LOS F, or stop-and-go traffic) could occur for a substantial period, for example, 6 hours or greater per day during 40 to 60 peak days of the year. The 365-hour threshold was used to define the problematic areas discussed in *the I-70 Mountain Corridor PEIS Travel Demand Technical Report*.

A lower threshold of 120 hours per year was selected to distinguish intermediate congestion from least congestion because that quantity of congestion corresponds to 60 peak days (about the current number of weekends with congestion) having 2 hours of congestion each.

To summarize, congestion thresholds are as follows:

- Least hours of congestion (119 hours or less per year)
- Intermediate hours of congestion (120 to 364 hours per year)
- Greatest hours of congestion (365 or more hours per year)

The following sections provide a summary of annual and selected model day hours of congestion respectively.

How Congestion is Calculated

Hours of congestion are calculated on a daily directional basis and on an annual basis. Alternatives with a higher number of congestion hours during a year are considered to be functioning worse in traffic operation than alternatives with a lower number of congestion hours. The annual congestion hours and demands were determined from the daily directional level and reported as annual totals. A congested hour is defined as one in which the traffic is expected to operate under stop-and-go conditions—that is, LOS F. Congestion hours and “percent of annual hours under congestion” are reported for 10 focal points per alternative in Appendix A.

Changes in peak-day level of service (LOS) and travel time (minutes per vehicle trip eastbound or westbound) are determinants of how well an alternative is functioning under the peak demand of that alternative for specific model days. This mobility comparison shows each alternative’s travel time and LOS for representative segments of the Corridor.

5.1.1 Annual Hours of Congestion (LOS F) Comparisons

Table 4 provides a summary of annual hours of congestion for both westbound and eastbound directions.

Westbound Direction

As shown in **Table 4**, the 2035 Baseline Scenario falls within the greatest hours of congestion range at all focal points except for West of Silverthorne and East of Eagle. In the westbound direction, West of Silverthorne experiences no congestion for any of the alternatives. Below is a summary of westbound annual hours of congestion for all alternatives:

- While the No Action and Minimal Action alternatives result in a reduction in annual hours of congestion from 2035 Baseline, they do not accommodate the 2035 Baseline travel demand. However, interchange improvements and auxiliary lanes in the Minimal Action Alternative

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improve local capacity in the Corridor and the ability to accommodate 2035 Baseline travel demand over the No Action Alternative.

- For transit-only alternatives congestion at the greatest and intermediate ranges occur at Genesee, Top of Floyd Hill, Twin Tunnels, East of Empire Junction, Eisenhower-Johnson Memorial Tunnels, Vail Pass and Dowd Canyon focal points. Transit-only alternatives experience no congestion at the remaining focal points.
- The Six-lane Highway (55 mph or 65 mph) alternatives result in congested travel conditions at Genesee and Top of Floyd Hill, where congestion remains at the greatest range. At Twin Tunnels, East of Empire Junction and Eisenhower-Johnson Memorial Tunnels, the Six-Lane Highway alternatives operate at intermediate hours of congestion, while experiencing no congestion at the remaining focal points.
- The Reversible/HOV/HOT Lanes Alternative operates in greatest hours of congestion range at Genesee, Top of Floyd Hill and Eisenhower-Johnson Memorial Tunnels and intermediate hours of congestion range at Twin Tunnels and East of Empire Junction. The Reversible/HOV/HOT Lanes Alternative experience no congestion at the remaining focal points.
- The Combination alternatives including the Preferred Alternative – Maximum Program operate in greatest hours of congestion range at Genesee and Top of Floyd Hill; intermediate hours of congestion range at Eisenhower-Johnson Memorial Tunnels and least hours of congestion at East of Empire Junction. The Combination alternatives experience no congestion at the remaining focal points.
- The Preferred Alternative – Minimum Program Alternative operates in greatest hours of congestion range at Genesee, Top of Floyd Hill, Twin Tunnels and Eisenhower-Johnson Memorial Tunnels; intermediate hours of congestion range at East of Empire Junction, and least hours of congestion range at East of Eagle. The Preferred Alternative – Minimum Program Alternative experience no congestion at the remaining focal points.
- In general, Genesee and Top of Floyd Hill experience the most annual hours of congestion in the westbound direction.

Eastbound Direction

As shown in **Table 4**, in the eastbound direction, the 2035 Baseline Scenario falls within the greatest hours of congestion range at all focal points except for Top of Floyd Hill and Genesee. Below is a summary of eastbound annual hours of congestion for all alternatives:

- While the No Action and Minimal Action alternatives result in a reduction in annual hours of congestion from 2035 Baseline (except for at Dowd Canyon), they do not accommodate the 2035 Baseline travel demand.

Table 4. Annual Hours of Congestion (LOS F)

Scenario or Alternative	Westbound Annual Hours of Congestion								
	Genesee	Top of Floyd Hill	Twin Tunnels	East of Empire Junction	EJMT	West of Silverthorne	Vail Pass	Dowd Canyon	East of Eagle
2035 Baseline	3,426	2,796	1,223	1,059	1,732	0	723	2,632	189
No Action Alternative	2,340	862	417	475	1,447	0	237	2,069	148
Preferred Alternative - Minimum Program (55 or 65 mph)	2,589	2,437	712	153	578	0	0	0	65
Minimal Action Alternative	3,115	1,700	689	314	1,243	0	483	2,321	74
Rail with Intermountain Connect (IMC)	3,700	2,458	983	169	1,122	0	729	2,684	0
Advanced Guideway System (AGS)	3,891	2,538	961	153	1,038	0	729	2,572	0
Dual-Mode Bus in Guideway	3,978	2,753	1,260	252	1,299	0	729	3,708	0
Diesel Bus in Guideway	3,935	2,700	1,206	237	1,306	0	729	3,824	0
Six-Lane Highway (55 or 65 mph)	1,156	2,877	333	125	198	0	0	0	0
Reversible / HOV / HOT Lanes	1,607	837	125	168	476	0	0	0	0
Combination Six-Lane Highway with Rail and IMC	1,180	2,772	246	84	130	0	0	0	0
Combination Six-Lane Highway with AGS	1,097	2,638	229	76	117	0	0	0	0
Combination Six-Lane Highway with Dual-Mode Bus in Guideway	1,161	2,807	278	98	155	0	0	0	0
Combination Six-Lane Highway with Diesel Bus in Guideway	1,187	2,863	295	106	172	0	0	0	0
Preferred Alternative - Maximum Program (55 or 65 mph)	1,097	2,638	229	76	117	0	0	0	0

Scenario or Alternative	Eastbound Annual Hours of Congestion								
	East of Eagle	Dowd Canyon	Vail Pass	West of Silverthorne	EJMT	East of Empire Junction	Twin Tunnels	Top of Floyd Hill	Genesee
2035 Baseline	589	1,688	429	2,093	2,133	1,676	2,059	287	335
No Action Alternative	334	1,873	31	109	970	1,368	2,531	0	142
Preferred Alternative - Minimum Program (55 or 65 mph)	109	298	0	51	174	495	206	93	93
Minimal Action Alternative	334	1,873	28	80	720	959	1,479	72	157
Rail with Intermountain Connect (IMC)	1,325	207	27	56	515	612	471	137	161
Advanced Guideway System (AGS)	1,325	197	25	51	470	549	428	144	171
Dual-Mode Bus in Guideway	1,325	302	29	69	632	679	522	172	186
Diesel Bus in Guideway	1,325	313	30	70	631	673	516	167	182
Six-Lane Highway (55 or 65 mph)	82	379	0	181	253	114	592	1,021	606
Reversible / HOV / HOT Lanes	82	379	0	184	201	79	856	958	608
Combination Six-Lane Highway with Rail and IMC	82	379	0	128	161	75	320	885	523
Combination Six-Lane Highway with AGS	82	379	0	128	148	68	279	848	502
Combination Six-Lane Highway with Dual-Mode Bus in Guideway	82	379	0	128	186	83	380	959	584
Combination Six-Lane Highway with Diesel Bus in Guideway	82	379	0	128	204	89	423	975	591
Preferred Alternative - Maximum Program (55 or 65 mph)	82	379	0	128	148	68	279	848	502

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- The Transit-only alternatives operate in the greatest range of annual hours at East of Eagle, Eisenhower-Johnson Memorial Tunnels, East of Empire Junction, and Twin Tunnels; the intermediate range of annual hours of congestion at Dowd Canyon, Top of Floyd Hill and Genesee; and least hours of congestion at Vail Pass and West of Silverthorne.
- The Six-lane Highway (55 mph or 65 mph) alternatives result in congested travel conditions at Dowd Canyon, Twin Tunnels, Top of Floyd Hill and Genesee, where congestion remains at the greatest range. At the remaining focal points, the Six-lane Highway alternatives operate at intermediate or least hours of congestion.
- The Reversible/HOV/HOT Lanes Alternative operates in greatest hours of congestion range at Dowd Canyon, Twin Tunnels, Top of Floyd Hill and Genesee; intermediate hours of congestion range at West of Silverthorne and Eisenhower-Johnson Memorial Tunnels; and least hours of congestion at the remaining focal points.
- The Combination alternatives including the Preferred Alternative – Maximum Program operate in greatest hours of congestion range at Dowd Canyon, Genesee and Top of Floyd Hill; intermediate hours of congestion range at West of Silverthorne and Eisenhower-Johnson Memorial Tunnels and least hours of congestion at East of Eagle, Vail Pass and East of Empire Junction. At Twin Tunnels, the Combination Alternatives operate at either intermediate or greatest hours of congestion.
- The Preferred Alternative–Minimum Program Alternative operates in greatest hours of congestion range at East of Empire Junction; intermediate hours of congestion range at Dowd Canyon, Eisenhower-Johnson Memorial Tunnels and Twin Tunnels, and least hours of congestion range at the remaining focal points.

5.1.2 Peak Model Day Hours of Congestion (LOS F) Comparisons

Table 5 provides a summary of peak model day hours of congestion for both westbound and eastbound directions.

Westbound Direction

As described earlier, peak model day for westbound direction is Winter Saturday for focal points east of Vail Pass; and Summer Friday for focal points west of Vail Pass including Vail Pass. Below is a summary of westbound peak model day hours of congestion for all alternatives by each focal point:

- On Winter Saturday at **Genesee**, the Transit alternatives experience most congestion followed by Combination (including Preferred Alternative–Maximum Program), Highway, Minimal Action and No Action alternatives. The **Preferred Alternative–Minimum Program** is not expected to experience congestion. Travel conditions under this package of improvements benefits from having the westbound auxiliary lane from Morrison to Chief Hosa, without having the greater traffic levels experienced with the Highway and Combination alternatives.
- On Winter Saturday at **Top of Floyd Hill**, Combination (including Preferred Alternative–Maximum Program) and Highway alternatives experience most congestion followed by No Action, Preferred Alternative–Minimum Program and Minimal Action alternatives. Because winter Saturday trips are suppressed, the Transit alternatives are not forecast to have any westbound hours of congestion at the Top of Floyd Hill.
- On Winter Saturday at **Twin Tunnels**, Preferred Alternative–Minimum Program has the most hours of congestion because of queuing from the lane drop at Exit 241 (East Idaho Springs). No Action and the Minimal Action alternatives have the second most hours of congestion while the remaining alternatives are not expected to have any hours of congestion.

Table 5. Selected Model Day Hours of Congestion (LOS F)

Scenario or Alternative	Winter Saturday Hours of Congestion (LOS F)					
	WESTBOUND					
	Genesee (mp 254)	Top of Floyd Hill (mp 246)	Twin Tunnels (mp 242)	East of Empire Junction (mp 233)	EJMT (mp 214)	West of Silverthorne (mp 204)
2035 Baseline	16	17	3	4	0	0
No Action Alternative	3	4	3	4	1	0
Minimal Action Alternative	12	2	1.5	4	1	0
Rail with IMC	14	0	0	4	0	0
Advance Guideway System (AGS)	14	0	0	4	0	0
Dual-Mode Bus in Guideway	14	0	0	4	0	0
Diesel Bus in Guideway	14	0	0	4	0	0
Six-Lane Highway (55 or 65 mph)	13	13	0	2	3	0
Reversible HOV/HOT Lanes	13	13	0	2	3	0
Combination Six-Lane Highway with Rail & IMC	13	13	0	2	3	0
Combination Six-Lane Highway with AGS	13	13	0	2	3	0
Combination Six-Lane Highway with Dual-Mode Bus in Guideway	13	13	0	2	3	0
Combination Six-Lane Highway with Diesel Bus Guideway	13	13	0	2	3	0
Preferred Alternative - Minimum Program (55 or 65 mph)	0	3	4	4	0	0
Preferred Alternative - Maximum Program (55 or 65 mph)	13	13	0	2	3	0
Scenario or Alternative	Summer Friday Hours of Congestion (LOS F) WESTBOUND			Summer Friday Hours of Congestion (LOS F) EASTBOUND		
	Vail Pass (mp 190)	Dowd Canyon (mp 172)	East of Eagle (mp 147)	East of Eagle (mp 147)	Dowd Canyon (mp 172)	Vail Pass (mp 190)
2035 Baseline	0	11	1	7	7	1
No Action Alternative	0	10	0	1	2	0
Minimal Action Alternative	0	10.5	0	2	2	0
Rail with IMC	0	11	0	3	2	0
Advance Guideway System (AGS)	0	11	0	3	2	0
Dual-Mode Bus in Guideway	0	16	0	3	3	0
Diesel Bus in Guideway	0	16	0	3	3	0
Six-Lane Highway (55 or 65 mph)	0	0	0	0	0	0
Reversible HOV/HOT Lanes	0	0	0	0	0	0
Combination Six-Lane Highway with Rail & IMC	0	0	0	0	0	0
Combination Six-Lane Highway with AGS	0	0	1	0	0	0
Combination Six-Lane Highway with Dual-Mode Bus in Guideway	0	0	0	0	0	0
Combination Six-Lane Highway with Diesel Bus Guideway	0	0	0	0	0	0
Preferred Alternative - Minimum Program (55 or 65 mph)	0	0	1	0	0	0
Preferred Alternative - Maximum Program (55 or 65 mph)	0	0	1	0	0	0
Scenario or Alternative	Summer Sunday Hours of Congestion (LOS F) EASTBOUND					
	West of Silverthorne (mp 204)	EJMT (mp 214)	East of Empire Junction (mp 233)	Twin Tunnels (mp 242)	Top of Floyd Hill (mp 246)	Genesee (mp 254)
2035 Baseline	10	10	12	13	0	0
No Action Alternative	10	10	3	10	0	0
Minimal Action Alternative	5	9	10	10	0	0
Rail with IMC	0	8	12	10	0	0
Advance Guideway System (AGS)	0	8	13	10	0	0
Dual-Mode Bus in Guideway	0	8	13	10	0	0
Diesel Bus in Guideway	0	8	13	10	0	0
Six-Lane Highway (55 or 65 mph)	0	0	0	8	11	0
Reversible HOV/HOT Lanes	0	0	0	10	11	0
Combination Six-Lane Highway with Rail & IMC	0	0	0	8	11	0
Combination Six-Lane Highway with AGS	0	0	0	8	11	0
Combination Six-Lane Highway with Dual-Mode Bus in Guideway	0	0	1	8	11	0
Combination Six-Lane Highway with Diesel Bus Guideway	0	1	1	8	11	0
Preferred Alternative - Minimum Program (55 or 65 mph)	0	8	12	9	0	0
Preferred Alternative - Maximum Program (55 or 65 mph)	0	0	0	8	11	0

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- On Winter Saturday at **East of Empire Junction**, the No Action, Minimal Action, Preferred Alternative–Minimum Program and Transit, alternatives all have the same amount of congestion (4 hours) followed by the remaining alternatives (2 hours).
- On Winter Saturday at **Eisenhower-Johnson Memorial Tunnels**, the 2035 Baseline scenario is projected to result in no congestion due to the metering of traffic upstream. Highway and Combination (including Preferred Alternative-Maximum Program) alternatives are projected to experience most hours of congestion followed by the No Action and Minimal Action alternatives. The remaining alternatives are not expected to have any congestion.
- No hours of congestion are projected to occur on Winter Saturday at **West of Silverthorne** under the 2035 Baseline scenario or any alternative.
- No hours of congestion are projected to occur on Summer Friday at **Vail Pass** under the 2035 Baseline scenario or any alternative.
- On Summer Friday at **Dowd Canyon**, the two Bus in Guideway alternatives (either power source) are the most congested followed by the other two transit alternatives. Minimal Action and No Action alternatives are the next most congested while the remaining alternatives are not projected to experience any congestion.
- On Summer Friday at **East of Eagle**, only one hour of localized congestion is projected to occur under Combination Six-Lane Highway with Advanced Guideway Alternative and Preferred Alternative (both Minimum and Maximum Program). No congestion is expected for the remaining alternatives.

Eastbound Direction

As described earlier, peak model day for eastbound direction is Summer Sunday for focal points east of Vail Pass; and Summer Friday for focal points west of Vail Pass including Vail Pass. Below is a summary of eastbound peak model day hours of congestion for all alternatives by each focal point:

- On Summer Friday at **East of Eagle**, transit alternatives are the most congested followed by Minimal Action and No Action alternatives. No congestion is expected for the remaining alternatives.
- On Summer Friday at **Dowd Canyon**, the two Bus in Guideway alternatives experience the most congestion followed by the No Action, Minimal Action, Rail with Intermountain Connection, and Advanced Guideway System alternatives. No congestion is expected for the remaining alternatives.
- None of the alternatives are expected to experience any congestion at **Vail Pass** on Summer Friday.
- On Summer Sunday at **West of Silverthorne**, No Action Alternative experience the most hours of congestion followed by Minimal Action Alternative. The remaining alternatives are not expected to have any congestion.
- On Summer Sunday at **Eisenhower-Johnson Memorial Tunnels**, the No Action Alternative is projected to have the most hours of congestion followed by the Minimal Action, Transit and Preferred Alternative–Minimum Program. The Combination Six-Lane Highway with Diesel Bus alternative is expected to experience LOS F conditions for only one hour while remaining alternatives are expected to experience no congestion.

- On Summer Sunday at **East of Empire Junction**, the Transit alternatives have the greatest duration of congestion followed by Preferred Alternative–Minimum Program, Minimal Action, No Action and Combination Six-Lane with Bus alternatives. The remaining alternatives are not expected to have any congestion.
- On Summer Sunday at **Twin Tunnels**, The No Action, Minimal Action, Transit and the Reversible/HOV/HOT Lanes alternatives are expected to experience most hours of congestion closely followed by the remaining alternatives.
- On Summer Sunday at **Top of Floyd**, Highway and Combination alternatives (including Preferred Alternative–Maximum Program) are expected to experience same amount of congestion (11 hours) while the remaining alternatives have no hours of congestion due to the metering of traffic upstream at Twin Tunnels.
- On Summer Sunday at **Genesee**, no hours of congestion are expected for the 2035 Baseline scenario or any of the alternatives. For the alternatives other than the Highway and Combination alternatives, this situation results primarily due to the metering of traffic at Twin Tunnels, which ensures that the traffic volume that reached Genesee is less than the capacity. However, for the Highway and Combination alternatives (including the **Preferred Alternative**–Maximum Program), the traffic is metered at Floyd Hill instead, resulting in similar uncongested conditions at Genesee.

Appendix A: Detailed Transportation Statistics

Appendix A provides the complete data reports for tables referenced in the document. The reports included are:

- I-70 PEIS 2035 Travel Demand Estimates. This table provides the estimated daily travel demand at the 10 focal points.
- Highway Travel Times. This table provides the Highway travel time by 10 segments.
- Transit Travel Times. This table provides the Transit travel time by 10 segments.
- Annual hours of LOS F WB. This table provides the annual hours at LOS F at 10 Focal points for the westbound direction of travel.
- Annual hours of LOS F EB. This table provides the annual hours at LOS F at 10 Focal points for the eastbound direction of travel.

These results were used to identify transportation related measures of effectiveness and compare alternative performance. The data were prepared in 2004 and reviewed for consistency with current (2010) conditions. The data remain valid as the overall travel patterns in the corridor have not changed.

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Winter Saturday at Vail Pass		2000 Hwy. Vehicle Trips (VT)	2000 Hwy. Person Trips (PT)	WB 2035 Highway VT	EB 2035 Highway VT	2035 Highway VT	% Growth 2000 to 2035 VT	Avg. % Growth in VT per Yr.	2035 WB Highway PT	2035 EB Highway PT	2035 Highway PT	2035 WB Transit PT	2035 EB Transit PT	2035 Transit PT	2035 WB Total PT	2035 EB Total PT	2035 Total PT	Transit as % of Total PT	Trip Suppression/ Inducement	
Alternative																		PT Diff. % Diff.		
Baseline		17,900	36,400	23,838	21,123	44,961	151%	2.7%	46,621	41,149	87,769	133	125	258	46,754	41,273	88,027	0%		
No Action				23,496	20,642	44,138	147%	2.6%	46,295	40,369	86,663	136	121	257	46,431	40,490	86,920	0%	(1,107)	-1%
Minimal Action				23,835	20,748	44,583	149%	2.6%										#DIV/0!	(88,027)	-100%
Rail with IMC				20,754	17,279	38,033	112%	2.2%	39,347	32,989	72,336	8,049	7,625	15,675	47,397	40,614	88,011	18%	(16)	0%
AGS				19,656	16,366	36,022	101%	2.0%	37,307	31,279	68,586	9,897	9,376	19,273	47,204	40,654	87,858	22%	(169)	0%
Dual-Mode Bus (DMB)				20,056	17,450	37,506	110%	2.1%	37,688	32,526	70,214	8,183	9,333	17,517	45,871	41,859	87,731	20%	(297)	0%
Diesel Bus				21,019	18,287	39,306	120%	2.3%	39,644	34,214	73,857	6,508	7,422	13,930	46,151	41,636	87,787	16%	(240)	0%
6-Lane Highway				24,139	20,978	45,117	152%	2.7%	47,405	40,869	88,274	133	125	258	47,538	40,995	88,533	0%	505	1%
Reversible Lane				24,177	21,012	45,189	152%	2.7%	47,441	40,901	88,342	132	125	257	47,574	41,025	88,599	0%	572	1%
Combination 6-Lane Highway & Rail with IMC				22,811	19,943	42,753	139%	2.5%	43,641	37,853	81,494	8,645	8,509	17,154	52,286	46,362	98,649	17%	10,621	12%
Combination 6-Lane Highway & AGS				22,183	19,373	41,556	132%	2.4%	42,136	36,532	78,668	10,378	10,116	20,494	52,514	46,648	99,162	21%	11,135	13%
Combination 6-Lane Highway & DMB				22,420	19,500	41,920	134%	2.5%	41,985	36,227	78,212	9,219	10,540	19,759	51,204	46,766	97,970	20%	9,943	11%
Combination 6-Lane Highway & Diesel Bus				23,028	20,031	43,058	141%	2.5%	43,444	37,486	80,929	7,467	8,591	16,058	50,910	46,077	96,987	17%	8,960	10%
Minimum Program				20,393	17,509	37,902	112%	2.2%	38,701	33,167	71,868	10,190	9,149	19,339	48,891	42,316	91,207	21%	3,180	4%

Winter Saturday at Dowd Canyon		2000 Hwy. Vehicle Trips (VT)	2000 Hwy. Person Trips (PT)	WB 2035 Highway VT	EB 2035 Highway VT	2035 Highway VT	% Growth 2000 to 2035 VT	Avg. % Growth in VT per Yr.	2035 WB Highway PT	2035 EB Highway PT	2035 Highway PT	2035 WB Transit PT	2035 EB Transit PT	2035 Transit PT	2035 WB Total PT	2035 EB Total PT	2035 Total PT	Transit as % of Total PT	Trip Suppression/ Inducement	
Alternative																		PT Diff. % Diff.		
Baseline		30,200	60,600	42,193	36,123	78,316	159%	2.8%	78,361	66,971	145,332	1,873	2,717	4,591	80,234	69,688	149,922	3%		
No Action				41,831	36,010	77,842	158%	2.7%	77,893	66,807	144,700	1,680	2,907	4,587	79,573	69,714	149,287	3%	(635)	0%
Minimal Action				40,634	35,000	75,634	150%	2.7%										#DIV/0!	(149,922)	-100%
Rail with IMC				36,803	30,994	67,798	124%	2.3%	67,024	56,602	123,626	12,967	13,020	25,987	79,991	69,622	149,613	17%	(309)	0%
AGS				36,453	30,699	67,153	122%	2.3%	66,342	56,026	122,368	13,624	13,680	27,304	79,966	69,706	149,672	18%	(250)	0%
Dual-Mode Bus (DMB)				37,923	32,729	70,652	134%	2.5%	68,556	58,930	127,487	10,206	12,106	22,311	78,762	71,036	149,798	15%	(125)	0%
Diesel Bus				37,899	32,708	70,607	134%	2.5%	68,659	59,019	127,678	10,118	12,001	22,119	78,777	71,020	149,797	15%	(125)	0%
6-Lane Highway				42,143	36,301	78,444	160%	2.8%	78,372	67,273	145,645	1,736	2,857	4,593	80,108	70,129	150,237	3%	315	0%
Reversible Lane				42,156	36,313	78,469	160%	2.8%	78,381	67,281	145,662	1,734	2,853	4,587	80,115	70,134	150,249	3%	327	0%
Combination 6-Lane Highway & Rail with IMC				40,471	34,930	75,402	150%	2.6%	73,764	63,479	137,243	13,753	13,750	27,503	87,517	77,229	164,746	17%	14,823	10%
Combination 6-Lane Highway & AGS				40,348	34,755	75,103	149%	2.6%	73,904	63,486	137,390	14,394	14,308	28,701	88,298	77,794	166,092	17%	16,169	11%
Combination 6-Lane Highway & DMB				41,654	35,892	77,546	157%	2.7%	75,401	64,743	140,143	11,160	12,779	23,940	86,561	77,522	164,083	15%	14,161	9%
Combination 6-Lane Highway & Diesel Bus				42,029	36,221	78,250	159%	2.8%	76,104	65,352	141,455	10,329	11,923	22,252	86,433	77,274	163,707	14%	13,785	9%
Minimum Program				39,613	32,705	72,317	139%	2.5%	71,107	60,272	131,379	14,205	13,440	27,645	85,312	73,712	159,023	17%	9,101	6%

Winter Saturday e/o Eagle		2000 Hwy. Vehicle Trips (VT)	2000 Hwy. Person Trips (PT)	WB 2035 Highway VT	EB 2035 Highway VT	2035 Highway VT	% Growth 2000 to 2035 VT	Avg. % Growth in VT per Yr.	2035 WB Highway PT	2035 EB Highway PT	2035 Highway PT	2035 WB Transit PT	2035 EB Transit PT	2035 Transit PT	2035 WB Total PT	2035 EB Total PT	2035 Total PT	Transit as % of Total PT	Trip Suppression/ Inducement	
Alternative																		PT Diff. % Diff.		
Baseline		19,700	36,000	37,001	33,100	70,101	256%	3.7%	62,565	55,922	118,487	2,480	2,336	4,817	65,045	58,258	123,304	4%		
No Action				36,398	33,032	69,430	252%	3.7%	61,490	55,676	117,166	1,944	2,902	4,846	63,434	58,578	122,011	4%	(1,292)	-1%
Minimal Action				36,289	32,937	69,227	251%	3.7%										#DIV/0!	(123,304)	-100%
Rail with IMC				34,170	30,126	64,296	226%	3.4%	56,673	49,994	106,667	8,235	8,354	16,589	64,908	58,348	123,256	13%	(48)	0%
AGS				34,054	30,023	64,077	225%	3.4%	56,456	49,803	106,259	8,437	8,560	16,997	64,893	58,362	123,256	14%	(48)	0%
Dual-Mode Bus (DMB)				33,621	30,383	64,003	225%	3.4%	55,280	49,875	105,155	8,513	9,056	17,569	63,792	58,932	122,724	14%	(580)	0%
Diesel Bus				34,177	30,886	65,063	230%	3.5%	55,526	50,097	105,623	8,267	8,795	17,062	63,793	58,892	122,685	14%	(619)	-1%
6-Lane Highway				36,565	33,074	69,639	253%	3.7%	61,745	55,742	117,487	2,070	2,798	4,868	63,815	58,540	122,355	4%	(949)	-1%
Reversible Lane				36,565	33,074	69,639	253%	3.7%	61,855	55,841	117,695	2,069	2,797	4,866	63,923	58,638	122,561	4%	(743)	-1%
Combination 6-Lane Highway & Rail with IMC				35,379	31,912	67,291	242%	3.6%	59,200	53,366	112,566	8,862	8,250	17,112	68,062	61,615	129,678	13%	6,374	5%
Combination 6-Lane Highway & AGS				35,301	31,771	67,071	240%	3.6%	59,098	53,154	112,251	8,826	8,789	17,615	67,924	61,942	129,866	14%	6,562	5%
Combination 6-Lane Highway & DMB				36,232	32,729	68,962	250%	3.6%	58,717	52,956	111,673	8,839	9,305	18,145	67,556	62,261	129,817	14%	6,514	5%
Combination 6-Lane Highway & Diesel Bus				36,653	33,028	69,681	254%	3.7%	59,591	53,624	113,215	8,667	9,007	17,673	68,257	62,631	130,888	14%	7,585	6%
Minimum Program				34,747	30,949	65,696	233%	3.5%	58,024	51,646	109,670	8,842	8,571	17,413	66,866	60,217	127,083	14%	3,779	3%

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Summer Thursday e/o Eagle Alternative	2000 Hwy. Vehicle Trips (VT)	2000 Hwy. Person Trips (PT)	WB 2035 Highway VT	EB 2035 Highway VT	2035 Highway VT	% Growth 2000 to 2035 VT	Avg. % Growth in VT per Yr.	2035 WB Highway PT	2035 EB Highway PT	2035 Highway PT	2035 WB Transit PT	2035 EB Transit PT	2035 Transit PT	2035 WB Total PT	2035 EB Total PT	2035 Total PT	Transit as % of Total PT	Trip Suppression/ Inducement	
																		PT Diff.	% Diff.
Baseline	26,000	42,700	45,653	42,680	88,334	240%	3.6%	66,351	61,990	128,340	863	733	1,597	67,214	62,723	129,937	1%		
No Action			45,659	42,711	88,370	240%	3.6%	66,351	61,990	128,340	863	733	1,597	67,214	62,723	129,937	1%		
Minimal Action			46,085	43,100	89,184	243%	3.6%										#DIV/0!	(129,937)	-100%
Rail with IMC			43,796	40,857	84,653	226%	3.4%	63,608	59,396	123,005	4,282	4,179	8,462	67,891	63,576	131,466	6%	1,529	1%
AGS			43,593	40,667	84,260	224%	3.4%	63,389	59,192	122,581	4,546	4,436	8,982	67,935	63,628	131,563	7%	1,626	1%
Dual-Mode Bus (DMB)			44,987	42,039	87,026	235%	3.5%	64,837	60,556	125,393	2,866	2,304	5,170	67,703	62,859	130,562	4%	625	0%
Diesel Bus			45,082	42,128	87,210	235%	3.5%	64,798	60,519	125,317	2,800	2,250	5,050	67,597	62,769	130,367	4%	430	0%
6-Lane Highway			45,991	42,995	88,986	242%	3.6%	66,638	62,259	128,896	863	734	1,598	67,501	62,993	130,494	1%	557	0%
Reversible Lane			45,873	42,884	88,757	241%	3.6%	66,631	62,253	128,884	863	735	1,598	67,494	62,987	130,482	1%	545	0%
Combination 6-Lane Highway & Rail with IMC			44,839	41,928	86,767	234%	3.5%	64,935	60,674	125,609	4,321	3,967	8,287	69,256	64,641	133,896	6%	3,959	3%
Combination 6-Lane Highway & AGS			44,626	41,746	86,373	232%	3.5%	64,146	59,953	124,100	4,565	4,471	9,036	68,711	64,424	133,135	7%	3,198	2%
Combination 6-Lane Highway & DMB			45,911	42,925	88,836	242%	3.6%	65,896	61,573	127,469	2,836	2,347	5,182	68,731	63,920	132,651	4%	2,714	2%
Combination 6-Lane Highway & Diesel Bus			46,121	43,099	89,220	243%	3.6%	66,174	61,805	127,979	2,760	2,255	5,016	68,935	64,060	132,995	4%	3,058	2%
Minimum Program			43,543	40,732	84,276	224%	3.4%	63,511	59,228	122,739	4,570	4,470	9,040	68,081	63,698	131,779	7%	1,842	1%

Summer Thursday at No Name Alternative	2000 Hwy. Vehicle Trips (VT)	2000 Hwy. Person Trips (PT)	WB 2035 Highway VT	EB 2035 Highway VT	2035 Highway VT	% Growth 2000 to 2035 VT	Avg. % Growth in VT per Yr.	2035 WB Highway PT	2035 EB Highway PT	2035 Highway PT	2035 WB Transit PT	2035 EB Transit PT	2035 Transit PT	2035 WB Total PT	2035 EB Total PT	2035 Total PT	Transit as % of Total PT	Trip Suppression/ Inducement	
																		PT Diff.	% Diff.
Baseline	20,900	38,300	24,073	22,747	46,821	124%	2.3%	34,612	32,660	67,272	436	426	862	35,048	33,086	68,134	1%		
No Action			24,357	23,009	47,366	127%	2.4%	34,612	32,660	67,272	436	426	862	35,048	33,086	68,134	1%		
Minimal Action			24,311	22,993	47,304	126%	2.4%										#DIV/0!	(68,134)	-100%
Rail with IMC			24,114	22,673	46,787	124%	2.3%	34,640	32,601	67,241	900	878	1,778	35,540	33,479	69,019	3%	885	1%
AGS			24,095	22,655	46,750	124%	2.3%	34,636	32,597	67,232	932	909	1,841	35,567	33,506	69,073	3%	940	1%
Dual-Mode Bus (DMB)			24,022	22,680	46,702	123%	2.3%	34,163	32,237	66,400	2,207	1,720	3,927	36,369	33,958	70,327	6%	2,193	3%
Diesel Bus			23,997	22,657	46,655	123%	2.3%	34,128	32,205	66,333	2,206	1,720	3,926	36,334	33,925	70,259	6%	2,125	3%
6-Lane Highway			24,419	23,094	47,512	127%	2.4%	35,119	33,191	68,310	436	432	868	35,555	33,623	69,177	1%	1,044	2%
Reversible Lane			24,423	23,097	47,520	127%	2.4%	35,120	33,192	68,312	435	431	866	35,555	33,623	69,178	1%	1,045	2%
Combination 6-Lane Highway & Rail with IMC			24,115	22,797	46,912	124%	2.3%	34,708	32,785	67,493	901	824	1,724	35,608	33,609	69,217	2%	1,084	2%
Combination 6-Lane Highway & AGS			24,032	22,721	46,754	124%	2.3%	34,691	32,771	67,462	853	836	1,689	35,544	33,606	69,150	2%	1,017	1%
Combination 6-Lane Highway & DMB			24,273	22,946	47,219	126%	2.4%	34,609	32,691	67,300	2,184	1,730	3,915	36,793	34,422	71,215	5%	3,081	5%
Combination 6-Lane Highway & Diesel Bus			24,627	23,252	47,879	129%	2.4%	35,033	33,058	68,091	2,207	1,721	3,928	37,240	34,779	72,019	5%	3,885	6%
Minimum Program			24,047	22,736	46,783	124%	2.3%	34,692	32,772	67,464	853	836	1,689	35,545	33,608	69,153	2%	1,019	1%

Summer Friday at EJMT Alternative	2000 Hwy. Vehicle Trips (VT)	2000 Hwy. Person Trips (PT)	WB 2035 Highway VT	EB 2035 Highway VT	2035 Highway VT	% Growth 2000 to 2035 VT	Avg. % Growth in VT per Yr.	2035 WB Highway PT	2035 EB Highway PT	2035 Highway PT	2035 WB Transit PT	2035 EB Transit PT	2035 Transit PT	2035 WB Total PT	2035 EB Total PT	2035 Total PT	Transit as % of Total PT	Trip Suppression/ Inducement	
																		PT Diff.	% Diff.
Baseline	45,745	77,792	42,591	33,306	75,897	66%	1.5%	66,539	52,002	118,542	494	394	888	67,033	52,397	119,430	1%		
No Action			35,758	33,339	69,097	51%	1.2%	55,518	51,736	107,254	510	379	889	56,027	52,116	108,143	1%	(11,287)	-9%
Minimal Action			36,868	32,597	69,465	52%	1.2%										#DIV/0!	(119,430)	-100%
Rail with IMC			31,777	29,329	61,106	34%	0.8%	49,287	45,461	94,748	12,989	13,037	26,027	62,277	58,498	120,775	22%	1,345	1%
AGS			30,188	29,156	59,344	30%	0.7%	46,645	45,020	91,665	14,593	14,647	29,239	61,238	59,667	120,904	24%	1,475	1%
Dual-Mode Bus (DMB)			34,106	30,707	64,813	42%	1.0%	52,922	47,617	100,539	10,195	9,856	20,051	63,117	57,473	120,590	17%	1,160	1%
Diesel Bus			34,106	30,753	64,859	42%	1.0%	52,973	47,734	100,707	9,804	9,478	19,282	62,777	57,212	119,989	16%	559	0%
6-Lane Highway			39,726	34,430	74,156	62%	1.4%	62,068	53,765	115,833	503	391	894	62,571	54,156	116,727	1%	(2,702)	-2%
Reversible Lane			39,726	34,484	74,210	62%	1.4%	61,920	53,720	115,641	499	388	887	62,419	54,108	116,527	1%	(2,902)	-2%
Combination 6-Lane Highway & Rail with IMC			36,524	32,306	68,829	50%	1.2%	56,659	50,088	106,747	13,678	13,589	27,267	70,337	63,677	134,014	20%	14,584	12%
Combination 6-Lane Highway & AGS			36,154	32,141	68,295	49%	1.2%	55,820	49,594	105,414	15,951	16,010	31,962	71,771	65,604	137,375	23%	17,945	15%
Combination 6-Lane Highway & DMB			36,522	32,679	69,201	51%	1.2%	56,729	50,728	107,457	11,547	11,191	22,738	68,276	61,919	130,195	17%	10,765	9%
Combination 6-Lane Highway & Diesel Bus			37,312	33,022	70,334	54%	1.2%	57,959	51,264	109,223	10,163	9,821	19,984	68,122	61,085	129,207	15%	9,777	8%
Minimum Program			31,103	29,798	60,901	33%	0.8%	50,701	47,234	97,936	14,766	14,770	29,536	65,468	62,004	127,472	23%	8,042	7%

I-70 PEIS 2035 Travel Demand Estimates

Summer Friday at Vail Pass																			
Alternative	2000 Hwy. Vehicle Trips (VT)	2000 Hwy. Person Trips (PT)	WB 2035 Highway VT	EB 2035 Highway VT	2035 Highway VT	% Growth 2000 to 2035 VT	Avg. % Growth in VT per Yr.	2035 WB Highway PT	2035 EB Highway PT	2035 Highway PT	2035 WB Transit PT	2035 EB Transit PT	2035 Transit PT	2035 WB Total PT	2035 EB Total PT	2035 Total PT	Transit as % of Total PT	Trip Suppression/Inducement	
																		PT Diff.	% Diff.
Baseline	26,600	46,200	30,220	25,796	56,017	111%	2.2%	47,265	40,282	87,546	83	63	146	47,348	40,345	87,692	0%		
No Action			29,449	25,061	54,510	105%	2.1%	46,494	39,535	86,029	86	59	145	46,581	39,594	86,175	0%	(1,518)	-2%
Minimal Action			28,874	24,564	53,438	101%	2.0%										#DIV/0!	(87,692)	-100%
Rail with IMC			26,674	22,737	49,411	86%	1.8%	41,731	35,516	77,247	5,128	5,134	10,262	46,858	40,651	87,509	12%	(184)	0%
AGS			25,751	22,579	48,329	82%	1.7%	40,187	35,183	75,371	5,876	5,884	11,759	46,063	41,067	87,130	13%	(562)	-1%
Dual-Mode Bus (DMB)			26,999	23,022	50,021	88%	1.8%	42,158	35,894	78,052	5,147	5,081	10,228	47,304	40,976	88,280	12%	588	1%
Diesel Bus			26,961	22,989	49,950	88%	1.8%	42,123	35,864	77,987	4,604	4,545	9,149	46,726	40,410	87,136	10%	(557)	-1%
6-Lane Highway			30,126	25,687	55,813	110%	2.1%	47,328	40,296	87,624	85	62	146	47,413	40,357	87,770	0%	78	0%
Reversible Lane			30,115	25,677	55,792	110%	2.1%	47,168	40,159	87,327	84	61	146	47,253	40,221	87,473	0%	(219)	0%
Combination 6-Lane Highway & Rail with IMC			28,870	24,611	53,481	101%	2.0%	45,143	38,426	83,569	5,091	5,072	10,163	50,233	43,498	93,732	11%	6,039	7%
Combination 6-Lane Highway & AGS			28,576	24,362	52,938	99%	2.0%	44,470	37,853	82,323	6,295	6,301	12,596	50,765	44,154	94,919	13%	7,227	8%
Combination 6-Lane Highway & DMB			28,916	24,662	53,578	101%	2.0%	45,141	38,442	83,583	5,225	5,164	10,389	50,366	43,605	93,971	11%	6,279	7%
Combination 6-Lane Highway & Diesel Bus			29,098	24,808	53,906	103%	2.0%	45,472	38,713	84,185	4,617	4,559	9,176	50,089	43,272	93,360	10%	5,668	6%
Minimum Program			27,159	23,462	50,621	90%	1.9%	42,354	36,541	78,895	6,096	6,098	12,194	48,450	42,639	91,089	13%	3,396	4%
Summer Friday at Dowd Canyon																			
Alternative	2000 Hwy. Vehicle Trips (VT)	2000 Hwy. Person Trips (PT)	WB 2035 Highway VT	EB 2035 Highway VT	2035 Highway VT	% Growth 2000 to 2035 VT	Avg. % Growth in VT per Yr.	2035 WB Highway PT	2035 EB Highway PT	2035 Highway PT	2035 WB Transit PT	2035 EB Transit PT	2035 Transit PT	2035 WB Total PT	2035 EB Total PT	2035 Total PT	Transit as % of Total PT	Trip Suppression/Inducement	
																		PT Diff.	% Diff.
Baseline	48,400	79,100	55,331	53,715	109,046	125%	2.3%	88,081	85,349	173,431	933	1,308	2,241	89,014	86,658	175,672	1%		
No Action			49,726	49,852	99,577	106%	2.1%	80,066	80,095	160,161	978	1,189	2,166	81,044	81,284	162,328	1%	(13,344)	-8%
Minimal Action			49,943	49,840	99,783	106%	2.1%										#DIV/0!	(175,672)	-100%
Rail with IMC			49,883	49,044	98,926	104%	2.1%	79,426	77,909	157,335	7,864	8,004	15,868	87,291	85,913	173,204	9%	(2,468)	-1%
AGS			49,829	49,141	98,970	104%	2.1%	79,262	77,985	157,246	8,242	8,389	16,631	87,504	86,374	173,878	10%	(1,794)	-1%
Dual-Mode Bus (DMB)			49,980	49,617	99,597	106%	2.1%	79,198	78,427	157,625	4,934	5,215	10,149	84,131	83,643	167,774	6%	(7,898)	-4%
Diesel Bus			49,950	50,107	100,057	107%	2.1%	79,172	79,223	158,394	4,117	4,352	8,468	83,288	83,574	166,863	5%	(8,809)	-5%
6-Lane Highway			54,859	53,221	108,080	123%	2.3%	87,696	84,861	172,557	935	1,345	2,281	88,632	86,206	174,837	1%	(835)	0%
Reversible Lane			54,639	53,008	107,647	122%	2.3%	87,237	84,416	171,653	915	1,316	2,231	88,152	85,732	173,884	1%	(1,788)	-1%
Combination 6-Lane Highway & Rail with IMC			53,513	51,933	105,447	118%	2.2%	84,738	82,036	166,773	8,249	8,198	16,447	92,986	90,234	183,220	9%	7,548	4%
Combination 6-Lane Highway & AGS			53,383	51,808	105,191	117%	2.2%	84,371	81,678	166,049	8,633	8,726	17,359	93,003	90,405	183,408	9%	7,736	4%
Combination 6-Lane Highway & DMB			54,594	52,978	107,572	122%	2.3%	85,979	83,218	169,198	5,962	5,835	11,797	91,941	89,054	180,995	7%	5,323	3%
Combination 6-Lane Highway & Diesel Bus			54,905	53,276	108,181	124%	2.3%	86,486	83,701	170,186	5,176	5,066	10,242	91,662	88,766	180,428	6%	4,756	3%
Minimum Program			53,918	52,358	106,275	120%	2.3%	85,019	82,387	167,406	8,703	8,711	17,414	93,721	91,098	184,819	9%	9,147	5%
Summer Friday e/o Eagle																			
Alternative	2000 Hwy. Vehicle Trips (VT)	2000 Hwy. Person Trips (PT)	WB 2035 Highway VT	EB 2035 Highway VT	2035 Highway VT	% Growth 2000 to 2035 VT	Avg. % Growth in VT per Yr.	2035 WB Highway PT	2035 EB Highway PT	2035 Highway PT	2035 WB Transit PT	2035 EB Transit PT	2035 Transit PT	2035 WB Total PT	2035 EB Total PT	2035 Total PT	Transit as % of Total PT	Trip Suppression/Inducement	
																		PT Diff.	% Diff.
Baseline	31,400	54,200	46,472	42,005	88,477	182%	3.0%	70,447	63,591	134,038	692	652	1,344	71,139	64,243	135,382	1%		
No Action			46,153	41,722	87,875	180%	3.0%	70,447	63,591	134,038	693	630	1,322	71,140	64,220	135,360	1%	(21)	0%
Minimal Action			46,092	41,676	87,768	180%	3.0%										#DIV/0!	(135,382)	-100%
Rail with IMC			44,775	40,507	85,282	172%	2.9%	68,060	61,520	129,580	4,629	4,630	9,259	72,690	66,150	138,839	7%	3,458	3%
AGS			42,408	41,229	83,637	166%	2.8%	64,496	62,649	127,145	4,840	4,841	9,681	69,336	67,490	136,826	7%	1,445	1%
Dual-Mode Bus (DMB)			44,578	40,292	84,870	170%	2.9%	67,461	60,901	128,363	4,414	3,570	7,984	71,875	64,472	136,347	6%	965	1%
Diesel Bus			44,507	40,228	84,735	170%	2.9%	67,209	60,673	127,882	4,310	3,487	7,797	71,519	64,160	135,680	6%	298	0%
6-Lane Highway			46,344	41,912	88,256	181%	3.0%	70,679	63,836	134,514	702	637	1,339	71,380	64,473	135,853	1%	471	0%
Reversible Lane			46,391	41,954	88,345	181%	3.0%	70,731	63,883	134,614	703	639	1,343	71,434	64,522	135,956	1%	575	0%
Combination 6-Lane Highway & Rail with IMC			45,609	41,269	86,877	177%	3.0%	69,295	62,637	131,932	4,869	4,881	9,750	74,164	67,518	141,682	7%	6,301	5%
Combination 6-Lane Highway & AGS			45,684	41,350	87,033	177%	3.0%	69,353	62,713	132,066	4,965	4,956	9,921	74,319	67,669	141,987	7%	6,606	5%
Combination 6-Lane Highway & DMB			46,269	41,840	88,109	181%	3.0%	69,837	63,065	132,902	4,428	3,542	7,970	74,266	66,606	140,872	6%	5,490	4%
Combination 6-Lane Highway & Diesel Bus			46,524	42,067	88,590	182%	3.0%	70,211	63,397	133,608	4,324	3,462	7,786	74,535	66,858	141,393	6%	6,012	4%
Minimum Program			43,250	41,434	84,685	170%	2.9%	65,568	62,762	128,330	4,719	4,722	9,442	70,287	67,484	137,772	7%	2,390	2%

Highway Travel Times

Element of P&N		Free- Flow	2000	CE Alternative	2035 Baseline	No Action Alternative	Transit Alternatives				Highway Alternatives			Combination Highway/Transit Alternatives				
							1	2	3	4	5	6	7	8	9	10	11	12
							Minimal Action Alternative	Rail with Intermountain Connection (IMC)	Advanced Guideway System (AGS)	Dual-Mode Bus in Guideway	Diesel Bus in Guideway	6-Lane Highway 55 mph	6-Lane Highway 65 mph	Reversible/HOV/HOT Lanes	6-Lane Highway with Rail and IMC	6-Lane Highway with AGS	6-Lane Highway with Dual-Mode Bus in Guideway	6-Lane Highway with Diesel Bus in Guideway
Travel time: winter Saturday highway EB	Glenwood Springs to Eagle County Line	15	15	15	15	15	15	15	15	15	15	15	15	9 <i>- Build Combination Simultaneously</i>	10 <i>- Build Combination Simultaneously</i>	11 <i>- Build Combination Simultaneously</i>	12 <i>- Build Combination Simultaneously</i>	
	Eagle County Line to Edwards	26	32	54	39	39	35	31	30	33	33	54	54	54	9a <i>- Build Transit and Preserve for Highway</i>	10a <i>- Build Transit and Preserve for Highway</i>	11a <i>- Build Transit and Preserve for Highway</i>	12a <i>- Build Transit and Preserve for Highway</i>
															9b <i>- Build Highway and Preserve for Transit</i>	10b <i>- Build Highway and Preserve for Transit</i>	11b <i>- Build Highway and Preserve for Transit</i>	12b <i>- Build Highway and Preserve for Transit</i>
															9	10	11	12
	Edwards to Vail East Entrance	15	17	28	28	28	24	20	20	20	22	29	29	29	9a	10a	11a	12a
															9b	10b	11b	12b
															9	10	11	12
	Vail East Entrance to Copper Mountain	16	18	17	23	23	22	21	20	21	21	18	18	18	9a	10a	11a	12a
															9b	10b	11b	12b
															9	10	11	12
Copper Mountain to Silverthorne	9	12	11	12	12	12	11	11	11	11	11	11	12	9a	10a	11a	12a	
														9b	10b	11b	12b	
														9	10	11	12	
Silverthorne to Loveland Pass Interchange	12	15	12	92	36	27	17	15	17	18	14	14	14	9a	10a	11a	12a	
														9b	10b	11b	12b	
														9	10	11	12	
Loveland Pass Interchange to Downieville	16	23	47	116	39	37	35	31	32	32	20	20	22	9a	10a	11a	12a	
														9b	10b	11b	12b	
														9	10	11	12	
Downieville to Hidden Valley	8	13	17	64	35	34	33	27	28	29	13	13	19	9a	10a	11a	12a	
														9b	10b	11b	12b	
														9	10	11	12	
Hidden Valley to Beaver Brook	5	6	6	6	6	6	6	6	6	6	10	10	7	9a	10a	11a	12a	
														9b	10b	11b	12b	
														9	10	11	12	
Beaver Brook to C-470	11	12	15	21	17	17	17	17	17	17	14	14	10	9a	10a	11a	12a	
														9b	10b	11b	12b	
														9	10	11	12	
Travel time: winter Saturday highway WB	C-470 to Beaver Brook	12	14	24	131	30	39	47	48	49	49	50	50	29	9	10	11	12
	Beaver Brook to Hidden Valley	5	14	21	31	18	16	14	14	14	14	12	12	5	9a	10a	11a	12a
															9b	10b	11b	12b
															9	10	11	12
	Hidden Valley to Downieville	8	13	20	29	17	15	13	13	13	13	11	11	8	9a	10a	11a	12a
															9b	10b	11b	12b
															9	10	11	12
	Downieville to Loveland Pass Interchange	18	32	28	32	40	33	26	25	26	26	23	23	15	9a	10a	11a	12a
															9b	10b	11b	12b
															9	10	11	12
Loveland Pass Interchange to Silverthorne	10	13	11	15	15	14	12	11	12	12	16	16	15	9a	10a	11a	12a	
														9b	10b	11b	12b	
														9	10	11	12	
Silverthorne to Copper Mountain	9	12	12	39	39	26	12	12	14	14	16	16	16	9a	10a	11a	12a	
														9b	10b	11b	12b	
														9	10	11	12	
Copper Mountain to Vail East Entrance	15	17	17	28	28	25	22	20	24	24	20	20	20	9a	10a	11a	12a	
														9b	10b	11b	12b	
														9	10	11	12	
Vail East Entrance to Edwards	15	18	28	23	23	25	26	26	28	27	33	33	33	9a	10a	11a	12a	
														9b	10b	11b	12b	
														9	10	11	12	
Edwards to Eagle County Line	26	32	34	12	12	24	36	35	35	35	25	25	25	9a	10a	11a	12a	
														9b	10b	11b	12b	
														9	10	11	12	
Eagle County Line to Glenwood Springs	15	15	15	36	36	26	15	15	15	15	15	15	15	9a	10a	11a	12a	
														9b	10b	11b	12b	
														9	10	11	12	

Highway Travel Times

Element of P&N	Free- Flow	2000	CE Alternative	2035 Baseline	No Action Alternative	Transit Alternatives					Highway Alternatives			Combination Highway/Transit Alternatives				
						1	2	3	4	5	6	7	8	9	10	11	12	
						Minimal Action Alternative	Rail with Intermountain Connection (IMC)	Advanced Guideway System (AGS)	Dual-Mode Bus in Guideway	Diesel Bus in Guideway	6-Lane Highway 55 mph	6-Lane Highway 65 mph	Reversible/HOV/HOT Lanes	6-Lane Highway with Rail and IMC	6-Lane Highway with AGS	6-Lane Highway with Dual-Mode Bus in Guideway	6-Lane Highway with Diesel Bus in Guideway	
Travel time: summer weekday highway EB	Glenwood Springs to Eagle County Line (Friday)	15	15	16	18	16	16	16	16	16	16	16	16	9 <i>9 - Build Combination Simultaneously</i>	10 <i>10 - Build Combination Simultaneously</i>	11 <i>11 - Build Combination Simultaneously</i>	12 <i>12 - Build Combination Simultaneously</i>	
	Eagle County Line to Edwards (Friday)	26	32	42	231	70	68	66	67	67	70	43	43	43	9a <i>9a - Build Transit and Preserve for Highway</i>	10a <i>10a - Build Transit and Preserve for Highway</i>	11a <i>11a - Build Transit and Preserve for Highway</i>	12a <i>12a - Build Transit and Preserve for Highway</i>
	Edwards to Vail East Entrance (Friday)	15	22	30	66	61	61	61	61	62	63	31	31	31	9b <i>9b - Build Highway and Preserve for Transit</i>	10b <i>10b - Build Highway and Preserve for Transit</i>	11b <i>11b - Build Highway and Preserve for Transit</i>	12b <i>12b - Build Highway and Preserve for Transit</i>
	Vail East Entrance to Copper Mountain (Friday)	16	16	20	23	26	26	26	26	26	26	22	22	22	9	10	11	12
	Copper Mountain to Silverthorne (Thursday)	9	12	11	12	12	12	12	12	12	12	12	12	12	9a	10a	11a	12a
	Silverthorne to Loveland Pass Interchange (Thursday)	12	12	14	21	21	18	14	14	14	14	17	17	22	9b	10b	11b	12b
	Loveland Pass Interchange to Downieville (Thursday)	16	16	26	54	54	38	22	22	23	23	19	19	20	9	10	11	12
	Downieville to Hidden Valley (Thursday)	8	8	19	21	21	17	14	14	14	14	10	10	11	9a	10a	11a	12a
	Hidden Valley to Beaver Brook (Thursday)	5	5	7	6	6	6	7	7	7	7	7	7	7	9b	10b	11b	12b
	Beaver Brook to C-470 (Thursday)	11	14	16	17	17	16	16	16	16	16	17	17	17	9	10	11	12
Travel time: summer weekday highway WB	C-470 to Beaver Brook (Thursday)	12	15	51	102	35	34	33	34	34	34	19	19	19	9a	10a	11a	12a
	Beaver Brook to Hidden Valley (Thursday)	5	5	10	22	12	12	12	12	12	12	7	7	5	9b	10b	11b	12b
	Hidden Valley to Downieville (Thursday)	8	8	17	34	18	18	18	19	20	20	12	12	8	9	10	11	12
	Downieville to Loveland Pass Interchange (Thursday)	18	18	41	47	38	37	36	36	37	37	29	29	28	9a	10a	11a	12a
	Loveland Pass Interchange to Silverthorne (Thursday)	10	10	12	12	11	12	12	12	12	12	12	12	12	9b	10b	11b	12b
	Silverthorne to Copper Mountain (Thursday)	9	12	15	76	43	44	44	43	45	44	16	16	16	9	10	11	12
	Copper Mountain to Vail East Entrance (Friday)	15	15	19	177	70	77	84	85	85	84	20	20	20	9a	10a	11a	12a
	Vail East Entrance to Edwards (Friday)	15	25	23	82	48	49	50	50	50	50	26	26	26	9b	10b	11b	12b
	Edwards to Eagle County Line (Friday)	26	30	35	35	36	36	36	36	36	36	38	38	38	9	10	11	12
	Eagle County Line to Glenwood Springs (Friday)	15	15	15	15	15	15	15	15	15	15	15	15	15	9a	10a	11a	12a

Highway Travel Times

Element of P&N		Free- Flow	2000	CE Alternative	2035 Baseline	No Action Alternative	Transit Alternatives				Highway Alternatives			Combination Highway/Transit Alternatives				
							1	2	3	4	5	6	7	8	9	10	11	12
							Minimal Action Alternative	Rail with Intermountain Connection (IMC)	Advanced Guideway System (AGS)	Dual-Mode Bus in Guideway	Diesel Bus in Guideway	6-Lane Highway 55 mph	6-Lane Highway 65 mph	Reversible/HOV/HOT Lanes	6-Lane Highway with Rail and IMC	6-Lane Highway with AGS	6-Lane Highway with Dual-Mode Bus in Guideway	6-Lane Highway with Diesel Bus in Guideway
Travel time: summer Saturday highway EB	Glenwood Springs to Eagle County Line	15	15	15	15	15	15	15	15	15	18	18	18	9 - Build Combination Simultaneously	10 - Build Combination Simultaneously	11 - Build Combination Simultaneously	12 - Build Combination Simultaneously	
	Eagle County Line to Edwards	26	28	35	41	41	40	38	38	38	38	38	38	9a - Build Transit and Preserve for Highway	10a - Build Transit and Preserve for Highway	11a - Build Transit and Preserve for Highway	12a - Build Transit and Preserve for Highway	
	Edwards to Vail East Entrance	15	17	23	28	28	26	24	24	25	27	25	25	9b - Build Highway and Preserve for Transit	10b - Build Highway and Preserve for Transit	11b - Build Highway and Preserve for Transit	12b - Build Highway and Preserve for Transit	
	Vail East Entrance to Copper Mountain	16	18	16	30	30	28	26	27	27	27	23	23	9	10	11	12	
	Copper Mountain to Silverthorne	9	10	11	12	12	12	12	12	12	13	16	16	9a	10a	11a	12a	
	Silverthorne to Loveland Pass Interchange	12	12	12	22	22	20	17	17	17	18	17	17	18	9a	10a	11a	12a
	Loveland Pass Interchange to Downieville	16	20	32	67	67	47	27	27	28	28	24	24	26	9b	10b	11b	12b
	Downieville to Hidden Valley	8	10	24	27	27	22	18	18	18	18	13	13	22	9	10	11	12
	Hidden Valley to Beaver Brook	5	5	8	7	7	7	8	8	8	8	8	8	8	9a	10a	11a	12a
	Beaver Brook to C-470	11	14	16	17	17	16	16	16	16	16	17	17	17	9b	10b	11b	12b
Travel time: summer Saturday highway WB	C-470 to Beaver Brook	12	16	49	123	30	31	31	33	33	42	42	11	9	10	11	12	
	Beaver Brook to Hidden Valley	5	7	8	15	11	10	10	10	10	9	9	5	9a	10a	11a	12a	
	Hidden Valley to Downieville	8	12	15	26	18	17	16	17	18	18	16	16	11	10	11	12	
	Downieville to Loveland Pass Interchange	18	26	31	38	44	42	39	38	40	39	30	30	34	9b	10b	11b	12b
	Loveland Pass Interchange to Silverthorne	10	12	12	11	11	11	11	11	11	11	13	13	18	9	10	11	12
	Silverthorne to Copper Mountain	9	10	27	14	13	13	12	12	13	13	18	18	18	9a	10a	11a	12a
	Copper Mountain to Vail East Entrance	15	17	21	25	24	24	23	23	23	23	26	26	26	9b	10b	11b	12b
	Vail East Entrance to Edwards	15	18	18	60	60	54	48	48	51	52	22	22	22	9	10	11	12
	Edwards to Eagle County Line	26	26	12	35	34	32	30	30	30	30	36	36	36	9a	10a	11a	12a
	Eagle County Line to Glenwood Springs	15	15	15	15	15	15	15	15	15	15	15	15	15	9b	10b	11b	12b

Highway Travel Times

Element of P&N		Free- Flow	2000	CE Alternative	2035 Baseline	No Action Alternative	Transit Alternatives				Highway Alternatives			Combination Highway/Transit Alternatives				
							1	2	3	4	5	6	7	8	9	10	11	12
							Minimal Action Alternative	Rail with Intermountain Connection (IMC)	Advanced Guideway System (AGS)	Dual-Mode Bus in Guideway	Diesel Bus in Guideway	6-Lane Highway 55 mph	6-Lane Highway 65 mph	Reversible/HOV/HOT Lanes	6-Lane Highway with Rail and IMC	6-Lane Highway with AGS	6-Lane Highway with Dual-Mode Bus in Guideway	6-Lane Highway with Diesel Bus in Guideway
Travel time: summer Sunday highway EB	Glenwood Springs to Eagle County Line	15	15	16	16	16	16	15	16	16	18	18	18	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b	
	Eagle County Line to Edwards	26	32	39	58	58	53	47	47	50	47	43	43	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b	
	Edwards to Vail East Entrance	15	18	23	29	29	26	22	22	23	24	26	26	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b	
	Vail East Entrance to Copper Mountain	16	22	20	31	31	30	28	28	28	28	24	24	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b	
	Copper Mountain to Silverthorne	9	12	12	25	25	24	22	20	25	25	17	17	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b	
	Silverthorne to Loveland Pass Interchange	12	25	15	231	53	54	54	53	55	55	18	18	17	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b
	Loveland Pass Interchange to Downieville	16	39	35	164	42	37	31	32	32	32	24	24	23	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b
	Downieville to Hidden Valley	8	20	30	52	43	43	44	45	45	44	21	21	20	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b
	Hidden Valley to Beaver Brook	5	6	6	6	6	6	6	6	6	6	9	9	9	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b
	Beaver Brook to C-470	11	12	25	18	17	16	15	15	16	16	15	15	16	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b
Travel time: summer Sunday highway WB	C-470 to Beaver Brook	12	13	45	89	31	30	29	30	30	17	17	15	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b	
	Beaver Brook to Hidden Valley	5	5	11	22	12	12	12	13	13	8	8	7	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b	
	Hidden Valley to Downieville	8	10	20	42	22	22	22	23	24	14	14	19	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b	
	Downieville to Loveland Pass Interchange	18	22	26	32	37	35	33	32	34	25	25	29	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b	
	Loveland Pass Interchange to Silverthorne	10	12	14	14	13	13	14	14	14	14	14	17	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b	
	Silverthorne to Copper Mountain	9	9	11	57	32	33	33	32	34	33	12	12	12	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b
	Copper Mountain to Vail East Entrance	15	15	19	22	21	21	20	20	20	20	23	23	23	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b
	Vail East Entrance to Edwards	15	15	15	50	50	45	40	40	43	43	18	18	18	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b
	Edwards to Eagle County Line	26	26	12	35	34	32	30	30	30	30	36	36	36	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b
	Eagle County Line to Glenwood Springs	15	15	15	15	15	15	15	15	15	15	15	15	15	9 10 11 12	10 10a 10b	11 11a 11b	12 12a 12b

Transit Travel Times

Element of P&N	No Action Alternative	Transit Alternatives				Highway Alternatives			Combination Highway/Transit Alternatives				Preferred Alternative				
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
		Rail with IMC	Advanced Guideway System (AGS)	Dual-Mode Bus in Guideway	Diesel Bus in Guideway	6-Lane Highway 55 mph	6-Lane Highway 65 mph	Reversible / HOV / HOT Lanes	6-Lane Highway with Rail and IMC	6-Lane Highway with AGS	6-Lane Highway with Dual-Mode Bus in Guideway	6-Lane Highway with Diesel Bus in Guideway	Minimum Program 55 mph	Minimum Program 65 mph	Maximum Program 55 mph	Maximum Program 65 mph	
		MP 142 to 260 Eagle Airport to C-470		MP 142 to 260 Eagle Airport to C-470		MP 142 to 260 Eagle Airport to C-470		MP 142 to 260 Eagle Airport to C-470		MP 169 to 173 MP 213.5 to 247 Dowd Canyon EJMT to Floyd Hill		MP 169 to 173 MP 213.5 to 247 Dowd Canyon EJMT to Floyd Hill		MP 169 to 173 MP 213.5 to 247 Dowd Canyon EJMT to Floyd Hill		MP 142 to 260 Eagle Airport to C-470	
Travel time: winter Saturday transit EB	Glenwood Springs to Eagle County Line	N/A	15	15	15	N/A	N/A	N/A	9 15	10 15	11 15	12 15	15	15	15	15	
	Eagle County Line to Edwards	N/A	50	44	46	N/A	N/A	N/A	9a 50	10a 44	11a 46	12a 48	51	51	50	50	
	Edwards to Vail East Entrance	N/A	26	17	19	N/A	N/A	N/A	9 26	10 17	11 19	12 20	17	17	17	17	
	Vail East Entrance to Copper Mountain	N/A	23	19	22	N/A	N/A	N/A	9 23	10 19	11 22	12 24	19	19	19	19	
	Copper Mountain to Silverthorne	N/A	17	15	16	N/A	N/A	N/A	9 17	10 15	11 16	12 17	15	15	15	15	
	Silverthorne to Loveland Pass Interchange	N/A	14	12	15	N/A	N/A	N/A	9 14	10 12	11 15	12 15	12	12	12	12	
	Loveland Pass Interchange to Downieville	N/A	25	22	25	N/A	N/A	N/A	9 25	10 22	11 25	12 28	20	20	20	20	
	Downieville to Hidden Valley	N/A	11	9	12	N/A	N/A	N/A	9 11	10 9	11 12	12 11	11	11	11	11	
	Hidden Valley to Beaver Brook	N/A	10	9	10	N/A	N/A	N/A	9 10	10 9	11 10	12 10	9	9	9	9	
	Beaver Brook to C-470	N/A	16	14	16	N/A	N/A	N/A	9 16	10 14	11 16	12 20	14	14	14	14	
Travel time: winter Saturday transit WB	C-470 to Beaver Brook	N/A	16	14	16	N/A	N/A	N/A	9 16	10 14	11 16	12 20	14	14	14	14	
	Beaver Brook to Hidden Valley	N/A	10	9	10	N/A	N/A	N/A	9 10	10 9	11 10	12 10	9	9	9	9	
	Hidden Valley to Downieville	N/A	11	9	12	N/A	N/A	N/A	9 11	10 9	11 12	12 11	13	13	13	13	
	Downieville to Loveland Pass Interchange	N/A	27	24	27	N/A	N/A	N/A	9 27	10 24	11 27	12 29	20	20	20	20	
	Loveland Pass Interchange to Silverthorne	N/A	14	12	12	N/A	N/A	N/A	9 14	10 12	11 12	12 13	12	12	12	12	
	Silverthorne to Copper Mountain	N/A	17	15	18	N/A	N/A	N/A	9 17	10 15	11 18	12 19	15	15	15	15	
	Copper Mountain to Vail East Entrance	N/A	23	19	19	N/A	N/A	N/A	9 23	10 19	11 19	12 21	19	19	19	19	
	Vail East Entrance to Edwards	N/A	19	17	18	N/A	N/A	N/A	9 19	10 17	11 18	12 19	17	17	17	17	
	Edwards to Eagle County Line	N/A	49	43	43	N/A	N/A	N/A	9 49	10 43	11 43	12 45	43	43	44	44	
	Eagle County Line to Glenwood Springs	N/A	16	16	17	N/A	N/A	N/A	9 16	10 16	11 17	12 17	16	16	16	16	

Transit Travel Times

Travel time: summer weekday transit EB	Glenwood Springs to Eagle County Line (Friday)	N/A	16	16	16	16	N/A	N/A	N/A	9	16	10	16	11	16	12	16	16	16	16	16
										9a	16	10a	16	11a	16	12a	16				
										9b	N/A	10b	N/A	11b	N/A	12b	N/A				
	Eagle County Line to Edwards (Friday)	N/A	62	54	46	48	N/A	N/A	N/A	9	58	10	49	11	48	12	50	45	45	49	49
										9a	62	10a	54	11a	46	12a	48				
										9b	N/A	10b	N/A	11b	N/A	12b	N/A				
	Edwards to Vail East Entrance	N/A	26	17	19	20	N/A	N/A	N/A	9	26	10	17	11	19	12	20	17	17	17	17
										9a	26	10a	17	11a	19	12a	20				
										9b	N/A	10b	N/A	11b	N/A	12b	N/A				
	Vail East Entrance to Copper Mountain	N/A	23	19	22	24	N/A	N/A	N/A	9	23	10	19	11	22	12	24	19	19	19	19
									9a	23	10a	19	11a	22	12a	24					
									9b	N/A	10b	N/A	11b	N/A	12b	N/A					
Copper Mountain to Silverthorne	N/A	17	15	16	17	N/A	N/A	N/A	9	17	10	15	11	16	12	17	15	15	15	15	
									9a	17	10a	15	11a	16	12a	17					
									9b	N/A	10b	N/A	11b	N/A	12b	N/A					
Silverthorne to Loveland Pass Interchange	N/A	14	12	16	16	N/A	N/A	N/A	9	14	10	12	11	15	12	15	12	12	12	12	
									9a	14	10a	12	11a	16	12a	16					
									9b	N/A	10b	N/A	11b	N/A	12b	N/A					
Loveland Pass Interchange to Downieville	N/A	25	22	25	28	N/A	N/A	N/A	9	25	10	22	11	25	12	28	20	20	20	20	
									9a	25	10a	22	11a	25	12a	28					
									9b	N/A	10b	N/A	11b	N/A	12b	N/A					
Downieville to Hidden Valley	N/A	11	9	12	11	N/A	N/A	N/A	9	11	10	9	11	12	12	11	11	11	11	11	
									9a	11	10a	9	11a	12	12a	11					
									9b	N/A	10b	N/A	11b	N/A	12b	N/A					
Hidden Valley to Beaver Brook	N/A	10	9	10	10	N/A	N/A	N/A	9	10	10	9	11	10	12	10	9	9	9	9	
									9a	10	10a	9	11a	10	12a	10					
									9b	N/A	10b	N/A	11b	N/A	12b	N/A					
Beaver Brook to C-470	N/A	16	14	16	20	N/A	N/A	N/A	9	16	10	14	11	16	12	20	14	14	14	14	
									9a	16	10a	14	11a	16	12a	20					
									9b	N/A	10b	N/A	11b	N/A	12b	N/A					
Travel time: summer weekday transit WB	C-470 to Beaver Brook	N/A	16	14	16	20	N/A	N/A	N/A	9	16	10	14	11	16	12	20	14	14	14	14
										9a	16	10a	14	11a	16	12a	20				
										9b	N/A	10b	N/A	11b	N/A	12b	N/A				
	Beaver Brook to Hidden Valley	N/A	10	9	10	10	N/A	N/A	N/A	9	10	10	9	11	10	12	10	9	9	9	9
										9a	10	10a	9	11a	10	12a	10				
										9b	N/A	10b	N/A	11b	N/A	12b	N/A				
	Hidden Valley to Downieville	N/A	11	9	12	11	N/A	N/A	N/A	9	11	10	9	11	12	12	11	13	13	13	13
										9a	11	10a	9	11a	12	12a	11				
										9b	N/A	10b	N/A	11b	N/A	12b	N/A				
	Downieville to Loveland Pass Interchange	N/A	27	24	27	29	N/A	N/A	N/A	9	27	10	24	11	27	12	29	20	20	20	20
									9a	27	10a	24	11a	27	12a	29					
									9b	N/A	10b	N/A	11b	N/A	12b	N/A					
Loveland Pass Interchange to Silverthorne	N/A	14	12	12	13	N/A	N/A	N/A	9	14	10	12	11	12	12	13	12	12	12	12	
									9a	14	10a	12	11a	12	12a	13					
									9b	N/A	10b	N/A	11b	N/A	12b	N/A					
Silverthorne to Copper Mountain	N/A	17	15	18	19	N/A	N/A	N/A	9	17	10	15	11	18	12	19	15	15	15	15	
									9a	17	10a	15	11a	18	12a	19					
									9b	N/A	10b	N/A	11b	N/A	12b	N/A					
Copper Mountain to Vail East Entrance	N/A	23	19	19	21	N/A	N/A	N/A	9	23	10	19	11	19	12	21	19	19	19	19	
									9a	23	10a	19	11a	19	12a	21					
									9b	N/A	10b	N/A	11b	N/A	12b	N/A					
Vail East Entrance to Edwards	N/A	19	17	18	19	N/A	N/A	N/A	9	19	10	17	11	18	12	19	17	17	17	17	
									9a	19	10a	17	11a	18	12a	19					
									9b	N/A	10b	N/A	11b	N/A	12b	N/A					
Edwards to Eagle County Line (Friday)	N/A	54	46	47	49	N/A	N/A	N/A	9	54	10	46	11	47	12	49	43	43	46	46	
									9a	54	10a	46	11a	47	12a	49					
									9b	N/A	10b	N/A	11b	N/A	12b	N/A					
Eagle County Line to Glenwood Springs (Friday)	N/A	16	16	17	17	N/A	N/A	N/A	9	16	10	16	11	17	12	17	16	16	16	16	
									9a	16	10a	16	11a	17	12a	17					
									9b	N/A	10b	N/A	11b	N/A	12b	N/A					

Transit Travel Times

Travel time: summer Saturday transit EB	Glenwood Springs to Eagle County Line	N/A	15	15	15	15	N/A	N/A	N/A	9	15	10	15	11	15	12	16	15	15	15	15
	9a	15	10a	15	11a	15	12a	15	15	15	15	15									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
	Eagle County Line to Edwards	N/A	52	46	46	48	N/A	N/A	N/A	9	51	10	45	11	47	12	49	45	45	45	45
	9a	52	10a	46	11a	46	12a	48	45	45	45	45									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
	Edwards to Vail East Entrance	N/A	26	17	19	20	N/A	N/A	N/A	9	26	10	17	11	19	12	20	17	17	17	17
	9a	26	10a	17	11a	19	12a	20	17	17	17	17									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
	Vail East Entrance to Copper Mountain	N/A	23	19	22	24	N/A	N/A	N/A	9	23	10	19	11	22	12	24	19	19	19	19
	9a	23	10a	19	11a	22	12a	24	19	19	19	19									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
	Copper Mountain to Silverthorne	N/A	17	15	16	17	N/A	N/A	N/A	9	17	10	15	11	16	12	17	15	15	15	15
	9a	17	10a	15	11a	16	12a	17	15	15	15	15									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
	Silverthorne to Loveland Pass Interchange	N/A	14	12	15	15	N/A	N/A	N/A	9	14	10	12	11	15	12	15	12	12	12	12
	9a	14	10a	12	11a	15	12a	15	12	12	12	12									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
	Loveland Pass Interchange to Downieville	N/A	25	22	25	28	N/A	N/A	N/A	9	25	10	22	11	25	12	28	20	20	20	20
	9a	25	10a	22	11a	25	12a	28	20	20	20	20									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
	Downieville to Hidden Valley	N/A	11	9	12	11	N/A	N/A	N/A	9	11	10	9	11	12	12	11	11	11	11	11
	9a	11	10a	9	11a	12	12a	11	11	11	11	11									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
Hidden Valley to Beaver Brook	N/A	10	9	10	10	N/A	N/A	N/A	9	10	10	9	11	10	12	10	9	9	9	9	
9a	10	10a	9	11a	10	12a	10	9	9	9	9										
9b	N/A	10b	N/A	11b	N/A	12b	N/A														
Beaver Brook to C-470	N/A	16	14	16	20	N/A	N/A	N/A	9	16	10	14	11	16	12	20	14	14	14	14	
9a	16	10a	14	11a	16	12a	20	14	14	14	14										
9b	N/A	10b	N/A	11b	N/A	12b	N/A														
Travel time: summer Saturday transit WB	C-470 to Beaver Brook	N/A	16	14	16	20	N/A	N/A	N/A	9	16	10	14	11	16	12	20	14	14	14	14
	9a	16	10a	14	11a	16	12a	20	14	14	14	14									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
	Beaver Brook to Hidden Valley	N/A	10	9	10	10	N/A	N/A	N/A	9	10	10	9	11a	10	12a	10	9	9	9	9
	9a	10	10a	9	11a	10	12a	10	9	9	9	9									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
	Hidden Valley to Downieville	N/A	11	9	12	11	N/A	N/A	N/A	9	11	10	9	11	12	12	11	13	13	13	13
	9a	11	10a	9	11a	12	12a	11	13	13	13	13									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
	Downieville to Loveland Pass Interchange	N/A	27	24	27	29	N/A	N/A	N/A	9	27	10	24	11	27	12	29	20	20	20	20
	9a	27	10a	24	11a	27	12a	29	20	20	20	20									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
	Loveland Pass Interchange to Silverthorne	N/A	14	12	12	13	N/A	N/A	N/A	9	14	10	12	11	12	12	13	12	12	12	12
	9a	14	10a	12	11a	12	12a	13	12	12	12	12									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
	Silverthorne to Copper Mountain	N/A	17	15	18	19	N/A	N/A	N/A	9	17	10	15	11	18	12	19	15	15	15	15
	9a	17	10a	15	11a	18	12a	19	15	15	15	15									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
	Copper Mountain to Vail East Entrance	N/A	23	19	19	21	N/A	N/A	N/A	9	23	10	19	11	19	12	21	19	19	19	19
	9a	23	10a	19	11a	19	12a	21	19	19	19	19									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
	Vail East Entrance to Edwards	N/A	19	17	18	19	N/A	N/A	N/A	9	19	10	17	11	18	12	19	17	17	17	17
	9a	19	10a	17	11a	18	12a	19	17	17	17	17									
	9b	N/A	10b	N/A	11b	N/A	12b	N/A													
Edwards to Eagle County Line	N/A	50	42	42	44	N/A	N/A	N/A	9	50	10	42	11	42	12	44	41	41	43	43	
9a	50	10a	42	11a	42	12a	44	41	41	43	43										
9b	N/A	10b	N/A	11b	N/A	12b	N/A														
Eagle County Line to Glenwood Springs	N/A	16	16	17	17	N/A	N/A	N/A	9	16	10	16	11	17	12	17	16	16	16	16	
9a	16	10a	16	11a	17	12a	17	16	16	16	16										
9b	N/A	10b	N/A	11b	N/A	12b	N/A														

Transit Travel Times

Travel time: summer Sunday transit EB	Glenwood Springs to Eagle County Line	N/A	16	15	16	16	N/A	N/A	N/A	9	16	10	16	11	16	12	16	16	16	16	16	16	
										9a	16	10a	15	11a	16	12a	16						
										9b	N/A	10b	N/A	11b	N/A	12b	N/A						
	Eagle County Line to Edwards	N/A	54	48	46	48	N/A	N/A	N/A	9	52	10	47	11	47	12	50	46	46	47	47		
										9a	54	10a	48	11a	46	12a	48						
										9b	N/A	10b	N/A	11b	N/A	12b	N/A						
	Edwards to Vail East Entrance	N/A	26	17	19	20	N/A	N/A	N/A	9	26	10	17	11	19	12	20	17	17	17	17		
										9a	26	10a	17	11a	19	12a	20						
										9b	N/A	10b	N/A	11b	N/A	12b	N/A						
	Vail East Entrance to Copper Mountain	N/A	23	19	22	24	N/A	N/A	N/A	9	23	10	19	11	22	12	24	19	19	19	19		
										9a	23	10a	19	11a	22	12a	24						
										9b	N/A	10b	N/A	11b	N/A	12b	N/A						
Copper Mountain to Silverthorne	N/A	17	15	16	17	N/A	N/A	N/A	9	17	10	15	11	16	12	17	15	15	15	15			
									9a	17	10a	15	11a	16	12a	17							
									9b	N/A	10b	N/A	11b	N/A	12b	N/A							
Silverthorne to Loveland Pass Interchange	N/A	14	12	15	15	N/A	N/A	N/A	9	14	10	12	11	15	12	15	12	12	12	12			
									9a	14	10a	12	11a	15	12a	15							
									9b	N/A	10b	N/A	11b	N/A	12b	N/A							
Loveland Pass Interchange to Downieville	N/A	25	22	25	28	N/A	N/A	N/A	9	25	10	22	11	25	12	28	20	20	20	20			
									9a	25	10a	22	11a	25	12a	28							
									9b	N/A	10b	N/A	11b	N/A	12b	N/A							
Downieville to Hidden Valley	N/A	11	9	12	11	N/A	N/A	N/A	9	11	10	9	11	12	12	11	11	11	11	11			
									9a	11	10a	9	11a	12	12a	11							
									9b	N/A	10b	N/A	11b	N/A	12b	N/A							
Hidden Valley to Beaver Brook	N/A	10	9	10	10	N/A	N/A	N/A	9	10	10	9	11	10	12	10	9	9	9	9			
									9a	10	10a	9	11a	10	12a	10							
									9b	N/A	10b	N/A	11b	N/A	12b	N/A							
Beaver Brook to C-470	N/A	16	14	16	20	N/A	N/A	N/A	9	16	10	14	11	16	12	20	14	14	14	14			
									9a	16	10a	14	11a	16	12a	20							
									9b	N/A	10b	N/A	11b	N/A	12b	N/A							
Travel time: summer Sunday transit WB	C-470 to Beaver Brook	N/A	16	14	16	20	N/A	N/A	N/A	9	16	10	14	11	16	12	20	14	14	14	14		
										9a	16	10a	14	11a	16	12a	20						
										9b	N/A	10b	N/A	11b	N/A	12b	N/A						
	Beaver Brook to Hidden Valley	N/A	10	9	10	10	N/A	N/A	N/A	9	10	10	9	11	10	12	10	9	9	9	9		
										9a	10	10a	9	11a	10	12a	10						
										9b	N/A	10b	N/A	11b	N/A	12b	N/A						
	Hidden Valley to Downieville	N/A	11	9	12	11	N/A	N/A	N/A	9	11	10	9	11	12	12	11	13	13	13	13		
										9a	11	10a	9	11a	12	12a	11						
										9b	N/A	10b	N/A	11b	N/A	12b	N/A						
	Downieville to Loveland Pass Interchange	N/A	27	24	27	29	N/A	N/A	N/A	9	27	10	24	11	27	12	29	20	20	20	20		
										9a	27	10a	24	11a	27	12a	29						
										9b	N/A	10b	N/A	11b	N/A	12b	N/A						
Loveland Pass Interchange to Silverthorne	N/A	14	12	12	13	N/A	N/A	N/A	9	14	10	12	11	12	12	13	12	12	12	12			
									9a	14	10a	12	11a	12	12a	13							
									9b	N/A	10b	N/A	11b	N/A	12b	N/A							
Silverthorne to Copper Mountain	N/A	17	15	18	19	N/A	N/A	N/A	9	17	10	15	11	18	12	19	15	15	15	15			
									9a	17	10a	15	11a	18	12a	19							
									9b	N/A	10b	N/A	11b	N/A	12b	N/A							
Copper Mountain to Vail East Entrance	N/A	23	19	19	21	N/A	N/A	N/A	9	23	10	19	11	19	12	21	19	19	19	19			
									9a	23	10a	19	11a	19	12a	21							
									9b	N/A	10b	N/A	11b	N/A	12b	N/A							
Vail East Entrance to Edwards	N/A	19	17	18	19	N/A	N/A	N/A	9	19	10	17	11	18	12	19	17	17	17	17			
									9a	19	10a	17	11a	18	12a	19							
									9b	N/A	10b	N/A	11b	N/A	12b	N/A							
Edwards to Eagle County Line	N/A	48	42	42	44	N/A	N/A	N/A	9	48	10	42	11	42	12	44	41	41	43	43			
									9a	48	10a	42	11a	42	12a	44							
									9b	N/A	10b	N/A	11b	N/A	12b	N/A							
Eagle County Line to Glenwood Springs	N/A	16	16	17	17	N/A	N/A	N/A	9	16	10	16	11	17	12	17	16	16	16	16			
									9a	16	10a	16	11a	17	12a	17							
									9b	N/A	10b	N/A	11b	N/A	12b	N/A							

Annual Hours of LOS F WB

Element of P&N		2000	2035 Baseline	No Action Alternative	Preferred Alternative (Minimum Program)	Transit Alternatives					Highway Alternatives			Combination Highway/Transit Alternatives						
						1	2	3	4	5	6	7	8	9	10	11	12			
						Minimal Action Alternative	Rail with IMC	Advanced Guideway System (AGS)	Dual-Mode Bus in Guideway	Diesel Bus in Guideway	6-Lane Widening 55 mph	6-Lane Widening 65 mph	Reversible/HOV/HOT Lanes	6-Lane Widening with Rail and IMC	6-Lane Widening with AGS	6-Lane Widening with Dual-Mode Bus in Guideway	6-Lane Widening with Diesel Bus in Guideway			
Duration of congestion on I-70: annual congested and uncongested hours	Genesee	Congested hours	0	3,426	2,340	2,589	3,115	3,700	3,891	3,978	3,935	1,156	1,156	1,607	9 - Build Combination Simultaneously 1,180	10 - Build Combination Simultaneously 1,097	11 - Build Combination Simultaneously 1,161	12 - Build Combination Simultaneously 1,187		
		Uncongested hours	8,760	5,334	6,420	6,171	5,645	5,060	4,869	4,782	4,825	7,604	7,604	8,760	9a - Build Transit and Preserve for Highway 3,700	10a - Build Transit and Preserve for Highway 3,891	11a - Build Transit and Preserve for Highway 3,978	12a - Build Transit and Preserve for Highway 3,935		
		% of annual hours under congestion	0%	39%	27%	30%	36%	42%	44%	45%	45%	13%	13%	0%	9b - Build Highway and Preserve for Transit 1,156	10b - Build Highway and Preserve for Transit 1,156	11b - Build Highway and Preserve for Transit 1,156	12b - Build Highway and Preserve for Transit 1,156		
		Top of Floyd Hill	Congested hours	130	2,796	862	2,437	1,700	2,458	2,538	2,753	2,700	2,877	2,877	837	9 - Build Combination Simultaneously 2,772	10 - Build Combination Simultaneously 2,638	11 - Build Combination Simultaneously 2,807	12 - Build Combination Simultaneously 2,863	
			Uncongested hours	8,630	5,964	7,898	6,323	7,060	6,302	6,222	6,007	6,060	5,883	5,883	7,923	9a - Build Transit and Preserve for Highway 2,458	10a - Build Transit and Preserve for Highway 2,538	11a - Build Transit and Preserve for Highway 2,753	12a - Build Transit and Preserve for Highway 2,700	
			% of annual hours under congestion	1%	32%	10%	28%	19%	28%	29%	31%	31%	33%	33%	10%	9b - Build Highway and Preserve for Transit 2,877	10b - Build Highway and Preserve for Transit 2,877	11b - Build Highway and Preserve for Transit 2,877	12b - Build Highway and Preserve for Transit 2,877	
			Twin Tunnels	Congested hours	70	1,223	417	712	689	983	961	1,260	1,206	333	333	125	9 - Build Combination Simultaneously 246	10 - Build Combination Simultaneously 229	11 - Build Combination Simultaneously 278	12 - Build Combination Simultaneously 295
				Uncongested hours	8,690	7,537	8,343	8,048	8,071	7,777	7,799	7,500	7,554	8,427	8,427	8,635	9a - Build Transit and Preserve for Highway 983	10a - Build Transit and Preserve for Highway 961	11a - Build Transit and Preserve for Highway 1,260	12a - Build Transit and Preserve for Highway 1,206
				% of annual hours under congestion	1%	14%	5%	8%	8%	11%	11%	14%	14%	4%	4%	1%	9b - Build Highway and Preserve for Transit 333	10b - Build Highway and Preserve for Transit 333	11b - Build Highway and Preserve for Transit 333	12b - Build Highway and Preserve for Transit 333
	East of Empire Junction			Congested hours	80	1,059	475	153	314	169	153	252	237	125	125	168	9 - Build Combination Simultaneously 84	10 - Build Combination Simultaneously 76	11 - Build Combination Simultaneously 98	12 - Build Combination Simultaneously 106
				Uncongested hours	8,680	7,701	8,285	8,607	8,446	8,591	8,607	8,508	8,523	8,635	8,635	8,592	9a - Build Transit and Preserve for Highway 169	10a - Build Transit and Preserve for Highway 153	11a - Build Transit and Preserve for Highway 252	12a - Build Transit and Preserve for Highway 237
				% of annual hours under congestion	1%	12%	5%	2%	4%	2%	2%	3%	3%	1%	1%	2%	9b - Build Highway and Preserve for Transit 125	10b - Build Highway and Preserve for Transit 125	11b - Build Highway and Preserve for Transit 125	12b - Build Highway and Preserve for Transit 125
		Eisenhower / Johnson Memorial Tunnels		Congested hours	20	1,732	1,447	578	1,243	1,122	1,038	1,299	1,306	198	198	476	9 - Build Combination Simultaneously 130	10 - Build Combination Simultaneously 117	11 - Build Combination Simultaneously 155	12 - Build Combination Simultaneously 172
				Uncongested hours	8,740	7,028	7,313	8,182	7,517	7,638	7,722	7,461	7,454	8,562	8,562	8,284	9a - Build Transit and Preserve for Highway 1,122	10a - Build Transit and Preserve for Highway 1,038	11a - Build Transit and Preserve for Highway 1,299	12a - Build Transit and Preserve for Highway 1,306
				% of annual hours under congestion	0%	20%	17%	7%	14%	13%	12%	15%	15%	2%	2%	5%	9b - Build Highway and Preserve for Transit 198	10b - Build Highway and Preserve for Transit 198	11b - Build Highway and Preserve for Transit 198	12b - Build Highway and Preserve for Transit 198

- NOTES: NOTES: 1) Alternatives are assessed for their ability to meet baseline travel demand need. If a given alternative has more capacity than needed to meet baseline, that alternative is assumed to induce travel demand beyond baseline. If a given alternative has less capacity than needed to meet baseline, that alternative is assumed to suppress travel demand below baseline.
- 2) These estimates are for non-incident related congestion. Congestion hours due to incidents (such as accidents or breakdowns) are not accounted for.
- 3) The highway is assumed to be congested when a queue is present.

Annual Hours of LOS F WB

Element of P&N			Transit Alternatives				Highway Alternatives			Combination Highway/Transit Alternatives										
			2000	2035 Baseline	No Action Alternative	Preferred Alternative (Minimum Program)	1	2	3	4	5	6	7	8	9	10	11	12		
			Minimal Action Alternative	Rail with IMC	Advanced Guideway System (AGS)	Dual-Mode Bus in Guideway	Diesel Bus in Guideway	6-Lane Widening 55 mph	6-Lane Widening 65 mph	Reversible/HOV/HOT Lanes	6-Lane Widening with Rail and IMC	6-Lane Widening with AGS	6-Lane Widening with Dual-Mode Bus in Guideway	6-Lane Widening with Diesel Bus in Guideway						
Duration of congestion on I-70: annual congested and uncongested hours	WB	West of Silverthorne	Congested hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
			Uncongested hours	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	
			% of annual hours under congestion	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
			Congested hours	0	723	237	0	483	729	729	729	729	0	0	0	0	0	0	0	0
			Uncongested hours	8,760	8,037	8,523	8,760	8,277	8,031	8,031	8,031	8,031	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760
			% of annual hours under congestion	0%	8%	3%	0%	6%	8%	8%	8%	8%	0%	0%	0%	0%	0%	0%	0%	0%
			Congested hours	0	2,632	2,069	0	2,321	2,684	2,572	3,708	3,824	0	0	0	0	0	0	0	0
			Uncongested hours	8,760	6,128	6,691	8,760	6,439	6,076	6,188	5,052	4,936	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760
			% of annual hours under congestion	0%	30%	24%	0%	26%	31%	29%	42%	44%	0%	0%	0%	0%	0%	0%	0%	0%
		Congested hours	0	189	148	65	74	0	0	0	0	0	0	0	0	0	0	0	0	
		Uncongested hours	8,760	8,571	8,612	8,695	8,686	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	
		% of annual hours under congestion	0%	2%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
		Congested hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Uncongested hours	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	
		% of annual hours under congestion	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

NOTES: 1) Alternatives are assessed for their ability to meet baseline travel demand need. If a given alternative has more capacity than needed to meet baseline, that alternative is assumed to induce travel demand beyond baseline. If a given alternative has less capacity than needed to meet baseline, that alternative is assumed to suppress travel demand below baseline.

2) These estimates are for non-incident related congestion. Congestion hours due to incidents (such as accidents or breakdowns) are not accounted for.

3) The highway is assumed to be congested when a queue is present.

Annual Hours of LOS F EB

Element of P&N			Transit Alternatives													Highway Alternatives				Combination Highway/Transit Alternatives																																			
			2000	2035 Baseline	No Action Alternative	Preferred Alternative (Minimum Program)	1				2				3				4				5				6				7				8				9				10				11				12				
							Minimal Action Alternative	Rail with IMC	Advanced Guideway System (AGS)	Dual-Mode Bus in Guideway	Diesel Bus in Guideway	6-Lane Highway 55 mph	6-Lane Highway 65 mph	Reversible/HOV/HOT Lanes	6-Lane Highway with Rail and IMC				6-Lane Highway with AGS				6-Lane Highway with Dual-Mode Bus in Guideway				6-Lane Highway with Diesel Bus in Guideway																												
															9	9a	9b	9c	10	10a	10b	10c	11	11a	11b	11c	12	12a	12b	12c																									
Duration of congestion on I-70: annual congested and uncongested hours	EB	No Name Tunnels	Congested hours	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
			Uncongested hours	8,760	8,760	8,760	8,760	8,760	8,760	3	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760				
			% of annual hours under congestion	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
		East of Eagle	Congested hours	0	589	334	109	334	1,325	1,325	1,325	1,325	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	
			Uncongested hours	8,760	8,171	8,426	8,651	8,426	7,435	7,435	7,435	7,435	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678	8,678			
			% of annual hours under congestion	0%	7%	4%	1%	4%	15%	15%	15%	15%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%			
		Dowd Canyon	Congested hours	0	1,688	1,873	298	1,873	207	197	302	313	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379	
			Uncongested hours	8,760	7,072	6,887	8,462	6,887	8,553	8,563	8,458	8,447	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381	8,381
			% of annual hours under congestion	0%	19%	21%	3%	21%	2%	2%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
		Vail Pass	Congested hours	0	429	31	0	28	27	25	29	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
			Uncongested hours	8,760	8,331	8,729	8,760	8,732	8,733	8,735	8,731	8,730	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	8,760	
			% of annual hours under congestion	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
West of Silverthorne	Congested hours	0	2,093	109	51	80	56	51	69	70	181	181	184	184	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181	181				
	Uncongested hours	8,760	6,667	8,651	8,709	8,680	8,704	8,709	8,691	8,690	8,579	8,579	8,576	8,576	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579	8,579		
	% of annual hours under congestion	0%	24%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%			

NOTES: NOTES:

- 1) Alternatives are assessed for their ability to meet baseline travel demand need. If a given alternative has more capacity than needed to meet baseline, that alternative is assumed to induce travel demand beyond baseline. If a given alternative has less capacity than needed to meet baseline, that alternative is assumed to suppress travel demand below baseline.
- 2) These estimates are for non-incident related congestion. Congestion hours due to incidents (such as accidents or breakdowns) are not accounted for.
- 3) The highway is assumed to be congested when a queue is present.