

Sketch Level I-70 Mountain Corridor Traffic and Revenue Study

Prepared for:



Prepared by:



August 8, 2014



This Report was prepared by The Louis Berger Group, Inc. (Louis Berger) for the benefit of the Colorado Department of Transportation and the High-Performance Transportation Enterprise (Client) pursuant to a Professional Services Agreement dated July 1, 2013.

Louis Berger has performed its services to the level customary for competent and prudent engineers performing such services at the time and place where the services to our Client were provided. Louis Berger makes or intends no other warranty, express or implied.

Certain assumptions regarding future trends and forecasts may not materialize, which may affect actual future performance and market demand, so actual results are uncertain and may vary significantly from the projections developed as part of this assignment. The data used in the Report was current as of the date of the Report and may not now represent current conditions.

Unless you are the Client, or a party to a fully executed Reliance Letter Agreement with Louis Berger concerning this project (Relying Party), you may not rely on the information, data, and descriptions in this report as reasonably necessary for evaluation of this project. The Report is provided for information purposes only. Louis Berger makes no representations or warranty that the information in the Report is sufficient to provide all the information, evaluations and analyses necessary to satisfy the entire due diligence needs of a Relying Party.

Table of Contents

Executive Summary.....	1
ES-1 Overview of Level 1 Traffic and Revenue Study.....	1
ES-2 Modeling Process	1
ES-3 Key Assumptions	3
ES-4 Traffic and Revenue Results.....	3
ES-5 Cash Flow Analysis	4
1. Introduction	5
1.1 Sketch Level T&R Study Objectives and Criteria.....	5
1.2 Context Sensitive Solutions (CSS) Process.....	6
1.3 I-70 Mountain Corridor Characteristics.....	6
1.4 Traffic Volumes and Trends	8
1.5 Scope of Work.....	10
1.6 Summary of Data Sources and Methods.....	10
1.7 Proposed Alternatives.....	11
2. Regional Socioeconomic and Travel Conditions	12
2.1 Population.....	12
2.2 Employment.....	14
3. Model Evaluation, Updates, and Assumptions.....	20
3.1 Description of the Programmatic Environmental Impact Statement (PEIS)	20
3.2 Review of the PEIS Traffic Model	21
Goodness of Fit of the Model	21
3.3 Traffic Model Refinement	1
Improved Geographic Accuracy.....	2

Model Update to TransCAD Version 6.0.....	2
2010 Demographic Update.....	2
Traffic Assignment.....	3
3.4 Updated Model Parameters and Assumptions	3
3.5 Model Results Validation	9
4. Forecast Development Process	9
4.1 Long-Term Forecast Development Process.....	9
4.2 Tolling	10
4.3 Treatment of Demand.....	12
4.4 Estimated Capture Rates.....	14
5. Traffic and Revenue Results	15
5.1 Summary.....	15
5.2 Alternative 1	17
5.3 Alternative 2	17
5.4 Alternative 3	18
5.5 Alternative 4	19
5.6 Alternative 5	19
5.7 Alternative 6	20
5.8 Additional Sensitivity Analysis 5.1.....	21
5.9 Financial Evaluation	21
5.9.1 Discount Cash Flow Analysis	Error! Bookmark not defined.
8.0 Conclusion.....	23

Appendices

Appendix A: Full description of Alternatives

Appendix B: Traffic and Revenue Forecasts Base Case (1.4% Growth Rate)

Appendix C: Traffic and Revenue Forecasts Alternate Growth Rates (2.0%, 2.5%, and 3.0% Growth Rate)

Appendix D: Cash Flow Analysis (Separate Excel Spreadsheet)



COLORADO

Department of
Transportation

*I-70 Mountain Corridor
Traffic and Revenue Study*

Executive Summary

The Colorado Department of Transportation (CDOT) and the High-Performance Transportation Enterprise (HPTe) commissioned the Louis Berger Team to develop a Traffic and Revenue study for the I-70 Mountain Corridor (the Corridor) between Golden and Silverthorne. As the main throughway across the Front Range of the Rocky Mountains, the I-70 Mountain corridor connects Denver with Western Colorado and Utah.

This Corridor is a main freight and recreational corridor in the State, and therefore of great economic value. Many of Colorado's most popular summer and winter tourism destinations visited by hundreds of thousands of travelers each year lie along the Corridor. The large number of vehicles traveling along the Corridor, particularly the peak period weekend traffic, is generating capacity constraints in the Golden-Silverthorne segment, and peak time traffic is encountering heavy delays. Truck traffic is voluminous, as freight makes its way from the Western to the Eastern part of the Nation, serving Denver along the way. The Corridor's complex geography, ecological sensitivity, and constrained communities, however, make capacity expansion efforts challenging and expensive. CDOT is currently in the process of identifying a solution to the Corridor's congestion problems.

ES-1 Overview of Level 1 Traffic and Revenue Study

The purpose of this project is to evaluate a series of revenue-collecting capacity enhancement alternatives proposed for the Corridor in order to identify a financially, environmentally, and socially responsible solution to the I-70 Corridor's current and future traffic congestion. The results from this study will allow CDOT to make an informed decision on which alternatives provide the greatest benefits in terms of safety, mobility, and environmental protection, among others, and the extent to which each alternative can pay for themselves largely through toll user fees.

This report provides a summary of the modeling and forecasting process, and the traffic and revenue forecast results for six different capacity enhancement alternatives, one sensitivity analysis, and a base condition scenario. The financial evaluation compares revenue generation for each of the alternatives against expected costs through a nominal discounted cash flow analysis.

Section 2 of this report provides a basic overview of the socioeconomic trends at the County level for the Counties along which the relevant section of the I-70 Corridor crosses, as well as adjacent populations that are considered critical users of the corridor (e.g. Denver Metropolitan Region and Eagle County). Information on population, employment, commuting, and housing trends is included.

ES-2 Modeling Process and Assumptions

This Traffic and Revenue Study was conducted at a sketch level, commonly referred to as a "Level 1" analysis. As a result, this Study did not include the development of a new travel demand model and did not involve primary data collection efforts. Instead, the basis of the modeling process was the existing regional model developed in 2003 for the 2011 I-70 Mountain Corridor Programmatic Environmental

Impact Statement (PEIS). The Louis Berger Team evaluated the PEIS model, performed updates on the model and validated its calibration.

The Louis Berger Team carried out a series of updates on the PEIS model, followed by a verification of runs against actual counts to ensure that the model was properly calibrated. The most significant modifications included updating the demographics data to 2010 from 2000; modifying the traffic assignment capability of the model to support tolling assignments; and differentiating truck vehicle classes from standard automobiles.

For modeling and forecasting assumptions, the Study relied primarily on data from the most recent studies on the corridor; traditional data sources such as the U.S. Census and the State Demographer; or inputs from the Issue Task Force (ITF) multi-stakeholder groups. In order to maintain consistency in comparison of results with the PEIS, this study directly adopted a series of assumptions from that work. The assumptions related to trip descriptors, market segments, model run parameters, traffic growth, operations, and financial assumptions. The model and the assumptions were used to develop the 2025 forecast runs. Section 3 of this report describes the PEIS model, explains the updates performed on the model, and illustrates the long-term forecast projection tool.

The set of alternatives evaluated provide different levels of additional capacity for the corridor and involve different transit options - CDOT bus; Bus Rapid Transit (BRT) running in mixed traffic on the managed lanes; or the Advanced Guideway System (AGS). The alternatives are summarized in the **Table 1** below, and fully described in Appendix A.

Table 1: Alternatives Evaluated

Alternative	Description
Base Condition	Existing roadway including eastbound temporary peak period shoulder lane improvements. Includes CDOT Bus.
1	Two reversible, tolled, managed lanes (part of the Parsons Unsolicited Proposal). Includes BRT.
2	Three reversible, tolled, managed lanes at 65MPH (part of the Parsons Unsolicited Proposal). Includes BRT.
3	PEIS Minimum Program – toll at 3 rd bore EJMT (this alternative is strictly based on the PEIS description, and therefore does not include the eastbound PPSL). Includes AGS.
4	PEIS Maximum Program – one non-reversible tolled lane Eastbound, Westbound. Includes AGS.
5	Permanent Peak Period Shoulder Lane (both directions): left side tolled, managed side lane for peak time use. Includes AGS
5.1 sensitivity	Permanent Peak Period Shoulder Lane (both directions): left side tolled, managed side lane for peak time use. Includes AGS. Does not include a 3 rd bore at the EJMT.

6	Temporary Peak Period Shoulder Lane (both directions): Narrower West Bound tolled, managed lane for peak time use. Includes AGS
---	---

ES-3 Forecasting Development Process

The Louis Berger Team developed a detailed link-level tool in order to conduct the 50-year projections to 2075 using the 2025 modeled forecast as a base. The Corridor was organized into 19 key segments summarizing the 80 links. Each segment had a representation of volumes, capacity, and speed on toll lanes and corresponding free lanes by time of day, day of week, and season, as reflected in the PEIS model. The tool provides a forecast of managed lanes usage and pricing based on congestion and value of travel time savings. The tool calculates annual revenue and traffic performance measures depending on the volume outputs and pricing at each time period, day, and season.

Section 4 of this report discusses the specifics of the forecast development. Per mile dynamic tolling is based on volume to capacity ratio which determines levels of congestion along the corridor and vary the price of the tolls as needed in order to maintain a certain average speed. The model also includes fixed tunnel tolls at two locations, which vary depending on the alternative. Section 4 also provides detail on how the model and the forecasting process dealt with treatment of demand, unmet and induced, and what the modeling outputs showed were the managed lanes capture rates.

ES-4 Traffic and Revenue Results

This study provides traffic and revenue forecasts to 2075 for six alternatives, one sensitivity test, and one base condition forecasting the corridor’s traffic and capacity constraints if no action is taken (e.g. no build condition).

The full results for the traffic and revenue forecasts are available in Appendix B. Overall, the reversible managed lanes options (1, 2) and the PEIS Maximum Program (4) add significant capacity and present high revenue capture. The PEIS Minimum Program (3) provides the lowest improvements in capacity and the lowest revenue capture. The Peak Period Shoulder Lane (PPSL) alternatives (5, 6) provide some capacity improvement, yet have significant revenue generation. Alternative 5.1 has a lower revenue generation potential than Alternative 5 given that capacity improvements cover only half the distance. . The base condition, which includes the Eastbound PPSL, has some revenue generation. **Table 2** below provides a summary of the revenue present values (PV) for each of the alternatives, discounted at 5%.

Table 2: Revenue forecasts (\$Millions 2014)

Alternative	Revenue PV (at 5% Discount Rate)
Base Condition	\$109.70
1	\$1575.38
2	\$1517.97
3	\$50.98



4	\$486.60
5	\$440.49
5.1 sensitivity	\$256.65
6	\$222.57

ES-5 Cash Flow Analysis

The inputs to the discounted cash flow analysis (DCF) included the revenue forecasts for each of the alternatives and their corresponding capital and operations and maintenance (O&M) costs. The cost estimates were provided by Parsons Transportation. BRT farebox revenue for Alternatives 1 and 2 is included in the analysis since it contributes to the 50 year concession arrangement. Alternatives 3-6 and the sensitivity run 5.1 which include the AGS component do not consider AGS revenues or costs since its operations are separate from the highway capacity improvements.

Table 3 below illustrates which alternatives capture enough toll revenue to pay for capital and O&M costs and/or O&M costs only based on the DCF analysis. In summary, although alternatives 1 and 2 show the greatest improvements in capacity, the revenues captured are not able to cover capital and O&M expenses. Alternative 4 provides minimal improvements in time savings and therefore minimal revenue. Alternatives 4 and 5 provide considerable improvements in capacity and significant revenues. Both can cover O&M but neither can cover capital expenses. Sensitivity analysis 5.1 and Alternative 6 provide limited improvements in capacity but generate an important amount of revenues; both cover all costs.

Table 3: Ability to pay for Capital and O&M Costs through Toll Revenue

Alternative	Revenue	Capital + O&M	O&M
1	\$1575.38	✘	✔
2	\$1517.97	✘	✔
3	\$50.98	✘	✘
4	\$486.60	✘	✔
5	\$440.49	✘	✔
5.1 sensitivity	\$256.65	✔	✔
6	\$222.57	✔	✔

1. Introduction

The Colorado Department of Transportation (CDOT) and the High-Performance Transportation Enterprise (HPTE) commissioned The Louis Berger Group, Inc. (Louis Berger) to develop a Traffic and Revenue Study for the I-70 Mountain Corridor (the Corridor) between Golden and Silverthorne. The purpose of the Traffic and Revenue Study is to evaluate a series of revenue-collecting, capacity enhancement alternatives in order to identify a financially, environmentally, and socially responsible solution to the I-70 Corridor's current and future traffic congestion issues. The Corridor's complex geography, ecological sensitivity, and constrained communities make capacity expansion efforts challenging and expensive. The results from this study will allow CDOT to make an informed decision on which alternatives provide the greatest benefits in terms of safety, mobility, and environmental protection, among others, and the extent to which each alternative can pay for themselves through toll user fees.

This Traffic and Revenue Study was conducted at a sketch level, commonly referred to as a "Level 1" analysis. As a result, this Study did not include the development of a new travel demand model and did not involve primary data collection efforts. Instead, the regional model developed for the 2011 I-70 Mountain Corridor Programmatic Environmental Impact Statement (PEIS) was used as the basis for the modeling process. In general, modeling assumptions were adopted from the PEIS, adapted from other recent studies in the corridor, or devised by the project's stakeholder process described below. In order to provide consistency in comparison of results with the PEIS, some key assumptions including long-term traffic growth rates were directly borrowed from the PEIS.

This study provides a summary of the modeling and forecasting process and traffic and revenue forecasts for each of the capacity enhancement alternatives evaluated. Section 1 of this report presents a summary of study objectives, data sources, and methods; project description and scope; and a description of proposed alternatives.

1.1 Sketch Level T&R Study Objectives and Criteria

This Sketch Level Traffic and Revenue study is intended to provide CDOT with a preliminary feasibility analysis for different capacity enhancement improvements proposed for the I-70 Corridor segment running from Golden to Silverthorne. In addition to the two alternatives presented in the Parsons Transportation unsolicited proposal, the Project Leadership Team (PLT) and the Technical Team (TT), two main groups in the Context Sensitive Solutions Process (CSS) discussed below, agreed to evaluate four other alternatives as potential solutions to the Corridor's congestion problems.

In total, this study provides traffic and revenue forecasts for six alternatives, 13 options, and one sensitivity run. Traffic and revenue forecasts were also developed for a base condition, which represents a no action scenario. Each of these options involves a specific public transit component: CDOT bus; Bus Rapid Transit (BRT) running in mixed traffic on the managed lanes; or the Advanced Guideway System (AGS).

This evaluation provides estimates of future traffic conditions given anticipated growth in travel. It also provides an estimation of revenue generation potential for each alternative, which involved management of capacity through variable, or congestion, pricing, and accounted for traveler Value of Time (VOT) and response to pricing. Detailed data results from the analysis related to changes in travel time, congestion, corridor operations and management, financial performance supported the screening process conducted by CDOT to identify alternatives suitable for further analysis.

1.2 Context Sensitive Solutions (CSS) Process

The development of this study followed the Context Sensitive Solutions (CSS) process, which involved significant input from relevant stakeholders. These stakeholders included people living and working in the mountain communities, Denver residents who are regular recreational users of the Corridor, representatives of freight transportation, recreational business owners including the ski resorts, commuters, and representatives of local, state, and federal agencies and governments. The Technical Team (TT) and the Project Leadership Team (PLT) consisting of the various stakeholder groups partook in discussions regarding study design; alternatives to evaluate; development of assumptions; and results analysis. The consultant teams provided guidance during these discussions and addressed questions and concerns from the public regarding the evaluation process and results. The final set of alternatives evaluated were reviewed and approved by the PLT and TT.

The CSS process also involved the establishment of Issue Task Forces (ITFs) to evaluate specific elements of the traffic and revenue study. The ITFs were tasked to provide guidance on the technical components and assumptions considered for the evaluation. The following ITF groups were critical to the inputs for the Traffic and Revenue study:

Alternatives ITF: Identified and finalized proposed alternatives to evaluate;

Traffic Operations and Maintenance ITF: Evaluated and confirmed underlying assumptions for operations and maintenance; developed costs; defined the various levels of asset management; and identified potential cost risks.

Tolling ITF: Finalized assumptions on tolling arrangements including technology implementation; tolling operations; toll rates and pricing; hours of operation; and toll limits and segments.

Traffic Modeling ITF: Discussed details on existing model calibration (model extents, time periods, embedded assumptions) and future model development (time horizons, assumptions required, data needs).

Finance ITF: Evaluated assumptions made in the Parsons proposal and finalized assumptions on inflation rate, Weighted Average Cost of Capital (WAAC), and evaluation period, among others.

Transit ITF: Verified existing assumptions on AGS and BRT, and developed additional data required for the transit options involving all aspects of costs and operational characteristics.

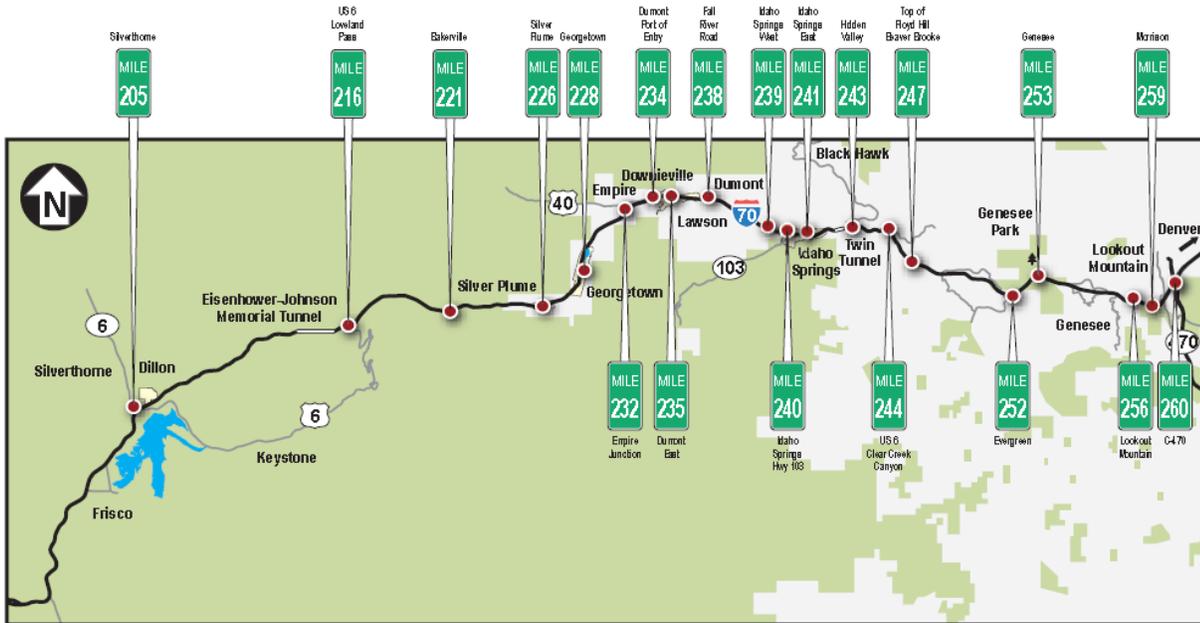
The observations and recommendations made by each of the ITF groups were taken into account during the modeling and forecasting efforts for this Study.

1.3 I-70 Mountain Corridor Characteristics

The I-70 Mountain Corridor crosses the State of Colorado from East to West, traversing the Rocky Mountains. The portion of the Corridor subjected for potential capacity enhancements is 55 miles long and runs from I-70 Exit 205 in Silverthorne to the crossing of I-70 and C-470 in Golden, West of the Denver metropolitan area (**Figure 1**). It includes steep grades leading up to the Continental Divide and two main tunnels: the Twin Tunnel (TT) and the Eisenhower-Johnson Memorial Tunnel (EJMT). This segment of I-70 passes through three counties – Summit, Clear Creek, and Jefferson Counties – which have a 2013 population estimate of 589,478. The Denver Metropolitan Region, an important market

segment user of the Corridor, has an estimated population of 649,495 for 2013, while the Denver-Aurora-Lakewood Metropolitan Region is nearly 2.7 million. ¹

Figure 1: Map of I-70 Corridor



I-70 is a major corridor for access to the communities along it as well as sites for multiple summertime and wintertime recreational activities. The Corridor provides access to centers of economic activity critical to the region’s growth: a number of major ski resorts as well as popular hiking and camping locations such as the Arapaho National Forest are visited by millions of local residents and national and international visitors every year. Providing access to these activities also makes the corridor a critical contributor to quality of life in the region. Recreational travel is the predominant contributor to peak traffic in the Corridor, especially during summer and winter weekends and holidays.

The only east-west interstate to cross Colorado, the I-70 Corridor is also a main freight thoroughway, providing access to the State capital of Denver and connecting Utah to the West with Nebraska to the East. I-70 links up with the following north-south highways, providing access to many outlying communities and counties: State Highways [SH] 82, 131, 9, 103, 119; United States Highway [US] 24, 40, 6; and C-470. Heavy vehicles consisting of trucks, buses, and recreational vehicles represent about 10% of average annual traffic along the Corridor, as estimated in the I-70 Mountain Corridor Final Programmatic Environmental Impact Statement (PEIS) in 2011. In multiple locations along the Corridor truck and bus traffic is restricted to slower speeds due to steep grades and constricted curvatures.

¹ [US Census Fact Finder](#)

1.4 Traffic Volumes and Trends

The Corridor is mainly a recreational one, with peak congestion periods during the weekends of the summer and winter seasons. High levels of congestion during weekends have led to peak spreading. As a result, volumes are generally increasing faster on Fridays and Mondays than other weekdays. Traffic volumes vary significantly by periods of day as well.

The Corridor still carries significant traffic during the weekdays, mainly commuters from the local mountain communities and freight traffic. Trucks represent about 10% of average annual traffic along the Corridor, as estimated in the I-70 Mountain Corridor Final Programmatic Environmental Impact Statement (PEIS) in 2011.

Weather plays an important role in the Corridor’s traffic conditions: on average, I-70 experiences ten to thirteen closure days due to severe weather in the winter. Significant delays in the winter time are also common due to snowfall, poor visibility, and accidents along the Corridor.

Congestion has increased significantly in past years, particularly during the weekends and holidays, and is expected to continue increasing based on population, employment, and tourism projections for the region. As of 2011, travelers experienced a one hour delay between Silverthorne and C-470 during weekend peak hours compared to free flow conditions and an average 20 additional minutes during weekday peak traffic times (PEIS, ES-3). Congestion is particularly heavy at the entrance of the two tunnels. If no capacity improvements are made on the corridor, heavy congestion is expected at the EJMT and Twin Tunnel sections. **Table 4** below shows modeled speeds at the tunnels during the most congested time periods. These estimates include unmet demand.

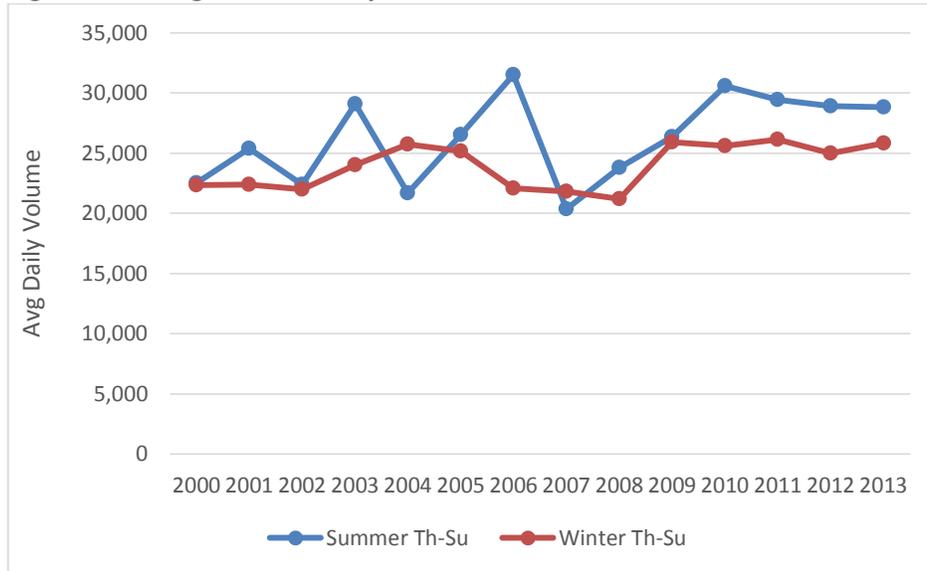
Table 4: Modelled Speeds at EJMT and Twin Tunnels under No Action Condition

Season	Day	Period	Direction	Tunnel	Speed
Winter	Saturday	AM	Westbound	EJMT	<10 mph
Summer	Thursday	AM	Westbound	EJMT	14 mph
Summer	Sunday	NN	Westbound	EJMT	24 mph
Winter	Saturday	PM	Eastbound	EJMT	13 mph
Summer	Sunday	PM	Eastbound	EJMT	36 mph
Summer	Sunday	NN	Eastbound	EJMT	37 mph
Summer	Thursday	AM	Westbound	Twin	25 mph
Winter	Saturday	AM	Westbound	Twin	26 mph
Winter	Sunday	AM	Westbound	Twin	30 mph
Winter	Saturday	PM	Eastbound	Twin	26 mph
Summer	Thursday	PM	Eastbound	Twin	29 mph
Summer	Sunday	PM	Eastbound	Twin	30 mph

Overall, since 2000, weekend traffic I-70 has been gradually increasing. **Figure 2** below shows average daily volumes from 2000 to 2013. The graph also indicates large variations in summer volumes from 2001 to 2010, and the effects of the recession from 2007-2010.



Figure 2: Average Annual Daily Traffic, 2000-2013



Nonetheless, commuter patterns over previous years indicate a possible decline in commuting trips along the I-70 corridor. **Tables 5 and 6** below show the level and percentage of workers commuting to Summit and Eagle Counties from their residential locations. Both Jefferson and Denver County residents commuting to Summit and Eagle Counties declined significantly from 2005 to 2011, although the economic recession likely impacted this trend.

Table 5: Summit County Commuter Patterns (2005 and 2011)

2011			2005		
	Count	Share		Count	Share
All Counties	17,419	100.00%	All Counties	16,700	100.00%
Summit County	7,117	40.90%	Summit County	5,177	31.00%
Eagle County	1,065	6.10%	Jefferson County	1,884	11.30%
Jefferson County	941	5.40%	Lake County	1,239	7.40%
Boulder County	924	5.30%	Denver County	1,060	6.30%
Grand County	634	3.60%	Eagle County	973	5.80%
Park County	579	3.30%	Arapahoe County	890	5.30%
Denver County	561	3.20%	Adams County	700	4.20%
Lake County	434	2.50%	El Paso County	649	3.90%
Douglas County	398	2.30%	Boulder County	517	3.10%
Arapahoe County	378	2.20%	Larimer County	510	3.10%
All Other Locations	4,388	25.20%	All Other Locations	3,101	18.60%

Source: U.S. Census LEHD

Table 6: Eagle County Commuter Patterns (2005 and 2011)

2011			2005		
	Count	Share		Count	Share
All Counties	27,370	100.00%	All Counties	26,289	100.00%
Eagle County	15,970	58.30%	Eagle County	12,698	48.30%

Garfield County	1,598	5.80%	Garfield County	2,638	10.00%
Summit County	859	3.10%	Lake County	1,470	5.60%
Mesa County	761	2.80%	Denver County	1,125	4.30%
Denver County	736	2.70%	Jefferson County	1,072	4.10%
Lake County	613	2.20%	Arapahoe County	900	3.40%
Jefferson County	599	2.20%	Mesa County	768	2.90%
Pitkin County	568	2.10%	Summit County	626	2.40%
Routt County	451	1.60%	Pitkin County	559	2.10%
Arapahoe County	437	1.60%	Adams County	470	1.80%
All Other Locations	4,778	17.50%	All Other Locations	3,963	15.1

1.5 Scope of Work

The following activities were carried out as part of the analysis:

1. Analysis of I-70 Corridor conditions, including CDOT traffic counts.
2. Review of previous studies relevant to this analysis including:
 - CTE Preliminary Traffic and Revenue Study (2004);
 - I-70 Mountain Corridor Final Programmatic Environmental Impact Statement (PEIS) (2011);
 - Investment Grade Traffic and Revenue Study U.S. 36 Managed Lanes (2011);
 - Inter-regional Connectivity Study (ICS) Level 1 Evaluation Report (2012);
 - Inter-regional Connectivity Study (ICS) Level 2 Evaluation Report (2013);
 - Co-Development, Multi-Modal, I-70 Mountain Corridor Project (2012).
3. Elaboration of basic assumptions for evaluation and model development.
4. PEIS travel model evaluation and upgrading.
5. Development and application of traffic and revenue forecasting tool.
6. Development of Cash Flow Analysis for each alternative.
7. Analysis and review of traffic and revenue outputs.
8. Collection of traffic counts along I-70 during the summer and winter periods.

1.6 Summary of Data Sources and Methods

The traffic model evaluation, updating, and development included a number of sources provided by CDOT and the Parsons Engineering Team including:

- I-70 Project Record;
- Denver Regional Council of Governments (DRCOG) Compass and Focus Models;
- 2010 US Census Data;
- 2006-2010 US American Community Survey (ACS) Block Group data;
- 2010 Census Transportation Planning Package (CTPP) Part 2 Workplace Location TAZ data;

- State Demographer population and employment data;
- CDOT 2000-2013 ATR and Short-Term Counter data;
- Original PEIS Network Modeling Tool and updated contour information;
- Alignments for all alternatives provided by the Parsons Engineering Team;
- CDOT Spot Speed Radar Devices from 2010 to present;
- CDOT Segment Travel Times from 2010 to present;
- CDOT Ramp Metering Systems Data in 5-minute bins for the past 12 months.
- Google Satellite Web Map Server

1.7 Proposed Alternatives

As discussed earlier, the PLT and the TT agreed upon 6 alternatives to evaluate. CDOT requested traffic and revenue forecasts for one specific sensitivity analysis labelled 5.1 and are included in Table 7 below which provides a brief description of each of the alternatives. Table 7 also includes the Base Condition scenario, also known as the “no build” condition. The base condition simulates existing corridor conditions including the fully built and tolled eastbound temporary peak period shoulder lane (PPSL) from Empire to Floyd Hill as well as the widening of the eastbound Twin Tunnels. One additional scenario was evaluated and used exclusively for comparison purposes. This scenario, labelled “all tolled” scenario, involved tolling all lanes of the existing roadway for the full 55 mile length of the corridor. The full description for each of the alternatives and options is included in Appendix A.

Table 7: Description of Alternatives Selected for Evaluation

Alternative	Description
Base Condition	Existing roadway including eastbound temporary peak period shoulder lane improvements. Includes CDOT Bus.
1	Two reversible, tolled, managed lanes (part of the Parsons Unsolicited Proposal). Includes BRT.
2	Three reversible, tolled, managed lanes at 65MPH (part of the Parsons Unsolicited Proposal). Includes BRT.
3	PEIS Minimum Program – toll at 3 rd bore EJMT (this alternative is strictly based on the PEIS description, and therefore does not include the eastbound PPSL). Includes AGS.
4	PEIS Maximum Program – one non-reversible tolled lane Eastbound, Westbound. Includes AGS.
5	Permanent Peak Period Shoulder Lane (both directions): left side tolled, managed side lane for peak time use. Includes AGS
5.1 sensitivity	Permanent Peak Period Shoulder Lane (both directions): left side tolled, managed side lane for peak time use. Includes AGS. Does not include a 3 rd bore at the EJMT.
6	Temporary Peak Period Shoulder Lane (both directions): Narrower West Bound tolled, managed lane for peak time use. Includes AGS

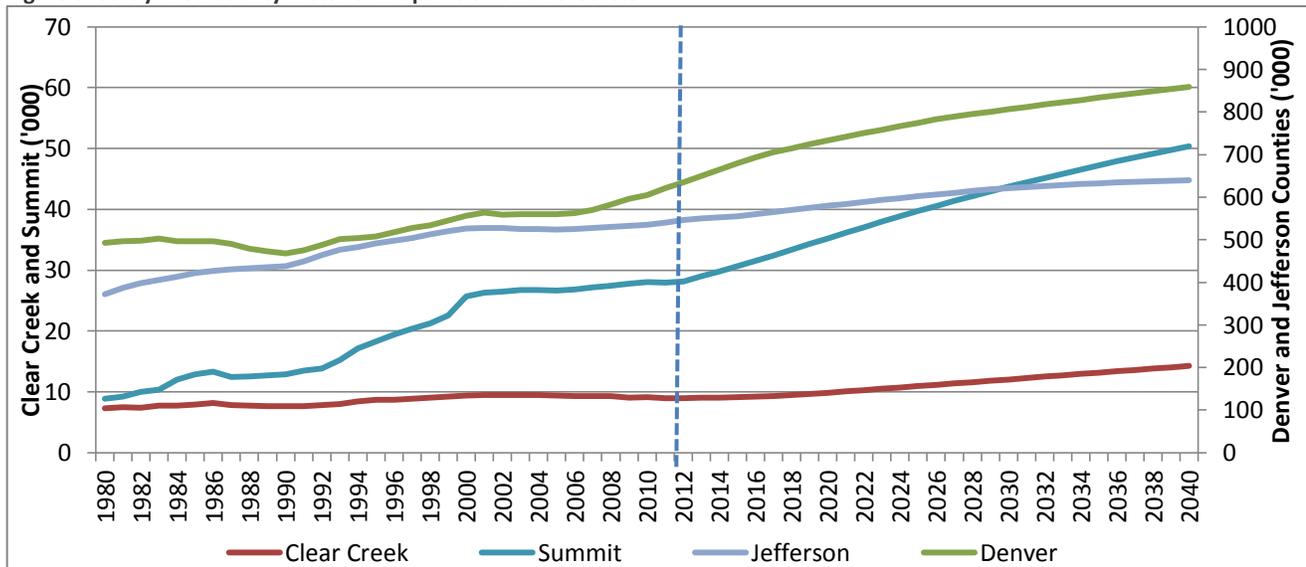
2. Regional Socioeconomic and Travel Conditions

2.1 Population

The population of Colorado grew by 16% from 2000 to 2010, and according to available forecasts the State is expected to continue to grow at that rate in the future. The growth of Colorado is highly dependent on the strength of the economy and tourism demand. The State’s policies for taxation and benefits for companies and individuals as well as other attributes such as environmental considerations are also important indicators of growth.

Figures 3 and **Table 8** below illustrate anticipated growth, which will be more robust in the valley areas of Summit, Eagle and Clear Creek Counties than in the more populated urban areas of Jefferson and Denver Counties. Although the percentage growth is higher for these areas, the actual level amounts for the urban areas are much higher than the Valley Counties as they have larger base populations. Population growth forecasts from DRCOG vary slightly from the State Demographer and Department of Labor estimates. These forecasts are shown on **Table 8**.

Figure 3: Study Area County Historical Population and Forecasts



Source: Colorado Department of Local Affairs - State Demographers, as of 2013

Table 8: State Demographer/Department of Labor (2013) and DRCOG Population Growth Forecast

State Demographer		DRCOG
2010-2040	Population	2010-2035
Clear Creek	1.5%	1.5%



Jefferson	0.6%	1.2%
Denver	1.2%	1.1%
Summit	2.0%	
State	1.4%	
Corridor Counties	0.9%	
Metro Region		2.0%

A review of the historical components to the population changes show the underlying trends of growth in both the urban areas (Denver and Jefferson) and the Valley areas (Summit and Eagle). Recent trends in the urban areas show a net increase in migration while the Valley areas show limited net migration and a population loss in 2011. **Figures 4 and 5** show the historical components of population change. The historical data shows positive net migration between 1991 and 2000 and a significant increase in net migration in the valley areas in 2000. After 2000 there is a period of loss in net migration until 2007, when increases in migration pick up.



Figure 4: Composition of Population Change (Denver and Jefferson Counties)

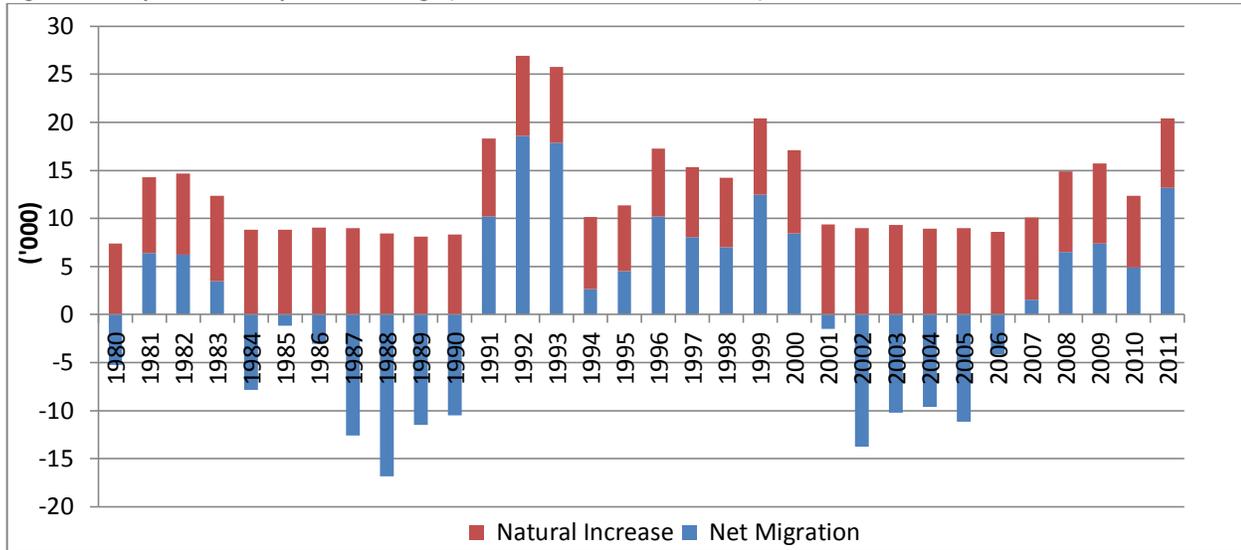
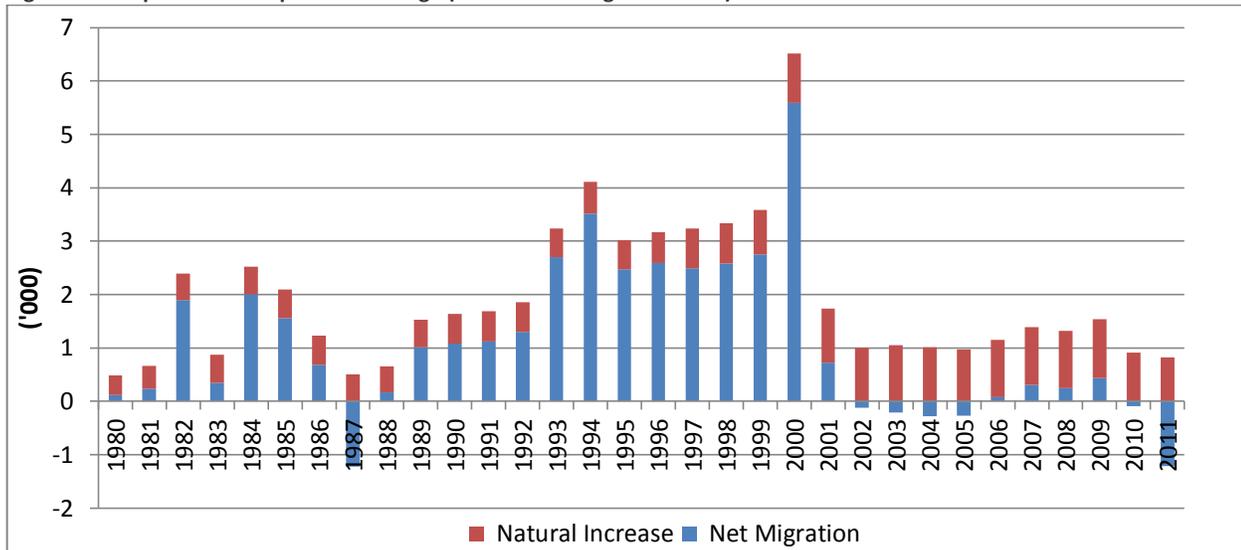


Figure 5: Composition of Population Change (Summit and Eagle Counties)

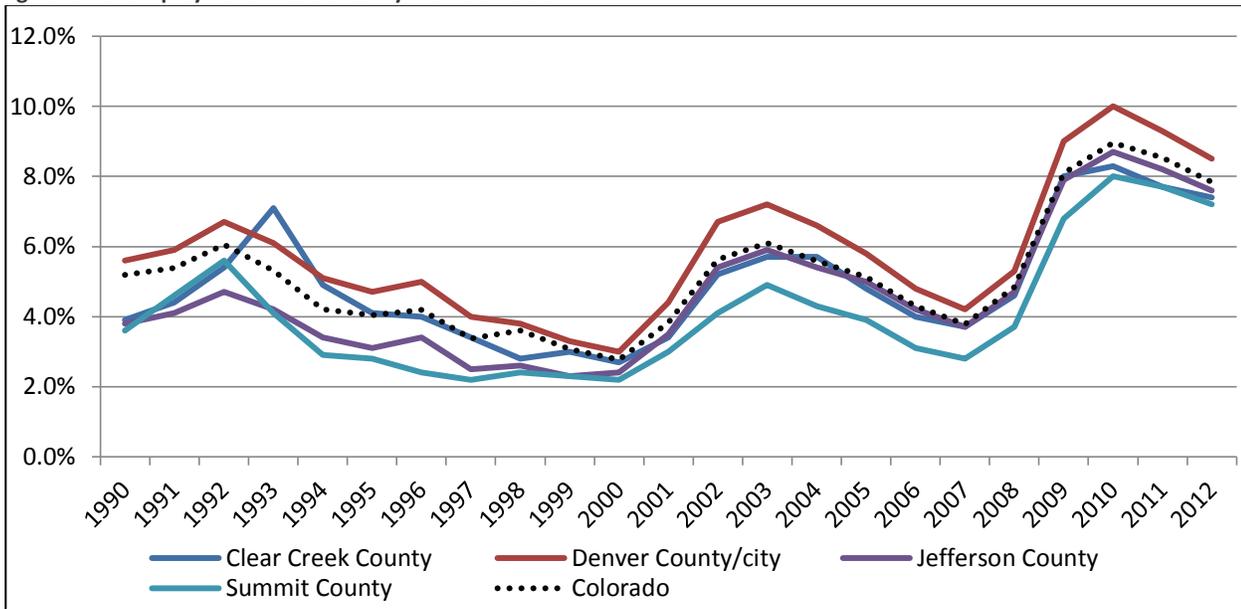


2.2 Employment

Employment in the study area is currently at its highest underutilization rates. The sluggish economy over the past several years has created a persistently high rate of unemployment. However, the expectation that unemployment rates will revert back to the State average of 5.2% is inherent in the forecasting process which assumes median trends over time. **Figure 6** shows the historical trend of unemployment in the study area counties. As the figure shows, recent unemployment rates are unusually high.

This recent trend has impacted the overall job market in the study areas as counties with high dependency on consumer spending have been slow to recover. Figure 6 shows the study area counties' payroll employment from 1990 to 2012. The relationship between total employment and the unemployment rate is more evident in Denver County since its unemployment rate is higher than the State average.

Figure 6: Unemployment Rates of Study Area Counties



Source: Bureau of Labor Statistics

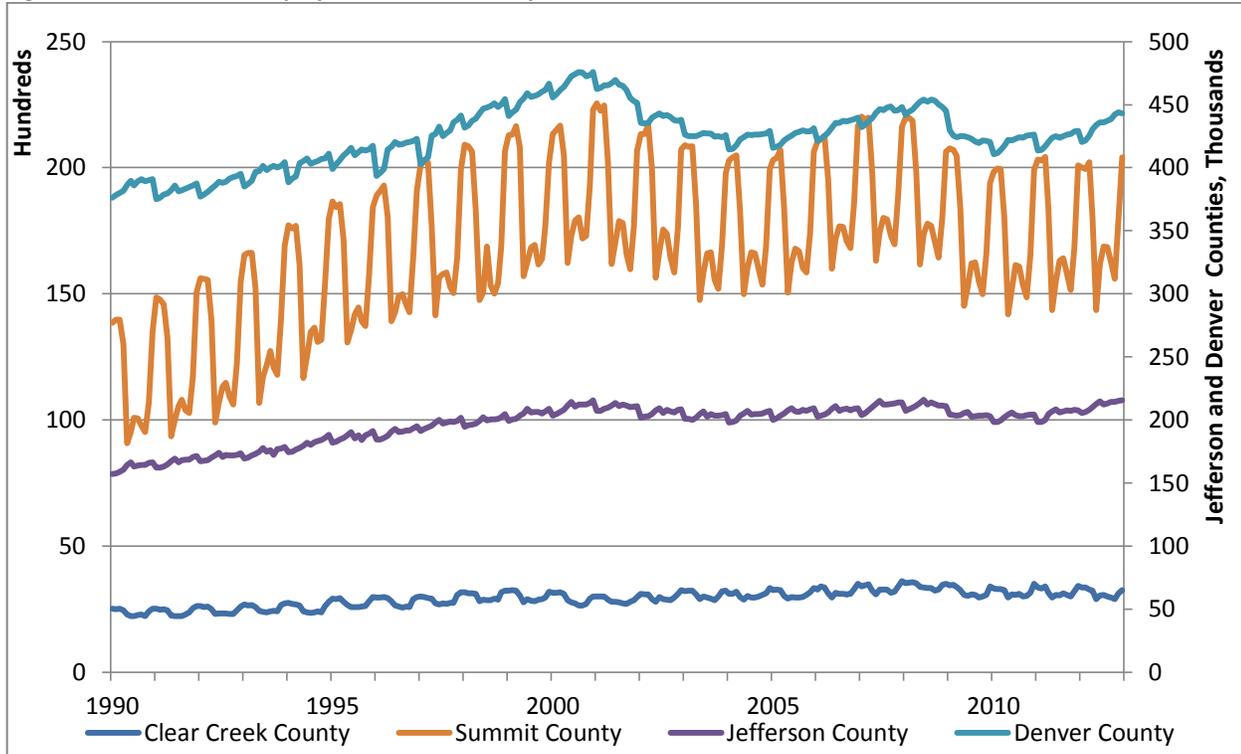
Despite recent high unemployment rates, employment growth projections suggest a return to more consistent historical growth trends. The employment forecast along the I-70 Corridor is, as with population, lower than the State average. **Table 9** illustrates employment growth forecasts from the State Demographer for relevant Counties and the State of Colorado:

**Table 9: State Demographer/Department of Labor
Employment Growth with Forecast (as of 2013)**

2010-2040	Employment
Clear Creek	1.80%
Denver	1.50%
Summit	2.40%
State	2.00%

Employment along the corridor is highly seasonal given that the region's economy is thrives on winter and summer tourism. This trend is best illustrated by employment rates in Summit County, where swings in employment from the winter peak season to spring and fall off-peak seasons average 30%, or 7,600 employees. Employment trends are illustrated in **Figure 7** below:

Figure 7: Historical Total Employment Trends in Study Area Counties

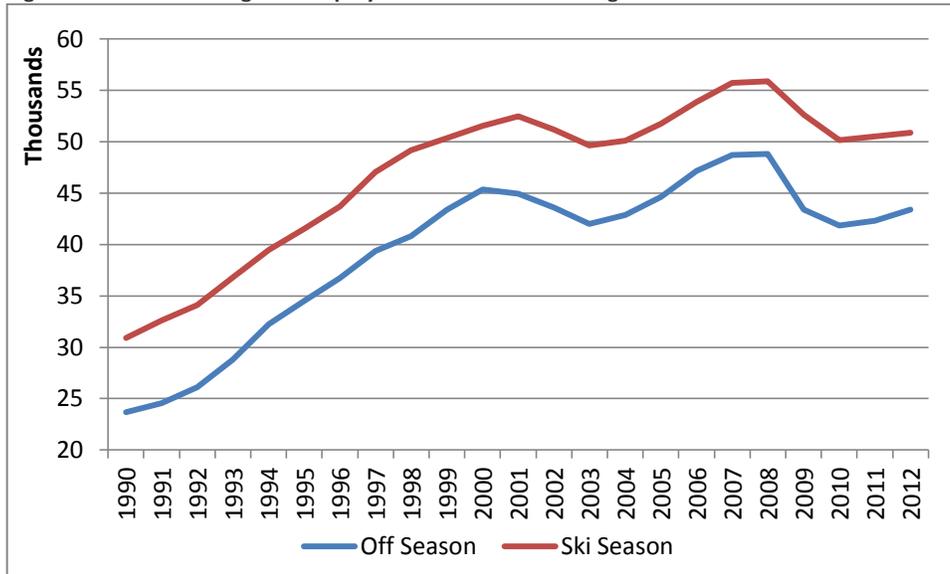


Source: Bureau of Labor Statistics

Figure 8 below shows employment averages for both Eagle and Summit counties during their (ski) peak (December to February) and off-peak (April to November) seasons. The off-peak season includes the “summer peak” season. The seasonality of this data clearly shows that the study areas’ employment is directly tied to the seasonal changes in the mountainous region of I-70.



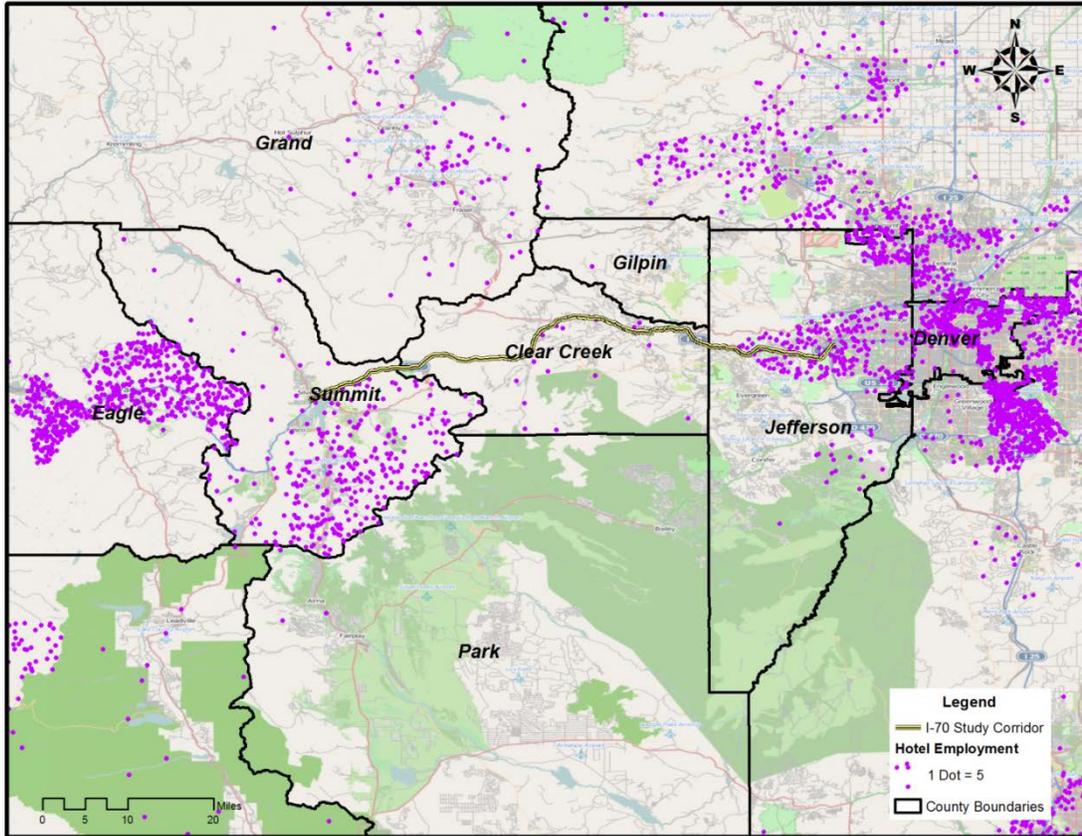
Figure 8: Seasonal Changes in Employment in Summit and Eagle Counties



Source: Bureau of Labor Statistics

Industries like hospitality and accommodations are major contributors to this seasonal pattern. **Figure 9** below shows the clustering of hotel employees for the study area region. A significant amount of hotel employment is present in the southern portion of Summit County and eastern portions of Eagle County, in Breckenridge and Vail ski resorts respectively.

Figure 9: Hotel Employment Estimates (by Zip Code)



Source: U.S. Census Business Patterns, Zip Code Level 2011

Although the concentration of seasonal employment could be isolated to the recreational and accommodation industries, other industries that may not be directly impacted will have higher demand during the peak winter seasons. For instance, the population in Summit and Eagle Counties swell during the seasonal periods, increasing the demand for a variety of goods and services. To verify the increase in temporary population that cannot be accounted for in the local accommodation industry services (e.g. hotel rooms), a count of seasonal housing was reviewed. Figure 10 below shows seasonal housing clusters in the study area. This confirms that demand beyond hotel capacity is possible. **Table 10** shows the percentage of seasonal housing that is used during seasonal peaks.

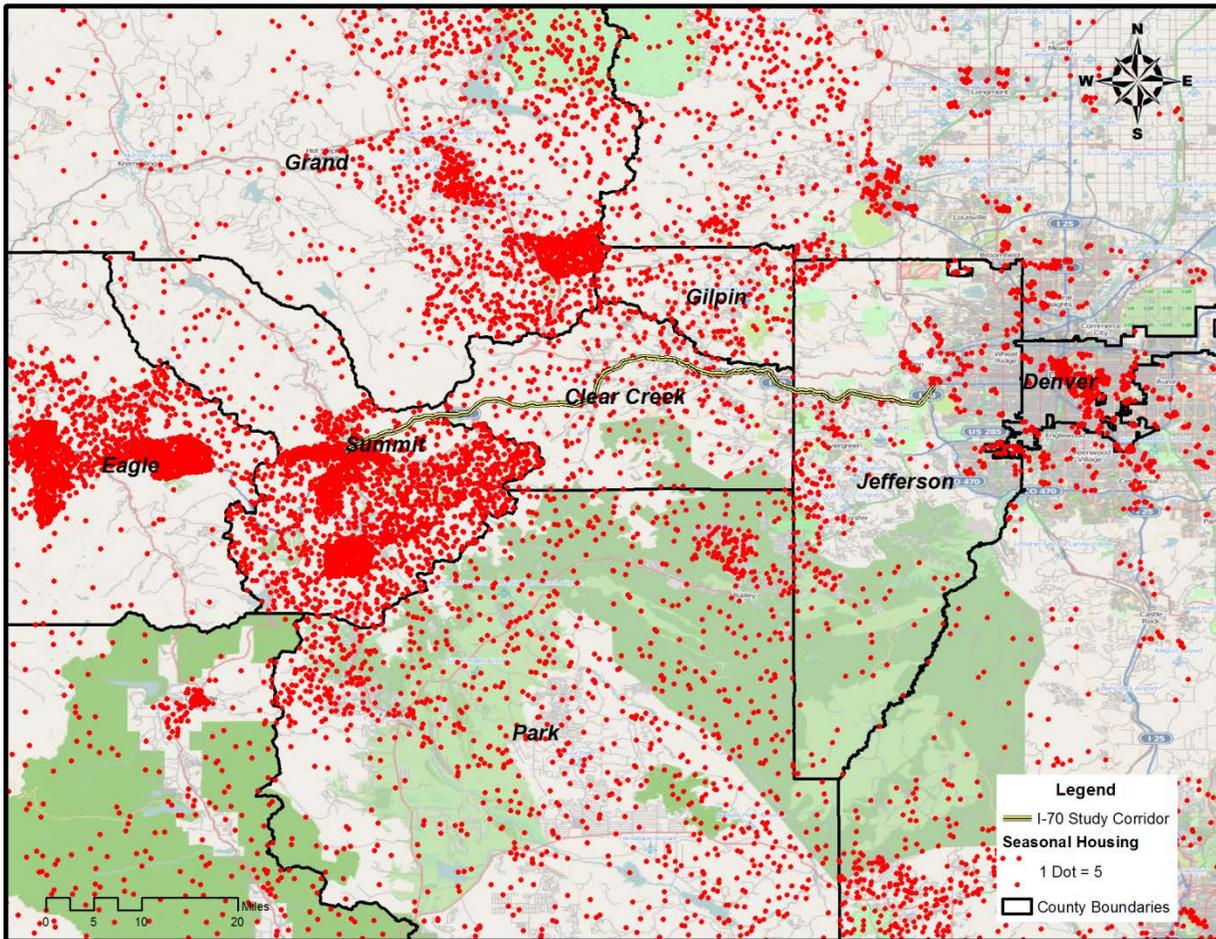
Table 10: Percentage of Housing that is Seasonal by County

County	Seasonal, Recreational, or Occasional Use as a % of Total Housing
Clear Creek County	22.1%
Eagle County	35.0%
Summit County	50.9%
Jefferson County	0.8%
Denver County	0.9%

Source: American Community Survey (ACS) 2008-2012, Table B25004 Vacancy Status for Housing



Figure 10: Seasonal Housing Counts



Source: American Community Survey (ACS) 2008-2012, Table B25004 Vacancy Status for Housing

3. Model Evaluation, Updates, and Assumptions

As discussed earlier, the traffic modeling conducted for this Traffic and Revenue study relied upon the PEIS model (2003). The Louis Berger team evaluated the PEIS model, performed updates on the model and validated its calibration. The team also developed and ratified with CDOT and the project stakeholders a series of assumptions related to trip descriptors, market segments, model run parameters, traffic growth, operations, and financial assumptions. The model and the assumptions were used to develop the 2025 forecast runs. Section 3 of this report describes the PEIS model, explains the updates performed on the model, and illustrates the long-term forecast projection tool.

3.1 Description of the Programmatic Environmental Impact Statement (PEIS)

The PEIS model consists of a full regional travel network with detailed representation of feeding and competing roadways. The I-70 portion of the model has 80 distinct Eastbound (EB) and Westbound (WB) links, with each link representing a distinct capacity, speed, elevation, geometry, and congestion and capacity factors.

The model is split into three distinct seasons: Summer, Winter, and Mud (off-peak season). The peak travel seasons are defined by 12 winter weekends in a year (a total of 48 days) running from the Friday after Thanksgiving to April 15th; and 17 summer weekends in a year, from June 1st to September 30th (a total of 69 days). The remaining 23 weekends in the year from April 16th to June 1st and September 30th – Thanksgiving Day (92 days) are considered off-peak for the purposes of this analysis.

The model displays four day types: Weekday (equivalent to Thursday), Friday, Saturday, and Sunday. It includes 165 Fridays, Saturdays, Sundays, and Holidays per year. **Table 11** displays the split by day and season:

Table 11: Number of Days by Day Type and Season

	Summer	Winter	Spring/Fall (Off peak)
Friday	16	23	13
Saturday	16	23	13
Sunday/Holiday	21	25	15
Weekdays	59	90	51

The PEIS model splits daily traffic in four distinct time periods:

- Morning (AM) peak period: 6:00 AM to 9:59 AM
- Midday or Noon period: 10:00 AM to 2:59 PM
- Afternoon (PM) peak period: 3:00 PM to 6:59 PM
- Night period: 7:00 PM to 5:59 AM the next day

Regardless of the day type, traffic volumes are highest in the AM and PM periods and lowest in the Noon and Night periods.

Each link in the network has a level of congestion at different times, days, periods, seasons, and direction (EB, WB). The model reflects a comprehensive representation of origin and destination patterns and trip purposes (work, non-work, and recreation) with income stratification. Vehicles are divided into three categories: automobiles, single unit trucks, and combo unit trucks. Recreational vehicles and single axel trucks are combined in the single unit truck category, while double axel trucks, combo unit trucks, and buses are combined in the combo unit truck category.

3.2 Review of the PEIS Traffic Model

The first step in the Level 1 sketch plan involved reviewing the 2003 I-70 PEIS Travel Model System in order to ascertain the travel model's current form and function. The review centered on an evaluation of the model's goodness of fit and the means – the assemblage of data and models – by which that fit is achieved.

The PEIS travel model is a traditional four-step travel demand model comprising trip generation, trip distribution, mode choice, and traffic assignment steps. In spite of its traditional structure, the model is, by nearly any standard, large and complex. The traditional four steps are intermixed with a variety of pre-processing, intermediate, and post-processing steps. Thus, the model is large not only in terms of its geographic scale of coverage but also in terms of the sheer number of steps and adjustments that it traverses in order to arrive at a forecast for any given scenario. The complexity of the model has ramifications for the model's suitability for any application beyond that of a sketch planning tool, particularly where tolls are involved. For purposes of the Level 1 sketch planning analysis, a series of modifications to the model described in the coming section ensured that the model performed adequately for a first round evaluation of the proposed alternatives.

Goodness of Fit of the Model

The Louis Berger Team evaluated the PEIS model results for 2000 by comparing them with year 2000 counts recorded on the CDOT Online Transportation Information System (OTIS) continuous counters on freeways. **Table 12** below illustrates the Percent Root Mean Square Error differences between counts and model flows by season, day, time of day, and direction. **Table 13** performs the same comparison for year 2010. The numbers of count locations used in each comparison are different due to the varying availability of counts from each source and in each year. For example, many more short-duration counts were collected and are available from OTIS in 2010 than in 2000. For the 2000 model run, the 2000 PEIS model network and year 2000 input demographics were used. For the 2010 model run, input demographics were estimated for 2010 while the year 2000 network was used.

Typically for a travel demand model, at a daily level, a %RMSE difference of below 20% for freeways is desired between counts and model flows. When comparing counts and flows by time period, slightly higher %RMSE values are acceptable. As seen in **Tables 12 and 13** below, the goodness of fit varies widely depending upon the season, day, and time period. In general, Summer Saturday and Summer Sunday fits are better than Summer Thursdays and Summer Fridays. Winter Thursday and Winter Saturday fits are better than Winter Sunday and Winter Friday. A large percentage of the season, day, and time period comparisons fall within the 20% RMSE criteria, but there are some time periods that are a little outside the criteria and some periods fall well outside the criteria.



Table 12: Percent RMSE Comparison between 2000 PEIS Model Volume Results and 2000 OTIS Counts

Season	Day	Eastbound			Westbound		
		AM	PM	Noon	AM	PM	Noon
Summer	Thursday	36.02	35.80	63.45	76.76	4.32	41.26
Summer	Saturday	3.71	47.37	18.31	8.77	31.78	12.96
Summer	Sunday	6.14	3.63	2.18	20.75	50.22	40.75
Summer	Friday	42.71	33.59	26.92	36.28	26.08	40.84
Winter	Thursday	31.08	15.36	22.56	23.31	14.52	36.66
Winter	Saturday	8.21	28.13	5.73	33.12	19.21	29.28
Winter	Sunday	37.93	19.35	42.61	35.32	19.61	35.35
Winter	Friday	43.72	43.29	37.99	32.20	48.99	40.37
Mud	Thursday	41.27	6.89	32.02	4.82	6.16	64.50

Table 13: 2010 Percent RMSE Comparison between 2000 PEIS Model Volume Results and 2000 OTIS Counts

Season	Day	Eastbound			Westbound		
		AM	PM	Noon	AM	PM	Noon
Summer	Thursday	51.28	22.51	23.57	77.75	36.89	27.60
Summer	Saturday	11.34	37.71	9.84	10.86	37.71	8.95
Summer	Sunday	11.57	19.55	7.57	29.40	49.53	32.57
Summer	Friday	26.64	15.24	4.81	33.71	30.68	32.92
Winter	Thursday	14.06	10.80	14.37	11.73	5.25	17.75
Winter	Saturday	25.78	31.78	12.99	14.62	26.70	22.37
Winter	Sunday	47.83	23.37	50.54	25.76	15.72	10.63
Winter	Friday	31.64	45.64	47.10	47.39	54.30	46.20
Mud	Thursday	50.18	112.32	47.13	33.43	45.26	72.15

One important comparison is to identify goodness of fit in particular locations along the corridor. **Figures 11-16** below exemplify the goodness of fit between 2000 PEIS model volumes and counts at nine locations along the corridor for the AM, mid-day, and PM periods on a Summer Saturday. Maps of other seasons and days in 2000 and 2010 illustrate similar variability in the results.

Figure 11: AM peak period counts (shown in red) and model volumes (shown in black) in the eastbound direction



Figure 12: AM peak period counts (shown in red) and model volumes (shown in black) in the westbound direction





Figure 13: PM peak period counts (shown in red) and model volumes (shown in black) in the eastbound direction



Figure 14: PM peak period counts (shown in red) and model volumes (shown in black) in the westbound direction





Figure 15: Mid-day counts (shown in red) and model volumes (shown in black) in the eastbound direction



Figure 16: Mid-day counts (shown in red) and model volumes (shown in black) in the westbound direction



Table 14 below summarizes the PEIS relative root mean square error (%RMSE) between the year 2000 model volumes and counts across the same nine count stations by season, day, and time of day. The model does not exhibit any consistent bias toward underestimating or overestimating volume on the corridor. Rather, volumes are high in some time periods on some days in some seasons and low in others.

Relative to the counts on Fridays in all seasons, the model volumes are, by a significant margin, consistently low. In particular, trip-making in the corridor on Fridays has the highest variability when compared to traffic counts.

Table 14: Relative (percent) root mean square error by season, day, and time of day

Season	Day	AM Peak	PM Peak	Mid-day	24-hour
Summer	Thursday	59.8%	16.3%	19.1%	19.6%
Summer	Saturday	22.0%	22.9%	13.2%	20.3%
Summer	Sunday	23.6%	19.5%	15.6%	17.5%
Summer	Friday	41.7%	32.8%	28.2%	33.1%
Winter	Thursday	29.1%	24.0%	23.7%	17.9%
Winter	Saturday	28.2%	22.4%	23.6%	21.0%
Winter	Sunday	27.5%	18.5%	38.1%	26.9%
Winter	Friday	44.0%	54.0%	41.6%	47.6%
Mud	Thursday	27.2%	13.7%	38.8%	27.8%
Mud	Saturday	21.9%	17.0%	24.6%	35.5%
Mud	Sunday	17.2%	15.7%	17.1%	28.7%
Mud	Friday	55.9%	41.2%	18.8%	42.3%

3.3 Traffic Model Refinement

The model was updated in order to make it more current with respect to both demographic variables (e.g., population) and state-of-the-practice modeling techniques. Critical to the model update was the inclusion of managed lanes with tolls, which were not part of the PEIS model’s original scope of analysis. The Berger Team performed the following revisions and updates on the model:

- Conflated the I-70 corridor links to aerial photography to reflect true geography and geometry;
- Updated the PEIS model script to TransCAD version 6.0 platform;
- Updated the model’s demographics to 2010 based on US Census data;
- Updated the traffic assignment to support traffic assignments with tolls and have a more stringent convergence criteria; and
- Had truck trips be explicitly assigned and have separate PCE effects in a multi-user, multi-class traffic assignment.

Improved Geographic Accuracy

The PEIS model network and traffic analysis zone (TAZ) geography were adjusted to align better with both Census 2010 geography and with aerial photography. The original network links and TAZ boundaries were offset about 500 to 750 feet from their true locations. Highway and adjacent links (e.g., ramps and local roads at interchanges) along the I-70 corridor were reshaped to align accurately with aerial photography. This adjustment vastly improves the distance estimates, and thus travel times and related performance measures, of the links along the corridor.

Model Update to TransCAD Version 6.0

The PEIS model was originally developed in TransCAD 4.5, a version of TransCAD that is almost 10 years old. That version was designed for older generations of computer hardware and operating systems. The model and model scripts were updated to be compatible with TransCAD version 6.0. The changes included the update of some script elements to exploit more modern GISDK coding conventions and the update of certain model procedures such as transit network building and skimming to support the latest calling conventions. By virtue of the update to version 6.0 of the TransCAD platform, numerous steps of the model run considerably faster than they would have in version 4.5.

2010 Demographic Update

The PEIS model uses standard demographic variables such as population, household, and employment to explain trip productions and attractions. However, numerous other special demographic variables are used to predict recreational trips of various kinds. The model includes measurements, estimates, or projections of all demographic variables for years 2000 and 2025. To bring the model up to date, The Berger Team added demographic estimates of those variables available in Census and other data sources for the year 2010.

More specifically, to estimate population and households, Census 2010 SF1 data at the block level were extracted for the study area and summarized to the PEIS TAZs. Geographic overlays were performed to aggregate from Census blocks to TAZs because the 2010 blocks did not nest entirely within the PEIS TAZs. To estimate households by income level, American Community Survey (ACS) 2006-2010 block group data were used and then summarized to the TAZ level. To estimate employment by sector, CTPP Part 2 (Workplace Location) occupation estimates by TAZ were used and then summarized to the PEIS TAZs.

For those special demographic variables that are used to explain recreational trip productions and attractions (e.g., air passengers, 2nd homes, etc.), updates could not be estimated from Census or any other source. To represent 2010, these variables were estimated based on year 2000 and 2025 demographic estimates and current 2010 employment estimates. Most of the special demographic attributes are tourism related and are therefore likely to be closely tied to retail and service employment. Thus, the estimate for any given special attribute is based on the formula given below:

$$Att_{2010} = Att_{2000} + \frac{Emp_{2010} - Emp_{2000}}{Emp_{2025} - Emp_{2000}} * (Att_{2025} - Att_{2000})$$

where:

Att_{year} = Special attribute value for the given year

Emp_{year} = Service + Retail employment for a given year

Traffic Assignment

It is important that a model of facilities with tolls have a good grasp of the travel market segments and the ability to consider different levels of willingness to pay, as measured by the Value of Time (VOT), in its traffic assignment process. The PEIS travel demand model is not adequately equipped to effectively predict patronage of managed lanes or pricing: in the original PEIS travel model, the traffic assignment step is a single-class Frank-Wolf User Equilibrium assignment wherein all trip purposes and types are combined into a single origin-destination (OD) trip matrix. The single-class assignment is insensitive to pricing and thus unsuitable for evaluation of managed lane alternatives. In other words, the PEIS does not consider the full range of users' willingness to pay for time savings.

The traffic assignment step was updated to support multiple classes of users and to be sensitive to tolls. In other words, the single-class traffic assignment was replaced by a multi-user, multi-class traffic assignment (MMA) which considered willingness to pay (values of time) as the primary means to assign traffic between general or managed lanes. The VOT allocation by user class is described in the willingness to pay section below.

In the PEIS, single unit truck trips were calculated in the RV, SINGLE, and SINGLEIX trip purposes, and combo unit truck trips were calculated in the COMBO and COMBOIX trip purposes. Originally, all truck trips were combined with auto trips into a single OD matrix of passenger car equivalent (PCE) trips, which were then input to the single-class traffic assignment. Model modifications involved separating the truck user classes into single unit and combo unit truck classes and assigning them with the other auto vehicle classes in an MMA. The auto vehicle classes were split by trip purpose, with each trip purpose modeled with its own value of time, as discussed below.

The traffic assignment was also updated to allow differentiated tolls by time period, by vehicle class, and by individual link. For the I-70 section, this translated into a fixed toll at tunnel links and per-mile tolls along the rest of the I-70. Dynamic tolling was estimated by applying different toll rates for different time periods.

3.4 Updated Model Parameters and Assumptions

The following assumptions were developed after careful review of earlier studies including the PEIS; CTE Preliminary Traffic and Revenue Study; Parsons's Co-Development Proposal; AGS Feasibility Study; and the Interregional Connectivity Study (ICS). The assumptions were presented to CDOT and discussed during the month of November, 2013. Stakeholders provided input and requested clarifications during the joint Project Leadership Team and Technical Team meeting in Golden December 2013.

Model Run Parameters and Operations

Modeling Years: The base year for the study is 2010, for which the model has been adjusted using existing Census and ACS data and traffic counts. The team modeled 2025 travel demand forecasts, and used the forecasting tool (described in a later section) to forecast future periods of , 2035, 2045, 2055, and 2075. All intermediate years were extrapolated from these base results by calculating compound annual growth rates (CAGR).

Design: With the exception of Alternative 6, the temporary peak period shoulder lane (PPSL), all alternatives were modeled using full AASHTO Standards. The lane capacities were determined using the lane widths and geometrics provided by the Parsons Engineering Team. Similarly, shoulder widths were based on the TRB Highway Capacity Manual (HCM) or material provided by Parsons Engineering Team. Highway percentage grades were also derived from topographical mapping and material provided by Parsons Engineering Team.

Vehicle Lane Capacities: In terms of vehicle lane capacity, the HCM provides guidelines on speed-flow curves for freeways, which are a good proxy for managed lanes where open road tolling is implemented. The team adjusted these guidelines for the number of entry points, lane width, truck utilizations, grade, and other relevant factors. Parsons developed capacity assumptions to determine the number of exit lanes per the below. It is worth noting that these are ramp capacities, not mainline freeway capacities.

- 1,700 max vehicles per hour per lane (veh/hr./ln) for direct connector ramps
- 1,500 max veh/hr./ln for diamond/traditional ramps
- 1,300 max veh/hr./ln for loop ramps

Interchange configuration: Interchange configuration varies depending on the alternative and location. For the reversible, managed lanes (Alternatives 01 and 02), standard diamonds similar to existing configurations were used with weave access from managed lanes except where operational improvements are anticipated. Exits and entrances to managed lanes occur outside of the ramp gores at appropriate distances to allow merge and weave movements across the general purpose lanes. Where larger traffic volumes are expected, diamond interchanges with separate ramps providing direct connections in the center combined with roundabouts and median separation to control directional access to the reversible managed lanes was provided. For connections onto the main highways US-40 and C-470 and other areas, direct systems-to-system connection ramps applied. Alternative 04 will use standard diamond interchanges as they currently exist, with access from toll lanes provided with weave movements. Alternatives 03 and 05 provide widening improvements as needed to match the existing interchange configuration. Alternative 06 has very minimal widening associated with this work, ramps are primarily in same configuration as existing with minor improvements at the gore locations to tie to proposed lanes.

Lane Usage: Trucks and buses are allowed to use the capacity enhancements in all alternatives including the PPSL. No High Occupancy Vehicle (HOV) allowances will be provided for any additional capacity.

Diverted Traffic: The multi-class traffic assignment procedure within the travel demand model handles traffic diversion from I-70. In the Bi-Conjugate Frank-Wolfe User Equilibrium assignment method, when network links like the I-70 become too congested, alternate paths for traffic such as Loveland pass are

chosen. Enough traffic volume is diverted such that the travel times between alternate paths (i.e. I-70 vs. Loveland Pass) are equalized. In addition to the I-70 example, the concept of diverted traffic and equalized route alternatives applies to all parts of the network.

Value of Time

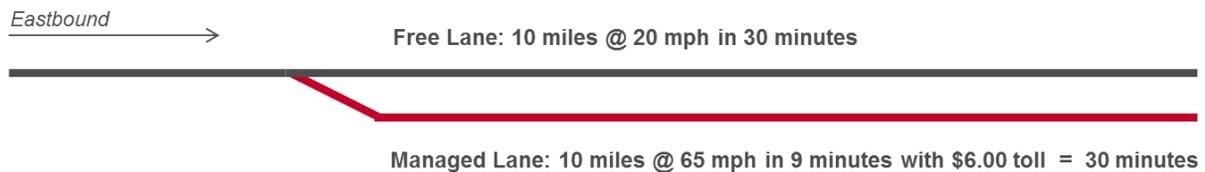
The Value of Time reflects the estimated price which an individual is willing to pay in exchange for time savings on a given journey. It is crucial to consider different VOT estimates for different market segments of travelers and trip purposes in the traffic assignment process in order to ensure the reliability of the revenue forecasts. The image below provides an example of how traveler value of time impacts the choice of whether or not to use the managed lanes on I-70. In this hypothetical situation, a driver whose estimated value of time is \$17.50 for every hour of travel – \$0.29 cents for every minute – would be willing to pay a six dollar toll for a ten mile journey if he can save 21 minutes, since \$6.00 plus the value of 9 minutes is equivalent to the value of 30 minutes that it would take him to travel the same distance on the free lanes.

Figure 17: Value of Time Example

Median Value of Time:

\$17.50 = 1 hour of travel *or*
\$ 0.29 = 1 minute of travel

\$6.00 toll (\$0.60/mile) = 21 minutes of travel



Other Equilibrium Conditions:

Free Lane: 10 miles @ 40 mph in 15 minutes = Managed Lane @ 65mph in 9 min with \$1.68 toll (\$0.17/mile)
Free Lane: 10 miles @ 50 mph in 12 minutes = Managed Lane @ 65mph in 9 min with \$0.80 toll (\$0.08/mile)

For the purposes of this sketch level Study, VOTs for each user class were adopted from existing studies of the corridor including the PEIS (Pg. A-149 Technical Report), the AGS Survey (Colorado AGS Mode Choice Model spreadsheet from SDG SP Survey Results), and the Denver Regional Council of Governments (DRCOG) Model. The values of time for each trip purpose and user class are summarized in Table 15 below. All values were converted to 2013 dollars from 2000 dollars in the PIES, 2009 dollars in the AGS Survey, and 1997 dollars in the DRCOG.

As discussed, each user class is also assigned a passenger car equivalency (PCE) value that relates the relative effect of one vehicle in that class to that of a single passenger car. **Table 15** summarizes the

user classes into the original PEIS trip purposes, the VOT assigned to each user class, and the PCE values assumed.

Table 15: Market segments (user classes) in the PEIS travel model traffic assignment

User Class	VOT (\$2013/hr)	PCE
HBW High Income	\$16	1.0
HBW Upper Income	\$15	1.0
HBW Middle Income	\$13	1.0
HBW Low Income	\$11	1.0
Non-Work	\$9	1.0
High VOT Recreation	\$18	1.0
Low VOT Recreation	\$12	1.0
Truck 1 Unit	\$16	1.5
Truck Combo Unit	\$55.02	2.0

*HBW: Home-Based Work

Based on the literature available and on commuter travel demand models in other cities, the VOT values for this corridor seem low. The VOT values are also generally lower than the USDOT guidelines, which suggest a range for intercity personal car trips of \$17-\$24. A more precise evaluation of VOT would require the development of a stated preference survey.

Growth Rates

Growth rate assumptions for this study are based predominantly on the PEIS assumptions in order to provide consistency in comparison of results. The PEIS traffic growth rate ranges from 0.5%-3.0%. This range was tested and benchmarked against employment and population growth rates as well as other relevant data including enplanement numbers at Denver International Airport (DIA) and Colorado Ski Resort Visitation. Based on this analysis, base case forecasts were developed using a 1.4% growth rate. Appendix C includes traffic and revenue forecasts using alternative growth rates of 2.0%, 2.5% and 3.0% which lie within the PEIS range.

Growth rate benchmarking: In addition to the need to maintain consistency with the PEIS, the Berger team conducted review of growth rates and a benchmarking exercise in order to assert the reasonableness of the 1.4% growth rate. Among the data considered was the ICS study, which reflected 0.7% overall growth in total travel through 2035. This growth rate, however, was not specific to the I-70 corridor but rather applied to the entire study area of the AGS system. In general, previous studies in the Corridor including the PEIS indicate that the growth in travel on the I-70 Corridor is somewhat lower than the overall growth in population and employment rates. **Table 16** below displays a series of growth rate benchmarks used as reference points. Based on this benchmarking exercise we consider that the 1.4% growth rate is a reasonable, if conservative, assumption for traffic growth along the corridor.



Table 16: Population, Employment, and Corridor Auto Trip Projections

<u>Year</u>	<u>Geographical Area</u>	<u>Population</u>	<u>Employment</u>
PEIS			
2000-2025	Corridor Counties	2.8%	1.4%
	Denver Metro	3.0%	1.5%
2025-2035	Corridor Counties	1.9%	1.4%
	Denver Metro	0.4%	1.8%
2010-2035	Study Region	1.6%	1.5%
DRCOG (2010)			
2010-2035	Metro Region	2.0%	2.0%
	Clear Creek	1.5%	1.7%
	Jefferson	1.2%	1.6%
	Denver	1.1%	1.5%
State Demographer / Department of Labor (2013)			
2010-2040	State of Colorado	1.4%	2.0%
	Clear Creek	1.5%	1.8%
	Jefferson	0.6%	N/A
	Denver	1.2%	1.5%
	Summit	2.0%	2.4%
	Eagle	2.2%	2.1%
Corridor Auto Trips			
2010-2035	0.71% (ICS)		
2035-2050	0.5%-3.0% (PEIS)		

Transit

Each alternative includes a particular transit mode. The two and three lane reversible managed lanes (Alternatives 1 and 2) include a light Bus Rapid Transit (BRT) system designed to run on the managed lanes at all times. Alternatives 3-6 include the AGS system coming online in 2035, and a limited bus service run by CDOT prior to 2035. The base condition also includes limited CDOT bus service. The descriptions below, along with **Table 17**, summarize the transit assumptions for each mode.

None of the transit options were modeled for ridership estimation purposes. Instead, the ridership for each of the transit options was subtracted as necessary prior to the mode split step in the model for the estimation of each alternative. The ridership was specified as discussed for each of the modes below.

BRT: The Transit Issue Task Force (ITF) developed the assumptions for the BRT mode share by calculating the capacity limits with a low and high occupancy rate range and the capital and operating costs for the service based on costs of existing comparable services. The BRT operating plan including frequency and its start year of operation were adopted directly from the Parson’s Co-development Proposal, while the fare was assumed to be equivalent to the CDOT bus service fare (\$0.17 / mile). The revenue is based on the ridership and fare assumptions. BRT ridership was deducted from auto travel based on the anticipated service provision and the capture rates for the new lanes.

AGS: AGS transit assumptions including mode share, fare, and frequency were directly borrowed from the ICS study. The start year of operation for AGS was assumed based on CDOT guidance of a realistic year for start of operations. Making an assumption for the opening of operations was critical to the modeling process. AGS ridership was deducted from auto travel based on published forecasts for 2035 and extrapolated to 2075 at the pace of corridor growth. As with BRT, revenue is based on ridership and fare assumptions.

CDOT Bus: Assumptions on start year of operation, fare and frequency of the CDOT bus were provided by CDOT but were not used for the purposes of this study. Based on its limited capacity and service, no ridership was deducted from vehicle trips as a result of the bus operations. The CDOT bus service is expected to phase out once AGS operations are underway.

Table 17: Transit Assumptions

	BRT	AGS	CDOT Limited Bus Service
Start year of operation	2018	2035	2014
Ridership for first year of operations (Millions)	0.83	2.35	N/A
Ridership growth rate	1.4%	1.4%	N/A
Fare (passenger mile)	\$0.17	\$0.26	\$0.17
Frequency	20 minute service in peak period (9 hours/day); hourly service for remaining 11 hours of the day (18 hour day service span).	30 minute service in peak period (6 hours/day); hourly service for remaining 12 hours of the day (18 hour day service span).	Two round trips per day 2014-2017

9 plus 11 is not 18 under BRT

Vehicle Occupancy Rate: The vehicle occupancy rate is used in the forecasting tool model to translate between vehicle trips and person trips. The study used a vehicle occupancy rate of 1.67 for weekdays and 1.75 for weekends, based on averages for vehicle occupancy rate per trip purpose presented in the PEIS. The PEIS values ranged from 1.1 for work trips to 2.6 for other trip purposes.

Revenue Calculation and Financial Assumptions

The revenue calculations for this study were performed in real dollar terms and therefore the analysis includes no escalation for inflation. Toll rates and values of time are fixed in current dollars; the model assumes that nominal charges keep pace with inflation. All revenue results presented are in 2014 dollars. The Present Value (PV) for the revenue cash flow was discounted at 5% to the first year of revenue service. The 5% rate is a standard rate reflecting a weighted average cost of capital (WAAC) in real dollar terms. A discounted cash flow (DCF) analysis was conducted in order to evaluate the Net Present Value (NPV) for each alternative. This DCF was conducted in nominal terms and used an 8.25% WAAC. Additional details on the assumptions of the DCF analysis are found in the cash flow analysis included as Appendix D.

3.5 Model Results Validation

Prior to evaluating each alternative, the model results were validated by comparing the 2025 baseline. **Tables 18 and 19** below illustrate that flows between the PEIS and the Louis Berger Traffic and Revenue base condition are within ±5% to 10% at key locations, including the Eisenhower Johnson Memorial Tunnel (EJMT). There are three possible reasons for the discrepancies seen below. First, the addition of tolling capabilities and multiple user classes may have led to discrepancies in the volume estimation of the model. Second, volume differences may be attributed to assigning traffic based on time and cost with the use of VOT. As discussed above, the original PEIS assignment process was purely based on time, without any VOT considerations. Third, some congestion data presented in the PEIS is based on hourly results developed in the simulation model, whereas the volumes for these locations on the traffic and revenue study are averaged out for the full day. The Louis Berger team found the differences in AADT to be acceptable given the explanations provided above.

Tables 18 and 19: 2025 PEIS and T&R Study AADT Outputs Comparison

Winter Saturday		
Focal Point	PEIS	T&R Study
EJMT	51,000	49,686
East of Empire Junction	77,000	71,529
Genesee	136,300	128,000

Summer Sunday		
Focal Point	PEIS	T&R Study
EJMT	67,000	68,036
East of Empire Junction	88,000	83,177
Genesee	151,300	137,000

4. Forecast Development Process

4.1 Long-Term Forecast Development Process

The Louis Berger Team developed a detailed link-level tool in order to conduct the 50-year projections to 2075 using the 2025 modeled forecast as a base. The Corridor was organized into 19 key segments summarizing the 80 links. Each segment had a representation of volumes, capacity, and speed on toll lanes and corresponding free lanes by time of day, day of week, and season, as reflected in the PEIS model. The tool provides a forecast of managed lanes usage and pricing based on congestion and value

of travel time savings. The tool calculates annual revenue and traffic performance measures depending on the volume outputs and pricing at each time period, day, and season.

4.2 Tolling

The study considered two types of tolling: per mile tolls and tunnel tolls. The analysis was performed using a peak and off-peak base per mile toll rate, which indicate the lowest toll rate per mile charged at that given time regardless of congestion. Based on existing literature from managed lanes, drivers will often choose to take the managed lane regardless of levels of congestion. Possible reasons for this behavior include the fact that managed lanes allow drivers to reliably estimate trip times and that they are usually more actively monitored than general or free lanes. The base toll rates for cars and trucks are shown on **Table 20** below. These values were selected based on an evaluation of a \$0.10-\$0.30 per mile car base rate range. This range is slightly broader than the one used in the Parsons Co-development Proposal.

Table 20: Base Toll Rates

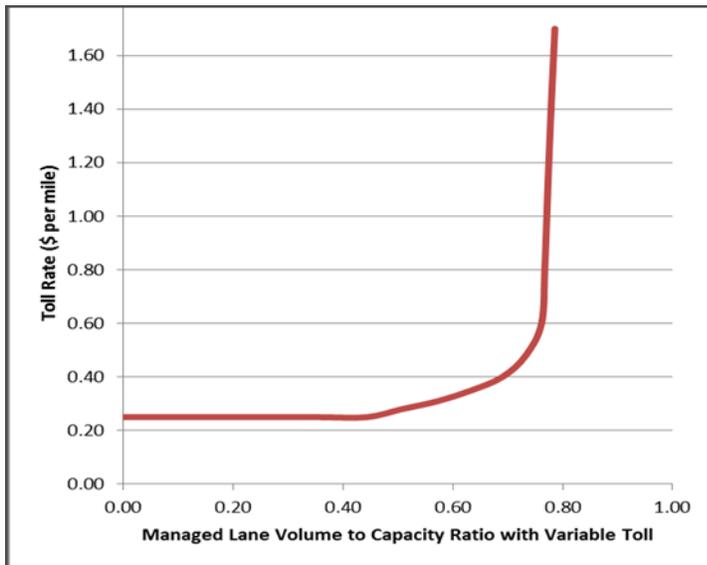
	Car	Truck
Peak (AM, PM)	\$0.25	\$0.75
Off-Peak (Noon, Night)	\$0.10	\$0.30

Per mile tolls are dynamically priced, meaning that they respond to changes in levels of congestion to maintain the speed specified for each of the alternatives (e.g. 55mph or 65mph). The designation of “peak period” is only relevant to define the base (starting) toll rate; the utilization and the applicable toll rate for the managed lanes is exclusively driven by demand regardless of day type, season, or time period. Therefore each time period, day, and season can have distinct toll rates.

Dynamic toll pricing is highly sensitive to congestion. As shown in the curve of **Figure 18** below, once the ratio of the traffic volume to the capacity of the lane (the volume/capacity ratio, or V/C) reaches about 0.80, toll rates start increasing significantly in order to maintain a predetermined speed and performance. The table demonstrates how under a variable pricing scheme the toll rate increases, keeping speeds relatively constant, whereas the fixed tolls do not influence speeds.



Figure 18: Dynamic Pricing and Increase in Toll Rates



Lanes Not Managed - Fixed Toll			Lanes Managed - Variable Toll		
V/C	Speed	Toll Rate	Managed V/C	Speed	Toll Rate
0.40	65	\$0.25	0.40	65	\$0.25
0.70	53	\$0.25	0.58	60	\$0.40
1.00	35	\$0.25	0.75	50	\$0.75

Table 21 below is an example drawn from Alternative 1 (2 reversible, managed lanes) of the highest estimated per mile toll rates achieved when adjusted on the basis of congestion. The highest toll rates correspond to periods of highest congestion, regardless of the season, day, or time.

Table 21: Alternative Dynamic pricing for per mile tolls – Highest Estimated Values

	Car	Truck
2035	\$0.61	\$1.85
2045	\$0.57	\$1.72
2055	\$0.80	\$2.40
2065	\$0.97	\$2.90
2075	\$1.15	\$3.45

The second type of toll rate implemented in in the forecasting process is the tunnel toll rate. For all alternatives except Alternative 3 (PEIS Minimum Program), tunnel toll rates were set to \$5.00 for cars and \$24.00 for trucks. After tunnel toll testing, the Louis Berger team found that these tunnel toll rates did not maximize revenue for Alternative 3. The tunnel rate for this Alternative was reduced to \$1.00 for cars and \$5.00 for trucks. Since tunnel toll rates are fixed, the above mentioned rates apply to all time periods.

4.3 Treatment of Demand

Trip rates, the principal parameters governing trip-making in the Denver region and along the corridor, are difficult to abstract from just a handful of variables, particularly for the trip purposes that contribute substantially to congestion along the I-70 corridor.

In order to maintain consistency with the ROD analysis, the revised model used the trip generation rates as established in the PEIS analysis. The PEIS 2025 forecast was developed and then further adjusted to quantify unmet demand by iteratively reducing trip rates for select trip purposes until travel speeds reached a threshold minimum 30 mph along the corridor. Unmet demand is the number of trips foregone or performed at different times or days due to congestion concerns.

The model has an additional option which involves no suppression of trip generation demand. In this case, the model is unconstrained with respect to capacity and no minimum threshold speed is enforced. The unconstrained option therefore allows a greater portion of the unmet demand to be accommodated. The results of this study are presented with no suppression of trip generation in order to show the full potential of capacity improvements to accommodate demand.

The most accurate way to look at the effect of unmet demand is to compare each of the build Alternatives 1-6 to the Base Condition: in general, the build alternatives see higher levels of overall VMT compared to the Base Condition only during high-volume periods of travel when capacity improvements make a difference. Unmet demand is a near-term factor reflected in early year performance – not an element of the growth rate. In other words, all growth in demand is based on the growth rate assumption; no additional demand is being added in the forecasting process after 2025.

Table 22 below illustrates how unmet demand is reflected in the model for 2025, based on a comparison of free and toll lane Vehicle Miles Traveled (VMT) (in the tolled direction) between Alternative 1 (two reversible managed lanes) and the Base Condition:

Table 22: Illustration of Unmet Demand, 2025 comparison

Season	Day	Period	Base Case VMT	Alt1 VMT	% Difference
Summer	Weekday	AM	39,091,320	54,958,835	29%



Summer	Friday	PM	8,838,514	9,842,532	10%
Winter	Saturday	AM	14,515,764	23,613,402	39%
Summer	Sunday	Night	11,436,365	15,270,539	34%
Spring/Fall	Sunday	Night	10,175,890	10,184,852	<1%
Spring/Fall	Saturday	PM	5,073,106	5,696,290	11%

The PEIS model also accounted for induced and suppressed demand. “Induced demand” is the concept that increased capacities lead to better travel times, and in turn attracts additional auto trips. Conversely, if a road becomes heavily congested, travel times are reduced, leading to auto trips being suppressed.

The PEIS model partially accounts for induced/suppressed demand through the mode choice model, which allocates trips to different modes of travel such as auto or transit based on the travel times and cost of these modes. In the mode choice model, if auto travel times within a corridor improve, the auto mode becomes more attractive relative to the other modes, and the mode split model allocates more trips to auto. The opposite occurs when auto travel times decrease due to congestion.

The PEIS model also accounts for induced and suppressed demand within the trip distribution model using a “trip inducement model”. For the base year 2000, travel utilities were calculated for each origin-to-destination combination in the network. Faster travel times would result in better utilities. For the future year model, these utilities would be re-calculated based on updated future year travel times. The trip inducement model would then calculate induced/suppressed trips for each origin-destination combination using the formula below as copied from Appendix A of the PEIS final report:

$$\begin{aligned}
 \text{2025 Trips after Inducement} &= \text{2025 Trips before Inducement} \left(\frac{\text{2025 Travel Propensity}}{\text{2000 Travel Propensity}} \right) \\
 &= \text{2025 Trips before Inducement} \left(\frac{\exp(\text{2025 Utility of Travel})/[1 + \exp(\text{2025 Utility of Travel})]}{\exp(\text{2000 Utility of Travel})/[1 + \exp(\text{2000 Utility of Travel})]} \right)
 \end{aligned}$$

In the equation above, if travel times improve, trips would be added (induced) to the origin-destination matrix, but if travel times degrade, trips would be taken away.

4.4 Estimated Capture Rates

Capture rates of Managed Lanes are defined as VMT on managed lanes as a proportion of total VMT on free lanes or managed lanes by direction.

Capture rates during high-volume demand periods in the forecast range from 20% to 45%, which is consistent with studies of capture rates on existing managed lanes nationwide. In low-volume periods, capture rates range from 5% to 20%, also consistent with the existing literature. The Louis Berger Team assumed a minimum capture rate of 5% during low-volume periods where managed lanes offer no demonstrable travel time savings, for reliability reasons, described earlier. Overall Capture Rates in 2025 are reflective of an all-day mix of high-volume and low volume periods. **Table 23** below illustrates the Managed Lanes utilization (based on VMT) for 2025 by season.

Table 23: Managed Lane Utilization, 2025

	# of Days	ML Utilization (%)
Overall ML Utilization	365	15%
Summer	112	18%
Winter	161	15%
Spring/Fall (Mud)	92	9%

5. Traffic and Revenue Results

5.1 Summary

Table 24 provides that a summary of the traffic and revenue forecasts for the year 2025. These forecasts are coming directly from the model runs performed on TransCad. Transit trips in 2025 are only considered for Alternatives 1 and 2 which include a BRT transit mode. For modeling purposes, the AGS was set to start operations in 2035, and the CDOT bus which is included in the Base Condition was assumed to have a non-significant ride share for modeling purposes. As can be seen on the Table, the highest revenue is by far achieved with Alternatives 1 and 2 in the year 2025, a trend that continues throughout the 50 year evaluation period. In the same manner, toll revenue for Alternative 3 is lowest, followed by revenue from the Temporary Peak Period Shoulder Lane (PPSL) option (6) and the Permanent PPSL sensitivity test (5.1). Revenues from the PEIS Maximum Program and the permanent PPSL (Alternatives 4 and 5 respectively) lie in between the other results.

Table 24: Traffic and Revenue Forecast Results - 2025

Alternative	Corridor Vehicle Trips (M)	Tolled Vehicle Trips (M)	Toll Revenue (2014 \$M)	Transit Person Trips (M)	Transit Revenue (2014 \$M)
Base Condition	25.7	0.37	0.4	-	-
1	26.7	2.10	36.0	0.83	7.8
2	26.8	2.20	37.2	0.83	7.8
3	25.9	0.02	0.9	-	-
4	26.7	0.56	8.2	-	-
5	26.0	0.50	8.0	-	-
5.1 Sensitivity	25.7	0.62	4.1	-	-
6	25.7	0.60	4.0	-	-

Table 25 below compares vehicle trips and toll revenues across the six built alternatives, the Base Condition, and the sensitivity test for intermediate years 2035 and 2050. The same pattern as the one discussed above for year 2025 holds in these cases as well. Table 25 also includes the revenue Present Value (PV) and capital and O&M costs, which provides a quick identification of alternatives with the least and most expensive cost and highest and lowest available cash flow to finance these costs. For



example, Alternatives 1 and 2 have by far the highest revenue PV but also require the largest budget to finance the planned capacity improvements.

Table 25: Comparison across Alternatives – Reference Case

Alt.	Corridor Vehicle Trips		Toll Revenue		Revenue PV	Costs	
	2035 (M)	2050 (M)	2035 (\$M)	2050 (\$M)	(2014 \$M)	Capital	O&M
Base Condition	29.3	34.8	4.1	11.3	\$109.73	-	-
1	30.6	37.1	63.6	104.4	\$1,575.4	\$4,116.4	\$49.7
2	30.7	37.3	56.9	99.9	\$1,518.0	\$5,092.4	\$53.9
3	27.9	33.7	2.1	4.7	\$51.0	\$2,012.5	\$10.7
4	28.7	34.7	21.7	40.6	\$486.6	\$2,715.6	\$14.2
5	27.8	33.4	19.3	34.9	\$440.5	\$1,959.2	\$13.8
5.1	27.6	33.2	11.9	20.5	\$256.7	\$99.8	\$3.5
6	27.6	33.2	12.1	21.0	\$222.6	\$99.8	\$3.5

5.2 Base Condition

As discussed, the Base Condition, or “no build” condition, reflects the current I-70 Corridor segment with the addition of the EB PPSL and the 3rd bore at the Twin Tunnels. **Table 26** below provides a summary of the traffic and revenue results for the Base Condition. Revenues are relatively low compared to the other alternatives, given that the PPSL only provides capacity enhancements in the eastbound direction. The revenue PV for the Base Condition is \$109.75 Million.

Table 26: Forecast Traffic and Revenue Results – Alternative 1

	Corridor Vehicle Trips (M)	Toll Vehicle Trips (M)	Toll Revenues (2014 \$M)
2025	25.7	0.37	0.44
2035	29.3	0.45	4.1
2045	33.0	0.75	9.0
2055	36.7	0.95	14.0
2065	40.1	1.2	17.7

2075	43.4	1.5	21.5
------	------	-----	------

5.3 Alternative 1

Alternative 1, consisting of two reversible, managed lanes, has more than ten times the toll lane mileage as the Base Condition and begins with a higher level of both utilization and revenue. The utilization for Alternative 1 increases over 300% during the 50-year life of the analysis. The revenue increases more than 600% in the same time period. The dynamic tolling setup allowed toll rates to rise in order to manage peak period flows and increases in utilization throughout the day. **Table 27** below provides a summary of the traffic and revenue results for Alternative 1. Revenue from BRT operations starting in 2023 is also included, as are transit person trips. Compared to all other alternatives, Alternative 1 is the most profitable: the revenue PV for Alternative 1 is \$1,575.4 Million.

Table 27: Forecast Traffic and Revenue Results – Alternative 1

	Corridor Vehicle Trips (M)	Toll Vehicle Trips (M)	Toll Revenues (2014 \$M)	BRT Person Trips (M)	BRT Revenue (2014 \$M)
2025	26.7	2.1	36.0	0.83	7.8
2035	30.6	2.7	63.6	0.95	8.9
2045	34.9	3.6	87.7	1.1	10.2
2055	39.3	4.7	124.2	1.3	11.8
2065	43.8	5.9	167.8	1.4	13.5
2075	48.3	7.0	218.9	1.7	15.5

5.4 Alternative 2

Alternative 2, consisting of three reversible, managed lanes, provides greater capacity enhancements than Alternative 1 and can therefore accommodate more traffic on the managed lanes. This improves the overall level of volume moving through the corridor on toll and free lanes. Given the additional capacity, however, the toll lanes in Alternative 2 are not as congested (nor are free lanes) as in Alternative 1 and toll rates do not need to rise as high as in Alternative 1 to manage volume. Therefore, toll lanes in this alternative see a greater traffic volumes, but toll rates are somewhat lower leading to marginally lower revenue than Alternative 1 overall. **Table 28** below provides a summary of the traffic and revenue results for Alternative 2. As with Alternative 1, revenue from BRT operations starting in 2023 and transit person trips are also included. The revenue PV for Alternative 2 is \$1,518.0 Million.

Table 28: Forecast Traffic and Revenue Results – Alternative 2

	Corridor Vehicle Trips (M)	Toll Vehicle Trips (M)	Toll Revenues (2014 \$M)	BRT Person Trips (M)	BRT Revenue (2014 \$M)
2025	26.8	2.2	37.2	0.83	7.8
2035	30.7	3.0	56.9	0.95	8.9
2045	35.1	4.1	83.7	1.1	10.2
2055	39.6	5.4	119.1	1.3	11.8
2065	44.4	6.9	162.8	1.4	13.5
2075	49.2	8.5	214.4	1.7	15.5

5.5 Alternative 3

Alternative 3, the PEIS Minimum Program, applies tolls to traffic only at the EJMT and Twin Tunnels. No per mile dynamic toll pricing was applied to this Alternative. Since the tunnel segments are relatively short, the time savings offered by the Minimum Program are lower than the longer managed lane segments represented in the other Alternatives. In the case of Alternative 3, the model shows that travelers are reluctant to utilize these short tolled segments since they will be forced to merge onto the more congested general lanes briefly afterwards.

Alternative 3 was originally modeled with fixed tunnel tolls of \$5 for cars and \$24 for trucks, equivalent to the tunnel tolls in all other alternatives. However, given the response in initial testing, tolls in this scenario were decreased to \$1 for cars and \$3 for trucks in order to maximize revenues and promote utilization of the new capacity. **Table 29** below provides a summary of the traffic and revenue results for Alternative 3. Compared to all other alternatives and the Base Condition, Alternative 3 has the lowest revenue generation: the revenue PV for Alternative 3 is \$51.0 Million.

Table 29: Forecast Traffic and Revenue Results – Alternative 3

	Corridor Vehicle Trips (M)	Toll Vehicle Trips (M)	Toll Revenues (2014 \$M)	AGS Person Trips (M)
2025	25.9	0.02	0.94	-
2035	27.9	0.04	2.1	3.3



2045	31.8	0.06	3.8	3.7
2055	35.7	0.08	5.8	4.3
2065	39.4	0.11	7.8	4.9
2075	43.1	0.14	9.7	5.7

5.6 Alternative 4

Alternative 4, the PEIS Maximum Program, generates substantial revenues, particularly in the later years as the capacity improvements are fully utilized and free-lane congestion increases. Overall, the revenues for this Alternative are high relative to other Alternatives because the additional tolled lanes are open at all times and in both directions, as opposed to the improvements that are either only in one direction or only open during peak times. This is particularly advantageous during periods where volumes are heavy in each direction. **Table 30** below provides a summary of the traffic and revenue results for Alternative 4. The revenue PV for Alternative 4 is \$486.6 Million.

Table 30: Forecast Traffic and Revenue Results – Alternative 4

	Corridor Vehicle Trips (M)	Toll Vehicle Trips (M)	Toll Revenues (2014 \$M)	AGS Person Trips (M)
2025	26.7	0.56	8.2	-
2035	28.7	0.97	21.7	3.3
2045	32.7	1.65	32.5	3.7
2055	36.8	2.46	50.7	4.3
2065	41.0	3.35	73.6	4.9
2075	45.0	4.34	102.5	5.7

5.7 Alternative 5

Alternative 5, the Permanent Peak Period Shoulder Lanes, runs from EJMT to Floyd Hill, and includes a 3rd bore and therefore a fixed tunnel toll at both EJMT and the Twin Tunnels. Alternative 5 provides additional tolled capacity in both directions, which allows it to generate substantial revenue. In contrast to Alternative 4, Alternative 5 is only open during peak periods, which limits its revenue-generating potential. Nonetheless, growth in revenue substantially outpaces growth in volume as toll prices are raised in the out-years of the forecast to manage volumes in the toll lanes. **Table 31** below provides a

summary of the traffic and revenue results for Alternative 5. The revenue PV for Alternative 5 is \$440.5 Million.

Table 31: Forecast Traffic and Revenue Results – Alternative 5

	Corridor Vehicle Trips (M)	Toll Vehicle Trips (M)	Toll Revenues (2014 \$M)	AGS Person Trips (M)
2025	26.0	0.50	8.0	-
2035	27.9	0.73	19.3	3.3
2045	31.6	1.1	28.4	3.7
2055	35.3	1.6	42.8	4.3
2065	39.0	2.1	61.3	4.9
2075	42.2	2.6	85.3	5.7

5.8 Alternative 6

Alternative 6 corresponds to the Temporary Peak Period Shoulder Lane that runs for a limited section of the corridor, namely from Empire Junction to Floyd Hill. This alternative does not include a third bore at EJMT and therefore only includes a fixed tunnel toll for the Twin Tunnel. Similar to the performance of Alternative 5, Alternative 6 sees an increase in revenue that substantially outpaces the growth in traffic. However, this alternative has lower revenue generating potential, as it covers half the distance of Alternative 5 and is a narrower, lower capacity lane, limiting the volumes it can carry overall. **Table 32** below provides a summary of the traffic and revenue results for Alternative 6. The revenue PV for Alternative 6 is \$222.6 Million.

Table 32: Forecast Traffic and Revenue Results – Alternative 6

	Corridor Vehicle Trips (M)	Toll Vehicle Trips (M)	Toll Revenues (2014 \$M)	AGS Person Trips (M)
2025	25.7	0.60	4.0	-
2035	27.6	0.83	12.1	3.3
2045	31.4	1.2	17.1	3.7



2055	35.1	1.6	25.7	4.3
2065	38.8	2.1	37.1	4.9
2075	42.2	2.5	49.6	5.7

5.9 Sensitivity Analysis 5.1

CDOT requested an additional Sensitivity analysis 5.1, which is a Permanent PPSL from Floyd Hill to Empire Junction, with no 3rd bore at EJMT. The permanent nature of 5.1 gives it greater capacity than Alternative 6. However, it is still half the distance of Alternative 5, and therefore has lower revenue generation potential. It is important to note that EJMT is one of the key locations for ongoing, concentrated congestion. Sensitivity analysis 5.1 does not provide relief for congestion at this location with significant revenue potential. **Table 33** below provides a summary of the traffic and revenue results for sensitivity analysis 5.1. The revenue PV in this case is \$256.7 Million.

Table 33: Forecast Traffic and Revenue Results – Sensitivity Analysis 5.1

	Corridor Vehicle Trips (M)	Toll Vehicle Trips (M)	Toll Revenues (2014 \$M)	AGS Person Trips (M)
2025	25.7	0.62	4.1	-
2035	27.6	0.86	11.9	3.3
2045	31.3	1.2	16.8	3.7
2055	35.1	1.7	25.1	4.3
2065	38.7	2.1	36.0	4.9
2075	42.2	2.6	48.7	5.7

5.10 Financial Evaluation

The financial evaluation of this traffic and revenue study was in the form of a nominal discounted cash flow. The inputs to the discounted cash flow analysis (DCF) included the revenue forecasts for each of the alternatives and their corresponding capital and operations and maintenance (O&M) costs. The cost estimates were provided by Parsons Transportation. BRT farebox revenue for Alternatives 1 and 2 is included in the analysis since it contributes to the 50 year concession arrangement. Alternatives 3-6 and the sensitivity run 5.1 which include the AGS component do not consider AGS revenues or costs since its operations are separate from the highway capacity improvements.

Table 34 below illustrates which alternatives capture enough toll revenue to pay for capital and O&M costs and/or O&M costs only based on the DCF analysis. In summary, although alternatives 1 and 2



show the greatest improvements in capacity, the revenues captured are not able to cover capital and O&M expenses. Alternative 3 provides minimal improvements in time savings and therefore minimal revenue. Alternatives 4 and 5 provide considerable improvements in capacity and significant revenues. Both can cover O&M but neither can cover capital expenses. Sensitivity analysis 5.1 and Alternative 6 provide limited improvements in capacity but generate revenue that covers all costs.

Table 34: Ability to pay for Capital and O&M Costs through Toll Revenue

Alternative	Revenue	Capital + O&M	O&M
1	\$1575.38	✗	✓
2	\$1517.97	✗	✓
3	\$50.98	✗	✗
4	\$486.60	✗	✓
5	\$440.49	✗	✓
5.1 sensitivity	\$256.65	✓	✓
6	\$222.57	✓	✓

8.0 Conclusion

The alternatives evaluated in this traffic and revenue study provide a wide range of capacity enhancements and represent a wide spectrum for potential revenue generation. The reversible managed lanes alternatives provide the greatest revenue potential but are the most expensive to implement, while the Minimum Program Alternative provides the least improvements and the least revenue generation potential. All alternatives except the Minimum Program can pay for their annual O&M costs, but only Sensitivity analysis 5.1 and Alternative 6 can pay for both O&M and capital costs.

This traffic and revenue study has a series of limitations that preclude the results from being considered for anything beyond a sketch level analysis. First, although the model was updated to TransCAD 6.0, a TransCAD-based travel demand model is not the most accurate means to model congestion. Weather, grades, and road curvature, among others have a strong impact on congestion and are not fully captured in the PEIS model. Second, in the nature of a sketch level analysis, this study used existing data from recent studies. The lack of primary data limits the model's ability to include the most up to date or variable assumptions on Value of Time, vehicle occupancy rates, trip purposes, and other critical measures. The standard activities developed in a Level 2 study including the implementation of a micro-simulation tool and the development of a stated preference survey would address most of the limitations listed above and provide a more accurate evaluation of traffic and revenue for the proposed alternatives.



Appendix A: Full description of Alternatives

Base Condition

Existing I-70 with EB Peak Period Shoulder Lane

Base Condition includes the existing highway infrastructure including the planned improvement of the EB peak period shoulder lane from Empire to Floyd Hill. The recently completed widening of the EB Twin Tunnel is part of the peak period shoulder lane project.

Roadway Information

Extent of Roadway Improvements	Empire to Floyd Hill
General Purpose (GP) Lane Information	Additional capacity by restriping existing pavement
Direction of Improvements	EB Only Direction
Design Speed	Match Existing
Trucks, Private Buses, BRT	Allowed in Peak Period Shoulder Lane (Always in GP Lanes)

Tolling

Capacity Improvements	Dynamic priced toll for EB Peak Period Shoulder Lane
Tunnels	Dynamic priced toll as part of the EB Peak Period Shoulder Lane
Technology	Transponder and license plate recognition

Schedule

Construction Start	2014 (Assumes NEPA Cat-Ex)
Construction Duration	1 year
First Year Operation	2014 - WB Tunnel / 2015 - EB PPSL
Financial Period	50 years

Transit Information

Termini	Glenwood Springs to Denver (CDOT Bus)
Special Infrastructure	N/A
Schedule	Fall 2014
Stations	6 CDOT Bus Stations - Glenwood Springs, Eagle, Vail, Frisco, Denver (2)

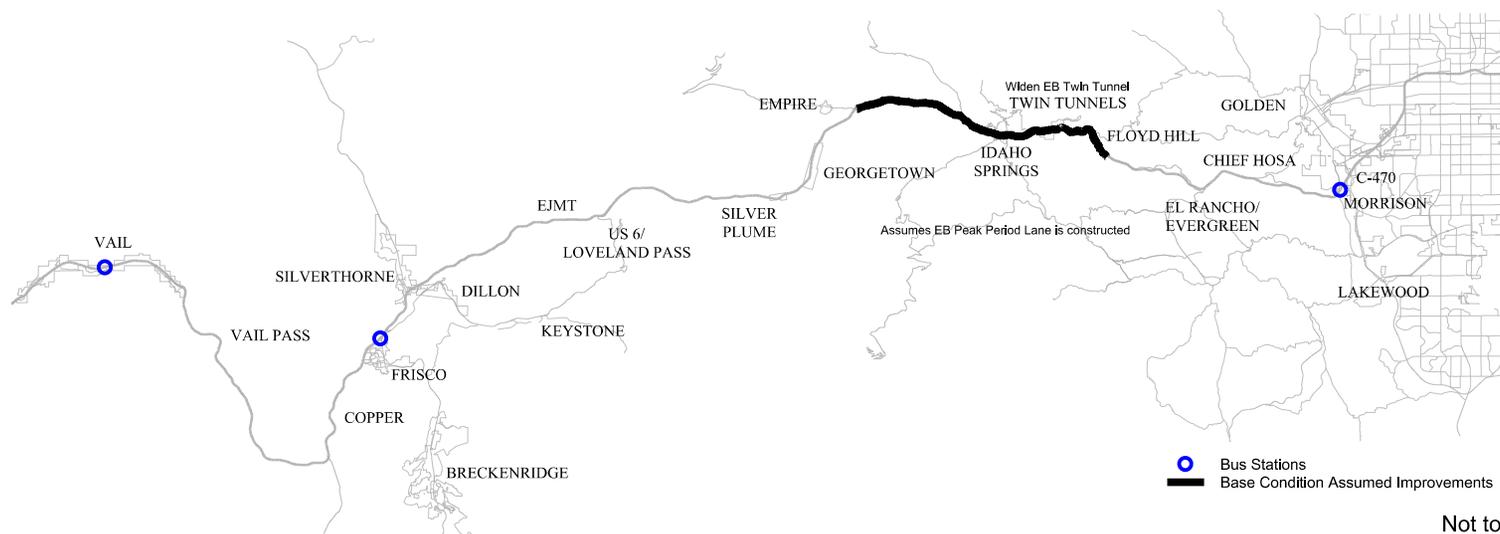
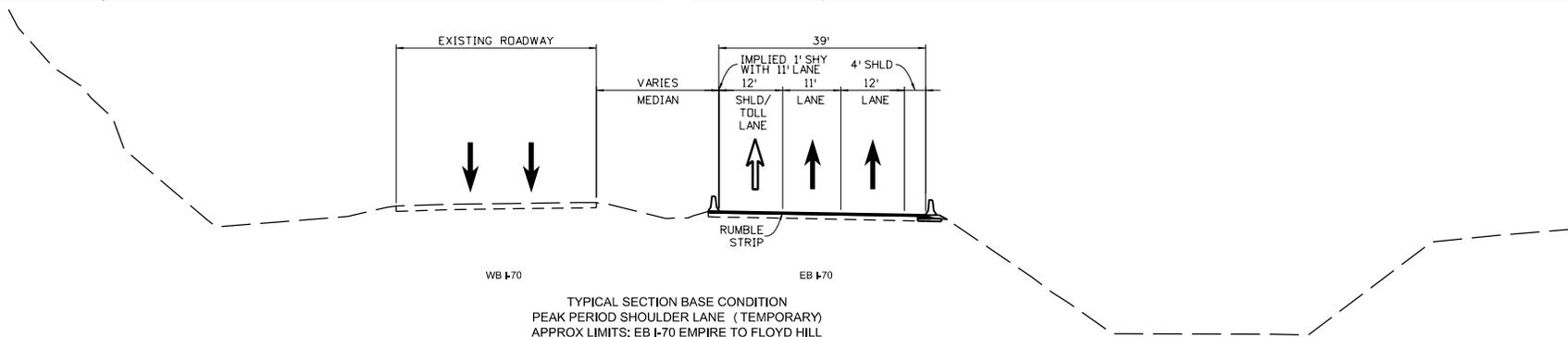
Type

CDOT Bus	TBD by CDOT
BRT	N/A
AGS	N/A

Special Structures

Special Structures	Existing EB Twin Tunnel Widening
--------------------	----------------------------------

GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels



Not to Scale
Print Date: 1/16/2014

Alt01_Opt01

2 Tolled Reversible Managed Lanes

Reversible managed lanes designed at 65 mph. The reversible managed lanes are on a separate viaduct structure from East Idaho Springs to Floyd Hill in order to maintain 65 mph design speed. General purpose (GP) lanes designed at 55 mph except from East Idaho Springs to Floyd Hill, where existing design speeds & lanes will remain.

Roadway Information

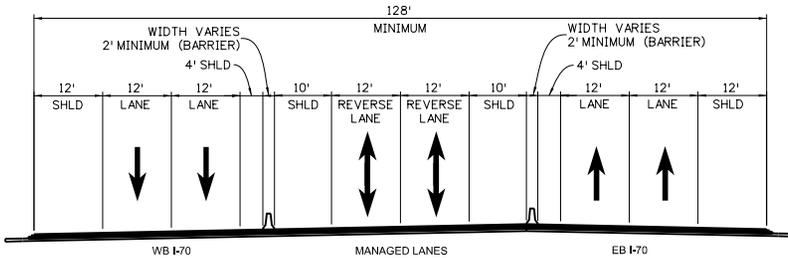
Extent of Roadway Improvements	Silverthorne to C-470
General Purpose (GP) Lane Information	Align managed lanes with GP lanes except from E Idaho Springs to Floyd Hill
Direction of Improvements	Both directions (EB and WB)
Design Speed	65 mph Managed Lanes, 55 mph GP lanes
Trucks, Private Buses, BRT	Allowed in Managed Lanes (Always in GP Lanes)
Tolling	
Capacity Improvements	Dynamic priced toll for Reversible Managed Lanes
Tunnels	Dynamic priced toll for EJMT 3rd Bore and Twin Tunnels 3rd bore
Technology	Transponder and license plate recognition
Schedule	
Construction Start	2019 (Assumes 4 years NEPA & Procurement)
Construction Duration	4 years
First Year Operation	2023
Financial Period	50 years

Transit Information

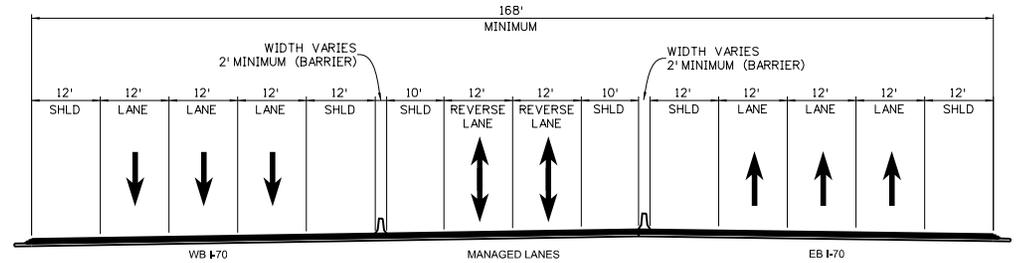
Termini	Vail to Denver
Special Infrastructure	Stations
Schedule	2019 - Limited Startup / 2023 - Full BRT Service
Stations	12 Total
Type	
CDOT Bus	N/A
BRT	Transit option for full 50 year concession
AGS	N/A

Special Structures

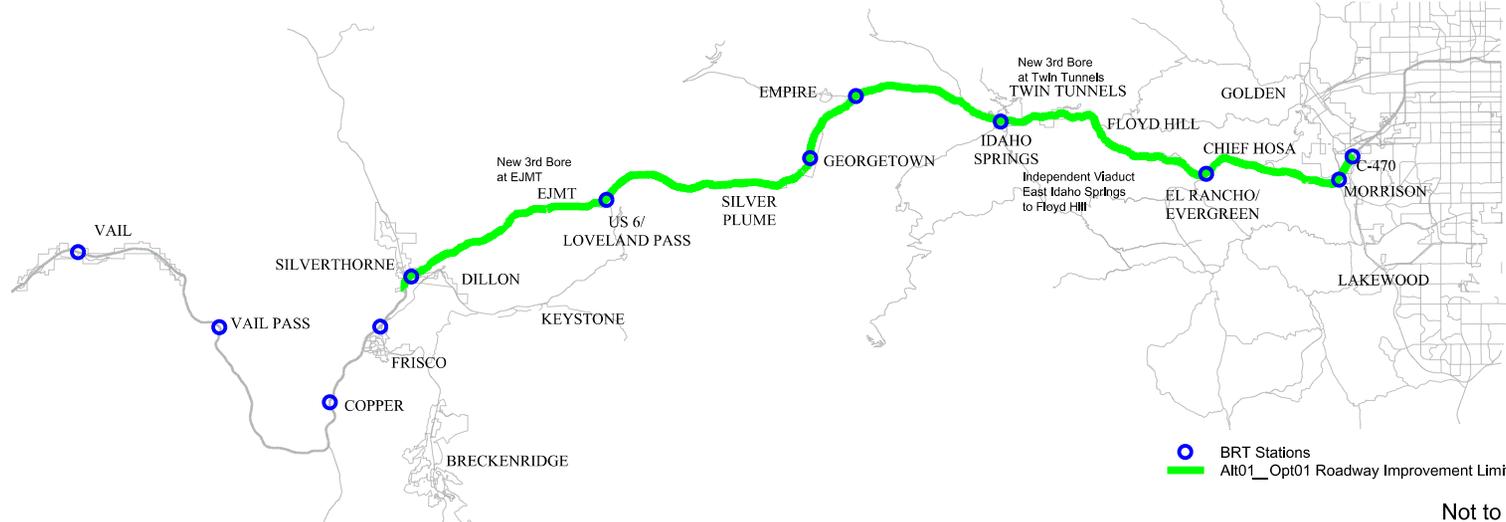
Special Structures	EJMT and Twin Tunnel 3rd Bores
	Managed Lanes on Viaduct from East Idaho Springs to Floyd Hill
GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels	



TYPICAL SECTION ALT01
2 TOLLED REVERSIBLE MANAGED LANES
EXISTING 2 GENERAL PURPOSE LANES EB & WB I-70
APPROX LIMITS: EJMT TO FLOYD HILL



TYPICAL SECTION ALT01
2 TOLLED REVERSIBLE MANAGED LANES
EXISTING 3 GENERAL PURPOSE LANES EB & WB I-70
APPROX LIMITS: SILVERTHORNE TO EJMT, FLOYD HILL TO C-470



Not to Scale
Print Date: 1/16/2014

Alt01_Opt02

2 Tolled Reversible Managed Lanes

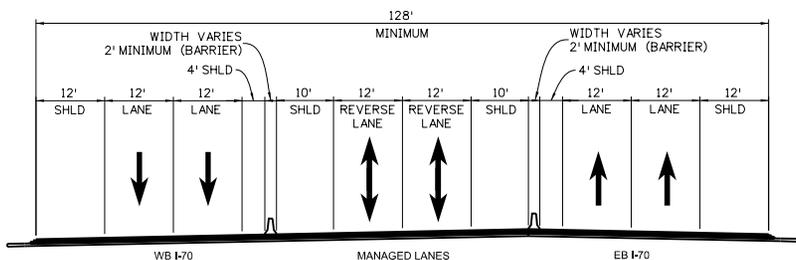
Reversible managed lanes and I-70 designed at 65 mph. This option matches Alt01_Opt01 except from East Idaho Springs to Floyd Hill, where the reversible managed lanes and I-70 will be reconstructed to meet a 65 mph design speed.

Roadway Information

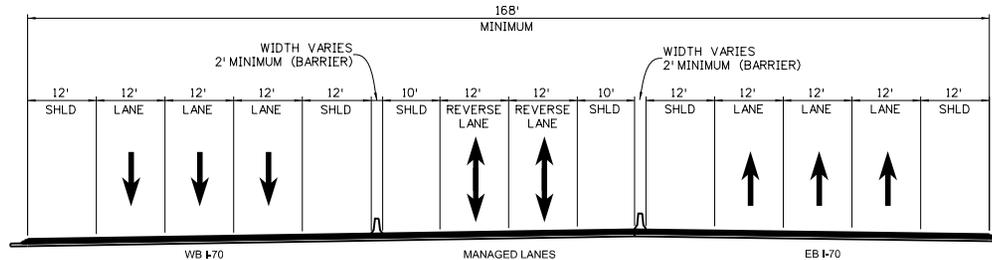
Extent of Roadway Improvements	Silverthorne to C-470
General Purpose (GP) Lane Information	Align managed lanes with GP lanes
Direction of Improvements	Both directions (EB and WB)
Design Speed	65 mph - Managed Lanes & GP Lanes
Trucks, Private Buses, BRT	Allowed in Managed Lanes (Always in GP Lanes)
Tolling	
Capacity Improvements	Dynamic priced toll for Reversible Managed Lanes
Tunnels	Dynamic priced toll for EJMT 3rd Bore and Twin Tunnels 3rd bore
Technology	Transponder and license plate recognition
Schedule	
Construction Start	2019 (Assumes 4 years NEPA & Procurement)
Construction Duration	4 years
First Year Operation	2023
Financial Period	50 years

Transit Information

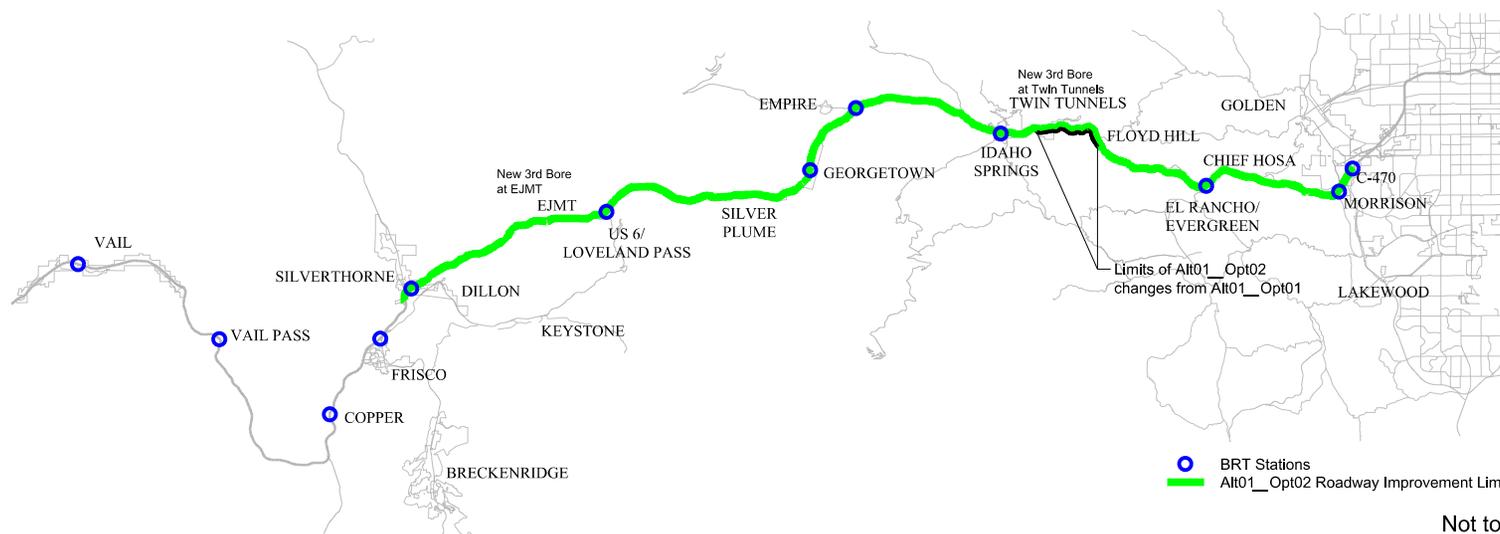
Termini	Vail to Denver
Special Infrastructure	Stations
Schedule	2019 - Limited Startup / 2023 - Full BRT Service
Stations	12 Total
Type	
CDOT Bus	N/A
BRT	Transit option for full 50 year concession
AGS	N/A
Special Structures	
Special Structures	EJMT and Twin Tunnel 3rd Bores
GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels	



TYPICAL SECTION ALT01
2 TOLLED REVERSIBLE MANAGED LANES
EXISTING 2 GENERAL PURPOSE LANES EB & WB I-70
APPROX LIMITS: EJMT TO FLOYD HILL



TYPICAL SECTION ALT01
2 TOLLED REVERSIBLE MANAGED LANES
EXISTING 3 GENERAL PURPOSE LANES EB & WB I-70
APPROX LIMITS: SILVERTHORNE TO EJMT, FLOYD HILL TO C-470



● BRT Stations
— Alt01_Opt02 Roadway Improvement Limits

Not to Scale
Print Date: 1/16/2014

Alt02_Opt01

3 Tolled Reversible Managed Lanes

Reversible managed lanes designed at 65 mph. The reversible managed lanes are on a separate viaduct structure from East Idaho Springs to Floyd Hill in order to maintain 65 mph design speed. General purpose (GP) lanes designed at 55 mph except from East Idaho Springs to Floyd Hill, where existing design speeds & lanes will remain.

Roadway Information

Extent of Roadway Improvements	Silverthorne to C-470
General Purpose (GP) Lane Information	Align managed lanes with GP lanes except from E Idaho Springs to Floyd Hill
Direction of Improvements	Both directions (EB and WB)
Design Speed	65 mph Managed Lanes, 55 mph GP lanes
Trucks, Private Buses, BRT	Allowed in Managed Lanes (Always in GP Lanes)

Tolling

Capacity Improvements	Dynamic priced toll for Reversible Managed Lanes
Tunnels	Dynamic priced toll for EJMT 3rd Bore and Twin Tunnels 3rd bore
Technology	Transponder and license plate recognition

Schedule

Construction Start	2019 (Assumes 4 years NEPA & Procurement)
Construction Duration	4 years
First Year Operation	2023
Financial Period	50 years

Transit Information

Termini	Vail to Denver
Special Infrastructure	Stations
Schedule	2019 - Limited Startup / 2023 - Full BRT Service
Stations	12 Total

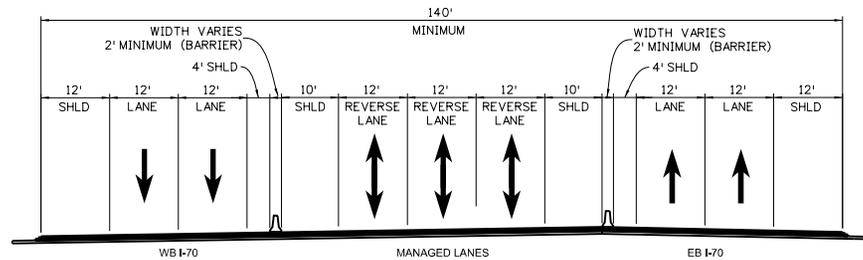
Type

CDOT Bus	N/A
BRT	Transit option for full 50 year concession
AGS	N/A

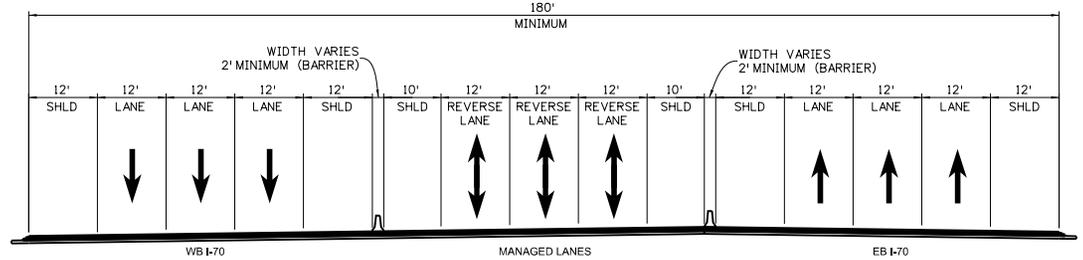
Special Structures

Special Structures	EJMT and Twin Tunnel 3rd Bores
	Managed Lanes on Viaduct from East Idaho Springs to Floyd Hill

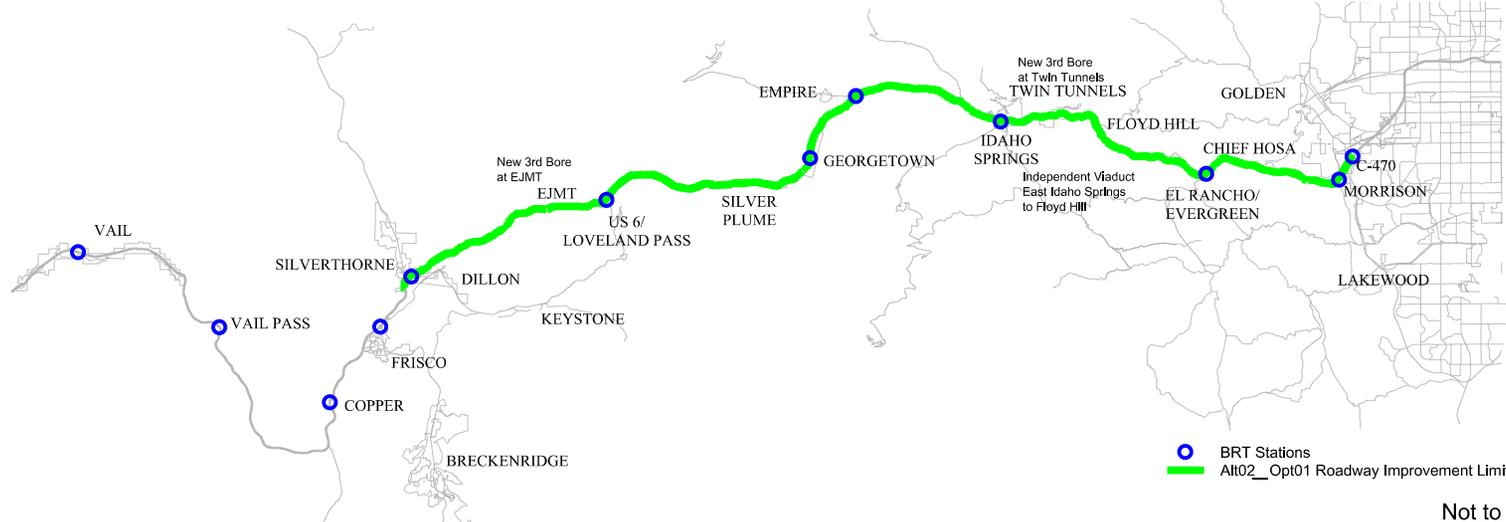
GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels



TYPICAL SECTION ALT02
3 TOLLED REVERSIBLE MANAGED LANES
EXISTING 2 GENERAL PURPOSE LANES EB & WB I-70
APPROX LIMITS: EJMT TO FLOYD HILL



TYPICAL SECTION ALT02
3 TOLLED REVERSIBLE MANAGED LANES
EXISTING 3 GENERAL PURPOSE LANES EB & WB I-70
APPROX LIMITS: SILVERTHORNE TO EJMT, FLOYD HILL TO C-470



● BRT Stations
— Alt02_Opt01 Roadway Improvement Limits

Not to Scale
Print Date: 1/16/2014

Alt02_Opt02

3 Tolled Reversible Managed Lanes

Reversible managed lanes and I-70 designed at 65 mph. This option matches Alt02_Opt01 except from East Idaho Springs to Floyd Hill, where the reversible managed lanes and I-70 GP lanes will be reconstructed to meet a 65 mph design speed.

Roadway Information

Extent of Roadway Improvements	Silverthorne to C-470
General Purpose (GP) Lane Information	Align managed lanes with GP lanes
Direction of Improvements	Both directions (EB and WB)
Design Speed	65 mph - Managed Lanes & GP Lanes
Trucks, Private Buses, BRT	Allowed in Managed Lanes (Always in GP Lanes)

Tolling

Capacity Improvements	Dynamic priced toll for Reversible Managed Lanes
Tunnels	Dynamic priced toll for EJMT 3rd Bore and Twin Tunnels 3rd bore
Technology	Transponder and license plate recognition

Schedule

Construction Start	2019 (Assumes 4 years NEPA & Procurement)
Construction Duration	4 years
First Year Operation	2023
Financial Period	50 years

Transit Information

Termini	Vail to Denver
Special Infrastructure	Stations
Schedule	2019 - Limited Startup / 2023 - Full BRT Service
Stations	12 Total

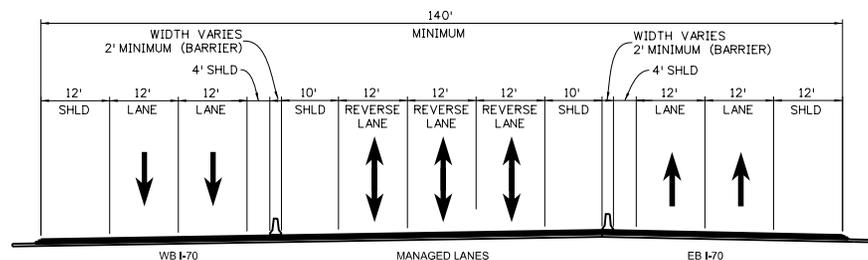
Type

CDOT Bus	N/A
BRT	Transit option for full 50 year concession
AGS	N/A

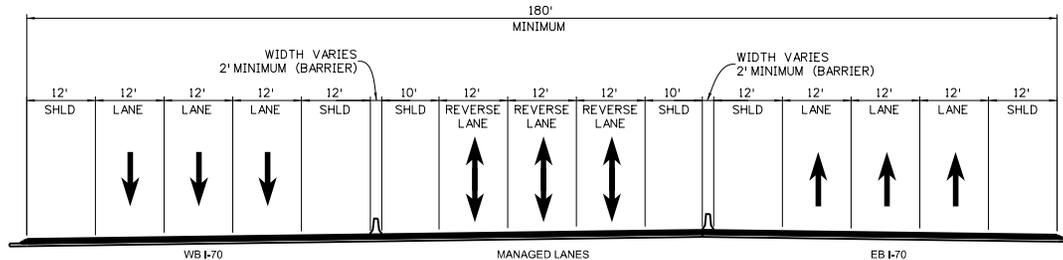
Special Structures

Special Structures	EJMT and Twin Tunnel 3rd Bores
--------------------	--------------------------------

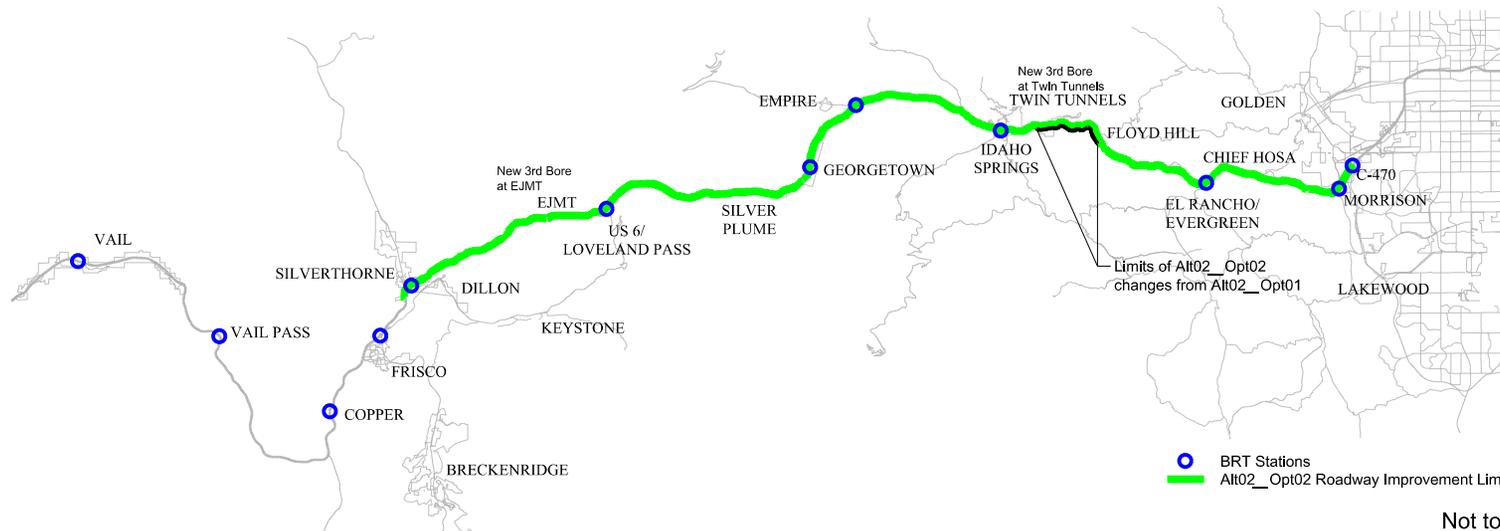
GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels



TYPICAL SECTION ALT02
3 TOLLED REVERSIBLE MANAGED LANES
EXISTING 2 GENERAL PURPOSE LANES EB & WB I-70
APPROX LIMITS: EJMT TO FLOYD HILL



TYPICAL SECTION ALT02
3 TOLLED REVERSIBLE MANAGED LANES
EXISTING 3 GENERAL PURPOSE LANES EB & WB I-70
APPROX LIMITS: SILVERTHORNE TO EJMT, FLOYD HILL TO C-470



● BRT Stations
— Alt02_Opt02 Roadway Improvement Limits

Not to Scale
Print Date: 1/16/2014

Alt02_Opt03

3 Tolled Reversible Managed Lanes

Reversible managed lanes designed at 65 mph. The reversible managed lanes are on a separate viaduct structure from West Idaho Springs to Floyd Hill to minimize impacts. General purpose (GP) lanes designed at 65 mph except from West Idaho Springs to Floyd Hill, where existing design speeds & lanes will remain. This option is similar to Alt02_Opt01, except viaduct extends to West Idaho Springs.

Roadway Information

Extent of Roadway Improvements	Silverthorne to C-470
General Purpose (GP) Lane Information	Align managed lanes with GP lanes except from W Idaho Springs to Floyd Hill
Direction of Improvements	Both directions (EB and WB)
Design Speed	65 mph Managed Lanes, 55 mph GP lanes
Trucks, Private Buses, BRT	Allowed in Managed Lanes (Always in GP Lanes)
Tolling	
Capacity Improvements	Dynamic priced toll for Reversible Managed Lanes
Tunnels	Dynamic priced toll for EJMT 3rd Bore and Twin Tunnels 3rd bore
Technology	Transponder and license plate recognition
Schedule	
Construction Start	2019 (Assumes 4 years NEPA & Procurement)
Construction Duration	4 years
First Year Operation	2023
Financial Period	50 years

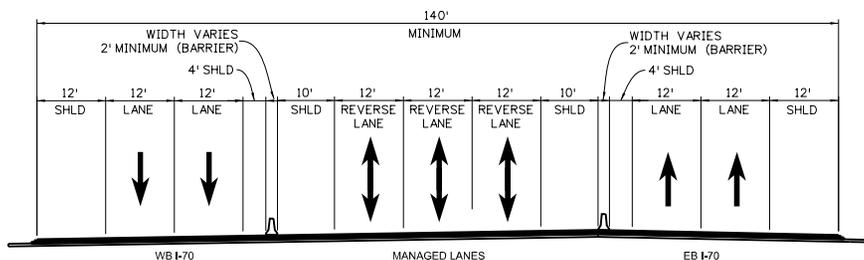
Transit Information

Termini	Vail to Denver
Special Infrastructure	Stations
Schedule	2019 - Limited Startup / 2023 - Full BRT Service
Stations	12 Total
Type	
CDOT Bus	N/A
BRT	Transit option for full 50 year concession
AGS	N/A

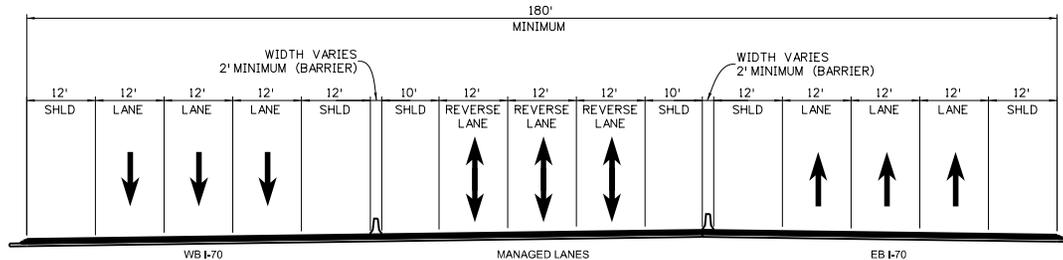
Special Structures

Special Structures	EJMT and Twin Tunnel 3rd Bores
	Managed Lanes on Viaduct from West Idaho Springs to Floyd Hill

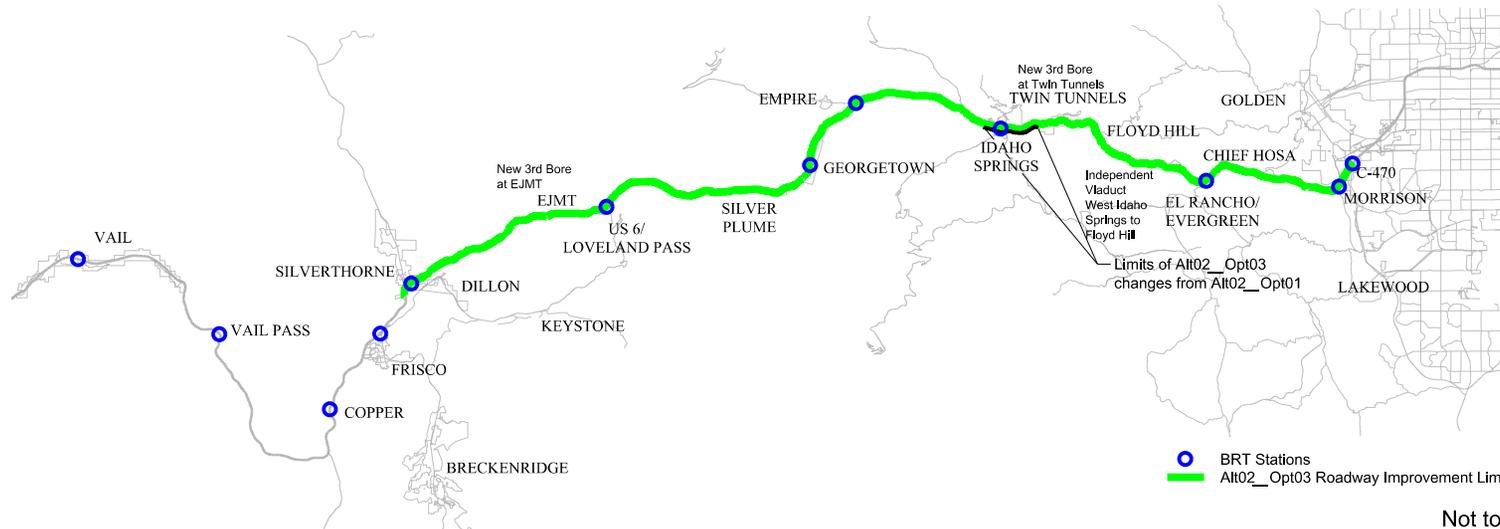
GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels



TYPICAL SECTION ALT02
3 TOLLED REVERSIBLE MANAGED LANES
EXISTING 2 GENERAL PURPOSE LANES EB & WB I-70
APPROX LIMITS: EJMT TO FLOYD HILL



TYPICAL SECTION ALT02
3 TOLLED REVERSIBLE MANAGED LANES
EXISTING 3 GENERAL PURPOSE LANES EB & WB I-70
APPROX LIMITS: SILVERTHORNE TO EJMT, FLOYD HILL TO C-470



Not to Scale
Print Date: 1/16/2014

Alt03_Opt01

Minimum Program per PEIS

Minimum program per PEIS with 55 mph design speed including a 3rd bore at EJMT. Minimum program is generally localized auxiliary lane improvements.

Roadway Information

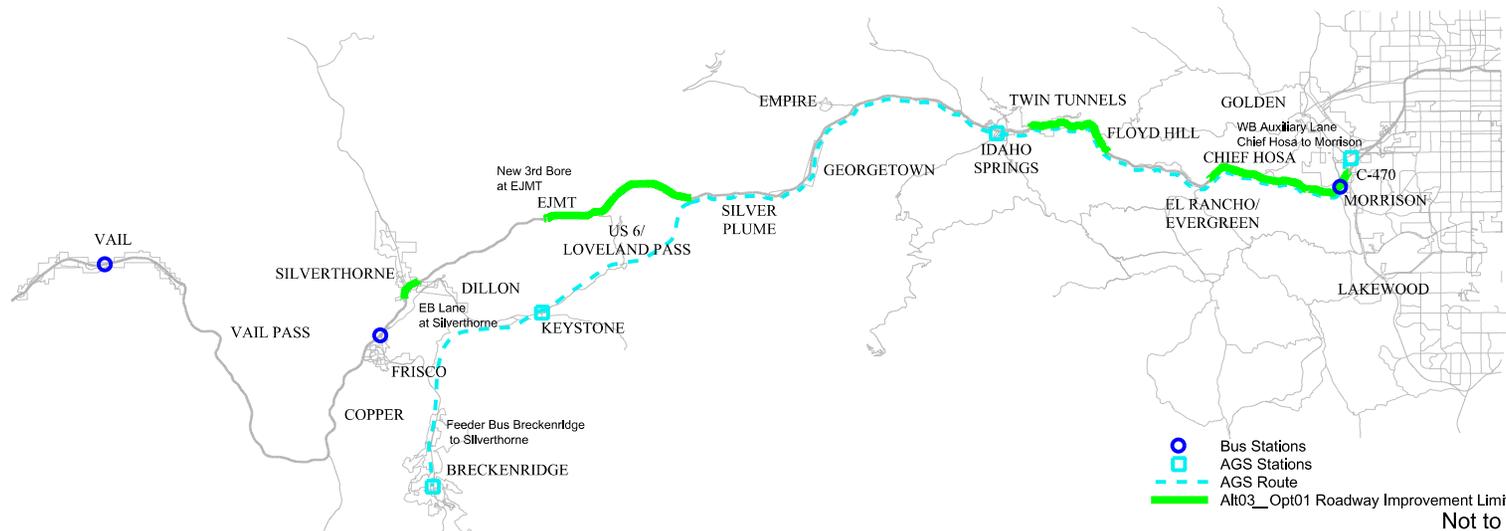
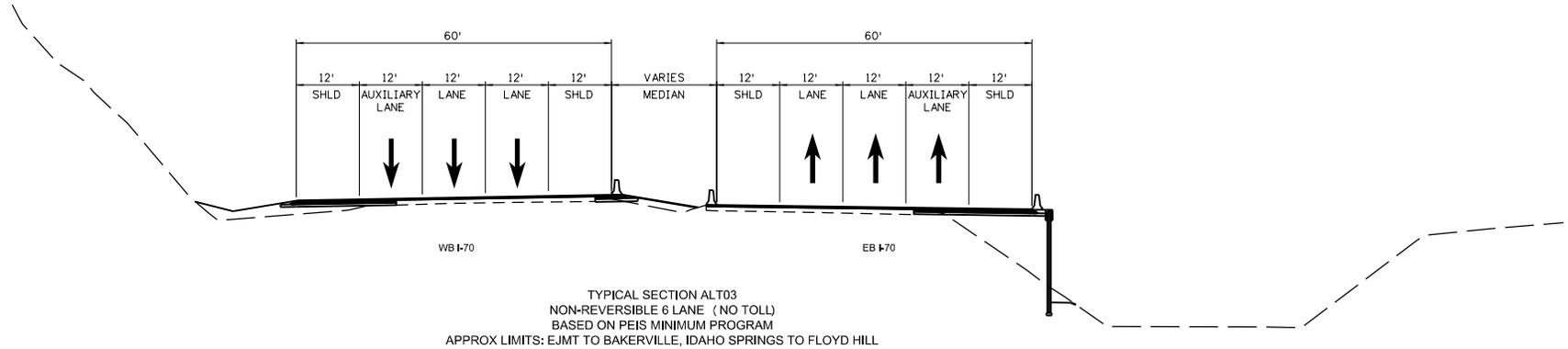
Extent of Roadway Improvements	EJMT to Floyd Hill
General Purpose (GP) Lane Information	Auxiliary lanes added at localized areas between interchanges
Direction of Improvements	Both directions (EB and WB)
Design Speed	55 mph
Trucks, Private Buses, BRT	Allowed in GP Lanes and auxiliary lanes
Tolling	
Capacity Improvements	No toll for auxiliary lanes
Tunnels	Dynamic priced toll for EJMT 3rd Bore and Twin Tunnels 3rd Lane
Technology	Transponder and license plate recognition
Schedule	
Construction Start	2018 (Assumes 3 years NEPA)
Construction Duration	3 years
First Year Operation	2021
Financial Period	50 years

Transit Information

Termini	Silverthorne-Denver, Service to GWS (CDOT Bus), Breckenridge-Denver (AGS)
Special Infrastructure	AGS System; None for CDOT Bus
Schedule	Fall 2014 - CDOT Bus / After 2035 - AGS
Stations	6 CDOT Bus Stations - GWS, Eagle, Vail, Frisco, Denver (2); 5 AGS Stations
Type	
CDOT Bus	TBD by CDOT
BRT	N/A
AGS	In operation after 2035

Special Structures

Special Structures	EJMT 3rd Bore
<p>GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels GWS = Glenwood Springs</p>	



Not to Scale
Print Date: 1/16/2014

Alt03_Opt02

Minimum Program per PEIS

Minimum program per PEIS with 65 mph design speed including a 3rd bore at EJMT. Minimum program is generally localized auxiliary lane improvements.

Roadway Information

Extent of Roadway Improvements	EJMT to Floyd Hill
General Purpose (GP) Lane Information	Auxiliary lanes added at localized areas between interchanges
Direction of Improvements	Both directions (EB and WB)
Design Speed	65 mph
Trucks, Private Buses, BRT	Allowed in GP Lanes and auxiliary lanes
Tolling	
Capacity Improvements	No toll for auxiliary lanes
Tunnels	Dynamic priced toll for EJMT 3rd Bore, New & Twin Tunnels 3rd Lane
Technology	Transponder and license plate recognition
Schedule	
Construction Start	2018 (Assumes 3 years NEPA)
Construction Duration	3 years
First Year Operation	2021
Financial Period	50 years

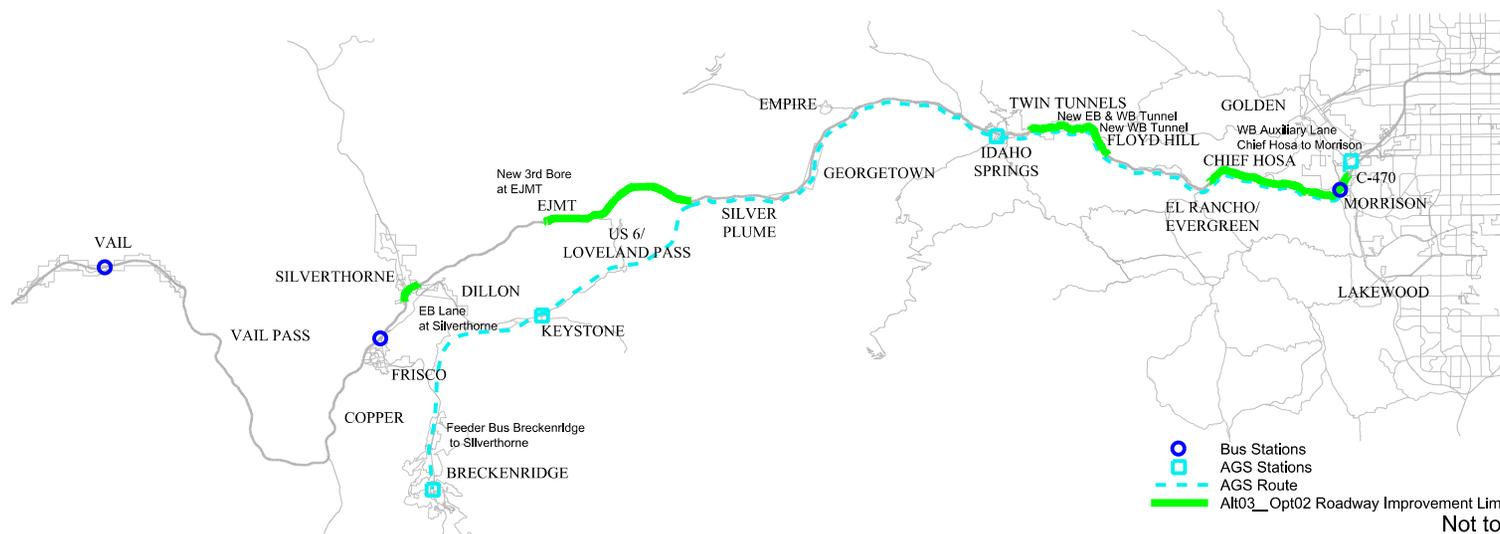
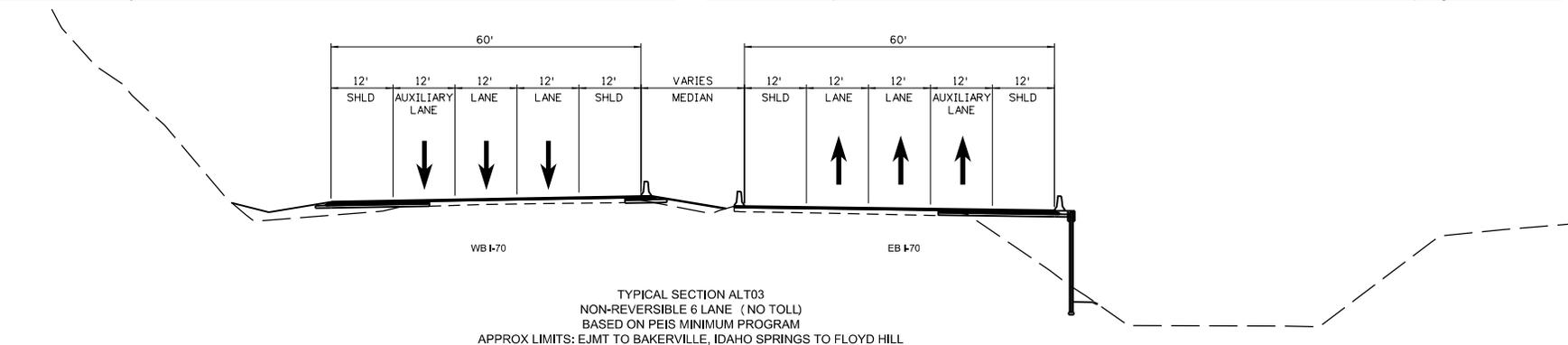
Transit Information

Termini	Silverthorne-Denver, Service to GWS (CDOT Bus), Breckenridge-Denver (AGS)
Special Infrastructure	AGS System; None for CDOT Bus
Schedule	Fall 2014 - CDOT Bus / After 2035 - AGS
Stations	6 CDOT Bus Stations - GWS, Eagle, Vail, Frisco, Denver (2); 5 AGS Stations
Type	
CDOT Bus	TBD by CDOT
BRT	N/A
AGS	In operation after 2035

Special Structures

Special Structures	EJMT 3rd Bore
	New EB & WB Tunnel at Hidden Valley, New WB Tunnel near SH 6

GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels GWS = Glenwood Springs



- Bus Stations
- AGS Stations
- - - AGS Route
- Alt03_Opt02 Roadway Improvement Limits

Not to Scale
Print Date: 1/16/2014

Alt03_Opt03

Minimum Program per PEIS

Minimum program per PEIS with 55 mph design speed without a 3rd bore at EJMT. Minimum program is generally localized auxiliary lane improvements. Option is similar to Alt03_Opt01 without 3rd Bore EJMT.

Roadway Information

Extent of Roadway Improvements	EJMT to Floyd Hill
General Purpose (GP) Lane Information	Auxiliary lanes added at localized areas between interchanges
Direction of Improvements	Both directions (EB and WB)
Design Speed	55 mph
Trucks, Private Buses, BRT	Allowed in GP Lanes and auxiliary lanes
Tolling	
Capacity Improvements	No toll for auxiliary lanes
Tunnels	Dynamic priced toll for Twin Tunnels 3rd Lane
Technology	Transponder and license plate recognition
Schedule	
Construction Start	2018 (Assumes 3 years NEPA)
Construction Duration	3 years
First Year Operation	2021
Financial Period	50 years

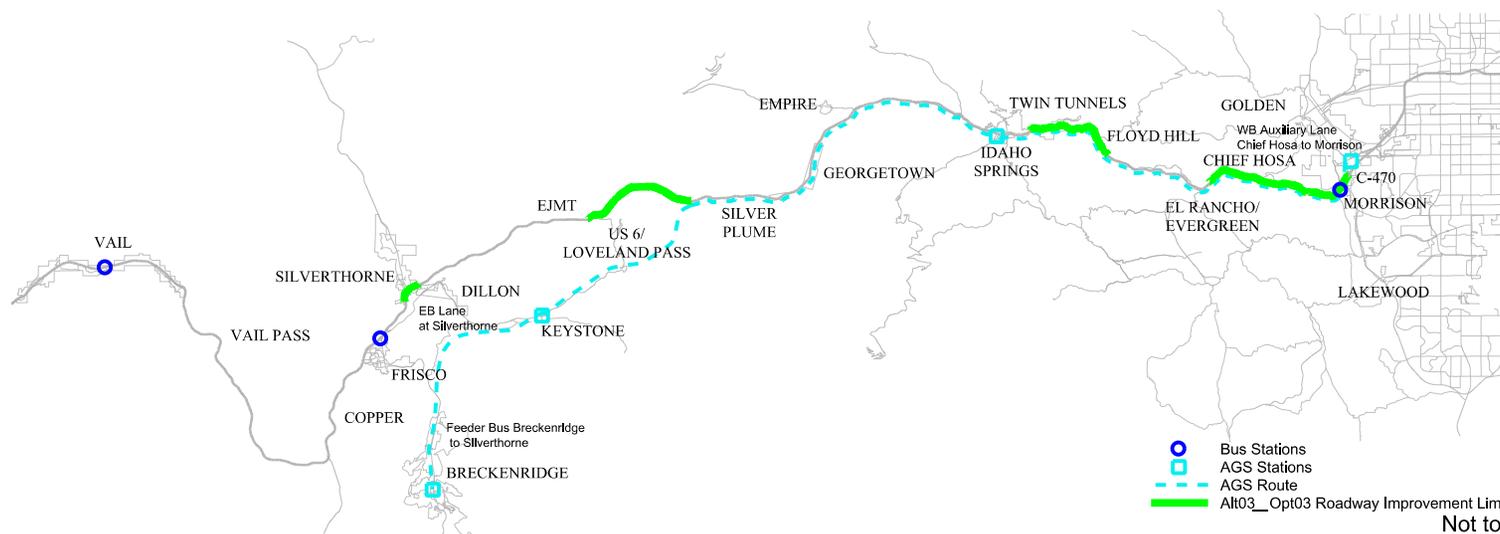
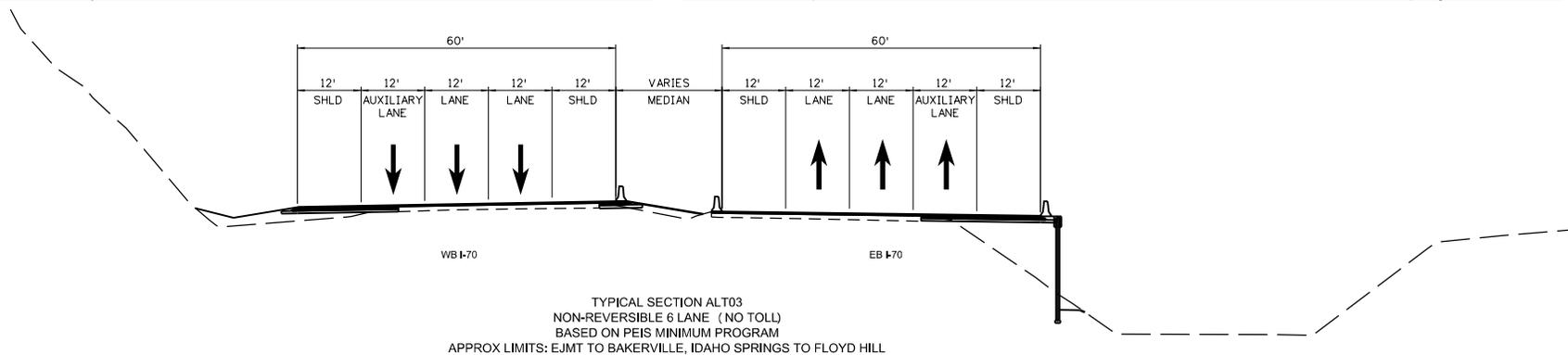
Transit Information

Termini	Silverthorne-Denver, Service to GWS (CDOT Bus), Breckenridge-Denver (AGS)
Special Infrastructure	AGS System; None for CDOT Bus
Schedule	Fall 2014 - CDOT Bus / After 2035 - AGS
Stations	6 CDOT Bus Stations - GWS, Eagle, Vail, Frisco, Denver (2); 5 AGS Stations
Type	
CDOT Bus	TBD by CDOT
BRT	N/A
AGS	In operation after 2035

Special Structures

Special Structures	

GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels GWS = Glenwood Springs



Not to Scale
Print Date: 1/16/2014

Alt03_Opt04

Minimum Program per PEIS

Minimum program per PEIS with 65 mph design speed without a 3rd bore at EJMT. Minimum program is generally localized auxiliary lane improvements. Option is similar to Alt03_Opt02 without 3rd Bore EJMT.

Roadway Information

Extent of Roadway Improvements	EJMT to Floyd Hill
General Purpose (GP) Lane Information	Auxiliary lanes added at localized areas between interchanges
Direction of Improvements	Both directions (EB and WB)
Design Speed	65 mph
Trucks, Private Buses, BRT	Allowed in GP Lanes and auxiliary lanes
Tolling	
Capacity Improvements	No toll for auxiliary lanes
Tunnels	Dynamic priced toll for New & Twin Tunnels 3rd Lane
Technology	Transponder and license plate recognition
Schedule	
Construction Start	2018 (Assumes 3 years NEPA)
Construction Duration	3 years
First Year Operation	2021
Financial Period	50 years

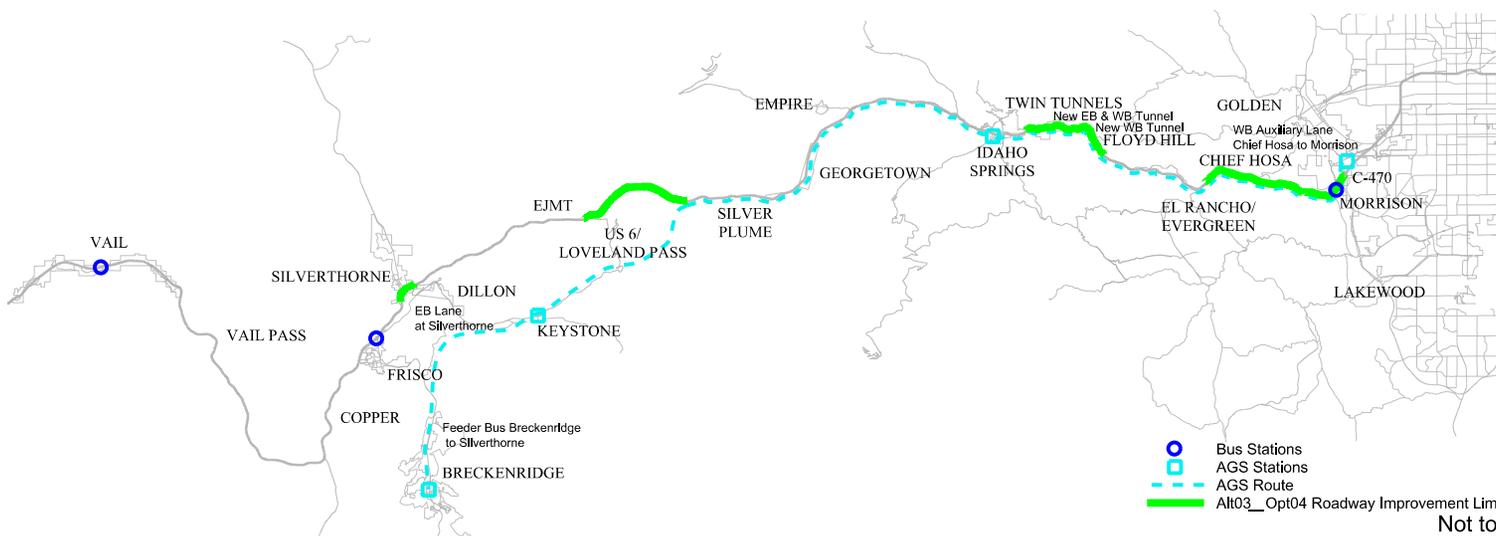
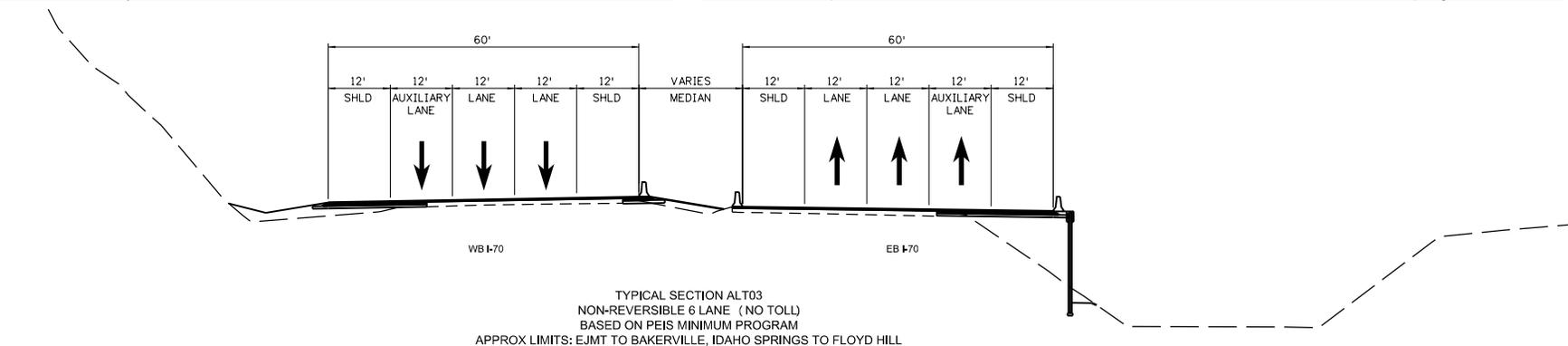
Transit Information

Termini	Silverthorne-Denver, Service to GWS (CDOT Bus), Breckenridge-Denver (AGS)
Special Infrastructure	AGS System; None for CDOT Bus
Schedule	Fall 2014 - CDOT Bus / After 2035 - AGS
Stations	6 CDOT Bus Stations - GWS, Eagle, Vail, Frisco, Denver (2); 5 AGS Stations
Type	
CDOT Bus	TBD by CDOT
BRT	N/A
AGS	In operation after 2035

Special Structures

Special Structures	New EB & WB Tunnel at Hidden Valley, New WB Tunnel near SH 6
--------------------	--

GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels GWS = Glenwood Springs



- Bus Stations
- AGS Stations
- AGS Route
- Alt03_Opt04 Roadway Improvement Limits

Not to Scale
Print Date: 1/16/2014

Alt04_Opt01

Maximum Program per PEIS

Maximum program per PEIS with 55 mph design speed including a 3rd bore at EJMT. Maximum program includes one additional non-reversible tolled lane (EB & WB) between EJMT and Floyd Hill.

Roadway Information

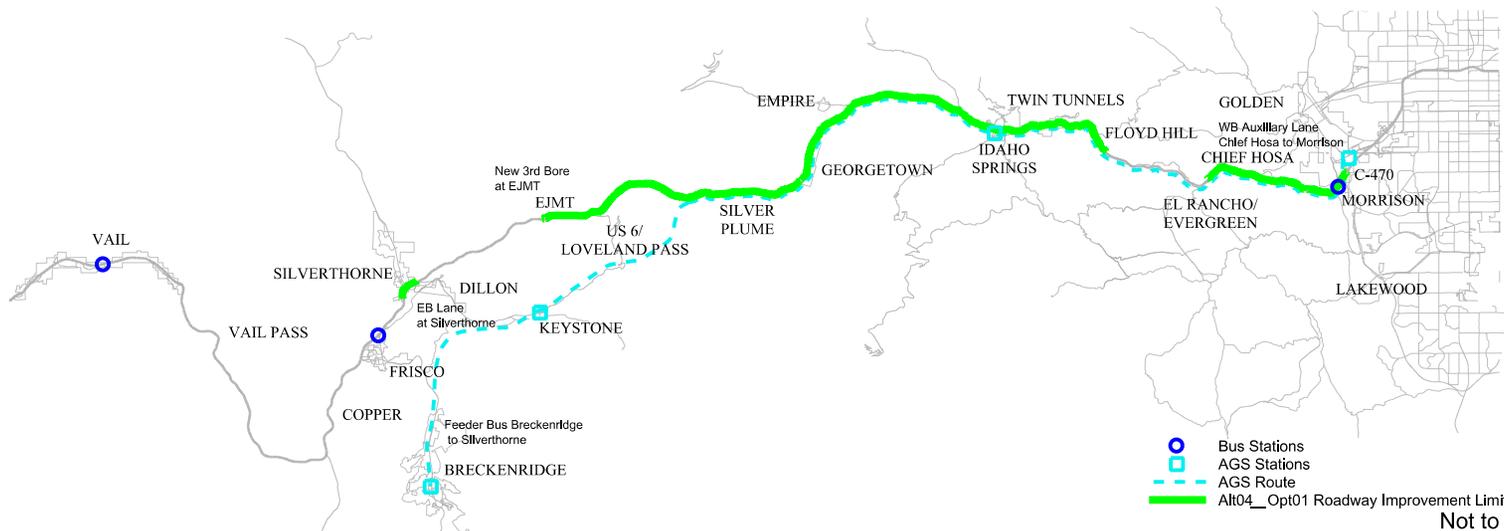
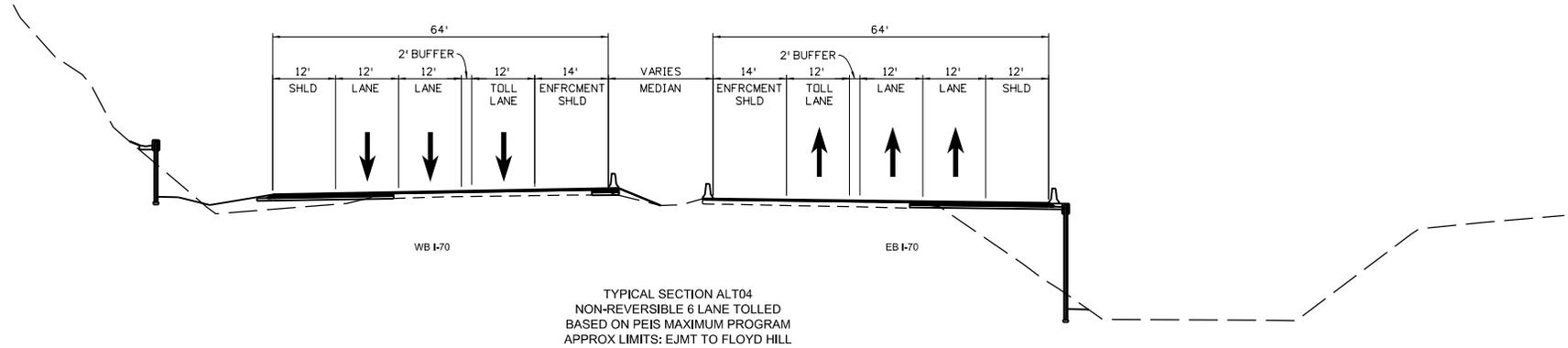
Extent of Roadway Improvements	EJMT to Floyd Hill
General Purpose (GP) Lane Information	Additional capacity by widening existing (Non-reversible)
Direction of Improvements	Both directions (EB and WB)
Design Speed	55 mph
Trucks, Private Buses, BRT	Allowed in Toll Lane (Always in GP Lanes)
Tolling	
Capacity Improvements	Dynamic priced toll for 3rd toll lane
Tunnels	Dynamic priced toll for EJMT 3rd Bore and Twin Tunnels 3rd Lane
Technology	Transponder and license plate recognition
Schedule	
Construction Start	2018 (Assumes 3 years NEPA)
Construction Duration	4 years
First Year Operation	2022
Financial Period	50 years

Transit Information

Termini	Silverthorne-Denver, Service to GWS (CDOT Bus), Breckenridge-Denver (AGS)
Special Infrastructure	AGS System; None for CDOT Bus
Schedule	Fall 2014 - CDOT Bus / After 2035 - AGS
Stations	6 CDOT Bus Stations - GWS, Eagle, Vail, Frisco, Denver (2); 5 AGS Stations
Type	
CDOT Bus	TBD by CDOT
BRT	N/A
AGS	In operation after 2035

Special Structures

Special Structures	EJMT 3rd Bore
GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels GWS = Glenwood Springs	



Alt04_Opt02

Maximum Program per PEIS

Maximum program per PEIS with 65 mph design speed including a 3rd bore at EJMT. Maximum program includes one additional non-reversible tolled lane (EB & WB) between EJMT and Floyd Hill.

Roadway Information

Extent of Roadway Improvements	EJMT to Floyd Hill
General Purpose (GP) Lane Information	Additional capacity by widening existing
Direction of Improvements	Both directions (EB and WB)
Design Speed	65 mph
Trucks, Private Buses, BRT	Allowed in Toll Lane (Always in GP Lanes)
Tolling	
Capacity Improvements	Dynamic priced toll for 3rd toll lane
Tunnels	Dynamic priced toll for EJMT 3rd Bore and New & Twin Tunnels 3rd Lane
Technology	Transponder and license plate recognition
Schedule	
Construction Start	2018 (Assumes 3 years NEPA)
Construction Duration	4 years
First Year Operation	2022
Financial Period	50 years

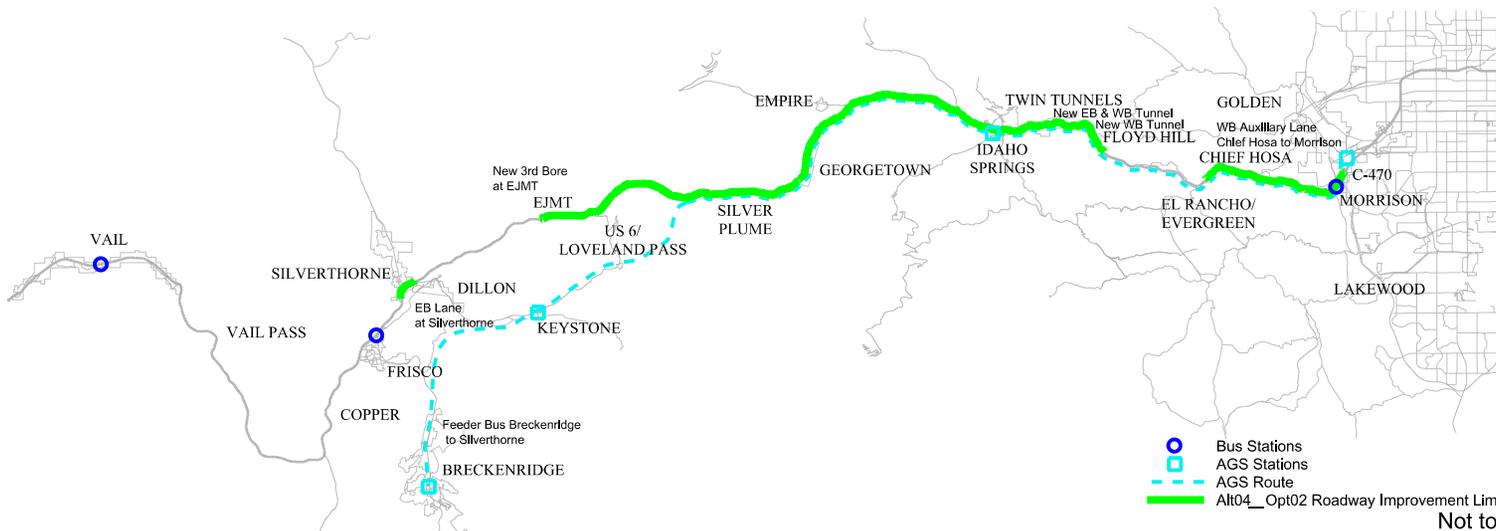
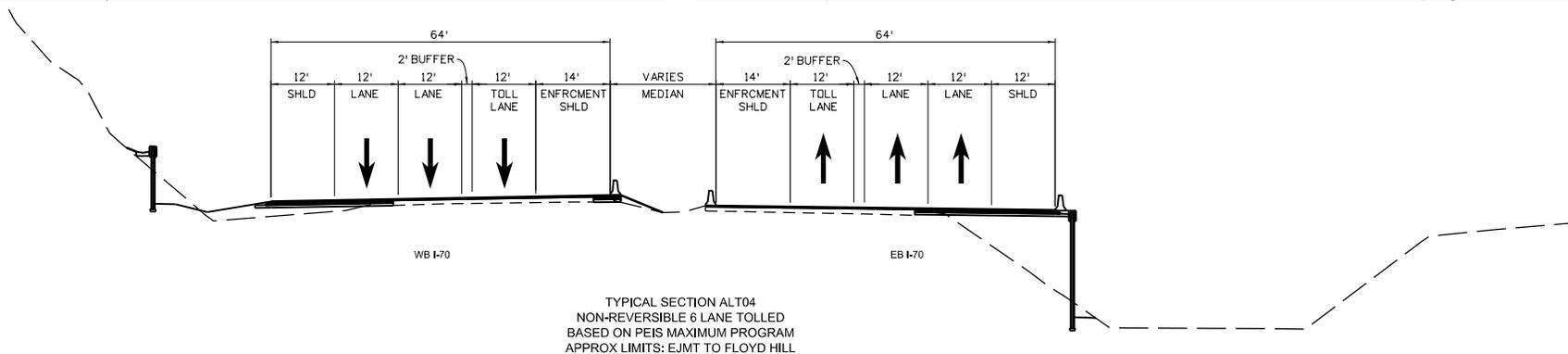
Transit Information

Termini	Silverthorne-Denver, Service to GWS (CDOT Bus), Breckenridge-Denver (AGS)
Special Infrastructure	AGS System; None for CDOT Bus
Schedule	Fall 2014 - CDOT Bus / After 2035 - AGS
Stations	6 CDOT Bus Stations - GWS, Eagle, Vail, Frisco, Denver (2); 5 AGS Stations
Type	
CDOT Bus	TBD by CDOT
BRT	N/A
AGS	In operation after 2035

Special Structures

Special Structures	EJMT 3rd Bore
	New EB & WB Tunnel at Hidden Valley, New WB Tunnel near SH 6

GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels GWS = Glenwood Springs



- Bus Stations
- AGS Stations
- AGS Route
- Alt04_Opt02 Roadway Improvement Limits

Not to Scale
Print Date: 1/16/2014

Alt05_Opt01

Permanent Peak Period Shoulder Lane

Widen the existing roadway to accommodate one additional left side managed lane (EB & WB) for use during peak times, during non-peak times operates as a standard shoulder. Provide full width shoulder on right side.

Roadway Information

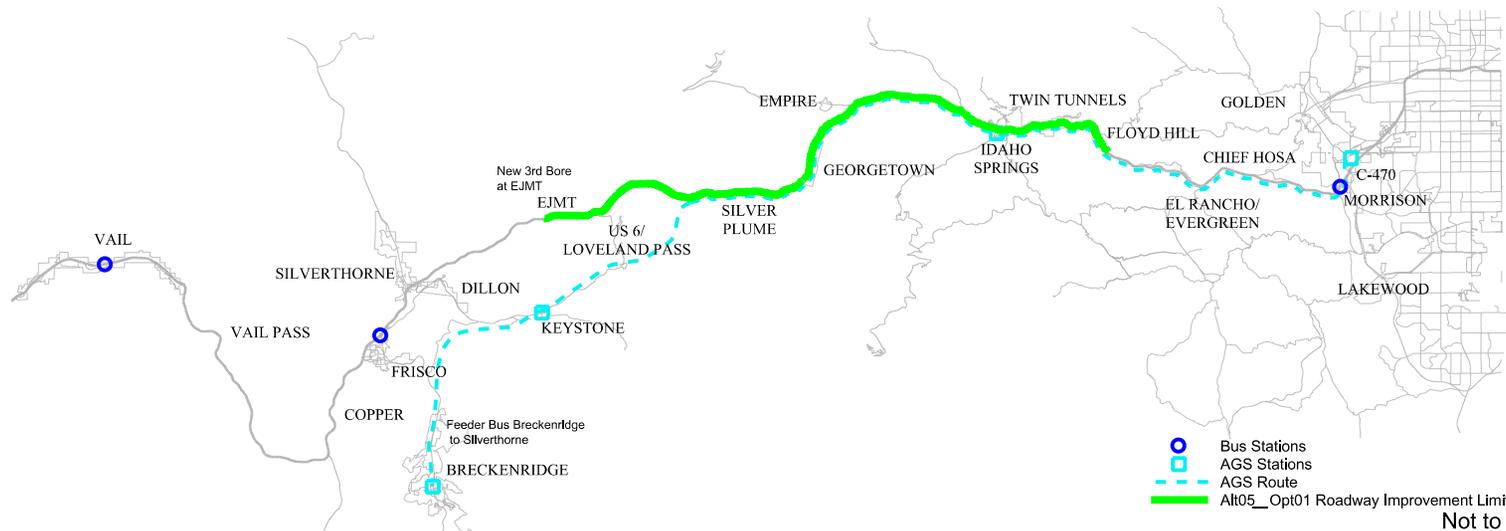
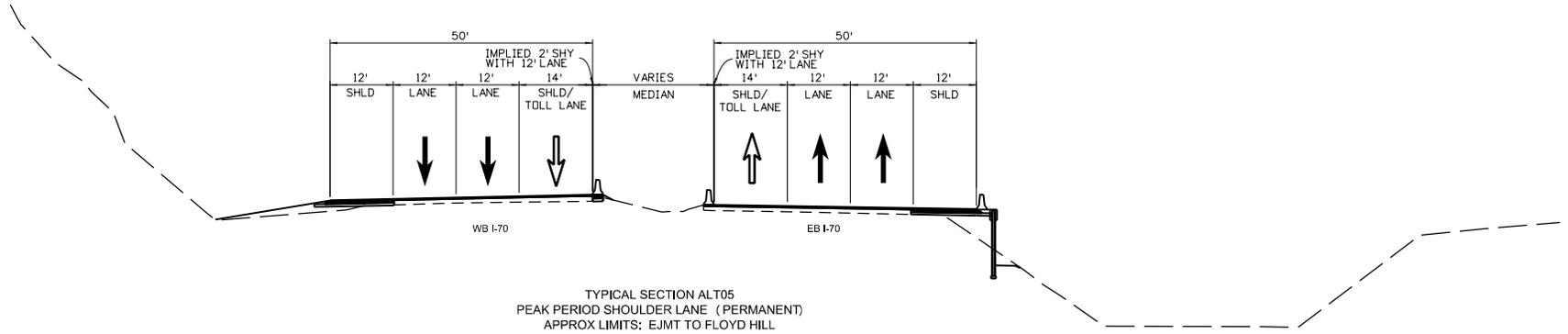
Extent of Roadway Improvements	EJMT to Floyd Hill
General Purpose (GP) Lane Information	Additional capacity by widening existing
Direction of Improvements	Both directions (EB and WB)
Design Speed	Match Existing
Trucks, Private Buses, BRT	Allowed in Peak Period Lane (Always in GP Lanes)
Tolling	
Capacity Improvements	Dynamic priced toll for EB & WB Peak Period Shoulder Lanes
Tunnels	Dynamic priced toll for EJMT 3rd Bore and Twin Tunnels 3rd Lane
Technology	Transponder and license plate recognition
Schedule	
Construction Start	2019 (Assumes 4 years NEPA)
Construction Duration	4 years
First Year Operation	2023
Financial Period	50 years

Transit Information

Termini	Silverthorne-Denver, Service to GWS (CDOT Bus), Breckenridge-Denver (AGS)
Special Infrastructure	AGS System; None for CDOT Bus
Schedule	Fall 2014 - CDOT Bus / After 2035 - AGS
Stations	6 CDOT Bus Stations - GWS, Eagle, Vail, Frisco, Denver (2); 5 AGS Stations
Type	
CDOT Bus	TBD by CDOT
BRT	N/A
AGS	In operation after 2035

Special Structures

Special Structures	EJMT 3rd Bore
GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels GWS = Glenwood Springs	



Not to Scale
Print Date: 1/16/2014

Alt05_Opt02

Permanent Peak Period Shoulder Lane

Widen the existing roadway to accommodate one additional left side managed lane (EB & WB) for use during peak times, during non-peak times operates as a standard shoulder. Provide full width shoulder on right side.

Roadway Information

Extent of Roadway Improvements	Empire to top of Floyd Hill
General Purpose (GP) Lane Information	Additional capacity by widening existing
Direction of Improvements	Both directions (EB and WB)
Design Speed	Match Existing
Trucks, Private Buses, BRT	Allowed in Peak Period Lane (Always in GP Lanes)
Tolling	
Capacity Improvements	Dynamic priced toll for EB & WB Peak Period Shoulder Lanes
Tunnels	Dynamic priced toll for Twin Tunnels 3rd Lane
Technology	Transponder and license plate recognition
Schedule	
Construction Start	2019 (Assumes 4 years NEPA)
Construction Duration	4 years
First Year Operation	2023
Financial Period	50 years

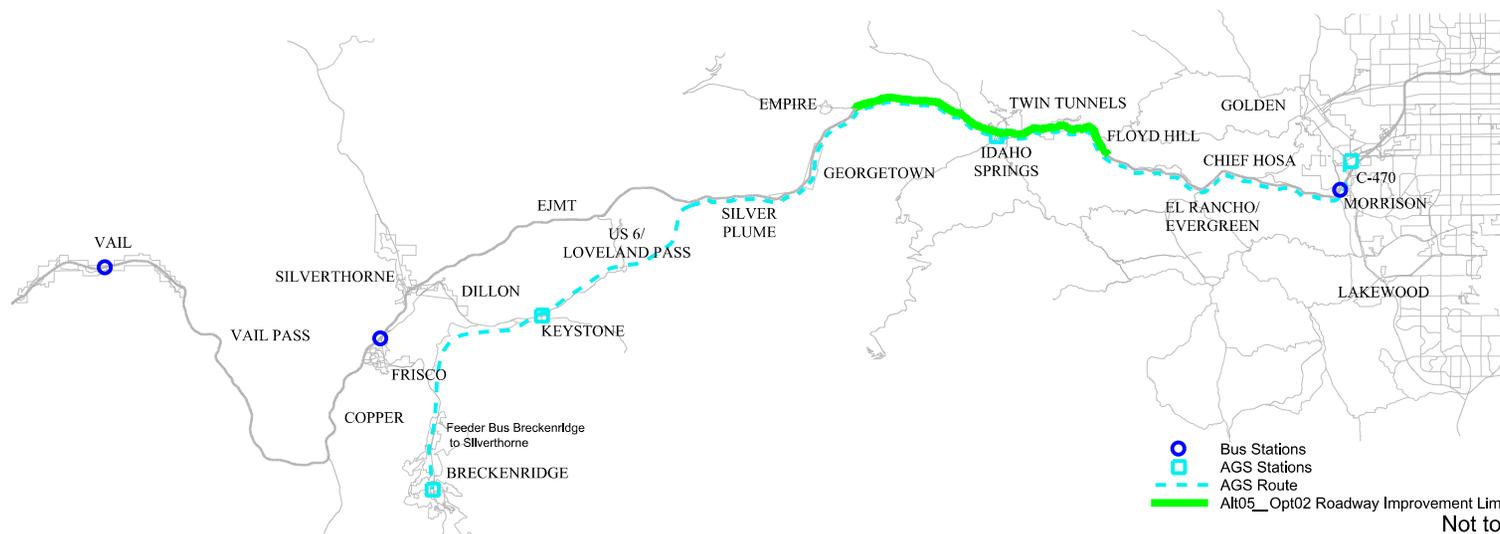
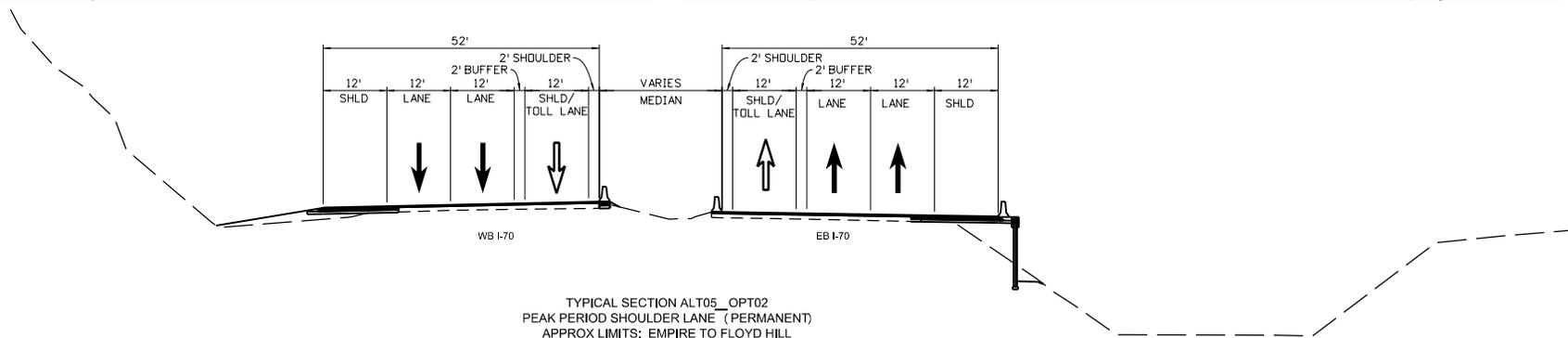
Transit Information

Termini	Silverthorne-Denver, Service to GWS (CDOT Bus), Breckenridge-Denver (AGS)
Special Infrastructure	AGS System: None for CDOT Bus
Schedule	Fall 2014 - CDOT Bus / After 2035 - AGS
Stations	6 CDOT Bus Stations - GWS, Eagle, Vail, Frisco, Denver (2); 5 AGS Stations
Type	
CDOT Bus	TBD by CDOT
BRT	N/A
AGS	In operation after 2035

Special Structures

Special Structures	

GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels GWS = Glenwood Springs



Not to Scale
Print Date: 5/2/2014

Alt06_Opt01

Temporary Peak Period Shoulder Lane

Using the existing roadway, accommodate one additional WB left side managed lane for use during peak times; during non-peak times operates as a standard shoulder. No twelve foot wide shoulders are available during peak periods. During non-peak periods, twelve foot breakdown shoulder is on left side instead of right. Construction of WB peak period lane from Empire to Floyd Hill only. (This alternative assumes EB direction peak period lane from Empire to Floyd Hill is constructed.)

Roadway Information

Extent of Roadway Improvements	Empire to Floyd Hill
General Purpose (GP) Lane Information	Additional capacity by restriping existing
Direction of Improvements	WB Only Direction
Design Speed	Match Existing
Trucks, Private Buses, BRT	Allowed in Peak Period Lane (Always in GP Lanes)

Tolling

Capacity Improvements	Dynamic priced toll for EB & WB Peak Period Shoulder Lanes
Tunnels	Dynamic priced toll for Twin Tunnels 3rd Lanes
Technology	Transponder and license plate recognition

Schedule

Construction Start	2016 (Assumes 1.5 years NEPA)
Construction Duration	3 years
First Year Operation	2019
Financial Period	50 years

Transit Information

Termini	Silverthorne-Denver, Service to GWS (CDOT Bus), Breckenridge-Denver (AGS)
Special Infrastructure	AGS System; None for CDOT Bus
Schedule	Fall 2014 - CDOT Bus / After 2035 - AGS
Stations	6 CDOT Bus Stations - GWS, Eagle, Vail, Frisco, Denver (2); 5 AGS Stations

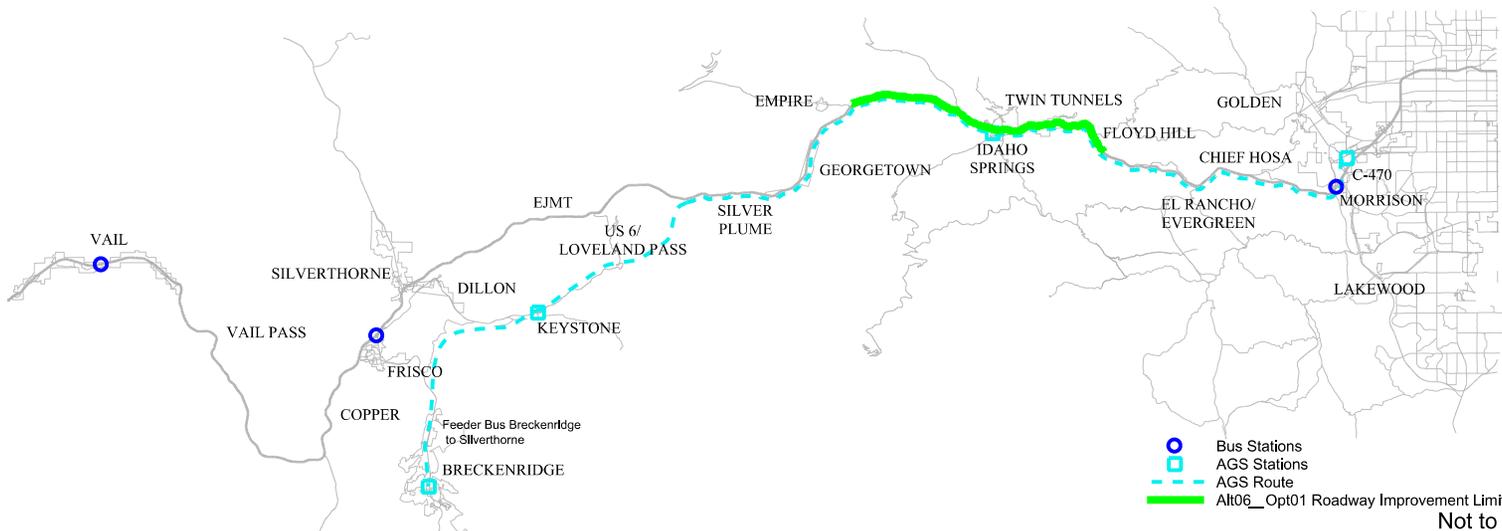
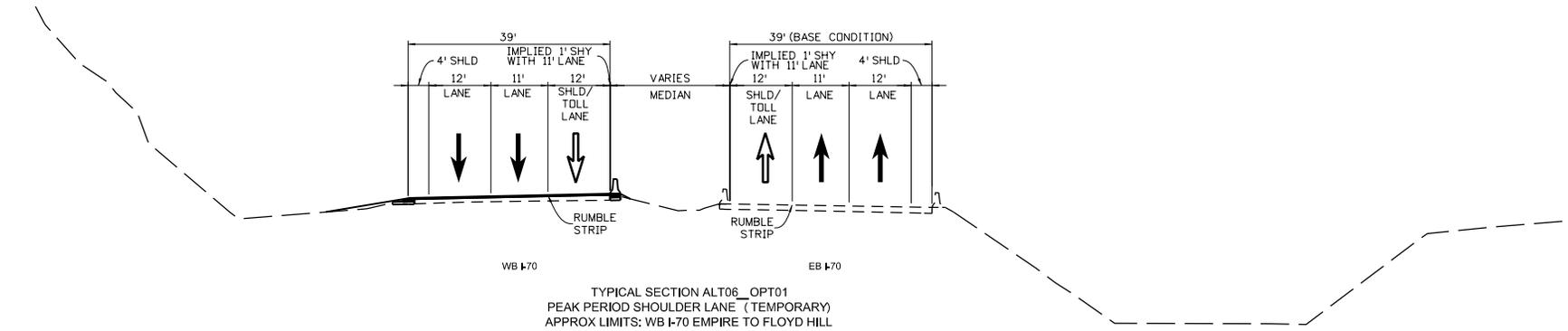
Type

CDOT Bus	TBD by CDOT
BRT	N/A
AGS	In operation after 2035

Special Structures

Special Structures	
--------------------	--

GP = General Purpose Lane EJMT = Eisenhower Johnson Memorial Tunnels GWS = Glenwood Springs





Appendix B: Traffic and Revenue Forecasts Base Case (1.4% Growth Rate)

Growth Rate 1.4%

Base Condition

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	BRT Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	24,921,000	74,000	\$208,000	-	\$0	\$208,000
2024	25,264,000	83,000	\$284,000	-	\$0	\$284,000
2025	25,612,000	94,000	\$387,000	-	\$0	\$387,000
2026	25,960,000	105,000	\$490,000	-	\$0	\$490,000
2027	26,313,000	117,000	\$621,000	-	\$0	\$621,000
2028	26,670,000	130,000	\$787,000	-	\$0	\$787,000
2029	27,032,000	145,000	\$997,000	-	\$0	\$997,000
2030	27,399,000	161,000	\$1,264,000	-	\$0	\$1,264,000
2031	27,771,000	179,000	\$1,602,000	-	\$0	\$1,602,000
2032	28,148,000	199,000	\$2,030,000	-	\$0	\$2,030,000
2033	28,530,000	222,000	\$2,573,000	-	\$0	\$2,573,000
2034	28,917,000	247,000	\$3,261,000	-	\$0	\$3,261,000
2035	29,311,000	275,000	\$4,139,000	-	\$0	\$4,139,000
2036	29,664,000	290,000	\$4,474,000	-	\$0	\$4,474,000
2037	30,021,000	306,000	\$4,836,000	-	\$0	\$4,836,000
2038	30,383,000	322,000	\$5,227,000	-	\$0	\$5,227,000
2039	30,749,000	339,000	\$5,650,000	-	\$0	\$5,650,000
2040	31,120,000	357,000	\$6,107,000	-	\$0	\$6,107,000
2041	31,495,000	376,000	\$6,601,000	-	\$0	\$6,601,000
2042	31,875,000	396,000	\$7,135,000	-	\$0	\$7,135,000
2043	32,259,000	417,000	\$7,712,000	-	\$0	\$7,712,000
2044	32,648,000	439,000	\$8,336,000	-	\$0	\$8,336,000
2045	33,041,000	463,000	\$9,009,000	-	\$0	\$9,009,000
2046	33,387,000	474,000	\$9,421,000	-	\$0	\$9,421,000
2047	33,736,000	485,000	\$9,852,000	-	\$0	\$9,852,000
2048	34,089,000	496,000	\$10,302,000	-	\$0	\$10,302,000
2049	34,446,000	508,000	\$10,773,000	-	\$0	\$10,773,000
2050	34,806,000	520,000	\$11,265,000	-	\$0	\$11,265,000
2051	35,170,000	532,000	\$11,780,000	-	\$0	\$11,780,000
2052	35,538,000	544,000	\$12,318,000	-	\$0	\$12,318,000
2053	35,910,000	557,000	\$12,881,000	-	\$0	\$12,881,000
2054	36,286,000	570,000	\$13,470,000	-	\$0	\$13,470,000
2055	36,666,000	584,000	\$14,086,000	-	\$0	\$14,086,000
2056	36,998,000	598,000	\$14,411,000	-	\$0	\$14,411,000
2057	37,333,000	613,000	\$14,744,000	-	\$0	\$14,744,000
2058	37,671,000	628,000	\$15,084,000	-	\$0	\$15,084,000
2059	38,012,000	643,000	\$15,432,000	-	\$0	\$15,432,000
2060	38,356,000	659,000	\$15,788,000	-	\$0	\$15,788,000
2061	38,703,000	675,000	\$16,153,000	-	\$0	\$16,153,000
2062	39,053,000	692,000	\$16,526,000	-	\$0	\$16,526,000
2063	39,407,000	709,000	\$16,908,000	-	\$0	\$16,908,000
2064	39,764,000	726,000	\$17,298,000	-	\$0	\$17,298,000
2065	40,124,000	745,000	\$17,698,000	-	\$0	\$17,698,000
2066	40,441,000	761,000	\$18,049,000	-	\$0	\$18,049,000
2067	40,761,000	777,000	\$18,406,000	-	\$0	\$18,406,000
2068	41,083,000	793,000	\$18,771,000	-	\$0	\$18,771,000
2069	41,408,000	810,000	\$19,143,000	-	\$0	\$19,143,000
2070	41,735,000	827,000	\$19,522,000	-	\$0	\$19,522,000
2071	42,065,000	845,000	\$19,909,000	-	\$0	\$19,909,000
2072	42,397,000	863,000	\$20,303,000	-	\$0	\$20,303,000
2073	42,732,000	881,000	\$20,705,000	-	\$0	\$20,705,000
2074	43,070,000	900,000	\$21,115,000	-	\$0	\$21,115,000
2075	43,410,000	919,000	\$21,533,000	-	\$0	\$21,533,000

Summary	
Toll Revenue PV (5% DR)	\$109,177,060

Alternative 1 Option1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	BRT Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	25,991,131	2,023,798	\$32,009,326	806,888	\$7,543,323	\$39,445,000
2024	26,354,525	2,077,195	\$33,992,715	818,362	\$7,650,402	\$41,593,000
2025	26,723,000	2,132,000	\$36,099,000	830,000	\$7,759,000	\$43,858,000
2026	27,091,000	2,187,000	\$38,205,000	842,000	\$7,868,000	\$46,123,000
2027	27,465,000	2,243,000	\$40,434,000	854,000	\$7,978,000	\$48,505,000
2028	27,844,000	2,301,000	\$42,793,000	866,000	\$8,090,000	\$51,010,000
2029	28,228,000	2,360,000	\$45,290,000	878,000	\$8,203,000	\$53,644,000
2030	28,617,000	2,421,000	\$47,933,000	890,000	\$8,318,000	\$56,414,000
2031	29,012,000	2,483,000	\$50,730,000	902,000	\$8,434,000	\$59,327,000
2032	29,412,000	2,547,000	\$53,690,000	915,000	\$8,552,000	\$62,391,000
2033	29,818,000	2,612,000	\$56,823,000	928,000	\$8,672,000	\$65,613,000
2034	30,229,000	2,679,000	\$60,138,000	941,000	\$8,793,000	\$69,001,000
2035	30,645,000	2,748,000	\$63,647,000	954,000	\$8,916,000	\$72,563,000
2036	31,047,000	2,826,000	\$65,718,000	967,000	\$9,041,000	\$74,770,000
2037	31,455,000	2,906,000	\$67,856,000	981,000	\$9,168,000	\$77,044,000
2038	31,868,000	2,988,000	\$70,064,000	995,000	\$9,296,000	\$79,388,000
2039	32,287,000	3,073,000	\$72,344,000	1,009,000	\$9,426,000	\$81,803,000
2040	32,711,000	3,160,000	\$74,698,000	1,023,000	\$9,558,000	\$84,291,000
2041	33,141,000	3,250,000	\$77,129,000	1,037,000	\$9,692,000	\$86,855,000
2042	33,576,000	3,342,000	\$79,639,000	1,051,000	\$9,828,000	\$89,497,000
2043	34,017,000	3,437,000	\$82,230,000	1,066,000	\$9,966,000	\$92,219,000
2044	34,464,000	3,534,000	\$84,906,000	1,081,000	\$10,106,000	\$95,024,000
2045	34,916,000	3,634,000	\$87,669,000	1,096,000	\$10,246,000	\$97,915,000
2046	35,333,000	3,728,000	\$90,779,000	1,111,000	\$10,389,000	\$101,186,000
2047	35,755,000	3,825,000	\$93,999,000	1,127,000	\$10,534,000	\$104,567,000
2048	36,182,000	3,924,000	\$97,334,000	1,143,000	\$10,681,000	\$108,060,000
2049	36,614,000	4,026,000	\$100,787,000	1,159,000	\$10,831,000	\$111,670,000
2050	37,051,000	4,131,000	\$104,363,000	1,175,000	\$10,983,000	\$115,401,000
2051	37,493,000	4,238,000	\$108,065,000	1,191,000	\$11,137,000	\$119,256,000
2052	37,940,000	4,348,000	\$111,899,000	1,208,000	\$11,293,000	\$123,240,000
2053	38,393,000	4,461,000	\$115,869,000	1,225,000	\$11,451,000	\$127,357,000
2054	38,851,000	4,577,000	\$119,980,000	1,242,000	\$11,611,000	\$131,612,000
2055	39,313,000	4,697,000	\$124,236,000	1,259,000	\$11,774,000	\$136,010,000
2056	39,740,000	4,801,000	\$128,024,000	1,277,000	\$11,939,000	\$139,975,000
2057	40,172,000	4,908,000	\$131,927,000	1,295,000	\$12,106,000	\$144,055,000
2058	40,608,000	5,017,000	\$135,949,000	1,313,000	\$12,275,000	\$148,254,000
2059	41,049,000	5,129,000	\$140,094,000	1,331,000	\$12,447,000	\$152,576,000
2060	41,495,000	5,243,000	\$144,365,000	1,350,000	\$12,621,000	\$157,024,000
2061	41,946,000	5,360,000	\$148,766,000	1,369,000	\$12,798,000	\$161,601,000
2062	42,402,000	5,479,000	\$153,301,000	1,388,000	\$12,977,000	\$166,312,000
2063	42,862,000	5,601,000	\$157,975,000	1,407,000	\$13,159,000	\$171,160,000
2064	43,327,000	5,726,000	\$162,791,000	1,427,000	\$13,343,000	\$176,149,000
2065	43,797,000	5,853,000	\$167,754,000	1,447,000	\$13,530,000	\$181,284,000
2066	44,228,000	5,962,000	\$172,281,000	1,467,000	\$13,719,000	\$186,010,000
2067	44,664,000	6,073,000	\$176,931,000	1,488,000	\$13,911,000	\$190,859,000
2068	45,104,000	6,186,000	\$181,706,000	1,509,000	\$14,106,000	\$195,834,000
2069	45,548,000	6,302,000	\$186,610,000	1,530,000	\$14,304,000	\$200,939,000
2070	45,997,000	6,420,000	\$191,646,000	1,551,000	\$14,504,000	\$206,177,000
2071	46,450,000	6,540,000	\$196,818,000	1,573,000	\$14,707,000	\$211,552,000
2072	46,908,000	6,662,000	\$202,130,000	1,595,000	\$14,913,000	\$217,067,000
2073	47,370,000	6,786,000	\$207,585,000	1,617,000	\$15,122,000	\$222,726,000
2074	47,837,000	6,913,000	\$213,187,000	1,640,000	\$15,334,000	\$228,532,000
2075	48,308,000	7,043,000	\$218,941,000	1,663,000	\$15,549,000	\$234,490,000

Summary	
Toll Revenue PV (5% DR)	\$1,575,375,415
Transit Revenue PV (5% DR)	\$176,618,876
Capex (2014 dollars)	\$4,116,416,660
Annual O&M (2014 dollars)	\$49,647,753

Alternative 2 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	BRT Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	26,040,596	2,068,680	\$34,062,701	807,062	\$7,542,325	\$41,556,000
2024	26,405,245	2,135,752	\$35,607,807	818,451	\$7,649,402	\$43,234,000
2025	26,775,000	2,205,000	\$37,223,000	830,000	\$7,758,000	\$44,981,000
2026	27,145,000	2,274,000	\$38,838,000	842,000	\$7,867,000	\$46,728,000
2027	27,520,000	2,345,000	\$40,523,000	854,000	\$7,977,000	\$48,542,000
2028	27,900,000	2,419,000	\$42,281,000	866,000	\$8,089,000	\$50,427,000
2029	28,285,000	2,495,000	\$44,116,000	878,000	\$8,202,000	\$52,385,000
2030	28,676,000	2,573,000	\$46,030,000	890,000	\$8,317,000	\$54,419,000
2031	29,072,000	2,654,000	\$48,027,000	902,000	\$8,433,000	\$56,532,000
2032	29,473,000	2,737,000	\$50,111,000	915,000	\$8,551,000	\$58,727,000
2033	29,880,000	2,823,000	\$52,285,000	928,000	\$8,671,000	\$61,007,000
2034	30,293,000	2,912,000	\$54,554,000	941,000	\$8,792,000	\$63,376,000
2035	30,711,000	3,004,000	\$56,923,000	953,000	\$8,915,000	\$65,838,000
2036	31,121,000	3,098,000	\$59,163,000	966,000	\$9,040,000	\$68,223,000
2037	31,537,000	3,195,000	\$61,491,000	980,000	\$9,166,000	\$70,694,000
2038	31,958,000	3,295,000	\$63,910,000	994,000	\$9,294,000	\$73,255,000
2039	32,385,000	3,398,000	\$66,425,000	1,008,000	\$9,424,000	\$75,909,000
2040	32,818,000	3,505,000	\$69,039,000	1,022,000	\$9,556,000	\$78,659,000
2041	33,256,000	3,615,000	\$71,755,000	1,036,000	\$9,690,000	\$81,508,000
2042	33,700,000	3,728,000	\$74,578,000	1,051,000	\$9,826,000	\$84,461,000
2043	34,150,000	3,845,000	\$77,512,000	1,066,000	\$9,963,000	\$87,520,000
2044	34,606,000	3,966,000	\$80,562,000	1,081,000	\$10,102,000	\$90,690,000
2045	35,069,000	4,091,000	\$83,731,000	1,096,000	\$10,244,000	\$93,975,000
2046	35,501,000	4,206,000	\$86,737,000	1,111,000	\$10,387,000	\$97,142,000
2047	35,938,000	4,325,000	\$89,851,000	1,127,000	\$10,532,000	\$100,416,000
2048	36,380,000	4,447,000	\$93,076,000	1,143,000	\$10,679,000	\$103,800,000
2049	36,828,000	4,572,000	\$96,417,000	1,159,000	\$10,829,000	\$107,298,000
2050	37,281,000	4,701,000	\$99,878,000	1,175,000	\$10,981,000	\$110,914,000
2051	37,740,000	4,834,000	\$103,463,000	1,191,000	\$11,135,000	\$114,652,000
2052	38,205,000	4,970,000	\$107,177,000	1,208,000	\$11,291,000	\$118,516,000
2053	38,675,000	5,110,000	\$111,024,000	1,225,000	\$11,449,000	\$122,510,000
2054	39,151,000	5,254,000	\$115,009,000	1,242,000	\$11,609,000	\$126,639,000
2055	39,634,000	5,402,000	\$119,138,000	1,259,000	\$11,772,000	\$130,910,000
2056	40,085,000	5,535,000	\$122,916,000	1,277,000	\$11,937,000	\$134,867,000
2057	40,541,000	5,671,000	\$126,813,000	1,295,000	\$12,104,000	\$138,943,000
2058	41,002,000	5,810,000	\$130,834,000	1,313,000	\$12,273,000	\$143,142,000
2059	41,468,000	5,953,000	\$134,982,000	1,331,000	\$12,445,000	\$147,468,000
2060	41,940,000	6,099,000	\$139,262,000	1,350,000	\$12,619,000	\$151,925,000
2061	42,417,000	6,249,000	\$143,678,000	1,369,000	\$12,796,000	\$156,517,000
2062	42,899,000	6,403,000	\$148,234,000	1,388,000	\$12,975,000	\$161,247,000
2063	43,387,000	6,560,000	\$152,934,000	1,407,000	\$13,157,000	\$166,120,000
2064	43,880,000	6,721,000	\$157,783,000	1,427,000	\$13,341,000	\$171,141,000
2065	44,379,000	6,887,000	\$162,786,000	1,447,000	\$13,528,000	\$176,314,000
2066	44,840,000	7,033,000	\$167,330,000	1,467,000	\$13,717,000	\$181,057,000
2067	45,306,000	7,182,000	\$172,001,000	1,488,000	\$13,909,000	\$185,928,000
2068	45,777,000	7,334,000	\$176,802,000	1,509,000	\$14,104,000	\$190,930,000
2069	46,253,000	7,489,000	\$181,737,000	1,530,000	\$14,301,000	\$196,067,000
2070	46,734,000	7,647,000	\$186,810,000	1,551,000	\$14,501,000	\$201,342,000
2071	47,220,000	7,809,000	\$192,024,000	1,573,000	\$14,704,000	\$206,759,000
2072	47,711,000	7,974,000	\$197,384,000	1,595,000	\$14,910,000	\$212,322,000
2073	48,207,000	8,143,000	\$202,893,000	1,617,000	\$15,119,000	\$218,034,000
2074	48,708,000	8,315,000	\$208,556,000	1,640,000	\$15,331,000	\$223,900,000
2075	49,213,000	8,491,000	\$214,377,000	1,663,000	\$15,546,000	\$229,923,000

Summary	
Toll Revenue PV (5% DR)	\$1,517,973,142
Transit Revenue PV (5% DR)	\$176,590,134
Capex (2014 dollars)	\$5,092,357,957
Annual O&M (2014 dollars)	\$53,861,812

Alternative 3 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2021	25,176,973	15,778	\$659,395	-	\$0	\$659,000
2022	25,363,643	16,742	\$721,086	-	\$0	\$721,000
2023	25,551,698	17,764	\$788,549	-	\$0	\$789,000
2024	25,741,147	18,849	\$862,323	-	\$0	\$862,000
2025	25,932,000	20,000	\$943,000	-	\$0	\$943,000
2026	26,123,000	21,000	\$1,024,000	-	\$0	\$1,024,000
2027	26,315,000	22,000	\$1,112,000	-	\$0	\$1,112,000
2028	26,509,000	23,000	\$1,207,000	-	\$0	\$1,207,000
2029	26,704,000	24,000	\$1,310,000	-	\$0	\$1,310,000
2030	26,901,000	25,000	\$1,422,000	-	\$0	\$1,422,000
2031	27,099,000	26,000	\$1,544,000	-	\$0	\$1,544,000
2032	27,298,000	27,000	\$1,676,000	-	\$0	\$1,676,000
2033	27,499,000	29,000	\$1,819,000	-	\$0	\$1,819,000
2034	27,701,000	31,000	\$1,975,000	-	\$0	\$1,975,000
2035	27,905,000	35,000	\$2,143,000	3,250,000	\$0	\$2,143,000
2036	28,269,000	37,000	\$2,269,000	3,296,000	\$0	\$2,269,000
2037	28,638,000	39,000	\$2,402,000	3,342,000	\$0	\$2,402,000
2038	29,012,000	41,000	\$2,543,000	3,389,000	\$0	\$2,543,000
2039	29,391,000	43,000	\$2,692,000	3,436,000	\$0	\$2,692,000
2040	29,775,000	45,000	\$2,850,000	3,484,000	\$0	\$2,850,000
2041	30,164,000	47,000	\$3,018,000	3,533,000	\$0	\$3,018,000
2042	30,558,000	49,000	\$3,195,000	3,582,000	\$0	\$3,195,000
2043	30,957,000	51,000	\$3,383,000	3,632,000	\$0	\$3,383,000
2044	31,361,000	53,000	\$3,582,000	3,683,000	\$0	\$3,582,000
2045	31,770,000	56,000	\$3,794,000	3,735,000	\$0	\$3,794,000
2046	32,138,000	58,000	\$3,960,000	3,787,000	\$0	\$3,960,000
2047	32,511,000	60,000	\$4,133,000	3,840,000	\$0	\$4,133,000
2048	32,888,000	62,000	\$4,314,000	3,894,000	\$0	\$4,314,000
2049	33,269,000	64,000	\$4,503,000	3,949,000	\$0	\$4,503,000
2050	33,655,000	66,000	\$4,700,000	4,004,000	\$0	\$4,700,000
2051	34,045,000	69,000	\$4,906,000	4,060,000	\$0	\$4,906,000
2052	34,440,000	72,000	\$5,121,000	4,117,000	\$0	\$5,121,000
2053	34,839,000	75,000	\$5,345,000	4,175,000	\$0	\$5,345,000
2054	35,243,000	78,000	\$5,579,000	4,233,000	\$0	\$5,579,000
2055	35,652,000	82,000	\$5,824,000	4,292,000	\$0	\$5,824,000
2056	36,011,000	84,000	\$5,996,000	4,352,000	\$0	\$5,996,000
2057	36,374,000	86,000	\$6,173,000	4,413,000	\$0	\$6,173,000
2058	36,741,000	88,000	\$6,355,000	4,475,000	\$0	\$6,355,000
2059	37,111,000	91,000	\$6,543,000	4,538,000	\$0	\$6,543,000
2060	37,485,000	94,000	\$6,736,000	4,602,000	\$0	\$6,736,000
2061	37,863,000	97,000	\$6,935,000	4,666,000	\$0	\$6,935,000
2062	38,245,000	100,000	\$7,140,000	4,731,000	\$0	\$7,140,000
2063	38,630,000	103,000	\$7,351,000	4,797,000	\$0	\$7,351,000
2064	39,019,000	106,000	\$7,568,000	4,864,000	\$0	\$7,568,000
2065	39,413,000	109,000	\$7,793,000	4,932,000	\$0	\$7,793,000
2066	39,763,000	112,000	\$7,969,000	5,001,000	\$0	\$7,969,000
2067	40,116,000	115,000	\$8,149,000	5,071,000	\$0	\$8,149,000
2068	40,472,000	118,000	\$8,333,000	5,142,000	\$0	\$8,333,000
2069	40,831,000	121,000	\$8,522,000	5,214,000	\$0	\$8,522,000
2070	41,193,000	124,000	\$8,715,000	5,287,000	\$0	\$8,715,000
2071	41,558,000	127,000	\$8,912,000	5,361,000	\$0	\$8,912,000
2072	41,927,000	130,000	\$9,114,000	5,436,000	\$0	\$9,114,000
2073	42,299,000	133,000	\$9,320,000	5,512,000	\$0	\$9,320,000
2074	42,674,000	136,000	\$9,531,000	5,589,000	\$0	\$9,531,000
2075	43,052,000	137,000	\$9,747,000	5,668,000	\$0	\$9,747,000

Summary	
Toll Revenue PV (5% DR)	\$50,976,772
Capex (2014 dollars)	\$2,012,515,909
Annual O&M (2014 dollars)	\$10,716,998

Alternative 4 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2022	26,138,620	475,534	\$5,954,642	-	\$0	\$5,955,000
2023	26,330,666	503,362	\$6,630,754	-	\$0	\$6,631,000
2024	26,524,122	532,819	\$7,383,635	-	\$0	\$7,384,000
2025	26,719,000	564,000	\$8,222,000	-	\$0	\$8,222,000
2026	26,914,000	595,000	\$9,060,000	-	\$0	\$9,060,000
2027	27,110,000	628,000	\$9,984,000	-	\$0	\$9,984,000
2028	27,308,000	663,000	\$11,002,000	-	\$0	\$11,002,000
2029	27,507,000	700,000	\$12,124,000	-	\$0	\$12,124,000
2030	27,708,000	739,000	\$13,360,000	-	\$0	\$13,360,000
2031	27,910,000	780,000	\$14,722,000	-	\$0	\$14,722,000
2032	28,114,000	823,000	\$16,223,000	-	\$0	\$16,223,000
2033	28,319,000	868,000	\$17,877,000	-	\$0	\$17,877,000
2034	28,526,000	916,000	\$19,700,000	-	\$0	\$19,700,000
2035	28,733,000	966,000	\$21,710,000	3,250,000	\$0	\$21,710,000
2036	29,104,000	1,019,000	\$22,603,000	3,295,000	\$0	\$22,603,000
2037	29,480,000	1,075,000	\$23,533,000	3,341,000	\$0	\$23,533,000
2038	29,861,000	1,134,000	\$24,501,000	3,388,000	\$0	\$24,501,000
2039	30,246,000	1,197,000	\$25,509,000	3,435,000	\$0	\$25,509,000
2040	30,636,000	1,263,000	\$26,558,000	3,483,000	\$0	\$26,558,000
2041	31,031,000	1,333,000	\$27,650,000	3,532,000	\$0	\$27,650,000
2042	31,432,000	1,406,000	\$28,787,000	3,581,000	\$0	\$28,787,000
2043	31,838,000	1,484,000	\$29,971,000	3,631,000	\$0	\$29,971,000
2044	32,249,000	1,566,000	\$31,204,000	3,682,000	\$0	\$31,204,000
2045	32,665,000	1,652,000	\$32,486,000	3,734,000	\$0	\$32,486,000
2046	33,059,000	1,719,000	\$33,965,000	3,786,000	\$0	\$33,965,000
2047	33,457,000	1,789,000	\$35,511,000	3,839,000	\$0	\$35,511,000
2048	33,860,000	1,862,000	\$37,128,000	3,893,000	\$0	\$37,128,000
2049	34,268,000	1,938,000	\$38,818,000	3,948,000	\$0	\$38,818,000
2050	34,681,000	2,017,000	\$40,585,000	4,003,000	\$0	\$40,585,000
2051	35,099,000	2,099,000	\$42,433,000	4,059,000	\$0	\$42,433,000
2052	35,522,000	2,184,000	\$44,365,000	4,116,000	\$0	\$44,365,000
2053	35,950,000	2,273,000	\$46,385,000	4,174,000	\$0	\$46,385,000
2054	36,383,000	2,365,000	\$48,497,000	4,232,000	\$0	\$48,497,000
2055	36,821,000	2,460,000	\$50,704,000	4,291,000	\$0	\$50,704,000
2056	37,215,000	2,537,000	\$52,628,000	4,351,000	\$0	\$52,628,000
2057	37,613,000	2,617,000	\$54,625,000	4,412,000	\$0	\$54,625,000
2058	38,016,000	2,699,000	\$56,697,000	4,474,000	\$0	\$56,697,000
2059	38,423,000	2,784,000	\$58,848,000	4,537,000	\$0	\$58,848,000
2060	38,834,000	2,872,000	\$61,081,000	4,601,000	\$0	\$61,081,000
2061	39,250,000	2,962,000	\$63,398,000	4,666,000	\$0	\$63,398,000
2062	39,670,000	3,055,000	\$65,803,000	4,731,000	\$0	\$65,803,000
2063	40,095,000	3,151,000	\$68,299,000	4,797,000	\$0	\$68,299,000
2064	40,524,000	3,250,000	\$70,890,000	4,864,000	\$0	\$70,890,000
2065	40,958,000	3,354,000	\$73,579,000	4,932,000	\$0	\$73,579,000
2066	41,345,000	3,442,000	\$76,061,000	5,001,000	\$0	\$76,061,000
2067	41,736,000	3,532,000	\$78,627,000	5,071,000	\$0	\$78,627,000
2068	42,130,000	3,624,000	\$81,280,000	5,142,000	\$0	\$81,280,000
2069	42,528,000	3,719,000	\$84,022,000	5,214,000	\$0	\$84,022,000
2070	42,930,000	3,816,000	\$86,857,000	5,287,000	\$0	\$86,857,000
2071	43,336,000	3,916,000	\$89,787,000	5,361,000	\$0	\$89,787,000
2072	43,746,000	4,018,000	\$92,816,000	5,436,000	\$0	\$92,816,000
2073	44,159,000	4,123,000	\$95,947,000	5,512,000	\$0	\$95,947,000
2074	44,576,000	4,231,000	\$99,184,000	5,589,000	\$0	\$99,184,000
2075	44,998,000	4,341,000	\$102,530,000	5,667,000	\$0	\$102,530,000

Summary	
Toll Revenue PV (5% DR)	\$486,602,150
Capex (2014 dollars)	\$2,715,596,739
Annual O&M (2014 dollars)	\$14,236,359

Alternative 5 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	25,628,023	466,812	\$6,587,585	-	\$0	\$6,588,000
2024	25,806,391	485,050	\$7,257,254	-	\$0	\$7,257,000
2025	25,986,000	504,000	\$7,995,000	-	\$0	\$7,995,000
2026	26,166,000	523,000	\$8,733,000	-	\$0	\$8,733,000
2027	26,347,000	543,000	\$9,539,000	-	\$0	\$9,539,000
2028	26,529,000	563,000	\$10,419,000	-	\$0	\$10,419,000
2029	26,712,000	584,000	\$11,380,000	-	\$0	\$11,380,000
2030	26,897,000	606,000	\$12,430,000	-	\$0	\$12,430,000
2031	27,083,000	629,000	\$13,577,000	-	\$0	\$13,577,000
2032	27,270,000	653,000	\$14,830,000	-	\$0	\$14,830,000
2033	27,458,000	678,000	\$16,198,000	-	\$0	\$16,198,000
2034	27,648,000	703,000	\$17,693,000	-	\$0	\$17,693,000
2035	27,839,000	729,000	\$19,326,000	3,250,000	\$0	\$19,326,000
2036	28,192,000	761,000	\$20,088,000	3,296,000	\$0	\$20,088,000
2037	28,549,000	794,000	\$20,880,000	3,342,000	\$0	\$20,880,000
2038	28,911,000	829,000	\$21,703,000	3,389,000	\$0	\$21,703,000
2039	29,277,000	865,000	\$22,558,000	3,436,000	\$0	\$22,558,000
2040	29,648,000	903,000	\$23,447,000	3,484,000	\$0	\$23,447,000
2041	30,024,000	943,000	\$24,371,000	3,533,000	\$0	\$24,371,000
2042	30,405,000	984,000	\$25,331,000	3,582,000	\$0	\$25,331,000
2043	30,790,000	1,027,000	\$26,329,000	3,632,000	\$0	\$26,329,000
2044	31,180,000	1,072,000	\$27,367,000	3,683,000	\$0	\$27,367,000
2045	31,576,000	1,121,000	\$28,445,000	3,735,000	\$0	\$28,445,000
2046	31,929,000	1,159,000	\$29,629,000	3,787,000	\$0	\$29,629,000
2047	32,286,000	1,198,000	\$30,863,000	3,840,000	\$0	\$30,863,000
2048	32,647,000	1,238,000	\$32,148,000	3,894,000	\$0	\$32,148,000
2049	33,012,000	1,280,000	\$33,486,000	3,949,000	\$0	\$33,486,000
2050	33,381,000	1,323,000	\$34,880,000	4,004,000	\$0	\$34,880,000
2051	33,754,000	1,368,000	\$36,332,000	4,060,000	\$0	\$36,332,000
2052	34,131,000	1,414,000	\$37,845,000	4,117,000	\$0	\$37,845,000
2053	34,512,000	1,462,000	\$39,421,000	4,175,000	\$0	\$39,421,000
2054	34,898,000	1,511,000	\$41,062,000	4,233,000	\$0	\$41,062,000
2055	35,286,000	1,563,000	\$42,772,000	4,292,000	\$0	\$42,772,000
2056	35,636,000	1,607,000	\$44,338,000	4,352,000	\$0	\$44,338,000
2057	35,990,000	1,652,000	\$45,961,000	4,413,000	\$0	\$45,961,000
2058	36,347,000	1,698,000	\$47,644,000	4,475,000	\$0	\$47,644,000
2059	36,708,000	1,745,000	\$49,389,000	4,538,000	\$0	\$49,389,000
2060	37,072,000	1,794,000	\$51,197,000	4,602,000	\$0	\$51,197,000
2061	37,440,000	1,844,000	\$53,072,000	4,666,000	\$0	\$53,072,000
2062	37,812,000	1,895,000	\$55,015,000	4,731,000	\$0	\$55,015,000
2063	38,187,000	1,948,000	\$57,029,000	4,797,000	\$0	\$57,029,000
2064	38,566,000	2,002,000	\$59,117,000	4,864,000	\$0	\$59,117,000
2065	38,950,000	2,058,000	\$61,283,000	4,932,000	\$0	\$61,283,000
2066	39,285,000	2,106,000	\$63,341,000	5,001,000	\$0	\$63,341,000
2067	39,622,000	2,156,000	\$65,468,000	5,071,000	\$0	\$65,468,000
2068	39,962,000	2,207,000	\$67,667,000	5,142,000	\$0	\$67,667,000
2069	40,305,000	2,259,000	\$69,939,000	5,214,000	\$0	\$69,939,000
2070	40,651,000	2,312,000	\$72,288,000	5,287,000	\$0	\$72,288,000
2071	41,000,000	2,366,000	\$74,716,000	5,361,000	\$0	\$74,716,000
2072	41,352,000	2,422,000	\$77,225,000	5,436,000	\$0	\$77,225,000
2073	41,707,000	2,479,000	\$79,818,000	5,512,000	\$0	\$79,818,000
2074	42,065,000	2,537,000	\$82,498,000	5,589,000	\$0	\$82,498,000
2075	42,428,000	2,597,000	\$85,269,000	5,667,000	\$0	\$85,269,000

Summary	
Toll Revenue PV (5% DR)	\$440,488,698
Capex (2014 dollars)	\$1,959,169,765
Annual O&M (2014 dollars)	\$13,810,447

Alternative 5.1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	25,307,000	578,000	\$3,255,000	-	\$0	\$3,255,000
2024	25,490,000	598,000	\$3,663,000	-	\$0	\$3,663,000
2025	25,674,000	619,000	\$4,123,000	-	\$0	\$4,123,000
2026	25,858,000	640,000	\$4,583,000	-	\$0	\$4,583,000
2027	26,043,000	661,000	\$5,094,000	-	\$0	\$5,094,000
2028	26,230,000	683,000	\$5,662,000	-	\$0	\$5,662,000
2029	26,418,000	706,000	\$6,293,000	-	\$0	\$6,293,000
2030	26,607,000	729,000	\$6,995,000	-	\$0	\$6,995,000
2031	26,798,000	753,000	\$7,775,000	-	\$0	\$7,775,000
2032	26,990,000	778,000	\$8,642,000	-	\$0	\$8,642,000
2033	27,183,000	804,000	\$9,605,000	-	\$0	\$9,605,000
2034	27,378,000	831,000	\$10,676,000	-	\$0	\$10,676,000
2035	27,573,000	858,000	\$11,864,000	3,250,000	\$0	\$11,864,000
2036	27,928,000	890,000	\$12,284,000	3,295,000	\$0	\$12,284,000
2037	28,288,000	923,000	\$12,719,000	3,341,000	\$0	\$12,719,000
2038	28,653,000	957,000	\$13,169,000	3,388,000	\$0	\$13,169,000
2039	29,022,000	993,000	\$13,635,000	3,435,000	\$0	\$13,635,000
2040	29,396,000	1,030,000	\$14,117,000	3,483,000	\$0	\$14,117,000
2041	29,775,000	1,068,000	\$14,616,000	3,532,000	\$0	\$14,616,000
2042	30,159,000	1,108,000	\$15,133,000	3,581,000	\$0	\$15,133,000
2043	30,548,000	1,149,000	\$15,668,000	3,631,000	\$0	\$15,668,000
2044	30,942,000	1,192,000	\$16,222,000	3,682,000	\$0	\$16,222,000
2045	31,341,000	1,236,000	\$16,797,000	3,734,000	\$0	\$16,797,000
2046	31,696,000	1,273,000	\$17,488,000	3,786,000	\$0	\$17,488,000
2047	32,055,000	1,311,000	\$18,207,000	3,839,000	\$0	\$18,207,000
2048	32,418,000	1,350,000	\$18,956,000	3,893,000	\$0	\$18,956,000
2049	32,785,000	1,390,000	\$19,735,000	3,948,000	\$0	\$19,735,000
2050	33,157,000	1,432,000	\$20,546,000	4,003,000	\$0	\$20,546,000
2051	33,533,000	1,475,000	\$21,391,000	4,059,000	\$0	\$21,391,000
2052	33,913,000	1,519,000	\$22,270,000	4,116,000	\$0	\$22,270,000
2053	34,297,000	1,565,000	\$23,186,000	4,174,000	\$0	\$23,186,000
2054	34,686,000	1,612,000	\$24,139,000	4,232,000	\$0	\$24,139,000
2055	35,080,000	1,661,000	\$25,131,000	4,291,000	\$0	\$25,131,000
2056	35,430,000	1,704,000	\$26,052,000	4,351,000	\$0	\$26,052,000
2057	35,784,000	1,748,000	\$27,007,000	4,412,000	\$0	\$27,007,000
2058	36,141,000	1,794,000	\$27,997,000	4,474,000	\$0	\$27,997,000
2059	36,502,000	1,841,000	\$29,023,000	4,537,000	\$0	\$29,023,000
2060	36,866,000	1,889,000	\$30,087,000	4,601,000	\$0	\$30,087,000
2061	37,234,000	1,938,000	\$31,190,000	4,666,000	\$0	\$31,190,000
2062	37,606,000	1,989,000	\$32,333,000	4,731,000	\$0	\$32,333,000
2063	37,981,000	2,041,000	\$33,518,000	4,797,000	\$0	\$33,518,000
2064	38,360,000	2,094,000	\$34,747,000	4,864,000	\$0	\$34,747,000
2065	38,743,000	2,149,000	\$36,021,000	4,932,000	\$0	\$36,021,000
2066	39,077,000	2,194,000	\$37,124,000	5,001,000	\$0	\$37,124,000
2067	39,414,000	2,240,000	\$38,261,000	5,071,000	\$0	\$38,261,000
2068	39,754,000	2,287,000	\$39,433,000	5,142,000	\$0	\$39,433,000
2069	40,097,000	2,335,000	\$40,641,000	5,214,000	\$0	\$40,641,000
2070	40,443,000	2,384,000	\$41,886,000	5,287,000	\$0	\$41,886,000
2071	40,792,000	2,434,000	\$43,169,000	5,361,000	\$0	\$43,169,000
2072	41,144,000	2,485,000	\$44,491,000	5,436,000	\$0	\$44,491,000
2073	41,499,000	2,537,000	\$45,854,000	5,512,000	\$0	\$45,854,000
2074	41,857,000	2,590,000	\$47,259,000	5,589,000	\$0	\$47,259,000
2075	42,217,000	2,645,000	\$48,707,000	5,667,000	\$0	\$48,707,000

Summary	
Toll Revenue PV (5% DR)	\$256,651,138
Capex (2014 dollars)	\$99,768,648
Annual O&M (2014 dollars)	\$3,463,832

Alternative 6 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2019	24,640,000	490,000	\$1,922,000	-	\$0	\$1,922,000
2020	24,818,000	507,000	\$2,174,000	-	\$0	\$2,174,000
2021	24,997,000	524,000	\$2,459,000	-	\$0	\$2,459,000
2022	25,177,000	542,000	\$2,782,000	-	\$0	\$2,782,000
2023	25,358,000	561,000	\$3,147,000	-	\$0	\$3,147,000
2024	25,541,000	580,000	\$3,560,000	-	\$0	\$3,560,000
2025	25,725,000	600,000	\$4,027,000	-	\$0	\$4,027,000
2026	25,909,000	620,000	\$4,494,000	-	\$0	\$4,494,000
2027	26,094,000	641,000	\$5,015,000	-	\$0	\$5,015,000
2028	26,281,000	662,000	\$5,597,000	-	\$0	\$5,597,000
2029	26,469,000	684,000	\$6,246,000	-	\$0	\$6,246,000
2030	26,658,000	707,000	\$6,971,000	-	\$0	\$6,971,000
2031	26,849,000	730,000	\$7,780,000	-	\$0	\$7,780,000
2032	27,041,000	754,000	\$8,683,000	-	\$0	\$8,683,000
2033	27,234,000	779,000	\$9,690,000	-	\$0	\$9,690,000
2034	27,429,000	805,000	\$10,814,000	-	\$0	\$10,814,000
2035	27,626,000	832,000	\$12,071,000	3,250,000	\$0	\$12,071,000
2036	27,981,000	863,000	\$12,496,000	3,296,000	\$0	\$12,496,000
2037	28,341,000	896,000	\$12,936,000	3,342,000	\$0	\$12,936,000
2038	28,706,000	930,000	\$13,391,000	3,389,000	\$0	\$13,391,000
2039	29,075,000	965,000	\$13,862,000	3,436,000	\$0	\$13,862,000
2040	29,449,000	1,001,000	\$14,350,000	3,484,000	\$0	\$14,350,000
2041	29,828,000	1,039,000	\$14,855,000	3,533,000	\$0	\$14,855,000
2042	30,212,000	1,078,000	\$15,378,000	3,582,000	\$0	\$15,378,000
2043	30,601,000	1,119,000	\$15,919,000	3,632,000	\$0	\$15,919,000
2044	30,995,000	1,161,000	\$16,479,000	3,683,000	\$0	\$16,479,000
2045	31,394,000	1,205,000	\$17,061,000	3,735,000	\$0	\$17,061,000
2046	31,748,000	1,240,000	\$17,776,000	3,787,000	\$0	\$17,776,000
2047	32,106,000	1,276,000	\$18,521,000	3,840,000	\$0	\$18,521,000
2048	32,468,000	1,313,000	\$19,297,000	3,894,000	\$0	\$19,297,000
2049	32,834,000	1,351,000	\$20,106,000	3,949,000	\$0	\$20,106,000
2050	33,205,000	1,391,000	\$20,949,000	4,004,000	\$0	\$20,949,000
2051	33,580,000	1,432,000	\$21,827,000	4,060,000	\$0	\$21,827,000
2052	33,959,000	1,474,000	\$22,742,000	4,117,000	\$0	\$22,742,000
2053	34,342,000	1,517,000	\$23,695,000	4,175,000	\$0	\$23,695,000
2054	34,730,000	1,561,000	\$24,688,000	4,233,000	\$0	\$24,688,000
2055	35,123,000	1,608,000	\$25,724,000	4,292,000	\$0	\$25,724,000
2056	35,472,000	1,649,000	\$26,680,000	4,352,000	\$0	\$26,680,000
2057	35,824,000	1,691,000	\$27,671,000	4,413,000	\$0	\$27,671,000
2058	36,180,000	1,734,000	\$28,699,000	4,475,000	\$0	\$28,699,000
2059	36,539,000	1,778,000	\$29,765,000	4,538,000	\$0	\$29,765,000
2060	36,902,000	1,823,000	\$30,871,000	4,602,000	\$0	\$30,871,000
2061	37,269,000	1,869,000	\$32,018,000	4,666,000	\$0	\$32,018,000
2062	37,639,000	1,916,000	\$33,208,000	4,731,000	\$0	\$33,208,000
2063	38,013,000	1,964,000	\$34,442,000	4,797,000	\$0	\$34,442,000
2064	38,391,000	2,014,000	\$35,722,000	4,864,000	\$0	\$35,722,000
2065	38,772,000	2,064,000	\$37,050,000	4,932,000	\$0	\$37,050,000
2066	39,105,000	2,106,000	\$38,145,000	5,001,000	\$0	\$38,145,000
2067	39,441,000	2,148,000	\$39,272,000	5,071,000	\$0	\$39,272,000
2068	39,780,000	2,191,000	\$40,433,000	5,142,000	\$0	\$40,433,000
2069	40,122,000	2,235,000	\$41,628,000	5,214,000	\$0	\$41,628,000
2070	40,467,000	2,280,000	\$42,858,000	5,287,000	\$0	\$42,858,000
2071	40,815,000	2,326,000	\$44,125,000	5,361,000	\$0	\$44,125,000
2072	41,166,000	2,373,000	\$45,429,000	5,436,000	\$0	\$45,429,000
2073	41,520,000	2,421,000	\$46,772,000	5,512,000	\$0	\$46,772,000
2074	41,877,000	2,470,000	\$48,154,000	5,589,000	\$0	\$48,154,000
2075	42,235,000	2,519,000	\$49,577,000	5,668,000	\$0	\$49,577,000

Summary	
Toll Revenue PV (5% DR)	\$222,568,567
Capex (2014 dollars)	\$99,768,648
Annual O&M (2014 dollars)	\$3,463,832



**Appendix C: Traffic and Revenue Forecasts Alternate Growth Rates
(2.0%, 2.5%, and 3.0% Growth Rates)**

Growth Rate 2.0%

Base Condition

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	BRT Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	24,651,000	68,000	\$180,000	-	\$0	\$180,000
2024	25,127,000	80,000	\$264,000	-	\$0	\$264,000
2025	25,612,000	94,000	\$387,000	-	\$0	\$387,000
2026	26,097,000	108,000	\$510,000	-	\$0	\$510,000
2027	26,592,000	124,000	\$672,000	-	\$0	\$672,000
2028	27,096,000	142,000	\$886,000	-	\$0	\$886,000
2029	27,609,000	163,000	\$1,168,000	-	\$0	\$1,168,000
2030	28,132,000	187,000	\$1,539,000	-	\$0	\$1,539,000
2031	28,665,000	215,000	\$2,028,000	-	\$0	\$2,028,000
2032	29,208,000	247,000	\$2,673,000	-	\$0	\$2,673,000
2033	29,761,000	283,000	\$3,523,000	-	\$0	\$3,523,000
2034	30,325,000	325,000	\$4,643,000	-	\$0	\$4,643,000
2035	30,901,000	371,000	\$6,122,000	-	\$0	\$6,122,000
2036	31,387,000	387,000	\$6,674,000	-	\$0	\$6,674,000
2037	31,881,000	404,000	\$7,276,000	-	\$0	\$7,276,000
2038	32,383,000	421,000	\$7,932,000	-	\$0	\$7,932,000
2039	32,892,000	439,000	\$8,647,000	-	\$0	\$8,647,000
2040	33,409,000	458,000	\$9,427,000	-	\$0	\$9,427,000
2041	33,935,000	478,000	\$10,277,000	-	\$0	\$10,277,000
2042	34,469,000	498,000	\$11,204,000	-	\$0	\$11,204,000
2043	35,011,000	519,000	\$12,215,000	-	\$0	\$12,215,000
2044	35,562,000	541,000	\$13,317,000	-	\$0	\$13,317,000
2045	36,121,000	564,000	\$14,520,000	-	\$0	\$14,520,000
2046	36,585,000	586,000	\$14,969,000	-	\$0	\$14,969,000
2047	37,055,000	609,000	\$15,432,000	-	\$0	\$15,432,000
2048	37,531,000	633,000	\$15,909,000	-	\$0	\$15,909,000
2049	38,013,000	658,000	\$16,401,000	-	\$0	\$16,401,000
2050	38,502,000	684,000	\$16,908,000	-	\$0	\$16,908,000
2051	38,997,000	711,000	\$17,431,000	-	\$0	\$17,431,000
2052	39,498,000	739,000	\$17,970,000	-	\$0	\$17,970,000
2053	40,006,000	768,000	\$18,526,000	-	\$0	\$18,526,000
2054	40,520,000	798,000	\$19,099,000	-	\$0	\$19,099,000
2055	41,041,000	830,000	\$19,690,000	-	\$0	\$19,690,000
2056	41,469,000	850,000	\$20,227,000	-	\$0	\$20,227,000
2057	41,901,000	870,000	\$20,778,000	-	\$0	\$20,778,000
2058	42,338,000	891,000	\$21,344,000	-	\$0	\$21,344,000
2059	42,779,000	912,000	\$21,926,000	-	\$0	\$21,926,000
2060	43,225,000	934,000	\$22,524,000	-	\$0	\$22,524,000
2061	43,675,000	956,000	\$23,138,000	-	\$0	\$23,138,000
2062	44,130,000	979,000	\$23,769,000	-	\$0	\$23,769,000
2063	44,590,000	1,003,000	\$24,417,000	-	\$0	\$24,417,000
2064	45,055,000	1,027,000	\$25,082,000	-	\$0	\$25,082,000
2065	45,523,000	1,053,000	\$25,765,000	-	\$0	\$25,765,000
2066	45,890,000	1,067,000	\$26,401,000	-	\$0	\$26,401,000
2067	46,260,000	1,082,000	\$27,053,000	-	\$0	\$27,053,000
2068	46,633,000	1,097,000	\$27,721,000	-	\$0	\$27,721,000
2069	47,009,000	1,112,000	\$28,406,000	-	\$0	\$28,406,000
2070	47,388,000	1,127,000	\$29,108,000	-	\$0	\$29,108,000
2071	47,770,000	1,142,000	\$29,827,000	-	\$0	\$29,827,000
2072	48,155,000	1,158,000	\$30,564,000	-	\$0	\$30,564,000
2073	48,543,000	1,174,000	\$31,319,000	-	\$0	\$31,319,000
2074	48,934,000	1,190,000	\$32,093,000	-	\$0	\$32,093,000
2075	49,328,000	1,207,000	\$32,886,000	-	\$0	\$32,886,000

Summary	
Toll Revenue PV (5% DR)	\$160,682,326

Alternative 1 Option1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	BRT Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	25,686,658	1,952,866	\$30,037,970	797,094	\$7,451,773	\$37,259,000
2024	26,199,705	2,040,468	\$32,929,328	813,380	\$7,603,835	\$40,424,000
2025	26,723,000	2,132,000	\$36,099,000	830,000	\$7,759,000	\$43,858,000
2026	27,246,000	2,224,000	\$39,269,000	847,000	\$7,914,000	\$47,292,000
2027	27,780,000	2,319,000	\$42,717,000	864,000	\$8,072,000	\$50,995,000
2028	28,324,000	2,419,000	\$46,468,000	881,000	\$8,233,000	\$54,988,000
2029	28,879,000	2,523,000	\$50,548,000	899,000	\$8,398,000	\$59,294,000
2030	29,445,000	2,631,000	\$54,986,000	917,000	\$8,566,000	\$63,937,000
2031	30,022,000	2,744,000	\$59,814,000	935,000	\$8,737,000	\$68,944,000
2032	30,610,000	2,862,000	\$65,066,000	954,000	\$8,912,000	\$74,343,000
2033	31,209,000	2,985,000	\$70,779,000	973,000	\$9,090,000	\$80,165,000
2034	31,820,000	3,113,000	\$76,994,000	992,000	\$9,272,000	\$86,442,000
2035	32,442,000	3,246,000	\$83,754,000	1,012,000	\$9,458,000	\$93,212,000
2036	33,016,000	3,375,000	\$88,218,000	1,032,000	\$9,647,000	\$97,902,000
2037	33,601,000	3,509,000	\$92,919,000	1,053,000	\$9,840,000	\$102,828,000
2038	34,196,000	3,648,000	\$97,871,000	1,074,000	\$10,037,000	\$108,002,000
2039	34,801,000	3,793,000	\$103,087,000	1,095,000	\$10,238,000	\$113,437,000
2040	35,417,000	3,944,000	\$108,581,000	1,117,000	\$10,443,000	\$119,145,000
2041	36,044,000	4,101,000	\$114,368,000	1,139,000	\$10,652,000	\$125,140,000
2042	36,682,000	4,264,000	\$120,463,000	1,162,000	\$10,865,000	\$131,437,000
2043	37,331,000	4,433,000	\$126,883,000	1,185,000	\$11,082,000	\$138,051,000
2044	37,992,000	4,609,000	\$133,645,000	1,209,000	\$11,304,000	\$144,998,000
2045	38,666,000	4,792,000	\$140,766,000	1,233,000	\$11,529,000	\$152,295,000
2046	39,266,000	4,943,000	\$147,679,000	1,258,000	\$11,760,000	\$159,475,000
2047	39,876,000	5,099,000	\$154,931,000	1,283,000	\$11,995,000	\$166,993,000
2048	40,495,000	5,260,000	\$162,539,000	1,309,000	\$12,235,000	\$174,866,000
2049	41,124,000	5,426,000	\$170,521,000	1,335,000	\$12,480,000	\$183,110,000
2050	41,763,000	5,597,000	\$178,895,000	1,362,000	\$12,730,000	\$191,743,000
2051	42,411,000	5,773,000	\$187,680,000	1,389,000	\$12,985,000	\$200,783,000
2052	43,070,000	5,955,000	\$196,897,000	1,417,000	\$13,245,000	\$210,249,000
2053	43,739,000	6,143,000	\$206,566,000	1,445,000	\$13,510,000	\$220,161,000
2054	44,418,000	6,337,000	\$216,710,000	1,474,000	\$13,780,000	\$230,540,000
2055	45,107,000	6,535,000	\$227,353,000	1,503,000	\$14,054,000	\$241,407,000
2056	45,710,000	6,704,000	\$236,625,000	1,533,000	\$14,335,000	\$250,984,000
2057	46,321,000	6,878,000	\$246,275,000	1,564,000	\$14,622,000	\$260,941,000
2058	46,940,000	7,056,000	\$256,319,000	1,595,000	\$14,914,000	\$271,293,000
2059	47,568,000	7,239,000	\$266,773,000	1,627,000	\$15,212,000	\$282,056,000
2060	48,204,000	7,427,000	\$277,653,000	1,660,000	\$15,516,000	\$293,246,000
2061	48,849,000	7,619,000	\$288,977,000	1,693,000	\$15,826,000	\$304,880,000
2062	49,502,000	7,816,000	\$300,763,000	1,727,000	\$16,143,000	\$316,975,000
2063	50,164,000	8,019,000	\$313,029,000	1,762,000	\$16,466,000	\$329,550,000
2064	50,835,000	8,227,000	\$325,796,000	1,797,000	\$16,795,000	\$342,624,000
2065	51,515,000	8,440,000	\$339,083,000	1,832,000	\$17,132,000	\$356,215,000
2066	52,064,000	8,612,000	\$350,507,000	1,869,000	\$17,475,000	\$367,994,000
2067	52,619,000	8,787,000	\$362,315,000	1,906,000	\$17,824,000	\$380,163,000
2068	53,180,000	8,966,000	\$374,521,000	1,944,000	\$18,180,000	\$392,734,000
2069	53,747,000	9,149,000	\$387,138,000	1,983,000	\$18,544,000	\$405,721,000
2070	54,320,000	9,335,000	\$400,181,000	2,023,000	\$18,915,000	\$419,137,000
2071	54,899,000	9,525,000	\$413,663,000	2,064,000	\$19,293,000	\$432,997,000
2072	55,484,000	9,719,000	\$427,599,000	2,105,000	\$19,679,000	\$447,315,000
2073	56,075,000	9,917,000	\$442,005,000	2,147,000	\$20,073,000	\$462,107,000
2074	56,673,000	10,119,000	\$456,896,000	2,190,000	\$20,474,000	\$477,388,000
2075	57,276,000	10,325,000	\$472,289,000	2,234,000	\$20,883,000	\$493,172,000

Summary	
Toll Revenue PV (5% DR)	\$2,390,786,658
Transit Revenue PV (5% DR)	\$195,089,274
Capex (2014 dollars)	\$4,116,416,660
Annual O&M (2014 dollars)	\$49,647,753

Alternative 2 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	BRT Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	25,734,028	1,990,590	\$32,458,536	797,258	\$7,450,940	\$39,794,000
2024	26,249,354	2,095,054	\$34,759,230	813,464	\$7,602,920	\$42,308,000
2025	26,775,000	2,205,000	\$37,223,000	830,000	\$7,758,000	\$44,981,000
2026	27,301,000	2,315,000	\$39,687,000	847,000	\$7,913,000	\$47,654,000
2027	27,837,000	2,430,000	\$42,314,000	864,000	\$8,071,000	\$50,486,000
2028	28,383,000	2,551,000	\$45,115,000	881,000	\$8,232,000	\$53,486,000
2029	28,940,000	2,678,000	\$48,101,000	899,000	\$8,397,000	\$56,664,000
2030	29,508,000	2,812,000	\$51,285,000	917,000	\$8,565,000	\$60,031,000
2031	30,087,000	2,952,000	\$54,680,000	935,000	\$8,736,000	\$63,598,000
2032	30,678,000	3,099,000	\$58,299,000	954,000	\$8,911,000	\$67,377,000
2033	31,280,000	3,254,000	\$62,158,000	973,000	\$9,089,000	\$71,380,000
2034	31,894,000	3,416,000	\$66,272,000	992,000	\$9,271,000	\$75,621,000
2035	32,521,000	3,587,000	\$70,657,000	1,011,000	\$9,456,000	\$80,113,000
2036	33,114,000	3,742,000	\$74,772,000	1,031,000	\$9,645,000	\$84,465,000
2037	33,718,000	3,903,000	\$79,126,000	1,052,000	\$9,838,000	\$89,054,000
2038	34,333,000	4,071,000	\$83,734,000	1,073,000	\$10,035,000	\$93,892,000
2039	34,959,000	4,247,000	\$88,610,000	1,095,000	\$10,236,000	\$98,993,000
2040	35,596,000	4,430,000	\$93,770,000	1,117,000	\$10,441,000	\$104,371,000
2041	36,245,000	4,621,000	\$99,231,000	1,139,000	\$10,650,000	\$110,041,000
2042	36,906,000	4,820,000	\$105,010,000	1,162,000	\$10,863,000	\$116,019,000
2043	37,579,000	5,028,000	\$111,125,000	1,185,000	\$11,080,000	\$122,322,000
2044	38,264,000	5,245,000	\$117,597,000	1,209,000	\$11,302,000	\$128,967,000
2045	38,962,000	5,472,000	\$124,447,000	1,233,000	\$11,527,000	\$135,974,000
2046	39,595,000	5,665,000	\$130,669,000	1,258,000	\$11,758,000	\$142,465,000
2047	40,238,000	5,865,000	\$137,202,000	1,283,000	\$11,993,000	\$149,265,000
2048	40,891,000	6,072,000	\$144,061,000	1,309,000	\$12,233,000	\$156,390,000
2049	41,555,000	6,286,000	\$151,263,000	1,335,000	\$12,478,000	\$163,855,000
2050	42,230,000	6,507,000	\$158,825,000	1,362,000	\$12,728,000	\$171,676,000
2051	42,916,000	6,736,000	\$166,765,000	1,389,000	\$12,983,000	\$179,871,000
2052	43,613,000	6,973,000	\$175,102,000	1,417,000	\$13,243,000	\$188,457,000
2053	44,321,000	7,219,000	\$183,856,000	1,445,000	\$13,508,000	\$197,453,000
2054	45,041,000	7,473,000	\$193,048,000	1,474,000	\$13,778,000	\$206,878,000
2055	45,772,000	7,736,000	\$202,701,000	1,503,000	\$14,052,000	\$216,753,000
2056	46,423,000	7,963,000	\$211,460,000	1,533,000	\$14,333,000	\$225,822,000
2057	47,084,000	8,196,000	\$220,598,000	1,564,000	\$14,620,000	\$235,271,000
2058	47,754,000	8,436,000	\$230,131,000	1,595,000	\$14,912,000	\$245,115,000
2059	48,434,000	8,683,000	\$240,076,000	1,627,000	\$15,210,000	\$255,371,000
2060	49,123,000	8,937,000	\$250,451,000	1,660,000	\$15,514,000	\$266,056,000
2061	49,822,000	9,199,000	\$261,274,000	1,693,000	\$15,824,000	\$277,188,000
2062	50,531,000	9,469,000	\$272,565,000	1,727,000	\$16,140,000	\$288,786,000
2063	51,250,000	9,747,000	\$284,343,000	1,762,000	\$16,463,000	\$300,870,000
2064	51,979,000	10,033,000	\$296,630,000	1,797,000	\$16,792,000	\$313,459,000
2065	52,720,000	10,327,000	\$309,448,000	1,832,000	\$17,129,000	\$326,577,000
2066	53,344,000	10,569,000	\$320,956,000	1,869,000	\$17,472,000	\$338,448,000
2067	53,976,000	10,817,000	\$332,892,000	1,906,000	\$17,821,000	\$350,750,000
2068	54,615,000	11,071,000	\$345,272,000	1,944,000	\$18,177,000	\$363,499,000
2069	55,262,000	11,331,000	\$358,112,000	1,983,000	\$18,541,000	\$376,712,000
2070	55,917,000	11,597,000	\$371,430,000	2,023,000	\$18,912,000	\$390,405,000
2071	56,579,000	11,869,000	\$385,243,000	2,063,000	\$19,290,000	\$404,596,000
2072	57,249,000	12,147,000	\$399,570,000	2,104,000	\$19,676,000	\$419,302,000
2073	57,927,000	12,432,000	\$414,429,000	2,146,000	\$20,070,000	\$434,543,000
2074	58,613,000	12,724,000	\$429,841,000	2,189,000	\$20,471,000	\$450,338,000
2075	59,308,000	13,022,000	\$445,826,000	2,233,000	\$20,880,000	\$466,706,000

Summary	
Toll Revenue PV (5% DR)	\$2,183,769,766
Transit Revenue PV (5% DR)	\$195,059,911
Capex (2014 dollars)	\$5,092,357,957
Annual O&M (2014 dollars)	\$53,861,812

Alternative 3 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2021	24,607,000	383,000	\$524,000	-	\$0	\$524,000
2022	24,932,000	423,000	\$607,000	-	\$0	\$607,000
2023	25,261,000	468,000	\$703,000	-	\$0	\$703,000
2024	25,594,000	518,000	\$814,000	-	\$0	\$814,000
2025	25,932,000	573,000	\$943,000	-	\$0	\$943,000
2026	26,270,000	628,000	\$1,072,000	-	\$0	\$1,072,000
2027	26,612,000	688,000	\$1,219,000	-	\$0	\$1,219,000
2028	26,958,000	754,000	\$1,386,000	-	\$0	\$1,386,000
2029	27,309,000	826,000	\$1,576,000	-	\$0	\$1,576,000
2030	27,664,000	905,000	\$1,791,000	-	\$0	\$1,791,000
2031	28,024,000	992,000	\$2,036,000	-	\$0	\$2,036,000
2032	28,389,000	1,087,000	\$2,314,000	-	\$0	\$2,314,000
2033	28,759,000	1,191,000	\$2,630,000	-	\$0	\$2,630,000
2034	29,133,000	1,305,000	\$2,990,000	-	\$0	\$2,990,000
2035	29,512,000	1,429,000	\$3,397,000	3,448,000	\$0	\$3,397,000
2036	30,026,000	1,515,000	\$3,634,000	3,517,000	\$0	\$3,634,000
2037	30,549,000	1,606,000	\$3,887,000	3,587,000	\$0	\$3,887,000
2038	31,081,000	1,702,000	\$4,158,000	3,659,000	\$0	\$4,158,000
2039	31,622,000	1,804,000	\$4,448,000	3,732,000	\$0	\$4,448,000
2040	32,173,000	1,912,000	\$4,758,000	3,807,000	\$0	\$4,758,000
2041	32,734,000	2,026,000	\$5,089,000	3,883,000	\$0	\$5,089,000
2042	33,304,000	2,147,000	\$5,443,000	3,961,000	\$0	\$5,443,000
2043	33,884,000	2,276,000	\$5,822,000	4,040,000	\$0	\$5,822,000
2044	34,474,000	2,412,000	\$6,227,000	4,121,000	\$0	\$6,227,000
2045	35,076,000	2,556,000	\$6,660,000	4,203,000	\$0	\$6,660,000
2046	35,577,000	2,661,000	\$6,925,000	4,287,000	\$0	\$6,925,000
2047	36,085,000	2,770,000	\$7,200,000	4,373,000	\$0	\$7,200,000
2048	36,600,000	2,883,000	\$7,486,000	4,460,000	\$0	\$7,486,000
2049	37,123,000	3,001,000	\$7,784,000	4,549,000	\$0	\$7,784,000
2050	37,653,000	3,124,000	\$8,094,000	4,640,000	\$0	\$8,094,000
2051	38,191,000	3,252,000	\$8,416,000	4,733,000	\$0	\$8,416,000
2052	38,737,000	3,385,000	\$8,751,000	4,828,000	\$0	\$8,751,000
2053	39,290,000	3,524,000	\$9,099,000	4,925,000	\$0	\$9,099,000
2054	39,851,000	3,668,000	\$9,461,000	5,023,000	\$0	\$9,461,000
2055	40,421,000	3,817,000	\$9,836,000	5,123,000	\$0	\$9,836,000
2056	40,901,000	3,949,000	\$10,123,000	5,225,000	\$0	\$10,123,000
2057	41,387,000	4,085,000	\$10,418,000	5,330,000	\$0	\$10,418,000
2058	41,879,000	4,226,000	\$10,722,000	5,437,000	\$0	\$10,722,000
2059	42,377,000	4,372,000	\$11,034,000	5,546,000	\$0	\$11,034,000
2060	42,881,000	4,523,000	\$11,355,000	5,657,000	\$0	\$11,355,000
2061	43,391,000	4,679,000	\$11,686,000	5,770,000	\$0	\$11,686,000
2062	43,907,000	4,840,000	\$12,026,000	5,885,000	\$0	\$12,026,000
2063	44,429,000	5,007,000	\$12,376,000	6,003,000	\$0	\$12,376,000
2064	44,957,000	5,180,000	\$12,737,000	6,123,000	\$0	\$12,737,000
2065	45,490,000	5,359,000	\$13,108,000	6,245,000	\$0	\$13,108,000
2066	45,916,000	5,506,000	\$13,409,000	6,370,000	\$0	\$13,409,000
2067	46,346,000	5,657,000	\$13,717,000	6,497,000	\$0	\$13,717,000
2068	46,780,000	5,812,000	\$14,032,000	6,627,000	\$0	\$14,032,000
2069	47,218,000	5,971,000	\$14,354,000	6,760,000	\$0	\$14,354,000
2070	47,660,000	6,135,000	\$14,683,000	6,895,000	\$0	\$14,683,000
2071	48,106,000	6,303,000	\$15,020,000	7,033,000	\$0	\$15,020,000
2072	48,556,000	6,476,000	\$15,365,000	7,174,000	\$0	\$15,365,000
2073	49,011,000	6,653,000	\$15,717,000	7,318,000	\$0	\$15,717,000
2074	49,470,000	6,835,000	\$16,078,000	7,464,000	\$0	\$16,078,000
2075	49,933,000	7,022,000	\$16,445,000	7,613,000	\$0	\$16,445,000

Summary	
Toll Revenue PV (5% DR)	\$80,237,227
Capex (2014 dollars)	\$2,012,515,909
Annual O&M (2014 dollars)	\$10,716,998

Alternative 4 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2022	25,696,661	407,084	\$5,406,206	-	\$0	\$5,406,000
2023	26,033,019	453,819	\$6,334,586	-	\$0	\$6,334,000
2024	26,373,779	505,919	\$7,422,391	-	\$0	\$7,422,000
2025	26,719,000	564,000	\$8,697,000	-	\$0	\$8,697,000
2026	27,064,000	622,000	\$9,972,000	-	\$0	\$9,972,000
2027	27,414,000	686,000	\$11,433,000	-	\$0	\$11,433,000
2028	27,768,000	757,000	\$13,109,000	-	\$0	\$13,109,000
2029	28,127,000	835,000	\$15,030,000	-	\$0	\$15,030,000
2030	28,490,000	921,000	\$17,233,000	-	\$0	\$17,233,000
2031	28,858,000	1,016,000	\$19,759,000	-	\$0	\$19,759,000
2032	29,231,000	1,121,000	\$22,655,000	-	\$0	\$22,655,000
2033	29,609,000	1,236,000	\$25,975,000	-	\$0	\$25,975,000
2034	29,992,000	1,363,000	\$29,782,000	-	\$0	\$29,782,000
2035	30,379,000	1,503,000	\$34,145,000	3,447,000	\$0	\$34,145,000
2036	30,921,000	1,600,000	\$36,659,000	3,516,000	\$0	\$36,659,000
2037	31,472,000	1,703,000	\$39,358,000	3,586,000	\$0	\$39,358,000
2038	32,033,000	1,813,000	\$42,255,000	3,658,000	\$0	\$42,255,000
2039	32,604,000	1,930,000	\$45,366,000	3,731,000	\$0	\$45,366,000
2040	33,185,000	2,054,000	\$48,706,000	3,806,000	\$0	\$48,706,000
2041	33,777,000	2,186,000	\$52,292,000	3,882,000	\$0	\$52,292,000
2042	34,379,000	2,327,000	\$56,142,000	3,960,000	\$0	\$56,142,000
2043	34,992,000	2,477,000	\$60,275,000	4,039,000	\$0	\$60,275,000
2044	35,616,000	2,636,000	\$64,712,000	4,120,000	\$0	\$64,712,000
2045	36,250,000	2,804,000	\$69,475,000	4,202,000	\$0	\$69,475,000
2046	36,803,000	2,921,000	\$73,607,000	4,286,000	\$0	\$73,607,000
2047	37,365,000	3,042,000	\$77,985,000	4,372,000	\$0	\$77,985,000
2048	37,935,000	3,168,000	\$82,624,000	4,459,000	\$0	\$82,624,000
2049	38,514,000	3,300,000	\$87,539,000	4,548,000	\$0	\$87,539,000
2050	39,102,000	3,437,000	\$92,746,000	4,639,000	\$0	\$92,746,000
2051	39,699,000	3,580,000	\$98,263,000	4,732,000	\$0	\$98,263,000
2052	40,305,000	3,729,000	\$104,108,000	4,827,000	\$0	\$104,108,000
2053	40,920,000	3,884,000	\$110,300,000	4,924,000	\$0	\$110,300,000
2054	41,545,000	4,045,000	\$116,861,000	5,022,000	\$0	\$116,861,000
2055	42,180,000	4,213,000	\$123,811,000	5,122,000	\$0	\$123,811,000
2056	42,708,000	4,353,000	\$129,247,000	5,224,000	\$0	\$129,247,000
2057	43,242,000	4,498,000	\$134,921,000	5,329,000	\$0	\$134,921,000
2058	43,783,000	4,647,000	\$140,844,000	5,436,000	\$0	\$140,844,000
2059	44,331,000	4,801,000	\$147,027,000	5,545,000	\$0	\$147,027,000
2060	44,886,000	4,961,000	\$153,482,000	5,656,000	\$0	\$153,482,000
2061	45,448,000	5,126,000	\$160,220,000	5,769,000	\$0	\$160,220,000
2062	46,017,000	5,296,000	\$167,254,000	5,884,000	\$0	\$167,254,000
2063	46,593,000	5,472,000	\$174,597,000	6,002,000	\$0	\$174,597,000
2064	47,176,000	5,654,000	\$182,262,000	6,122,000	\$0	\$182,262,000
2065	47,766,000	5,842,000	\$190,266,000	6,244,000	\$0	\$190,266,000
2066	48,244,000	5,993,000	\$196,694,000	6,369,000	\$0	\$196,694,000
2067	48,727,000	6,147,000	\$203,339,000	6,496,000	\$0	\$203,339,000
2068	49,215,000	6,305,000	\$210,208,000	6,626,000	\$0	\$210,208,000
2069	49,707,000	6,468,000	\$217,309,000	6,759,000	\$0	\$217,309,000
2070	50,204,000	6,635,000	\$224,650,000	6,894,000	\$0	\$224,650,000
2071	50,706,000	6,806,000	\$232,239,000	7,032,000	\$0	\$232,239,000
2072	51,213,000	6,981,000	\$240,084,000	7,173,000	\$0	\$240,084,000
2073	51,725,000	7,161,000	\$248,194,000	7,317,000	\$0	\$248,194,000
2074	52,243,000	7,346,000	\$256,578,000	7,463,000	\$0	\$256,578,000
2075	52,767,000	7,535,000	\$265,247,000	7,612,000	\$0	\$265,247,000

Summary	
Toll Revenue PV (5% DR)	\$998,585,041
Capex (2014 dollars)	\$2,715,596,739
Annual O&M (2014 dollars)	\$14,236,359

Alternative 5 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	25,340,000	432,000	\$5,023,000	-	\$0	\$5,023,000
2024	25,661,000	467,000	\$5,957,000	-	\$0	\$5,957,000
2025	25,986,000	504,000	\$7,065,000	-	\$0	\$7,065,000
2026	26,311,000	541,000	\$8,173,000	-	\$0	\$8,173,000
2027	26,640,000	581,000	\$9,454,000	-	\$0	\$9,454,000
2028	26,973,000	624,000	\$10,936,000	-	\$0	\$10,936,000
2029	27,310,000	670,000	\$12,651,000	-	\$0	\$12,651,000
2030	27,651,000	720,000	\$14,635,000	-	\$0	\$14,635,000
2031	27,996,000	773,000	\$16,930,000	-	\$0	\$16,930,000
2032	28,346,000	830,000	\$19,585,000	-	\$0	\$19,585,000
2033	28,700,000	892,000	\$22,656,000	-	\$0	\$22,656,000
2034	29,059,000	958,000	\$26,208,000	-	\$0	\$26,208,000
2035	29,421,000	1,032,000	\$30,316,000	3,447,000	\$0	\$30,316,000
2036	29,916,000	1,089,000	\$32,699,000	3,516,000	\$0	\$32,699,000
2037	30,420,000	1,149,000	\$35,269,000	3,586,000	\$0	\$35,269,000
2038	30,932,000	1,213,000	\$38,041,000	3,658,000	\$0	\$38,041,000
2039	31,453,000	1,280,000	\$41,031,000	3,731,000	\$0	\$41,031,000
2040	31,983,000	1,351,000	\$44,256,000	3,806,000	\$0	\$44,256,000
2041	32,522,000	1,426,000	\$47,735,000	3,882,000	\$0	\$47,735,000
2042	33,070,000	1,505,000	\$51,487,000	3,960,000	\$0	\$51,487,000
2043	33,627,000	1,589,000	\$55,534,000	4,039,000	\$0	\$55,534,000
2044	34,193,000	1,677,000	\$59,899,000	4,120,000	\$0	\$59,899,000
2045	34,768,000	1,772,000	\$64,609,000	4,202,000	\$0	\$64,609,000
2046	35,255,000	1,836,000	\$68,018,000	4,286,000	\$0	\$68,018,000
2047	35,749,000	1,902,000	\$71,607,000	4,372,000	\$0	\$71,607,000
2048	36,249,000	1,970,000	\$75,385,000	4,460,000	\$0	\$75,385,000
2049	36,756,000	2,041,000	\$79,362,000	4,549,000	\$0	\$79,362,000
2050	37,271,000	2,114,000	\$83,549,000	4,640,000	\$0	\$83,549,000
2051	37,793,000	2,190,000	\$87,957,000	4,733,000	\$0	\$87,957,000
2052	38,322,000	2,269,000	\$92,597,000	4,828,000	\$0	\$92,597,000
2053	38,859,000	2,351,000	\$97,482,000	4,925,000	\$0	\$97,482,000
2054	39,403,000	2,436,000	\$102,625,000	5,024,000	\$0	\$102,625,000
2055	39,954,000	2,523,000	\$108,039,000	5,123,000	\$0	\$108,039,000
2056	40,413,000	2,594,000	\$112,318,000	5,225,000	\$0	\$112,318,000
2057	40,877,000	2,667,000	\$116,767,000	5,329,000	\$0	\$116,767,000
2058	41,347,000	2,742,000	\$121,392,000	5,436,000	\$0	\$121,392,000
2059	41,822,000	2,819,000	\$126,200,000	5,545,000	\$0	\$126,200,000
2060	42,302,000	2,898,000	\$131,198,000	5,656,000	\$0	\$131,198,000
2061	42,788,000	2,979,000	\$136,394,000	5,769,000	\$0	\$136,394,000
2062	43,280,000	3,062,000	\$141,796,000	5,884,000	\$0	\$141,796,000
2063	43,777,000	3,148,000	\$147,412,000	6,002,000	\$0	\$147,412,000
2064	44,280,000	3,236,000	\$153,250,000	6,122,000	\$0	\$153,250,000
2065	44,789,000	3,324,000	\$159,320,000	6,244,000	\$0	\$159,320,000
2066	45,198,000	3,393,000	\$163,745,000	6,369,000	\$0	\$163,745,000
2067	45,610,000	3,463,000	\$168,293,000	6,496,000	\$0	\$168,293,000
2068	46,026,000	3,535,000	\$172,967,000	6,626,000	\$0	\$172,967,000
2069	46,446,000	3,608,000	\$177,771,000	6,759,000	\$0	\$177,771,000
2070	46,870,000	3,683,000	\$182,708,000	6,894,000	\$0	\$182,708,000
2071	47,298,000	3,759,000	\$187,782,000	7,032,000	\$0	\$187,782,000
2072	47,730,000	3,837,000	\$192,997,000	7,173,000	\$0	\$192,997,000
2073	48,166,000	3,917,000	\$198,357,000	7,317,000	\$0	\$198,357,000
2074	48,606,000	3,998,000	\$203,866,000	7,463,000	\$0	\$203,866,000
2075	49,048,000	4,081,000	\$209,528,000	7,612,000	\$0	\$209,528,000

Summary	
Toll Revenue PV (5% DR)	\$903,329,107
Capex (2014 dollars)	\$1,959,169,765
Annual O&M (2014 dollars)	\$13,810,447

Alternative 5.1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	25,018,000	545,000	\$2,789,000	-	\$0	\$2,789,000
2024	25,344,000	581,000	\$3,391,000	-	\$0	\$3,391,000
2025	25,674,000	619,000	\$4,123,000	-	\$0	\$4,123,000
2026	26,004,000	657,000	\$4,855,000	-	\$0	\$4,855,000
2027	26,338,000	697,000	\$5,716,000	-	\$0	\$5,716,000
2028	26,677,000	740,000	\$6,730,000	-	\$0	\$6,730,000
2029	27,020,000	785,000	\$7,924,000	-	\$0	\$7,924,000
2030	27,367,000	833,000	\$9,330,000	-	\$0	\$9,330,000
2031	27,719,000	884,000	\$10,985,000	-	\$0	\$10,985,000
2032	28,075,000	938,000	\$12,934,000	-	\$0	\$12,934,000
2033	28,436,000	996,000	\$15,229,000	-	\$0	\$15,229,000
2034	28,802,000	1,057,000	\$17,931,000	-	\$0	\$17,931,000
2035	29,172,000	1,123,000	\$21,113,000	3,447,000	\$0	\$21,113,000
2036	29,668,000	1,179,000	\$22,352,000	3,516,000	\$0	\$22,352,000
2037	30,172,000	1,238,000	\$23,664,000	3,586,000	\$0	\$23,664,000
2038	30,685,000	1,300,000	\$25,053,000	3,658,000	\$0	\$25,053,000
2039	31,207,000	1,365,000	\$26,523,000	3,731,000	\$0	\$26,523,000
2040	31,738,000	1,433,000	\$28,080,000	3,806,000	\$0	\$28,080,000
2041	32,278,000	1,505,000	\$29,728,000	3,882,000	\$0	\$29,728,000
2042	32,827,000	1,580,000	\$31,473,000	3,960,000	\$0	\$31,473,000
2043	33,385,000	1,659,000	\$33,320,000	4,039,000	\$0	\$33,320,000
2044	33,953,000	1,742,000	\$35,275,000	4,120,000	\$0	\$35,275,000
2045	34,529,000	1,829,000	\$37,344,000	4,202,000	\$0	\$37,344,000
2046	35,015,000	1,890,000	\$39,079,000	4,286,000	\$0	\$39,079,000
2047	35,508,000	1,953,000	\$40,894,000	4,372,000	\$0	\$40,894,000
2048	36,008,000	2,018,000	\$42,794,000	4,459,000	\$0	\$42,794,000
2049	36,515,000	2,085,000	\$44,782,000	4,548,000	\$0	\$44,782,000
2050	37,029,000	2,155,000	\$46,862,000	4,639,000	\$0	\$46,862,000
2051	37,551,000	2,227,000	\$49,039,000	4,732,000	\$0	\$49,039,000
2052	38,080,000	2,301,000	\$51,317,000	4,827,000	\$0	\$51,317,000
2053	38,616,000	2,378,000	\$53,701,000	4,924,000	\$0	\$53,701,000
2054	39,160,000	2,457,000	\$56,196,000	5,022,000	\$0	\$56,196,000
2055	39,713,000	2,540,000	\$58,805,000	5,122,000	\$0	\$58,805,000
2056	40,169,000	2,607,000	\$60,856,000	5,224,000	\$0	\$60,856,000
2057	40,631,000	2,676,000	\$62,979,000	5,329,000	\$0	\$62,979,000
2058	41,098,000	2,746,000	\$65,176,000	5,436,000	\$0	\$65,176,000
2059	41,570,000	2,818,000	\$67,449,000	5,545,000	\$0	\$67,449,000
2060	42,048,000	2,892,000	\$69,802,000	5,656,000	\$0	\$69,802,000
2061	42,531,000	2,968,000	\$72,237,000	5,769,000	\$0	\$72,237,000
2062	43,020,000	3,046,000	\$74,757,000	5,884,000	\$0	\$74,757,000
2063	43,514,000	3,126,000	\$77,365,000	6,002,000	\$0	\$77,365,000
2064	44,014,000	3,208,000	\$80,064,000	6,122,000	\$0	\$80,064,000
2065	44,519,000	3,293,000	\$82,855,000	6,244,000	\$0	\$82,855,000
2066	44,922,000	3,347,000	\$84,690,000	6,369,000	\$0	\$84,690,000
2067	45,329,000	3,402,000	\$86,566,000	6,496,000	\$0	\$86,566,000
2068	45,739,000	3,458,000	\$88,484,000	6,626,000	\$0	\$88,484,000
2069	46,153,000	3,515,000	\$90,444,000	6,759,000	\$0	\$90,444,000
2070	46,571,000	3,573,000	\$92,448,000	6,894,000	\$0	\$92,448,000
2071	46,993,000	3,632,000	\$94,496,000	7,032,000	\$0	\$94,496,000
2072	47,418,000	3,692,000	\$96,589,000	7,173,000	\$0	\$96,589,000
2073	47,847,000	3,753,000	\$98,729,000	7,317,000	\$0	\$98,729,000
2074	48,280,000	3,815,000	\$100,916,000	7,463,000	\$0	\$100,916,000
2075	48,718,000	3,877,000	\$103,151,000	7,612,000	\$0	\$103,151,000

Summary	
Toll Revenue PV (5% DR)	\$512,953,747
Capex (2014 dollars)	\$99,768,648
Annual O&M (2014 dollars)	\$3,463,832

Alternative 6 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2019	23,804,000	411,000	\$1,221,000	-	\$0	\$1,221,000
2020	24,114,000	438,000	\$1,490,000	-	\$0	\$1,490,000
2021	24,428,000	467,000	\$1,818,000	-	\$0	\$1,818,000
2022	24,746,000	497,000	\$2,218,000	-	\$0	\$2,218,000
2023	25,068,000	529,000	\$2,706,000	-	\$0	\$2,706,000
2024	25,394,000	563,000	\$3,301,000	-	\$0	\$3,301,000
2025	25,725,000	600,000	\$4,027,000	-	\$0	\$4,027,000
2026	26,056,000	637,000	\$4,753,000	-	\$0	\$4,753,000
2027	26,391,000	676,000	\$5,610,000	-	\$0	\$5,610,000
2028	26,730,000	717,000	\$6,621,000	-	\$0	\$6,621,000
2029	27,073,000	761,000	\$7,815,000	-	\$0	\$7,815,000
2030	27,421,000	808,000	\$9,224,000	-	\$0	\$9,224,000
2031	27,773,000	857,000	\$10,887,000	-	\$0	\$10,887,000
2032	28,130,000	909,000	\$12,850,000	-	\$0	\$12,850,000
2033	28,491,000	965,000	\$15,167,000	-	\$0	\$15,167,000
2034	28,857,000	1,024,000	\$17,901,000	-	\$0	\$17,901,000
2035	29,228,000	1,087,000	\$21,126,000	3,448,000	\$0	\$21,126,000
2036	29,723,000	1,141,000	\$22,343,000	3,517,000	\$0	\$22,343,000
2037	30,226,000	1,198,000	\$23,630,000	3,587,000	\$0	\$23,630,000
2038	30,738,000	1,257,000	\$24,991,000	3,659,000	\$0	\$24,991,000
2039	31,258,000	1,319,000	\$26,430,000	3,732,000	\$0	\$26,430,000
2040	31,787,000	1,384,000	\$27,952,000	3,807,000	\$0	\$27,952,000
2041	32,325,000	1,453,000	\$29,562,000	3,883,000	\$0	\$29,562,000
2042	32,872,000	1,525,000	\$31,264,000	3,961,000	\$0	\$31,264,000
2043	33,429,000	1,601,000	\$33,064,000	4,040,000	\$0	\$33,064,000
2044	33,995,000	1,680,000	\$34,968,000	4,121,000	\$0	\$34,968,000
2045	34,571,000	1,764,000	\$36,980,000	4,203,000	\$0	\$36,980,000
2046	35,055,000	1,821,000	\$38,685,000	4,287,000	\$0	\$38,685,000
2047	35,546,000	1,879,000	\$40,468,000	4,373,000	\$0	\$40,468,000
2048	36,044,000	1,939,000	\$42,334,000	4,460,000	\$0	\$42,334,000
2049	36,549,000	2,001,000	\$44,286,000	4,549,000	\$0	\$44,286,000
2050	37,061,000	2,065,000	\$46,328,000	4,640,000	\$0	\$46,328,000
2051	37,580,000	2,131,000	\$48,464,000	4,733,000	\$0	\$48,464,000
2052	38,107,000	2,199,000	\$50,698,000	4,828,000	\$0	\$50,698,000
2053	38,641,000	2,269,000	\$53,035,000	4,925,000	\$0	\$53,035,000
2054	39,183,000	2,342,000	\$55,480,000	5,023,000	\$0	\$55,480,000
2055	39,733,000	2,418,000	\$58,037,000	5,123,000	\$0	\$58,037,000
2056	40,188,000	2,479,000	\$59,929,000	5,225,000	\$0	\$59,929,000
2057	40,648,000	2,542,000	\$61,882,000	5,330,000	\$0	\$61,882,000
2058	41,114,000	2,607,000	\$63,899,000	5,437,000	\$0	\$63,899,000
2059	41,585,000	2,673,000	\$65,982,000	5,546,000	\$0	\$65,982,000
2060	42,061,000	2,741,000	\$68,133,000	5,657,000	\$0	\$68,133,000
2061	42,543,000	2,811,000	\$70,354,000	5,770,000	\$0	\$70,354,000
2062	43,030,000	2,882,000	\$72,647,000	5,885,000	\$0	\$72,647,000
2063	43,523,000	2,955,000	\$75,015,000	6,003,000	\$0	\$75,015,000
2064	44,022,000	3,030,000	\$77,460,000	6,123,000	\$0	\$77,460,000
2065	44,526,000	3,108,000	\$79,983,000	6,245,000	\$0	\$79,983,000
2066	44,925,000	3,155,000	\$81,707,000	6,370,000	\$0	\$81,707,000
2067	45,328,000	3,203,000	\$83,468,000	6,497,000	\$0	\$83,468,000
2068	45,734,000	3,252,000	\$85,267,000	6,627,000	\$0	\$85,267,000
2069	46,144,000	3,301,000	\$87,105,000	6,760,000	\$0	\$87,105,000
2070	46,558,000	3,351,000	\$88,983,000	6,895,000	\$0	\$88,983,000
2071	46,976,000	3,402,000	\$90,901,000	7,033,000	\$0	\$90,901,000
2072	47,397,000	3,454,000	\$92,861,000	7,174,000	\$0	\$92,861,000
2073	47,822,000	3,506,000	\$94,863,000	7,318,000	\$0	\$94,863,000
2074	48,251,000	3,559,000	\$96,908,000	7,464,000	\$0	\$96,908,000
2075	48,684,000	3,613,000	\$98,999,000	7,613,000	\$0	\$98,999,000

Summary	
Toll Revenue PV (5% DR)	\$420,695,217
Capex (2014 dollars)	\$99,768,648
Annual O&M (2014 dollars)	\$3,463,832

Growth Rate 2.5%

Base Condition

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	BRT Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	24,438,000	63,000	\$159,000	-	\$0	\$159,000
2024	25,018,000	77,000	\$248,000	-	\$0	\$248,000
2025	25,612,000	94,000	\$387,000	-	\$0	\$387,000
2026	26,206,000	111,000	\$526,000	-	\$0	\$526,000
2027	26,814,000	131,000	\$715,000	-	\$0	\$715,000
2028	27,436,000	154,000	\$972,000	-	\$0	\$972,000
2029	28,072,000	182,000	\$1,321,000	-	\$0	\$1,321,000
2030	28,723,000	215,000	\$1,795,000	-	\$0	\$1,795,000
2031	29,389,000	254,000	\$2,439,000	-	\$0	\$2,439,000
2032	30,071,000	300,000	\$3,315,000	-	\$0	\$3,315,000
2033	30,768,000	354,000	\$4,505,000	-	\$0	\$4,505,000
2034	31,482,000	417,000	\$6,123,000	-	\$0	\$6,123,000
2035	32,212,000	489,000	\$8,319,000	-	\$0	\$8,319,000
2036	32,800,000	507,000	\$9,022,000	-	\$0	\$9,022,000
2037	33,399,000	526,000	\$9,784,000	-	\$0	\$9,784,000
2038	34,009,000	546,000	\$10,610,000	-	\$0	\$10,610,000
2039	34,630,000	567,000	\$11,506,000	-	\$0	\$11,506,000
2040	35,262,000	588,000	\$12,478,000	-	\$0	\$12,478,000
2041	35,906,000	610,000	\$13,532,000	-	\$0	\$13,532,000
2042	36,562,000	633,000	\$14,675,000	-	\$0	\$14,675,000
2043	37,230,000	657,000	\$15,914,000	-	\$0	\$15,914,000
2044	37,910,000	682,000	\$17,258,000	-	\$0	\$17,258,000
2045	38,603,000	707,000	\$18,715,000	-	\$0	\$18,715,000
2046	39,149,000	731,000	\$19,225,000	-	\$0	\$19,225,000
2047	39,703,000	755,000	\$19,748,000	-	\$0	\$19,748,000
2048	40,264,000	780,000	\$20,286,000	-	\$0	\$20,286,000
2049	40,833,000	806,000	\$20,838,000	-	\$0	\$20,838,000
2050	41,410,000	833,000	\$21,405,000	-	\$0	\$21,405,000
2051	41,996,000	861,000	\$21,988,000	-	\$0	\$21,988,000
2052	42,590,000	890,000	\$22,587,000	-	\$0	\$22,587,000
2053	43,192,000	920,000	\$23,202,000	-	\$0	\$23,202,000
2054	43,803,000	951,000	\$23,834,000	-	\$0	\$23,834,000
2055	44,422,000	982,000	\$24,482,000	-	\$0	\$24,482,000
2056	44,886,000	1,003,000	\$25,246,000	-	\$0	\$25,246,000
2057	45,355,000	1,024,000	\$26,033,000	-	\$0	\$26,033,000
2058	45,829,000	1,046,000	\$26,845,000	-	\$0	\$26,845,000
2059	46,308,000	1,068,000	\$27,682,000	-	\$0	\$27,682,000
2060	46,792,000	1,091,000	\$28,545,000	-	\$0	\$28,545,000
2061	47,281,000	1,114,000	\$29,435,000	-	\$0	\$29,435,000
2062	47,775,000	1,138,000	\$30,353,000	-	\$0	\$30,353,000
2063	48,274,000	1,162,000	\$31,300,000	-	\$0	\$31,300,000
2064	48,778,000	1,187,000	\$32,276,000	-	\$0	\$32,276,000
2065	49,288,000	1,211,000	\$33,283,000	-	\$0	\$33,283,000
2066	49,638,000	1,226,000	\$33,728,000	-	\$0	\$33,728,000
2067	49,990,000	1,241,000	\$34,179,000	-	\$0	\$34,179,000
2068	50,345,000	1,256,000	\$34,636,000	-	\$0	\$34,636,000
2069	50,702,000	1,271,000	\$35,099,000	-	\$0	\$35,099,000
2070	51,062,000	1,287,000	\$35,568,000	-	\$0	\$35,568,000
2071	51,424,000	1,303,000	\$36,043,000	-	\$0	\$36,043,000
2072	51,789,000	1,319,000	\$36,524,000	-	\$0	\$36,524,000
2073	52,156,000	1,335,000	\$37,012,000	-	\$0	\$37,012,000
2074	52,526,000	1,351,000	\$37,506,000	-	\$0	\$37,506,000
2075	52,897,000	1,368,000	\$38,006,000	-	\$0	\$38,006,000

Summary	
Toll Revenue PV (5% DR)	\$203,809,395

Alternative 1 Option1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	BRT Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	25,441,269	1,897,991	\$28,326,208	789,092	\$7,375,927	\$35,329,000
2024	26,074,260	2,011,595	\$31,977,301	809,288	\$7,565,039	\$39,363,000
2025	26,723,000	2,132,000	\$36,099,000	830,000	\$7,759,000	\$43,858,000
2026	27,372,000	2,252,000	\$40,221,000	851,000	\$7,953,000	\$48,353,000
2027	28,036,000	2,379,000	\$44,813,000	872,000	\$8,152,000	\$53,309,000
2028	28,717,000	2,513,000	\$49,930,000	894,000	\$8,356,000	\$58,773,000
2029	29,414,000	2,655,000	\$55,631,000	916,000	\$8,565,000	\$64,797,000
2030	30,128,000	2,805,000	\$61,983,000	939,000	\$8,779,000	\$71,438,000
2031	30,859,000	2,963,000	\$69,060,000	962,000	\$8,998,000	\$78,760,000
2032	31,608,000	3,130,000	\$76,945,000	986,000	\$9,223,000	\$86,832,000
2033	32,375,000	3,307,000	\$85,730,000	1,011,000	\$9,454,000	\$95,731,000
2034	33,161,000	3,494,000	\$95,518,000	1,036,000	\$9,690,000	\$105,542,000
2035	33,967,000	3,693,000	\$106,424,000	1,062,000	\$9,932,000	\$116,356,000
2036	34,682,000	3,862,000	\$113,738,000	1,089,000	\$10,180,000	\$123,985,000
2037	35,412,000	4,038,000	\$121,554,000	1,116,000	\$10,435,000	\$132,114,000
2038	36,158,000	4,222,000	\$129,907,000	1,144,000	\$10,696,000	\$140,776,000
2039	36,919,000	4,415,000	\$138,834,000	1,173,000	\$10,963,000	\$150,006,000
2040	37,697,000	4,617,000	\$148,375,000	1,202,000	\$11,237,000	\$159,841,000
2041	38,491,000	4,828,000	\$158,571,000	1,232,000	\$11,518,000	\$170,321,000
2042	39,302,000	5,048,000	\$169,468,000	1,263,000	\$11,806,000	\$181,488,000
2043	40,130,000	5,279,000	\$181,114,000	1,295,000	\$12,101,000	\$193,387,000
2044	40,975,000	5,520,000	\$193,560,000	1,327,000	\$12,404,000	\$206,066,000
2045	41,838,000	5,772,000	\$206,862,000	1,360,000	\$12,714,000	\$219,576,000
2046	42,584,000	5,972,000	\$218,190,000	1,394,000	\$13,032,000	\$231,264,000
2047	43,344,000	6,178,000	\$230,139,000	1,429,000	\$13,358,000	\$243,575,000
2048	44,117,000	6,392,000	\$242,742,000	1,465,000	\$13,692,000	\$256,541,000
2049	44,904,000	6,613,000	\$256,035,000	1,502,000	\$14,034,000	\$270,197,000
2050	45,705,000	6,842,000	\$270,056,000	1,540,000	\$14,385,000	\$284,580,000
2051	46,520,000	7,079,000	\$284,845,000	1,579,000	\$14,745,000	\$299,729,000
2052	47,350,000	7,324,000	\$300,444,000	1,618,000	\$15,114,000	\$315,684,000
2053	48,195,000	7,577,000	\$316,897,000	1,658,000	\$15,492,000	\$332,488,000
2054	49,055,000	7,839,000	\$334,251,000	1,699,000	\$15,879,000	\$350,187,000
2055	49,931,000	8,108,000	\$352,554,000	1,741,000	\$16,275,000	\$368,829,000
2056	50,624,000	8,322,000	\$368,234,000	1,784,000	\$16,682,000	\$384,940,000
2057	51,326,000	8,542,000	\$384,611,000	1,829,000	\$17,099,000	\$401,755,000
2058	52,038,000	8,767,000	\$401,716,000	1,875,000	\$17,526,000	\$419,304,000
2059	52,760,000	8,998,000	\$419,582,000	1,922,000	\$17,964,000	\$437,620,000
2060	53,492,000	9,235,000	\$438,243,000	1,970,000	\$18,413,000	\$456,736,000
2061	54,234,000	9,479,000	\$457,734,000	2,019,000	\$18,873,000	\$476,687,000
2062	54,986,000	9,729,000	\$478,092,000	2,069,000	\$19,345,000	\$497,509,000
2063	55,749,000	9,986,000	\$499,355,000	2,121,000	\$19,829,000	\$519,241,000
2064	56,522,000	10,249,000	\$521,564,000	2,174,000	\$20,325,000	\$541,922,000
2065	57,307,000	10,520,000	\$544,759,000	2,228,000	\$20,833,000	\$565,592,000
2066	57,883,000	10,711,000	\$563,690,000	2,284,000	\$21,354,000	\$585,052,000
2067	58,464,000	10,906,000	\$583,279,000	2,341,000	\$21,888,000	\$605,181,000
2068	59,051,000	11,104,000	\$603,549,000	2,400,000	\$22,435,000	\$626,003,000
2069	59,644,000	11,306,000	\$624,523,000	2,460,000	\$22,996,000	\$647,541,000
2070	60,243,000	11,512,000	\$646,226,000	2,521,000	\$23,571,000	\$669,820,000
2071	60,848,000	11,721,000	\$668,683,000	2,584,000	\$24,160,000	\$692,866,000
2072	61,459,000	11,934,000	\$691,920,000	2,649,000	\$24,764,000	\$716,705,000
2073	62,076,000	12,151,000	\$715,965,000	2,715,000	\$25,383,000	\$741,364,000
2074	62,699,000	12,372,000	\$740,846,000	2,783,000	\$26,018,000	\$766,872,000
2075	63,330,000	12,598,000	\$766,590,000	2,852,000	\$26,668,000	\$793,258,000

Summary	
Toll Revenue PV (5% DR)	\$3,357,328,303
Transit Revenue PV (5% DR)	\$213,026,414
Capex (2014 dollars)	\$4,116,416,660
Annual O&M (2014 dollars)	\$49,647,753

Alternative 2 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	BRT Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	25,484,660	1,930,656	\$30,890,226	789,092	\$7,375,089	\$38,058,000
2024	26,121,864	2,063,273	\$33,909,098	809,288	\$7,564,122	\$41,375,000
2025	26,775,000	2,205,000	\$37,223,000	830,000	\$7,758,000	\$44,981,000
2026	27,428,000	2,347,000	\$40,537,000	851,000	\$7,952,000	\$48,587,000
2027	28,097,000	2,498,000	\$44,146,000	872,000	\$8,151,000	\$52,482,000
2028	28,782,000	2,659,000	\$48,076,000	894,000	\$8,355,000	\$56,690,000
2029	29,484,000	2,830,000	\$52,356,000	916,000	\$8,564,000	\$61,235,000
2030	30,203,000	3,012,000	\$57,017,000	939,000	\$8,778,000	\$66,145,000
2031	30,940,000	3,206,000	\$62,093,000	962,000	\$8,997,000	\$71,448,000
2032	31,695,000	3,412,000	\$67,621,000	986,000	\$9,222,000	\$77,176,000
2033	32,468,000	3,631,000	\$73,641,000	1,011,000	\$9,452,000	\$83,364,000
2034	33,260,000	3,864,000	\$80,197,000	1,036,000	\$9,688,000	\$90,048,000
2035	34,072,000	4,111,000	\$87,338,000	1,062,000	\$9,930,000	\$97,268,000
2036	34,817,000	4,319,000	\$93,636,000	1,089,000	\$10,178,000	\$103,890,000
2037	35,578,000	4,538,000	\$100,388,000	1,116,000	\$10,433,000	\$110,963,000
2038	36,355,000	4,768,000	\$107,627,000	1,144,000	\$10,694,000	\$118,518,000
2039	37,149,000	5,010,000	\$115,388,000	1,173,000	\$10,961,000	\$126,587,000
2040	37,961,000	5,264,000	\$123,709,000	1,202,000	\$11,235,000	\$135,205,000
2041	38,791,000	5,531,000	\$132,630,000	1,232,000	\$11,516,000	\$144,410,000
2042	39,639,000	5,811,000	\$142,194,000	1,263,000	\$11,804,000	\$154,242,000
2043	40,505,000	6,105,000	\$152,448,000	1,295,000	\$12,099,000	\$164,743,000
2044	41,390,000	6,414,000	\$163,441,000	1,327,000	\$12,402,000	\$175,959,000
2045	42,294,000	6,739,000	\$175,226,000	1,360,000	\$12,712,000	\$187,938,000
2046	43,092,000	7,003,000	\$185,917,000	1,394,000	\$13,030,000	\$199,007,000
2047	43,905,000	7,277,000	\$197,261,000	1,429,000	\$13,356,000	\$210,728,000
2048	44,733,000	7,562,000	\$209,297,000	1,465,000	\$13,690,000	\$223,140,000
2049	45,577,000	7,858,000	\$222,067,000	1,502,000	\$14,032,000	\$236,283,000
2050	46,436,000	8,166,000	\$235,616,000	1,539,000	\$14,383,000	\$250,200,000
2051	47,312,000	8,486,000	\$249,992,000	1,577,000	\$14,743,000	\$264,937,000
2052	48,204,000	8,818,000	\$265,245,000	1,616,000	\$15,112,000	\$280,542,000
2053	49,113,000	9,163,000	\$281,429,000	1,656,000	\$15,490,000	\$297,066,000
2054	50,039,000	9,522,000	\$298,600,000	1,697,000	\$15,877,000	\$314,563,000
2055	50,981,000	9,893,000	\$316,819,000	1,740,000	\$16,272,000	\$333,091,000
2056	51,763,000	10,192,000	\$332,315,000	1,784,000	\$16,679,000	\$349,030,000
2057	52,557,000	10,500,000	\$348,569,000	1,829,000	\$17,096,000	\$365,732,000
2058	53,363,000	10,817,000	\$365,618,000	1,875,000	\$17,523,000	\$383,233,000
2059	54,181,000	11,143,000	\$383,501,000	1,922,000	\$17,961,000	\$401,572,000
2060	55,012,000	11,479,000	\$402,259,000	1,970,000	\$18,410,000	\$420,788,000
2061	55,855,000	11,825,000	\$421,935,000	2,019,000	\$18,870,000	\$440,924,000
2062	56,711,000	12,182,000	\$442,573,000	2,070,000	\$19,342,000	\$462,023,000
2063	57,580,000	12,550,000	\$464,220,000	2,122,000	\$19,826,000	\$484,132,000
2064	58,463,000	12,929,000	\$486,926,000	2,175,000	\$20,322,000	\$507,299,000
2065	59,358,000	13,318,000	\$510,746,000	2,228,000	\$20,830,000	\$531,576,000
2066	60,041,000	13,612,000	\$530,936,000	2,284,000	\$21,351,000	\$552,304,000
2067	60,732,000	13,912,000	\$551,924,000	2,341,000	\$21,885,000	\$573,841,000
2068	61,431,000	14,219,000	\$573,742,000	2,400,000	\$22,432,000	\$596,217,000
2069	62,138,000	14,532,000	\$596,422,000	2,460,000	\$22,993,000	\$619,466,000
2070	62,853,000	14,852,000	\$619,999,000	2,521,000	\$23,568,000	\$643,621,000
2071	63,576,000	15,179,000	\$644,508,000	2,584,000	\$24,157,000	\$668,718,000
2072	64,308,000	15,514,000	\$669,985,000	2,649,000	\$24,761,000	\$694,794,000
2073	65,048,000	15,856,000	\$696,470,000	2,715,000	\$25,380,000	\$721,887,000
2074	65,797,000	16,205,000	\$724,002,000	2,783,000	\$26,014,000	\$750,036,000
2075	66,554,000	16,562,000	\$752,620,000	2,852,000	\$26,664,000	\$779,284,000

Summary	
Toll Revenue PV (5% DR)	\$3,050,787,974
Transit Revenue PV (5% DR)	\$212,994,533
Capex (2014 dollars)	\$5,092,357,957
Annual O&M (2014 dollars)	\$53,861,812

Alternative 3 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2021	24,151,000	331,000	\$443,000	-	\$0	\$443,000
2022	24,585,000	380,000	\$535,000	-	\$0	\$535,000
2023	25,026,000	436,000	\$646,000	-	\$0	\$646,000
2024	25,475,000	500,000	\$780,000	-	\$0	\$780,000
2025	25,932,000	573,000	\$943,000	-	\$0	\$943,000
2026	26,389,000	646,000	\$1,106,000	-	\$0	\$1,106,000
2027	26,854,000	729,000	\$1,297,000	-	\$0	\$1,297,000
2028	27,328,000	822,000	\$1,521,000	-	\$0	\$1,521,000
2029	27,810,000	927,000	\$1,783,000	-	\$0	\$1,783,000
2030	28,301,000	1,046,000	\$2,090,000	-	\$0	\$2,090,000
2031	28,800,000	1,180,000	\$2,450,000	-	\$0	\$2,450,000
2032	29,308,000	1,331,000	\$2,872,000	-	\$0	\$2,872,000
2033	29,825,000	1,502,000	\$3,367,000	-	\$0	\$3,367,000
2034	30,351,000	1,694,000	\$3,948,000	-	\$0	\$3,948,000
2035	30,887,000	1,913,000	\$4,628,000	3,621,000	\$0	\$4,628,000
2036	31,514,000	2,028,000	\$4,932,000	3,712,000	\$0	\$4,932,000
2037	32,153,000	2,150,000	\$5,256,000	3,805,000	\$0	\$5,256,000
2038	32,805,000	2,280,000	\$5,601,000	3,900,000	\$0	\$5,601,000
2039	33,471,000	2,418,000	\$5,969,000	3,997,000	\$0	\$5,969,000
2040	34,150,000	2,564,000	\$6,361,000	4,097,000	\$0	\$6,361,000
2041	34,843,000	2,719,000	\$6,779,000	4,199,000	\$0	\$6,779,000
2042	35,550,000	2,883,000	\$7,224,000	4,304,000	\$0	\$7,224,000
2043	36,271,000	3,057,000	\$7,699,000	4,412,000	\$0	\$7,699,000
2044	37,007,000	3,242,000	\$8,205,000	4,522,000	\$0	\$8,205,000
2045	37,758,000	3,438,000	\$8,746,000	4,635,000	\$0	\$8,746,000
2046	38,358,000	3,584,000	\$9,084,000	4,751,000	\$0	\$9,084,000
2047	38,968,000	3,736,000	\$9,435,000	4,870,000	\$0	\$9,435,000
2048	39,588,000	3,894,000	\$9,800,000	4,992,000	\$0	\$9,800,000
2049	40,217,000	4,059,000	\$10,179,000	5,117,000	\$0	\$10,179,000
2050	40,856,000	4,231,000	\$10,573,000	5,245,000	\$0	\$10,573,000
2051	41,506,000	4,410,000	\$10,982,000	5,376,000	\$0	\$10,982,000
2052	42,166,000	4,597,000	\$11,407,000	5,510,000	\$0	\$11,407,000
2053	42,836,000	4,792,000	\$11,848,000	5,648,000	\$0	\$11,848,000
2054	43,517,000	4,995,000	\$12,306,000	5,789,000	\$0	\$12,306,000
2055	44,209,000	5,207,000	\$12,784,000	5,933,000	\$0	\$12,784,000
2056	44,746,000	5,389,000	\$13,163,000	6,081,000	\$0	\$13,163,000
2057	45,290,000	5,577,000	\$13,554,000	6,233,000	\$0	\$13,554,000
2058	45,840,000	5,772,000	\$13,956,000	6,389,000	\$0	\$13,956,000
2059	46,397,000	5,974,000	\$14,370,000	6,549,000	\$0	\$14,370,000
2060	46,961,000	6,183,000	\$14,796,000	6,713,000	\$0	\$14,796,000
2061	47,532,000	6,399,000	\$15,235,000	6,881,000	\$0	\$15,235,000
2062	48,110,000	6,622,000	\$15,687,000	7,053,000	\$0	\$15,687,000
2063	48,695,000	6,853,000	\$16,153,000	7,229,000	\$0	\$16,153,000
2064	49,287,000	7,092,000	\$16,632,000	7,410,000	\$0	\$16,632,000
2065	49,886,000	7,339,000	\$17,127,000	7,595,000	\$0	\$17,127,000
2066	50,323,000	7,527,000	\$17,476,000	7,785,000	\$0	\$17,476,000
2067	50,764,000	7,720,000	\$17,833,000	7,980,000	\$0	\$17,833,000
2068	51,209,000	7,917,000	\$18,197,000	8,179,000	\$0	\$18,197,000
2069	51,658,000	8,120,000	\$18,568,000	8,383,000	\$0	\$18,568,000
2070	52,111,000	8,328,000	\$18,947,000	8,593,000	\$0	\$18,947,000
2071	52,568,000	8,541,000	\$19,334,000	8,808,000	\$0	\$19,334,000
2072	53,029,000	8,759,000	\$19,729,000	9,028,000	\$0	\$19,729,000
2073	53,494,000	8,983,000	\$20,132,000	9,254,000	\$0	\$20,132,000
2074	53,963,000	9,213,000	\$20,543,000	9,485,000	\$0	\$20,543,000
2075	54,435,000	9,448,000	\$20,961,000	9,722,000	\$0	\$20,961,000

Summary	
Toll Revenue PV (5% DR)	\$102,800,376
Capex (2014 dollars)	\$2,012,515,909
Annual O&M (2014 dollars)	\$10,716,998

Alternative 4 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2022	25,338,371	364,381	\$4,830,839	-	\$0	\$4,831,000
2023	25,790,466	421,500	\$5,876,763	-	\$0	\$5,877,000
2024	26,250,628	487,571	\$7,149,141	-	\$0	\$7,149,000
2025	26,719,000	564,000	\$8,697,000	-	\$0	\$8,697,000
2026	27,187,000	640,000	\$10,245,000	-	\$0	\$10,245,000
2027	27,664,000	727,000	\$12,068,000	-	\$0	\$12,068,000
2028	28,149,000	826,000	\$14,216,000	-	\$0	\$14,216,000
2029	28,642,000	938,000	\$16,746,000	-	\$0	\$16,746,000
2030	29,144,000	1,065,000	\$19,726,000	-	\$0	\$19,726,000
2031	29,655,000	1,209,000	\$23,237,000	-	\$0	\$23,237,000
2032	30,175,000	1,373,000	\$27,373,000	-	\$0	\$27,373,000
2033	30,704,000	1,559,000	\$32,245,000	-	\$0	\$32,245,000
2034	31,242,000	1,770,000	\$37,984,000	-	\$0	\$37,984,000
2035	31,790,000	2,010,000	\$44,744,000	3,620,000	\$0	\$44,744,000
2036	32,467,000	2,140,000	\$49,058,000	3,711,000	\$0	\$49,058,000
2037	33,158,000	2,278,000	\$53,787,000	3,804,000	\$0	\$53,787,000
2038	33,864,000	2,425,000	\$58,972,000	3,899,000	\$0	\$58,972,000
2039	34,585,000	2,582,000	\$64,657,000	3,996,000	\$0	\$64,657,000
2040	35,321,000	2,749,000	\$70,890,000	4,096,000	\$0	\$70,890,000
2041	36,073,000	2,927,000	\$77,724,000	4,198,000	\$0	\$77,724,000
2042	36,841,000	3,116,000	\$85,217,000	4,303,000	\$0	\$85,217,000
2043	37,625,000	3,317,000	\$93,432,000	4,411,000	\$0	\$93,432,000
2044	38,426,000	3,531,000	\$102,439,000	4,521,000	\$0	\$102,439,000
2045	39,241,000	3,758,000	\$112,316,000	4,634,000	\$0	\$112,316,000
2046	39,907,000	3,924,000	\$119,464,000	4,750,000	\$0	\$119,464,000
2047	40,584,000	4,098,000	\$127,067,000	4,869,000	\$0	\$127,067,000
2048	41,273,000	4,279,000	\$135,154,000	4,991,000	\$0	\$135,154,000
2049	41,974,000	4,468,000	\$143,756,000	5,116,000	\$0	\$143,756,000
2050	42,687,000	4,666,000	\$152,906,000	5,244,000	\$0	\$152,906,000
2051	43,412,000	4,873,000	\$162,638,000	5,375,000	\$0	\$162,638,000
2052	44,149,000	5,089,000	\$172,989,000	5,509,000	\$0	\$172,989,000
2053	44,898,000	5,314,000	\$183,999,000	5,647,000	\$0	\$183,999,000
2054	45,660,000	5,549,000	\$195,710,000	5,788,000	\$0	\$195,710,000
2055	46,435,000	5,796,000	\$208,168,000	5,932,000	\$0	\$208,168,000
2056	47,031,000	5,980,000	\$216,539,000	6,080,000	\$0	\$216,539,000
2057	47,635,000	6,170,000	\$225,246,000	6,232,000	\$0	\$225,246,000
2058	48,246,000	6,366,000	\$234,303,000	6,388,000	\$0	\$234,303,000
2059	48,865,000	6,568,000	\$243,725,000	6,548,000	\$0	\$243,725,000
2060	49,492,000	6,776,000	\$253,525,000	6,712,000	\$0	\$253,525,000
2061	50,127,000	6,991,000	\$263,719,000	6,880,000	\$0	\$263,719,000
2062	50,770,000	7,213,000	\$274,323,000	7,052,000	\$0	\$274,323,000
2063	51,422,000	7,442,000	\$285,354,000	7,228,000	\$0	\$285,354,000
2064	52,082,000	7,678,000	\$296,828,000	7,409,000	\$0	\$296,828,000
2065	52,752,000	7,920,000	\$308,765,000	7,593,000	\$0	\$308,765,000
2066	53,257,000	8,103,000	\$318,523,000	7,783,000	\$0	\$318,523,000
2067	53,767,000	8,290,000	\$328,590,000	7,978,000	\$0	\$328,590,000
2068	54,282,000	8,481,000	\$338,975,000	8,177,000	\$0	\$338,975,000
2069	54,802,000	8,677,000	\$349,688,000	8,381,000	\$0	\$349,688,000
2070	55,327,000	8,877,000	\$360,740,000	8,591,000	\$0	\$360,740,000
2071	55,857,000	9,082,000	\$372,141,000	8,806,000	\$0	\$372,141,000
2072	56,392,000	9,292,000	\$383,902,000	9,026,000	\$0	\$383,902,000
2073	56,932,000	9,506,000	\$396,035,000	9,252,000	\$0	\$396,035,000
2074	57,477,000	9,725,000	\$408,551,000	9,483,000	\$0	\$408,551,000
2075	58,026,000	9,949,000	\$421,463,000	9,720,000	\$0	\$421,463,000

Summary	
Toll Revenue PV (5% DR)	\$1,532,763,372
Capex (2014 dollars)	\$2,715,596,739
Annual O&M (2014 dollars)	\$14,236,359

Alternative 5 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	25,112,000	409,000	\$4,674,000	-	\$0	\$4,674,000
2024	25,545,000	454,000	\$5,746,000	-	\$0	\$5,746,000
2025	25,986,000	504,000	\$7,065,000	-	\$0	\$7,065,000
2026	26,427,000	554,000	\$8,384,000	-	\$0	\$8,384,000
2027	26,875,000	609,000	\$9,949,000	-	\$0	\$9,949,000
2028	27,331,000	670,000	\$11,806,000	-	\$0	\$11,806,000
2029	27,795,000	737,000	\$14,009,000	-	\$0	\$14,009,000
2030	28,266,000	810,000	\$16,624,000	-	\$0	\$16,624,000
2031	28,745,000	891,000	\$19,727,000	-	\$0	\$19,727,000
2032	29,233,000	980,000	\$23,409,000	-	\$0	\$23,409,000
2033	29,729,000	1,078,000	\$27,778,000	-	\$0	\$27,778,000
2034	30,233,000	1,185,000	\$32,962,000	-	\$0	\$32,962,000
2035	30,746,000	1,303,000	\$39,108,000	3,620,000	\$0	\$39,108,000
2036	31,352,000	1,381,000	\$42,814,000	3,711,000	\$0	\$42,814,000
2037	31,970,000	1,463,000	\$46,871,000	3,804,000	\$0	\$46,871,000
2038	32,601,000	1,550,000	\$51,312,000	3,899,000	\$0	\$51,312,000
2039	33,244,000	1,642,000	\$56,174,000	3,996,000	\$0	\$56,174,000
2040	33,900,000	1,740,000	\$61,497,000	4,096,000	\$0	\$61,497,000
2041	34,569,000	1,844,000	\$67,324,000	4,198,000	\$0	\$67,324,000
2042	35,251,000	1,954,000	\$73,704,000	4,303,000	\$0	\$73,704,000
2043	35,946,000	2,071,000	\$80,688,000	4,411,000	\$0	\$80,688,000
2044	36,655,000	2,195,000	\$88,334,000	4,521,000	\$0	\$88,334,000
2045	37,378,000	2,326,000	\$96,705,000	4,634,000	\$0	\$96,705,000
2046	37,957,000	2,412,000	\$102,182,000	4,750,000	\$0	\$102,182,000
2047	38,545,000	2,501,000	\$107,969,000	4,869,000	\$0	\$107,969,000
2048	39,142,000	2,594,000	\$114,084,000	4,991,000	\$0	\$114,084,000
2049	39,748,000	2,690,000	\$120,545,000	5,116,000	\$0	\$120,545,000
2050	40,364,000	2,790,000	\$127,372,000	5,244,000	\$0	\$127,372,000
2051	40,989,000	2,893,000	\$134,586,000	5,375,000	\$0	\$134,586,000
2052	41,624,000	3,000,000	\$142,208,000	5,509,000	\$0	\$142,208,000
2053	42,269,000	3,111,000	\$150,262,000	5,647,000	\$0	\$150,262,000
2054	42,924,000	3,226,000	\$158,772,000	5,788,000	\$0	\$158,772,000
2055	43,587,000	3,346,000	\$167,763,000	5,932,000	\$0	\$167,763,000
2056	44,101,000	3,427,000	\$173,374,000	6,080,000	\$0	\$173,374,000
2057	44,621,000	3,510,000	\$179,173,000	6,232,000	\$0	\$179,173,000
2058	45,147,000	3,595,000	\$185,166,000	6,388,000	\$0	\$185,166,000
2059	45,679,000	3,683,000	\$191,359,000	6,548,000	\$0	\$191,359,000
2060	46,218,000	3,773,000	\$197,759,000	6,712,000	\$0	\$197,759,000
2061	46,763,000	3,865,000	\$204,374,000	6,880,000	\$0	\$204,374,000
2062	47,314,000	3,959,000	\$211,210,000	7,052,000	\$0	\$211,210,000
2063	47,872,000	4,055,000	\$218,274,000	7,228,000	\$0	\$218,274,000
2064	48,436,000	4,154,000	\$225,575,000	7,409,000	\$0	\$225,575,000
2065	49,008,000	4,256,000	\$233,120,000	7,593,000	\$0	\$233,120,000
2066	49,422,000	4,319,000	\$238,726,000	7,783,000	\$0	\$238,726,000
2067	49,840,000	4,383,000	\$244,467,000	7,978,000	\$0	\$244,467,000
2068	50,261,000	4,448,000	\$250,346,000	8,177,000	\$0	\$250,346,000
2069	50,686,000	4,514,000	\$256,366,000	8,381,000	\$0	\$256,366,000
2070	51,114,000	4,581,000	\$262,531,000	8,591,000	\$0	\$262,531,000
2071	51,546,000	4,649,000	\$268,844,000	8,806,000	\$0	\$268,844,000
2072	51,982,000	4,718,000	\$275,309,000	9,026,000	\$0	\$275,309,000
2073	52,421,000	4,788,000	\$281,929,000	9,252,000	\$0	\$281,929,000
2074	52,864,000	4,859,000	\$288,709,000	9,483,000	\$0	\$288,709,000
2075	53,310,000	4,927,000	\$295,650,000	9,720,000	\$0	\$295,650,000

Summary	
Toll Revenue PV (5% DR)	\$1,289,177,596
Capex (2014 dollars)	\$1,959,169,765
Annual O&M (2014 dollars)	\$13,810,447

Alternative 5.1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	24,788,000	516,000	\$2,600,000	-	\$0	\$2,600,000
2024	25,227,000	565,000	\$3,274,000	-	\$0	\$3,274,000
2025	25,674,000	619,000	\$4,123,000	-	\$0	\$4,123,000
2026	26,121,000	673,000	\$4,972,000	-	\$0	\$4,972,000
2027	26,576,000	732,000	\$5,996,000	-	\$0	\$5,996,000
2028	27,039,000	796,000	\$7,231,000	-	\$0	\$7,231,000
2029	27,510,000	865,000	\$8,721,000	-	\$0	\$8,721,000
2030	27,989,000	940,000	\$10,518,000	-	\$0	\$10,518,000
2031	28,476,000	1,022,000	\$12,685,000	-	\$0	\$12,685,000
2032	28,972,000	1,111,000	\$15,298,000	-	\$0	\$15,298,000
2033	29,476,000	1,208,000	\$18,450,000	-	\$0	\$18,450,000
2034	29,989,000	1,313,000	\$22,251,000	-	\$0	\$22,251,000
2035	30,509,000	1,426,000	\$26,836,000	3,620,000	\$0	\$26,836,000
2036	31,114,000	1,500,000	\$28,812,000	3,711,000	\$0	\$28,812,000
2037	31,731,000	1,578,000	\$30,934,000	3,804,000	\$0	\$30,934,000
2038	32,361,000	1,660,000	\$33,212,000	3,899,000	\$0	\$33,212,000
2039	33,003,000	1,747,000	\$35,658,000	3,996,000	\$0	\$35,658,000
2040	33,658,000	1,838,000	\$38,284,000	4,096,000	\$0	\$38,284,000
2041	34,326,000	1,934,000	\$41,103,000	4,198,000	\$0	\$41,103,000
2042	35,007,000	2,035,000	\$44,130,000	4,303,000	\$0	\$44,130,000
2043	35,702,000	2,141,000	\$47,380,000	4,411,000	\$0	\$47,380,000
2044	36,410,000	2,253,000	\$50,869,000	4,521,000	\$0	\$50,869,000
2045	37,132,000	2,372,000	\$54,617,000	4,634,000	\$0	\$54,617,000
2046	37,708,000	2,455,000	\$57,050,000	4,750,000	\$0	\$57,050,000
2047	38,293,000	2,541,000	\$59,591,000	4,869,000	\$0	\$59,591,000
2048	38,887,000	2,630,000	\$62,245,000	4,991,000	\$0	\$62,245,000
2049	39,490,000	2,722,000	\$65,017,000	5,116,000	\$0	\$65,017,000
2050	40,103,000	2,818,000	\$67,913,000	5,244,000	\$0	\$67,913,000
2051	40,725,000	2,917,000	\$70,938,000	5,375,000	\$0	\$70,938,000
2052	41,357,000	3,019,000	\$74,098,000	5,509,000	\$0	\$74,098,000
2053	41,999,000	3,125,000	\$77,398,000	5,647,000	\$0	\$77,398,000
2054	42,651,000	3,235,000	\$80,845,000	5,788,000	\$0	\$80,845,000
2055	43,314,000	3,349,000	\$84,447,000	5,932,000	\$0	\$84,447,000
2056	43,822,000	3,407,000	\$86,943,000	6,080,000	\$0	\$86,943,000
2057	44,336,000	3,466,000	\$89,512,000	6,232,000	\$0	\$89,512,000
2058	44,856,000	3,526,000	\$92,157,000	6,388,000	\$0	\$92,157,000
2059	45,382,000	3,587,000	\$94,881,000	6,548,000	\$0	\$94,881,000
2060	45,915,000	3,649,000	\$97,685,000	6,712,000	\$0	\$97,685,000
2061	46,454,000	3,712,000	\$100,572,000	6,880,000	\$0	\$100,572,000
2062	46,999,000	3,776,000	\$103,544,000	7,052,000	\$0	\$103,544,000
2063	47,551,000	3,841,000	\$106,604,000	7,228,000	\$0	\$106,604,000
2064	48,109,000	3,907,000	\$109,754,000	7,409,000	\$0	\$109,754,000
2065	48,674,000	3,975,000	\$112,998,000	7,593,000	\$0	\$112,998,000
2066	49,067,000	4,023,000	\$114,966,000	7,783,000	\$0	\$114,966,000
2067	49,463,000	4,071,000	\$116,969,000	7,978,000	\$0	\$116,969,000
2068	49,862,000	4,120,000	\$119,007,000	8,177,000	\$0	\$119,007,000
2069	50,264,000	4,169,000	\$121,080,000	8,381,000	\$0	\$121,080,000
2070	50,669,000	4,219,000	\$123,189,000	8,591,000	\$0	\$123,189,000
2071	51,078,000	4,269,000	\$125,335,000	8,806,000	\$0	\$125,335,000
2072	51,490,000	4,320,000	\$127,518,000	9,026,000	\$0	\$127,518,000
2073	51,905,000	4,372,000	\$129,739,000	9,252,000	\$0	\$129,739,000
2074	52,324,000	4,424,000	\$131,999,000	9,483,000	\$0	\$131,999,000
2075	52,746,000	4,477,000	\$134,299,000	9,720,000	\$0	\$134,299,000

Summary	
Toll Revenue PV (5% DR)	\$694,272,574
Capex (2014 dollars)	\$99,768,648
Annual O&M (2014 dollars)	\$3,463,832

Alternative 6 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2019	23,157,000	349,000	\$1,005,000	-	\$0	\$1,005,000
2020	23,566,000	382,000	\$1,267,000	-	\$0	\$1,267,000
2021	23,983,000	418,000	\$1,597,000	-	\$0	\$1,597,000
2022	24,407,000	458,000	\$2,012,000	-	\$0	\$2,012,000
2023	24,839,000	501,000	\$2,536,000	-	\$0	\$2,536,000
2024	25,278,000	548,000	\$3,196,000	-	\$0	\$3,196,000
2025	25,725,000	600,000	\$4,027,000	-	\$0	\$4,027,000
2026	26,172,000	652,000	\$4,858,000	-	\$0	\$4,858,000
2027	26,627,000	708,000	\$5,861,000	-	\$0	\$5,861,000
2028	27,090,000	769,000	\$7,071,000	-	\$0	\$7,071,000
2029	27,561,000	835,000	\$8,531,000	-	\$0	\$8,531,000
2030	28,040,000	907,000	\$10,292,000	-	\$0	\$10,292,000
2031	28,527,000	985,000	\$12,417,000	-	\$0	\$12,417,000
2032	29,023,000	1,070,000	\$14,980,000	-	\$0	\$14,980,000
2033	29,527,000	1,162,000	\$18,073,000	-	\$0	\$18,073,000
2034	30,040,000	1,262,000	\$21,804,000	-	\$0	\$21,804,000
2035	30,561,000	1,373,000	\$26,306,000	3,620,000	\$0	\$26,306,000
2036	31,165,000	1,446,000	\$28,307,000	3,711,000	\$0	\$28,307,000
2037	31,781,000	1,523,000	\$30,460,000	3,804,000	\$0	\$30,460,000
2038	32,409,000	1,604,000	\$32,777,000	3,899,000	\$0	\$32,777,000
2039	33,049,000	1,689,000	\$35,270,000	3,996,000	\$0	\$35,270,000
2040	33,702,000	1,778,000	\$37,953,000	4,096,000	\$0	\$37,953,000
2041	34,368,000	1,872,000	\$40,840,000	4,198,000	\$0	\$40,840,000
2042	35,047,000	1,971,000	\$43,946,000	4,303,000	\$0	\$43,946,000
2043	35,740,000	2,075,000	\$47,289,000	4,411,000	\$0	\$47,289,000
2044	36,446,000	2,185,000	\$50,886,000	4,521,000	\$0	\$50,886,000
2045	37,167,000	2,300,000	\$54,755,000	4,634,000	\$0	\$54,755,000
2046	37,741,000	2,375,000	\$57,052,000	4,750,000	\$0	\$57,052,000
2047	38,324,000	2,452,000	\$59,445,000	4,869,000	\$0	\$59,445,000
2048	38,916,000	2,531,000	\$61,939,000	4,991,000	\$0	\$61,939,000
2049	39,517,000	2,613,000	\$64,537,000	5,116,000	\$0	\$64,537,000
2050	40,127,000	2,698,000	\$67,244,000	5,244,000	\$0	\$67,244,000
2051	40,747,000	2,785,000	\$70,065,000	5,375,000	\$0	\$70,065,000
2052	41,376,000	2,875,000	\$73,004,000	5,509,000	\$0	\$73,004,000
2053	42,015,000	2,968,000	\$76,066,000	5,647,000	\$0	\$76,066,000
2054	42,664,000	3,064,000	\$79,257,000	5,788,000	\$0	\$79,257,000
2055	43,324,000	3,164,000	\$82,582,000	5,932,000	\$0	\$82,582,000
2056	43,828,000	3,212,000	\$84,819,000	6,080,000	\$0	\$84,819,000
2057	44,338,000	3,261,000	\$87,117,000	6,232,000	\$0	\$87,117,000
2058	44,854,000	3,310,000	\$89,477,000	6,388,000	\$0	\$89,477,000
2059	45,376,000	3,360,000	\$91,901,000	6,548,000	\$0	\$91,901,000
2060	45,904,000	3,411,000	\$94,391,000	6,712,000	\$0	\$94,391,000
2061	46,438,000	3,463,000	\$96,948,000	6,880,000	\$0	\$96,948,000
2062	46,978,000	3,515,000	\$99,575,000	7,052,000	\$0	\$99,575,000
2063	47,525,000	3,568,000	\$102,273,000	7,228,000	\$0	\$102,273,000
2064	48,078,000	3,622,000	\$105,044,000	7,409,000	\$0	\$105,044,000
2065	48,638,000	3,677,000	\$107,890,000	7,594,000	\$0	\$107,890,000
2066	49,028,000	3,722,000	\$109,506,000	7,784,000	\$0	\$109,506,000
2067	49,421,000	3,767,000	\$111,146,000	7,979,000	\$0	\$111,146,000
2068	49,817,000	3,813,000	\$112,811,000	8,178,000	\$0	\$112,811,000
2069	50,216,000	3,860,000	\$114,501,000	8,382,000	\$0	\$114,501,000
2070	50,618,000	3,907,000	\$116,216,000	8,592,000	\$0	\$116,216,000
2071	51,024,000	3,955,000	\$117,957,000	8,807,000	\$0	\$117,957,000
2072	51,433,000	4,003,000	\$119,724,000	9,027,000	\$0	\$119,724,000
2073	51,845,000	4,052,000	\$121,517,000	9,253,000	\$0	\$121,517,000
2074	52,261,000	4,102,000	\$123,337,000	9,484,000	\$0	\$123,337,000
2075	52,680,000	4,152,000	\$125,182,000	9,721,000	\$0	\$125,182,000

Summary	
Toll Revenue PV (5% DR)	\$562,421,091
Capex (2014 dollars)	\$99,768,648
Annual O&M (2014 dollars)	\$3,463,832

Growth Rate 3.0%

Base Condition

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	BRT Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	24,235,000	62,000	\$144,000	-	\$0	\$144,000
2024	24,914,000	76,000	\$236,000	-	\$0	\$236,000
2025	25,612,000	94,000	\$387,000	-	\$0	\$387,000
2026	26,310,000	112,000	\$538,000	-	\$0	\$538,000
2027	27,027,000	133,000	\$748,000	-	\$0	\$748,000
2028	27,763,000	158,000	\$1,039,000	-	\$0	\$1,039,000
2029	28,519,000	188,000	\$1,444,000	-	\$0	\$1,444,000
2030	29,296,000	224,000	\$2,007,000	-	\$0	\$2,007,000
2031	30,094,000	266,000	\$2,789,000	-	\$0	\$2,789,000
2032	30,914,000	316,000	\$3,875,000	-	\$0	\$3,875,000
2033	31,756,000	376,000	\$5,385,000	-	\$0	\$5,385,000
2034	32,621,000	447,000	\$7,483,000	-	\$0	\$7,483,000
2035	33,508,000	534,000	\$10,386,000	-	\$0	\$10,386,000
2036	34,189,000	562,000	\$11,149,000	-	\$0	\$11,149,000
2037	34,883,000	591,000	\$11,968,000	-	\$0	\$11,968,000
2038	35,592,000	622,000	\$12,848,000	-	\$0	\$12,848,000
2039	36,315,000	655,000	\$13,792,000	-	\$0	\$13,792,000
2040	37,053,000	689,000	\$14,806,000	-	\$0	\$14,806,000
2041	37,806,000	725,000	\$15,894,000	-	\$0	\$15,894,000
2042	38,574,000	763,000	\$17,062,000	-	\$0	\$17,062,000
2043	39,357,000	803,000	\$18,316,000	-	\$0	\$18,316,000
2044	40,156,000	845,000	\$19,662,000	-	\$0	\$19,662,000
2045	40,971,000	889,000	\$21,107,000	-	\$0	\$21,107,000
2046	41,577,000	910,000	\$21,953,000	-	\$0	\$21,953,000
2047	42,192,000	932,000	\$22,832,000	-	\$0	\$22,832,000
2048	42,816,000	954,000	\$23,747,000	-	\$0	\$23,747,000
2049	43,449,000	977,000	\$24,698,000	-	\$0	\$24,698,000
2050	44,092,000	1,000,000	\$25,687,000	-	\$0	\$25,687,000
2051	44,744,000	1,024,000	\$26,716,000	-	\$0	\$26,716,000
2052	45,406,000	1,048,000	\$27,786,000	-	\$0	\$27,786,000
2053	46,078,000	1,073,000	\$28,899,000	-	\$0	\$28,899,000
2054	46,760,000	1,099,000	\$30,057,000	-	\$0	\$30,057,000
2055	47,451,000	1,126,000	\$31,262,000	-	\$0	\$31,262,000
2056	47,909,000	1,148,000	\$31,758,000	-	\$0	\$31,758,000
2057	48,372,000	1,170,000	\$32,262,000	-	\$0	\$32,262,000
2058	48,839,000	1,192,000	\$32,774,000	-	\$0	\$32,774,000
2059	49,311,000	1,215,000	\$33,294,000	-	\$0	\$33,294,000
2060	49,787,000	1,238,000	\$33,822,000	-	\$0	\$33,822,000
2061	50,268,000	1,262,000	\$34,358,000	-	\$0	\$34,358,000
2062	50,754,000	1,286,000	\$34,903,000	-	\$0	\$34,903,000
2063	51,244,000	1,311,000	\$35,457,000	-	\$0	\$35,457,000
2064	51,739,000	1,336,000	\$36,019,000	-	\$0	\$36,019,000
2065	52,239,000	1,362,000	\$36,590,000	-	\$0	\$36,590,000
2066	52,531,000	1,369,000	\$37,064,000	-	\$0	\$37,064,000
2067	52,825,000	1,376,000	\$37,544,000	-	\$0	\$37,544,000
2068	53,120,000	1,383,000	\$38,031,000	-	\$0	\$38,031,000
2069	53,417,000	1,390,000	\$38,524,000	-	\$0	\$38,524,000
2070	53,716,000	1,397,000	\$39,023,000	-	\$0	\$39,023,000
2071	54,016,000	1,404,000	\$39,529,000	-	\$0	\$39,529,000
2072	54,318,000	1,411,000	\$40,041,000	-	\$0	\$40,041,000
2073	54,622,000	1,418,000	\$40,560,000	-	\$0	\$40,560,000
2074	54,927,000	1,426,000	\$41,086,000	-	\$0	\$41,086,000
2075	55,233,000	1,436,000	\$41,619,000	-	\$0	\$41,619,000

Summary	
Toll Revenue PV (5% DR)	\$238,825,143

Alternative 1 Option1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	BRT Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	25,207,162	1,839,135	\$26,900,794	781,014	\$7,300,510	\$33,697,000
2024	25,954,017	1,980,161	\$31,162,345	805,135	\$7,526,264	\$38,443,000
2025	26,723,000	2,132,000	\$36,099,000	830,000	\$7,759,000	\$43,858,000
2026	27,492,000	2,284,000	\$41,036,000	855,000	\$7,992,000	\$49,273,000
2027	28,283,000	2,447,000	\$46,648,000	881,000	\$8,232,000	\$55,357,000
2028	29,097,000	2,621,000	\$53,027,000	907,000	\$8,479,000	\$62,192,000
2029	29,934,000	2,808,000	\$60,279,000	934,000	\$8,733,000	\$69,871,000
2030	30,795,000	3,008,000	\$68,522,000	962,000	\$8,995,000	\$78,498,000
2031	31,681,000	3,222,000	\$77,893,000	991,000	\$9,265,000	\$88,190,000
2032	32,593,000	3,451,000	\$88,545,000	1,021,000	\$9,543,000	\$99,078,000
2033	33,531,000	3,697,000	\$100,654,000	1,052,000	\$9,829,000	\$111,311,000
2034	34,496,000	3,960,000	\$114,419,000	1,084,000	\$10,124,000	\$125,054,000
2035	35,489,000	4,242,000	\$130,064,000	1,115,000	\$10,427,000	\$140,491,000
2036	36,346,000	4,456,000	\$140,549,000	1,148,000	\$10,740,000	\$151,382,000
2037	37,224,000	4,680,000	\$151,880,000	1,182,000	\$11,062,000	\$163,117,000
2038	38,123,000	4,916,000	\$164,124,000	1,218,000	\$11,394,000	\$175,762,000
2039	39,044,000	5,163,000	\$177,355,000	1,255,000	\$11,736,000	\$189,387,000
2040	39,987,000	5,423,000	\$191,653,000	1,293,000	\$12,088,000	\$204,069,000
2041	40,953,000	5,696,000	\$207,104,000	1,332,000	\$12,451,000	\$219,889,000
2042	41,942,000	5,983,000	\$223,800,000	1,372,000	\$12,825,000	\$236,935,000
2043	42,955,000	6,284,000	\$241,842,000	1,413,000	\$13,210,000	\$255,303,000
2044	43,993,000	6,600,000	\$261,339,000	1,455,000	\$13,606,000	\$275,095,000
2045	45,058,000	6,932,000	\$282,408,000	1,499,000	\$14,013,000	\$296,421,000
2046	45,925,000	7,178,000	\$299,834,000	1,544,000	\$14,433,000	\$314,321,000
2047	46,809,000	7,433,000	\$318,335,000	1,590,000	\$14,866,000	\$333,302,000
2048	47,710,000	7,697,000	\$337,978,000	1,638,000	\$15,312,000	\$353,429,000
2049	48,628,000	7,970,000	\$358,833,000	1,687,000	\$15,771,000	\$374,771,000
2050	49,564,000	8,253,000	\$380,975,000	1,738,000	\$16,244,000	\$397,402,000
2051	50,518,000	8,546,000	\$404,483,000	1,790,000	\$16,731,000	\$421,399,000
2052	51,490,000	8,849,000	\$429,442,000	1,844,000	\$17,233,000	\$446,846,000
2053	52,481,000	9,163,000	\$455,941,000	1,899,000	\$17,750,000	\$473,829,000
2054	53,491,000	9,488,000	\$484,075,000	1,956,000	\$18,283,000	\$502,442,000
2055	54,521,000	9,823,000	\$513,947,000	2,014,000	\$18,833,000	\$532,780,000
2056	55,245,000	10,056,000	\$536,717,000	2,074,000	\$19,398,000	\$556,130,000
2057	55,978,000	10,294,000	\$560,495,000	2,136,000	\$19,980,000	\$580,503,000
2058	56,721,000	10,538,000	\$585,327,000	2,200,000	\$20,579,000	\$605,945,000
2059	57,474,000	10,788,000	\$611,259,000	2,266,000	\$21,196,000	\$632,502,000
2060	58,237,000	11,044,000	\$638,340,000	2,334,000	\$21,832,000	\$660,223,000
2061	59,010,000	11,306,000	\$666,621,000	2,404,000	\$22,487,000	\$689,159,000
2062	59,793,000	11,574,000	\$696,155,000	2,476,000	\$23,162,000	\$719,363,000
2063	60,587,000	11,848,000	\$726,997,000	2,550,000	\$23,857,000	\$750,890,000
2064	61,391,000	12,129,000	\$759,206,000	2,627,000	\$24,573,000	\$783,799,000
2065	62,206,000	12,417,000	\$792,841,000	2,707,000	\$25,309,000	\$818,150,000
2066	62,767,000	12,616,000	\$815,308,000	2,788,000	\$26,068,000	\$841,376,000
2067	63,333,000	12,818,000	\$838,411,000	2,872,000	\$26,850,000	\$865,262,000
2068	63,904,000	13,024,000	\$862,169,000	2,958,000	\$27,656,000	\$889,826,000
2069	64,480,000	13,233,000	\$886,600,000	3,047,000	\$28,486,000	\$915,087,000
2070	65,061,000	13,445,000	\$911,724,000	3,138,000	\$29,341,000	\$941,065,000
2071	65,647,000	13,661,000	\$937,560,000	3,232,000	\$30,221,000	\$967,781,000
2072	66,239,000	13,880,000	\$964,128,000	3,329,000	\$31,128,000	\$995,255,000
2073	66,836,000	14,103,000	\$991,449,000	3,429,000	\$32,062,000	\$1,023,509,000
2074	67,438,000	14,329,000	\$1,019,544,000	3,532,000	\$33,024,000	\$1,052,565,000
2075	68,046,000	14,559,000	\$1,048,434,000	3,638,000	\$34,014,000	\$1,082,448,000

Summary	
Toll Revenue PV (5% DR)	\$4,473,415,194
Transit Revenue PV (5% DR)	\$233,698,349
Capex (2014 dollars)	\$4,116,416,660
Annual O&M (2014 dollars)	\$49,647,753

Alternative 2 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	BRT Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	25,242,096	1,868,567	\$29,489,682	781,014	\$7,299,518	\$36,483,000
2024	25,997,252	2,029,825	\$33,131,472	805,135	\$7,525,268	\$40,510,000
2025	26,775,000	2,205,000	\$37,223,000	830,000	\$7,758,000	\$44,981,000
2026	27,553,000	2,380,000	\$41,315,000	855,000	\$7,991,000	\$49,452,000
2027	28,353,000	2,569,000	\$45,856,000	881,000	\$8,231,000	\$54,368,000
2028	29,177,000	2,773,000	\$50,896,000	907,000	\$8,478,000	\$59,773,000
2029	30,025,000	2,993,000	\$56,490,000	934,000	\$8,732,000	\$65,715,000
2030	30,897,000	3,231,000	\$62,699,000	962,000	\$8,994,000	\$72,247,000
2031	31,794,000	3,488,000	\$69,591,000	991,000	\$9,264,000	\$79,429,000
2032	32,718,000	3,765,000	\$77,240,000	1,021,000	\$9,542,000	\$87,325,000
2033	33,668,000	4,064,000	\$85,730,000	1,052,000	\$9,828,000	\$96,006,000
2034	34,646,000	4,387,000	\$95,153,000	1,084,000	\$10,123,000	\$105,550,000
2035	35,652,000	4,736,000	\$105,615,000	1,115,000	\$10,426,000	\$116,041,000
2036	36,550,000	5,004,000	\$114,837,000	1,148,000	\$10,739,000	\$125,691,000
2037	37,471,000	5,287,000	\$124,864,000	1,182,000	\$11,061,000	\$136,143,000
2038	38,415,000	5,586,000	\$135,766,000	1,218,000	\$11,393,000	\$147,464,000
2039	39,383,000	5,902,000	\$147,620,000	1,255,000	\$11,735,000	\$159,727,000
2040	40,375,000	6,236,000	\$160,509,000	1,293,000	\$12,087,000	\$173,010,000
2041	41,392,000	6,589,000	\$174,524,000	1,332,000	\$12,450,000	\$187,397,000
2042	42,435,000	6,962,000	\$189,762,000	1,372,000	\$12,823,000	\$202,981,000
2043	43,504,000	7,356,000	\$206,331,000	1,413,000	\$13,208,000	\$219,861,000
2044	44,600,000	7,772,000	\$224,347,000	1,455,000	\$13,604,000	\$238,144,000
2045	45,726,000	8,209,000	\$243,936,000	1,499,000	\$14,011,000	\$257,947,000
2046	46,670,000	8,545,000	\$260,444,000	1,544,000	\$14,431,000	\$274,948,000
2047	47,634,000	8,895,000	\$278,069,000	1,590,000	\$14,864,000	\$293,069,000
2048	48,618,000	9,260,000	\$296,886,000	1,638,000	\$15,310,000	\$312,385,000
2049	49,622,000	9,640,000	\$316,977,000	1,687,000	\$15,769,000	\$332,974,000
2050	50,647,000	10,035,000	\$338,427,000	1,738,000	\$16,242,000	\$354,920,000
2051	51,693,000	10,446,000	\$361,329,000	1,790,000	\$16,729,000	\$378,312,000
2052	52,761,000	10,874,000	\$385,781,000	1,844,000	\$17,231,000	\$403,246,000
2053	53,851,000	11,320,000	\$411,887,000	1,899,000	\$17,748,000	\$429,823,000
2054	54,963,000	11,784,000	\$439,760,000	1,956,000	\$18,280,000	\$458,152,000
2055	56,099,000	12,267,000	\$469,519,000	2,014,000	\$18,830,000	\$488,349,000
2056	56,957,000	12,620,000	\$493,860,000	2,074,000	\$19,395,000	\$513,290,000
2057	57,828,000	12,983,000	\$519,463,000	2,136,000	\$19,977,000	\$539,505,000
2058	58,712,000	13,356,000	\$546,393,000	2,200,000	\$20,576,000	\$567,058,000
2059	59,610,000	13,740,000	\$574,719,000	2,266,000	\$21,193,000	\$596,019,000
2060	60,522,000	14,135,000	\$604,514,000	2,334,000	\$21,829,000	\$626,459,000
2061	61,448,000	14,542,000	\$635,853,000	2,404,000	\$22,484,000	\$658,453,000
2062	62,388,000	14,960,000	\$668,817,000	2,476,000	\$23,158,000	\$692,081,000
2063	63,342,000	15,390,000	\$703,490,000	2,550,000	\$23,853,000	\$727,427,000
2064	64,311,000	15,833,000	\$739,960,000	2,626,000	\$24,568,000	\$764,578,000
2065	65,293,000	16,289,000	\$778,320,000	2,706,000	\$25,305,000	\$803,625,000
2066	65,981,000	16,610,000	\$810,344,000	2,787,000	\$26,064,000	\$836,421,000
2067	66,676,000	16,937,000	\$843,686,000	2,871,000	\$26,846,000	\$870,555,000
2068	67,379,000	17,271,000	\$878,399,000	2,957,000	\$27,651,000	\$906,082,000
2069	68,089,000	17,612,000	\$914,541,000	3,046,000	\$28,481,000	\$943,059,000
2070	68,807,000	17,959,000	\$952,170,000	3,137,000	\$29,335,000	\$981,545,000
2071	69,532,000	18,313,000	\$991,347,000	3,231,000	\$30,215,000	\$1,021,602,000
2072	70,265,000	18,674,000	\$1,032,136,000	3,328,000	\$31,121,000	\$1,063,294,000
2073	71,006,000	19,042,000	\$1,074,603,000	3,428,000	\$32,055,000	\$1,106,687,000
2074	71,754,000	19,417,000	\$1,118,818,000	3,531,000	\$33,017,000	\$1,151,851,000
2075	72,510,000	19,801,000	\$1,164,851,000	3,637,000	\$34,008,000	\$1,198,859,000

Summary	
Toll Revenue PV (5% DR)	\$4,182,634,311
Transit Revenue PV (5% DR)	\$233,667,472
Capex (2014 dollars)	\$5,092,357,957
Annual O&M (2014 dollars)	\$53,861,812

Alternative 3 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2021	23,714,000	295,000	\$383,000	-	\$0	\$383,000
2022	24,250,000	348,000	\$480,000	-	\$0	\$480,000
2023	24,798,000	411,000	\$601,000	-	\$0	\$601,000
2024	25,359,000	485,000	\$753,000	-	\$0	\$753,000
2025	25,932,000	573,000	\$943,000	-	\$0	\$943,000
2026	26,505,000	661,000	\$1,133,000	-	\$0	\$1,133,000
2027	27,091,000	763,000	\$1,361,000	-	\$0	\$1,361,000
2028	27,690,000	880,000	\$1,635,000	-	\$0	\$1,635,000
2029	28,302,000	1,015,000	\$1,964,000	-	\$0	\$1,964,000
2030	28,928,000	1,171,000	\$2,360,000	-	\$0	\$2,360,000
2031	29,568,000	1,351,000	\$2,836,000	-	\$0	\$2,836,000
2032	30,222,000	1,558,000	\$3,407,000	-	\$0	\$3,407,000
2033	30,890,000	1,797,000	\$4,094,000	-	\$0	\$4,094,000
2034	31,573,000	2,073,000	\$4,919,000	-	\$0	\$4,919,000
2035	32,270,000	2,391,000	\$5,913,000	3,801,000	\$0	\$5,913,000
2036	32,999,000	2,541,000	\$6,295,000	3,915,000	\$0	\$6,295,000
2037	33,744,000	2,700,000	\$6,701,000	4,032,000	\$0	\$6,701,000
2038	34,506,000	2,869,000	\$7,134,000	4,153,000	\$0	\$7,134,000
2039	35,285,000	3,049,000	\$7,595,000	4,278,000	\$0	\$7,595,000
2040	36,082,000	3,240,000	\$8,085,000	4,406,000	\$0	\$8,085,000
2041	36,897,000	3,443,000	\$8,607,000	4,538,000	\$0	\$8,607,000
2042	37,730,000	3,659,000	\$9,163,000	4,674,000	\$0	\$9,163,000
2043	38,582,000	3,888,000	\$9,755,000	4,814,000	\$0	\$9,755,000
2044	39,453,000	4,131,000	\$10,385,000	4,958,000	\$0	\$10,385,000
2045	40,346,000	4,389,000	\$11,055,000	5,108,000	\$0	\$11,055,000
2046	41,028,000	4,598,000	\$11,507,000	5,261,000	\$0	\$11,507,000
2047	41,722,000	4,817,000	\$11,977,000	5,419,000	\$0	\$11,977,000
2048	42,427,000	5,046,000	\$12,467,000	5,582,000	\$0	\$12,467,000
2049	43,144,000	5,286,000	\$12,977,000	5,749,000	\$0	\$12,977,000
2050	43,873,000	5,537,000	\$13,507,000	5,921,000	\$0	\$13,507,000
2051	44,615,000	5,800,000	\$14,059,000	6,099,000	\$0	\$14,059,000
2052	45,369,000	6,076,000	\$14,634,000	6,282,000	\$0	\$14,634,000
2053	46,136,000	6,365,000	\$15,232,000	6,470,000	\$0	\$15,232,000
2054	46,916,000	6,668,000	\$15,855,000	6,664,000	\$0	\$15,855,000
2055	47,711,000	6,985,000	\$16,502,000	6,865,000	\$0	\$16,502,000
2056	48,265,000	7,187,000	\$16,890,000	7,071,000	\$0	\$16,890,000
2057	48,825,000	7,394,000	\$17,287,000	7,283,000	\$0	\$17,287,000
2058	49,392,000	7,607,000	\$17,694,000	7,502,000	\$0	\$17,694,000
2059	49,965,000	7,826,000	\$18,110,000	7,727,000	\$0	\$18,110,000
2060	50,545,000	8,052,000	\$18,536,000	7,959,000	\$0	\$18,536,000
2061	51,132,000	8,284,000	\$18,972,000	8,198,000	\$0	\$18,972,000
2062	51,725,000	8,523,000	\$19,418,000	8,444,000	\$0	\$19,418,000
2063	52,325,000	8,769,000	\$19,875,000	8,697,000	\$0	\$19,875,000
2064	52,932,000	9,022,000	\$20,343,000	8,958,000	\$0	\$20,343,000
2065	53,547,000	9,283,000	\$20,823,000	9,227,000	\$0	\$20,823,000
2066	53,949,000	9,479,000	\$21,136,000	9,504,000	\$0	\$21,136,000
2067	54,354,000	9,679,000	\$21,453,000	9,789,000	\$0	\$21,453,000
2068	54,762,000	9,884,000	\$21,775,000	10,083,000	\$0	\$21,775,000
2069	55,173,000	10,093,000	\$22,102,000	10,385,000	\$0	\$22,102,000
2070	55,587,000	10,306,000	\$22,434,000	10,697,000	\$0	\$22,434,000
2071	56,004,000	10,524,000	\$22,771,000	11,018,000	\$0	\$22,771,000
2072	56,424,000	10,747,000	\$23,113,000	11,349,000	\$0	\$23,113,000
2073	56,847,000	10,974,000	\$23,460,000	11,689,000	\$0	\$23,460,000
2074	57,274,000	11,206,000	\$23,812,000	12,040,000	\$0	\$23,812,000
2075	57,704,000	11,444,000	\$24,169,000	12,400,000	\$0	\$24,169,000

Summary	
Toll Revenue PV (5% DR)	\$126,591,261
Capex (2014 dollars)	\$2,012,515,909
Annual O&M (2014 dollars)	\$10,716,998

Alternative 4 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2022	24,990,899	331,157	\$4,387,144	-	\$0	\$4,387,000
2023	25,554,143	395,472	\$5,511,178	-	\$0	\$5,511,000
2024	26,130,081	472,278	\$6,923,201	-	\$0	\$6,923,000
2025	26,719,000	564,000	\$8,697,000	-	\$0	\$8,697,000
2026	27,308,000	656,000	\$10,471,000	-	\$0	\$10,471,000
2027	27,910,000	763,000	\$12,607,000	-	\$0	\$12,607,000
2028	28,525,000	887,000	\$15,178,000	-	\$0	\$15,178,000
2029	29,154,000	1,031,000	\$18,274,000	-	\$0	\$18,274,000
2030	29,797,000	1,199,000	\$22,001,000	-	\$0	\$22,001,000
2031	30,454,000	1,394,000	\$26,488,000	-	\$0	\$26,488,000
2032	31,125,000	1,621,000	\$31,890,000	-	\$0	\$31,890,000
2033	31,811,000	1,885,000	\$38,394,000	-	\$0	\$38,394,000
2034	32,512,000	2,192,000	\$46,225,000	-	\$0	\$46,225,000
2035	33,228,000	2,545,000	\$55,651,000	3,800,000	\$0	\$55,651,000
2036	34,027,000	2,711,000	\$62,244,000	3,914,000	\$0	\$62,244,000
2037	34,845,000	2,887,000	\$69,618,000	4,032,000	\$0	\$69,618,000
2038	35,682,000	3,075,000	\$77,865,000	4,153,000	\$0	\$77,865,000
2039	36,540,000	3,275,000	\$87,089,000	4,278,000	\$0	\$87,089,000
2040	37,418,000	3,488,000	\$97,406,000	4,406,000	\$0	\$97,406,000
2041	38,317,000	3,715,000	\$108,945,000	4,538,000	\$0	\$108,945,000
2042	39,238,000	3,957,000	\$121,851,000	4,674,000	\$0	\$121,851,000
2043	40,181,000	4,214,000	\$136,286,000	4,814,000	\$0	\$136,286,000
2044	41,147,000	4,488,000	\$152,431,000	4,959,000	\$0	\$152,431,000
2045	42,135,000	4,780,000	\$170,487,000	5,108,000	\$0	\$170,487,000
2046	42,884,000	4,987,000	\$179,958,000	5,261,000	\$0	\$179,958,000
2047	43,646,000	5,203,000	\$189,955,000	5,419,000	\$0	\$189,955,000
2048	44,422,000	5,429,000	\$200,508,000	5,582,000	\$0	\$200,508,000
2049	45,212,000	5,664,000	\$211,647,000	5,749,000	\$0	\$211,647,000
2050	46,016,000	5,910,000	\$223,405,000	5,921,000	\$0	\$223,405,000
2051	46,834,000	6,166,000	\$235,816,000	6,099,000	\$0	\$235,816,000
2052	47,666,000	6,433,000	\$248,916,000	6,282,000	\$0	\$248,916,000
2053	48,513,000	6,712,000	\$262,744,000	6,470,000	\$0	\$262,744,000
2054	49,375,000	7,003,000	\$277,340,000	6,664,000	\$0	\$277,340,000
2055	50,253,000	7,308,000	\$292,749,000	6,864,000	\$0	\$292,749,000
2056	50,893,000	7,517,000	\$303,964,000	7,070,000	\$0	\$303,964,000
2057	51,541,000	7,732,000	\$315,609,000	7,282,000	\$0	\$315,609,000
2058	52,197,000	7,953,000	\$327,700,000	7,500,000	\$0	\$327,700,000
2059	52,862,000	8,181,000	\$340,254,000	7,725,000	\$0	\$340,254,000
2060	53,535,000	8,415,000	\$353,289,000	7,957,000	\$0	\$353,289,000
2061	54,217,000	8,656,000	\$366,824,000	8,196,000	\$0	\$366,824,000
2062	54,908,000	8,904,000	\$380,877,000	8,442,000	\$0	\$380,877,000
2063	55,607,000	9,159,000	\$395,469,000	8,695,000	\$0	\$395,469,000
2064	56,315,000	9,421,000	\$410,620,000	8,956,000	\$0	\$410,620,000
2065	57,033,000	9,692,000	\$426,351,000	9,225,000	\$0	\$426,351,000
2066	57,477,000	9,885,000	\$437,096,000	9,502,000	\$0	\$437,096,000
2067	57,924,000	10,082,000	\$448,111,000	9,787,000	\$0	\$448,111,000
2068	58,374,000	10,283,000	\$459,404,000	10,081,000	\$0	\$459,404,000
2069	58,828,000	10,488,000	\$470,982,000	10,383,000	\$0	\$470,982,000
2070	59,286,000	10,697,000	\$482,851,000	10,694,000	\$0	\$482,851,000
2071	59,747,000	10,910,000	\$495,020,000	11,015,000	\$0	\$495,020,000
2072	60,212,000	11,127,000	\$507,495,000	11,345,000	\$0	\$507,495,000
2073	60,680,000	11,349,000	\$520,285,000	11,685,000	\$0	\$520,285,000
2074	61,152,000	11,575,000	\$533,397,000	12,035,000	\$0	\$533,397,000
2075	61,627,000	11,804,000	\$546,839,000	12,397,000	\$0	\$546,839,000

Summary	
Toll Revenue PV (5% DR)	\$2,096,984,268
Capex (2014 dollars)	\$2,715,596,739
Annual O&M (2014 dollars)	\$14,236,359

Alternative 5 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	24,892,000	386,000	\$4,412,000	-	\$0	\$4,412,000
2024	25,433,000	441,000	\$5,583,000	-	\$0	\$5,583,000
2025	25,986,000	504,000	\$7,065,000	-	\$0	\$7,065,000
2026	26,539,000	567,000	\$8,547,000	-	\$0	\$8,547,000
2027	27,104,000	637,000	\$10,340,000	-	\$0	\$10,340,000
2028	27,681,000	716,000	\$12,510,000	-	\$0	\$12,510,000
2029	28,270,000	805,000	\$15,135,000	-	\$0	\$15,135,000
2030	28,871,000	905,000	\$18,311,000	-	\$0	\$18,311,000
2031	29,485,000	1,017,000	\$22,153,000	-	\$0	\$22,153,000
2032	30,112,000	1,143,000	\$26,801,000	-	\$0	\$26,801,000
2033	30,753,000	1,285,000	\$32,424,000	-	\$0	\$32,424,000
2034	31,407,000	1,445,000	\$39,227,000	-	\$0	\$39,227,000
2035	32,075,000	1,625,000	\$47,458,000	3,801,000	\$0	\$47,458,000
2036	32,782,000	1,715,000	\$52,835,000	3,915,000	\$0	\$52,835,000
2037	33,505,000	1,810,000	\$58,822,000	4,032,000	\$0	\$58,822,000
2038	34,244,000	1,910,000	\$65,487,000	4,153,000	\$0	\$65,487,000
2039	34,999,000	2,016,000	\$72,907,000	4,278,000	\$0	\$72,907,000
2040	35,771,000	2,128,000	\$81,168,000	4,406,000	\$0	\$81,168,000
2041	36,560,000	2,246,000	\$90,365,000	4,538,000	\$0	\$90,365,000
2042	37,366,000	2,370,000	\$100,604,000	4,674,000	\$0	\$100,604,000
2043	38,190,000	2,501,000	\$112,003,000	4,814,000	\$0	\$112,003,000
2044	39,032,000	2,640,000	\$124,694,000	4,958,000	\$0	\$124,694,000
2045	39,890,000	2,787,000	\$138,821,000	5,108,000	\$0	\$138,821,000
2046	40,542,000	2,884,000	\$145,199,000	5,261,000	\$0	\$145,199,000
2047	41,204,000	2,984,000	\$151,870,000	5,419,000	\$0	\$151,870,000
2048	41,877,000	3,088,000	\$158,847,000	5,582,000	\$0	\$158,847,000
2049	42,561,000	3,195,000	\$166,145,000	5,749,000	\$0	\$166,145,000
2050	43,256,000	3,306,000	\$173,778,000	5,921,000	\$0	\$173,778,000
2051	43,963,000	3,421,000	\$181,762,000	6,099,000	\$0	\$181,762,000
2052	44,681,000	3,540,000	\$190,112,000	6,282,000	\$0	\$190,112,000
2053	45,411,000	3,663,000	\$198,846,000	6,470,000	\$0	\$198,846,000
2054	46,153,000	3,790,000	\$207,981,000	6,664,000	\$0	\$207,981,000
2055	46,907,000	3,921,000	\$217,534,000	6,864,000	\$0	\$217,534,000
2056	47,439,000	4,005,000	\$223,898,000	7,070,000	\$0	\$223,898,000
2057	47,977,000	4,091,000	\$230,448,000	7,282,000	\$0	\$230,448,000
2058	48,522,000	4,179,000	\$237,189,000	7,500,000	\$0	\$237,189,000
2059	49,073,000	4,269,000	\$244,128,000	7,725,000	\$0	\$244,128,000
2060	49,630,000	4,361,000	\$251,270,000	7,957,000	\$0	\$251,270,000
2061	50,193,000	4,455,000	\$258,621,000	8,196,000	\$0	\$258,621,000
2062	50,763,000	4,551,000	\$266,187,000	8,442,000	\$0	\$266,187,000
2063	51,339,000	4,649,000	\$273,974,000	8,695,000	\$0	\$273,974,000
2064	51,922,000	4,749,000	\$281,989,000	8,956,000	\$0	\$281,989,000
2065	52,511,000	4,850,000	\$290,236,000	9,225,000	\$0	\$290,236,000
2066	52,868,000	4,896,000	\$295,813,000	9,502,000	\$0	\$295,813,000
2067	53,227,000	4,943,000	\$301,497,000	9,787,000	\$0	\$301,497,000
2068	53,588,000	4,990,000	\$307,290,000	10,081,000	\$0	\$307,290,000
2069	53,952,000	5,038,000	\$313,195,000	10,383,000	\$0	\$313,195,000
2070	54,318,000	5,086,000	\$319,213,000	10,695,000	\$0	\$319,213,000
2071	54,687,000	5,135,000	\$325,347,000	11,016,000	\$0	\$325,347,000
2072	55,058,000	5,184,000	\$331,598,000	11,347,000	\$0	\$331,598,000
2073	55,432,000	5,233,000	\$337,970,000	11,687,000	\$0	\$337,970,000
2074	55,808,000	5,283,000	\$344,464,000	12,038,000	\$0	\$344,464,000
2075	56,187,000	5,333,000	\$351,082,000	12,398,000	\$0	\$351,082,000

Summary	
Toll Revenue PV (5% DR)	\$1,648,080,476
Capex (2014 dollars)	\$1,959,169,765
Annual O&M (2014 dollars)	\$13,810,447

Alternative 5.1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2023	24,572,000	497,000	\$2,434,000	-	\$0	\$2,434,000
2024	25,117,000	555,000	\$3,168,000	-	\$0	\$3,168,000
2025	25,674,000	619,000	\$4,123,000	-	\$0	\$4,123,000
2026	26,231,000	683,000	\$5,078,000	-	\$0	\$5,078,000
2027	26,801,000	754,000	\$6,254,000	-	\$0	\$6,254,000
2028	27,383,000	832,000	\$7,702,000	-	\$0	\$7,702,000
2029	27,978,000	918,000	\$9,486,000	-	\$0	\$9,486,000
2030	28,585,000	1,013,000	\$11,683,000	-	\$0	\$11,683,000
2031	29,206,000	1,118,000	\$14,389,000	-	\$0	\$14,389,000
2032	29,840,000	1,234,000	\$17,721,000	-	\$0	\$17,721,000
2033	30,488,000	1,362,000	\$21,825,000	-	\$0	\$21,825,000
2034	31,150,000	1,503,000	\$26,879,000	-	\$0	\$26,879,000
2035	31,826,000	1,661,000	\$33,101,000	3,801,000	\$0	\$33,101,000
2036	32,533,000	1,747,000	\$35,774,000	3,915,000	\$0	\$35,774,000
2037	33,255,000	1,837,000	\$38,663,000	4,032,000	\$0	\$38,663,000
2038	33,993,000	1,932,000	\$41,785,000	4,153,000	\$0	\$41,785,000
2039	34,748,000	2,032,000	\$45,159,000	4,278,000	\$0	\$45,159,000
2040	35,520,000	2,137,000	\$48,805,000	4,406,000	\$0	\$48,805,000
2041	36,309,000	2,248,000	\$52,746,000	4,538,000	\$0	\$52,746,000
2042	37,115,000	2,364,000	\$57,005,000	4,674,000	\$0	\$57,005,000
2043	37,939,000	2,486,000	\$61,608,000	4,814,000	\$0	\$61,608,000
2044	38,781,000	2,615,000	\$66,583,000	4,958,000	\$0	\$66,583,000
2045	39,642,000	2,751,000	\$71,959,000	5,108,000	\$0	\$71,959,000
2046	40,289,000	2,837,000	\$74,673,000	5,261,000	\$0	\$74,673,000
2047	40,947,000	2,926,000	\$77,490,000	5,419,000	\$0	\$77,490,000
2048	41,615,000	3,018,000	\$80,413,000	5,582,000	\$0	\$80,413,000
2049	42,294,000	3,113,000	\$83,446,000	5,749,000	\$0	\$83,446,000
2050	42,984,000	3,211,000	\$86,594,000	5,921,000	\$0	\$86,594,000
2051	43,686,000	3,312,000	\$89,860,000	6,099,000	\$0	\$89,860,000
2052	44,399,000	3,416,000	\$93,250,000	6,282,000	\$0	\$93,250,000
2053	45,124,000	3,523,000	\$96,767,000	6,470,000	\$0	\$96,767,000
2054	45,861,000	3,633,000	\$100,417,000	6,664,000	\$0	\$100,417,000
2055	46,610,000	3,745,000	\$104,205,000	6,864,000	\$0	\$104,205,000
2056	47,124,000	3,809,000	\$106,813,000	7,070,000	\$0	\$106,813,000
2057	47,643,000	3,874,000	\$109,487,000	7,282,000	\$0	\$109,487,000
2058	48,168,000	3,940,000	\$112,227,000	7,500,000	\$0	\$112,227,000
2059	48,699,000	4,008,000	\$115,036,000	7,725,000	\$0	\$115,036,000
2060	49,236,000	4,077,000	\$117,915,000	7,957,000	\$0	\$117,915,000
2061	49,779,000	4,147,000	\$120,866,000	8,196,000	\$0	\$120,866,000
2062	50,328,000	4,218,000	\$123,891,000	8,442,000	\$0	\$123,891,000
2063	50,883,000	4,290,000	\$126,992,000	8,695,000	\$0	\$126,992,000
2064	51,444,000	4,364,000	\$130,171,000	8,956,000	\$0	\$130,171,000
2065	52,009,000	4,439,000	\$133,430,000	9,225,000	\$0	\$133,430,000
2066	52,344,000	4,466,000	\$135,018,000	9,502,000	\$0	\$135,018,000
2067	52,681,000	4,493,000	\$136,625,000	9,787,000	\$0	\$136,625,000
2068	53,020,000	4,520,000	\$138,251,000	10,081,000	\$0	\$138,251,000
2069	53,361,000	4,547,000	\$139,896,000	10,383,000	\$0	\$139,896,000
2070	53,704,000	4,574,000	\$141,561,000	10,694,000	\$0	\$141,561,000
2071	54,050,000	4,601,000	\$143,246,000	11,015,000	\$0	\$143,246,000
2072	54,398,000	4,629,000	\$144,951,000	11,345,000	\$0	\$144,951,000
2073	54,748,000	4,657,000	\$146,676,000	11,685,000	\$0	\$146,676,000
2074	55,100,000	4,685,000	\$148,422,000	12,035,000	\$0	\$148,422,000
2075	55,455,000	4,713,000	\$150,189,000	12,397,000	\$0	\$150,189,000

Summary	
Toll Revenue PV (5% DR)	\$847,090,900
Capex (2014 dollars)	\$99,768,648
Annual O&M (2014 dollars)	\$3,463,832

Alternative 6 Option 1

Year	Total Annual Vehicle Trips	Total Annual Toll Vehicle Trips	Annual Toll Revenue (2014 \$)	Transit Trips	Transit Revenue (2014 \$)	Annual Revenue (2014 \$)
2019	22,556,000	313,000	\$826,000	-	\$0	\$826,000
2020	23,056,000	349,000	\$1,076,000	-	\$0	\$1,076,000
2021	23,567,000	389,000	\$1,401,000	-	\$0	\$1,401,000
2022	24,089,000	433,000	\$1,824,000	-	\$0	\$1,824,000
2023	24,623,000	483,000	\$2,375,000	-	\$0	\$2,375,000
2024	25,168,000	538,000	\$3,093,000	-	\$0	\$3,093,000
2025	25,725,000	600,000	\$4,027,000	-	\$0	\$4,027,000
2026	26,282,000	662,000	\$4,961,000	-	\$0	\$4,961,000
2027	26,851,000	730,000	\$6,112,000	-	\$0	\$6,112,000
2028	27,433,000	805,000	\$7,530,000	-	\$0	\$7,530,000
2029	28,027,000	888,000	\$9,277,000	-	\$0	\$9,277,000
2030	28,634,000	979,000	\$11,429,000	-	\$0	\$11,429,000
2031	29,254,000	1,080,000	\$14,081,000	-	\$0	\$14,081,000
2032	29,888,000	1,191,000	\$17,348,000	-	\$0	\$17,348,000
2033	30,536,000	1,313,000	\$21,373,000	-	\$0	\$21,373,000
2034	31,198,000	1,448,000	\$26,332,000	-	\$0	\$26,332,000
2035	31,875,000	1,595,000	\$32,446,000	3,801,000	\$0	\$32,446,000
2036	32,579,000	1,675,000	\$34,961,000	3,915,000	\$0	\$34,961,000
2037	33,299,000	1,759,000	\$37,671,000	4,032,000	\$0	\$37,671,000
2038	34,035,000	1,847,000	\$40,591,000	4,153,000	\$0	\$40,591,000
2039	34,787,000	1,939,000	\$43,737,000	4,278,000	\$0	\$43,737,000
2040	35,556,000	2,036,000	\$47,127,000	4,406,000	\$0	\$47,127,000
2041	36,342,000	2,138,000	\$50,780,000	4,538,000	\$0	\$50,780,000
2042	37,145,000	2,245,000	\$54,716,000	4,674,000	\$0	\$54,716,000
2043	37,966,000	2,357,000	\$58,957,000	4,814,000	\$0	\$58,957,000
2044	38,805,000	2,475,000	\$63,527,000	4,958,000	\$0	\$63,527,000
2045	39,661,000	2,597,000	\$68,449,000	5,108,000	\$0	\$68,449,000
2046	40,306,000	2,676,000	\$71,032,000	5,261,000	\$0	\$71,032,000
2047	40,961,000	2,757,000	\$73,713,000	5,419,000	\$0	\$73,713,000
2048	41,627,000	2,841,000	\$76,495,000	5,582,000	\$0	\$76,495,000
2049	42,304,000	2,927,000	\$79,382,000	5,749,000	\$0	\$79,382,000
2050	42,992,000	3,016,000	\$82,378,000	5,921,000	\$0	\$82,378,000
2051	43,691,000	3,108,000	\$85,487,000	6,099,000	\$0	\$85,487,000
2052	44,401,000	3,203,000	\$88,714,000	6,282,000	\$0	\$88,714,000
2053	45,123,000	3,300,000	\$92,062,000	6,470,000	\$0	\$92,062,000
2054	45,856,000	3,400,000	\$95,537,000	6,664,000	\$0	\$95,537,000
2055	46,600,000	3,504,000	\$99,144,000	6,865,000	\$0	\$99,144,000
2056	47,109,000	3,562,000	\$101,449,000	7,071,000	\$0	\$101,449,000
2057	47,624,000	3,621,000	\$103,807,000	7,283,000	\$0	\$103,807,000
2058	48,144,000	3,680,000	\$106,220,000	7,501,000	\$0	\$106,220,000
2059	48,670,000	3,740,000	\$108,689,000	7,726,000	\$0	\$108,689,000
2060	49,202,000	3,801,000	\$111,216,000	7,958,000	\$0	\$111,216,000
2061	49,739,000	3,863,000	\$113,801,000	8,197,000	\$0	\$113,801,000
2062	50,282,000	3,926,000	\$116,446,000	8,443,000	\$0	\$116,446,000
2063	50,831,000	3,990,000	\$119,153,000	8,696,000	\$0	\$119,153,000
2064	51,386,000	4,056,000	\$121,923,000	8,957,000	\$0	\$121,923,000
2065	51,948,000	4,124,000	\$124,757,000	9,226,000	\$0	\$124,757,000
2066	52,280,000	4,147,000	\$126,156,000	9,503,000	\$0	\$126,156,000
2067	52,614,000	4,170,000	\$127,571,000	9,788,000	\$0	\$127,571,000
2068	52,951,000	4,193,000	\$129,002,000	10,082,000	\$0	\$129,002,000
2069	53,290,000	4,216,000	\$130,449,000	10,384,000	\$0	\$130,449,000
2070	53,631,000	4,239,000	\$131,912,000	10,696,000	\$0	\$131,912,000
2071	53,974,000	4,262,000	\$133,391,000	11,017,000	\$0	\$133,391,000
2072	54,319,000	4,286,000	\$134,887,000	11,348,000	\$0	\$134,887,000
2073	54,666,000	4,310,000	\$136,400,000	11,688,000	\$0	\$136,400,000
2074	55,016,000	4,334,000	\$137,930,000	12,039,000	\$0	\$137,930,000
2075	55,368,000	4,358,000	\$139,475,000	12,399,000	\$0	\$139,475,000

Summary	
Toll Revenue PV (5% DR)	\$668,396,150
Capex (2014 dollars)	\$99,768,648
Annual O&M (2014 dollars)	\$3,463,832



Appendix D: Cash Flow Analysis (Separate Excel Spreadsheet)